

Disclaimer

This document is the product of an ongoing co-operation between GLOBE International and the Grantham Research Institute on Climate Change and the Environment at the London School of Economics. It was financially supported by the United Kingdom's Foreign & Commonwealth Office (FCO). However the views expressed and information contained in it are not necessarily those of or endorsed by the FCO or of the host institutions, neither of which accept responsibility for such views or information or for any reliance placed on them. This publication has been prepared for general guidance only, and is in no way intended as professional advice. You should not act upon the information contained within this document without obtaining specific independent professional advice relevant to your activities.

No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, the FCO, their advisors and the authors and distributors of this publication do not accept or assume any liability, responsibility or duty of care for any consequences resulting directly or indirectly from you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it.

This study is intended for consumption in the public domain. The authors encourage the free circulation of this paper as widely as possible. Users are welcome to download, save, or distribute this report electronically or in any other format, including in foreign language translation, without written permission of the authors. We do ask that if you do distribute this report, you credit the authors, cite the website www.globeinternational.org as the source and that you do not alter the text. An electronic copy of this report is available at www.globeinternational.org and at www.lse.ac.uk/GranthamInstitute.

The correct citation for this report is:

Nachmany, M., Fankhauser, S., Townshend, T., Collins, M. Landesman, T., Matthews, A., Pavese, C., Rietig, K., Schleifer, P. and Setzer, J., 2014. "The GLOBE Climate Legislation Study: A Review of Climate Change Legislation in 66 Countries. Fourth Edition." London: GLOBE International and the Grantham Research Institute, London School of Economics.

The GLOBE Climate Legislation Study

A Review of Climate Change Legislation in 66 Countries

FOURTH EDITION

Michal Nachmany, Sam Fankhauser, Terry Townshend, Murray Collins, Tucker Landesman, Adam Matthews, Carolina Pavese, Katharina Rietig, Philip Schleifer and Joana Setzer

Typeset by Mike Scott, Carbon Copy Communications Ltd
Printed in the UK by CPI Group (UK) Croydon CR0 4YY

Contents

Terms and abbreviations.....	vii
Acknowledgments.....	ix
Foreword by the President of GLOBE International.....	xii
Foreword by the Executive Secretary of the UNFCCC.....	xiv
1..... Introduction.....	1
2..... Progress in 2013.....	3
2.1 Overview.....	3
2.2 Summary of Progress by Region.....	4
2.3 Flagship Legislation and Assessment of Progress in 2013.....	8
3..... Climate Change Legislation at the End of 2013.....	23
3.1 The Stock of Climate Change Laws.....	24
3.2 The Dynamics of Climate Change Legislation.....	26
3.3 The Sectors Covered in Climate Legislation.....	30
4..... Climate Change Legislation Country-by-Country.....	37
4.1 Argentina.....	40
4.2 Australia.....	46
4.3 Bangladesh.....	59
4.4 Bolivia.....	67
4.5 Brazil.....	73
4.6 Canada.....	86
4.7 Chile.....	92
4.8 China.....	103
4.9 Colombia.....	112
4.10 Costa Rica.....	121
4.11 Czech Republic.....	130
4.12 Denmark.....	138
4.13 Dominican Republic.....	146
4.14 Democratic Republic of Congo.....	154
4.15 Ecuador.....	160
4.16 El Salvador.....	166
4.17 Ethiopia.....	173
4.18 EU.....	183
4.19 France.....	201
4.20 Gabon.....	211
4.21 Germany.....	218
4.22 Ghana.....	228
4.23 Guatemala.....	236
4.24 Guyana.....	242
4.25 India.....	250
4.26 Indonesia.....	263
4.27 Israel.....	277
4.28 Italy.....	287
4.29 Jamaica.....	299
4.30 Japan.....	307
4.31 Jordan.....	314
4.32 Kazakhstan.....	321

4.33	Kenya.....	328
4.34	Malaysia	336
4.35	Maldives	344
4.36	Mexico.....	349
4.37	Federated States of Micronesia	359
4.38	Mongolia	366
4.39	Morocco	378
4.40	Mozambique	386
4.41	Nepal	393
4.42	Netherlands.....	400
4.43	New Zealand.....	408
4.44	Nigeria	417
4.45	Norway.....	425
4.46	Pakistan	434
4.47	Peru	442
4.48	Philippines.....	450
4.49	Poland	460
4.50	Russia	470
4.51	Rwanda.....	479
4.52	Saudi Arabia	486
4.53	Senegal.....	491
4.54	South Africa.....	498
4.55	South Korea.....	508
4.56	Sweden.....	520
4.57	Switzerland.....	529
4.58	Tanzania	540
4.59	Thailand.....	548
4.60	Turkey.....	555
4.61	Ukraine.....	565
4.62	United Arab Emirates (UAE).....	575
4.63	United Kingdom	582
4.64	United States of America (USA)	602
4.65	Venezuela.....	614
4.66	Vietnam	619
5.....	Information Sources	631
5.1	Argentina.....	631
5.2	Australia	632
5.3	Bangladesh	634
5.4	Bolivia.....	634
5.5	Brazil.....	635
5.6	Canada	636
5.7	Chile	637
5.8	China	637
5.9	Colombia	637
5.10	Costa Rica	638
5.11	Czech Republic	639
5.12	Denmark.....	639
5.13	Dominican Republic	640
5.14	Democratic Republic of Congo.....	641

5.15	Ecuador	641
5.16	El Salvador.....	642
5.17	Ethiopia	642
5.18	EU	643
5.19	France.....	644
5.20	Gabon.....	644
5.21	Germany.....	644
5.22	Ghana	645
5.23	Guatemala	645
5.24	Guyana	646
5.25	India	647
5.26	Indonesia.....	647
5.27	Israel.....	648
5.28	Italy.....	649
5.29	Jamaica.....	649
5.30	Japan	651
5.31	Jordan.....	651
5.32	Kazakhstan	652
5.33	Kenya.....	653
5.34	Malaysia	653
5.35	Maldives.....	655
5.36	Mexico.....	655
5.37	Federated States of Micronesia	656
5.38	Mongolia	656
5.39	Morocco	657
5.40	Mozambique	658
5.41	Nepal	659
5.42	Netherlands.....	659
5.43	New Zealand	660
5.44	Nigeria	662
5.45	Norway.....	662
5.46	Pakistan.....	664
5.47	Peru	665
5.48	Philippines.....	666
5.49	Poland	667
5.50	Russia	667
5.51	Rwanda.....	668
5.52	Saudi Arabia	669
5.53	Senegal.....	670
5.54	South Africa.....	670
5.55	South Korea.....	671
5.56	Sweden.....	672
5.57	Switzerland.....	673
5.58	Tanzania	673
5.59	Thailand.....	674
5.60	Turkey	675
5.61	UAE.....	675
5.62	Ukraine	676
5.63	United Kingdom	677
5.64	USA.....	677

5.65 Venezuela.....	678
5.66 Vietnam.....	679

Terms and abbreviations

ADAPTATION - Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects

ANNEX 1 COUNTRIES – Group of OECD countries and Economies in transition listed in Annex I to the UN Framework Convention on Climate Change

NON-ANNEX 1 COUNTRIES - Countries that have ratified or acceded to the United Nations Framework Convention on Climate Change that are not included in Annex I of the Convention, mostly developing countries

ANNEX 2 COUNTRIES – Countries of Annex I that have special obligation to provide financial resources and facilitate technology transfer to developing countries. This group includes 24 OECD countries and the European Union

CDM- Clean Development Mechanism of the Kyoto Protocol

COP – Conference of the parties to the UN Framework Convention on Climate Change

ETS – Emissions Trading System

EU ETS – European Union Emissions Trading Scheme

GEF - Global Environment Facility

LULUCF - Land Use, Land-Use Change, and Forestry

MOP – Meeting of the Parties to the Kyoto Protocol

MRV - Measurement, Reporting and Verification

PES - Payments for Ecosystem Services

MITIGATION - Initiatives to reduce emissions of greenhouse gases

NAMAS - Nationally Appropriate Mitigation Actions

REDD+ - Mitigation measures related to “Reducing Emissions from Deforestation and Forest Degradation (REDD)” that also includes conservation, sustainable management of forests and enhancement of forest carbon stocks, thus REDD+

UNDP - United Nations Development Programme

UNEP - United Nations Environment Programme

UNFCCC - United Nations Framework Convention on Climate Change

UN-REDD - United Nations collaborative initiative on Reducing Emissions from Deforestation and forest Degradation (REDD) in developing countries

Acknowledgments

This report would not have been possible without the contributions, advice and assistance from colleagues across the GLOBE and LSE networks. In particular the authors would like to thank the legislators who gave feedback and comments on the previous editions of GLOBE Climate Legislation Study and who commented on drafts of the national chapters in this 4th study. Legislative staffers were also immensely helpful in facilitating comments from legislators and in providing comments themselves.

Gauri Kiik, Fulvio Menghini, Marlene Grundstrom, Danny Stevens, Andres Avila-Akerberg and Rafael Aybar in the GLOBE International Secretariat provided much appreciated support and advice in the production of this and previous studies. Staff at the UK Foreign and Commonwealth Office, particularly David Concar, Daniel Parkes and Marie-Louise Childs, provided important support and advice. Colleagues at the Grantham Research Institute have also provided valuable insights. The authors appreciate the dedicated work of Mike Scott from Carbon Copy Communications who edited and typeset this study, of Analiz Vergara, who assisted with data compilation and of Maria Carvalho and Udi Nachmany who assisted with design.

GLOBE International would like to thank the UK Foreign and Commonwealth Office for supporting the production of this study and the work of GLOBE.

The Grantham Research Institute is supported by the Grantham Foundation for the Protection of the Environment and the UK Economic and Social Research Council (ESRC), through its support of the Centre for Climate Change Economics and Policy (CCCEP).

A large number of people have assisted with reviewing of the country chapters this year. We wish to thank them all – legislators, executive officials, academics, NGO representatives and independent observers – for their significant contributions to the accuracy and comprehensiveness of the study, while we retain all responsibility for errors:

Argentina	Patricia Cazenave
Australia	Eleanor Ashton, Heike Phillips
Bangladesh	Muhammad Jahedul Huq Shovon, Saleemul Huq, Monir Shaikh Moniruzzaman
Bolivia	Patricia Cazenave
Brazil	Barbara Oliveira
Canada	Jenny Hooper, David McGuinty MP
Chile	Fernando Farías Ellies, Andrea Rudnik

China	Ding Ding, Li Ting
Colombia	Senador Mauricio Ospina, Francisco Quiroga, Mauricio Umaña Camacho
Costa Rica	Roberto Guzmán Gutiérrez, Deputy Alfonso Pérez Gómez, Luis Rivera
Czech Republic	Michal Danhelka, Pavel Zamyslicky
Denmark	Steen Gade, MP, Pernille Sørensen, Rikke Thoning
Dominican Republic	Pedro García , Omar Ramírez Tejada
DRC	Fumu Munanga, Crispin Mutumbe Mbuya
Ecuador	Angel Valverde, Patricia Velasco , Analiz Vergara
Ethiopia	Russell Bishop
EU	Samuela Bassi , Jürgen Lefevere, Terhi Letonen, Alexandre Paquot, Damyana Stoyanova
France	Marguerite Culot
FSM	Lam Dang, Congressman Isaac V. Figir
Germany	Philipp Behrens, Michael Kauch MdB, Volker Kraih
Ghana	Joseph Kofi Teye
Guyana	Lili Ilieva , Tim Laing
India	Elizabeth Colebourn, Pranav Sinha
Indonesia	Rian Pradipta, Satya Yudha
Israel	Ofira Ayalon, Dana Tabachnik, Arye Wanger
Italy	Caterina Gennaioli
Jamaica	Heather Cooke
Japan	Jinichi Ueda
Jordan	Amal Dababseh
Kazakhstan	Kassymkhan Kapparov, Karlygash Kuralbayeva
Kenya	Helen Baker
Malaysia	Tan Ching Sin , Yap Kok Seng,
Mexico	Andres Avila-Akerberg, Carolina Hernández Campos, Jatziri Pando Medina

Mongolia	Sambuu Demberel, Bata Ochir
Morocco	Yassir Benabdallaoui, Moh Rejdali
Mozambique	Paula Panguene
Nepal	Ram Chandra Khanal, Lucky Sherpa,
Netherlands	Bart Pierik
New Zealand	Kate Hodgkinson , Judy Lawrence
Nigeria	Appollonia Okhimamhe, Innocent Onah, Abubakar S. Sambo
Norway	Freya Nowell
Pakistan	Kashif Majeed Salik
Peru	Pablo Larco, Eduardo Durand López Hurtado, Isabela Souza, Patrick Wieland
Philippines	Chris Estallo
Poland	Elzbieta Lenart, Jacek Mizak
Russia	Elena Chistyakova, Karlygash Kuralbayeva
Saudi Arabia	Abdulaziz Ahmed, Ali Althuwaini
South Africa	Cedric Frolick MP, Scotney Watts
South Korea	Jeemin Lee , Ohkeum Lee
Sweden	Marlene Grundström, Marie Karlberg, Erica Petterson, Anna Wallentin
Switzerland	Reto Burkard, Laurence Mortier, Marjorie Perroud
Thailand	Buntoon Srethasirote , Sopitsuda Tongsovit
Turkey	Bali Emrah Biçer, Nicholas Pope
UAE	Dennis Kumetat, Dane McQueen
Ukraine	Natalie Kushko, Irina Stavchuk
United Kingdom	Officials at the Department for Energy and Climate Change
USA	Ana Unruh Cohen
Venezuela	Patricia Cazenave
Vietnam	Le Kim Thai

Foreword by the President of GLOBE International



Welcome to the 4th edition of the GLOBE Climate Legislation Study, a collaboration between Globe International and the London School of Economics. Since the first edition was published in 2010, covering 16 countries, the Study has established itself as the world's most authoritative and comprehensive audit of climate change-related legislation.

At the launch of the 3rd edition in London in January 2013 Christiana Figueres, Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC), challenged us to “double the coverage” of countries reviewed. I am delighted to say that we have met this challenge. The 4th edition has been expanded from 33 to 66 countries (including the European Union as a single entity), which are together responsible for approximately 88% of global emissions of greenhouse gases.

With its broader coverage and deeper analysis, the 4th edition shows more clearly than ever before the extent and breadth of the legislative activity on climate change. It's happening across the globe: in Africa, the Americas, Asia and Europe and in both large and small economies from China to Micronesia.

The study shows that 61 out of 66 countries have passed laws to promote domestic, clean sources of energy and 54 have legislated to increase energy efficiency. The former reduces reliance on imported fossil fuels, thereby mitigating exposure to volatile fossil fuel prices and increasing energy security. The latter reduces costs and increases competitiveness. All of these actions, whilst being driven by national interest, have a positive benefit for the world's climate. And it's no surprise, either, that 52 of the 66 countries covered by the study have developed legislation or policies to improve their resilience to the impacts of climate change, many of which we are already experiencing.

As illustrated by the comparative graphics, legislation is progressing at a rapid rate, reflecting the fact that addressing climate change is being seen as firmly in the national interest. National achievements are often also supported and, in some cases surpassed, by the legislation produced by States and Provinces. Canada and the US are cases in point. At the same time we must recognise that progress can sometimes be undone. The new attitude of Australia in particular could lead to a reversal of the important legislative steps taken to enable it to play its part in the global battle against climate change.

We should be clear that the legislative response thus far is not yet sufficient to limit emissions at a level that would cause only a 2 degree Celsius rise in global average temperature, the agreed goal of the international community. However, it is also clear that the cumulative effect of the advances in national legislation outlined by the study is the creation of a strong foundation on which a post-2020 global deal can be built. Domestic legislation is establishing the institutional frameworks and policies to measure, report, verify, and manage emissions. The ambition of these policies and laws can be increased as countries experience the co-benefits of tackling climate change and discover that the costs

are manageable. This legislation is a fundamental pre-requisite to an effective international deal.

As the formal UN negotiations move towards Paris in 2015, the scheduled conclusion of negotiations on a post-2020 framework, it is increasingly clear that an effective and ambitious deal is dependent on the national legislation passed in advance.

That is why the GLOBE Climate Legislation Initiative (GCLI) is so important. Launched in January 2013, the GCLI is bringing together legislators in over 60 countries to share experience, discuss common challenges and develop legislation. Building on the success of GLOBE Mexico in developing and securing the political support for the General Law on Climate Change in 2012, GLOBE members in 2013 have been instrumental in the passage of climate change legislation in Micronesia, an influential member of the Alliance of Small Island States, a comprehensive climate change law has been tabled by GLOBE Costa Rica, which is expected to pass in early 2014, and GLOBE members are developing legislation in China, Colombia, Nigeria and Peru, amongst others.

Of course, the role of legislators does not end when legislation is passed. Equally if not more important than legislators' role in developing and passing legislation is oversight of governments, not least in approving national budgets. It is one thing to pass legislation and another to implement it. That is why the GCLI includes a major strand of work on oversight, identifying and promoting good practice and equipping legislators to be as effective as possible in holding their governments to account. GLOBE International will be working continuously with its network of legislators across the world to advance the legislative response to climate change. Success in Paris in 2015 depends on it.



The Rt Hon. John Gummer, Lord Deben
President, The Global Legislators' Organisation (GLOBE International)

Foreword by the Executive Secretary of the UN Framework Convention on Climate Change (UNFCCC)



Climate change is the greatest challenge of our time. Evidence clearly shows that human actions have a direct and dramatic effect on the climate system. Recent reports from the Intergovernmental Panel on Climate Change, UN Environment Programme, International Energy Agency and World Economic Forum constitute a clarion call to curb greenhouse gas emissions and adapt to climate change.

These reports also point to one emerging truth. We can act to avoid the worst effects of climate change, but time is running out. Capturing our opportunity to stabilise the climate system, achieve the internationally agreed goal of limiting warming to less than 2 degrees Celsius and safeguard development for future generations requires immediate action by leaders in every country and every sector. Given the complexity of climate science and vastly different geopolitics around the world, no one suite of climate policies is right for everyone. Therefore, instruments that promote sharing experiences, discussing challenges and developing appropriate legislation are exceedingly valuable. GLOBE International provides just such an instrument.

In 2014, Parties to the UNFCCC are conducting the domestic conversations necessary to determine their contributions to the new, universal climate agreement slated for 2015. The GLOBE Climate Legislation Study gives policymakers clear options by showcasing national climate policies, regional progress and the effects of legislation. Last year, I challenged GLOBE to double the number of countries in the study and they rose to the challenge. This year, I challenge legislators to take advantage of the information in this study, create strong national policy that moves us to a low-carbon world and bring strong contributions to the international process. In doing so, legislators can rise to meet our greatest challenge, climate change.

A handwritten signature in black ink, appearing to read 'C. Figueres'.

Christiana Figueres, Executive Secretary, United Nations Framework Convention on Climate Change

1 Introduction

The GLOBE Climate Legislation Study seeks to provide an authoritative and comprehensive annual audit of climate change-related laws in the 66 country chapters.

The origin of the study was the 2009 agreement on a set of Legislative Principles on Climate Change, co-authored by Chinese Congressman Wang Guangtao and then US Congressman Ed Markey and endorsed by 120 legislators from 16 countries. These principles were designed to guide legislators as they advanced climate change legislation, on the understanding that moving together in a nationally-appropriate and consistent fashion would help to maximise the benefits of moving towards a low carbon economy and minimise the competitive distortions.

To facilitate the implementation of the Legislative Principles on Climate Change, it was important to develop an understanding of existing climate change-related legislation to learn lessons and benefit from the experience of others in drafting, building support for, passing and implementing these laws. In 2010 GLOBE and the Grantham Research Institute at the London School of Economics partnered to produce the 1st edition of The GLOBE Climate Legislation Study (Townshend et al 2010), examining climate-related legislation in 16 of the major economies. The 2nd edition of The GLOBE Climate Legislation Study, published in December 2011, was expanded to include Australia, and covered progress in 2011. Subsequently, in response to a challenge “to double the coverage” by Christiana Figueres, Executive Secretary of the UNFCCC, the coverage was increased to 33 countries in the 3rd edition, launched in January 2013, and further expanded to 66 countries in this 4th edition. This latest edition includes 18 of the top 20 emitters of greenhouse gases (GHGs) and 39 of the top 50, representing approximately 88% of (anthropogenic) global emissions.

Recognising the growing importance of adapting to climate change, GLOBE co-hosted a conference in July 2013 entitled “Adapting to Climate Change: Policy, Practice and Legislation”, bringing together legislators, policy makers and experts from more than 10 countries. The output was a set of “Adaptation Principles” designed to inform the development of adaptation-related legislation. These Adaptation Principles have already informed legislation in Micronesia and the adaptation elements of Costa Rica’s draft law while the Chinese government received the principles as an input to the drafting of their national climate change law.

The aims of the GLOBE Climate Legislation Studies are threefold. First, to support legislators advancing climate-related legislation by providing a detailed summary of existing legislation to identify best practice and help peer-to-peer learning. Second, to document the broad progress on climate change legislation at the domestic level in both industrialised and developing countries to provide

positive momentum to the international negotiations. And third, to highlight the fundamental role of legislators in any effective strategy to tackle climate change.

Parliaments considering climate-related legislation can benefit from the experience of others. For example, South Korea's emissions trading legislation and China's sub-national schemes draw on the experience, and lessons learned, from the EU's emissions trading system. Mexico's General Law on Climate Change draws on the experience of the UK's Climate Change Act, while Costa Rica's draft law builds on Mexico's legislation. Brazilian, Indonesian, Mexican and Congolese legislators have been sharing knowledge of forest-related legislation via the GLOBE Legislators' Forest Initiative to ensure maximum consistency and share experience. And in January 2012 the team drafting China's climate change law made a study visit to London and Brussels, hosted by GLOBE International, to learn from the experience of the UK and the EU to inform the development of their national law. GLOBE's engagement with China is ongoing as it develops its law, expected to pass in 2015.

The 4th edition is a major output of The GLOBE Climate Legislation Initiative (GCLI), a policy process to support the advance of climate change legislation in more than 40 countries. The GCLI is running alongside the international negotiations under the Durban Platform with the aim of helping to build the foundations and political conditions that enable an international agreement to be reached.

Legislative action at the national level is fundamental to achieving the ultimate goal of the UN Framework Convention on Climate Change – the stabilisation of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

2 Progress in 2013

This section summarises the major changes to the legislative picture in 2013, or more specifically between the cut-off date of the third study (October 2012) and the end of 2013. It includes laws, regulations, policies or decrees as per the definition of legislation used in this study (see Section 4). In addition we review major legislative or regulatory proposals that have a reasonable chance of entering into law or being approved by governments.

2.1 Overview

2013 was a period of transition in global climate diplomacy. The international negotiations are slowly gearing up towards the crucial 2015 Conference of the Parties/Meeting of the Parties in Paris. Among developed countries, US President Barack Obama raised the bar when he promised to “respond to the threat of climate change” in his inaugural State of the Union address after his re-election, and subsequently published a Climate Action Plan. With the worst of the economic crisis over, the European Union began to focus again on climate policy and its climate objectives beyond 2020. However, compared to a few years ago the political environment for carbon legislation in industrialised countries has become more difficult, nowhere more so than in Australia, where a new administration has vowed to repeal the key aspects of Australia’s flagship legislation – the Clean Energy Act. Japan also announced a downward revision of its climate targets to accommodate a much-reduced reliance on low-carbon nuclear energy after the tsunami that devastated the nuclear plant at Fukushima.

These developments accentuate a longer-term trend that has seen the momentum in climate change legislation shifting from industrialised countries to developing countries and emerging markets. This has gone hand in hand with a rise in legislation covering adaptation. The stock of climate laws in developing countries is still lower than in industrialised nations, but many have started to close the gap by passing sophisticated new legislation.

We identify significant positive changes in two regions in particular. In Sub-Saharan Africa national strategies and plans are being formed in almost all the study countries, as the basis for future legislation. In Latin America, plans are beginning to transform into concrete legislation, notably Bolivia’s Framework Law on Mother Earth and Integral Development to Live Well and Costa Rica’s anticipated Framework Law on Climate Change, building on the substantial progress in Mexico we reported in the 3rd edition.

Overall, we report substantive legislative progress in 8 of the 66 countries, which passed flagship legislation, and some positive advances in a further 19 countries. Detailed chapters on each country's climate change-related legislation can be found in Section 4 – Climate Legislation Country by Country.

2.2 Summary of Progress by Region

2.2.1 Summary of Progress in Africa and the Middle East

Sub Saharan Africa saw major developments in 2013, with progress made in almost all of the study countries, notably the approval of national plans and strategies on climate change. In **Ethiopia**, the Environmental Protection Agency was upgraded to the status of a ministry with the formation of the Ministry of Environment and Forest, and is better equipped to take the technical responsibility of building a climate-resilient green economy. **Gabon** passed Resolution No. 20/2013 on Sustainable Development in the Republic of Gabon.

Kenya adopted the 2013-2017 Climate Change Action Plan, with the objective of providing a platform for the implementation of the 2010 National Climate Change Response Strategy (NCCRS). In November 2012, **Mozambique** adopted the 2013-2025 National Strategy for Climate Change, with the aim of reducing vulnerability to climate change and improving living conditions. The strategy proposes climate change adaptation and disaster risk reduction measures and also addresses mitigation by targeting low carbon development.

Tanzania passed its National Strategy on REDD+ in March 2013. In late 2012, **Nigeria's** Legislative Council approved the adoption of a National Climate Change Policy and Response Strategy (NCCP-RS). NCCP-RS aims to provide Nigeria with a framework for responding to climate change-related challenges such as increased flooding and sea level rise. **Rwanda** approved its Second Economic Development and Poverty Reduction Strategy (2013-2018), which highlights pursuing a green economy approach to development, and integrating climate change and the environment as a 'cross-cutting issue'.

Limited progress has been observed in the Middle East and North Africa. Exceptions include **Jordan**, which passed its National Climate Change Policy in May. **Saudi Arabia** is preparing for climate legislation, having issued a white paper which contains a roadmap and description of policy tools for launching a large renewable energy programme. The **UAE** launched a mandatory Energy Efficiency Standardisation and Labelling Scheme.

2.2.2 Summary of Progress in the Americas and Caribbean

In the **USA**, dedicated climate change legislation remains politically challenging. However, the President announced a Climate Action Plan, including a series of

executive actions designed to accomplish the United States' GHG emission reduction targets and prepare for the impacts of climate change. The Plan sets a timetable for the Environmental Protection Agency to complete work on regulations governing existing and future fossil fuel power plants. Additionally, an executive order was issued by the President, entitled Preparing the United States for the Impacts of Climate Change, which promotes information-sharing and climate risk-informed decision-making at all levels of government. In late 2013, the Senate began floor consideration of bipartisan energy efficiency legislation, the Energy Savings and Industrial Competitiveness Act, which will see further debate in 2014.

Mexico, following up on its 2012 General Law on Climate Change, announced the creation of the Climate Change National System and the Inter-secretarial Committee on Climate Change. It also adopted the National Climate Change Strategy. This strategy sets out the main focal areas regarding cross-sectoral climate policy, adaptation to climate change and reduction of GHG emissions, and reinforces Mexico's GHG mitigation targets. **El Salvador** adopted the National Climate Change Strategy, aiming to enhance the financial and institutional resources to reduce economic and social impact of climate change. The Strategy focuses on three core areas: adaptation, mitigation and international co-operation.

In **Costa Rica**, a Framework Law on Climate Change was formally introduced to Congress in September 2013, and is expected to pass in 2014. The proposal includes the creation of the Climate Change National Committee and the Climate Change National Council, together responsible for the implementation of the National Adaptation and Mitigation Plans. The draft bill also calls for the adoption of a National Climate Change Plan and the further development of climate policies oriented towards research, crisis management, GHG reporting and monitoring as well as mitigation and adaptation. Further developments include a Ministerial Decree adopted in September 2013, which creates a voluntary carbon market.

In **Ecuador**, Decree 1815 established the Intersectoral National Strategy for Climate Change, part of a package of measures to encourage sustainable development in Ecuador. The National Plan for Good Living promotes adaptation to climate change, which sits alongside the National Environmental Policy. Other decrees passed in 2013 include the Ministerial Accord 33 on REDD+, the Ministerial Accord 095 (adoption of The National Climate Change Strategy), and Ministerial Accord 089, which establishes the National Authority for Implementation of the NAMA. In October 2012 **Bolivia** passed The Mother Earth Law and Integral Development to Live Well, Law No 300 of 2012. The law is a sweeping overhaul of the national management of natural resources, climate, and ecosystem.

2.2.3 Summary of Progress in Europe

The **EU** reform of the Common Agricultural Policy, approved in 2013, has led to the integration of climate change mitigation and adaptation measures by introducing two rural development policy priorities for restoring, preserving and enhancing ecosystems, for resource efficiency and to address climate change. In June, the Council of the European Union adopted an EU strategy on adaptation to climate change. Finally, the Directive on Energy Efficiency has been revised to include the legal obligation to establish energy efficiency schemes or policy measures in all Member States.

Within the European Union, **Sweden** passed an act creating tax incentives for biofuels, while the **United Kingdom** passed the Energy Act, which implements a white paper on electricity market reform, and supports low-carbon electricity generation through contracts for differences.

In July 2013 **France** concluded its National Debate on Energy Transition, resulting in a series of policy recommendations. One recommendation reiterates the President's commitment to reduce the proportion of nuclear energy in the overall energy mix from the current 75% to 50% in 2025. Another recommendation demands a reduction in total energy consumption of 50% by 2050. The recommendations from the Energy Transition Debate have been submitted to the government and draft legislation is expected in 2014.

The **Czech Republic** passed an Act on Promoted Energy Sources, imposing a levy on renewables development while still meeting EU targets, with increased support for nuclear energy. **Poland** adopted the Polish National Strategy for Adaptation to climate Change (SPA 2020), the first strategic document directly focused on adaptation to climate change. Poland also adopted a Strategy for Economic Innovation and Effectiveness, which aims to make the country highly innovative by 2020. It is also in the process of adopting a Strategy for Energy Security and Environment, which sets targets to increase energy efficiency and the share of renewables.

Outside the EU, **Switzerland** revised its CO₂ Act. The revision sets an emission reduction target of 20% below 1990 levels by 2020, and sets interim goals and various measures for buildings, transportation and industry.

The State Environmental Agency of the **Ukraine** is currently working on a new draft law on a national ETS. In September 2013, the **Russian** President signed a decree adopting a target for GHG emissions, stating that by 2020 they must not exceed 75% of the total emissions of 1990.

2.2.4 Summary of Progress in Asia Pacific

China continues to work on its national climate change law, a draft of which is expected to be completed and consulted on in 2014. The National Development

and Reform Commission has also developed and published a National Plan for Addressing Climate Change (2013-2020) that outlines the framework for tackling climate change in China, including targets, tasks and safeguarding measures. Progress has also continued with sub-national legislation and pilot carbon trading systems in key Provinces and Municipalities.

In January 2013 **Mongolia** signed a bilateral document on a Joint Crediting Mechanism (JMC) agreement with the government of Japan to help offset its GHG emissions. The Forest Law amended in July 2013 now foresees the use of forests for GHG sequestration. The UN-REDD Programme is working with the government to integrate REDD+ into national strategies and legislation.

Following a change of government, **Japan** announced in late 2013 that instead of aiming for a 25% reduction in greenhouse gas emissions by 2020, it would increase its emissions by 3%, following the shutdown of many nuclear reactors after the tsunami that led to the shutdown of the Fukushima nuclear power plant. It is yet to be seen how this might be reflected in Japan's legislation.

Although **Kazakhstan** did not pass any new legislation in the past year, it began trading carbon in January 2013 for a pilot period of one year. Should the trading system be deemed successful, a second trading period will be enacted for the period to 2020.

The Federated States of Micronesia made significant progress on tackling climate change this year, passing two major pieces of legislation in late 2013. The first, the Nationwide Integrated Disaster Risk Management and Climate Change Policy, sets out in its guiding principles a 'multi-hazard' risk management approach that integrates disaster risk management, climate change adaptation and GHG emissions reduction. The second, The Climate Change Act, instructs government offices and departments to prepare plans and policies consistent with the Climate Change Policy and includes an obligation on the President to report to Congress on the progress of implementation.

Indonesia has been active on REDD+, with a decree establishing a Managing Agency for REDD+, which amongst other things will develop a national REDD+ strategy. A Presidential Instruction extends the forest moratorium, which is a core aspect of REDD+ implementation. In **Thailand**, the Office of Natural Resources and Environmental Policy Planning is working on the National Master Plan on Climate Change 2013-2050, outlining strategies and policy recommendations for climate change adaptation, mitigation, and capacity building for climate change.

Australia's climate change policy took a turn following the September 2013 general election. The new government announced it would repeal the carbon tax effective from 1 July 2014, and it introduced carbon tax repeal bills into parliament as its first item of legislative business. Full repeal of the Clean Energy

legislative package would also see the abolition of the Climate Change Authority and the Clean Energy Finance Corporation. The repeal of these laws, if supported in parliament, is expected to take place in 2014. In place of the Clean Energy Act, the new government plans to introduce a Direct Action Plan in July 2014, under which the government has committed to reduce GHG emissions by 5% from 2000 levels by 2020. In August 2013, the government of **New Zealand** announced an unconditional emissions reduction target of 5% to be achieved by 2020.






2.3 Flagship Legislation and Assessment of Progress in 2013

For 62 of the 66 country studies we have been able to identify a flagship law – a piece of legislation or regulation with equivalent status that serves as a comprehensive, unifying basis for climate change policy. Changes in flagship legislation are therefore particularly significant. They constitute a step change in a country’s approach to climate change.






In 2013 eight countries passed new flagship legislation. They are Bolivia, El Salvador, Guatemala, Kenya, Micronesia, Mozambique, Nigeria and Switzerland. In addition, we have changed the flagship law of El Salvador, from The National Environment Policy (2012) to The National Climate Change Strategy (2013), which is specifically focused on climate change.





Table 1 below provides a summary of “flagship legislation” in all 66 countries. The final column displays an assessment of legislative progress in 2013. The assessment takes into account laws passed since the cut-off date for the third edition of the study (October 2012). It also – through the use of coloured exclamation marks – includes an indication of major legislative proposals that, although not yet passed, have been formally introduced to the legislature for consideration.





Table 1: Flagship Legislation and Legislative Progress in 2013






Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Argentina	<i>Presidential Decree 140/2007 declaring "rational and efficient" energy use a national priority</i>	Includes far-reaching and ambitious goals to reduce energy consumption and promote the use of renewable energy in the public sector (including public transport and lighting), private industry and private residences.	2007	
Australia	<i>Clean Energy Act 2011</i>	The purpose of the Clean Energy Act is to put Australia on a path to reduce its GHG emissions by 80% by 2050. The central element of the bill is pricing carbon, initially via a carbon tax and, subsequently, via an emissions trading scheme.	2011	 New government has published draft legislation to repeal aspects of the Clean Energy Act
Bangladesh	<i>The Climate Change Trust Fund Act</i>	Focused on funding adaptation-related activities over the period 2009–2011.	2009	
Bolivia	<i>Framework Law on Mother Earth Law and Integral Development to Live Well, Law No 300 of 2012</i>	The vision of the Law is to "establish the vision and fundamentals of integral development in harmony and balance with Mother Earth to Live Well, guaranteeing the continued capacity of Mother Earth to regenerate natural systems, recuperating and strengthening local and ancestral practices, within the framework of rights, obligations and responsibilities".	2012	 The Mother Earth Law and Integral Development to Live Well
Brazil	<i>National Policy on Climate Change (NPCC)</i>	The NPCC is based on Brazil's international commitment within the UNFCCC and incorporates all previous related government instruments (i.e. the National Plan on Climate Change, the National Fund on Climate Change and others).	2009	 Law No. 12805 Establishing the National Policy on Farming-Livestock-Forest Integration






¹ Taking into account laws passed between the close of the third edition of the study, in October 2012 and the end of 2013.






Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Canada	No flagship legislation			 Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations P.C. 2013-160
Chile	<i>National Climate Change Action Plan 2008–2012</i>	Creates an Inter-ministerial Committee on Climate Change and two dialogue platforms, one for public-private partnerships and one for civil society. The Plan establishes a set of public policy guidelines for five years, after which it will be followed by long-term national and sectoral plans for adaptation and mitigation.	2008	
China	<i>12th Five-Year Plan</i>	The 12th Five-Year Plan includes targets to decrease the carbon intensity of GDP by 17% by 2015; to decrease the energy intensity of GDP by 16%; to increase the share of non-fossil fuel primary energy consumption to 11.4%; and to increase forest coverage by 21.6%.	2011	 National Adaptation Plan published
Colombia	<i>Law No. 1450 of 2011</i>	National Development Plan 2010–2014 addresses sustainability and risk reduction and foresees the implementation of a National Climate Change Policy.	2011	
Costa Rica	<i>2008 National Climate Change Strategy</i>	The primary objective of the NCCS is to convert the country into a “climate neutral” economy by 2021. Other objectives are to reduce the socio-economic and environmental impacts of climate change, and promote sustainable development and environmental protection through actions of mitigation and adaptation. The NCCS is divided into a national and an international agenda, detailing specific areas and actions to be taken within each domain.	2008	 2013 Biofuels Law; Ministerial Decree DAJ-62-2012-MINAE creating the Voluntary Carbon Market; New Framework Law on Climate Change in debate and expected to pass in 2014





Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Czech Republic	<i>National Programme to Abate Climate Change Impacts in the Czech Republic</i>	The National Programme to Abate Climate Change Impacts in the Czech Republic is the key document through which the ministries co-ordinate cross-cutting and sectoral policies at the national level that are necessary to comply with the European Climate Change Programme and other EU climate legislation. It thus forms the basis for further, sector-specific climate legislation.	2004	
Denmark	<i>Energy Agreement 2012-2020</i>	Comprehensive governmental agreement passed by the parliament (Folketing) that aims to reduce emissions via energy efficiency and increase the share of renewable energies as part of a green socio-economic transition. The overall objective is to make Denmark's energy supply 100% renewable by 2050.	2012	
Dominican Republic	<i>Law 1-12: National Development Strategy</i>	The strategy aims to integrate climate change learning in key sectors to promote human and institutional capacity to cope with climate change. The Law establishes a binding commitment to achieve a reduction in GHG emissions of 25% in the DR compared to 2010 levels.	2012	
Democratic Republic of Congo	<i>Law No. 11/009 on the Protection of the Environment</i>	The Law covers many areas from the management of air and water through to the introduction of genetically modified organisms. It sets out the fundamental principles concerning environmental protection. The law establishes the institutional framework and outlines the procedural and financial mechanisms of environmental protection for DRC. The Law sets out the rules for natural resources management and conservation.	2011	






Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Ecuador	<i>Executive Decree 1815 No. 636, catalysing the National Strategy on Climate Change</i>	The Decree defines adaptation and mitigation as government policy, under the oversight of the Ministry of the Environment, Secretary of Climate Change. The decree led the formulation of the National Strategy on Climate Change.	2009	 Ministerial Accord 095 Official Register No9 passed, adopting the National Climate Change Strategy; Ministerial Accord 33 on REDD+ passed
El Salvador	<i>The National Climate Change Strategy</i>	The Strategy aims to enhance financial and institutional resources to reduce the economic and social impact of climate change by addressing three core issues: tackling losses generated by climate change, adaptation measures and development of a mitigation programme associated with the national agenda for social and economic development, including the development of a low-carbon economy.	2013	 The National Climate Change Strategy
Ethiopia	<i>Climate-Resilient Green Economy Initiative</i>	The CRGE's vision is achieving middle-income status by 2025 in a climate-resilient green economy, outlining four pillars: Adoption of agricultural and land use efficiency measures; increased GHG sequestration in forestry; deployment of renewable and clean power generation; and use of advanced technologies in industry, transportation, and buildings.	2011	 Proclamation creating the Ministry of Environment and Forestry
European Union	<i>Climate and Energy Package</i>	The core of the package comprises four pieces of complementary legislation: Revision and strengthening of the EU Emissions Trading Scheme (ETS) Reducing GHG emissions fairly, taking into account the relative wealth of EU Member States A framework for the production and promotion of renewable energy A legal framework for the environmentally safe geological storage of CO ₂	2008	 An EU strategy on adaptation to climate change. Council of the European Union conclusions 11151/13; Decision No 529/2013/EU of the European Parliament on accounting rules on GHG emissions and removals resulting from activities relating to land use, land-use change and forestry and on information concerning actions relating to those activities







Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
France	<i>Grenelle I and II</i>	Grenelle laws include comprehensive policies on emissions targets, renewable energy, energy efficiency and research and development.	2009 and 2010	
Gabon	<i>National Climate Change Action Plan- 'Plan Climat'</i>	The plan is designed to enable Gabon to be able to control its GHG emissions and reduce climate risks across the country; and to enable the reconciliation of environmental protection and sustainable economic development, in accordance with the Gabon Emergent strategy.	2012	 Resolution No. 20/2013 on Sustainable Development in the Republic of Gabon
Germany	<i>Integrated Climate and Energy Programme</i>	This programme aims to cut GHG emissions by 40% from 1990 levels by 2020. The package focuses strongly on the building sector. The government approved a new climate package of measures in June 2008 that focuses on the transportation and construction sectors.	2007 (updated 2008)	 Implementation of the Government Programme for Electric Mobility from 23 November 2012, No. 634/12
Ghana	<i>Renewable Energy Act, 2011 Act 832</i>	The Act's objective is to provide for the development, management and use of renewable energy sources for the production of heat and power in an efficient and environmentally sustainable manner.	2011	
Guatemala	<i>Framework law for the regulation of vulnerability reduction, mandatory adaptation to the effects of climate change and mitigation of GHGs</i>	The main aim of the law is to provide an immediate and co-ordinated response to climate change. The bill stresses the need to develop a national adaptation and mitigation plan.	2013	 Framework law to regulate vulnerability reduction and obligatory adaptation to the effects of climate change and the mitigation of GHG effects







Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Guyana	<i>Low Carbon Development Strategy</i>	The Low Carbon Development strategy seeks to transform Guyana's economy from one on a high energy intensity 'business as usual' path towards one focused on low carbon growth and reduced exploitation of forests with concomitant benefits for climate change mitigation.	2009	
India	<i>National Action Plan on Climate Change (NAPCC)</i>	India's NAPCC outlines existing and future policies and programmes directed at climate change mitigation and adaptation. The Plan sets out eight "national missions" running up to 2017.	2008	
Indonesia	<i>Presidential Decree (PerPres) No. 61 2011, National Action Plan to reduce GHG emissions (RAN-GRK)</i>	RAN-GRK is a national guideline for emission reduction covering 70 programmes, to be conducted together by the Central Government, Local Governments, private sectors/business actors and civil society. It sets out the different sectors in which Indonesia will make emissions reductions, namely Forestry and Peat land, Agriculture, Energy and Transportation, Industry and Waste Management.	2011	 Decree 62 of 2013 to establish a Managing Agency for REDD+; Presidential Instruction Inpres 6/2013 extending the forest moratorium, which is a core aspect of REDD+ implementation
Israel	<i>The National Greenhouse Gas Emissions Mitigation Plan</i>	The plan's main strategies relate to energy efficiency, green building, and transportation. A key element was a government-sponsored programme of subsidies administered jointly by the Ministry of Environmental Protection and the Investment Centre in the Ministry of Economy, aimed at encouraging investments in energy efficiency and GHG reduction projects and at advancing new Israeli technologies.	2010	
Italy	<i>Climate Change Action Plan (CCAP)</i>	Italy's CCAP is a comprehensive action plan to help Italy comply with GHG reduction targets under the Kyoto Protocol.	2007	





Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Jamaica	<i>Vision 2030 Jamaica</i>	Seeks to achieve developed country status for Jamaica by 2030. The Vision has four goals, 15 National Outcomes and 82 National Strategies, with sector strategies and actions. National outcome 14 under this goal is "Hazard Risk Reduction and adaptation to climate change".	2007	
Japan	<i>Law Concerning the Promotion of Measures to Cope with Global Warming</i>	This Law establishes the Council of Ministers for Global Environmental Conservation; develops the Kyoto Achievement Plan; and stipulates the establishment and implementation of countermeasures by local governments.	1998 (amended 2005)	
Jordan	<i>Renewable Energy & Energy Efficiency Law, No. 3 of 2010</i>	The renewable energy and energy efficiency law provides the legislative framework to encourage exploitation of enable energy sources, further supply-side energy efficiency and streamline private sector investment through incentives.	2010	 National Climate Change Policy 2013-2020
Kazakhstan	<i>The Concept of Transition of the Republic of Kazakhstan to Sustainable Development for the Period 2007-2024, Presidential Decree No 753 of 2006</i>	The Concept for Sustainable Development (Concept) is a comprehensive guide to planning national development over a period of nearly two decades. The Concept was developed within the framework of the World Summit on Sustainable Development (Johannesburg, 2002) by the Ministry of Environment with support from UNDP, UNEP-EU, as well as scientists and experts.	2006	
Kenya	<i>The 2013-2017 Climate Change Action Plan</i>	Provides a platform for the implementation of the 2010 National Climate Change Response Strategy, defining clear measures on adaptation and mitigation.	2013	 Climate Change Action Plan






Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Malaysia	<i>Renewable Energy Act 2011</i>	The Renewable Energy Act 2011 establishes a system of feed-in tariffs for renewables. The system sets fixed tariff rates for electricity generated from solar, biomass, biogas, and hydro energy. Depending on the type of resource used, these tariffs are guaranteed for a period of 16 to 21 years.	2011	
Maldives	<i>National Adaptation Programme of Action of 2006</i>	The Plan is divided into five policy components: (i) climate change-related hazards; (ii) adaption of systems vulnerable to climate change (ecosystems, biodiversity, non-renewable resources, land use, human social relations); (iii) sustainable development outcomes of adaption strategies; (iv) processes to compensate for lost, damaged or negatively altered systems (as listed above) as a result of climate change; and (v) barriers to implementation.	2006	
Mexico	<i>General Law on Climate Change</i>	Establishes the basis for the creation of institutions, legal frameworks and financing to move towards a low carbon economy. Puts into law the country's emissions reduction target of 30% below Business As Usual by 2020, subject to the availability of financial resources and technology transfer.	2012	 National Climate Change Strategy
Micronesia	<i>Federated States of Micronesia Climate Change Act</i>	The Act implements the recently adopted Nationwide Integrated Disaster Risk Management and Climate Change Policy. It instructs government offices and departments to prepare plans and policies consistent with the Climate Change Policy and includes an obligation on the President to report to Congress on the progress of implementation of the Climate Change Act.	2013	 Climate Change Policy and Climate Change Act




Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Mongolia	<i>National Action Programme on Climate Change (NAPCC)</i>	The NAPCC aims to create a sustainable environment for development by promoting capacities and measures on adaptation to climate change, halting imbalances in the country's ecosystems and protecting them. The implementation strategies in this NAPCC include institutional, legislative, financial, human, education and public awareness, and research programmes, as well as co-ordination with other national and sectoral development plans.	2011	
Morocco	<i>National Plan Against Global Warming</i>	The National Plan presents the mitigation and adaptation actions taken by the government to combat climate change. It consolidates within the Department for the Environment a number of initiatives related to climate change established by other ministries.	2009	
Mozambique	2013-2025 Climate Change Strategy	The objective is to reduce vulnerability to climate change and improve the living conditions of the Mozambican people. It proposes climate change adaptation and disaster risk reduction measures and also focuses on mitigation by targeting low carbon development.	2012	 Adoption of the 2013-2025 National Strategy for Climate Change
Nepal	<i>Climate Change Policy, 2011</i>	Sets out a vision to address the adverse impacts of climate change and take opportunities to improve livelihoods and encourage climate-friendly change.	2011	
Netherlands	<i>New Energy for Climate Policy: The Clean and Efficient Programme</i>	The Programme has three main objectives: setting and implementing firm targets for reducing GHG emissions, increasing the share of renewable energies and improving energy efficiency.	2007	






Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
New Zealand	<i>Climate Change Response Act 2002</i>	The Act established an institutional and legal framework for New Zealand to ratify and meet its obligations and the Kyoto Protocol and the United Nations Framework Convention on Climate Change.	2002	
Nigeria	<i>National Policy on Climate Change</i>	The objectives of the Plan are to foster low-carbon, high growth economic development path and build a climate-resilient society through the attainment of set targets.	2013	 National Policy on climate change
Norway	<i>Climate Settlement</i>	The Settlement reinforces the targets set out in the 2008 agreement on climate policy on transportation; construction; agriculture and carbon uptake by forests; and mainland industry and petroleum activities.	2012	
Pakistan	<i>National Climate Change Policy</i>	Identifies vulnerabilities to climate change, and spells out appropriate response measures, including disaster risk management.	2012	
Peru	<i>National Strategy on Climate Change</i>	The National Strategy for Climate Change has the general objective of reducing the adverse impacts of climate change by conducting research that identifies vulnerability and developing strategic action plans to mitigate climate change as well as adaptation techniques.	2003	
Philippines	<i>Climate Change Act of 2009 (Republic Act No. 9729) (and Implementing Rules and Regulations [IRR] of the "Climate Change Act of 2009"</i>	The Act establishes the Climate Change Commission as the sole policy-making body within government, and requires the Commission to draft a National Climate Change Framework, a detailed National Climate Change Action Plan and guidelines for local Climate Change Action Plans.	2009	

Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Poland	<i>Strategies for Greenhouse Gas Emission Reduction in Poland until 2020</i>	Outlines the actions to be taken in each sector of the economy to comply with international obligations including energy, industry, transportation, agriculture, forestry, waste, public utilities, services and households.	2003	
Russia	<i>Climate Doctrine of the Russian Federation</i>	The doctrine sets strategic guidelines for the development and implementation of future climate policy, covering issues related to climate change and its impacts.	2009	 Presidential decree from 30 September 2013 adopting a target for GHG emissions: by 2020 they cannot exceed 75% of the total emissions of 1990
Rwanda	<i>Green Growth and Climate Resilience – National Strategy on Climate Change and Low Carbon Development</i>	Includes a collection of 9 working papers covering all major sectors relating to mitigation and adaptation.	2011	 The Second Economic Development and Poverty Reduction Strategy (2013-2018)
Saudi Arabia	No flagship legislation			
Senegal	<i>Ministerial Decree 1220 establishing the National Climate Change Committee</i>	The Decree formalises the creation of the National Climate Change Committee (NCCC) with jurisdiction over all domains related to the activities related to the UNFCCC and its legal instruments.	2003	
South Africa	<i>National Climate Change Response Policy White Paper (NCCRP)</i>	The Policy is a comprehensive plan to address both mitigation and adaptation in the short, medium and long term (up to 2050). Strategies are specified for: Water; Agriculture and Commercial Forestry; Health; Biodiversity and Ecosystems; Human Settlements; and Disaster Risk Reduction and Management.	2011	

Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
South Korea	<i>Framework Act on Low Carbon Green Growth</i>	This law creates the legislative framework for mid- and long-term emissions reduction targets, cap-and-trade, carbon tax, carbon labelling, carbon disclosure and the expansion of new and renewable energy.	2009	
Sweden	<i>Integrated Climate and Energy Policy</i>	The Climate Policy Bill specifies targets for reducing GHG emissions and provides a joint action plan to achieve emission reductions. The Policy includes various taxation measures, including a carbon tax, and facilitates green investments in developing countries, climate policy and development co-operation and an increased focus on climate change adaptation.	2009	 Changes in the act concerning energy tax (part of climate and energy package within 2013 national budget bill)
Switzerland	<i>Revised CO₂ Act</i>	The revised act sets emission reduction targets of 20% below 1990 levels by 2020 and sets interim goals and measures for buildings, transportation and industry.	2013	 CO2 Act (fully revised version); CO2 emission regulations for new cars SR 541.711.Package including measures under "Energy Strategy 2050" in parliament.
Tanzania	<i>2012 National Climate Change Strategy</i>	The Strategy aims to enable Tanzania to effectively adapt to climate change and participate in global efforts to mitigate climate change, whilst also achieving sustainable development.	2012	 National Strategy on REDD+

Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
Thailand	<i>Strategic Plan on Climate Change (2008-2012)</i>	The Plan created a strategic framework for climate change policy-making, in regards to building capacity to adapt and reduce vulnerabilities to climate change impacts; promoting GHG mitigation activities based on sustainable development; supporting research and development to better understand climate change, its impacts and adaptation and mitigation options; raising awareness and promoting public participation; and supporting international co-operation to achieve the common goal of climate change mitigation and sustainable development.	2008	
Turkey	<i>Law No. 5346 on Utilization of Renewable Energy Sources for the Purposes of Generating Electrical Energy</i>	The law (known as the Renewable Energy Law) encourages the use of renewable energy. It encompasses the procedures and principles of the conservation of renewable energy resource areas, certification of the energy generated from these sources, and use of these sources.	2005, amended 2010	
United Arab Emirates	No flagship legislation			 UAE Energy Efficiency Standardisation and Labelling Scheme
Ukraine	<i>National Action Plan on Implementation of the Kyoto Protocol</i>	The National Action Plan primarily focuses on the development of a GHG emissions inventory, on an absorption inventory and preparation for use of financial mechanisms.	2005	
United Kingdom	<i>Climate Change Act</i>	The Act provides a long-term framework to improve carbon management, promote the transition to a low carbon economy, and encourage investment in low carbon goods. It includes specific emissions reduction targets (at least 80% reduction from 1990 levels by 2050) and creates 5-yearly carbon budgets.	2008	 Energy Act passed in December 2013

Country	Name of Law	Main Purpose	Date Passed	Progress in 2013 ¹
United States of America	<i>Clean Air Act</i>	Following the “endangerment finding”, the EPA is now required to regulate gases for their GHG potential under the Clean Air Act.	1963 (amended 1976 and 1990)	
Venezuela	No flagship legislation			
Vietnam	<i>The National Climate Change Strategy and the No: 2139/QĐ-TTg Decision on Approval of the National Climate Change Strategy</i>	The Strategy sets out a number of objectives: ensure food security, energy security, water security, poverty alleviation, gender equality, social security, public health; enhance living standards, conserve natural resources in the context of climate change.	2011	 Resolution 24/NQ-TW: Active response to climate change, improvement of natural resource management and environmental protection

Key	
	New legislation in 2013 advancing GHG mitigation and/or adaptation
	No new legislation in 2013 advancing GHG mitigation and/or adaptation
	Legislation advancing GHG mitigation and/or adaptation repealed in 2013
	Positive legislative proposals introduced
	Negative legislative proposals introduced

3 Climate Change Legislation at the End of 2013

This section reviews the state of climate change legislation at the end of 2013. It reviews the total stock of climate laws in the 66 study countries and identifies patterns, themes and trends.

3.1 The Stock of Climate Change Laws

At the end of 2013 there were 487 climate change-related laws or policies of equivalent status in the 66 study countries. The 20 Annex 1 countries in the sample had passed 194 climate laws, compared with 293 laws in the 46 non-Annex 1 countries. 58% of the identified laws were legal acts passed by parliament, while 40% were executive orders or policies. (The remaining 2% had both executive and legislative features or could not be classified).

The motivations of acts, either legislative or executive, is one of several dimensions in which the legislative approaches of countries differ. Across the 66 countries, we observe a rich diversity of approaches in terms of legislative focus, ambition and institutional arrangements. Some laws address several different objectives (for example a single law covering carbon pricing, energy efficiency and renewable energy), while others focus narrowly on a particular sector. Some laws contain firm commitments of a statutory nature, while others are more aspirational.

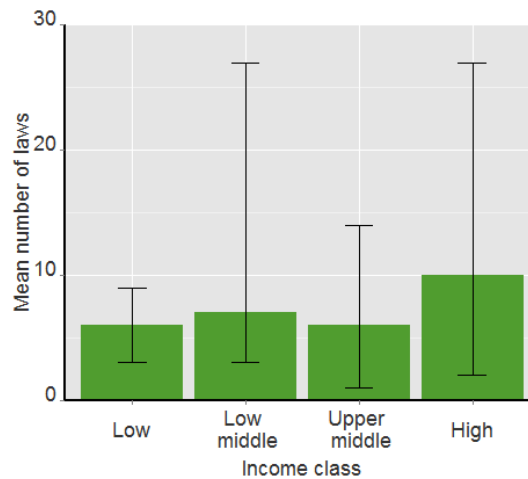
The study makes no normative judgments about these choices or indeed the merit of individual pieces of legislation. Nor is there a “right number” of climate change laws. What must be noted, though, is that *the cumulative environmental ambition contained in the 487 laws is not yet sufficient to stabilise climate change at a level that is consistent with the agreed objectives of the UN Framework Convention on Climate Change.*

To reflect the diversity in approach the study adopts the same broad definition of climate change legislation used in previous studies and uses the same eight categories to classify the sectoral focus of legislation (see Section 3.3 for definitions). These categories are not exclusive, and many pieces of legislation cover several different categories.

As in the earlier editions, the study focuses on national-level legislation. In many countries, such as Brazil, Canada and the US, there is substantial additional action at the sub-national and supra-national levels. These are crucial activities, but not covered in detail here.

The 66 study countries include some of the world's richest and poorest nations, and both big and small contributors to global greenhouse gas emissions. Figure 3.1 shows the number of climate change laws by income group. The figure suggests that high-income countries tend to have a higher legislative density, with on average 10 climate laws per country, compared with 6 laws on average in low-income countries. However there are variations. Even in the high-income bracket there are countries with little climate legislation, while some lower-middle income countries have in excess of 25 laws.

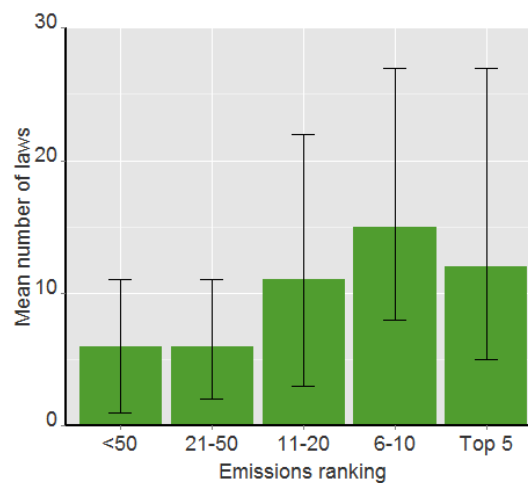
Figure 3.1. Average number of climate laws by income group



Note: Income classifications according to the World Bank, 2012. The bar shows the average number of laws in an income group. The black line indicates the range within an income group.

Figure 3.2 breaks down legislative activity by greenhouse gas emissions. Climate laws - covering mitigation or adaptation or both – tend to be concentrated in high-emitting countries, in particular the top 6-10 emitters, which on average have 15 climate laws each.

Figure 3.2. Average number of climate laws by GHG emissions



Note: Emissions classification is as in section 4. Emissions data are from the CAIT database of the World Resources Institute, 2010. The bar shows the average number of laws in a group; the black line indicates the range within a group.

There is considerable variation within groups, not least among the top five emitters. That group includes the entity with the highest number of climate laws in our sample (the European Union with 27 laws), but also countries with relatively few climate laws, such as China with five laws. Among the remaining top-5 emitters, the US and Japan have each passed eight climate laws and India 10.

The number of climate laws and policies is not a perfect indicator of a country's commitment to climate action and is only loosely correlated with climate change ambition: legislative approaches differ, as does the level of ambition in individual laws. In addition, there are issues of context and comparability: a given law or policy in one country does not necessarily have the same impact as it would in another. The impact of law and policy is moderated by the countries' institutional context. For instance a national development plan which is strictly adhered to is likely to be more significant than a law that lacks compliance and enforcement. Further, some countries have a culture of taking action through development of national policies, whilst others follow a strictly legislative approach.

3.2 The Dynamics of Climate Change Legislation

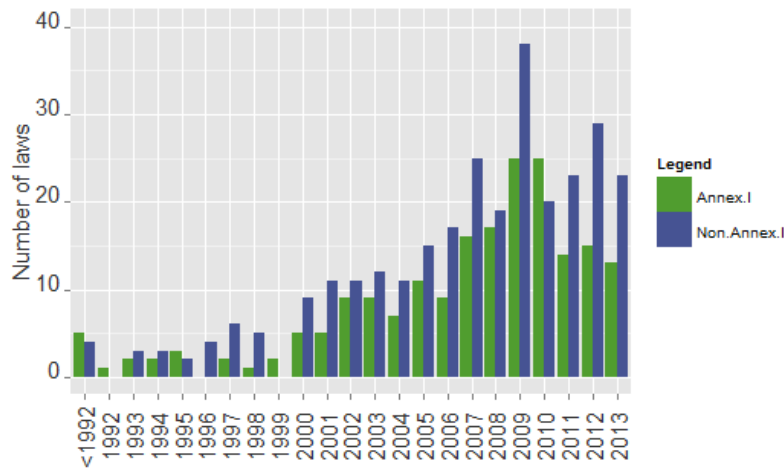
At least 30 climate change laws are passed in the 66 study countries in a typical year. Figure 3.3 shows the evolution of climate legislation over time, broken down into Annex 1 and Non-Annex 1 countries. The result of this sustained legislative activity is shown in Figures 3.4 and 3.5, which illustrate the growth in the stock of climate change legislation over time, and a comparison between climate legislation across the globe in 1997 and 2013, respectively. Over this period, the stock of climate laws has risen from less than 40 in 1997 to almost 500 now. At the same time, the legislative momentum is shifting from Annex 1 countries to non-Annex 1 countries.

Over the past decade, the typical Annex 1 country passed a climate change law every 18 months, except in the period 2008-10 when there was a notable acceleration. Many countries passed their flagship legislation during this time, probably in response to international and domestic pressure in the advent to COP15/CMP5 in Copenhagen, or to underpin the national pledges made under the Copenhagen Accord.

Legislation in Annex-1 countries since Copenhagen has aimed primarily at the implementation of earlier commitments. For example, in the UK the 2008 Climate Change Act, which set legally binding emissions targets, was followed by

the 2013 Energy Act, which pushes forward decarbonisation in the energy sector. There is still consolidation, experimentation with new policies, changes in ambition and in some cases reversal, but in general there is a strong stock of existing laws. The focus has shifted from creating a legislative basis to the practical challenges of implementation.

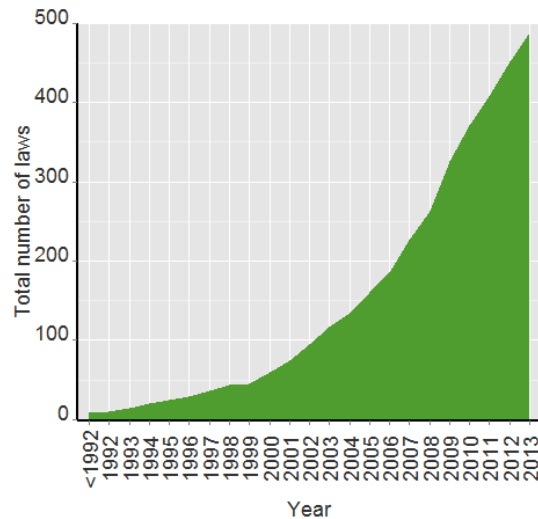
Figure 3.3. Climate change legislation over time



Note: Annex I and non-Annex I as defined in the UN Framework Convention on Climate Change.

There also remain a handful of countries that have not yet engaged with climate change, or do not see it as a legislative priority, but their number is shrinking.

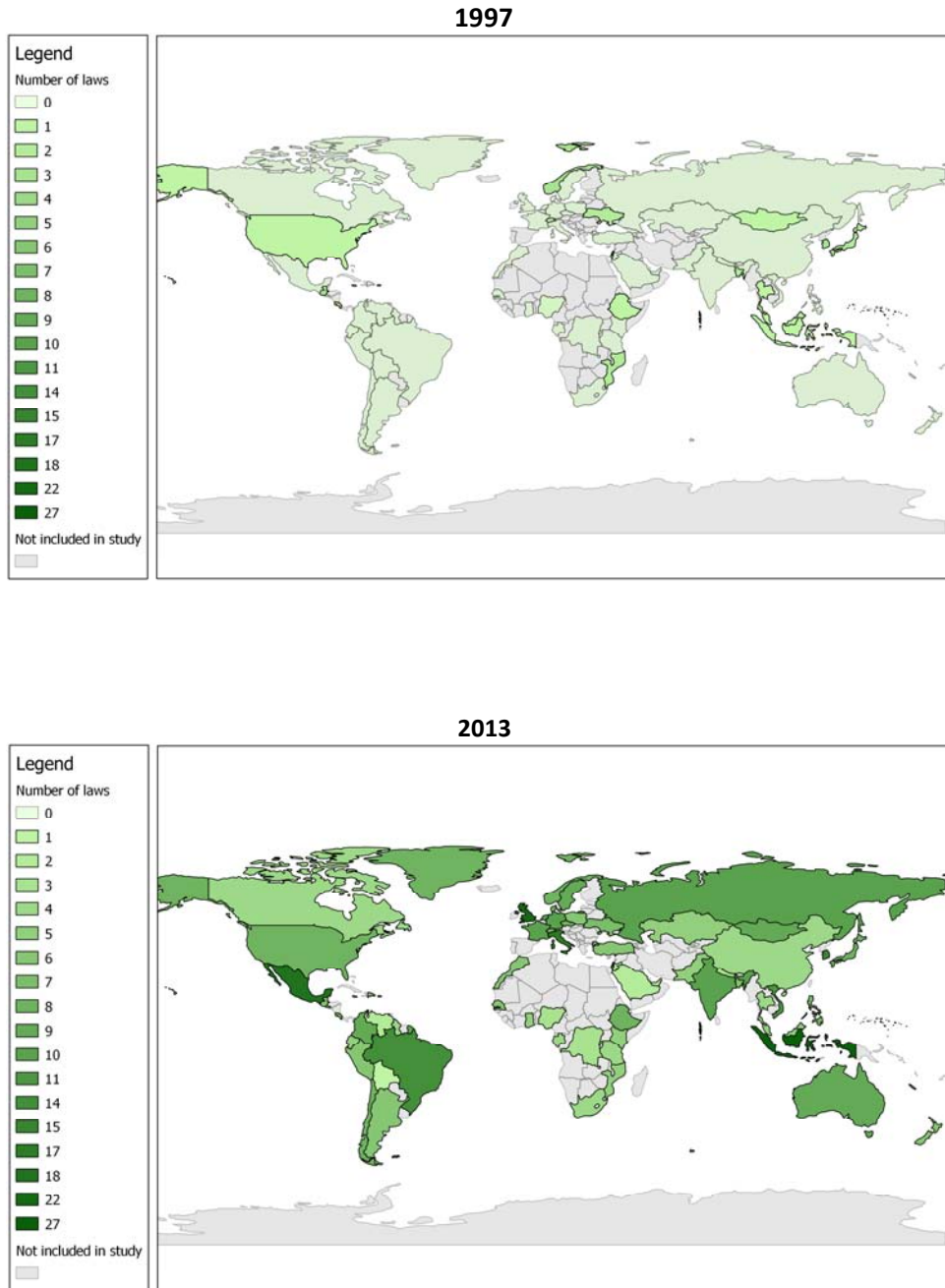
Figure 3.4 Stock of climate change legislation over time



Non-Annex 1 countries have engaged with climate change as a legislative issue more recently, and the pace of legislation is still increasing. In the period 2004-08 a non-Annex 1 country would typically pass a climate change law every 31 months. In the period 2009-13 this accelerated to a law every 20 months. This is close to the legislative pace in Annex 1, but the dynamics are different. Outside Annex 1 fundamental new laws are still being added to a relatively small stock, including the drafting of new flagship legislation, such as Mexico's General Law on Climate Change in 2012.

The legislative trends of the past few years are likely to continue. As we have seen in Chapter 2, several countries are in the process of preparing new flagship legislation. It is possible that a new peak of legislative activity may occur in the run up to, and shortly after, the 2015 negotiations when a new post-2020 deal is due to be agreed under the Durban Platform.

Figure 3.5. Climate change legislation in 1997 and 2013



3.3 The Sectors Covered in Climate Legislation

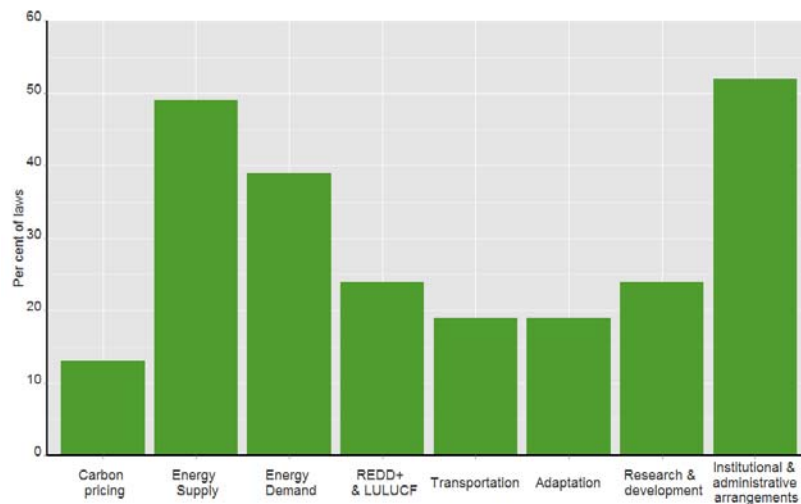
The body of climate legislation in the 66 study countries deals with the full range of institutional, policy and legislative issues associated with climate change, although a clear delineation of the related energy, transportation, land-use and resource management objectives is not always easy. Many climate change laws also address other issues such as air pollution, energy security, green growth or disaster risk management. In this study, we used the following broad categorization to classify legislation – carbon pricing, energy demand, energy supply, REDD+ and LULUCF, transportation, adaptation, research and development, and institutional or administrative arrangements. A breakdown of the categories covered by legislation in each of the 66 countries can be found in Table 2.

Most countries have enacted at least one law or executive policy to address each of these principal categories. There are only five countries without climate-relevant laws on energy supply, for example. Thirteen countries do not have any legal adaptation provisions, but many of them have policies of a less formal nature. Many countries have developed nationally appropriate institutional arrangements, which feature in over half of all laws, although the solutions put forward vary widely.

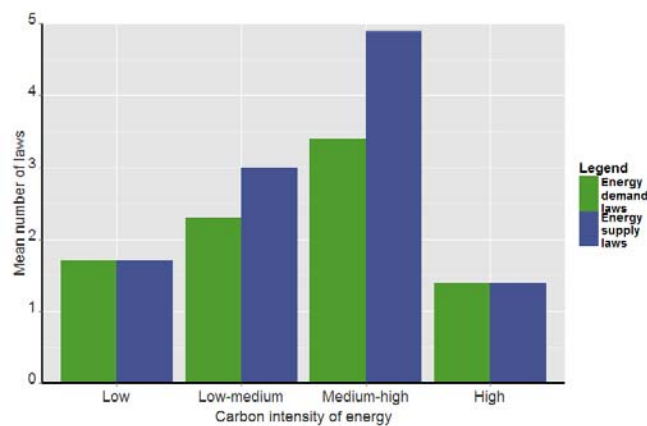
Figure 3.6 summarises the extent to which the categories are addressed in climate legislation. Energy supply (in particular renewable energy) and energy demand (in particular energy efficiency) are dominant issues, reflecting the fact that around two-thirds of global emissions are energy-related. Almost half of the laws identified in the study deal with energy supply issues, and nearly 40% are concerned at least in part with energy demand (mostly energy efficiency). In contrast, relatively few laws tackle the need to price carbon.

LULUCF, which includes agriculture, accounts for most non energy-related emissions. Laws addressing LULUCF feature particularly in those countries where it is the main source of emissions. Bangladesh, Brazil, Indonesia, Mexico, Nepal and Vietnam all have significant laws and regulations designed to reduce deforestation. About one quarter of all laws deal with land-use and forest-related emissions.

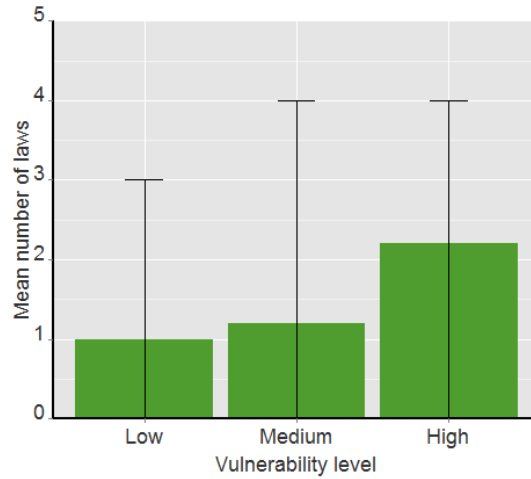
Adaptation and resilience to climate risk is only covered in about one fifth of all laws. However, it is the main focus in highly vulnerable countries such as Bangladesh, Jamaica, Kenya, Micronesia, Mozambique, Nepal and Philippines.

Figure 3.6. Percentage of laws covering each category

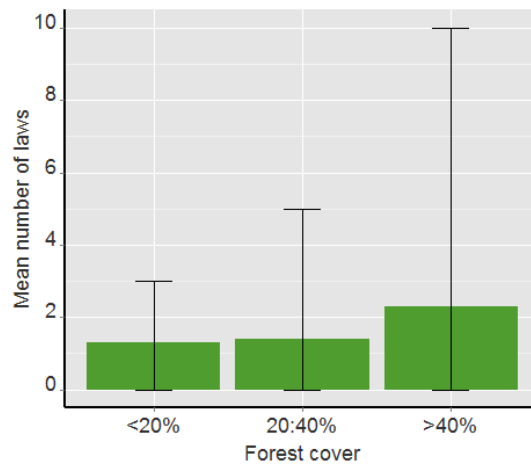
The observation that climate legislation is relatively well targeted and concentrated in the main areas of concern is reinforced in Figures 3.7 to 3.9. Figure 3.7 shows that legislation on energy supply and demand is particularly prevalent in countries with high energy-related emissions, although countries with a low carbon intensity of energy tend to have more laws than those with medium to high carbon intensities. Figure 3.8 suggests that countries especially vulnerable to climate change tend to have more adaptation laws on average, even if the absolute number is relatively low. Figure 3.9 shows how the number of forest laws is linked to a country's forest cover.

Figure 3.7. Energy-related laws and the carbon intensity of energy

Note: Countries were grouped into four categories according to the carbon intensity of their energy sector, measured in kilogrammes of CO₂ per kilogramme of oil equivalent energy use. In particular: Low: <1000 kgCO₂/kgoe; Low-medium, 1000-1999 kgCO₂/kgoe; Medium-high, 2000-2999 kgCO₂/kgoe; High, >3000 kgCO₂/kgoe. Data from World Bank Development Indicators.

Figure 3.8. More adaptation laws in highly vulnerable countries

Note: Countries were grouped into three vulnerability categories according to their score in the GAIN index of climate vulnerability. In particular: low = GAIN score of 1-50; medium = 51-100, high = 101-150. For details of the GAIN index see <http://index.gain.org/>.

Figure 3.9. More forest laws in countries with high forest cover

Note: Countries were grouped into three categories according to their area of forest cover, relative to total land mass. In particular: low = < 20% of land mass covered by forests; medium = 20 – 40% forest cover; high >40% forest cover. Data from the World Bank Development Indicators.

Table 2: Sectoral Coverage of Legislation

Country	No. of Laws	Pricing carbon	Energy Demand	Energy Supply	REDD+ and LULUCF	Transportation	Adaptation	Research and Development	Institutions/ Administrative Arrangements
Argentina	6	X	X	M		X		X	X
Australia	9	X	X	M	X	X			X
Bangladesh	5	X	X	X	X		X	X	M
Bolivia	3			X	M	X	X	X	X
Brazil	14		X	X	X		X	X	M
Canada	4	X	X	M		X			
Chile	9		X	M	X		X		X
China	5	X	M	X	X	X	M	M	M
Colombia	9		X	M	X	X	X	X	M
Costa Rica	7	X	X	M	X		X		X
Czech Republic	6	X	M	M		X			X
DRC	3			X	M		X		
Denmark	8	X	M	X	X	X	X	X	X
Dominican Rep	7			M	X		X		X
Ecuador	5				X		X		X
El Salvador	6		X	X	X		X	X	M
Ethiopia	9		X	X	X	X	X	X	M
EU	27	X	M	X	X	X	X	X	X

Country	No. of Laws	Pricing carbon	Energy Demand	Energy Supply	REDD+ and LULUCF	Transportation	Adaptation	Research and Development	Institutions/ Administrative Arrangements
France	10	X	M	X	X	X	X	X	X
Gabon	4				M		X		X
Germany	12	X	X	M		X	X	X	X
Ghana	5			M			X		X
Guatemala	6		X	X	X	X	X	X	M
Guyana	4		X	X	X		M	X	M
India	10	X	M	X	X	X	X	X	M
Indonesia	27		X	M	M		X	X	M
Israel	11		M	X		X		X	M
Italy	17	X	X	M	X	X			X
Jamaica	4		M	X	X		X	X	X
Japan	8	X	M	X		X		X	X
Jordan	3		M	M	X		X	X	X
Kazakhstan	5	X	X	M	X		X	X	X
Kenya	5		X	X	X		X		M
Malaysia	5		X	X	X				M
Maldives	1		M	M	M		M	M	M
Mexico	9	X	X	X	X	X	X	X	M
Micronesia	3		M	M	X		X	X	X
Mongolia	9		X	X	X		X	X	M

Country	No. of Laws	Pricing carbon	Energy Demand	Energy Supply	REDD+ and LULUCF	Transportation	Adaptation	Research and Development	Institutions/ Administrative Arrangements
Morocco	6		M	M	X	X		X	M
Mozambique	5			X	X		X	X	M
Nepal	3						M	M	M
Netherlands	7	X	X	M	X	X	X	X	X
New Zealand	6	M	X	X					M
Nigeria	3			M	X	X	X	X	X
Norway	8	X		X	X	X	X		M
Pakistan	7		X	X	X	X	X	X	M
Peru	6		X	M	X	X	X	M	X
Philippines	7		X	X	X	X	X	X	M
Poland	4		X	X	X	X	X	X	X
Russia	10	X	X	X	X				M
Rwanda	5	X	X	M	X	X	X	X	M
Saudi Arabia	3		X				X		M
Senegal	6			X	X	X	X		M
South Africa	4	X	M	X		X	X	X	X
South Korea	15	X	X	X	X	X	X	X	M
Sweden	7	M	X	X	X	X	X	M	X
Switzerland	8	X	M	X	M	X	X	X	X
Tanzania	5			X	X	X	X	X	M

Country	No. of Laws	Pricing carbon	Energy Demand	Energy Supply	REDD+ and LULUCF	Transportation	Adaptation	Research and Development	Institutions/ Administrative Arrangements
Thailand	4		X	X			X	X	X
Turkey	6		X	M	X	X	X	X	X
UAE	2		M	M				M	M
Ukraine	7	X	X	X		X	X	X	M
UK	22	X	M	X		X	X	X	X
US	8		X	M	X	X		X	X
Venezuela	2		M				M	M	M
Vietnam	10		X	X	X	X	X	X	M
Total	487	27/66	54/66	61/66	50/66	38/66	53/66	48/66	64/66

Key:

M = Main Focus – defined as the category or categories addressed by the greatest number of laws in a given country.

X = category covered by at least one law

4 Climate Change Legislation

Country-by-Country

This edition of the study covers 66 countries, responsible for approximately 88% of world emissions.² They include 20 Annex-1 countries (including the EU as a separate entity) and 46 non Annex-1 countries, as defined under the UN Framework Convention on Climate Change. There are 23 high income countries,³ (including the EU as a separate reporting entity), 19 upper-medium income, 17 lower-medium income and seven low-income countries. They are spread across all world regions and represent large economies as well as small states. It includes 18 of the top 20 and 39 of the top 50 emitters. We include countries that between them are home to about two thirds of the world's tropical forests.⁴

Following a few methodological remarks, this section details the key information about the main climate change-relevant laws in each of the 66 countries covered by this *4th edition of The GLOBE Climate Legislation Study*. It also includes information about emissions and the latest international commitments under the UNFCCC.

There is no clear-cut *definition* of a climate change law. There are ambiguities both with the terms “climate change” and “law”. As in the previous versions of the study, the authors define climate change law as:

Legislation, or regulations, policies and decrees with a comparable status, that refer specifically to climate change or that relate to reducing energy demand, promoting low carbon energy supply, tackling deforestation, promoting sustainable land use, sustainable transportation, or adaptation to climate impacts.

This definition has been applied with flexibility on a country-by-country basis to ensure the best reflection of the overall legislative, regulatory and policy response to climate change in the 66 study countries. We have distinguished between legislative articles that have been passed by a parliament or equivalent legislative authority, and executive instruments (e.g. presidential decrees, executive orders, government policies or plans), which have been passed or decreed by the government, president or equivalent executive authority. In the case where both legislative and executive instruments exist, prominence was generally given to legislative over executive instruments. Therefore, in cases where a legislative act (law) has been enacted to fully implement an executive instrument (such as a policy or plan) we have removed reference to the latter, leaving a reference to the legislative instrument only. However, where a legislative act covers only part of an executive instrument (for example, a law addressing emission reductions from transportation, whereas a policy exists to

² World Resources Institute, CAIT 2.0, 2010

³ World Bank, 2012

⁴ Food and Agriculture Organization (FAO) estimates, 2010

address emissions reductions from multiple sectors), we have retained references to both articles.

Compared to the third edition of the study (Townshend et al 2013), the addition of a further 33 countries, 25 of which are non-Annex 1, has resulted in more emphasis on adaptation in this edition. A country's approach to adaptation is determined by its climate and geography and therefore calls for context-specific strategies. For example, adaptation in one country may involve improving protection against sea-level rise, whereas in another it may involve addressing drought-related risks and improving water management. Moreover there may be variations in the way that local adaptation measures are implemented, such as through the passage of dedicated new legislation or use of (including amendments to) existing legislation (including, but not limited to, broader development legislation). Because of this large scope, the study does not capture all adaptation-related legislative activity.

The study does not list laws still under consideration. The country chapters only detail laws, regulations, policies and decrees that have been passed and that have come into effect. However, significant current legislative efforts not yet passed, or recently failed, have been referenced in the covering text of each country summary and are also taken into account in the assessment of "Progress in 2013" as outlined in Table 1.

The focus on legislation at the federal level excludes significant action at regional and local levels of government. This is particularly significant in countries with federal structures (e.g. Australia, Brazil, India and South Africa) and, within this category, in countries where federal legislation has been slow when compared with activity at the sub-national level (e.g. US and Canada). The country chapters include brief descriptions of this activity in the covering text.

For EU member states covered⁵, the study does not replicate EU Directives listed under the EU chapter in each of the individual member states' profiles, unless that country has implemented legislation that goes significantly beyond the scope of the Directive. For example, the French *Farming Policy Framework* goes beyond the EU *Biofuels Directive*.

The data sources used for the "Fact Boxes" in the individual country chapters are from the following sources. The GHG emissions data is taken from the most recent official national submission to the UNFCCC. This means that the figures are not directly comparable from country to country as the submissions are from different years. Additionally, although some countries have published updated figures, they are only taken into account if they have been officially submitted to the UNFCCC. Note the 'latest reporting year' mentioned for each country refers to the date of the data, and not to the date of the communication. For example, India submitted its 2nd communication to the UNFCCC in 2012, using GHG inventory data from 2000. Therefore the 'last reporting year' for India is 2000 and not 2012.

⁵ Czech Republic, Denmark, France, Germany, Italy, Netherlands, Poland, Sweden and the UK

For the category of *Importance as an emitter*, 2010 data from World Resources Institute have been used. The data are comparable and the use of broad categories (Top 5, Top 10, etc.) allows for an indicative assessment rather than a specific ranking. When referring to change in emissions from base year, 1990 was used if no reporting base year has been stated by the countries.

There is no claim to have identified every relevant law from all 66 study countries. Whether or not a given law has been detected depends on a number of factors such as the availability of information online and the strength of connections with relevant legislators and legislatures. As a result, *the study does not offer an exhaustive list of all climate-relevant legislation.*

Country chapters have been subjected to an extensive review and quality control process. After each chapter was authored by the study team, it was sent for review in the respective country. Reviewers included academics, NGO representatives and independent observers. In addition, the speaker or president of the legislature in each country was contacted, and asked to nominate an official reviewer for the country chapter. Chapters were then sent to the official reviewers, usually legislators and/or legislative or executive officials. Reviews were received for 57 of the 66 countries. While every possible attempt was made to guarantee comprehensive and accurate information, the authors retain all responsibility for errors. The authors appreciate any feedback on the country chapters, to support the development and improve the accuracy of the material.

4.1 Argentina



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	239
excl. LULUCF	282
Change from base year (1990)	51
Latest reporting year	2000
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 11 March 1994 Date of entry into force: 9 June 1994
Kyoto Protocol ratification status and date	Date of signature: 16 March 1998 Date of ratification: 28 September 2001 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	Presidential Decree 140/2007 declaring “rational and efficient” energy use a national priority

Legislative Process

The Argentine legislative structure is a bicameral congressional model within a federal republic. The National Congress is composed of the Senate and the Chamber of Deputies. Each of the 23 provinces (and the autonomous federal capital, Buenos Aires) elects three senators (two from the majority party and one from the first minority) for a total of 72 senators. The 257 representatives of the Chamber of Deputies are elected by congressional districts based on proportional representation.

Legislative proposals are called law projects (*proyectos de ley*) and are generally introduced in the Chamber of Deputies before debate and vote in the Senate (exceptions include laws declaring war and tax/tariff legislation). To become law, all law projects must be passed by both congressional bodies and signed by the President, who acts as both head of state and head of government.

A law project is first drafted, proposed and debated in legislative committees in the Chamber of Deputies. Often included in the debate are experts invited by the committee, who may include high-level government officials, noted academics, civil society leaders, and members of the private sector. Once the proposal has passed the relevant legislative committee, it can officially be presented and debated in front of all the deputies, and amendments may be considered.

Argentina is a federal republic made up of 23 provinces and an autonomous national capital city. Each province elects its own governor and congress and is granted significant authority over the running of its territory by the Argentine National Constitution. While federal law usurps provincial law, many of the laws passed by National Congress and enacted by the President are written to coexist with provincial law. Some provinces have passed legislation directly or indirectly related to climate change, which will not be considered here. Article 41 of the Argentine National Constitution declares the importance of the natural environment and its protection from contamination a national priority. It considers “enjoyment” of the natural environment an individual and cultural right. Constitutionally, each province has the gubernatorial authority to legislate and control its natural resources; however, the national government reserves the right to dictate the norms for the protection of the environment.

Approach to Climate Change

Legislation, or regulation related to climate change, has been particularly difficult to enact in Argentina. The country experienced a severe recession from 1998 until 2002, and an acute crisis in 2001, after which nearly 60% of the population was plunged into poverty. During the last decade, the federal government’s priority has been economic recovery and growth. Investments necessary to mitigate emissions and adapt to climate change are conceived as politically pitted against social investments in health, education and poverty reduction in a zero-sum game. As such, Argentina has neither enacted

comprehensive legislation related to climate change nor made an official pledge to reduce GHG emissions by a measurable difference.

In its second report to the UNFCCC (2007), the Argentine government maintains that the country is vulnerable to climate change, particularly floods and landslides related to increased rainfall, melting glaciers and increased river flow. Various government-commissioned studies have laid out both mitigation and adaptation strategies; however, the government insists that substantial non-refundable international funds would be necessary for their implementation. In a public speech before the UNFCCC conference in Copenhagen in 2009, President Cristina Fernandez de Kirchner argued that developing countries should set GHG emissions reduction goals that were “humbler” but more feasible, and that wealthy nations that are the principal polluters should set more ambitious reduction goals as well as finance the mitigation and adaptation efforts of poorer nations.

That is not to say, however, that Argentina has made no institutional attempts to respond to climate change. The country ratified the UNFCCC in 1993 and the Kyoto Protocol in 2001. In 2002 a presidential decree created the Secretary of Environment and Sustainable Development (SAyDS), to be housed within the Ministry of Health and Environment. The SAyDS in turn created the Direction for Climate Change, which has responsibility for introducing and coordinating policies and actions relating to climate change. Other subgroups include the National Advisory Commission on Climate Change, which includes various academic and industry experts, and the Gubernatorial Committee on Climate Change, comprised entirely of government organs and intended to coordinate cross-sector government actions.

Energy demand and supply

Argentina has enacted legislation to reduce energy demand through the promotion of energy efficient practices in the private, public and residential sectors. The policy mechanism through which most energy demand projects are implemented is the National Program for Rational and Efficient Energy Use, which, according to official estimates, will lead to a 2,400 MW reduction in demand for electricity by 2015 and a 28 million tonne reduction in CO₂ emissions (between 2006 and 2015). Further details of The National Plan can be found in the detailed tables below.

Argentina has made the use of biofuel-blends obligatory for all liquid fuel types used for transportation. Part of legislation meant to promote the production and use of biofuels, regulations for the commercialisation of petrol now mandate that all fuel types must contain a minimum of 5% biodiesel or bioethanol. Similar legislation related to renewable sources of electricity stipulates that by 2017, 10% of all electricity consumed must come from renewable energy sources. As such the federal government has laid out several tax benefits and financing and grant schemes to encourage new production of alternative energy and energy efficiency technologies.

Since the economic crisis mentioned above, the federal government has subsidised residential and commercial electricity, gas and water use resulting in some of the lowest energy prices in the continent. In 2011 The Ministry of Economy issued a resolution that ended the subsidies to large corporations and residencies deemed to be in “high income” areas in the Buenos Aires metropolitan area (home to 39% of the population) as well as gated communities and country clubs throughout all provinces. The motives behind the cutting of subsidies were neither climate change mitigation nor consumer behaviour-change. Nonetheless, possible effects include a decrease in energy consumption and/or more competitive price schemes for renewable energies in the future

Research and Development; Education

Argentina’s comprehensive *General Law of Environment*, amongst other things establishes the Secretariat of Environment within the National Ministry of Health and Environment. This law explicitly states that modules related to the natural environment, protection of natural resources and prevention of pollution must be included in primary and secondary school curricula. Later congressional legislation and presidential decrees have mandated that climate change material (including information about mitigation of emissions and adaptation through individual and collective action) should also be included. In addition to the production of educational materials and curricula for school-aged children, various laws call for “massive public education campaigns” on issues such as pollution and energy efficiency targeted to the general population. Lastly, included in much of the legislation covered in the annex below are mechanisms for funding research at national universities, and facilitating knowledge transfer human resource training (including the establishment of postgraduate programs focussed on energy efficiency) between academic institutions and the public and private sectors.

Argentina: Flagship Legislation

Name of law	Decree 140/2007: Presidential decree declaring “rational and efficient” energy use a national priority [Executive]
Date of entry into force	21 December 2007
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Transportation – Institutional/Administrative arrangements
Driver for implementation	Energy efficiency
Summary of bill	This presidential decree is considered Argentina’s “flagship legislation” due to its far-reaching and ambitious goals to reduce energy consumption and promote the use of renewable energy in the public sector (including public transport and lighting), private industry and private residencies. While the decree is not technically legislation, it has real authority to regulate energy consumption and demonstrated potential to drive new regulation and policies through legislation, executive decrees and ministerial resolutions.
The decree operates within the framework established by the UNFCCC and the Kyoto	

Protocol, seeking sustainable development and growth while mitigating negative impacts to the environment. The decree's main purpose is to announce a National Program for Rational and Efficient Energy Use, to guarantee funding for the program in the federal budget, to name the Energy Secretary as the main authority for implementing the plan and to create a federal commission to oversee and monitor progress.

The National Programme for Rational and Efficient Energy Use is divided into actions to be realised in the 1) short term and 2) medium and long term.

In the short term (30 days from implementation) the commission is to initiate a "massive" public education campaign about energy efficiency, take necessary measures to manage the replacement of incandescent light bulbs with energy efficient bulbs in all private residences in the country, begin work to rate the energy efficiency of all electric appliances, improve the energy efficiency in all sectors of public administration and promote agreements with energy providers, national universities and business associations to improve energy efficiency in non-public sectors.

In the medium to long term, the actions are further subdivided by sectors:

- Industry: formulate a strategy to increase competitiveness by reducing energy costs; work to monitor and improve energy efficiency with those corporations that voluntarily participate in the program; disseminate and replicate the program; facilitate energy efficiency technology within the private sector; offer financing to small and medium companies who voluntarily invest in energy saving technology
 - Commercial and Service Sectors: tailor an energy efficiency program to the specific circumstances of office buildings, retail shops, hotels, restaurants, commercial banks etc.; develop efficiency standards for the consumption of energy (lighting, heating and air-conditioning, food storage)
 - Education: incorporate energy efficiency and renewable energy themes into pre-existing curricula at primary and secondary education levels; develop postgraduate programs focussing on energy efficiency at national universities
 - Cogeneration: develop a plan to promote and regulate the cogeneration of electricity and heat with new and existing energy providing companies
 - Energy efficiency standards and labelling: designate maximum and minimum standards of energy efficiency for electric appliances and machines produced or commercialised in the country; propose a timeline to ban the production, importation and commercialisation of incandescent light bulbs
 - Public lighting: implement system technologies to make public street lighting and traffic lights more energy efficient
 - Transportation: improve the management and distribution of public transportation in regards to energy consumption; with corresponding authorities develop minimum standards of efficiency for new automobiles; initiate a monitoring and maintenance program for public vehicles, commercial transportation vehicles and taxis and limousines; design a public education campaign about the impacts of the excessive driving of automobiles
 - Residences: initiate a system of energy certification for newly constructed residences in cooperation with construction-industry associations, architect associations and universities; introduce energy efficiency as an indicator of construction quality in the academic departments of engineering and architecture; indicate maximum energy consumption guides for new homes based on regional geographies; optimise solar energy in new construction projects; incentivise reduction of energy consumption in existing residences; develop a strategy to design "massive systems" of water heating using solar technology
 - Climate Change–Clean Development Mechanism (CDM): evaluate the role of
-

CDM, including international carbon markets, in supporting energy efficiency projects; develop a plan to take advantage of international sources of financing and technological cooperation; promote the CDM in public and private entities that could have a role in identifying new energy efficiency projects

Targets None specified

Argentina: Other Relevant Legislation

Name of law	Law 26473 Prohibiting commercialisation of incandescent light bulbs [Legislative]
Date of entry into force	31 December 2010
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	Prohibits the importation and commercialisation of incandescent light bulbs for residential use throughout the country.
Targets	None specified

Name of law	Law 26.190 Regimen for the National Promotion for the Production and Use of Renewable Sources of Electric Energy [Legislative]
Date of entry into force	2 January 2007
Categories	– Energy supply – Research and Development
Driver for implementation	Renewable energy
Summary of bill	Law 26.190 declares the production of electricity from renewable energy sources a matter of national interest. It requires that within 10 years (2017), 8% of all electricity consumed nationally must be generated from renewable energy sources. The law directs the executive power to co-ordinate a Federal Programme for the Development of Renewable Energy, which for a period of 10 years will create a fund to finance renewable energy projects. Private firms who are recognised as beneficiaries of the Plan and/or the Fund will enjoy a series of tax benefits.
Targets	None specified

Name of law	Law 26.123 (2006) Promotion of Hydrogen Energy [Legislative]
Date of entry into force	25 August 2006
Categories	– Energy supply – Research and Development
Driver for implementation	Renewable energy
Summary of bill	Law 26.123 declares the technological development, the production of, and the use of hydrogen fuel, as well as other alternative energy sources, a matter of national interest.

The executive power will determine the federal organisation responsible for developing a *National Programme for Hydrogen*, which will have among its objectives: develop and strengthen the technological and scientific research into alternative energy sources; incen-

tivise the application of hydrogen energy technology; incentivise the participation of the private sector in the generation and production of hydrogen energy where it strengthens the national industry; promote the regional cooperation and technology transfer between MERCOSUR member-countries; develop a plan to educate the general public about the necessity to diminish contamination of the national environment and the importance of alternative energy use; incentivise the industrialisation of hydrogen fuel cells; and promote links between state entities, university research centres and private industry in the interest of a national industry of hydrogen energy.

The objectives will be realised primarily through the creation of The National Fund of Hydrogen Promotion (FONHIDRO), which will depend on the national fiscal budget and which will also oversee various tax exemptions and deductions for participating firms.

Targets None specified

Name of law **Law 26.093 (2006) Regimen of Regulation and Promotion of the Production and Sustainable Use of Biofuels [Legislative]**

Date of entry into force 12 May 2006 with some provisions activated 1 January 2010

Categories — Energy supply

Driver for implementation Renewable energy

Summary of bill The object of the Law 26.093 is to provide a regulatory framework for the production and promotion of biofuels. The law creates and defines the authority of a federal regulatory entity, The National Advisory Commission for the Promotion of the Production and Sustainable Use of Biofuels, delineates the chemical definitions of biodiesel and bioethanol and provides direction for the issuing of subsidies and tax reductions. The Commission also has the charge of facilitating technology transfer, especially between small and medium sized firms who are beneficiaries of the law.

Four years after enactment (by 2010) all gasoline produced and consumed in Argentina must be composed of no less than 5% biofuels.

The regulations enacted and the Commission will be valid for a period of 15 years from the date of entry into force; however, the Executive Branch will have the authority to extend the law based on pre-existing tax law.

Targets None specified

Name of law **National Decree 1070/05 (2005) Creation of the Argentine Carbon Fund [Executive]**

Date of entry into force 5 September 2005

Categories — Carbon pricing
— Institutional/Administrative arrangements

Driver for implementation Climate change

Summary of bill National Decree 1070/05 has the single purpose of creating the National Argentine Carbon Fund (FAC) and to incentivise projects within the framework of The Clean Development Mechanism, as defined by Article 12 of the Kyoto Protocol. The fund is administered by the Secretary of Environment and Sustainable Development within the Ministry of Health and Environment.

Targets None specified.

4.2 Australia



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	512
excl. LULUCF	552
Change from base year (1990)	-12 (including LULUCF) 135 (excluding LULUCF)
Latest reporting year	2011
Importance as an emitter	Top 20
UNFCCC ratification status and date	Date of signature: 4 June 1992 Date of ratification: 30 December 1992 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 12 December 2007 Date of entry into force: 11 March 2008
2020 pledge	Australia will unilaterally reduce its emissions by 5% below 2000 levels by 2020. Australia will review its climate change policy in 2015, considering further action and targets on the basis of comparable real global action, in particular by major economies and trading partners, and progress on the new agreement.
Flagship legislation	Clean Energy Act

Legislative Process

The Australian parliamentary system is based on the UK's Westminster system. The Federal Parliament is bicameral, consisting of the House of Representatives (commonly known as the Lower House), and the Senate (often referred to as the Upper House). The Senate is composed of equal numbers of representatives from all six Australian states, with additional Senators representing Australian Territories. In the House of Representatives, the number of members of parliament per state is proportional to population. Australia retains the Sovereign of the United Kingdom as its head of state. All laws are formally enacted by the Sovereign (Royal Assent).

Proposed laws are called bills, and can be introduced into either House, except for bills that propose expenditure or tax levies (appropriation or money bills), which must be introduced in the House of Representatives. In practice, most bills are introduced in the House of Representatives. All bills must be passed (by a series of three readings) by both Houses of Parliament to become law (Acts). It is possible for the Senate to block the passage of legislation even in cases where the government has a clear majority in the House of Representatives. In the case of parliamentary deadlock, the Australian constitution allows the Governor-General (the Sovereign's representative) to authorise a "double dissolution" election under specific circumstances, at the request of the Prime Minister.

Australia operates under a Federal system of government, with six states (formerly separate colonies) with considerable autonomy, defined areas of jurisdictional responsibility under the Constitution and separate Parliaments. This chapter covers only those laws and policies that are enacted nationwide.

Approach to Climate Change

Climate change has been a contentious issue in Australian politics since the late 1990s. In 1998, the Australian Government set up the Australian Greenhouse Office (AGO), which was the world's first national government agency dedicated to reducing GHG emissions, and the National Carbon Accounting System (NCAS). Australia signed the Kyoto Protocol in April 1998, but did not ratify it until December 2007. Controversy over the introduction of federal legislation to limit GHG emissions became particularly acute from 2009, with both major parties (the Australian Labor Party or ALP, and the Liberal-National Party coalition or LNP) advocating different approaches.

In 2007, the LNP government introduced the National Greenhouse Energy Reporting Act 2007 (NGER Act). This Act established a single national reporting framework for GHG emissions and energy use and production, one of the objectives of which was to provide information to underpin a future emissions trading scheme (ETS). The Garnaut Climate Change Review (released 2007, updated 2011) indicated that an ETS could help to "decarbonise" the economy, and would not be inflationary if permit revenue were used to compensate households. Major political controversy surrounded the first attempt (by the ALP

government) to introduce an ETS through the Carbon Pollution Reduction Scheme Bill 2009 (CPRS), which was twice defeated in the Senate in 2009, giving rise to a trigger for a double dissolution election. In April 2010, it was announced that the CPRS would be put on hold until 2012.

However, after a federal election in 2010, the new minority ALP government (which relied on the Greens to govern) began anew to introduce climate change legislation. A new package of 18 bills to combat climate change, headed by the Clean Energy Act 2011, was passed by the House of Representatives in October 2011 and by a narrow majority in the Senate in November 2011. The Clean Energy Legislative package created a carbon pricing mechanism that began on 1 July 2012, with the price to be paid by the largest business emitters fixed for the first three years before moving to a floating price ETS.

Ongoing issues related to the carbon pricing mechanism include the potential effects on emissions-intensive industries, and the effects on household bills. As a result, the package included transitional assistance for “emissions-intensive trade-exposed industries” and substantial cuts to income tax, particularly for low-income earners, and increases to the pension and allowances in order to compensate for any price rises. Household transportation fuel consumption and emissions from agriculture and other land-based activities are exempt from the carbon price.

In 2012, the Australian Minister for Climate Change and Energy Efficiency and the European Commissioner for Climate Action announced their intention to connect the Australian ETS to the European Union ETS, through a partial link from 1 July 2015 and a full two-way link from 1 July 2018. The intent to link with the EU ETS was formalised with the passage of the Clean Energy Legislation Amendment (International Emissions Trading and Other Measures) Bill 2012 and six related bills, which introduced two changes to the Australian scheme: first, removal of the price floor on carbon; second, the application of a new sub-limit to the use of eligible Kyoto emission reduction credits.

With a change of Prime Minister in July 2013, the ALP signalled its intention to bring forward by one year the move from a fixed price on carbon to a floating price ETS. Bills to implement this intent were never introduced to parliament due to a change of government.

Australia’s climate change policy took another turn following the victory of Tony Abbot’s LNP in the general election of September 2013. One of the major pre-election promises of the LNP was to revoke the carbon tax. On 15 October 2013, the new government announced it would repeal the carbon tax effective from 1 July 2014, and it introduced carbon tax repeal bills into parliament as its first item of legislative business. Full repeal of the Clean Energy legislative package will also see the abolition of the Climate Change Authority and the Clean Energy Finance Corporation. The repeal of these laws, if supported in parliament, is expected to take place in 2014.

In place of the Clean Energy Act, the new government plans to introduce a Direct Action Plan in July 2014, under which the government has committed to reduce GHG emissions by 5% from 2000 levels by 2020. Emissions reductions will primarily be achieved through the Emissions Reduction Fund (ERF) where the government will purchase low cost abatement through a reverse auction.

The Green Paper, outlining the preferred design options for the ERF was released on 20 December 2013. Submissions are sought by 21 February 2014. The White Paper, outlining the final design of the Emissions Reduction Fund will be released in early 2014.

In addition to domestic efforts to tackle climate change, Australia is involved in many regional and global activities, providing opportunities for building stronger political relationships and influencing other countries' climate change policies, and for capacity building in developing countries. It is involved in setting up REDD+ projects and has an allocated budget towards supporting adaptation efforts in developing countries.

Sub-national level

Several states have climate legislation and emission reduction targets. The state of South Australia set ambitious targets in its 2007 legislation - reducing emissions by 60% to be 40% under 1990 levels by 2050; and production and consumption of at least 20% renewable energy by 2014. Victoria's Climate Change Act 2010 came into effect in July 2011. Following federal legislation, the Act was reviewed and "found no compelling case to maintain the (Victorian) target" when a national scheme was in place. State emission reduction targets (which are more ambitious than the federal targets) will be repealed from the state legislation; however, other elements of the legislation, including adaptation plans, will remain intact. New South Wales produced several plans, which include a commitment to be net carbon neutral by 2020, as well as other targets and measures with regards to energy consumption and supply and transportation. The Australian Capital Territory also introduced ambitious legislation including net carbon neutrality by 2060. It remains to be seen how the results of the 2013 general election and the subsequent shift in national policy, will affect sub-national activity.

Energy demand

There are several schemes targeted at increasing energy efficiency, but to date there is no overarching framework. The previous Australian government outlined plans for a new national Energy Savings Initiative (ESI), designed to tie in with carbon pricing measures under the Clean Energy Act. A national ESI would place obligations on energy retailers to find and implement energy savings in households and businesses, and would assist consumers to save money through energy efficient technologies. A working group under the previous government released an issues paper in December 2011, a progress report in August 2012 and an information paper in July 2013. The current Government has not made any statements about the policy.

Australia began phasing out energy-intensive incandescent light bulbs from February 2009.

In September 2012, the Australian Government legislated the Greenhouse and Energy Minimum Standards (GEMS) Act 2012, creating a national framework for appliance and equipment energy efficiency in Australia. In the 2012-2013 financial year, AUD 37.1 million (USD 33.8 million) in funding was allocated to support this national legislative framework, which replaced the separate state and territory schemes. The budget also included AUD 2.8 million (USD 2.6 million) in additional funding for a range of building energy efficiency activities, including maintenance and improvement of current building regulatory schemes.

The Energy Efficiency Opportunities scheme is the flagship policy for improving industrial energy efficiency.

Energy supply

Australia has had legislation in place to incentivise increased renewable energy generation since 2000 (the Renewable Energy [Electricity] Act 2000), with a Mandatory Renewable Energy Target (MRET) commencing in 2001. From 2009, the MRET was expanded to the Renewable Energy Target (RET) Scheme, designed to ensure that 20% of the nation's electricity supply will be generated from renewable sources by 2020. As of 2011-12, around 9.5% of Australia's electricity generation comes from renewable sources. Hydroelectricity, bagasse (a by-product of sugarcane), wood and wood waste together account for 85% of renewable energy production in Australia. Wind energy and solar energy are rapidly growing sectors within the renewable energy market and in 2011-12 made up 25 and 6% of all generation.

In 2010 the Parliament passed legislation to split the RET into a Large-scale Renewable Energy Target (LRET) and Small-scale Renewable Energy Scheme (SRES), effective from 2011. The two schemes recognise differences between large-scale operations (such as renewable energy projects, and energy suppliers) and small-scale renewable energy systems (such as households, small businesses and communities). Under the amended legislation, liable entities (normally electricity retailers) are required to purchase renewable energy certificates (RECs) from renewable energy providers. This is intended to provide a financial incentive for investment in renewable energy systems. LRET and SRES are overseen by a statutory authority (the Clean Energy Regulator).

Land use

In 1990 Land Use Change emissions were 27% of the UNFCCC inventory total. However by 2011 this proportion had decreased to 9% due to a long term trend of declining land-clearing in Australia from the 1970s to the present. The government established the National Carbon Accounting System (NCAS) in 1998 to provide a complete accounting and forecasting system for human-induced sources and sinks of GHG emissions from Australian land-based activities. Reporting capabilities include emissions from land use, land use change and forestry (LULUCF), as well as projections for future emissions from these

categories. Carbon pools that are covered through NCAS include soil carbon and biomass (both above-ground and below-ground). The NCAS is considered one of the leading programmes worldwide in accounting for carbon emissions and sequestration from land-based activities.

Emissions from agriculture are not covered within the provisions of the Clean Energy Act 2011. A separate package of three pieces of legislation received Royal Assent in 2011, with the aim of setting up the Carbon Farming Initiative. The central piece of legislation in the package was the Carbon Credits (Carbon Farming Initiative) Act 2011.

The Carbon Farming Initiative allows for GHG abatement projects in the land sector, and from landfill waste emissions. The projects earn carbon credits which can then be sold to people and businesses wishing to offset their GHG emissions. The initiative covers land-based sequestration activities, native forest protection and emissions avoidance projects.

Transportation

Transportation emissions account for approximately 15% of Australia's total GHG emissions. The Clean Energy Act 2011 specifically exempts transportation fuel emissions from inclusion within emissions calculations and from the carbon tax.

Adaptation

The National Climate Change Adaptation Framework was agreed by the Council of Australian Governments in April 2007. The Australian Government established the Climate Change Adaptation Program (CCAP), with funding of AUD 126 million (USD 115 million) and allocated a further AUD 44 million (USD 40 million) to establish the CSIRO Climate Adaptation Flagship. In the budget for 2012–2013, AUD 3 million (USD 2.7 million) in funding was allocated to support the development of climate change adaptation policy and risk analysis. In 2010, the government published a position paper on adaptation, identifying six national priority areas for action: water, coasts, infrastructure, natural ecosystems, natural disaster management and agriculture. The paper emphasised responsibility sharing between government and private parties, and allocation of responsibilities among different levels of government.

Research and development

The government is committed to climate change research through numerous programmes. The Australian Climate Change Science Programme (ACCSP) provides fundamental climate system science to support decision-making. The ACCSP has been operating since 1989 and involves a partnership between the Department of the Environment, CSIRO, the Bureau of Meteorology, the Antarctic Climate and Ecosystems Cooperative Research Centre, the Centre of Excellence for Climate System Science and the Australian Academy of Science. The Climate Change Research Strategy for Primary Industries (CCRSPI), operating since 2007 under a mandate from the Primary Industry Ministerial Council and Primary Industry Standing Committee, leads the national collaboration, co-ordination and communication of climate change research, development and extension activity for Australia's primary industries. Research

programmes such as the Climate Change Research Programme and Carbon Farming Futures (CFF) – Filling the Research Gap, Action on the Ground and Extension and Outreach programmes are led by the Department of Agriculture. The government has approved 200 grants worth AUD 138.9 million (USD 126.5 million) under these CFF programmes. These projects are supporting research, trials and extension of the ways farmers and land managers can reduce agricultural GHG emissions and increase storage of carbon in soil, and maintain productivity while adapting to a changing climate. Adaptation-related research is also carried out through the CSIRO Climate Adaptation Flagship and the National Climate Change Adaptation Research Facility (NCCARF).

Australia: Flagship Legislation

Note: although the Clean Energy Act 2011 is active as at the end of 2013, the new government announced on 15 October 2013 that it would repeal the carbon tax effective from 1 July 2014, and it introduced carbon tax repeal bills into parliament on 13 November 2013 as its first item of legislative business. The repeal of these laws, if supported in parliament, is expected to take place in 2014.

Name of law	Clean Energy Act 2011[Legislative]
Date of entry into force	1 July 2012
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – Energy Demand – Transportation – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The main objective of Australia's flagship legislation, the Clean Energy Act, is to support an effective global response to climate change that is consistent with Australia's national interests, and thereby give effect to Australia's obligations under the UNFCCC and the Kyoto Protocol. It is the centrepiece of a package of 18 Acts.</p> <p>The central mechanism by which the Clean Energy Act and associated legislation will do this is by putting a price on carbon. Under the carbon tax, operators of facilities that emit more than 25,000 tonnes of CO₂e per year ("large polluters") must purchase permits for every tonne of carbon emitted or pay a shortfall charge. Around 370 "large polluters" operate such facilities, in covered sectors such as electricity generation, resource extraction, manufacturing and waste. In addition, an equivalent carbon price is applied (through the fuel tax system) to certain uses of fossil fuels and synthetic GHGs, and suppliers of natural gas are liable to pay a carbon price on the 'embodied emissions' in the gas they supply to customers.</p> <p>Under the provisions of the NGER Act (see following section), many corporations are required to report their CO₂e emissions, energy production and energy use.</p> <p>From 1 July 2012 to 30 June 2015, the carbon price will be fixed, moving to an emissions trading scheme from 1 July 2015. The fixed price stage started on 1 July 2012 at AUD23 (USD 20.9) per tonne, rising by 2.5% per year in real terms. Once the ETS comes into effect, the carbon price will be set by the market.</p>

The package also includes assistance for households, jobs, businesses (particularly “trade-exposed, emissions-intensive industries”) and communities. Due to the projected rise in utility bills, income tax reform and increases in payments such as aged pensions have been undertaken to compensate households. Household transportation fuel consumption and emissions from agriculture and other land-based activities are exempt.

The package of laws establishes the Clean Energy Regulator as a statutory authority that will administer the carbon pricing mechanism, the National Greenhouse and Energy Reporting Scheme, the Renewable Energy Target and the Carbon Farming Initiative (which commenced in April 2012).

The laws also establish the Climate Change Authority, which will advise the Australian government on the setting of carbon pollution caps and provide periodic review of the carbon pricing mechanism and other steps required to meet the legislated target to reduce emissions by 80% below 2000 levels by 2050. The Authority will hold public consultations as part of its reviews and its reports will be made public.

Targets	The Act is designed to take action towards Australia’s long-term target of reducing net GHG emissions to 80% below 2000 levels by 2050. The carbon price is expected to apply to around two-thirds of Australia’s emissions.
----------------	--

Australia: Other Relevant Legislation

Name of law	Clean Energy (Consequential Amendments) Act 2011 [Legislative]
Date of entry into force	1 July 2012
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>This Act makes amendments to other laws to ensure that the mechanism is integrated with existing laws, regulatory schemes and processes. It includes changes that ensure:</p> <ul style="list-style-type: none"> – The National Greenhouse and Energy Reporting scheme supports the mechanism – The Australian National Registry of Emissions Units covers the mechanism, as well as the Carbon Farming Initiative – The Regulator covers the mechanism, Carbon Farming Initiative, the Renewable Energy Target and the National Greenhouse and Energy Reporting scheme – The Regulator and Authority are set up as statutory agencies and regulated by public accountability and financial management rules – Carbon units and their trading are covered by laws on financial services and regulated by the Australian Securities and Investment Commission
Targets	None specified

Name of law	The Steel Transformation Plan Act 2011 [Legislative]
Date of entry into force	4 December 2011
Categories	– Energy Demand
Driver for implementation	Green growth, GHG reduction
Summary of bill	<p>This Act is designed to assist Australia's steelmakers adjust to a low emissions economy. The Plan will commence on 1 July 2012 and will conclude on 31 December 2016.</p> <p>The plan includes an AUD 300 million (USD 273 million) entitlement (self-assessment) scheme that will operate over the five payment years from 2012–2013, and competitiveness assistance advance payments up to the value of AUD164 million (USD 149 million) in 2011–2012.</p>
Targets	None specified.

Name of law	Additional Clean Energy Acts [Legislative]
Date of entry into force	April 2012, May 2012, July 2012
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The following acts specify how fees are paid under the mechanism, and commence on 1 April 2012:</p> <ul style="list-style-type: none"> – Clean Energy (Unit Shortfall Charge General) Act 2011 – Clean Energy (Unit Issue Charge Auctions) Act 2011 – Clean Energy (Unit Issue Charge Fixed Charge) Act 2011 – Clean Energy (Charges Excise) Act 2011 – Clean Energy (Charges Customs) Act 2011 – Clean Energy (International Unit Surrender Charge) Act 2011 – Ozone Protection and Synthetic Greenhouse Gas (Manufacture Levy) Amendment Act 2011 – Ozone Protection and Synthetic Greenhouse Gas (Import Levy) Amendment Act 2011 <p>The following acts deal with: imposing an effective carbon price on aviation and non-transportation gaseous fuels through excise and customs tariffs; reducing business fuel tax credit entitlement of non-exempted industries for use of liquid and gaseous transportation fuels, in order to provide an effective carbon price on business through the fuel tax system. They commence on 1 July 2012:</p> <ul style="list-style-type: none"> – Clean Energy (Fuel Tax Legislation Amendment) Act 2011 – Clean Energy (Excise Tariff Legislation Amendment) Act 2011 – Clean Energy (Customs Tariff Amendment) Act 2011 <p>The following acts commence on 14 May 2012:</p> <ul style="list-style-type: none"> – Clean Energy (Household Assistance Amendment) Act 2011 – Clean Energy (Tax Laws Amendments) Act 2011 – Clean Energy (Income Tax Rates Amendments) Act 2011
Targets	None specified

Name of law	Carbon Credits (Carbon Farming Initiative) Act 2011 [Legislative]
Date of entry into force	15 September 2011
Categories	<ul style="list-style-type: none"> – Carbon Pricing – REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Reducing GHG emissions; creating incentives to carry out land-based offset activities; increasing carbon abatement while protecting environment and increasing resilience to climate change
Summary of bill	<p>The Act sets up a scheme for the issue of Australian Carbon Credit Units (ACCUs) in relation to eligible offsets projects. It is part of a package of three Acts to establish the Carbon Farming Initiative, including the Australian National Registry of Emissions Units Act 2011 and the Carbon Credits (Consequential Amendments) Act 2011.</p> <p>The goal of the CFI Act is to give “farmers, forest growers and landholders” access to domestic and international carbon markets. Implementation of the Act will assist Australia to meet international obligations under UNFCCC and the Kyoto Protocol, although it also covers activities that are not included within the Kyoto Protocol. The package of Acts establishes the existence of ACCUs as personal property, which are generally transferable, and can be sold domestically or internationally subject to regulation.</p>
Targets	None specified
Name of law	Offshore Petroleum and Greenhouse Gas Storage Act 2006 [Legislative]
Date of entry into force	1 July 2008, some provisions activated 29 March 2006
Categories	– Energy Supply
Driver for implementation	Reducing GHG emissions, carbon sequestration
Summary of bill	<p>The object of the Act is to provide an effective regulatory framework for petroleum exploration and recovery, and the exploration for potential GHG storage formations, injection and storage of GHG substances in offshore areas (Commonwealth waters).</p> <p>The Act provides a comprehensive national framework for offshore petroleum exploration and GHG storage activities, as these are managed jointly by the relevant State and Commonwealth agencies.</p> <p>The Act designates a “Joint Authority” for each offshore area, which are responsible for implementing the Act. The Joint Authorities typically comprise the responsible State Minister and the responsible Commonwealth Minister.</p> <p>The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is the national regulator responsible for administration of occupational health and safety provisions, structural integrity (wells and facilities) provisions, and environmental management provisions for all petroleum activities, and for occupational health and safety for persons engaged in offshore GHG storage activities.</p> <p>The National Offshore Petroleum Titles Administrator (NOPTA or the Titles Administrator), advises the Joint Authorities on key decisions and is responsible for keeping registers of titles and data and information management.</p>
Targets	None specified

Name of law	National Greenhouse and Energy Reporting Act 2007 [Legislative]
Date of entry into force	29 September 2007. First reporting period commenced 1 July 2008
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – Transportation – Institutional/Administrative arrangements
Driver for implementation	Reducing GHG emissions, including meeting reporting obligations under UNFCCC and Kyoto Protocol; informing policy development; and avoiding overlapping and duplicative reporting requirements.
Summary of bill	<p>The Act establishes the legislative framework for the National Greenhouse and Energy Reporting Scheme. The goal of the NGER Act was to introduce a single national reporting framework for the reporting and dissemination of information related to GHG emissions, GHG projects, energy consumption and energy production of corporations.</p> <p>The NGER Act was in part designed to underpin the introduction of a future emissions trading scheme. Additionally, the NGER Act is intended to meet Australia's international GHG reporting obligations, and reduce red tape and duplication associated with emissions reporting.</p> <p>The NGER Act sets out a number of thresholds in relation to GHG emissions, energy production and energy consumption. Corporations that meet an annual NGER threshold must register with the Clean Energy Regulator, and submit annual reports of GHG emissions, energy production, energy consumption, and other information. The annual reports cover the financial year (1 July to 30 June). All registered corporations are required to submit a report, even where the threshold has not been met in a given reporting year. Failure to submit reports on time can attract civil penalties.</p>
Targets	None specified. The objectives of the NGER Act are to inform government policy, inform the Australian public, help meet Australia's international reporting obligations, assist Commonwealth, state and territory government programs and activities, and avoid duplication of similar reporting requirements in the states and territories.

Name of law	Renewable Energy (Electricity) Act 2000 and associated legislation, including: Renewable Energy (Electricity) (Large-scale Generation Shortfall Charge) Act 2000 and Renewable Energy (Electricity) (Small-scale Technology Shortfall Charge) Act 2010 [Legislative]
Date of entry into force	21 December 2000
Categories	<ul style="list-style-type: none"> – Energy Supply
Driver for implementation	Renewable energy; reducing GHG emissions
Summary of bill	<p>The Act and associated legislation establishes the framework for the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES). LRET and SRES aim to encourage additional electricity generation from renewable sources; reduce emissions of GHGs in the electricity sector; and ensure that renewable energy sources are ecologically sustainable.</p> <p>These goals are achieved by the creation of online certificates by eligible renewable energy sources based on the amount of electricity in megawatt hours (MWh):</p> <ul style="list-style-type: none"> – Generated by a renewable energy power station, or small-scale solar panel, wind or hydro system; or – Displaced by a solar water heater or heat pump <p>They also include placing a legal obligation on liable entities (usually electricity retailers) to purchase and surrender a certain amount of these certificates each year. The trade in these certificates provides financial incentives for investment in renewable energy power stations, and for the installation of solar water heaters, heat pumps and small-scale solar</p>

panel, wind and hydro systems.

The Office of the Renewable Energy Regulator (ORER) is a statutory authority established in 2001 to oversee the implementation of the RET and the SRES. This function was subsumed into the Clean Energy Regulator in 2011.

Targets	The renewable energy supply target for 2013 is 18,238 GWh; targets to reach 41,000 GWh by 2020, excluding an additional 850 GWh per year from 2013 to 2020 for waste coal mine gas.
----------------	---

4.3 Bangladesh



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	54
excl. LULUCF	46
Change from base year (1990)	NA
Latest reporting year	1994
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 9 June 1992 Date of ratification: 15 April 1994 Date of entry into force: 14 July 1994
Kyoto Protocol ratification status and date 2020 pledge	Date of ratification: 22 October 2001 Date of entry into force: 16 February 2005 No pledge made
Flagship legislation	The Climate Change Trust Fund Act

Legislative Process

The People's Republic of Bangladesh is a parliamentary republic. As with many Commonwealth countries, criminal and civil law in Bangladesh is still based on English Common Law, which was enacted during the colonial period, though a few aspects of family law derive from customary Islamic rules.

The Parliament of Bangladesh, known as the “House of the Nation” (Jatiyo Shangshad). It is the sovereign law-making body, vested with the legislative power of the Republic. All laws made are subject to the limits of the constitution and its provisions, such that any law conflicting with the constitution is void. Statutory law is made by Parliament. Laws are proposed, prepared and processed by the executive, which is the Cabinet.

The law-making process is as follows: Cabinet recommends a legislative initiative and arranges for a bill to be drafted. Cabinet then approves the bill and it is presented to Parliament. The bill is then subject to debate and amendment. Following this, Parliament votes for the formal adoption (or rejection) of the bill. If it is accepted by Parliament, it will be handed to the President for assent. In addition, the power to make subordinate legislation (such as rules; regulations; by-laws; etc.) can be delegated to a lower authority in order to carry out the aim of any given Act of Parliament.

The Supreme Court is the highest judicial power. Supreme Court Judges are selected by the Bangladeshi President. The Judiciary and the Executive were separated in 2007.

Approach to Climate Change

Bangladesh is a poster child for the potential impact of climate change. It is a Least Developed Country, recognised by the UNFCCC as one of the most vulnerable countries to climate change impacts. Among other things, cyclones, floods and saltwater inundation already threaten the livelihoods of some of the world’s poorest people: some 50 million Bangladeshis live in poverty. Moreover, 79% of Bangladeshis live in rural areas, yet the country has one of the world’s highest population densities. Following the Population and Housing Census 2011, the Bangladesh Bureau of Statistics reckons there are now a remarkable 1015 people/km² in Bangladesh. This intensifies threats even at a local level. Yet climate-related hazards occur on a wide scale – for instance flash floods already affect some 80% of the land area during the monsoon season. The increased intensity and frequency of these hazards under future climate change scenarios is a major challenge for Bangladesh’s development, and a significant barrier to its vision of eliminating poverty and becoming a middle income country by 2021.

The highest level plans to address the domestic impacts of climate change are The National Adaptation Programme of Action (NAPA) and The Bangladesh Climate Change Strategy and Action Plan (BCCSAP). NAPA was launched in 2005 to respond to immediate adaptation needs. It identified 15 priority adaptation programmes and activities. Following this, the UNDP received funding from the GEF to implement the coastal afforestation project set out in the NAPA. However, numerous stakeholders felt that the NAPA 2005 document was insufficient to tackle the dramatic impacts faced by Bangladesh. This catalysed first the revision of the NAPA in 2009, and second, the development of the BCCSAP. The revised NAPA contains 45 important adaptation measures under six themes: (1) food security and pro-poor social safety-nets; (2) comprehensive disaster management; (3) climate resilient infrastructure; (4) mainstreaming climate change; (5) capacity and knowledge enhancement; and (6) strategic natural resources management. The NAPA then highlights nine short-term priorities mainly addressing the first four of these thematic areas, along with nine medium-term priorities with a focus on the last two thematic areas.

The BCCSAP is a 10-year programme (2009–2018) designed to build the capacity and resilience of Bangladesh to meet climate change-derived challenges. This medium- to long-term programme recommends 44 actions in six areas: 1) food security, social protection and health; 2) comprehensive disaster management; 3) infrastructure; 4) research and knowledge management; 5) mitigation and low carbon development; and 6) capacity building and institutional strengthening. While far-reaching, the plan has, however, been criticised for not prioritising activities to help the most vulnerable.

This plan brought mitigation into Bangladesh's climate change strategy in addition to adaptation. This allows Bangladesh to address climate change as well as responding to its impacts, and specifically, opened the way for REDD+ activities. This is important given potential synergies from REDD+ implementation such as securing local ecosystem services provision (e.g. clean water; protection against erosion; biodiversity provision) and carbon sequestration and storage. For instance, the mitigation and low carbon development pillar of the BCCSAP includes a plan to expand Bangladesh's so-called greenbelt, by replanting the mangrove and forest belt that once covered much of the coastline. This should help to protect the coastline at the same time as offering carbon storage and sequestration and fisheries benefits.

Following the release of the BCCSAP, the Government of Bangladesh established a Climate Change Trust Fund (BCCTF) that it funded itself. BCCTF received \$100 million per year in 2009–2011 and focused on helping adaptation efforts. In addition, the government made an international appeal for funding for the Bangladesh Climate Change Resilience Fund (BCCRF), to which Denmark, Sweden, the UK, the USA, the EU, Switzerland and Australia responded.

To boost private sector investment in Bangladesh, the government is developing a public-private partnership strategy that specifies the environment as an investment sector. The Bangladesh Green Development Plan (BGDP) aims to develop new programmes in environment, energy and climate change that address the climate change adaptation and mitigation needs of the poor. It focuses on demand-side energy management by providing access to low-carbon fuels and energy and it should also create green jobs. Within the plan there is a strong focus on improving the management of the natural environment, biodiversity and ecosystems. The government has expressed interest in using REDD+ as a strategy to fulfil some of these objectives, and the UN has produced a document investigating the readiness of the country to participate.

Whilst the policies mentioned above are specifically targeted at climate change, other aspects of government policy also relate to environmental management in a changing climate. Most notably, the government's *Vision 2021* document sets out to eliminate poverty and make Bangladesh a middle-income country by 2021. However, importantly, it aims to do this by supporting sustainable development. *Vision 2021* has social, economic and environmental dimensions and it declares that all efforts will be made to protect Bangladesh from the adverse effects of climate change.

At the highest level it aims to reduce air pollution from industry and transportation, and improve waste management; to improve the state of the natural environment by conserving forests and water bodies and preventing river erosion. The plan also envisages regional co-operation, particularly in water management: the government plans to develop a regional water policy with its neighbours India, Nepal and Bhutan. This prioritisation of water resource management at the regional level is mirrored by the recent domestic developments under The Water Act (2013). A notable large-scale project to be enabled under this Act and under the Vision 2021 strategy is the Ganges barrage project to expand irrigation facilities; prevent saltwater intrusion; and to solve the problem of freshwater scarcity in the Sundarban region. In essence these are adaptation activities, although they are not always referred to as such.

In order to achieve the goals of Vision 2021, Bangladesh has adopted '*Outline Perspective Plan (OPP) of Bangladesh 2010-2021: Making Vision 2021 A Reality*'. This outlines the long-term goals and medium-term objectives to make a more prosperous Bangladesh. The OPP includes a dedicated chapter on the environment where the vulnerabilities, responses and climate change management strategies are analysed. The plan emphasises climate change adaptation through the active participation of local communities and the private sector, rather than a top-down strategy.

Finally, the Sixth Five Year Plan (SFYP) has a dedicated chapter on environmental management and climate change. Noting the long-term consequences of environmental degradation to the country's ecosystems and human welfare, the

government has set a number of goals, objectives and strategies to achieve sustainable development whilst meeting the challenges of climate change. The Plan's objective is to promote new appropriate environment management systems for mitigation and adaptation through active participation of Bangladesh's women and the poorest members of society.

Energy supply

The Ministry of Power, Energy and Mineral Resources sets out in its Renewable Energy Policy (2008) the following three provisions; however, the document does not refer to any laws deriving from these policies:

- Renewable energy project(s): the sale of electricity from plants requires a power generation licence from The Energy and Mineral Resources Division (BERC) if the capacity is 5 MW or more.
- The government and the Sustainable Energy Development Agency (SEDA), in consultation with BERC, will create a regulatory framework encouraging generation of electricity from renewable energy sources.
- BERC shall approve the energy tariff in consultation with the government and SEDA as per the provision of the BERC Act 2003 if the capacity of renewable energy project(s) is 5 MW or more. Electricity distributors may offer “green energy” tariffs, which provide consumers an opportunity to co-finance through their electricity bills the development of new renewable energy sources.

However, more significantly, on 18 June 2012 the Cabinet approved the draft of Sustainable and Renewable Energy Development Authority Act, 2012. This aims to increase the production and use of green energy in the country.

REDD+ and LULUCF

Article 31 of Part III of the Constitution notes that the right to life includes the right to a healthy and stable environment. Article 18A of the Act, included in the constitution in 2011, says that “the state shall endeavour to protect and improve the environment and preserve and safeguard natural resources, biodiversity, wetlands, forest and wildlife for the present and future citizens”. This latter article could potentially support mitigation activities under REDD+.

In the policy sphere, the BCCSAP opened the door for climate change mitigation activities in Bangladesh in addition to adaptation, which allows for REDD+ activities to be implemented. Yet the major piece of legislation with regards to forests in Bangladesh is the 1927 Forest Act. Nonetheless, all local government laws have provisions either for afforestation or for street planting in urban areas. These are the City Corporation Laws; the Paurashava Law; the Union Parishad Laws; and the Laws on Hill Districts. Furthermore, the Acquisition of Waste Land Act (1950) allows for afforestation of waste land. A potential conflict lies in the fact that afforestation is normally the process of planting trees in any treeless area, whereas reforestation is planting trees in an area previously forested but cleared through human activity. Benefits to ecosystem services provision and

biodiversity conservation are more likely to be provided through reforestation and restoration, rather than afforestation of a naturally treeless ecosystem, which may already be providing other essential ecosystem services in addition to carbon sequestration and storage.

The first National Forest Policy in 1979 was adopted to improve protection and conservation of Bangladesh's forests, while developing the economy. The current Forest Policy (1994) is particularly important from a pro-poor perspective in that it recognised the role of active participation of communities living near to forest resources in forestry specifically and in sustainable development more broadly. The Forest Policy, in addition to the Forestry Sector Master Plan (FSMP, 1993) intends, through social and participatory forestry, to raise the total forest cover of Bangladesh to 20% by 2015. This provides a strong background for the 'plus' components of REDD+, in particular reforestation.

Other Environmental legislation

There are 187 statutory laws relating to environmental management in Bangladesh. Although most of these were passed historically, and therefore developed before mainstream international political concern about climate change, such legislation could provide a legal basis and enabling environment to facilitate adaptation and mitigation on climate change. These may include (1) the 1965 Factories Act, due to its regulation of industrial emissions; (2) The Forest Act of 1927 key law regulating forest resources in Bangladesh, which therefore has implications for land use policies and particularly mitigation through REDD+; (3) The Water Act (2013) is relevant to adaptation through integrated management of water resources at the national level. (4) The Hill District Local Government Parishad Act (1989) devolves management responsibilities to the Hill District Council, including forestry, which may therefore have implications for REDD+. Similarly, The Bangladesh Water and Power Development Boards Order empowers the Water Board to develop schemes for watershed management. It can direct the owner of any private land to undertake anti-erosion operations including conservation of forests and reforestation. In addition presidential orders such as the Standing order on Disaster may also facilitate adaptation.

The 1992 Environment Policy of Bangladesh recognised the need for a comprehensive approach to address climate change and the environment. Few elements of this policy have become law, however. The only legislation that specifically deals with environmental issues is the Bangladesh Environment Conservation Act (1) (ECA) of 1995. This Act was passed for conservation and improvement of environmental standards and for controlling and mitigating environmental pollution. Importantly, Section 2 A of the Environment Conservation (Amendment) Act, 2002 (Act No. IX of 2002) gives the law overriding effect over all other laws, creating the principle of environment primacy. The Environmental Conservation Rules (1997) were developed to promote the objectives of the ECA, though they are not enshrined in law. The ECA was

amended in 2010. At the time of writing in 2013, the government is drafting a new Environmental Policy.

Bangladesh: Flagship Legislation

Name of law	The Climate Change Trust Fund Act [Legislative]
Date of entry into force	2009–2011 (three years of funding)
Categories	<ul style="list-style-type: none"> – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Adaptation
Summary of bill	This is intended as the government's quick-start domestic response to climate change adaptation activities, which are planned through the BCCSAP. As such this Act is intimately linked to the BCCSAP. It stipulates allocating an initial budget of \$100 million per year for three years between 2007 and 2009. It stipulates that 66% of its budget will be spent on the implementation of projects/programmes prioritised in the BCCSAP. The remaining 34% will be maintained as a deposit for emergencies. Interest accrued on the deposit will be spent on project implementation. Funds from the BCCTF can be used to finance public sector and non-government projects. It is not mandatory to spend the total grant within a given financial year.
Targets	None specified

Bangladesh: Other Relevant Legislation

Name of law	Sustainable and Renewable Energy Development Authority Act [Legislative]
Date of entry into force	2012
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Institutional/Administrative arrangements
Driver for implementation	Renewable energy
Summary of bill	Aims to create an independent authority to promote the development and use of renewable energy in Bangladesh. Currently few details in the public domain since the bill is recent to the writing of this report.
Targets	None specified

Name of law	Bangladesh Climate Change Strategy and Action Plan (BCCSAP) (Executive)
Date of entry into force	2009
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – REDD+ and LULUCF – Adaptation – Research and development

	<ul style="list-style-type: none"> – Institutional/Administrative arrangements
Driver for implementation	Creating a framework of activities for a suitable response to climate change in Bangladesh; implementation of Vision 2021
Summary of bill	<p>The BCCSAP is a “knowledge strategy” built upon the National Adaptation Programme of Action (2005). It sets out 44 programmes to be taken by Bangladesh over the short, medium and long term within six strategic areas:</p> <ul style="list-style-type: none"> – food security, social protection and health – comprehensive disaster management – infrastructure – research and knowledge management – mitigation and low carbon development – capacity building and institutional strengthening <p>A common theme throughout of all of these strategic areas is the focus on the poor and vulnerable and in particular women and children. All programmes are expected to provide synergies with the government’s Vision 2021.</p> <p>Examples of the programmes:</p> <ul style="list-style-type: none"> – Infrastructure: programme T3P8 seeks to restore rivers and khals through dredging and de-siltation works – Mitigation: programme T5P7 targets re/afforestation
Targets	None specified
Name of law	The Bangladesh Environment Conservation Act (and subsequent Environment Conservation rules) (Legislative)
Date of entry into force	1995 for the Act itself; rules introduced in 1997
Categories	<ul style="list-style-type: none"> – Energy supply – REDD+ and LULUCF
Driver for implementation	Environmental quality management through pollution control.
Summary of bill	<p>The Act is dedicated to the “conservation, improvement of quality standards, and control through mitigation of pollution of the environment”. It legislates the conservation of environmental systems, improvement of environmental standards and control and mitigation and provides a framework for its implementation. It also calls for the protection of “Ecologically Critical Areas”.</p> <p>The subsequent rules issued provide additional guidance for certain components of the Act: declaring an area as ecologically critical; on vehicles emitting smoke injurious to health and otherwise harmful pollution or degradation of the environment. As such this is interpreted to include GHG emissions.</p> <p>The Environmental Conservation Act (1995) was amended in 2002 and the Environmental Conservation Rules (1997) were extended to incorporate ambient air quality and exhaust fan vehicles.</p>
Targets	None specified

4.4 Bolivia



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	92
excl. LULUCF	44
Change from base year (1990)	28
Latest reporting year	2004
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 10 June 1992 Date of ratification: 03 October 1994 Date of entry into force: 1 January 1995
Kyoto Protocol ratification status and date	Date of signature: 9 July 1998 Date of ratification: 30 November 1999 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	Framework Law on Mother Earth Law and Integral Development to Live Well - Law No 300 of 2012

Legislative Process

The Plurinational State of Bolivia adopted a new federal constitution by popular referendum in 2009 that prioritises popular democratic participation. The government is divided into four branches: executive, legislative, judicial and electoral. The executive branch is composed of the President (head of state), Vice-President and the Cabinet of Ministers. The legislative branch is bicameral and consists of the Senate – in which 36 members sit, four representatives from each of the nine regional authorities (called departments) – and the House of Representatives – with 130 members, half of whom are elected by popular direct vote and the other half listed on the presidential ticket.

Any congressional representative, the Vice-President, the President, the Supreme Court, or any citizen of the Republic may initiate proposed legislation, called law projects. Once a law project is passed in one house, it is debated and considered in the other. Both houses must pass the bill by a simple majority, and modifications must be resolved between the two houses by a conference committee before the President can sign it into law. Should the President oppose some provision of the legislation, they may return the bill with a written statement to the house of origin where the objections will be considered and passed with modifications (again in both houses). Alternatively Congress may override presidential objections or veto by a two-thirds majority vote in both houses.

Approach to Climate Change

Bolivia ratified the UNFCCC in 1994 as a non-annex I party and has been vocal in international climate change debates. Its national approach differs from many countries that have followed the models of UNFCCC annex I countries. A new constitution ratified in 2009 guarantees citizens the right to a healthy environment; and the “New Economic Model” championed by President Evo Morales prioritises raising the quality of life for Bolivian citizens using sustainable development.

In its approach to climate change Bolivia begins from the political premise that wealthy industrialised countries owe a “climate debt” or “climate deficit” both to the earth (as a political subject) and to states that are not historical polluters. It calls for significant transfer of funds from countries with a “climate debt” to developing countries as payment, or reparation; as well as for increased technology transfer so that poorer countries may develop using cleaner, more efficient technology.

In accordance with its desire to increase democratic participation, Bolivia hosted an international summit called The World People’s Summit on Climate Change and the Rights of Mother Earth in 2010. According to the Bolivian government, more than 35,000 delegates from 140 countries participated in the conference that countered the Copenhagen Climate Change Conference. The conference organised working-group committees and eventually passed a communiqué,

including a “People’s Agreement” and a draft of the “Universal Declaration of Mother Earth’s Rights,” which was submitted to the UNFCCC.

In a novel approach to climate change, the government also believes the planet is an entity with inherent rights to be protected by states. Beyond the international conference, Bolivia’s legislature has adopted the same ideology and passed The Mother Earth Law and Integral Development to Live Well in 2012, its flagship legislation. The law is a sweeping overhaul of the national management of natural resources, climate, and ecosystem and aims to incorporate climate change perspectives into general environmental and socio-economic legislative frameworks. Climate change is mentioned in reference to equitable distribution of wealth and the right to access clean water. The law incorporates environmental justice and climate justice into the country’s environmental legal framework, creating new authoritative bodies to implement forestry, adaptation and mitigation plans; however, it lacks any hard targets by which to measure implementation of the law.

Under The Mother Earth Law, a government authority is established to oversee the implementation of climate change mitigation and adaptation principles. This body is called the Plurinational Authority of Mother Earth and operates within the Ministry of Environment and Water (the ministry also includes a Sub-Secretary of Climate Change) and will pursue a three-pronged approach: incorporating mitigation and adaptation into the national forestry management, and two broadly defined campaigns dedicated to mitigation and adaptation that will span various sectors of Bolivian society as well as governmental institutions.

Sub-National Activity

Bolivia saw the launch of the first municipal plan focused on adaptation to climate change in December of 2012 by the municipality of Villamontes, in the department of Tarija. The municipal government co-ordinated the adaptation plan with input from the Latin American Development Bank and national NGOs. Local indigenous groups (referred to as *pueblos originales*, or original nations) called for a plan to better manage the biodiversity of the region in relation to changing climatic conditions. The plan is described as incorporating local knowledge and ancestral traditions of environmental management. The plan is also meant to serve as a replicable model for other municipalities in Bolivia, especially in areas where communities depend on the local natural environment for their sustenance and economic security.

Carbon pricing

Bolivia has a national policy stance of rejecting carbon markets. It argues that effective mitigation will come from measurable reduction of emissions domestically rather than through trading schemes that allow firms to obscure or “offset” their material emissions. As a country facing a variety of development challenges, Bolivia critiques carbon markets as an opportunity for wealthy industrialised countries to purchase emission reductions in other countries while continuing to pollute at the same rate in their own country. For this reason it refuses to participate in any carbon pricing and trading scheme.

REDD+ and LULUCF

An estimated 50% of Bolivian territory is forested; and a worrying 330,000 ha are lost each year, mainly to agricultural expansion, small-scale farmers moving their operations to the lowlands due to highland drought, and unsustainable logging practices. A 36-month UN REDD programme concluded in April 2013. The programme spent USD 4.4 million, listing the outcome as strengthening the institutional and organisational capacity for productive development and job creation through the sustainable management of natural resources and the environment. The government is meant to incorporate REDD+ into various aspects of forestry and land-use management; and the results are seen in The Mother Earth Law.

REDD, as conceived by international agencies and media, has come under criticism by indigenous groups close to the government. Bolivian indigenous leaders joined other Latin American indigenous peoples at a parallel summit to the Rio+20 meeting and denounced REDD+ contracts and carbon credits associated with REDD programmes. They have called into doubt which political and commercial actors directly benefit from REDD+ programmes and have condemned any attempt to commodify nature while ignoring the traditional knowledge of indigenous cultures. The Law of Mother Earth responds to this criticism by prioritising traditional mechanisms of caring for forested areas.

Bolivia: Flagship Legislation

Name of law	The Mother Earth Law and Integral Development to Live Well, Law No 300 [Legislative]
Date of entry into force	15 October 2012
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Transportation – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Sustainable development, Climate Change, Environmental Rights
Summary of bill	The Mother Earth Law is a piece of legislation that epitomises the Bolivian State's dedication to sustainable development, respecting the balance between human life and the natural environment, and prioritising the rights and knowledge of the country's majority indigenous population. The expressed objective of the law is to "establish the vision and fundamentals of integral development in harmony and balance with Mother Earth to Live Well, guaranteeing the continued capacity of Mother Earth to regenerate natural systems, recuperating and strengthening local and ancestral practices, within the framework of rights, obligations and responsibilities".

In relation to climate change the law has many provisions that outline the state's vision, citizens' rights, and responsibilities. It embraces the concept of "climate justice", defined by the ability of all Bolivian citizens to "Live Well", especially those who are most vulnerable to climate change. It reinforces the point that some states have more of a global responsibility to respond to climate change.

To encourage sustainable development of natural resources, it states that climate change trajectories should be accounted for when planning and zoning responsible land use.

The law focuses on reducing the risks posed to Bolivia by climate change through six lines of actions:

- The permanent incorporation of prevention of and managed response to natural disasters into the System of Integral Planning;
- Risk management for the agricultural sector to prevent diminished crop yields and food insecurity;
- The adoption of risk management of disasters as well as adaption to climate change across state development projects; development of informational networks to issue early warnings in times of natural crisis as well as to assist the agricultural industry and indigenous communities plan according to climate conditions;
- Strengthening territorial management processes of sub-national governments through the incorporation of risk management and adaption to climate change perspectives;
- Articulation between public and private scientific research sectors to share knowledge and co-ordinate research regarding vulnerabilities related to climate change.

The Law defines “Living Well” in relation to climate change and lays out the state’s legal obligations. The state will develop policies, strategies and legal techniques to mitigate the effects of climate change and adapt to them through strengthening institutional capacities for the monitoring of climate with the purpose of long-term planning. The state will also encourage the recuperation of traditional indigenous practices that were historically sustainable and allowed for the natural regeneration of resources.

The law also establishes the Plurinational Authority of Mother Earth, within the Ministry of Environment and Water, as the state entity responsible for much of the development, overseeing and co-ordination of projects, programmes and research as it relates to climate change and the objectives of the Plurinational Plan for Climate Change. It also co-ordinates scientific monitoring of GHG emissions. The entity will operate within the framework of “climate justice,” following the principles of Bolivia’s climate change politics.

The Authority will operate through three mechanisms:

1. Joint Mechanism of Mitigation and Adaptation for the Integral and Sustainable Management of Mother Earth’s Forests
2. Mitigation Mechanism to “Living Well”
3. Adaptation Mechanism to “Living Well”

The Authority is also responsible for the management of the Plurinational Fund of Mother Earth. The Fund will be financed with multilateral and bilateral aid, public money from the national government allocated to mitigation or adaptation, funds from private donors, national or international loans, and funds at the disposal of the executive branch.

Targets	None specified
----------------	----------------

Bolivia: Other Legislation

Name of law	Executive Decree Nº 28218 on Mechanisms for Clean Development [Executive]
Date of entry into force	24 June 2005
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – REDD+ and LULUCF
Driver for implementation	Clean Development, Kyoto Protocol
Summary of bill	This Executive Decree was passed in order to declare the Mechanism for Clean Development, of the Kyoto Protocol, a priority in the national policy of development.

Bolivia was keen to develop projects related to the energy sectors and forestry industry, especially as it related to technology transfer and substantial investment in energy efficiency.

Targets None specified

Name of law Forest Law Nº 1700 [Legislative]

Date of entry into force 12 September 1996

Categories – REDD+ and LULUCF

Driver for implementation REDD+ and LULUCF, Desertification

Summary of bill This law was written to bring Bolivian forestry legislation up to standards with the international conventions that Bolivia has signed, including the ratification of the UNFCCC as well as the UN Convention to Combat Desertification and Drought.

The law updates the legal framework, shoring up the federal state's authority to impose restrictions on the forestry industry and economic land use. The objective listed in the law's text is to establish legal norms for the sustainable use and protection of national forests, harmonising social, economic and ecological interests for present and future Bolivian generations.

The law creates a Regimen of National Forests to be overseen by a national Forestry Superintendent, and a National Forest Development Fund; all of which are under the Ministry of Sustainable Development and Environment (now called the Ministry of Environment and Water).

This is an early legislative action to combat desertification in Bolivia, mitigate the negative effects of GHG emissions through the conservation of tropical forests, and preserve the natural environment for future generations. While climate change was one driver for this law, explicit mention of climate change is marginal to the logic of conservation; and the Law of Mother Earth (listed above as the national flagship legislation) now occupies the main role in incorporating mitigation and adaptation strategies to forestry management.

Targets None specified

4.5 Brazil



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	2192
excl. LULUCF	863
Change from base year (1990)	286
Latest reporting year	2005
Importance as an emitter	Top 10
UNFCCC ratification status and date	Date of signature: 4 June 1992 Date of ratification: 28 February 1994 Date of entry into force: 29 May 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 23 August 2002 Date of entry into force: 16 February 2005
2020 pledge	Voluntary measures, including on deforestation, anticipated to lead to expected emission reductions of 36.1% to 38.9% by 2020, compared to business as usual
Flagship legislation	National Policy on Climate Change (NPCC)

Legislative Process

Brazil's legislature is represented by a bicameral parliament, the National Congress. The Chamber of Deputies has 513 Members of Parliament (MPs) and the Senate has 81. All members of Congress are directly elected.

The 1988 Constitution outlines how laws may be proposed. The legislative process may be initiated by any member or committee of the Chamber of Deputies or the Federal Senate; the President of the Republic; the Supreme Federal Court; the Superior Courts; the Attorney-General of the Republic; and the citizens.

Each one of the two chambers has its independent legislative process, passing laws that fall under their specific competences. However, as established in the constitution, in some areas a proposal must undergo the legislative process in both Chambers simultaneously, including laws related to the federal budget.

Laws related to climate change are presented at the Parliament in a process that entails three phases. First, the Constitution and Justice Committee assesses the constitutionality of the proposal, secondly, the text is scrutinised by one or more relevant committees. Finally, the law is discussed and voted in the plenary sessions of the congress. With the exception of laws that modify the constitution, the approval of a law proposal requires simple majority of votes.

After the National Congress's deliberations, the President of the Republic may sanction or veto the proposition. In the first case, the project becomes a law. In the case of a veto, the project is sent back to the Congress. If sanctioned by the President, the law comes into force after it is published in the National Gazette (Diario Oficial).

Approach to Climate Change

The Constitution establishes the protection of the environment as a general principle of economic activity. It is the shared responsibility of the federal government, states, federal districts and municipalities to "protect the environment and combat pollution, whatever its form".

Since early 2000, Brazil has employed significant political effort to adopt climate change legislation and policies. The country has passed legislation supporting its Copenhagen commitments; its National Policy on Climate Change was passed in 29 December 2009. This law established the country's voluntary emission reduction target of 36.1% to 38.9% compared to business as usual by 2020 with 2005 as a baseline. The policy presents emission reduction targets for four designated strategic areas: deforestation (24.7%), agriculture and livestock (4.9% to 6.1%), energy (6.1% to 7.7%) and the steel sector (0.3% to 0.4%). The policy leaves specific implementation measures to be established either by decree or determined by the Second Brazilian Inventory on GHG Emissions and Reductions (Second Inventory). It also incorporates all laws, measures and policies

pertaining to climate change (i.e. the National Plan on Climate Change, the National Climate Change Fund, plans to conserve the country's biomes).

Brazil passed relevant climate legislation in the context of the UNFCCC's Conferences of the Parties. In 2010, the President passed a Decree establishing that total national emissions should not surpass 2Gt and that emissions should be reduced by 5.8% reduction by 2020 vis-à-vis 2005 levels, making Brazil the first developing country to institute an absolute limit to its GHG emissions. In addition to regulating features of the National Policy such as the commitment to reduce Amazon deforestation by 80% by 2020, the Decree requires the elaboration of Sector Plans outlining mitigation actions for key economic sectors until the end of 2011, with targets to be revised on a tri-annual basis.

Carbon Pricing

Although the 2007 National Plan on Climate Change foresees the creation of a cap-and-trade system, it leaves the details for a future decision. At present, discussions on the implementation of a cap-and-trade system are most developed in the State of Sao Paulo. The Brazilian Emissions Reductions Market, a joint initiative between the Ministry of Development, Industry and Foreign Trade and the Brazilian Futures Stock Exchange, launched in Sao Paulo in 2004, supports the negotiation of carbon credits emanating from national Clean Development Mechanism (CDM) projects. Brazilian parliamentarians have put forward a series of Bills (PLs) on carbon market development. These Bills include provisions on trading over-the-counter and through stock exchanges, for both spot and futures transactions, authorised by the Brazilian Securities and Exchange Commission (CVM); the establishment of CDM Investment Funds to be structured by the CVM and the Commission on Climate Change; and multiple fiscal incentives to commercialise CERs emanating from CDM projects by individuals and companies.

While the National Policy on Climate Change is the overarching legal instrument in this area, the National Plan on Climate Change, created in 2008, provides a comprehensive framework of 25 actions. As 75% of Brazil's GHG emissions result from emissions from deforestation, the framework primarily focuses on reducing deforestation by 80% by 2020. Additionally, the plan includes provisions on energy efficiency and renewable energy. In contrast, the Ministry of Mines and Energy's Energy Expansion Plan for the period 2008–2017 foresees the expansion of fossil fuel-based thermal power stations, establishing a potential conflict with the efforts to reduce GHG emissions and promote renewable energy.

Adopted in 2011, the Green Allowance establishes payments for ecosystem services scheme aimed at combating extreme poverty while incentivising conservation. Through the Green Allowance, payments of up to BRL 300 (USD129) will be transferred quarterly for a maximum period of two years to families living in extreme poverty to develop conservation activities.

The passing of a law on payments for ecosystem services reflects an emerging consensus on a new development model that seeks to align economic growth

with conservation through the promotion of sustainable production, infrastructure development, environmental protection and social inclusion after numerous Bills on this theme had been submitted to both Congress Houses in the past 5 years.

REDD+ and LULUCF

A great part of Brazil's commitment to climate change involves measures to tackle deforestation, since 61% of the country's GHG emissions derive from the forest sector. Alongside provisions established by the *National Policy on Climate Change* and the National Plan on Climate Change, Brazil's commitment to its Copenhagen pledges is further illustrated by the national REDD+ Bill, which was initially proposed in 2009. Apart from REDD+, the Bill also involves services such as recovery, reforestation, maintenance and improvement of ecosystems (including tourism, water and biodiversity). Following elections in 2010, a more comprehensive REDD+ Bill was introduced to both the Lower House and to the Senate in 2011. Even though these Bills are anchored in the National Policy on Climate Change, more than two years later the law proposal is still being analysed by the internal committee of the Congress. As of November 2013 the law had not been discussed in the general plenary session of the lower house.

The proposed legislation covers ownership of tradable REDD+ credits, creating a dedicated dispute settlement procedure for activities in this area. It establishes participatory rights and benefit-sharing rules to protect the rights of indigenous peoples, traditional communities and small rural producers. The bill also endorses a nested approach to REDD+ financing as it establishes multiple sources of funding for the National REDD+ System. These include: nationally administered public money from the Brazilian government and international donors that contribute to the Amazon Fund, the National Climate Fund and others; resources derived from bilateral and multilateral international climate agreements; donations; private investments; and commercial carbon credits.

The Bill expressly refers to cap-and-trade systems from California and Japan when illustrating possible sources of finance. Accordingly, the Bill foresees and arguably incentivises the regularisation of the Brazilian Emission Reductions Market, the eventual adoption of an international agreement that sanctions the use of REDD+ credits as a compensation mechanism between countries and a national compensation mechanism. The Bill acknowledges the importance of both national and sub-national levels of governance, including private actors, to the implementation of REDD+.

Parallel to these developments, three working groups of around 120 representatives from the aforementioned stakeholder groups provided technical advice and recommendations to the elaboration of the National REDD+ Strategy in 2010. The Secretariat for Climate Change and Environmental Quality within the Ministry of Environment under the new administration of President Dilma Rousseff has taken these comments on board and should be launching the Brazilian National REDD+ Strategy in the near future.

Meanwhile, regional governments have successfully forged local plans on REDD+. In addition, Brazil has also been working with other countries (Mozambique, Indonesia, and Nigeria, among others) in assisting on addressing REDD+. These initiatives are, however, in stark contrast with the lack of a Brazilian REDD+ National Strategy.

In 2010 Brazil adopted the 2010-2020 Low Carbon Agriculture Programme adopting measure to expand sustainable practices, expand commercial forests, and decrease deforestation by promoting agricultural and forestry activities (especially in the Amazon). One of the main aims of the programme is to contribute to soil recovery by incorporating a further 4 million ha of land into an integrated system that will help farmers alternate their activities between forest, crops and pasture, adopting measures to better address vegetable residue use, and extending the use of environmentally-friendly fertilisers.

Energy Supply

Renewable energy is a key driver of new climate change-related legislation in Brazil, reflected in Brazil's prominent role in the development of biofuels and the promotion of hydropower. Hydropower is the main element in the country's clean energy matrix. The National Plan on Climate Change determines that Brazil should continue to generate more than 80% of its power from renewable energy sources through to 2030, and establishes a series of renewable energy and biofuels requirements. The plan brings forward the 5% biodiesel blending requirement introduced in 2005 from 2013 to 2010, and promotes solar and wind energy. The Federal Programme of Incentives for Alternative Electricity Sources (PROINFA) establishes comprehensive renewable measures that seek to increase Brazil's electricity generation from non-hydropower renewable energy sources.

Brazil: Flagship Legislation

Name of law	National Policy on Climate Change (NPCC) – Law No. 12187/2009, Decree No. 7390/2010 (Executive)
Date of entry into force	Law No. 12187/2009: 29 December 2009; Decree No. 7390/2010: 9 December 2010
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Climate change, air pollution, deforestation and land use
Summary of bill	Law No. 12187/2009: Creates the NPCC with the following key areas of concern: combining climate protection with socio-economic development; reducing anthropogenic GHG emissions from all its sources and strengthening GHG sinks; adaptation; preservation, conservation and recuperation of national biomes; land use and reforestation measures; and the development of a national cap-and-trade mechanism. The NPCC is based on Brazil's international commitment with the UNFCCC and incorporates all previous government instruments related to its key areas (the National Plan on Climate Change, the National Fund on Climate Change and others).

Decree No. 7390/2010: Regulates the following Articles of Law No. 12187/2009: Article 6 on the National Plan on Climate Change, National Fund on Climate Change, and Action Plans on Deforestation Prevention and Control in national biomes; Article 11 on the Sector Plans on climate change mitigation in key economic sectors – the Article set the precedent for inclusion of the Clean Development Mechanism and Nationally Appropriate Mitigation Actions (NAMAs) in these Plans; and Article 12 which establishes the national voluntary emission reduction commitment.

Foresees the promotion and development of scientific and technological research concerned with mitigation and strengthening of carbon sinks; reduction of uncertainty in national and regional climate projections; and adaptation measures.

The Law foresees the establishment of the Brazilian Emissions Reduction Market (MBRE). It incorporates the National Plans for Prevention and Control of Deforestation in national biomes.

Targets	None specified
----------------	----------------

Brazil: Other Relevant Legislation

Name of law	Law No. 12805 Establishing the National Policy on Farming-Livestock-Forest Integration (Legislative)
--------------------	---

Date of entry into force	29 October 2013
---------------------------------	-----------------

Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Adaptation – Research and development
-------------------	--

Driver for implementation	Forest, Climate change
----------------------------------	------------------------

Summary of bill	The law establishes National Policy on Integration of Farming, Livestock and Forestry to mitigate deforestation causes by these activities, supporting best practices that promote the development of these sectors in a sustainable manner, ultimately contributing to the recovery degraded areas.
------------------------	--

The law also foresees the promotion of environmental education, targeting schools and agents involved in the production and/or trade of agricultural and livestock products. In additions, it proposes fostering activities of research, innovation and technological transfer that meet the general objective of the Policy.

The programme is part of the Low Carbon Emission Agriculture Programme.

Targets	None specified
----------------	----------------

Name of law	Forest Code (Law No. 12651) (Executive)
--------------------	--

Date of entry into force	18 October 2012
---------------------------------	-----------------

Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Management of forest, protected areas and water sources. Regulation of land use.
----------------------------------	--

Summary of bill	The Forest Code establishes general norms applied to Permanent Protected Areas (PPAs), "Legal Reserves" and other areas with natural vegetation. The Law also regulates economic activities in forest areas, setting new rules for controlling deforestation and trade of forest products.
------------------------	--

The bill defines a compulsory forest reserve in all properties located in areas with native vegetation. The size of the area protected varies depending on the location. Properties on areas of the “Legal Amazon” must conserve 80% of the native forest. Illegal activities on the “Legal Amazon” area that started after 22 July 2008 must be immediately suspended, and are subjected to a compulsory reforestation process.

The bill adopts distinct levels of deforested areas to be restored, with exemptions granted to smallholders. Moreover, all properties must be adjusted to the new Law and added to the new “Rural Environmental Register” (Cadastro Ambiental Rural – CAR). Failure to meet these obligations will result in loss of access to bank loans, fines and should be subjected to prosecution.

Information gathered by the “Rural Environmental Register” will be used by the national deforestation tracking system to provide detailed data on activities in forest areas.

Amnesty is granted to landowners that began their economic activities in protected areas before 22 July 2008.

River banks must be reforested depending on the width of the river and the size of the property developed. Medium-size properties have to maintain 20 meters of forest areas along rivers, whereas the largest properties have to protect a 30-meter margin of native vegetation.

Mangrove swamps are protected, but certain economic activities around their edges are legalised.

Targets	None specified
----------------	----------------

Name of law	Law No. 12512/2011 – Programme in Support of Environmental Conservation (“Green Allowance”) and Programme for the Promotion of Rural Productive Activity (Legislative)
Date of entry into force	14 October 2011
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Conservation, payments for ecosystem services, poverty reduction, deforestation and land use
Summary of bill	<p>Creates the Programme in Support of Environmental Conservation, popularly known as “Green Allowance”, a payments for ecosystem services scheme aimed at: 1) incentivising ecosystem conservation (preservation and sustainable use); 2) promoting citizenship, improved living conditions and income gains for people living in extreme poverty who engage in natural resource conservation activities in Conservation Units; and 2) incentivising the participation of grant-receivers in environmental, social, educational, technical and professional capacity-building. Caixa Econômica Federal (government-owned bank) is the Programme’s Operating Agency and the Ministry of Environment is charged with its execution. Establishes the Programme for the Promotion of Rural Productive Activity, a cash-transfer policy with the following objectives:</p> <ul style="list-style-type: none"> - To stimulate sustainable employment and income generation; - To promote food and nutritional security; - To promote the engagement of programme beneficiaries in capacity-building activities; - To incentivise organisation in cooperatives and associations. <p>The Ministries of Agrarian Development and Social Development and Fight against Hunger are the executing agencies.</p> <p>Monitoring and control related to the Programme in Support of Environmental Conservation will take place via sample audits and in partnership with state and municipal governments.</p>

In order to qualify for the Green Allowance, families must be living in extreme poverty, registered in the Federal Government's Unique Registry for Social Programmes and developing conservation activities in:

- National forests, extractive reserves and federal sustainable development reserves
- Forest settlement projects, sustainable development projects or agro-extractive settlement projects established by the Incra (the National Land and Agrarian Reform Institute)
- Territories occupied by people who live on river margins, communities who Engage in extractive activities, indigenous peoples, quilombolas (communities of descendants of escaped slaves), and other traditional communities;
- Priority areas defined by the Executive. Payments amounting to BRL 300 (USD 129) will be transferred quarterly for a maximum period of two years, which can be extended according to the Programme regulation.

To benefit from the Programme for the Promotion of Rural Productive Activity family-farmers and others must be living in extreme poverty and be registered in the Federal Government's Unique Registry for Social Programmes. The Federal government will transfer up to BRL 2,400 (USD 1,030) per family in a minimum of three instalments during the maximum period of two years.

Grant receivers are encouraged to participate in environmental capacity-building activities.

Targets	None specified
----------------	----------------

Name of law	Decree No. 7378/2010 – Ecological-Economic Macro-zoning of the Legal Amazon (Executive)
Date of entry into force	December 1, 2010
Categories	<ul style="list-style-type: none"> - REDD+ and LULUCF - Institutional/Administrative arrangements
Driver for implementation	Deforestation and land use, climate change, sustainable agricultural development, trade promotion and natural capital
Summary of bill	Approves the Ecological-Economic Macrozonning (MacroZEE) of the Legal Amazon as a guiding instrument for public policy pertaining to development, spatial planning and the environment as well as for decisions taken by private actors. The aim of the Legal Amazon's MacroZEE is to ensure that regional development is sustainable by proposing production strategies and environmental and territorial management that are in tune with the Amazon's ecological, economic, cultural and social diversity.

The Co-ordinating Commission of Ecological-Economic Macrozonning in the National Territory (CC-MacroZEE) will establish monitoring indicators and conduct evaluations of the MacroZEE in the Legal Amazon every two years. Results will be available to the public.

The Legal Amazon's MacroZEE promotes sustainable economic activity in the Amazon. It aims to foster trade and economic integration and endorses productive and environmental management strategies through a focus in 10 territorial unities: 1) the Amazon–Caribbean corridor; 2) coastal capitals, mining regulation, and support to the diversification of other production chains; 3) polycentrism and the Pará–Tocantins–Maranhão junction; 4) the Araguaia-Tocantins productive systems; 5) regulation and innovation in the agro-industrial complex; 6) ordering and consolidation of the logistical hub for integration with the Pacific; 7) diversification of the agro-forestry and animal husbandry frontier; 8) control of the expansion of the agricultural frontier into the forest with protected areas and alternative land-use; 9) defence of the forest's core based on sustainable productive activities; 10) defence of the Pantanal biome through the promotion of local culture, traditional activities and tourism.

Targets	None specified
----------------	----------------

Name of law	Law No. 12305/2010 – National Policy on Solid Residues (Legislative)
Date of entry into force	2 August 2010
Categories	– Institutional/Administrative arrangements
Driver for implementation	Waste management and climate change
Summary of bill	<p>This bill promotes strategies to minimise the generation of solid residues, domestic sewerage and industrial effluents, and to incentivise the selective collection, recycling and reuse of waste to preserve sanitary conditions and reduce GHG emissions. Some of the policy's guiding principles are: prevention and precaution; the "polluter pays" and the "protector receives"; sustainable development; and shared responsibility for product life cycle. The policy also seeks to promote, among other things, continued capacity building on solid residues; public-private technical and financial co-operation for the integrated management of solid residues; sustainable public procurement; and environmental labelling and consumption. It establishes measures to be implemented at the federal, state and municipal levels of government.</p> <p>The policy seeks to promote the adoption, development and improvement of clean technologies as a means of minimising the environmental impact of solid residues.</p>
Targets	None specified

Name of law	Law No. 12144/2009, Decree No. 7343/2010 – National Fund on Climate Change (NFCC) (Legislative)
Date of entry into force	Law No. 12144/2009: 9 December 2009; Decree No. 7343/2010: 26 October 2010
Categories	<ul style="list-style-type: none"> – Energy Supply – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>NFCC resources may be directed to REDD+ projects, with priority being given to natural areas under threat as well as relevant biodiversity conservation strategies.</p> <p>Resources may be channelled to society and ecosystem adaption to climate change.</p>
Targets	The NFCC may fund activities related to the development and diffusion of technologies for the mitigation of GHG emissions. It may also fund research, the creation of project and inventory systems, methodologies that contribute to the reduction of liquid GHG emissions, and the reduction of emissions from deforestation and land use change

Name of law	Decree No. 6527/2008 – Amazon Fund (Executive)
Date of entry into force	1 August 2008
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Deforestation, climate change, sustainable land use
Summary of bill	<p>Establishes the Amazon Fund under the auspices of the Brazilian Development Bank (BNDES). The Decree authorises the BNDES to manage donation-based funds granted to the Amazon Fund with the purpose of developing non-reimbursable actions to prevent, monitor and combat deforestation as well as promoting conservation and sustainable land use in the Amazon.</p> <p>The Amazon Fund finances activities in the following areas: public forest management and</p>

protected areas; control, monitoring and environmental auditing; sustainable forest management; economic activities developed through the sustainable use of the forest; Ecological and Economic Zoning, spatial planning and land regulation; conservation and sustainable biodiversity use; reforestation.

The Technical Committee, composed of six high-level members from the scientific community appointed by the Ministry of Environment in consultation with the Brazilian Forum on Climate Change, meets once a year to evaluate the methodology for calculating deforested areas as well as the amount of carbon per hectare used in the calculation of emissions. The Supervisory Committee is formed by representatives from different Ministries, the Brazilian Development Bank (BNDES), state governments, civil society (including Indigenous peoples, private sector associations and epistemic communities); mandates are two-year long and may be renewed. The Supervisory Committee meets once every six months and is charged with establishing the rules and criteria governing the use of the Fund's resources.

Targets	None specified
----------------	----------------

Name of law	Decree No. 6263/2007 – Inter-ministerial Committee on Climate Change (ICCC) and National Plan on Climate Change (Executive)
--------------------	---

Date of entry into force	Federal Decree 6263: 21 November 2007; National Plan on Climate Change: 1 December 2008
---------------------------------	---

Categories	<ul style="list-style-type: none"> – Energy Supply – Institutional/Administrative arrangements
-------------------	--

Driver for implementation	Climate change, renewable energy, energy efficiency
----------------------------------	---

Summary of bill	<p>More than 80% of the power base to be derived from renewable sources by 2030. It aims to: increase the share of electricity derived from wind and sugarcane bagasse plants; add a number of hydroelectric projects to the electricity network; expand the solar photovoltaic industry; promote the use of solar water heaters in the residential sector; as well as establish research on energy production from solid waste. The plan further encourages industrial users to increase their average consumption of ethanol by 11% in the next 10 years; brings forward the 5% biodiesel blending requirement from 2013 to 2010; and supports the creation of an international biofuels market.</p>
------------------------	--

The Plan on Climate Change determines that a National Energy Efficiency Action Plan should be created to reduce electricity consumption by 10% by 2030 and to establish other measures such as incentives to replace old electric equipment with modern equipment, and create improvements in industry energy efficiency, transportation and buildings.

The Plan promotes a sustainable increase in the use of biofuels in the national transportation network. The National Plan establishes measures on adaptation to climate change.

The plan establishes that actions should be taken to eliminate the loss of national forest cover by 2015. The plan sets targets for a consistent cut on deforestation to be accomplished in subsequent four-year periods. The goal is to reduce deforestation by 40% in the 2006–2009 period in relation to the Amazon Fund's 10-year reference period (1996–2005). This is followed by an additional 30% reduction in the 2010–2013 and 2014–2017 periods in relation to the previous 4-year period. These targets are to be accomplished through the provision of new and additional funding from national and international sources, including the Amazon Fund.

Targets	None specified
----------------	----------------

Name of law	Law No. 11284/2006 – Management of Public Forests, Brazilian Forest Service and National Fund for Forest Development (Legislative)
Date of entry into force	2 March 2006
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Deforestation and land use, sustainable forestry
Summary of bill	<p>The bill establishes principles for the management of public forests for sustainable production; institutes, within the structure of the Ministry of Environment, the Brazilian Forest Service (BFS); and creates the National Fund for Forest Development.</p> <p>In order to attest compliance with the forest management principles established by this bill, forest concession-holders should undertake independent forest audits, every 3 years at a maximum, and at their own cost. Additionally, the National Environment System (Sisnama) agencies are responsible for control and environmental inspection. The National Fund for Forest Development has a Consultative Council formed by members from the federal administration and civil society charged with overseeing the disbursement of funds and evaluating performance.</p> <p>Regarding REDD+/land use policies, the bill establishes the following principles for public forest management:</p> <ul style="list-style-type: none"> - protection of ecosystems, land, water, biodiversity and associated cultural value - Efficient and rational use of forests in line with local, regional and national sustainable development targets - Respect of local communities' right of access to and use of public forests and the benefits associated with conservation - Promotion of local processing, increased value-added of forest products and services, industrial diversification, technological development, and capacity-building of local entrepreneurs and labour-force - Free access to information regarding public forest management - Promotion and dissemination of research on forestry related to conservation, restoration and sustainable use of forests - Promotion of knowledge and awareness of forest conservation, recovery and sustainable use - Creation of stable and secure conditions for the promotion of long-term investment in forest conservation and recovery <p>The National Fund for Forest Development (NFFD) is instituted with the purpose of promoting sustainable forestry activities in Brazil as well as technological innovation in the sector. Among other things, the Fund's resources should be channelled to technical assistance, monitoring and verification, recuperation of degraded areas, rational economic use of forests and environmental education. The Fund only finances projects from public institutions or not-for-profit private institutions. The Brazilian Forest Service (BSF) is created with the exclusive mandate of managing public forests; it is equally the managing authority of the NFFD. In this context, the BSF is responsible for, among other things: training, capacity-building and technical assistance; promoting of sustainable timber and wood and sustainable forest production in general; and market scoping for forest products and services.</p> <p>Research and development: the National Fund for Forest Development finances research and technological development on forest monitoring.</p>
Targets	None specified

Name of law	Federal Law No. 11097/2005 (amended in 2009 and 2010) – Mandatory Biodiesel Requirement (Legislative)
Date of entry into force	13 January 2005
Categories	– Energy Supply
Driver for implementation	Renewable energy
Summary of bill	<p>Establishes a series of biodiesel requirements with the purpose of stimulating the market for clean burning fuel. Biodiesel is a mixture of vegetable oil and sugarcane based ethanol.</p> <p>With regards to Energy supply-side policies, the 2005 revision of the law mandates that by 2008 2% of diesel sold to consumers is biodiesel (B2 biodiesel), and that by 2013 5% is B2 biodiesel. The law was altered so that as of July 2008 all diesel had to contain 3% of biodiesel (B3). In July 2009, the mandatory blending was increased to 5% (B5) 3 years ahead of the original schedule.</p>
Targets	None specified

Name of law	Law No. 10438/2002 – Programme of Incentives for Alternative Electricity Sources (PROINFA) (Legislative)
Date of entry into force	26 April 2002
Categories	– Energy Supply – Institutional/Administrative arrangements
Driver for implementation	Renewable Energy
Summary of bill	<p>Creates PROINFA, the largest national plan to promote the use of alternative energy sources, as well as other programmes.</p> <p>Regarding energy supply-side policies PROINFA's implementation is co-ordinated by Eletrobras (a publicly traded company controlled by the Brazilian government) and divided into two consecutive stages. The first stage sets a target power production value of 3,300 MW from renewable energy including wind, biomass and small hydroelectric sources. This target is to be reached by the end of 2007 through a system of subsidies and incentives drawn from an Energy Development Account. This is to be funded by end-use consumers through an increase in energy bills (with the exemption of low income sectors) as well as by financing programmes available for renewable energy projects from the Brazilian National Development Bank (BNDES). The second stage establishes a target of increasing the electricity generated by these three renewable sources to 10% of annual consumption within 20 years. In addition, Renewable Energy Certificates that are proportional to the amount of clean energy produced by each plant should be issued in this second stage.</p>
Targets	None specified

Name of law	Federal Law No. 10294/2001 – National Conservation and Rational Energy Use Policy (Legislative)
Date of entry into force	17 October 2001
Categories	– Energy Demand – Institutional/Administrative arrangements
Driver for implementation	Energy efficiency
Summary of bill	Creates the National Conservation and Rational Energy Use Policy charged with ensuring the efficient allocation of energy resources and protecting the environment.

The law determines that one year after the Executive Power publishes the required levels of energy consumption and efficiency, a Targets Programme should be established to monitor the progressive evolution of these levels.

Regarding energy demand-side policies, the law charges the Executive Power with establishing maximum levels of energy consumption and minimum levels of energy efficiency for machines and energy consuming apparatus produced or traded in the country. It also obliges the producers and importers of these items to observe these requirements at the risk of being fined. Further charges the Executive Power with developing mechanisms to promote energy efficiency in buildings constructed after the commencement of the law.

Targets None specified

Name of Law Federal Law No. 9985/2000, Federal Decree No. 4340/2001 – National System of Conservation Units (Legislative)

Date of entry into force Federal Law No. 9985: 18 July 2000; Federal Decree No. 4340: 22 August 2002

Categories

- REDD+ and LULUCF
- Institutional/Administrative arrangements

Driver for

Implementation Deforestation and land use

Federal Law 9985/2000 creates the National System of Nature Conservation Units. It thereby establishes norms and criteria for the creation, implementation and management of conservation units. Federal Decree No. 4340/2002 regulates several articles of the associated Federal Law and establishes provisions for its implementation.

Establishes the use, types and restrictions that apply to each category of conservation unit. Divides conservation units into two broad groups: Integral Protection Units intended to protect nature. They permit the indirect use of natural resources (except for cases provided for in this Law); and Sustainable Use Units intended to reconcile the conservation of nature with the sustainable use of a portion of its natural resources.

Integral Protection Units constitute the following conservation units:

- Ecological Station
- Biological Reserve
- National Park
- Natural Monument
- Wild Life Refuge

Sustainable Use Units comprise of:

- Area of Environmental Protection
- Area of Significant Ecological Value
- National Forest
- Extractive Reserve
- Fauna Reserve
- Sustainable Development Reserve
- Reserve Particular to the Natural Heritage

The implementation of economic activities in these areas will depend on the conservation unit category in question as well as the respective uses permitted by law and by the unit's managing plan. It is also necessary to obtain a specific permit from the authority in charge of the protection unit.

Targets None specified

4.6 Canada



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	789
excl. LULUCF	702
Change from base year (1990)	111
Latest reporting year	2011
Importance as an emitter	Top 20
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 4 December 1992 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 17 December 2002 Date of entry into force: 16 February 2005 Withdrawn December 2011, effective December 2012
2020 pledge	Reduction of 17% from 2005 levels by 2020
Flagship legislation	No flagship legislation

Legislative Process

The Parliament of Canada is the federal legislative branch of Canada. It consists of the Senate and the House of Commons. In the Parliament of Canada, as in all legislative assemblies based on the British model, there is a clearly defined method for enacting legislation.

The law-making process starts with a bill, which can be introduced in the House of Commons (C-bills) or the Senate (S-bills). Most bills that concern matters of public policy, such as taxes and the environment, begin in the Commons. A bill goes through certain formal stages in each House. The stages include a series of three “readings” during which parliamentarians debate the bill. Prior to the third and final reading, each House also sends the bill to a committee where members examine the finer points of the legislation. Committee members hear witness testimony on the bill, and then subject it to a clause-by-clause study based on the testimony. Canada retains the Sovereign of the United Kingdom as its head of state. Therefore, all laws of Canada are formally enacted by the Sovereign “by and with the advice and consent” of the Senate and House of Commons. Once both Houses have approved a bill, it is presented for Royal Assent and becomes law.

The constitution divides the legislative abilities of Canada between the federal and provincial governments. Provincial legislatures may pass laws relating to topics explicitly reserved for them by the constitution.

Approach to Climate Change

Canada has no comprehensive federal climate change legislation. An act to implement Canada’s targets under the Kyoto Protocol during the first commitment period of 2008–2012 was passed in 2007, and had been regarded as Canada’s Flagship Climate Legislation in the first and second editions of this study. However, in December 2011, Canada announced that it would withdraw from the Kyoto Protocol, and officially repealed the Act on 29 June 2012, within the framework of the budget implementation Act.

There have been attempts to pass more comprehensive and longer-term climate change legislation, the most significant being the Climate Change Accountability Act. This Bill was originally introduced in 2006, again in 2010, and then passed the House of Commons in May 2010 but did not pass the Senate. In June 2011 the bill was reintroduced by Canada’s largest opposition party, the New Democratic Party, but no progress has been made. This bill would have required the federal government to set regulations to attain a medium-term target to bring GHG emissions 25% below 1990 levels by 2020, and a long-term target to bring emissions 80% below 1990 levels by 2050. The bill would also have allowed the government to establish executive measures to meet these targets and set penalties for those that violate the regulations (for example, the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations published in October 2010).

The reduction targets in the bill were proposed by “Turning the Corner: Action Plan to Reduce Greenhouse Gases and Air Pollution”, the Conservative Party’s climate change plan announced in April 2007. Indeed, “Turning the Corner” provided the groundwork for Canada’s approach to tackling climate change. According to the document, Canada’s priority is to realign its policies and regulations in order to maintain economic prosperity while protecting the environment and harmonising its regulatory framework with the United States, its largest trading partner. Regulations in the Action Plan require intensity-based targets for a variety of industrial sectors of 6% each year between 2007 and 2010, with a further 2% intensity reduction each year to 2015.

Sub-National activity

Despite the lack of comprehensive federal legislation in Canada, Canadian provinces have been active in passing their own climate legislation. British Columbia and Quebec have introduced economic incentives to reduce emissions, such as a carbon tax (up to CAD30 [USD328.3] in 2012 in British Columbia). Vehicle fuel efficiency in British Columbia and Quebec were aligned with the stringent standards in the US state of California. Ontario passed a comprehensive Green Energy and Green Economy Act in 2009, created to expand renewable energy generation, encourage energy conservation and promote the creation of clean energy jobs. The targets of the Act are to reduce emissions by 6% below 1990 levels by 2014, 15% by 2020 and 80% by 2050. It includes a feed-in tariff, energy conservation measures on all levels and a plan to shut down all coal-fired power plants by 2014. Cap-and-trade schemes have been introduced by three provinces, representing 75% of Canada’s population – Ontario, Quebec and British Columbia. Alberta’s climate change plan relies upon intensity-based targets, with a commitment to reduce GHG emissions intensity by 50% by 2050. It relies on energy efficiency, carbon capture and storage and renewable energy production.

Energy demand

Canada has implemented minimum energy performance standards for a number of products since the approval of the Energy Efficiency Act in 1992. The most recent amendments increase the Act’s scope and effectiveness. The amendments also require Canada’s Minister of Natural Resources to submit an energy efficiency progress report to Parliament every three years. The Renewable Fuels Regulations that came into effect in December 2010 require an average renewable fuel content of 5% in gasoline.

On 5 September 2012, regulations were announced by the federal environment minister to reduce emissions from coal-fired electricity facilities by phasing out high-emitting coal-fired generation and promoting lower or non-emitting types of generation. The regulations will set performance standards for new coal-fired units (producing electricity from 1 July 2015) and for units at the end of their “useful life” – i.e. which have been producing electricity for 50 years. Transitional regulations apply to units built before 1986. Regulated entities will be required to begin reporting emission levels two years in advance of the performance standards coming into force. The level of the performance

	(g/BHP-hr)	Designed To Be Used in Vocational Vehicles (g/BHP-hr)	Be Used in Vocational Vehicles (g/BHP-hr)	Designed To Be Used in Tractors (g/BHP-hr)	Designed To Be Used in Tractors (g/BHP-hr)
2014 to 2016	600	600	567	502	475
2017 onwards	576	576	555	487	460

(Article 30)

Targets

To reduce emissions from heavy-duty vehicles by up to 23% by 2018

Name of law Biofuel Bill C-33: An Act to amend the Canadian Environmental Protection Act [Legislative]

Date of entry into force 26 June 2008

Categories – Energy Supply

Driver for implementation Renewable energy

Summary of bill The bill amends the Canadian Environmental Protection Act 1999 with respect to provisions for the regulation of fuels. The bill is designed to establish a framework within which the government can regulate biofuels content. This would include the tracking of exports to make accurate calculations of the volume of renewable fuels as a percentage of the total fuel used in Canada, and the lifting of administrative burdens that would be placed on small producers and importers.

The bill allows the federal government to implement regulations requiring 5% average renewable content in gasoline by 2010. Subsequent regulations will also require 2% average renewable content in diesel and heating oil by 2012 on successful demonstration of renewable diesel fuel use under the range of Canadian environmental conditions.

Targets 5% average renewable content in gasoline by 2010

Name of law Canada Foundation for Sustainable Development Technology Act [Legislative]

Date of entry into force 14 June 2001

Categories – Energy Supply

Driver for implementation Research and development on sustainable development

Summary of bill This Act establishes a not-for-profit foundation that finances and supports the development and demonstration of clean technologies which provide solutions to issues of climate change, clean air, water and soil quality, and which deliver economic, environmental and health benefits to Canadians.

The foundation shall, within 5 months of the end of each fiscal year, prepare an annual report in English and French of its activities during the preceding fiscal year. The report is to include the foundation's financial statements for the year as approved by the board and the report of the auditor respecting those statements, a detailed statement of its investment activities during the year, its investment portfolio as at the end of the year and its investment policies, standards and procedures, a detailed statement of its funding activities, a statement of its plans for fulfilling its objectives and purposes for the next year

and an evaluation of the overall results achieved by the funding of eligible projects by the foundation during the year in review, and since the inception of the foundation.

Targets None specified

Name of law Energy Efficiency Act [Legislative]

Date of entry into force 1992, last amended in 2008.

Categories – Energy Demand

Driver for implementation Energy efficiency

Summary of bill The Act aims to establish minimum energy efficiency standards for a broad range of products and equipment in order to decrease overall Canadian energy consumption. It gives the government of Canada the authority to make and enforce standards for the performance of energy-consuming products that are imported into Canada, or that are manufactured in Canada and shipped across provincial or territorial borders. The Act also gives the federal government the authority to set labelling requirements for these products so consumers can compare the energy efficiency of various models of the same product.

Regulations made under the Act have been amended a number of times, most recently in 2008, to expand the list of products covered by the Act and enhance standards for some products already in place.

There are several monitoring arrangements that govern the Act. A database will be used to identify the amount of energy that can be saved for specific products. It will also help in compiling statistics on energy consumption as well as develop alternative energy sources

Importing into Canada, or trading between provinces, products that do not meet such energy efficiency standards, or tampering with an energy efficiency label, is a criminal offence. Failure to comply with regulations will result in the possibility of prosecution, fines and secondary offences.

Targets None specified

4.7 Chile



Fact Box

Greenhouse Gas emissions (MtCO₂e) incl. LULUCF excl. LULUCF Change from base year (1990)	60 79 NA
Latest reporting year	2006
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 22 December 1994 Date of entry into force: 22 March 1995
Kyoto Protocol ratification status and date	Date of signature: 17 June 1998 Date of ratification: 26 August 2002 Date of entry into force: 16 February 2005
2020 pledge	Reduction of 20% of emissions compared with Business as usual
Flagship legislation	National Climate Change Action Plan 2008–2012

Legislative Process

Chile's democratic system of government is based on the separation of powers. It is a multiparty republic with a presidential system based on the 1980 constitution. The constitution sets the format for the National Congress, composed of a Senate and a Chamber of Deputies. The Senate has 47 members (38 elected and nine appointed) who serve eight-year terms. The Chamber of Deputies has 120 members who are directly elected for 4 years. The President of the Republic is elected for a six-year term without possibility for re-election. The president is elected by an absolute majority of the votes cast. The executive branch in Chile is composed of 16 ministries and four cabinet-level agencies.

In several areas the President is given sole authority to introduce bills. The President may grant certain initiatives priority status, requiring that Congress act within 3, 10, or 30 days, depending on the degree of urgency specified. In this sense, the President has the exclusive power to set the legislative agenda.

The legislative process in Chile often starts with a "pre-legislative" phase through which any proposed legislation must first proceed. This phase is not governed or mandated by law in Chile. In practice, extensive consultations take place at this stage between the authorities and the representatives of institutions and agencies, both public and private, particularly the various organisations or associations representing the interests that will be affected by the new legislation.

The first draft of a bill is sent to the Chamber of Deputies for general analysis before referred to the relevant Commission. The Commission's conclusions are transmitted to the full Chamber. The Chamber then engages in a general discussion of the proposed law to decide whether to approve or reject the idea of legislating on the particular subject. After the bill is approved by the Chamber of Deputies in general discussion, it is sent to various legislative commissions that have jurisdiction over the bill. After the commission review, the Chamber studies the law in greater detail. When the Chamber approves the bill, it is sent to the Senate, where the bill undergoes an identical process of review. Once approved by both houses of the National Congress, the bill is sent to the President for approval. Upon endorsement of the bill the President issues a decree of promulgation and submits the bill for constitutional review by the Comptroller-General. After the bill has been declared constitutionally sound, the President has the bill published as law in the Official Journal. Publication of the law is the final step required in the legislative process.

Approach to Climate Change

Chile ratified the UNFCCC in 1994 and established its National Advisory Committee for Global Change in 1996.

Between its 1st National Communication under the UNFCCC in 1999 and its 2nd National Communication in 2011 Chile has made notable progress in incorporating climate change into its strategic long-term decision-making

through institutional reforms. Public administration has been reformed in order to establish an institutional framework providing a platform for strengthened climate action. Extensive sectoral studies on the impact of climate change and on mitigation strategies have been carried out and informed a wide range of action plans and policies.

The National Strategy for Climate Change was adopted in 2006 and made operational by the National Action Plan for Climate Change 2008–2012 prepared by the Department of Climate Change of the National Environmental Commission. Under this Action Plan, in 2009 an Inter-ministerial Committee on Climate Change was set up, including the Ministers of the Environment, Foreign Affairs, Agriculture, Transport and Telecommunications, Energy, Economy, Finance, Mining and Public Works and two dialogue platforms, one for public–private partnerships and one for the civil society. The Plan establishes a set of public policy guidelines for 5 years, after which it will be followed by long-term national and sectoral plans for adaptation and mitigation.

The year 2010 witnessed the inauguration of Chile’s new environmental institutional structure, a process that began in 2006 and transformed the country’s multisectoral model, in which environmental matters were co-ordinated by the National Environmental Commission (CONAMA) into a more centralised model under the new Ministry of the Environment set up as the State body in charge of co-operating with the President of the Republic in the design and implementation of environmental policies, plans and programmes. The Ministry is in charge of proposing and developing national climate policy, specifically and for the first time in Chilean legislation by virtue of a special mandate to this effect.

This institutional change was driven mainly by the need to streamline and better define environmental competencies; to have a Ministry responsible for environmental policies; to have a completely technical Environmental Assessment Service as well as a centralised and efficient enforcement system; and, urgently, to manage issues related to biodiversity and protected areas.

One of the Ministry’s major areas of responsibility is the development of the country’s response to climate change. Climate change is one of the five thematic focuses of the Ministry. The Office of Climate Change was created in 2010 under the Sub-secretary of the Ministry of the Environment, and endowed with an annual budget and permanent staff. For the first time in history the country’s legislation includes a government mandate that specifically addresses this issue, affirming that “the Ministry shall be especially responsible for proposing policies and formulating plans, programs and plans of action in the area of climate change”. To facilitate organisational aspects, the Office of Climate Change was formally created under the Office of the Undersecretary, with its own annual budget for conducting research and consultants to assist with its work. This office also is responsible for participating in international negotiations related to the implementation of the Convention, as well as acting as Co-ordinator of the Committee for the Designated National Authority for the Clean Development Mechanism. It is also the focal point for the Intergovernmental Panel on Climate

Change (IPCC) and the technical secretariat for Inter-ministerial committees on climate change.

Energy

In December 2009, Chile's National Congress passed a law creating the Ministry of Energy as a high level agency that works with the President of the Republic to govern and administer Chile's energy sector.

The Ministry's primary objective is to prepare and co-ordinate the implementation of plans, policies and standards to ensure the sector's effective operation and development towards the objectives of energy security and of a high-quality competitive energy supply plus environmental protection at local and global level; to ensure these instruments are complied with; and to advise the Government on energy-related matters.

Chile's energy policy is founded upon the legal and regulatory role played by the State through the Ministry of Energy and the institutions under its purview, while the private energy sector is responsible for investments in the sector. This arrangement means that Chile's energy policies will have a major impact on limiting the growth of GHG emissions.

Among Chile's energy policy objectives are: to increase energy availability and security to satisfy demand, assuming an average economic growth rate of 6% annually up to 2020; to promote the development of competitive and sustainable investments; to work towards the goal of having 20% of Chile's installed capacity for electricity generation come from non-conventional renewable energies by 2020; to enhance existing regulations for accessing energy resources in order to increase investment in renewable energies available in the country; to promote research programmes in the area of energy and educate new generations of citizens on the importance of energy savings and efficiency; to improve the information available on the country's energy resources to support the formulation of a policy to promote energy efficiency and energy savings projects; and to enhance existing energy efficiency standards and certification programmes for residential construction, household appliances, lighting and transportation vehicles.

Institutions under the Ministry's purview that play a key role in the sectoral mitigation of GHG emissions include the Centre for Renewable Energies (CER), the National Energy Efficiency Programme (PPEE) dating from 2005 and the Chilean Energy Efficiency Agency (AchEE).

The Centre for Renewable Energies was created in 2009 under the purview of the Chilean Economic Development Agency (CORFO) and the direction of the Ministry of Energy to create a technology focus for the development of renewable energies in Chile.

The Ministry of Economy set up the National Energy Efficiency Programme in response to the Environmental Performance Review conducted by the Organisation for Economic Co-operation and Development (OECD), which recommended

that Chile incorporate energy efficiency into its national development. The Programme has contributed to the development of sustainable energy in Chile by promoting advances such as reducing energy demand in the Central Interconnected System (SIC) energy grid by 2.6% between March 2008 and March 2009 and establishing energy efficiency as a central pillar of Chile's national energy policy: the budget allocated to the National Energy Efficiency Programme by the National Energy Commission rose from USD1 million in 2006 to USD40 million in 2009.

Thermal regulations for housing were incorporated into the General Construction and Urbanism Bylaw and have been in force and operating in Chile since 2000. The first stage, which began in March of that year, established minimum R-values for housing roof systems that improved resistance to heat flow significantly in that part of the building shell. The second stage came into force in early 2007 and complemented the first one. This stage set out requirements for limiting heat loss through walls, floors and ventilated floors and windows, limiting size according to R-values.

The National Energy Efficiency Programme included a line of action for identifying potential energy efficiency applications for the mining sector. Under this line of action, in 2006 the Mining Energy Efficiency Working Group was established to encourage the country's largest mining companies to manage their energy consumption, exchange experiences and best practice, study the application of energy efficiency indicators that may be suitable for these companies and formulate innovation projects in this area. The Working Group is a voluntary technical board made up of representatives of Chile's large mining companies, ENAMI, the EEPP and the Mining Undersecretary's Office.

The Chilean Energy Efficiency Agency is the successor to the National Energy Efficiency Programme and includes representatives of the ministries of Transportation and Telecommunications, Housing and Urbanism, and Energy, as well as the academic and business sectors. This new Agency has an updated mandate that replaces the lines of action of the PPEE with the role of designing and establishing public policies for energy efficiency in the respective divisions of the Ministry of Energy.

The Agency has proposed a National Energy Efficiency Action Plan 2010–2020 with a roadmap towards a 15% energy efficiency progress by 2025. Some of its proposals have been incorporated in the National Energy Strategy published in February 2012, although the mechanisms and deadlines for their implementation are to be developed.

Chile is currently formulating a strategy to establish Minimum Energy Performance Standards, based on the Ministry of Energy's authority to enact MEPS, which was established in the recently passed law that also created that institution. The first phase was implemented in 2010 and involved MEPS for lighting.

REDD+ and LULUCF

The public institutions under the purview of the Chilean Ministry of Agriculture that have a role to play in mitigating climate change in Chile are the Office of Agrarian Policy and Studies, the Institute for Agriculture and Livestock Development, the National Forestry Corporation, the Foundation for Agrarian Innovation, the Institute of Agricultural Research, the Forestry Institute and the Natural Resource Information Centre.

The Ministry for Agriculture set up the Climate Change and Agriculture Council in 2008, chaired by the Minister and integrated by representatives of the productive, public and academic sectors. The Council's main objective is to work with stakeholders in different sectors to build a common understanding of how climate change will impact activities in the agriculture, livestock and forestry sectors and to define major lines of action to address this impact. Functionally, the Council supports the Ministry in defining the main features and priorities of a climate change adaptation programme for the agriculture, livestock and forestry sectors and in defining potential mitigation measures to be implemented in each sector.

Research and development

Chile has signed Memoranda of Understanding and Framework Co-operation Agreements on climate action with Denmark and France, as well as a technical and scientific co-operation agreement on bioenergy with Colombia.

The Public Works Ministry created the Glaciology and Snow Unit within the Water Directorate-General in 2008 to establish and run a national glaciological programme that will develop a glacier inventory, study and monitor glaciers in Chile, define present and future responses to climate change in regard to glaciers and identify adaptation strategies for different climate scenarios. This includes defining strategic priorities to quantify and monitor glaciological variables in representative glaciers; building and regularly updating a Public Inventory of Glaciers based on recent satellite images; implementing the Glacier Monitoring Network in priority geographic zones, and identifying suitable parameters for quantifying the interaction between climate and glaciers in representative zones. In February 2009 the Directive Council of Ministers adopted a National Policy for Glacier Protection and Conservation foreseeing the creation of a national glacier register, the study of their vulnerability to climate change and the introduction of preservation and conservation policies.

Adaptation

The National Climate Change Action Plan includes directives to focus some resources towards adapting to climate change, specifically to better understand how key industries, social wellbeing, and natural environments will be affected. The Ministry of Environment has since developed a national adaptation plan for biodiversity, which includes scientific studies about how national biodiversity might be affected by climate change, general recommendations and specific projects that may be implemented by lawmakers and the ministry. The plan was still a draft proposal at the time of press, and it is unclear if the new government-elect will follow the same course once assuming office.

Chile: Flagship Legislation

Name of law	National Climate Change Action Plan 2008–2012 [Executive]
Date of entry into force	4 December 2008
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – Adaptation – REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Energy security, energy efficiency, adaptation
Summary of Bill	<p>The Action Plan is intended as a short-term measure designed to generate key information that will be used to prepare longer-term national and sector-specific adaptation and mitigation plans. The Plan includes both situation analysis and strategic considerations as its base, and details of actions to be taken on three areas (adaptation, mitigation and capacity-building) and the entities responsible for delivery.</p> <p>The analysis takes into account climate change science in Chile and abroad, the country's vulnerability and the actions needed for adaptation. It includes GHG emissions from the energy sector, advances in analysing emission scenarios and mitigation potential. It also delves into the country's capacity to design and implement policies, strategies and actions for adaptation and for mitigating emissions from legal, institutional and public policy perspectives. It further assesses national capacities for participating in international negotiations, meetings and reviews of IPCC reports, international and national co-operation initiatives on climate change, clean development mechanisms, and the carbon offset market, among others.</p> <p>The main adaptation actions proposed are: generating local climate scenarios, determining the impacts of climate change and the corresponding adaptation measures and formulating national and sector-based plans for adaptation to climate change. Specifically, the Plan affirms the need to determine impacts on water resources, biodiversity, the forestry, agriculture and livestock sectors, hydropower generation, infrastructure, coastal zones, fishery resources and public health.</p> <p>The Plan calls for a national programme and sector-based plans for mitigating GHGs. The actions proposed include: designing a system to update GHG inventories; assessing the total and sector-specific potential for reducing GHGs; preparing indicators to monitor the impact of actions taken; preparing GHG mitigation plans, policies and strategies and generating mitigation scenarios for different timeframes.</p> <p>The capacity building and development actions contemplated include: a national programme of education and awareness-raising; a national fund for researching biodiversity and climate change; technical and economic assessment for a climate change monitoring network; and a national registry of glaciers.</p>
Targets	None specified

Chile: Other Relevant Legislation

Name of law	Resolution 370 regulating the subsidies for power transmission lines to facilitate access to the grid for renewable energy installations [Executive]
Date of entry into force	18 July 2012
Categories	– Energy Supply

Driver for implementation	Climate change, energy security
Summary of bill	The regulation establishes a subsidy for power lines granting access to the grid to renewable energy installations in the event that the demand is lower than expected, reducing the investment risks. The agent applying for the subsidy shall be facilitating access to the grid to at least three renewable energy installations. The subsidy is capped at USD700,000 and applies between the sixth and the tenth year of exploitation of the power line.
Targets	Renewables to represent 20% of the installed power generation capacity by 2020

Name of law	Law No. 20571 regulating the payment of electricity tariffs of residential generators [Legislative]
Date of entry into force	22 March 2012
Categories	– Energy Supply
Driver for implementation	Climate change, energy security
Summary of bill	The law introduces modifications to the General Law for Electric Services of 1982 with the objective of regulating the payment of electricity tariffs to residential generators. Final users are thus authorised to inject electricity from renewable installations of up to 100kW in the distribution grid through their connection line.
Targets	None specified

Name of law	Law No. 20.365 on Tax Exemption for Solar Thermal Systems [Legislative]
Date of entry into force	19 August 2010
Categories	– Energy Supply
Driver for implementation	Climate change, energy security
Summary of bill	<p>The law grants tax deductions equivalent to the cost, or a share of the cost, of the installation of new solar thermal systems providing at least 30% of the hot water consumed in a given building per annum.</p> <p>The tax exemption targets construction companies that are willing to use solar systems in new housing developments, allowing them to discount the cost of solar collectors they install from their taxes on a sliding scale indexed to the value of each home. This measure seeks to promote the use of solar technology and extend its benefits to houses and buildings across the country by offering up to 100% of the installed cost of these hot water systems for new houses eligible by the tax exemption. The exemption covers 100% of the tax on solar thermal systems for houses priced at approximately USD87,000 and up to 20% of the tax for houses worth approximately USD195,000.</p> <p>The law also includes a consumer protection provision that mandates a 5-year guarantee against failures in the solar thermal system and a free inspection within the first year of home ownership.</p> <p><i>Decree 331</i> of 26 May 2010 lays down the implementation rules establishing the eligibility of technical conditions for solar thermal systems.</p>
Targets	None specified

Name of law	Law No. 20.283 on the Chilean Native Forest [Legislative]
Date of entry into force	5 October 2009
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Adaptation
Driver for implementation	Climate change, forestry management, soil protection
Summary of bill	<p>The law is intended to protect, recover and improve the country's native forest species, ensuring their sustainability through management and preservation plans. It defines small landowners as those with title to total property of no more than 200 ha. This limit is larger for landowners living in the far south of Chile, who may own up to 800 ha, provided that their assets are valued at less than USD150,000 and their income derives mainly from agricultural or forestry activities.</p> <p>The law mandates detailed rules and definitions for the application of this instrument, including subsidies to promote the conservation, recovery and sustainable development of native species.</p> <p>The Native Forest Law also defines a series of incentives, most notable among which are those for preserving environmental services in native forests and xerophytic formations, forestry activities oriented towards obtaining non-wood forestry products and the management and recovery of native forests for wood production.</p>
Targets	None specified

Name of law	Law No. 20.257 on Non-Conventional Renewable Energies [Legislative]
Date of entry into force	1 April 2008
Categories	<ul style="list-style-type: none"> – Energy supply
Driver for implementation	Climate change, energy security
Summary of bill	The law mandates that a certain percentage of power sold by electricity companies operating in systems with an installed capacity greater than 200 MW come from NCREs. It is applicable only to new projects implemented by electricity companies that remove energy from power grids by selling it to distributors or end users.
Targets	<ul style="list-style-type: none"> – From 2010 to 2014, all energy contracts signed on or after 2007 shall be required to supply at least 5% of their energy from non-conventional renewable sources – As of 2015, this percentage will increase by 0.5% per year until reaching 10% in 2024 – This gradual increase will be applied in the following way: 5.5% of all energy removed from the system shall be subject to this mandate in 2015, 6% in 2016, and so on, until reaching the goal of 10% by 2024

Name of law	Law No. 19.440 modifying the General Electrical Services Law (LGSE) of 1982 [Legislative]
Date of entry into force	13 March 2004
Categories	<ul style="list-style-type: none"> – Energy supply – Institutional/Administrative arrangements
Driver for	

implementation	Climate change, energy security
Summary of bill	<p>The law reformed the LGSE, changing several aspects of the energy generation market in Chile that affected all forms of energy generation, but included special provisions for Non-Conventional Renewable Energy sources (NCREs), defined as wind, hydropower installations up to 20 MW, biomass, biogas, geothermal, solar and tidal energy. The reform opened up the spot market and guaranteed the right to be connected to the country's power grids to small generating plants, many of which fall into the NCRE category. This move increased commercial and generating opportunities for these small producers.</p> <p>In addition, the reform exempted projects using NCREs from paying transmission fees, using a differentiated scale—one for plants generating up to 9 MW and another for those generating between 9 MW and 20 MW. In addition to benefiting those sources, this exemption serves to recognise a positive externality, given their low impact on transmission grids and on investments associated with their expansion.</p>
Targets	None specified

Name of law	Law No. 19.657 on Geothermal Energy and its Regulation by Decree 34 [Legislative]
Date of entry into force	7 January 2000 and 20 October 2004
Categories	<ul style="list-style-type: none"> – Energy supply – Institutional/Administrative arrangements
Driver for implementation	Climate change, energy security
Summary of bill	This law established a special system for granting concessions for the exploration and development of geothermal energy.
Targets	16 concessions for a total investment value of USD85 million were granted in 2009.

Name of law	Law No. 19.561 modifying Decree Law No. 701 [Legislative]
Date of entry into force	9 April 1998
Categories	– REDD+ and LULUCF
Driver for implementation	Climate change, forestry management, soil protection
Summary of bill	<p>The law was enacted to establish the country's forest capital and meet the growing demand of the national forestry industry through subsidies to private parties undertaking forestation. From 1974 to 1995, subsidies were paid out for some 800,000 ha of suitable, eligible land, with a total investment of nearly USD136 million.</p> <p>In 1998, a modifying law was enacted, extending several subsidies to 2010, with a different focus – the protection and recovery of degraded soils in Chile and forestation activities carried out by small landowners, the latter including a group of additional benefits. From the enactment of the DL 701 modification up to 2008, the government approved USD284 million (nominal value) in subsidies for forestation and soil protection, financing the forestation of 475,000 ha and soil recovery on another 175,000 ha. This state-sponsored effort generates major positive externalities such as erosion control, carbon capture and rural employment.</p> <p>This programme includes two types of subsidies. First, subsidies granted to small landowners for forestation and management of forests planted in land suitable for forestry. The aim was to give small landowners a subsidy equal to 90% of the net cost of plantation for the first 15 ha. Second, subsidies of 75% of the net cost of each activity to undertake</p>

forestation, soil recovery and stabilisation activities in dunes, on fragile soils, volcanic soils and those in process of desertification, in degraded soils or degraded soils on slopes with a grade greater than 100%.

Targets None specified

4.8 China



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	7046
excl. LULUCF	7467
Change from base year (1990)	NA
Latest reporting year	2005
Importance as an emitter	Top 5
UNFCCC ratification status and date	Date of signature: 11 June 1992 Date of ratification: 5 January 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 May 1998 Date of ratification: 30 August 2002 Date of entry into force: 16 February 2005
2020 pledge	Reduce CO ₂ emissions per unit of GDP by 40–45% by 2020 compared to the 2005 level, increase the share of non-fossil fuels in primary energy consumption to around 15% by 2020 and increase forest coverage by 40 million hectares and forest stock volume by 1.3 billion cubic meters by 2020 from the 2005 levels
Flagship legislation	12th Five-Year Plan (2011)

Legislative Process

China's legal system is largely a civil law system. The national legislative power is exercised by the National People's Congress (NPC) and the Standing Committee of the National People's Congress. The NPC is responsible for criminal law, civil law, state organ law and other basic laws. While the NPC is not in session, the Standing Committee of the NPC is responsible for supplementing and amending parts of the laws promulgated by the NPC, provided they do not contradict with the basic principles of these laws. There is not a division of legislative power between the central government and the provincial governments in China.

Approach to Climate Change

China is the world's second largest economy but, with a population of over 1.3 billion, its per capita income is still relatively low and levels of development differ widely between regions. China's fight against climate change has focused mainly around energy-related laws. Climate change was first officially referred to in legislation or regulations in China's National Climate Change Programme of 2007, and repeated in China's Policies and Actions for Addressing Climate Change 2008. In 2009, the National Peoples Congress passed a comprehensive Climate Change Resolution. These are not strictly laws but policy documents guiding legislation.

Although there is not yet a comprehensive climate change law in China, it was announced in 2010 at the GLOBE International legislators' forum in Tianjin that China would begin work on legislation. A first formal draft of the law is expected to be produced in early 2014, after which a comprehensive formal consultation will begin with government ministries, industry and other stakeholders, with passage likely by 2015. In the meantime, China's domestic climate-related laws are dominated by a focus on saving energy, reflecting the need for to improve energy efficiency to enable the country to keep pace with energy demand as the economy grows strongly.

China has passed the Energy Conservation Law and the 2005 Renewable Energy Law and is planning a new Energy Law, the draft of which contains provisions on the promotion of clean energy and energy efficiency. The goals are relatively vague, with clearer targets expected to be set by ministries, including the National Development and Reform Commission (NDRC), Ministry of Construction, Ministry of Agriculture, Ministry of Transportation and the Bureau for Tax.

In 2011 China's 12th Five-Year Plan was published. The Plan includes a target to reduce the carbon intensity of its GDP by 17% from 2005 levels by 2015 (in line with the 40–45% target by 2020 committed by China under the Copenhagen Accord), increases the number of pollutants included in the "total emissions control" system and sets new targets for the energy intensity of GDP (a reduction of 16% by 2015), the percentage of non-fossil fuel energy (to increase to 11.4% by 2015 from 8% in 2011) and an increase in forest coverage of 21.6%.

The specific policies and mechanisms required to implement these targets are the responsibilities of ministries and provinces.

The State Council approved a package of policies and measures aimed at meeting the energy and carbon targets included in the 12th Five-Year Plan. This package included provincial and municipal-level carbon and energy intensity targets, recognising that the provinces and municipalities have different economic structures, efficiency options and levels of wealth.

In July 2013, to strengthen top-level planning on climate change, the State Council adjusted the composition and personnel of the National Leading Group for Addressing Climate Change, with Premier Li Keqiang acting as group leader. All provinces have established their own leading groups to address climate change with the provincial governors serving as group leaders.

To underpin China's top-level planning on climate change, the NDRC has developed a National Plan for Addressing Climate Change (2013-2020) that outlines the framework for addressing climate change in China, including targets, tasks and safeguarding measures. Under this framework, all provinces and municipalities have also begun to develop their own plans. Anhui and Jiangxi Provinces, together with Tianjin Municipality, have published their plans and Sichuan, Yunnan, Guangxi, Anhui, Chongqing, Gansu, Ningxia, Xinjiang, Qinghai and Liaoning have also completed theirs, with official publication expected in 2014.

Sub-National Activity

China often pilots policies and mechanisms at the sub-national level and, if successful, scales up these initiatives to the national level. The emissions trading pilots referred to above are a good example. Legislation is also tested in this way. For example, in 2012, Shenzhen Municipal People's Congress passed the Provisions of Carbon Emission Management of the Shenzhen Special Economic Zone to strengthen the management of carbon emission trading, the first such legislation in China. Similarly, the provinces of Shanxi and Qinghai (with economies the size of Hungary and Bolivia respectively) have, in the last two years, passed provincial climate change laws and legislation is being developed in Sichuan and Jiangsu provinces (economies the equivalent size of Malaysia and Switzerland). These sub-national efforts will inform the development of national law.

China has also been piloting the concept of low carbon cities and provinces. Initially, five provinces and eight cities were selected to pilot low carbon communities. In 2012 this was expanded to include 29 new provinces and cities, including Beijing, Shanghai, Hainan Province and Shijiazhuang in Hebei Province. The pilots are required to develop goals and principles, including exploring "low carbon green development models". They are also required to establish measuring and reporting systems for GHG emissions and plans to curb those emissions.

Carbon pricing

The 12th Five-Year Plan encourages the use of market mechanisms to encourage emissions reductions. Seven provinces and municipalities (Beijing, Chongqing, Guangdong, Hubei, Shanghai, Shenzhen and Tianjin) are piloting emissions trading systems, the experiences of which will inform the design of a national scheme, likely before 2020. Consideration is also being given to introducing a carbon tax but it is unclear whether, and how, this might be implemented.

Energy demand

Since 2012 China has invested CNY 4.9 billion (USD 804 million) within the central government's budget and CNY 2.6 billion (USD 427 million) of the central fiscal bonus to support 2,411 projects on high-efficiency, energy-saving technologies, model products and industries, contracted energy management, developing energy-saving monitoring institutions, energy-saving buildings and green lighting. The government estimates that these projects have saved the energy equivalent of more than 19.79 million tons of standard coal.

The Ministry of Housing and Urban-Rural Development issued the Special Blueprint for Conserving Energy in the Construction Sector during the 12th Five Year Plan Period. By the end of 2012, heat metering and energy efficiency renovations on 590 million m² of existing housing stock in northern China had been completed, saving the energy equivalent of 4 million tons of standard coal and reducing about 10 million tons of CO₂ emissions.

Energy supply

In 2012 the State Council published a White Paper on energy policy. At the same time it announced that China's nuclear programme, suspended after the Fukushima disaster, would resume but at a slower pace than initially planned. The NDRC's Natural Gas Development Plan during the 12th Five-Year Plan Period, says that the supply capacity of natural gas will reach 176 billion m³ in 2015 and that 18% of urban residents will use natural gas. The NDRC, along with the National Energy Administration, also announced the Development Plan for Shale Gas (2011-2015); The Ministry of Finance and the National Energy Administration announced the Notice on Issuing the Subsidy Policies of Exploring and Utilising Shale Gas and allocated special funds to support shale gas projects. In September 2013, the State Council issued the Airborne Pollution Prevention and Control Action Plan, stipulating goals for controlling the consumption cap of coke and increasing the use of clean energy.

In 2012 the State Council issued a note entitled Several Opinions on the Sound Development of the Photovoltaic Industry, articulating policies and measures to accelerate the uptake of solar energy and the National Energy Administration issued 'Development Plans' for Solar, Biomass and Geothermal energy. In 2012 China invested CNY 127.7 billion (USD 21 billion) in hydropower, CNY 77.8 billion (USD 12.8 billion) in nuclear power and CNY 61.5 billion (USD 10.1 billion) in wind power.

By the end of 2012, total power generation capacity had reached 1,147 GW, up by 7.9%. The generation of non-fossil fuel, including, hydro, nuclear, wind and

solar energies, represented 28.5% of the whole, 4.2 percentage points higher than the 2005 figure. A total of 54 supercritical coal-fired power stations were in operation, the highest number in the world.

REDD+ and LULUCF

The State Council has approved the second stage of the plan to curb the source of sandstorms in Beijing and Tianjin. The plan covers six provinces and municipalities and 138 towns. The State Forestry Administration issued the Plan on the Division of Work on Enhancing the Forest's Role in Tackling Climate Change to Implement the Durban Climate Change Conference Agreement, and began to draft the fifth stage of the plan on the construction of a 'shelterbelt' in north-east, northern and north-west China. The country also continues to promote afforestation and, from 2012 to the first half of 2013, 10.25 million hectares was greened in the afforestation drive, and 4.96 billion trees were planted in a volunteer tree-planting drive.

Transportation

The Ministry of Transport has made efforts to improve energy efficiency and emission reductions in key areas of the transportation sector. It gave a boost to supporting policies, and continued to undertake the "special action on low-carbon transportation" for 1,000 companies dedicated to vehicles, ships, roads and ports. The ministry issued the Guidelines for Pedestrian and Bicycle Transportation to encourage local governments to promote the construction of city pedestrian and bicycle transportation systems by showcasing model pedestrian and bicycle transportation systems. The Ministry of Science and Technology has rolled out a pilot green car project, billed as "10 cities, 1,000 green cars," in 25 cities across the nation. It is estimated that the energy saving capacity in the transportation industry is equivalent to 4.2 million tons of standard coal or 9.17 million tons of CO₂ emissions.

Additionally, the government has selected 26 cities such as Tianjin, Chongqing, Beijing and Kunming to establish pilot low-carbon transportation systems, with 26 trial projects and 40 harbours of "drop and pull" transportation, pushing forward pilot projects in inland water transportation using natural gas-fuelled boats and establishing gas and petroleum pilot recycle stations at crude oil terminals. Studies have also been commissioned to establish an evaluation index system for low-carbon transportation cities, ports, and the construction of low-carbon ports and sailing routes and low-carbon highways.

Adaptation

China's climate is complex. Since 2012, the country has suffered from an increase in frequency of extreme weather conditions. Many areas in the south have experienced extremely high temperatures, and there have been increased urban, regional and mountain floods, landslides and mudslides. Many typhoons have hit land at the same time, affecting a broad area. And for the past four years there have been moderate to severe droughts in central and north-west Yunnan Province, impacting on agriculture and people's lives. In November 2013, reflecting China's vulnerability to climate change impacts, NDRC published China's National Strategy for Climate Change Adaptation. The strategy lays out

clear guidelines and principles for climate change adaptation and proposes some specific adaptation goals. Provinces including Zhejiang, Henan and Liaoning have also carried out their own regional strategic studies for addressing climate change.

Research and development

Since 2012, thanks to financial support provided by the China Clean Development Mechanism Fund and other financing channels, a range of policy research projects on climate change have been carried out. By the end of 2012, CNY 495 million (USD 81 million) in funds and donations had been arranged, more than 100 donation projects had been supported, and numerous research programmes on domestic and international problems on climate change had been carried out.

In 2012, the Ministry of Science and Technology released Specific Plans for Clean Coal Technology. The 12th Five-Year Plan highlights clean coal technology as a priority in advanced energy, focusing on efficient clean coal-fired power generation, advanced coal conversion, advanced energy-efficient technology, regulation of pollutants and resource utilisation technology. The Government Offices Administration of the State Council has carried out research projects on new energy and renewable energy applications for public institutions, building the energy efficiency of government and public institutions. The Ministry of Land and Resources has carried out a series of research programmes on geothermal investigation and exploration, geological traces of climate changes and geological carbon sink, as well as initiatives to make technological breakthrough on CO₂ geological storage.

The General Administration of Quality Supervision, Inspection and Quarantine has carried out preliminary studies on relevant climate change standards. The State Forestry Administration has carried out empirical research on how forests can mitigate the impacts of climate change, and organised potential and process studies of carbon sequestration in a typical ecosystem. The Meteorological Administration has assessed climate change for the first time in Eastern, Southern, Northern, North-Eastern, Central, South-Western and North-Western China as well as the Xinjiang region. The Ministry of Water Resources has undertaken more than 10 significant research programmes such as the impact of climate change on water resources security and how to respond to it. The Ministry of Health and the State Family Planning Commission has initiated research on adaptation mechanisms, assessment and prediction to address the impact of climate change on human health. The State Oceanic Administration has launched remote sensing monitoring and evaluating systems for air-sea CO₂ in China's coastal waters.

China: Flagship Legislation

Name of law	The 12th Five-Year Plan for the Development of National Economy and Society (2011–2015) [Executive and Legislative]
Date of entry into force	12 March 2011
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand – REDD+ and LULUCF – Transportation – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Economic and Social Development
Summary of bill	The Five-Year Plan aims to create more socially inclusive and environmentally sustainable growth and boost domestic consumption that will begin to re-orientate the Chinese economy away from heavy industry and resource-intensive production towards a more consumption-based and resource-efficient economy.
Targets	To decrease the carbon intensity of GDP by 17% by 2015; to decrease the energy intensity of GDP by 16%; to increase the share of non-fossil fuel primary energy consumption to 11.4%; and to increase forest coverage by 21.6%.

China: Other Relevant Legislation

Name of law	National Strategy for Climate Change Adaptation (Executive)
Date of entry into force	November 2013
Categories	– Adaptation
Driver for implementation	Climate Change
Summary of bill	Reflecting China's vulnerability to climate change impacts, the National Development and Reform Commission (NDRC) published China's National Strategy for Climate Change Adaptation in November 2013. The strategy lays out clear guidelines and principles for climate change adaptation and proposes some specific adaptation goals. It outlines a wide range of measures to be implemented by 2020 in order to protect water resources, minimise soil erosion and strengthen disaster prevention, such as early-warning detection and information-sharing mechanisms at the national and provincial levels, ocean disaster monitoring system and coastal restoration. To reduce climate impacts in agriculture the Chinese government plans to develop new farming practices, including controlling plant-eating pests and improving crop adaptability. The plan also includes weather-based financial instruments such as catastrophe bonds and weather index-based insurance.
Targets	None.

Name of law	National Climate Change Programme (Executive)
Date of entry into force	4 June 2007
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – REDD+ and LULUCF – Transportation – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Energy Efficiency
Summary of bill	<p>This indicated that the Chinese government acknowledged the importance of addressing climate change. The document covered five issues: GHG mitigation; adaptation; climate change science and technology; public awareness on climate change; and institutions and mechanisms. In mitigation, the focus is on energy production and transformation, energy efficiency improvement and energy conservation, industrial processes, agriculture, and forestry and municipal waste.</p> <p>Regarding energy production and transformation, measures aim to strengthen the existing energy legal system, improve the national energy programme, implement the Renewable Energy Law, promote favourable conditions for renewable energy development and GHG mitigation, stimulate energy price reform, optimise the energy mix and promote innovation and efficiency improvements in various power generating technologies, both renewable and non-renewable, including nuclear power. All these policies are expected to have a major influence on the energy and utilities sectors. Chinese leaders essentially equate climate change with energy conservation.</p> <p>Monitoring arrangements: China promoted a number of policies and measures to adjust the economic structure, change the development patterns, save energy and improve energy efficiency, optimise energy mix and promote afforestation.</p>
Targets	Cut energy waste by 20% between 2006 and 2010. Increase the proportion of renewable energy in primary energy supply by 10% 2010. Stabilise NO _x emission at 2005 levels. Increase the 2001 forest coverage rate by 20%, and increase the carbon sink by 50 Mt over the 2005 level by 2010.
Name of law	Renewable Energy Act (Legislative)
Date of entry into force	1 January 2006, amended 26 December 2009
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Research and Development – Institutional/Administrative arrangements
Summary of bill	<p>This Act describes duties of the government, business and other users in renewable energy development and use. It includes measures and goals relating to mandatory grid connection, price management regulation, differentiated pricing, special funds and tax reliefs, and sets the goal to realise 15% of China's energy from renewable sources by 2020.</p> <p>Energy – supply-side policies: The Act requires the government to encourage and support the application of renewable energy in various areas.</p> <p>Research and development: The Act requires that the government budget establishes a renewable energy development fund.</p> <p>Monitoring arrangements: It requires that energy authorities of the State Council are responsible for organising and co-ordinating national surveys and management of</p>

renewable energy resources, and work with related departments to establish technical regulations for resource surveys. Relevant departments of the State Council, within their respective authorities, are responsible for related renewable energy resource surveys. The survey results will be summarised by the energy authority in the State Council.

Targets Energy authorities of the State Council must set middle- and long-term targets for the total volume of renewable energy at the national level, which shall be implemented and released to the public after being approved by the State Council.

Name of law Energy Conservation Law (Executive)

Date of entry into force 1 November 1997 adopted; amended 2007 ; 2008

Categories

- Energy demand
- Research and Development
- Institutional/Administrative arrangements

Driver for implementation Energy efficiency

Summary of bill The Act aims to strengthen energy conservation, particularly for key energy-using entities, promote efficient use of energy and adoption of energy conservation technology.

The Act requires the government to encourage and support the application of renewable energy in various areas.

Monitoring arrangements: the National Peoples Congress serves as the monitoring body.

Targets None.

4.9 Colombia



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	180
excl. LULUCF	154
Change from base year (1990)	35
Latest reporting year	2004
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 22 March 1995 Date of entry into force: 20 June 1995
Kyoto Protocol ratification status and date	Date of ratification: 30 November 2001 Date of entry into force: 16 February 2005
2020 pledge	Unilateral guarantee of a minimum 77% share of renewable energy in the national mix; Zero deforestation in the Amazon basin and increased market share of biofuels up to 20% of total fuel consumption with external financial support
Flagship legislation	Law No. 1450 of 2011 Ratifying the National Development Plan 2010–2014

Legislative Process

The 1991 Constitution vests legislative authority in the bicameral Congress, consisting of the Senate (Senado), with 114 members, and the House of Representatives (Cámara), with 199 members.

Both houses of Congress have joint responsibility for initiating, amending, interpreting and repealing legislation; selecting the president-designate and inaugurating the President; selecting the members of the Supreme Court; changing the boundaries of territories, creating new departments, granting special powers to departmental legislatures and moving the location of the national capital; supervising the civil service and creating new positions in it; and setting national revenues, providing for payment of the national debt and determining the nation's currency.

After a congressman or government minister introduces a bill in either chamber, the congressional leadership refers it to one of the standing committees. If approved by the committee, it is reported back for a second reading to a plenary session of the House of origin, where a member of the committee guides it through debate. If approved by the full membership, the bill is forwarded to the other House, where it undergoes the same process.

Approach to Climate Change

Colombia's 1991 Constitution establishes an obligation on the part of the state to protect the country's natural wealth through some 60 dispositions, which establish a linkage between environmental issues and development plans and places environmental policies on the same footing as economic and social policies.

In 2000 the Environment, Housing and Territorial Development Ministry (MAVDT) co-ordinated the preparation of a National Strategy Study for the Implementation of the Clean Development Mechanism in order to evaluate Colombia's potential in the new market, to identify capacity shortages and solutions and to promote potential benefits.

Colombia submitted its second National Communication to the UNFCCC in 2010, presenting its national inventory of GHGs for 2000 and 2004. The sectors that caused most GHGs in 2004 were (in order of importance): agriculture 38%, energy 37%; land-use, land-use change and forestry (LULUCF) 42%; solid waste 6%, and industrial processes 5%. When the total emissions of agriculture are added to those of LULUCF, activities within this sector account for around 50% of total emissions in 2000 and 2004.

Colombia has ratified multilateral alliances giving priority to CDM as an instrument for effective mitigation. Among the most important are those with the World Bank Prototype Carbon Fund, the CAF Latin American programme for

carbon and alternative energy; the Memorandum of Understanding with the government of the Netherlands (2002–2012) and that with the government of France (2003–2012).

REDD+ and LULUCF

The government designed a National Forestry Development plan in 2000. A working plan was set up for mitigation in the forestry sector. Actions proposed included the definition of areas with potential for the execution of mitigation forestry projects, based on the definition of forests in the context of CDMs; the establishment of principles, requirements and criteria for the approval of CDM forestry projects; and the preliminary formulation of a National CDM Forestry Project, with potential for reduction of emissions of 26 million tonnes of CO₂-equivalent in 25 years.

Environmental management in agriculture uses two instruments that bring together measures relating to the mitigation of climate change. The interministerial environmental agenda, involving MAVDT and MADR, set lines of action to integrate mitigation measures such as 1) conservation and sustainable use of environmental goods and services such as climate regulation and water supply, strategic systems and agro-biodiversity, management of climate change, mitigation services and support for CDM, and 2) environmental sustainability in national production, which seeks to develop management systems for sustainable farm production and the development of ecological production, environmental management for farm production and encouragement for the efficient use of soil and irrigation.

The environmental strategic plan for the farming sector (PEASA) encourages integrated management of natural resources, to bring sustainability to environmental goods and services supporting production and strengthen the sector's capacity to face the challenges implicit in a threat to the productive base, such as desertification and climate change.

According to the guidelines for climate change policy and the National Development Plan 2002–2006 of the National Planning Department, which set targets for reduction of GHG emissions, an institutional strategy was established for the sale of environmental services derived from mitigation of climate change (CONPES 3242), to encourage greater participation by Colombia in the CDM and establish the generation of an institutional framework for the development of emission reduction activities.

In 2002 the MAVDT and the National Planning Department developed the Guidelines for Climate Change Policy proposing mitigation and adaptation strategies. The Colombian Office for Climate Change Mitigation was set up in the same year as the body in charge of promoting CDM projects in Colombia. In 2003 the CONPES document 3242 "National Strategy for the sale of mitigation environmental services" introducing guidelines for the development of CDM projects.

The National Development Plan 2010–2014 was ratified in 2011, including provisions for comprehensive, cross-sectoral climate programmes and a Low-Carbon Development Strategy, a National Plan for Climate Change Adaptation and a National Strategy for REDD+ to be delivered under the co-ordination of the newly-created National Climate Change System.

The process towards the adoption of a National Strategy for REDD+ started in 2009 with the constitution of a national REDD Platform (Mesa REDD) in 2009 as a space for dialogue between the Colombian government, the private sector and civil society including local communities as an initiative supported by WWF, Fundación Natura, The Nature Conservancy (TNC), Conservación Internacional Colombia (CI), USAID through its MIDAS Programme and Corporación Ecoveresa.

Colombia is currently developing a National Strategy for REDD+ (ENREDD+ in Spanish) as one of the climate-related actions foreseen in the Colombian National Development Plan 2010–2014. The estimated duration of the ENREDD+ preparation process is two to three years.

Future low-carbon development

The Colombian Low-Carbon Development Strategy was launched in February 2012 as a tool to deliver the objectives of the National Development Plan 2011–2014 and the CONPES Document on Climate Change by promoting efficient low-carbon growth. It foresees the identification of a GHG emissions baseline and the formulation and implementation of low-carbon development plans for energy, mining, agriculture, transportation, industry, waste and construction. On the basis of these results, appropriate NAMAs and projects will be put in place. With the support of the EU, the UK and the Children’s Investment Fund Foundation, UNDP will contribute to the implementation of the strategy by providing information for the development of the sectoral emissions baselines and cost-effective sectoral action plans and public policies. It will also strengthen the capacity of the sectoral ministries to integrate low-carbon aspects into their activities.

Adaptation

The National Plan for Climate Change Adaptation was launched on 31 August 2012. Its objectives are to increase knowledge of the potential risks and opportunities associated with climate change and climate variability, to incorporate climate risk management in territorial and sectoral planning and to mitigate the climate change vulnerability of ecological and socio-economic systems.

Parallel to the preparation of the ENREDD+, Colombia is implementing a series of demonstration activities and projects for the REDD+ Voluntary Carbon Market, such as the project “Institutional, Technical and Scientific Capacity for the Implementation of REDD+” by IDEAM and Fundación Natura financed by the Gordon and Betty Moore Foundation; the project “Preparation of a Voluntary GHG Mitigation Mechanism for Colombia” by the Environment Ministry, Fundación Natura, the Colombian Business Council for Sustainable Development (CECODES), and the Colombian Exchange, financed by GEF; as well as REDD pilot

projects such as San Nicolás Agroforestry, which is establishing forestry and agroforestry systems on 1,100 ha of abandoned pastures with the support of the World Bank's Forest Carbon Partnership Fund.

Colombia: Flagship Legislation

Name of law	Law No. 1450 of 2011 (16 June) by which the National Development Plan 2010–2014 is issued (Legislative)
Date of entry into force	16 June 2011
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – REDD+ and LULUCF – Transportation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Economic and social development and climate change
Summary of bill	<p>The law addresses environmental sustainability and risk prevention as one of the bases of the plan.</p> <p>It foresees the implementation of a National Climate Change Policy and the design of a National Climate Change System. The law also call for the identification and prioritisation of climate change adaptation measures in the framework of a National Adaptation Plan and the strengthening of data generation for sectoral and territorial vulnerability analysis. Finally, it proposes the adoption of a low-carbon development strategy including emission reductions from avoided deforestation and the identification of commercial barriers associated with carbon footprint standards and labelling schemes.</p>
Targets	None specified

Colombia: Other Relevant Legislation

Name of law	National Plan for Climate Change Adaptation (Executive)
Date of entry into force	31 August 2012
Categories	<ul style="list-style-type: none"> – Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The National Plan for Climate Change Adaptation's objectives are to increase knowledge of the potential risks and opportunities associated with climate change and climate variability, to incorporate climate risk management in territorial and sectoral planning and to mitigate the climate change vulnerability of ecological and socio-economic systems.</p> <p>The implementation of the plan is divided into four phases. Beginning in 2012, the first two stages were conceptual and methodological, followed by the detailing of specific sectoral and regional plans. Phase four, implementation of measures, began in 2013, while monitoring and reporting, the final phase, is scheduled to begin in 2014.</p>
Targets	None specified

Name of law	Law 1523 Adopting the National Policy of Risk Management and the National System of Risk Management (Legislative)
Date of entry into force	24 April 2012
Categories	<ul style="list-style-type: none"> – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Risk Management
Summary of bill	<p>The law regulates the creation of the National Policy of Risk Management with the objective of identifying, monitoring and analysing risks, preparing measures to address situations of emergency. Other measures include financial instruments and a comprehensive communication system.</p> <p>The law also establishes the National Risk Management System responsible for integrating various stakeholders (public and private entities) in the development of policies, plans and other institutional mechanisms that address risk management.</p>
Targets	None specified

Name of law	Colombian Low-Carbon Development Strategy (Executive)
Date of entry into force	February 2012
Categories	<ul style="list-style-type: none"> – Energy Supply – REDD+ and LULUCF – Transportation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The Colombian Low-Carbon Development Strategy (ECDBC) was launched in February 2012 as a tool to deliver the objectives of the National Development Plan 2011–2014 and the CONPES Document on Climate Change by promoting efficient low-carbon growth. It foresees the identification of a GHG emissions baseline and the formulation and implementation of low-carbon development plans for the sectors of energy, mining, agriculture, transportation, industry, waste and construction. On the basis of these results appropriate NAMAs and projects will be put in place. With the support of the EU, the UK Embassy to Colombia and the Children Investment Fund Foundation, UNDP will contribute to the implementation of the Strategy by providing information for the development of the sectoral emissions baselines and of cost-effective sectoral action plans and public policies. It will also strengthen the capacity of the sectoral ministries to integrate low-carbon aspects into their activities.</p> <p>Colombia's LCDS seeks to explore ways in which Colombia can contribute to the challenge of mitigating global climate change, while adapting to the impacts of changing climatic conditions domestically. Notwithstanding the broader goals of mitigating and adapting to climate change impacts, Colombia sees potential co-benefits in terms of the LCDS contributing to economic, social and environmental goals. For instance, in terms of economic competitiveness it sees potential gains by increasing energy efficiency and hence production costs. Planning documents publicly available on the LCDS from May 2012 refer to the development of working groups to examine the potential mitigation and adaptation benefits in each sector of the economy, in addition to production of sector-specific abatement curves for Colombia.</p>
Targets	None specified

Name of law	Resolution 18-0919 of the Ministry of Mines and Energy Adopting the Indicative Action Plan 2010–2015 to develop the Programme for a Rational and Efficient use of Energy and of other Non-Conventional Energy Sources (Executive)
Date of entry into force	1 June 2010
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – Institutional/Administrative arrangements
Driver for implementation	Energy self-sufficiency, climate change
Summary of bill	<p>The Plan introduces energy efficiency sectoral sub-programmes for the residential sector (phase out of incandescent bulbs, introduction of energy-efficient stoves, low-energy housing construction), industry (optimisation of energy use in cold chains, boilers, lighting, combustion processes, cogeneration), commercial/public (promotion and implementation of best practices in refrigeration, lighting, building stock retrofit and low-energy new building) and transportation (modernisation of fleets, best practices, modal shift).</p> <p>The Plan also introduces provisions for the expansion of non-conventional renewable energies (FNCEs) differentiating between zones connected to the national power grid and zones not connected.</p> <p>The Plan is to be carried out by the Inter-sectoral Commission for the Rational and Efficient Use of Energy and of Non-Conventional Sources of Energy (CIURE).</p>
Targets	The Plan introduces differentiated sectoral energy saving targets for 2015: housing (9.21%), industry (3.68%), commercial/public (2.66%) and transportation (1.29%). The targets for FCNEs for connected areas are of 3.5% in 2015 and 6.5% in 2020 and of 20% for 2015 and 30% by 2020 for non-connected areas. The targets will be subject to annual revisions and adjustments.

Name of law	National Energy Plan 2006–2025 (Executive)
Date of entry into force	10 October 2006
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – REDD+ and LULUCF – Transportation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Economic and social development and climate change
Summary of bill	<p>The Plan establishes a series of long-term strategies and recommendations to inform decision-makers and orientate the formulation of energy supply policies adequate to face global productivity and competitiveness conditions.</p> <p>It includes an analysis of Colombia's current energy needs and scenario for the evolution of the energy needs of the country and its supply alternatives as well as the possibilities for energy supply integration at regional and international levels. The document proposes the analysis of specific long-term projects including the construction of a refinery on the Pacific, the regasification of natural gas in the north and an increase in exports of value-added oil and coal-based products.</p> <p>The document defines five principal objectives, the main of which is to maximise the energy sector's contribution to sustainable development. The objectives include the following: using resources to meet national demand while preserving the energy sector's</p>

long-term sustainability; consolidating regional energy integration; increasing vertical integration in the country's energy market; developing price structures to guarantee market competitiveness; and maximising coverage and access to energy throughout the country.

Five horizontal elements fundamental for the attainment of these objectives are also analysed :

- non-conventional energy sources and rational use of energy
- environmental and public health protection
- science and technology
- institutional and regulatory framework
- information, promotion and capacity-building

The government's goals on energy policy include the promotion of the energy sources with the highest potential in the country and especially renewables on the basis of their environmental benefits, full development of Colombia's natural potential for the production of biofuels taking into consideration evaluations of technical, economic and environmental feasibility for domestic and foreign markets and institutional reforms to increase energy efficiency in the energy sector such as the proposed Office for the management and development of biofuels.

Targets	None specified
----------------	----------------

Name of law	Decree 3683 of 2003 Regulating the Rational and Efficient Use of Energy as per Law 697 of 2001 and Creating an Inter-sectoral Commission (Executive)
--------------------	---

Date of entry into force	19 December 2003
---------------------------------	------------------

Categories	<ul style="list-style-type: none"> - Energy Supply - Energy Demand - Research and development - Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Energy self-sufficiency, climate change, economic development
----------------------------------	---

Summary of bill	The Rational and Efficient use of Energy and the Use of other Non-Conventional Energy Sources is declared as a public interest issue and as a national priority to ensure energy supply, competitiveness and environmental protection.
------------------------	--

The State is mandated to establish the legal, technical, economic and financial framework needed for the development and application of the law and the development of short-, medium- and long-term projects. The Ministry of Mining and Energy is responsible for the promotion, organisation, facilitation and monitoring of energy efficiency and renewables programmes under the PROURE Programme to be gradually expanded to cover all the energy chain. Special obligations are foreseen for public service companies. The government shall support energy efficiency and renewables research and development programmes. Companies importing or producing spare parts, boilers, solar panels, biogas generators, wind turbines and any other technology or product using renewable energy sources or allowing energy savings will benefit from incentives.

Targets	None specified
----------------	----------------

Name of law	Law 788/2002 by which national and territorial tax and penal norms are adopted (Legislative)
--------------------	---

Date of entry into force	27 December 2002
---------------------------------	------------------

Categories	<ul style="list-style-type: none"> - Energy Supply
-------------------	---

	– Energy Demand
Driver for implementation	Energy self-sufficiency, climate change
Summary of bill	<p>The comprehensive tax reform introduces several provisions in support of the development of renewable sources of energy. The sale of electricity from wind energy, biomass or agricultural waste is to be exempted from income tax for 15 years, as long as the following criteria are satisfied: participation in CO₂ permit trading in accordance with the Kyoto Protocol, and reinvestment of at least 50% of revenues from the sale of permits in social projects situated within the area served by the utility.</p> <p>In addition, it was established that the importation of machinery and equipment for the project which generate GHG reduction certificates will be exempt from sales tax (IVA), both on the product and on related services.</p>
Targets	None specified
Name of law	<p>Law 697* of 2001 Promoting the Rational and Efficient use of Energy and the Use of other Non-Conventional Energy Sources (Legislative)</p> <p>*regulated by Decree 3683 of 2003 and Decree 2688 of 2008, further regulated by Decree 2331 of 2007 and Decree 895 of 2008 phasing out incandescent lighting, Decree 2501 of 2007 on energy use of energy-transforming and energy-using products; Decree 3450 of 2008, Resolution 180540 of 2010, Resolution 182544 of 2010 and Resolution 180173 de 2011 banning the commercialisation of low-efficiency lighting and Resolution 180606 of 2008 on technical specifications for lighting in public buildings.</p>
Date of entry into force	3 October 2001
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – Research and development – Institutional/Administrative arrangements
Driver for implementation	Energy self-sufficiency, climate change, economic development
Summary of bill	<p>The Rational and Efficient Use of Energy and the Use of other Non-Conventional Energy Sources is declared as a public interest issue and as a national priority to ensure energy supply, competitiveness and environmental protection.</p> <p>The State is mandated to establish the legal, technical, economic and financial framework needed for the development and application of the law and the development of short-, medium- and long-term projects. It is planned to set up a Programme for the Rational Use of Energy and the Use of Renewable Forms of Energy (PROURE) under the auspices of the Ministry of Mining and Energy.</p> <p>It is also intended to develop political guidelines and strategies along with instruments to promote non-conventional energy sources, with the main emphasis being placed on regions that do not have access to electricity. Special obligations are foreseen for public service companies. The government shall support energy efficiency and renewables research and development programmes. Companies that manufacture or import components for use in exploiting renewable energy sources and energy efficiency are to receive special assistance.</p> <p>The Ministry of Mining and Energy is responsible for the promotion, organisation, facilitation and monitoring of energy efficiency and renewables programmes under the PROURE Programme to be gradually expanded to cover all the energy chain.</p>
Targets	None specified

4.10 Costa Rica



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	9
excl. LULUCF	12
Change from base year (1990)	6
Latest reporting year	2005
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 26 August 1994 Date of entry into force: 24 November 1994
Kyoto Protocol ratification status and date	Date of signature: 27 April 1998 Date of ratification: 9 August 2002 Date of entry into force: 16 February 2005
2020 pledge	Implementation of a "Long term economy-wide transformational effort to enable carbon-neutrality" that will help the country to significantly deviate from business as usual GHG emissions projected scenarios up to 2021 and beyond.
Flagship legislation	2008 National Climate Change Strategy

Legislative Process

As established by the 1949 National Constitution, the legislative power in Costa Rica is unicameral. The National Assembly is constituted of 57 Members of the Parliament - MPs directly elected by the citizens for a four-year term without the possibility of re-election. According to Article 123 of the Constitution, the proposal of a piece of law can be initiated by the Executive, the Legislature and even directly by Costa Rican citizens. Popular initiative laws require the endorsement of a minimum of 5% of the electorate and should not address fiscal issues, taxation, loans and other administrative acts.

The law-making process entails two readings at the National Assembly, before the approved proposal is submitted for the final appraisal of the Executive. In the first stage, a text is registered at the Directory Secretariat, published, and later submitted by the Presidency to the Legislative Committee. The proposal is subjected to a first reading at the General Assembly and analysed by the Constitutional Committee before being discussed by one of the permanent committees, depending on the issue addressed by the legislation. The text is finally submitted to a second reading at the General Assembly to be voted. The rules for the approval of legislations depend on the type of the law. The most common type, *delegación*, requires the assent of two thirds of the Assembly, whereas *avocación* needs to be approved by an absolute majority of MPs present at the session.

Once passed by the National Assembly, proposed laws are scrutinised by the Executive and require the sanction of the President of the Republic. When not sanctioning directly the law as received, the President has 10 days to request modifications to the text or veto the proposal. If the Assembly discusses and adopts all requirements of the Executive, the amended law must be sanctioned by the President. If the President vetoes the law, the Assembly can appeal on the basis that the decision was unconstitutional.

Approved by the Assembly and sanctioned by the President, a law enters into force 10 days after its publication in the Official Journal.

Approach to Climate Change

Climate change policies in Costa Rica are based on a broad set of strategies and plans that have set ambitious targets to combat deforestation and shift the course of economic and social development towards carbon neutrality. Initiatives have been largely developed by the Executive; policies and plans adopted at that level outnumber climate laws adopted by the legislature. Yet, in 2013 the focus of political discussion has been centred on the Framework Law on Climate Change. Presented at the National Assembly in September 2013, the draft text is still under the scrutiny of Parliament and may be subjected to amendments.

The proposal includes the creation of the Climate Change National Committee and the Climate Change National Council, both responsible for the implementation of the National Adaptation and Mitigation Plan. The draft text also calls for the adoption of a National Climate Change Plan and the further development of climate policies oriented towards research, crisis management, GHG reporting and monitoring as well as mitigation and adaptation.

While lacking a framework climate legislation and a Climate Plan, the 2006-2010 National Development Plan set the grounds for the 2008 National Climate Change Strategy. The plan stressed the need to promote a national response to the issue considering the importance of “balancing the climate system”. For this purpose, the plan places the “climate change agenda” as a national and international priority, calling for the development of a Climate Change National Programme. The Programme was expected to enhance infrastructure and technology to prevent natural disasters related to climate change. Additionally, it was intended to consolidate a national approach to climate change and develop institutional mechanisms to address the issues facing different sectors.

The 2011-14 National Development Plan reaffirmed the ambitious goal to promote a carbon neutral economy by 2021 and the strategies adopted to promote renewable energies, reduce GHG emissions, and stressed the focus on mitigation and adaptation.

Energy supply

Costa Rica has one of the cleanest energy mixes in the world, with renewables accounting for more than 90% of the national electricity supply. However, because of growing consumption of fossil fuels for transportation, GHG emissions from energy use have increased in recent years and the country is currently struggling to decouple its economic growth from carbon. In order to meet the “2021 target” the 2008-2021 National Energy Plan aims to diversify the energy matrix, with a sustainable transportation sector and the further development of renewable energy, in particular domestic resources. Additionally, the plan calls for the promotion of energy efficiency and the reduction of fossil fuel consumption.

Energy is also one of the core issues addressed in the National Development Plans. The 2011-14 Plan, for instance, highlights hydropower and photovoltaic projects under development and sets a target to replace 5% of transportation fossil fuels used in transportation for renewable sources.

Transportation

The 2008 National Biofuels Programme aimed to reduce CO₂ emissions and, to this end, set a target for to replace 10% of gasoline with bioethanol and up to 20% of diesel with biodiesel by 2010.

The 2010 Energy Strategy further elaborates actions to meet the goals of the Energy Plan. The Strategy proposes the gradual introduction of biofuels to

replace diesel and gasoline. It explores the prospects of replacing oil with natural gas within some sectors and proposes strategies to make transportation more energy efficiency. The Strategy proposes the creation of a multidisciplinary group, the “Energy Technological Revolution Committee”, to analyse ways to develop a strategy to replace the current dependency on oil with renewable sources of energy.

Carbon Pricing

Following the 2008 National Climate Change Strategy, Costa Rica developed a national carbon market as part of its initiatives to reach carbon neutrality by 2021. Adopted in 2011, the National Norm of Carbon Neutrality defines the conditions in which businesses and organisations can receive a carbon neutral certification. The norm regulates measures to reduce carbon emissions, to be complemented by other programmes under the Clean Development Mechanism (CDM), and the Verified Carbon Standard (VCS).

These initiatives fit within the 2012 Carbon Neutral Country Programme, the official programme of the Climate Change Directorate (DCC) of the Ministry of Environment and Energy (MINAE) for processes regarding GHG inventories and the C-Neutrality Norm.

Activities in this area were strengthened in 2013 with the Presidential approval of the MINAE Decree of 2012 creating the national Voluntary Carbon Market.

REDD+ and LULUCF

Established in 1991, the National Forestry Finance Fund (*Fondo Nacional de Financiamiento Forestal*, FONAFIFO) aims to: a) finance the Payments for Environmental Services – PES- Programme; and b) develop activities to strengthen the development of the forestry sector. FONAFIFO formally became one of the core elements of Costa Rica’s forest policy with the regulation of its activities established in the 1996 Forest Code. The main instrument of FONAFIFO’s operations is the PES Programme, which executes policies established by MINAE.

As defined in the 1996 Forest Code, the main source of funding for the ESP is a fuel tax, or “ecotax” that applies to the consumption of any crude-oil derivatives. Another source of financing is Environmental Service Certificates, a voluntary private sector scheme. Additionally, FONAFIFO obtains payments for the protection of water resources from agreements with hydropower companies.

In 1998 the government created the National System of Conservation Areas (SINAC) to administer all biodiversity in Costa Rica. SINAC functions as a technical organisation decentralised from Ministry of the Environment and is responsible for the core guidelines for policies on sustainable use of natural resources. Together, FONAFIFO and SINAC are the two major institutions responsible for forest policy in Costa Rica.

In addition, the management of fires in forest areas is addressed on the basis of the guidelines of the 1997 National Fire Management Strategy. The strategy sets out the agenda for planning and evaluating different national policy instruments on the issue, ensuring co-ordinated action to tackle fires in forest areas.

In 2008 the country committed to developing a REDD+ (Reduced Emissions from Deforestation and Forest Degradation) policy and developed a first REDD+ Plan in 2010. Approved by the World Bank, the Plan received funds from the organisation to prepare a REDD+ Strategy. A Second Plan was presented in 2011. In 2013 the government included a REDD+ Project in its Carbon Fund aiming to set up an agreement for trading emission reductions. The plan is to develop a monitoring and reporting system on emissions and reductions of GHG in energy, waste, and land use.

Costa Rica: Flagship Legislation

Name of law	2008 National Climate Change Strategy (NCCS) (Executive)
Date of entry into force	2008
Categories	<ul style="list-style-type: none"> – Adaptation – REDD+ and LULUCF – Institutional/administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The primary objective of the NCCS is convert the country into a “climate neutral” economy by 2021. Other objectives are to reduce socio-economic and environmental impact of climate change, and promote sustainable development and environmental protection through actions of mitigation and adaptation. NCCS is divided into a national and an international agenda, detailing specific areas and actions to be taken within each domain.</p> <p>The national agenda entails two core areas, mitigation and adaptation, and four transversal issues (measurement; capability development and technological transfer; public awareness, education and cultural exchange; and financing).</p> <p>The mitigation strategy is structured around three main areas actions. The first, reduction of GHG emissions by sources, aims to identify emission sources and develop opportunities for reductions in eight sectors: energy; industry; transportation; land use change; tourism; agriculture and livestock; solid waste; and water resources. The second area of action addresses carbon sequestration in forests and reforestation. Complementing the scheme on mitigation, the third area refers to emission compensation (carbon markets) and encompasses the development of local markets; National programmes of compensation payments; voluntary markets; and participation in international schemes, such as the Clean Development Mechanism (CDM).</p> <p>The adaptation strategy aims to reduce sectoral and geographic vulnerability to climate change, focussing on six areas: agriculture and livestock; infrastructure; health; coastal areas and biodiversity; water resources; fishery.</p> <p>The international agenda is based on strengthening the engagement of Costa Rica with the development of collective (international) actions on climate change; and attracting external funds for the implementation of national initiatives.</p>
Targets	Carbon neutral economy by 2021

Costa Rica: Other Relevant Legislation

Name of law	Ministerial Decree DAJ-62-2012-MINAE creating the Voluntary Carbon Market (Executive)
Date of entry into force	10 September 2013
Categories	– Carbon Pricing
Driver for implementation	Carbon Market
Summary of bill	<p>Voluntary Domestic Carbon Market sets up guidelines for the generation, issuance and exchange of carbon credits, also known as Costa Rican Compensation Units –(UCC). The UCCs are associated with projects developed within the country that address forests, energy efficiency, technological innovation directed to emission reduction, amongst other themes.</p> <p>To ensure management of the carbon market, including trade, compensation, and certification activities, the decree formalises the creation of the Carbon Board. Co-ordinated by the Climate Change Direction of the Ministry of Environment and Energy, the Board includes representatives from the public and private sector.</p>
Targets	None specified

Name of law	2013 Biofuels Law (Legislative)
Date of entry into force	10 July 2013
Categories	– Energy Supply
Driver for implementation	Renewable energy
Summary of bill	<p>Aims to promote the development and the expansion of the national biofuel industry contributing to: enhanced energy security and efficiency, climate change mitigation, environmental protection, agricultural land revitalisation, employment creation and local development. For this end, the law creates the National Biofuel Programme, placing the Ministry of environment and Energy in charge of its co-ordination.</p> <p>Establishing rules for the production and trade of biofuels, the law determines that when the biomass is suitable for direct consumption, of human beings, animals or the industry, food security and industrial supply must be prioritised. Only the excess of biomass can be used for biofuel production. The Ministry of Agriculture and Livestock is responsible for regulating and ensuring the compliance of this rule.</p> <p>The new law defines a minimum volume of biofuels that must be included in fossil fuels, 8% for bioethanol and 5% for biodiesel.</p> <p>Tax exemption is granted for the import and sales of machineries and raw materials for the production of biofuels. Final consumers are exempted from sales taxes for a period of 10 years from the entry into force of the law for purchases of biofuels.</p>
Targets	None specified

Name of law	Biofuel Regulation (Executive Decree 35091) (Executive)
Date of entry into force	17 March 2009
Categories	– Energy supply

Driver for implementation	Renewable Energy
Summary of bill	<p>The biofuel regulation aims at fostering the development of the biofuel industry in Costa Rica. For this purpose, the decree regulates the production, transportation, storage, and trade of biofuels. It designates the Ministry of Environment, Energy and Telecommunications (MINAET) and the Ministry of Agriculture and Livestock (MAG) as the institutions in charge of promoting, implementing and managing the development of the National Biofuels Programme.</p> <p>According to the decree, prices of raw materials employed in the production of biofuels as well as the sales of biofuels to consumers and to the national oil refinery (RECOPE) are to be determined by the market. However, the prices of fossil fuels mixed with biofuels are regulated by the competent national authority.</p> <p>It sets up the National Research and Development Bioenergy Policy to enhance the environmental sustainability of biofuel production, increasing production, and looking for new sources of biomass.</p>
Targets	None specified

Name of law	1996 Forest Law (Law N.7575) (Legislative)
Date of entry into force	16 October 1996
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Institutional/Administrative arrangements

Driver for implementation	Forest management
Summary of bill	<p>The 1996 Forest Law establishes the protection, conservation and management of forest areas as a priority and central responsibility for the State. The government is in charge of regulating and supervising the use and exploitation of forest resources in a sustainable manner. In addition, the federal government should pursue the improvement of living conditions for rural communities.</p> <p>The law forbids land cover changes in forest and calls for the moderate and rational use of natural resources. Four are the environmental services of forests identified in the bill: biodiversity protection, carbon fixation, hydrological services, and protection of scenic beauty.</p> <p>At the institutional level, the law establishes the creation of the National Forest Office, in charge of proposing policies and programmes on forest issues, as well as managing the activities of projects in place, working closely with local communities and other governmental bodies. Operating on the basis of decentralisation of policy-making, the 1996 law endorsed the role of the Regional Environmental Councils.</p> <p>Creating the Forest Conservation Certificate (CCB), the law rewards landholders for their environmental services. To be eligible for the CCB, forest resources should not have been extracted in the two years previous to the application and should remain preserved throughout a minimum period of 20 years of the validity of the Certificate. A share of 5% of the amount granted should be designated to the Forest Fund.</p> <p>The Law establishes the Forest Fund with aim at: fostering research and capacity building activities on best practices in the forest sector; preventing fires and plagues in forest areas; promote reforestation plans; protecting soil; water and air contamination; promoting forest products; other administrative tasks. The budget of the Fund is formed mainly of contributions from the Ministry of Environment and Energy, donations from international and national organisations and entities, taxes, fines and revenues associated to forest activities, and forest bonds.</p> <p>Additionally, the law sets up the National Forest Financing Fund (FONAFIFO), to finance the</p>

activities of small and medium producers that relate to forestation and reforestation, restoration of degraded land, technological changes and sustainable use of forest resources. Holding legal personality, the Fund raises funds for the payment of environmental services that contribute to the development of the natural resources sector.

Targets None specified

Name of law Regulations on the Rational Use of Energy (Law n.7447) (Legislative)

Date of entry into force 13 December 1994

Categories – Energy demand

Driver for implementation Energy

Summary of bill This law consolidates the participation of the State in the promotion and gradual execution of the programme for the rational use of energy. It also attempts to establish mechanisms to achieve energy efficiency, taking environmental protection into account.

The Ministry for Natural Resources, Energy and Mining is responsible for the implementation, monitoring the “National Programme for the Rational Use of Energy”.

To promote this objective the law establishes the obligation to execute energy efficiency programmes of rational use of energy in companies with high consumption levels. Companies have the legal obligation to report the precise amount of energy they use. When the amount is beyond the maximum level allowed by the Ministry, businesses are notified and have three months to submit a plan to reduce their energy consumption, within six months. The government can, in certain circumstances, provide specific technical recommendations to these companies.

The Law also calls for the creation of campaigns to raise public awareness on the rational use of energy, including educational programmes in schools. All products must publicly announce their level of energy consumption.

Producers of machines and/or vehicles that operate using energy (of any source) must obtain authorisation from the Ministry relating to their energy efficiency before beginning production of these goods. The import of similar equipment (including vehicles) is conditional to the submission of energy efficiency data.

The law also determines that the Ministry for Natural Resources, Energy and Mining is in charge of determining limits for emissions from vehicles, to be monitored and controlled by the Ministry of Transport.

Additionally, it exempts equipment used for renewable energy from import duties.

Fines and penalties apply to breach of the law.

Targets None specified

Name of law 1990 Energy Law (Law 7200) (Legislative)

Date of entry into force 18 October 1990

Categories – Energy supply

Driver for implementation Energy

Summary of bill This law requires MINAE to establish company-level power indices based on their level of

economic activity. The law and its subsequent regulations outline the obligatory nature of executing projects that conserve electricity. They also include an incentive programme for businesses that promote the efficient use of energy.

Targets	None specified
----------------	----------------

4.11 Czech Republic



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	126
excl. LULUCF	133
Change from base year (1990)	- 63
Latest reporting year	2009
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 18 June 1993 Date of ratification: 7 October 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 31 May 2002 Date of entry into force: 16 February 2005
2020 pledge	<ul style="list-style-type: none"> - 30% GHG reduction per capita from 2000 - 25% aggregated GHG reduction from 2000 - 6% renewable energies in consumption of primary sources in 2010 and 20% in 2030 - 60-70% energy intensity in production, distribution and final consumption of energy by 2030 - 5.75% biofuels in 2010 and 20% share of all alternative fuels by 2020
Flagship policy	National Programme to Abate Climate Change Impacts in the Czech Republic

Legislative Process

The Czech Republic is a parliamentary democracy, which was established following the splitting of Czechoslovakia - the Czech and Slovak Federative Republic, on 1 January 1993, based on the Constitution of 1992. The Parliament, as the highest legislative body, consists of the Chamber of Deputies and the Senate. It votes on laws proposed by the executive and on international treaties in all policy areas.

In 2001, the state transferred a number of powers to the regions, an intermediate level between the national government and the municipalities. The regions are structured in accordance with the concept of subsidiarity. They are in charge of implementing national legislation and have far-reaching self-governance authority. Based on their better knowledge of local conditions and independent decision-making in financial matters, the regions provide a number of services within the overall framework on socio-economic and environmental aspects of development.

Approach to Climate Change

The Czech Republic has followed two different approaches to climate mitigation in the 20 years of its existence. In the first 10 years it focused on implementing the Kyoto Protocol, and it automatically met the targets as a result of its economic reconstruction and transition towards a market economy. The accession to the European Union in 2004 mandated the adoption and implementation of European climate policy and targets in compliance with the burden-sharing arrangements necessary to compensate for diverse economic and technological capabilities among the European member states. In both cases, the international commitments could be met with the emission reductions of the 1990s given that the Czech Republic's 2020 GHG emissions are projected to be 37.7% below 1990 levels (-38.4% with additional measures). Thus, there was no necessity to develop an ambitious Czech climate policy. This predominantly explains the 'implementation' approach to climate policy, which is focused on compliance with European directives and overall EU negotiation mandates. The key climate legislation was the National Programme to Abate Climate Change Impacts in the Czech Republic, formulated in the EU-accession period of 2004 and focused on the implementation of Kyoto commitments. However, this legislation was regarded as insufficient to cut emissions reductions of 20-30% compared to a 2005 reference year. Notwithstanding ambitions to contribute to EU targets via the implementation of EU legislation into national law, in recent years the government has taken a 'compliance' approach as opposed to an active role in climate policy. The Burden-Sharing Decision of the EU allows the Czech Republic to increase emissions not covered by the European Emission Trading Scheme by 9% compared to 1990 levels by 2020. Projections show that business-as-usual emissions are likely to remain 8% above the target and 6% above the target with additional measures. These emission developments have a strong influence on the Czech climate change

approach since both Kyoto targets and internal EU emission reduction targets are predominantly already met due to the decline in emissions following the economic restructuring in the 1990s.

Nevertheless, the Czech Republic is implementing EU and UNFCCC targets by setting up climate legislation, although there are few measures that go beyond implementing international commitments. By 2012/13, the focus shifted from policies supporting the uptake of renewable energies and emission cuts in non-energy sectors to fostering the generation of nuclear power and thereby developing into a low-carbon economy. Thus, the share of nuclear energy is expected to increase from 35% in the national energy mix to 50%, while the share of energy from solid fuels is expected to drop from 50% to 12-17%.

The flagship legislation is the 2004 National Programme to Abate the Climate Change Impacts in the Czech Republic. The new Climate Protection Policy for the 2020 period (and beyond) is still under consideration. Meanwhile, important policy objectives for both mitigation and adaptation are also included in the State Environmental Policy 2012–2020 and a new draft of the State Energy Policy.

The regions play an important role in implementing national climate initiatives. They have to develop regional development plans that include the management of natural resources affected by climate change such as water management for rivers, flood prevention measures, the development of renewable energies and improvement of energy efficiency.

Carbon pricing

The EU ETS is the Czech Republic's major carbon pricing initiative. The corresponding EU-level legislation has been implemented. Since 2013, according to the latest version of EU ETS national legislation, at least half of the revenues from the EU Allowances auctions to be devoted to climate related programmes. The Czech Republic also implemented the EU directive on the taxation of energy products and electricity including taxation of gas, electricity and solid fuels that took effect in January 2008. The Czech Republic has funded the Green Savings Programme from the sales of Assigned Amount Units - AAUs under the Kyoto Protocol. In total, between 2009 and 2013 the Czech Republic sold 103,672,000 AAUs and revenue from these sales amounts to almost 20.5 billion crowns (USD 993 million).

Energy demand

The increase in energy demand in the building sector has been met with stricter standards for energy efficiency in buildings in the form of an amendment to the Energy Management Act (approved by the Czech Parliament in September 2012). Construction and major reconstruction permits are conditional upon compliance with the Energy Management Act and require an Energy Performance Certificate issued by an authorised energy expert. Subsidies are available to improve insulation in residential and municipal buildings and replacement of fossil fuel-based heating systems via the Green Savings Programme from 2009 to 2012, where the equivalent of USD2 billion was

disbursed to more than 70,000 project participants. This original programme has been succeeded by New Green Savings Programme 2013 and New Green Savings Programme all managed by the State Environmental Fund of the Czech Republic. For the purpose of energy savings and utilisation of RES support there have been involved as well resources from the Cohesion Fund, the Czech state budget, fees from polluters and the ERDF.

Energy supply

The Czech Republic has a 2020 target for 13% of its energy to come from renewable sources. The share of renewables in final energy consumption was 9.2% in 2010. The uptake of renewables was supported with a feed-in tariff and a green bonus for renewable power. Plant operators can choose whether they prefer payments based on the feed-in tariff or a bonus on the market price for renewable electricity. On 1 January 2013 feed-in tariffs were altered to lessen its attractiveness in comparison with the green bonus option. Eligibility for the feed-in tariff has been limited to operators of plants with an installed capacity of less than 100kW and the tariff rates are based on a 15-year return on investment. Furthermore, the Ministry of Industry and Trade selects obligatory purchasers from available licence holders for electricity trading. The solar tax from January 2011 aims to slow down the uptake of solar/pv projects by imposing a tax of 26% of their feed-in tariff on operators of new installations (after 1. January 2009), with the exception of rooftop installations up to 30kW. From 2014 new renewable energy sources will not be supported by feed-in tariff or the green bonus, with the exemption of installations already granted a permit and in operation by the end of 2015 and small hydropower installations.

REDD+ and LULUCF

The Czech Republic participates in international efforts to integrate climate and forest management objectives into assistance for economic development in developing countries within the European Union efforts. Domestically, there are provisions for land-use planning to reduce the impacts of extreme meteorological situations, erosion and floods and in agro-environmental measures under the Common Agricultural Policy and government regulations. These measures include greening measures such as grassing over of cropland, organic farming and grass strips on sloped land.

Transportation

Emissions from the transportation sector have remained relatively stable between 2005 and 2011 (12-13%) with the third lowest taxation of transportation in the EU. Emissions from transportation are primarily addressed via the Clean Air Act, which mandates a 4.1% of biofuels in gas and 6% in diesel.

Adaptation

A number of adaptation measures are integrated into the overall policies and measures (e.g. agriculture, water, forestry). Water management is a key adaptation element both in response to draught and flood effects. These include River Basin Management Plans, which are focused on the management of precipitation water, enabling retention of water via water basin areas/ water reservoirs, direct use and comprehensive land use measures; as well as Flood

protection management plans, which are currently under preparation. The implemented measures include increased safety of water works, flood protection measures, reduction of water losses. The implementation of adaptation measures rests predominantly with the regions/ municipal governments. Measures supported via the Landscape programme and Programme of Renewal of the Natural Function of the Landscape have a special focus on nature and landscape protection and are financed through national resources. The Operational Programme Environment and the Rural Development Programme (both supported through EU funds) should continue to finance adaptation activities and measures in next period (2014 – 2020). New adaptation strategy is in preparation and should be adopted by the end of 2014.

Research and development

The State Environmental Fund provided financial resources to fund research and development activities such as tenders to promote the exchange of solid fuel boilers for low emission automatic biomass boilers. Recently such research has been supported by the Technology Agency of the Czech Republic. Research on the climate system is carried out by different institutions, funded through Czech grant agencies as well as the national Academy of Sciences. The Czech Hydrometeorological Institute carries out systematic observation of the climate system (hydrology, water/air quality, climatology, meteorology) as state institute.

Czech Republic: Flagship Legislation

Name of law	National Programme to Abate the Climate Change Impacts in the Czech Republic; Government Resolution No. 187 [Executive]
Date of entry into force	3 February 2004
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand – Transportation
Driver for implementation	Climate Change
Summary of bill	<p>Framework document on climate change legislation in the Czech Republic, replacing the Government Resolution on the ‘Strategy of Protection of the Climate System of the Earth in the Czech Republic’. This was the central legislation implementing the Czech Republic’s commitments under the international commitments of the Czech Republic following from the UN Framework Convention on Climate Change and the Kyoto Protocol. The accession to the European Union required a new overall strategy that harmonised the national policy framework with European climate legislation. This National Programme to Abate Climate Change Impacts in the Czech Republic (‘National Programme’) is the key document through which the ministries co-ordinate cross-cutting and sectoral policies at the national level that are necessary to comply with the European Climate Change Programme and other EU climate legislation. It thus forms the basis for further, sector-specific climate legislation.</p> <p style="text-align: center;">This document has been evaluated and updated in line with the progress in the UNFCCC negotiations and the European climate package of 2007.. In April 2008 the Ministry of the Environment submitted an Evaluation of the National Plan to the government,</p>

emphasising that the progress is particularly due to the increase in the share of renewable energies (particularly biomass and hydropower, but also progress in wind and solar/PV). It also outlined the inadequate progress in economic analysis of the effectiveness of the measures and the unfavourable record of energy intensity and the increase in GHG emissions per capita and in the transportation sector. It also emphasised the importance of improving the awareness among the population and its acceptability of further GHG reduction measures.

Targets	Reduce CO ₂ emissions per capita by 30% by 2020 compared to 2000 Reduce aggregate CO ₂ emissions by 25% by 2020 from 2000
----------------	--

Czech Republic: Other Relevant Legislation

Name of law	Act No. 165 of 31 January 2012 on promoted energy sources and on amendment to some laws [Legislative]
Date of entry into force	1 January 2013
Categories	– Carbon pricing – Energy supply
Driver for implementation	Climate Change, implementation of EU legislation
Summary of bill	Measures to reduce the further development of energy from renewable sources while still meeting the EU targets for renewable energy under the burden sharing agreement in compliance with the Renewable Energy Directive. The objective is to minimise consumer prices. It regulates the guarantees of origin for energy from renewable sources, funds to support the market competitiveness of energies from renewable sources by granting subsidies to operators to bridge the cost difference, levy on electricity from solar/PV and creates market conditions for achieving the national targets on energy from renewable sources under the consideration of customer interests to minimise the economic impacts of support for renewable energies on energy prices. The act also further outlines and develops the content of the National Action Plan of the Czech Republic for energy from renewable sources.
Targets	A tax has been imposed on solar power producers. The rate of the levy is either a) 26% of the purchase price or b) 28% of the green bonus for electricity. , Installations under 30kW are exempt from the levy.

Name of law	Energy Management Act No. 406/2000 Coll, last amended by Act 318/2012 Coll., [Legislative]
Date of entry into force	1 January 2013
Categories	– Energy demand
Driver for implementation	Climate change, reducing domestic energy demand
Summary of bill	Amendment to the Energy Management Act that mandates stricter standards for energy efficiency in the residential sector. This aims to address the increases in energy consumption in the building sector and the high energy intensity of the Czech economy. From 1 January 2013, the award of permits for new buildings and major retrofits of existing buildings is conditional upon compliance with the Energy

Management Act. The amendment implements the EU's Energy Efficiency Directive.

Targets None specified

Name of law State Environmental Policy of the Czech Republic 2012-2020 [Executive]

Date of entry into force 2011

Categories

- Energy supply
- Energy demand
- Institutional/Administrative arrangements

Driver for implementation Air quality, climate change

Summary of bill Overall framework to effectively protect the environment. Objectives include climate mitigation, adaptation and the sustainable management of natural resources to contribute towards an improvement of the quality of life for Czech citizens and its neighbours.

The policy has a climate protection component in conjunction with improving air quality. It aims to reduce per capita GHG emissions to 10.5 tCO₂eq by 2020 (17% lower than 2009 levels). It also aims to reduce GHG emissions within the EU ETS by 21% and to limit the GHG emission growth for sectors not covered by the EU ETS to 9% by 2020 (from 2005 levels).

Key measures include the promotion of renewable energies and especially energy efficiency via more energy efficient technologies. Further objectives include an improvement in the adaptation to climate change, improving the ambient air quality, particularly in locations where emission limits are exceeded, and fulfilling national emission ceilings in force since 2010 and reducing the total emissions of SO₂, NO_x, VOC, NH₃ and fine dust particles by 2020.

Targets Reduction of per capita GHG emissions to 10.5 tCO₂eq by 2020 (17% from 2009 levels)
Reduce GHG emissions within the EU ETS by 21%
Limit the GHG emission growth for sectors not covered by the EU ETS to 9% by 2020 (from 2005 levels).

Name of law Act No. 406/2000 Coll., on energy management, as amended (consolidated version, Act No. 61/2009 Coll.) [Legislative]

Date of entry into force 2009

Categories

- Carbon pricing
- Energy supply
- Energy demand
- Transportation
- Research and development

Driver for implementation EU legislation, climate change, energy security

Summary of bill The purpose of this law is to implement EU legislation and improve the effectiveness of energy management within the National Programme to Abate Climate Change Impacts in the Czech Republic. This act dates back to 2000 and has been amended several times. It aims to promote measures that increase energy efficiency, introduce requirements for eco-design and energy-consuming products as well as provide rules

to create a 'State Programme in Support of Energy Savings and Usage of Renewable Energy Sources'. It contains a number of strategy documents, which all aim at the reduction of energy consumption and improvement of energy efficiency in different sectors – the State Energy Policy, the State Programme in Support of Energy Savings and the Usage of Renewable Energy Sources.

Subsidies are available for energy-saving measures; combined heat and power; modernisation of energy installations; technology/materials supporting energy-saving measures; renewable energy development; recovering energy from municipal waste; improving public awareness for energy efficiency; research and development in energy management, renewable energies and energy efficiency; energy intensity certificates for buildings; support on improved eco-design for small and medium sized companies and other measures such as efficiency of energy use, energy intensity of buildings, combined production of electricity and heat, energy labels, energy audits and eco-design.

Targets None specified

Name of law Act No. 458/2000 Coll., on the conditions for operating business and on performance of state administration in energy sectors (the Energy Act), last amended by Act No. 165/2012 of 31 January 2012 [Legislative]

Date of entry into force 1 January 2000

Categories

- Carbon pricing
- Energy supply
- Energy demand
- Institutional/Administrative arrangements

Driver for implementation Energy provision

Summary of bill

This legislation provides the framework for operating an enterprise in the energy sector capable of providing safe, affordable and reliable energy supply while withstanding economic competition, satisfying consumer needs as well as the interests of the licence holders.

Section 31 creates a framework for use of renewable energy sources, i.e. non-fossil natural energy sources such as energy from wind, solar, geothermal sources, water, biomass, landfill gas and biogas. The act allows preferential connection to the distribution system for renewable electricity producers and encourages the co-production of heat and electricity under certain requirements.

In addition, the law implements a series of EU Resolutions and Directives.

Targets None specified

4.12 Denmark



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	55
excl. LULUCF	58
Change from base year (1990)	-12
Latest reporting year	2011
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 9 June 1992 Date of ratification: 21 December 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 31 May 2002 Date of entry into force: 16 February 2005
2020 pledge	National target: - 40% GHG by 2020 compared to 1990 (including contribution from LULUCF) EU-obligations: - 20% reduction in non-ETS-sectors by 2020 relative to 2005 - 30% renewable energy by 2020 Effects of "Energy agreement 2012": - > - 30% CO ₂ - 35% Renewable energy - 50% wind energy in Danish electricity consumption - - 12% of gross energy consumption
Flagship legislation	Energy agreement 2008

Legislative Process

In Denmark, the legislative power rests with the parliament (Folketing). The population elects the 179 members of parliament for a period of four years, including two representatives each for Greenland and the Faroe Islands. As a constitutional monarchy, the legislative branch, the executive branch and the judicial branch share power.

The Danish Constitution (Danmarks Riges Grundlov) attributes the ultimate authority of appointing and dismissing the Prime Minister and ministers to the Monarch. Responsibility for legislation is delegated to the respective ministers, who sign bills together with the Monarch. Consent of the Folketing and the Regent is required for international treaties, obligations whose implementation require sustained support of the Folketing or that are otherwise of 'great importance' to Denmark.

Approach to Climate Change

Denmark's climate approach is focused on the integration of climate change mitigation measures into policy sectors alongside single-purpose climate policies. Domestic policy is closely linked to the implementation of international commitments under the UNFCCC, especially the Kyoto Protocol, and the fulfilment of burden-sharing commitments within European Union climate change policy.

The environmental ministry, established in 1971, followed an environmental policy integration approach throughout the 1990s and 2000s in response to the 1988 Brundtland report on sustainable development, focusing on the integration of environmental objectives into other sectoral policies via action plans.

Besides promoting a greener and more sustainable society, the Danish government has set a goal of achieving independence from fossil fuels. To help achieve this, the responsibilities for climate change (within the Ministry of the Environment) and the for energy (within the Ministry of Transport and Energy) were merged into the Ministry of Climate and Energy (Klima- og Energiministeriet) in 2007, reflecting the increasing importance of addressing climate change.

The majority of climate change-related legislation in Denmark relates to implementation of EU legislation or sector action plans that also address climate change mitigation (and to a lesser extent climate change adaptation). Sector action plans outline specific environmental objectives and measures to achieve the objectives and deadlines, which allow the evaluation of their effectiveness.

When the present government came to power in 2011 it set a national GHG reduction target of 40% reduction by 2020 compared to 1990 levels. The 40% reduction target goes beyond international and EU commitments, underlining Denmark's leadership approach on climate change. In particular, Denmark aspires to convert the energy and transportation sector to run on 100%

renewable energy by 2050 and strongly improve energy efficiency. The 2012 *Energy Agreement* and the 2013 *Climate Policy Plan* will be followed up by a climate change bill in 2014, likely to become Denmark's flagship legislation from thereon.

Local authorities and municipalities implement state-level framework legislation by deciding on and planning appropriate initiatives. Local involvement and public participation in environmental and climate change aspects was also strengthened in response to the implementation of the Agenda 21 (adopted at the 1992 UNCED Rio conference) and the Aarhus Convention. Hosting the 2009 climate change summit of the UNFCCC (COP-15) motivated several municipalities and sub-national actors to set up their own climate targets. It also coincided with initiatives to raise awareness among the business community, cities and the population.

Carbon pricing

Denmark implemented the EU ETS and thereby, since 2005, has operated since carbon pricing for the sectors covered under the EU ETS phases I – III, i.e. predominantly energy producers and some of the energy-intensive industry. This means that installations covered can either reduce their emissions where they regard it as most cost-effective, or they can buy allowances to cover their emissions. Denmark takes additional measures to reduce its emissions by 1 million tonnes of CO₂ per year, including the cancellation of reserved emissions rights.

Taxes are a further carbon pricing mechanism used to reduce demand for CO₂-intensive products. These date back to the 1970s, when energy taxes aimed to promote energy efficiency. Since 1992 there have been carbon taxes for gas/diesel oil, fuel oil, electricity, lignite, natural/ town gas, petrol and coal. In particular, the carbon tax and increases in the rates of individual energy taxes since 1990 have reduced emissions by 1.5 million tonnes of CO₂-equivalent by 2001 annually (based on the 2005 Effort Analysis with expectations of similar performance for 2008-2012). Taxes also cover imported industrial GHGs (HFCs, PFCs, SF₆, i.e. F-gases) since 2001.

Energy demand

The observed energy consumption in 2011 was 792 PJ and was distributed over the following energy sources: oil - 303 PJ (38%), natural gas - 157 PJ (20%), coal - 136 PJ (17%), and other sources 192 PJ 24% (of which 22% was renewable energy). The net export of electricity was insignificant in 2011, corresponding to 5 PJ (0.6%). The distribution of gross energy consumption (energy consumption adjusted for foreign electricity trade) in 2011 was as follows: industry and agriculture accounted for 23%, domestic sector for 28%, transportation for 26% and commerce and service for 16%. Refining and non-energy purposes accounted for the remaining 7%. Energy consumption in the household sector primarily comprises heating and electricity. Since 2000 the net heat demand per m² has decreased and was in 2011 approximately 7% below the level in 1990. From 1990-2011 total household electricity consumption increased by 2.6%, while electricity consumption for appliances and lighting etc. increased by

16.0%. This big difference is due to a significant fall in electricity consumption for heating.

Furthermore, Denmark provides financial support of up to DKK 400 million (USD 72.8 million) to substitute individual oil-based furnaces for low-emitting modern heating solutions including heat pumps and solar heating as a key component alongside carbon trading to achieve the emission reduction target of 1 million tonnes CO₂ annually.

Energy supply

Energy production and supply accounts for 36% of GHG emissions (2011). The Folketing has passed legislation supporting the uptake of renewable energy, which should cover 20% of energy use by 2011 and 30% by 2020. The focus is on wind energy, biomass and solar energy. Furthermore, Denmark is implementing the EU Renewable Energy Directive in the areas of electricity (a further development from the Renewable Electricity Directive), heating/ cooling and renewable energies in transportation (a further development from the Biofuels Directive). The energy sector in Denmark is deregulated, making emissions trading and flexible mechanisms even more a central measure in reducing emissions.

REDD+ and LULUCF

Denmark actively manages its forests based on the strategy for sustainable forest management (1994) and the national forest programme (2002) and provides funds for REDD+ projects in developing countries. LULUCF-effects from forests and cropland are part of the Danish effort to reach its Kyoto target, and are taken into consideration in general planning (spatial, environmental).

Transportation

The transportation sector accounted for 23% of GHG emissions in 2011. Key measures are the implementation of the European Renewable Energy Directive, which includes a target of 10% of renewable energy in transportation and is primarily met by first generation biofuels. Furthermore, taxes are differentiated according to the CO₂ intensity of fuels to encourage improvements in fuel efficiency. The annual tax on motor vehicles is based on energy consumption, which is also known as the 'green owner tax' and ranges from DKK 520 to DKK 18,460 (USD 94.70–USD 3,362) per year for petrol-based vehicles and DKK 1,960 to DKK 25,060 (USD 356.9–USD 4564.28) per year for diesel-based vehicles and is measured in accordance with the EU directive 93/116/EC. Denmark has a number of action plans and political agreements to support emission reductions in the transportation sector such as tax incentives and funding for specific programmes such as those supporting the uptake of electric vehicles and hydrogen fuel. However, the legislation predominantly aims at sectoral objectives that integrate climate aspects as a side-aspect or the implementation of EU-level directives. Notable transportation-related government initiatives include the action plan to reduce the transportation sector's CO₂ emissions (1996), the action plan (2001) on the reduction of the transportation sector's CO₂ emissions and the political agreement on a Green Transport Vision for Denmark (2009).

Adaptation

In 2012 the government released a new adaptation action plan including a task force that works around the country with municipalities and other stakeholders to develop local action plans.

Research and development

There is a long list of institutions, programmes and initiatives that receive support for their research and development activities on climate change mitigation and adaptation. This includes basic climate change-focused research such as climate modelling and applied research on how emission reductions can be achieved in the different sectors including demonstration projects. Funds are distributed on a competitive basis and include tenders on specific problems and defined projects as well as grants supporting research particularly at universities. Concrete development projects delivered energy savings, improved efficiency in energy conversion and cost-effective renewable energy technologies that benefit Danish companies.

Denmark: Flagship Legislation

Name of law	Energy Agreement 2012-2020 [Legislative]
Date of entry into force	22 March 2012
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand – Transportation – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Climate change, play international leadership role in energy transition
Summary of bill	<p>Comprehensive governmental agreement passed by the parliament (Folketing) that aims at reducing emissions via energy efficiency and increasing the share of renewable energies towards a green socio-economic transition. The overall objective is to shift Denmark's energy supply to 100% renewable energy by 2050. This is a follow up to the previous 2008-2011 Energy Agreement and a key element of the long-term strategy towards 2050.</p> <p>It contains a number of key elements that contribute to the overall target. Energy companies must realise specific energy savings beyond current standards. It also includes development of a comprehensive strategy to improve energy efficiency standards in buildings, expansion of wind power from 25% (2012) to 50% (2020) including 1,500 MW offshore and 1,800 MW onshore wind turbines (partly replacing older turbines), DKK 160 million (USD 29 million) to fund the development, demonstration and use of new renewable energy technologies (wave, solar, geothermal), amendment to the Heating Supply Act to increase attractiveness of shifting from coal to biomass, phasing-out of oil-fired boilers via encouraging shifts to natural gas boilers in existing buildings and banning new oil-fired boilers from 2013 onwards, subsidies to promote investment in energy efficient use of renewable energy in industrial production processes (DKK 250 million (USD 45 million) annually in 2013, to be increased to DKK 500 million (USD 91 million) annually in 2020, calls to draw up strategy on establishing smart grids, improving opportunities for using biogas (provision, financial support), facilitating a shift in transport sector from fossil</p>

fuels to electricity and biofuels via subsidies for car recharging stations as well as the implementation of the 10% target for renewable energies in transportation by 2020 and the implementation of efficiency improvements in the Danish energy sector, which are expected to result in savings of up to DKK 1.8 billion (USD 327.8 million).

Targets	<ul style="list-style-type: none"> – 40% reduction of GHG emissions by 2020 from 1990 levels – 20% reduction of GHG emissions by 2020 from 1990 levels in sectors not covered by the European Emission Trading Scheme – 12% reduction of gross energy consumption in 2020 in comparison to 2006 – Share of 35% renewable energy in 2020 – 50% wind energy in Danish electricity consumption in 2020 – 100% renewable energy supply by 2050
----------------	--

Denmark: Other relevant legislation

Name of law	The Forest Act No. 945 (24 September 2009) [Legislative]
Date of entry into force	1 October 2009
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Adaptation
Driver for implementation	Sustainable forest management/use of natural resources, climate change, biodiversity.
Summary of bill	<p>The Danish Forest Act aims at sustainable use of natural resources, the conservation of biodiversity, climate change mitigation and adaptation. To enforce sustainability in forest management, it provided the basis for the implementation of national plans on the further development of the forest timber industry, information, guidance and research as well as overall sustainable forest management.</p> <p>More recently, it was amended by the Act amending the Law on Natural and Environmental Appeal Board and various other Acts (2012). The text of the act was consolidated as the Forest Act (2013).</p> <p>It also implements EU environmental legislation.</p>
Targets	None specified

Name of law	Planning Act (No. 937 of 2009; consolidated No. 587 of 2013) [Legislative]
Date of entry into force	1 October 2009
Categories	<ul style="list-style-type: none"> – Energy demand – REDD+ and LULUCF – Transportation – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Sustainable development
Summary of bill	<p>Consolidated and updated act on land use planning in Denmark to ensure a sustainable land use that supports multiple purposes such as environmental protection, adaptation to climate change, habitats for wild life and protection of biodiversity. The act requires local authorities and municipalities to provide plans and strategies on how this overall objective of sustainable development and land use can be achieved in their specific circumstances to sustainably manage human living conditions.</p>

It implements the European Council Directive on the assessment of the effects of certain public and private projects on the environment (1985 and 1997) and was implemented in 2011. It was further amended by the Act on the assessment and management of flood risk from rivers and lakes (2009), the act amending the Planning Act (2013), the act amending the Planning Law (2011), the act amending the Nature Protection Act, Planning Act, Act on watercourses and various other laws (2011), the act amending the Environmental Protection Act, the Planning Act and various other Acts (2011) and the act amending Nature and Environmental Act and others (2012).

Targets None specified

Name of policy Green Transport Policy Agreement [Executive]

Date of entry into force 2009

Categories

- Energy demand
- Transportation

Driver for implementation Climate change, sustainable development, implementation of international commitments

Summary of bill The policy's objective is to implement international commitments of emission reductions, predominantly in the transportation sector and non-ETS covered sectors. In these sectors, emissions are to be reduced by 20% by 2020 (of 1990 levels).

Key initiatives are aimed at encouraging the use of public transportation (buses, railway) and cycling in cities to reduce emissions and create synergies such as reducing congestion and maintaining mobility. They include the "Drive Green" campaign, energy labelling of vans, green taxis, trials for energy efficiency in transport, certification schemes for municipal and corporate green transport, recommendations for green procurement and investment in expanding the railway system.

Targets None specified

Name of law Law on the Promotion of Renewable Energy - No. 1392/2008 [Legislative]

Date of entry into force 1 January 2009

Categories

- Carbon pricing
- Energy supply
- Energy demand
- Transportation

Driver for implementation Climate change and energy security

Summary of bill The RES law is the legal basis for achieving emission reductions via increasing the share and uptake of renewable energies, particularly in the electricity sector. It is amended several times per year to reflect new developments on the European level and adjustments to the most recent state of technology (e.g., in 2012 the tariffs for biogas were changed via amendments).

Key elements are a premium tariff system based on net metering and bonus payments (since 2008), a bonus for renewable energy plant operators on top of market price, not exceeding a statutory maximum per kWh and adjustment of the tariff structure for photovoltaic subsidies in response to the high costs of the rapid uptake of solar panel and PV installations, motivated by falling solar/ PV panel costs.

Targets Contribution to 40% renewable energy target by 2020

Name of law	Environment protection Act, no. 1757 of 22 December 2006 (updated: No. 879 of 2010). [Legislative]
Date of entry into force	1 January 2007
Categories	<ul style="list-style-type: none"> - REDD+ and LULUCF - Adaptation - Transportation - Institutional/Administrative arrangements
Driver for implementation	Sustainable environmental management, climate change
Summary of bill	<p>Framework act that serves the purpose of safeguarding the sustainable management of environmental resources in Denmark including controls on air-, water, soil and noise pollution in various sectors such as transport, agriculture, waste disposal and energy via appropriate institutional arrangements.</p> <p>This act implements a multitude of European Directives and Regulations..</p>
Targets	None specified

Name of law	Carbon Dioxide Tax on Certain Energy Products - Act 321/2011 [Legislative]
Date of entry into force	1991; latest version 2011
Categories	<ul style="list-style-type: none"> - Carbon pricing - Energy demand
Driver for implementation	Climate change, tax revenues
Summary of bill	Tax on certain energy products to discourage their extensive consumption, used in conjunction with the energy tax. Includes fuels for transportation and energy generation as well as products with high carbon intensity.
Targets	Varied

Name of law	Act on the Energy Tax on Mineral Oil Products - Act 313/2011 [Legislative]
Date of entry into force	1992; latest version 2011
Categories	<ul style="list-style-type: none"> - Carbon pricing - Energy demand
Driver for implementation	Energy security, climate mitigation
Summary of bill	<p>Obligations for companies that produce, process, receive or dispatch energy products to pay pre-defined, annually varying taxes on these energy products.</p> <p>A tax reduction is available if the mineral oil product is blended with biofuels.</p>
Targets	Varied

4.13 Dominican Republic



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	8
excl. LULUCF	26
Change from base year (1990)	14.00%
Latest reporting year	2000
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 7 October 1998 Date of entry into force: 5 January 1999
Kyoto Protocol ratification status and date	Date of signature: Not listed on UNFCCC.int website Date of ratification: 12 February 2002 Date of entry into force: 16 February 2005
2020 pledge	Has committed to reducing GHG emissions by 25% by 2030 against 2010 baseline.
Flagship legislation	Law 1-12 - National Development Strategy

Legislative Process

The legal system of the Dominican Republic is based on French Civil Codes, with universal and compulsory suffrage. The President is both the Head of State and the Head of the government. Both the President and Vice-President are elected on the same ticket by popular vote for four year terms.

The National Congress is bicameral, with a 32-seat Senate and a 150-seat Chamber of Deputies, the members of which are elected by popular vote. Supreme Court judges are appointed by a National Judicial Council made up of the President, the leaders of the chambers of commerce and a representative of an opposition party.

Approach to Climate Change

The Dominican Republic (DR) shares the Caribbean island of Hispaniola with Haiti, occupying the eastern two thirds of the island. The country's vulnerability to climate change derives principally from rising sea levels and increased frequency and intensity of tropical storms. The seriousness with which the country views climate change is reflected in Article 194 of the Constitution, which specifically references the need for adaptation to climate change. The DR ratified the UNFCCC in 1998 and the Kyoto Protocol in 2002. It has submitted first and second national communications to the UNFCCC and established a Council on Climate Change (ONCC) and a Council on The Clean Development Mechanism (ONMDL), an inter-sectoral body established by Presidential decree in 2004. For both of these, the Ministry of the Environment and Natural Resources is the Secretary.

One of the key documents with respect to climate change is A Journey to Sustainable Growth, the draft of the Climate Compatible Development Plan of the Dominican Republic (DECCC). Sustainable economic development is a core component of this document: the republic intends to double GDP by 2030; and increase GDP per capita by 140% from USD 5,200 to USD 12,500. However, it notably seeks to achieve these gains in GDP whilst simultaneously reducing GHG emissions. Nonetheless, the only binding emission reduction is made under Law 1-12, the flagship law on climate change, which commits the country to reduce GHG emissions by 25% by 2030 against a 2010 baseline.

In 2012, the Dominican Republic launched its National Strategy to Strengthen Human Resources and Skills to Advance Green Low Emissions and Climate Resilient Development. This aims to integrate climate change learning in key sectors to promote human and institutional capacity to cope with climate change.

Pricing carbon

The DR introduced a carbon tax for the transportation sector in 2007. It also has a tax on the use of fossil fuels including in electricity production, which is used to develop renewable energy-projects.

Energy demand

In the early part of 2008, the Light Bulb Substitution Programme was launched. It sought to replace 10 million incandescent light bulbs with energy-saving compact fluorescents (CFLs) in 840,000 Dominican homes. Three million 18-watt CFLs (equivalent to 75-watt incandescent bulbs) were given out in the barrios that received subsidised power under the Reduced Blackout Programme. A further 7 million 14W bulbs were distributed elsewhere. Between 2008 and 2009, approximately 12 million bulb substitutions were made. Incandescent bulbs in traffic lights and public lamps have been replaced with LED systems. In addition to this action on use of technology, energy efficiency is being vigorously and widely promoted. This is being done through energy audits and the creation of energy managers in government institutions.

Energy supply

Unstable electrical supply has been a major challenge for both domestic and business users. Distribution losses were estimated to be 40% in 2006, primarily due to theft across the network. In addition there were problems with collection of electricity rates, despite attempts to regulate prices through subsidies. Reform of the sector has proved difficult: privatisation was attempted in 1998, with the sale of three regional electricity distribution systems, with half the shares going to foreign investors. However in late 2003, the administration decided to repurchase all foreign-owned shares in two of these systems.

However, the landscape has changed in the past decade, with the DR starting to exploit its significant potential for the development of renewable energy. The Inter-American Development Bank provided loans for a total of USD 78.3 million to support the construction of two wind farms at Los Cocos (25MW) and Quilvio Cabrera (8MW). Additional wind farms started operation in 2013 at Matafongo (30MW) and El Guanillo (50MW). In 2011 a 30MW solar farm was established at Monte Plata. On a smaller scale, photovoltaic cells are now being deployed residentially and across the telecommunications network. As of 2010 there were 30 photovoltaic systems in telecommunications stations.

Additionally, the DR is developing biodiesel from vegetable oil, and as of 2012 there were 11 pilot projects growing crops to produce biodiesel. There are also two bioethanol projects using sugar cane and sweet sorghum as feedstocks. The contribution of hydropower is also growing, and as of 2011 there were 25 generators connected to the national grid with a total capacity of 523MW. The national energy commission considers that there is potential for small, mini and micro hydro to be developed, with tax exemptions and other incentives available.

REDD+ and LULUCF

The remaining forests of Hispaniola are very biologically diverse, supporting a range of different habitats, and constituting globally significant biodiversity. The biodiversity NGO called Conservation International calls the island a 'Caribbean Island Biodiversity Hotspot'. These forests once covered 70% of the island, but the government and the UN Food and Agriculture Organisation estimate that forest cover is now between 32% and 40%, although much of what remains is degraded. This is because during the 1980s large areas were logged and degraded for charcoal extraction, and then converted for agriculture and cattle ranching. However this pattern could change under the Climate Compatible Development Plan. This has identified significant abatement options in the forestry sector, which could become a net sink if deforestation and fires can be reduced and forest cover can be increased through afforestation and reforestation.

The Dominican Republic has established a Forestry Working group which is expected to lead on improving the sustainability of the forestry sector. The group is composed of representatives from multiple institutions including the Ministry of the Environment and Natural Resources; the Vice-Minister of Forest Resources; the Directorate of Environmental and Natural Resources (DIARENA); the Centre for Agricultural and Forestry Development (CEDAF), and the Dominican Institute Agriculture and Forestry Research (IDIAF). These objectives are being supported internationally by the German Development Agency GIZ and the Coalition of Rainforest Nations CrFN. This is a grouping of tropical forest countries which formed prior to UNFCCC COP 13 in Bali.

In addition, Dominican Republic is developing a REDD+ Plan as a part of the Regional REDD+ Programme of Central America and the Dominican Republic. This initiative supports dialogue between country partners, and also seeks to address potential problems of 'leakage', which is when deforestation is reduced in one country, but then simply increases elsewhere.

Aside from REDD+, climate change and biodiversity management, improved forest management is also a crucial part of the environmental management for the maintenance of ecosystem services such as the maintenance of water supply and the watershed protection. The Frontera Verde, or Green Border, lies between Dominican Republic and its island neighbour, the impoverished and highly environmentally degraded Haiti. Here, the government is seeking to restore ecosystem services across the border area in the most significant reforestation programme in the country to-date. The activities are supported by several sources of funding including the German Development Agency GIZ; the UNDP; the UNEP; and the governments of Norway and Taiwan.

Research and development

The Dominican Environmental Consortium is a non-profit organisation, which was established to co-ordinate the actions of the organisations involved in environmental projects across the Dominican Republic. It was created with the aim of becoming a centre of excellence and influencing decisions in the areas of environmental and natural resources.

Dominican Republic: Flagship legislation

Name of law	Law 1-12: National Development Strategy. [Legislative]
Date of entry into force	1 January 2012
Categories	<ul style="list-style-type: none"> – Adaptation – Mitigation
Driver for implementation	Sustainable development
Summary of bill	The National Development Strategy was signed into law in January 2012. It contains a central theme that mandates national adaptation to climate change, making it the flagship climate change legislation for DR. The Law establishes a binding commitment to achieve a reduction in GHG emissions of 25% in the DR compared to 2010 levels.
Targets	Boost GDP by 140% over the period 2010:2030. 25% reduction in GHG emissions by 2030.

Dominican Republic - Other relevant legislation

Name of law	Decree 786-04 Creation of the Office of Climate Change and the Clean Development Mechanism [Executive]
Date of entry into force	2004
Categories	– Institutional/Administrative Arrangements
Driver for implementation	Climate change
Summary of bill	<p>This decree was developed in 2004 in recognition of the law on environmental protection and the need to engage with the international community on climate change action. It created the Offices of Climate Change (ONCC) and the Clean Development Mechanism (ONMDL), under the secretary of state for the Environment and Natural Resources. The objective of the ONCC is to support the Ministry of the Environment and Natural Resources to comply with obligations arising from the ratification of the UNFCCC and associated mechanisms. The overall objective of the ONMDL is to lead on the development of renewable energy projects; improving energy efficiency; and develop reforestation activities.</p> <p>The specific objectives of the ONCC include:</p> <ul style="list-style-type: none"> – Acting as the focal point for the UNFCCC – Facilitating the definition, implementation, and inter-sectoral and inter-agency assessment of a national climate change strategy. – Promotion of the development of the national capacities for the management of policies and measures to tackle climate change. – Pushing the development of scientific research; and developing technology transfer schemes. <p>The functions of the Executive Director of the ONCC are:</p> <ul style="list-style-type: none"> – To design and implement climate change activities – To boost the Clean Development Mechanism – To follow up on international conventions such as the UNFCCC and the Kyoto Protocol.

- To act as Executive Secretary of the ONMDL

The ONMDL focuses on renewable energy and emissions reduction projects, including:

- Promotion of national and international registration of activities that encourage the development of projects to reduce emissions supported by incentives under the UNFCCC.
- Facilitation of CDM project developers
- Development of national capacity for mitigation projects
- Identification of international investors to purchase emissions reduction credits

The decree recognises that climate change action needs to be co-ordinated between all public and private institutions, and civil society. However it highlights in particular the Secretaries of State for Agriculture, Foreign Relations, Industry and Commerce; the head of the Electricity Corporation; the Central Bank; The National Transport Office; the National Meteorological Office; Civil Defence and the President's office.

Article 14 mandates the creation of a National Carbon Account for DR.

Targets	Creation of a National Carbon Account
----------------	---------------------------------------

Name of law	Law 64-00 Environmental Protection [Legislative]
--------------------	--

Date of entry into force	18 August 2000
---------------------------------	----------------

Categories	- REDD+ & LULUCF
-------------------	------------------

- Institutional/Administrative arrangements

Driver for implementation	Legal modernisation
----------------------------------	---------------------

Summary of bill	<p>The overarching objective of the law is “to provide rules for the protection, improvement and restoration of the environment and natural resources, by ensuring the sustained development thereof”.</p> <p>It adopts the precautionary principle and emphasises the need to correct the deforestation and dry conditions currently being experienced in DR.</p> <p>It requires mandatory inclusion of environmental programmes in all social and economic development programmes.</p> <p>It creates the category of ‘Environmental Crime’ e.g. deforestation in protected areas.</p> <p>The administration of the environment, ecosystems and natural resources is placed under the Ministry of Environment and Natural Resources.</p> <p>The law states that the Ministry is responsible for monitoring international environmental agreements (e.g. under UNFCCC) in conjunction with the Ministry of Foreign Affairs (the lead agency).</p>
------------------------	---

Targets	None specified
----------------	----------------

Name of law	Law 202-04 On Protected Areas [Legislative]
--------------------	---

Date of entry into force	2004
---------------------------------	------

Categories	- REDD+ & LULUCF
-------------------	------------------

Driver for implementation	LULUCF
----------------------------------	--------

Summary of bill	<p>The overall objective of the law is to guarantee the conservation of the ecosystems of the DR, with the goal of maximising ecosystem services that they can deliver society. Accordingly, the first principle of Article 3 is that humans are to be the central beneficiaries of the law. This law is additional to the 2000 law on the environment (64-00) but that law provides the general underlying principles for Law 202-04.</p> <p>The law discusses the role of forest reserves and sustainable land use in several land use categories including: Strict Protected Areas; National Parks; and Areas of Special Protection. This has direct relevance to the DR's engagement with mitigation and adaptation through LULUCF, such as REDD+.</p> <p>One of the main goals of the Law is the development of an effective protected area system. Some of the key objectives of the law include:</p> <ul style="list-style-type: none"> Mainstreaming conservation and sustainable use across society and into development more generally. Modernising and improving administration for improved protected area management. Promote the adoption of incentives and new forms of income generation such as Payments for Ecosystem Services. Establishing a protected area system that is co-ordinated between the private sector, civil society and the state.
------------------------	--

Targets	None specified
----------------	----------------

Name of law	Law 57-07 on Renewable Energy (supported by the 2008 Renewable Energy Regulation No. 202-08, used to apply the law) [Legislative].
Date of entry into force	7 th May 2007
Categories	– Energy supply
Driver for implementation	Renewable energy
Summary of bill	<p>The law was developed in recognition of the potential that renewable energy and fuels offer to boost DR's development. It constitutes the main regulatory framework for a range of renewable energy production, from the production of ethanol to the exploitation of tidal energy.</p> <p>The objectives of the Law include:</p> <ul style="list-style-type: none"> – To diversify energy supply – To reduce dependency on fossil fuel imports – To promote private investment – To mitigate the environmental impacts of fossil fuels – To contribute to decentralisation of power and biofuel production; and increase competition between providers <p>The Law sets out tax exemptions and incentives for investors in renewable energy production projects. This constitutes a 100% customs tax exemption and a 10 year income tax exemption. For self-producers (e.g. domestic) a credit of up to 75% on capital costs is provided against income tax. There are also provisions for community projects.</p> <p>This includes, but is not limited to, small hydro-electric installations with capacity of not more than 5MW; wind parks with capacity of not more than 50MW; and electric and solar installations of any type and power levels.</p>

There are special rules for production of bioethanol, biodiesel and any other synthetic renewable fuel. Specifically, the Law provides for a 10-year exemption on income tax, duties, contributions and any other taxed from the beginning of operations for companies.

Targets None specified.

Name of law Law 112-00: Law on hydrocarbons [Legislative]

Date of entry into force 29th November 2000

Categories – Energy supply

Driver for implementation Renewable energy

Summary of bill A fund has been established from tax on fossil fuel and petroleum derivatives, beginning in 2005. The tax is specifically allocated to be spent on programmes and projects for the development of renewable sources of energy at a national level, and for national energy efficiency programmes.

Targets None specified

Name of law Law 125-01: General electricity law [Legislative]

Date of entry into force 26th July 2001

Categories – Energy supply

Driver for implementation Renewable energy

Summary of bill This Law establishes a tax on electricity production from fossil fuels. The tax “is specifically allocated to be spent on programmes and projects for the development of renewable sources of energy at a national level, and for national energy efficiency programmes.

Targets None specified

4.14 Democratic Republic of Congo



Fact box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	-133
excl. LULUCF	46
Change from base year (1990)	NA
Latest reporting year	2003
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 11 June 1992 Date of ratification: 9 January 1995 Date of entry into force: 9 April 1995
Kyoto Protocol ratification status and date	Date of ratification: 23 March 2005 Date of entry into force: 21 June 2005
2020 pledge	No pledge made
Flagship legislation	Law No. 11/009 on the protection of the environment

Legislative Process

The government of the Democratic Republic of the Congo (DRC) is bicameral, constituting a Senate and a National Assembly. The 108 members of the Senate are elected by provincial assemblies, while the members of the National Assembly are elected from open lists using proportional representation. Both members of the Senate and the National Assembly are elected for five-year terms. The President is the head of state and appoints the members of the cabinet, while the Prime Minister is the head of the government.

The legal system of the DRC is based on the Belgian version of French civil law. Within the judicial branch the highest court is the Supreme Court of Justice, whose judges are appointed by an independent body called the Judicial Service Council, which is composed of public prosecutors and judges from the lower courts. The 2006 constitution of the DRC was modified by Law 11/002 in January 2011. The recent constitution is a result of the changes which have occurred in DRC over the past two decades, which have been characterised by large scale warfare which has drawn in neighbouring countries on opposing sides; the deposing of presidents; and the re-naming of the country (it was formerly called Zaire). Peace accords were signed in 2003, but fighting continues in the east of the country. A transitional government took office in 2003 and multiparty elections were held in 2006 and 2011.

Approach to Climate Change

The Democratic Republic of Congo (DRC) is the world's 18th most populous country. No account of the country could fail to mention the violence of recent history: the Second Congo War, which began in 1998, involved numerous foreign armies and multiple militia groups, killing some 5.4 million people. It has therefore come to be known as 'Africa's World War'. As a result, there has understandably not been a particularly strong history of action on climate change legislation. Nonetheless, the country does have a National Adaptation Plan on Climate Change, and has engaged actively at the forefront of global REDD+ activities. It has recently revised and implemented new environmental legislation that may be relevant to climate change. Yet how the DRC engages with these processes and implements laws over the medium term depends on success in maintaining a tenuous stability and providing economic development to one of the poorest populations in the world.

Serious food problems for the population reflect the DRC's low area of land under agriculture, and low intensity and productivity. The fundamental structure of the economy has changed little in the past 20 years, being highly dependent on agriculture and natural resource extraction. The UN expects the short to medium term development of the country to continue to be based around the extraction of natural resources, principally timber, minerals, gas and oil. The DRC's national development vision, as set out in its Poverty Reduction and Growth Strategy Papers, aims to increase growth in extractive industry to 8-9% between 2011 and 2015. This extraction is to be facilitated by infrastructure investment at the same levels over the same period to enable the country to draw down its natural capital.

The DRC has now in some cases stopped social and economic decline. Since 2004, real growth in GDP has been between 5% and 6%, and the government has moved to address the institutional and organisational issues surrounding natural resources. These include establishment of new legislation for resource extraction, specifically the Forestry Code 2002 and Mining Code 2002, as well as a complete review of the process of issuing forestry and mining concession licenses.

There have been significant developments in broader environmental law. In particular it is expected that the national legislative response to climate change will be provided by the comprehensive Law on the Principles of the Protection of the Environment. This addresses the protection of air, water, biodiversity, protected area development, through to the development of genetically modified organisms. This law has led to the development of some 28 decrees. However, at the time of writing in 2013, the development of these decrees is ongoing.

Environmental lawyers in the DRC expect to see soon the development of a national policy document to provide a vision on environmental issues and climate change mitigation. The UN environment programme has filled some of this policy space with the development of a Post Conflict Environmental Assessment and National Environmental Action Plan (PCEA-NEAP) to run 2009-10. This was developed in the context of the DRC's recovery from civil war, and within the UNEP's country programme for 2009-13 which places peace and reconciliation at the heart of its activities.

With very low emissions at 0.30 tonnes of CO₂e per capita per year, there is limited scope to engage in mitigation activities. However, the DRC holds huge tracts of forests that are only second in extent to those of Brazil. With a rising deforestation rate from agriculture and resource extraction, CO₂ emissions from this sector are set to rise. This underscores the importance of the engagement of the international community and investors to support development which does not cause excessive deforestation – particularly a problem for road building schemes, which have been shown elsewhere to increase deforestation.

Energy Supply

Some 95% of the DRC's energy needs are currently being met from biomass. However, the country has a potentially diverse energy mix from oil, gas, solar and hydro-electric. Estimates suggest that the DRC has the potential to supply 100,000MW of power from hydro-electric power generation, but less than 3% of this is exploited. The Grand Inga is a flagship project that would represent the world's largest hydropower scheme. The Grand Inga would be the fourth dam at Inga, 50km from the mouth of the Congo River, located on the largest waterfall in the world as measured by water volume. The scheme would in aggregate provide 40,000MW power, amounting to as much as one third of the total electricity produced across all of Africa, and cost an estimated USD 80 billion. This is a priority project for regional development organisations like the Partnership for Africa's Development (NEPAD), the Southern Africa Development Community (SADC), East African Power Pool (EAPP).

REDD+ and LULUCF

The DRC's forests are the second largest of any country, extending over more than 100 million ha. Due to the pressures of agriculture and resource extraction they have been cleared at an estimated 319,000 ha per year between 1990 and 2000. Due to a lack of diversification of power sources, the energy sector remains highly dependent on ligneous fuels (wood, charcoal, plant residues). Surveys estimate that almost all rural households use wood from forests and savannas, which constitutes 98% of domestic fuel supply. The high numbers of internally displaced people rely particularly heavily upon forest resources since they are removed from their local economies. Many such people are now located in the eastern conflict zones, where four of the DRC's national parks are found, leading to charcoal extraction and land clearances inside these protected areas.

More than half of DRC's territory is now covered with mining and extractive concession licences, which overlap with one another and also with protected areas. This presents a large challenge to the rural poor who continue to be dependent on forest resources for their livelihoods. Less than a third of timber is processed in-country, meaning that significant value added for the tropical hardwoods is captured outside the DRC. This is in addition to the fact that many concession licences are poorly negotiated, meaning little benefit is derived by the DRC, in practice only providing limited revenues for central government.

While there have been improvements in the institutional framework to manage natural resources (the mining and forest codes of 2002), laws tend to be fragmented and ad hoc, a problem that is now being addressed under the National Forestry and Conservation Development Plan Programme (PNFCN). Because of the huge forest resources which are now coming under increasing pressure, there is a potential for the DRC to engage in REDD+ activities. Recognising the great potential, the DRC has forged ahead from planning to the implementation stages of REDD+ preparedness. The initial DRC National Programme helped launch and structure the country's national REDD+ strategy. This has now transitioned into the full National Programme (Readiness Plan) after it was approved by the UN-REDD Programme Policy Board. The DRC's National Programme document was signed in October and funds were disbursed in November. This was the official launch of the country's UN-REDD Programme and marks a movement away from strategic planning towards results-based activities including testing of in-country consultations and even a university curriculum based around REDD+. In addition, the DRC is receiving funding for forestry activities under the Climate Investment Funds Forest Investment Programme as implemented by the African Development Bank (AfDB). Its investment plan was finalised in 2011, with the programme receiving USD 58.4 million. The goal is to support the DRC's REDD+ initiatives, including the AfDB's project address deforestation and degradation in the Mbuji Mayi/Kananga and Kisangani areas.

Adaptation

The main document concerning adaptation in the DRC is the National adaptation programme of action (NAPA), published in 2006. This called for a multidisciplinary approach combining expert opinion with consultations with civil society and NGOs. It covers adaptation in both rural and urban areas. The priorities are strongly focussed on basic service provision and ensuring fundamental service provision such as the electrification of urban areas and the provision of water supplies.

Democratic Republic of Congo: Flagship Legislation

Name of law	Law No. 11/009 on the protection of the environment (Legislative)
Date of entry into force	9 July 2011
Categories	REDD+ and LULUCF
Driver for implementation	Environmental protection
Summary of bill	<p>This is the DRC's most recent and broader sweeping environmental legislation which covers many areas including the management of air, water, through to the introduction of genetically modified organisms.</p> <p>It sets out the fundamental principles concerning environmental protection. The law establishes the institutional framework and outlines the procedural and financial mechanisms of environmental protection for DRC. The Law sets out the rules for natural resources management and conservation. This is expected to be the most significant piece of legislation with regards to environmental management and to climate change. It has led to plans for 28 subsequent decrees, whose production is still in progress.</p>
Targets	None

Democratic Republic of Congo: Other Relevant Legislation

Name of law	National Programme of Action on Climate Change / Programme d'Action National d'Adaptation au Changement Climatique de la République Démocratique du Congo (Executive)
Date of entry into force	1 September 2006
Categories	Adaptation
Driver for implementation	National Adaptation Programme of Action
Summary of bill	The document creates a synthetic planning document for the DRC on adaptation to climate change impacts. This plan summarises some of the dire challenges that face the population of the DRC, which are expected to become more severe even in the absence of climate

change, such as food security and health.

Vulnerability assessments of the populace are central to the plan, while proposed activities focus on improved management of the natural resources that underpin the livelihoods of the majority of Congolese, for example the management of soil erosion and sedimentation of waterways; the sustainable management of forests; and the improvement of agricultural capacity.

Targets None

Name of law	Law 11/022 Fundamental Agricultural Law (Legislative)
Date of entry into force	24 December 2011
Categories	<ul style="list-style-type: none"> - Energy supply - REDD+ and LULUCF
Driver for implementation	Improved management of agriculture
Summary of bill	Given the huge dependence of the largely rural population on agriculture, this law attempts to support sustainable development; improve agricultural production and provide food self-sufficiency. While these aspects of the law are relevant to climate change with regard to land management and land use change (LULUCF), of particular importance is the law's stated goal of attracting new technology for sustainable energy production, specifically bioenergy and biogas.
Targets	None

4.15 Ecuador



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	410
excl. LULUCF	248
Change from base year (1990)	69
Latest reporting year	2006
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 6 June 1992 Date of ratification: 23 February 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 15 January 1999 Date of ratification: 13 January 2000 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	Executive Decree 1815 No. 636, catalysing the National Strategy on Climate Change.

Legislative Process

Ecuador was the first Latin American country to successfully move from military rule to multi-party, decentralised democracy based on the rule of law, following a referendum in 1978. However the republic has endured recurrent periods of political instability during the past decade that have eroded the strength of the state, and weakened the public sector. Historically there has been little co-operation between political parties, and the political instability is reflected in the fact that few recent leaders have finished their term in office: There were seven Presidents between 1996 and 2007.

These factors contributed to Ecuador's constitution being rewritten in 2008, the country's 20th such change. In 2009 the unicameral 137-seat National Assembly was created, which replaced the Legislative Commission. Assembly members were last elected in 2013 by popular vote for a four-year term on a party list proportional representation system. The new constitution allows members of the executive branch, namely the president, vice-president and members of the National Assembly, to be elected for four-year terms. The president in turn appoints a 38-member cabinet. These changes appear to have heralded a new period of political stability: the incumbent President Rafael Correa Delgado was re-elected in early 2013.

In the judiciary, the National Court of Justice is elected by an independent body of professionals, the Judiciary Council. Judges are elected for nine years. Candidates for the Constitutional Court are selected by the president, government officials and the supreme court, with the judges finally appointed by the National Assembly for two-year terms.

Approach to Climate Change

With its diverse range of natural environments, from coastal plain to high mountains to the Amazon rainforest, Ecuador is expected to experience a range of impacts due to climate change. As a relatively small middle-income country, Ecuador does not support emissions targets for developing countries that do not cause large anthropogenic emissions. Nonetheless, adaptation to and mitigation of climate change is now a government objective. Article 414 of the constitution states that Ecuador "will adopt climate change mitigation policies, whilst Article 413 promotes the development and adoption of clean technology.

The Ministry of the Environment of Ecuador is charged with awareness raising and developing institutional co-operation on climate change. It oversees Ecuador's commitments to the UNFCCC and the CDM and is taking the lead in preparing and executing the National Strategy for Climate Change, as per Decree 1815. This decree establishes the preparation and execution of the National Strategy for Climate Change, Ecuador's benchmark for climate change actions, covering the period 2012-2025. Decree 1815 is chosen as the flagship legislation for Ecuador.

The National Climate Change Strategy is comprehensive and ambitious, and fits into Ecuador's broader development strategies. For instance, it aims to protect the country's biodiversity, which Ecuador sees as a fundamental resource for health and well-being. The strategy is highly integrated across other policy areas: sectors that are prioritised in the National Plan for Good Living (described below) are also given priority in the National Strategy for Climate Change in order to provide policy coherence. These priority areas are: agriculture and livestock security; development of fishing and aquaculture; maintenance of water supply and natural ecosystems; development of tourism; improvement of infrastructure and robustness of human settlements. The strategy is one component of a broader series of measures under the new constitution that are being put in place to foster more sustainable development in Ecuador.

The climate strategy takes particular note of the decentralised nature of the Ecuadorian government, and the rights and abilities of regional governments to participate in action on climate change. It also recognises the role of civil society in climate change policy making and action, with specific reference to a 2011 law concerning the participation of civil society in governance.

The climate strategy has three implementing plans. The first is The National Plan for the Creation and Strengthening of Institutional Conditions. In order to facilitate this, Ecuador established an Undersecretary of Climate Change in 2009, whose remit is to facilitate adaptation and mitigation by developing national institutional capacity. This is the foundation for the two remaining climate action-oriented plans: The Climate Change Mitigation Plan and The Climate Change Adaptation Plan. These generate and implement actions and measures for climate change adaptation and mitigation across Ecuador. Each of these has its own objectives, and specific action plans.

The related National Plan for Good Living (2013-2017) sets out to ensure sustainable management of Ecuador's resources and biodiversity, and develop strategies for the mitigation of and adaptation to climate change. Objective 7.1 focuses on adaptation to and mitigation of climate change. This plan sits alongside the National Environmental Policy which similarly is designed to ensure the well being of Ecuadorians. These policies are faithful to the constitution which remarkably defines nature as a rights-bearing entity, which "has the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its evolutionary processes."

Energy supply

Ecuador's recent economic growth is partially the result of fossil fuel extraction, with exports of ~500,000 barrels of crude a day. It is hoped that the development of new domestic refining capacity will reduce oil derivative imports, slow domestic oil price increases and hence reduce inflationary pressure. The development of the sector has been aided by international investment and direct budgetary assistance, particularly from China through PetroEcuador.

Dependency on fossil fuels for growth represents a challenge for climate change mitigation and adaptation, as it does for other countries. Ecuador faces the realities

of being a middle-income country trying to develop its resources to achieve economic growth. Within the context of a broader development vision, the government is seeking to finance improved service provision and infrastructure that will both improve quality of life and be robust to climate change impacts, but without exacting too high a cost on the environment.

An example of the challenges of reconciling sustainable development and tackling climate change is the Yasuni National Park in the Amazonian region, which has long been known to contain large oil reserves in the Ishpingo-Tambococha-Tiputini fields. Since these reserves are in an environmentally sensitive area and a national park, President Correa introduced a moratorium preventing planned drilling here. In a move similar to Guyana's offer to the government of the UK to create the world's largest carbon offset with its forests (which was turned down), President Corea offered to pay 50% of the projected site revenues to offset the opportunity costs of keeping the oil in the ground. Only \$13m of the \$3.6bn required to do this was raised from the international community, so exploitation has now been authorised in late 2013.

However, the government acknowledges the challenges of managing development impacts on the environment, and is taking action to achieve more sustainable development.. Under objective 10 of the National Plan for Good Living, the government is promoting innovation and diversification of the economy away from natural resource dependency and diversification of the energy mix within the National Climate Change Strategy.

The focus in the energy sector is to reduce net emissions through increased efficiency in production of electricity and to promote the development of renewable energies including hydro-electric and solar power. The National Electricity Board (CONELEC; Consejo Nacional de Electricidad) launched a feed-in tariff scheme in April 2011 to support the development of solar photovoltaic, wind, geothermal, biomass, biogas and hydro-energy. With new hydro-electric plants already in construction, Ecuador aims to obtain fully 93% of its energy from hydro-electric power by 2015.

REDD+ and LULUCF

As a country that was once heavily forested, and where deforestation levels are still quite high, climate change mitigation in Ecuador is likely to be centred upon the reduction of deforestation and degradation, and forest restoration through REDD+. The annual net deforestation rate for 1990-2005 was estimated to be 1.4%. The main drivers of deforestation are the expansion of agricultural land, for the raising of cattle in particular. This is recognised as a social and environmental problem and is being addressed under the National Plan for Good Living; with REDD+ action legislated for under Ministerial Accord 33 (see Annexe).

Research and development

In order to develop the knowledge and scientific capacity to deal with climate change, Ecuador has developed a number of research facilities that are undertaking targeted research including the International Centre for Research on the El Niño Phenomenon, and the National Institute of Meterology and Hydrology.

Ecuador: Flagship Legislation

Name of law	Executive Decree 1815 No. 636 (Executive)
Date of entry into force	17 July 2009
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate change mitigation and adaptation
Summary of bill	The Decree defines adaptation and mitigation as government policy. It states that the Ministry of the Environment, Secretary of Climate Change is in charge of oversight of this policy and the issue more generally in government. Adaptation and mitigation of climate change policies are to be designed by the Ministry of Environment. This resulted in the National Strategy on Climate Change. This has three implementing plans: 1. The National Plan for the Creation and Strengthening of Institutional Conditions, which included establishing an Undersecretary of Climate Change in 2009. 2. The Climate Change Mitigation Plan and 3. The Climate Change Adaptation Plan. Plans 2 and 3 generate and implement actions and measures for climate change adaptation and mitigation across Ecuador. Each of these has its own objectives, and specific action plans.
Targets	Publish adaptation and mitigation policies for Ecuador.

Ecuador: Other Relevant Legislation

Name of law	Ministerial Accord 089 (Executive)
Date of entry into force	10 September 2013
Categories	– Institutional/Administrative arrangements
Driver for implementation	NAMAS, Climate Change Mitigation
Summary of bill	The Decree establishes the National Authority for Implementation of NAMAs. This Authority is chaired by the Minister of Environment while the Undersecretary of Climate Change is in charge of implementing the registry. The NAMA registration is compulsory and is part of the National Environment Information System.
Targets	None.

Name of law	Ministerial Accord 33 on REDD+ (Executive)
Date of entry into force	18 June 2013
Categories	– REDD+ and LULUCF
Driver for implementation	Climate change mitigation
Summary of bill	The Ministerial Accord sets out the regulations for the implementation of the REDD+ mechanism in Ecuador.
Targets	None.

Name of law	Ministerial Accord 095 Official Register No9, Special Edition: Adoption of The National Climate Change Strategy (Executive)
Date of entry into force	17 June 2013
Categories	– Institutional/Administrative arrangements
Driver for implementation	Adoption of National Climate Change Strategy
Summary of bill	<p>The Decree defines National Climate Change Strategy as government policy. Specifically:</p> <p>The members of the Inter-institutional Committee of Climate Change shall promulgate the National Strategy.</p> <p>The Ministry of Environment shall update the National Strategy considered as a planning tool.</p> <p>Local governments will have to present to the approval of the Ministry of Environment its proposed "plans, programs and strategies for climate change".</p>
Targets	None.

Name of law	Executive Decree No. 495. Official Register No. 302 on the creation of an Inter-Institutional Committee on Climate Change. (Executive)
Date of entry into force	20 October 2010
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>This Decree legislates the co-ordination of climate change policies and actions via the creation of an Inter-institutional Committee on Climate Change. It is aimed at co-ordinators from Ministries and Secretariats that handles this inter-sectoral approach. Members are: National Secretariat of State Planning and Development; Ministry of Foreign Affairs; Secretariat of Higher Education, Science; Technology and Innovation; Co-ordinating Ministry of Production, Employment and Competitiveness; Co-ordinating Ministry of Strategic Sectors; Co-ordinating Ministry of Economic Policy; National Secretariat of Risk Management; National Secretariat of Water Resources; Ministry of Environment.</p> <p>The role of the Committee include:</p> <ul style="list-style-type: none"> - Co-ordinate integration of climate change policies into national institutions; - Promote research into development and adjustment policies - Promote adaptation and mitigation in public investment projects - consult specific working groups - promote training and technical assistance in adaptation and mitigation - enhance international cooperation and international technical assistance - define negotiating positions for international delegations - co-ordinate the development of reports and policies for the international arena (e.g. UNFCCC)
Targets	None.

4.16 El Salvador



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	16
excl. LULUCF	12
Change from base year (1990)	NA
Latest reporting year	1994
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 4 December 1995 Date of entry into force: 3 March 1996
Kyoto Protocol ratification status and date	Date of signature: 8 June 1998 Date of ratification: 30 November 1998 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	National Climate Change Strategy

Legislative Process

El Salvador has a unicameral legislative system organised in the form of a legislative Assembly with 84 Deputies. As established by the Constitution, the law-making process encompasses the legislative and the executive powers, but the right to initiate a legislative process is extended to numerous actors. As a general rule, Deputies and the President (acting through the Ministries) hold the responsibility to propose a piece of legislation; however, the Supreme Court of Justice can suggest laws directly related to the field of justice. In addition, local councils have a voice in laws that would address local taxations and the Central American Parliament can propose laws regarding certain aspects of the integration process within Central America.

In all these cases, the law proposal must be submitted to the Assembly in the form of a Communication. The document is received by the Directive Board which schedules a formal presentation of the project to the Legislative. Following, the proposal is submitted for the approval of a legislative committee. The Committee drafts a law proposal and submits it to the Assembly, where it is voted upon. If approved by a simple majority of votes, the proposal becomes a Decree. According to the Constitution, the Decree must be presented to the President within 10 days of its approval. Sanctioned by the President, the Decree is published in the Official Diary (Gazette) and becomes a piece of law. In cases in which the President has observations or vetoes the Decree, the text is sent back to the Assembly. The Deputies then analyse the presidential comments and alter the law accordingly. In the case of presidential veto, the text is voted on again by the Deputies, and, if approved by two-thirds of the Assembly, the law is ratified and sent again for presidential sanction. In the extreme circumstance in which the President still disagrees with the ratification and questions the constitutionality of the law, he/she can ask for the Supreme Court to deliberate on the matter, having the final say on the law.

Approach to Climate Change

In recent years, El Salvador has made significant progress in terms of climate related policies/legislation. Increased concern with climate change, partially spurred by the country's vulnerability to adverse climate events, has resulted in the adoption of various policy instruments, with significant emphasis on adaptation and mitigation, but especially on risk management. Nonetheless, the most recent initiatives have been restricted to the Executive and were not converted into legislation. In the absence of a National Climate Change Policy/Plan, El Salvador still lacks a broad and comprehensive policy framework on climate change. Nevertheless, a significant step in that direction was taken in early 2013 with the adoption of the National Climate Change Strategy.

The National Climate Change Strategy was adopted to set the grounds for a National Climate Change Policy, while the 2012 National Environmental Policy

aims “to reduce the process of environmental degradation and the vulnerability to climate change”.

The 2010–2014 Five-Year Development Plan recognises the direct association between climate change and development, placing special emphasis on the negative impact of natural disasters for the economy. The Plan identifies as one of its priorities the creation of an Environment and Risks Reduction Policy to efficiently manage environmental risks, prevent natural disasters through an alert system and rehabilitate infrastructure and facilities affected by past events. The Plan also calls for the adoption of a National Climate Change Plan addressing issues of adaptation and mitigation, but this Plan remains to be established.

Energy Supply

The 2010–2024 National Energy Policy considers the need to address climate change when defining policies in the sector. The document proposed a set of actions on energy efficiency, promoting the reduction of the use of fossil fuels as sources of energy for industry, transportation and households. The policy points to the importance of fostering the development of hydropower, geothermal energy and biofuels in order to diversify the country’s energy matrix and reduce El Salvador’s dependence on external energy supplies.

The proposal to promote further development of biofuel activities is supported by a 2007 law that adopts well-defined instruments to grant fiscal incentives to the sector, mostly in the form of tax exemptions.

REDD+ and LULUCF

The 2011–2030 National Forest Policy Proposal acknowledges that the lack of political priority has been partially responsible for irregular deforestation practices that increased the country’s vulnerability to the impact of climate change. Addressing this gap, the Policy intends to promote the recovery of around 15% of deforested areas. In addition, the Policy aims to modernise the forest sector, maximising the sustainable production of good and services, while helping to reduce El Salvador’s vulnerability to climate change.

Complementing this Policy, in early 2012, the Ministry for Agriculture and Livestock adopted the Climate Change Mitigation and Adaptation National Strategy for Agriculture, Livestock, Aquaculture and Forest sectors.

Adaptation

The 2012 Integral Programme for Fiscal Sustainability and Climate Change Adaptation focuses on reducing the country’s natural and physical vulnerability to climate change. For this reason, the Programme aims to strengthen the tools available to promote effective response measures to climate events in different aspects. The Programme suggests that public policies addressing the issue of development should take into account four core elements: 1) macroeconomic stability; 2) fiscal sustainability; 3) strengthening of institutional capability; and 4) resilience and adaptation.

The 2005 Civil Protection, Disasters Prevention and Mitigation Law provides further legal basis for initiatives on prevention and mitigation of natural

disasters, creating the Civil Protection, Disasters Prevention and Mitigation National System.

As a long-term strategy to prepare society to deal with natural disasters, the Ministry of Education adopted the 2012–2022 Climate Change and Risk Management Educational Plan, whose main objective is to increase the attention devoted to climate change and environmental issues by the educational system. For this purpose, the Plan aims to: 1) provide training on climate change related issues for educators; 2) support research on the topic; 3) develop social communications mechanisms to enhance public awareness on climate change and risk management; 4) re-model the infrastructure planning of schools to reduce their vulnerability to climate events; and 5) ensure financial support to these initiatives.

In addition, focusing on adaptation, the Ministry for the Environment and Natural Resources launched the National Ecosystem and Landscape Recovery Programme, in May 2012. The main driver for the adoption of the instrument is the perception that environmental degradation increases the vulnerability to climate change.

The 2011–2015 National Food and Nutrition Policy associates climate change with food security, and calls for the adoption of mitigation measures to reduce the vulnerability of food production to climate events. The document also proposes the establishment of a national system of food storage to be employed in the case of emergency.

El Salvador: Flagship Legislation

Name of law	The National Climate Change Strategy (Executive)
Date of entry into force	22 April 2013
Categories	<ul style="list-style-type: none"> – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	The National Climate Change Strategy aims to enhance the financial and institutional resources to reduce economic and social impact of climate change. The Strategy is structured around three core areas of action. To tackle losses generated by climate change, the Strategy proposes strong participation on international climate negotiations, financial compensation to people and businesses that suffered from climate related disasters. Adaptation measures should address urban and coastal changes, the recovery of critical ecosystems and rural landscapes, as well as sectoral adaptation strategies. The third focal area of the National Climate Change Strategy is the development of a mitigation programme that is associated with the national agenda for social and economic development, including the development of a low-carbon economy.
Targets	None specified

El Salvador: Other Relevant Legislation

Name of law	National Environmental Policy (Executive)
Date of entry into force	30 May 2012
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Climate change and environmental sustainability
Summary of bill	<p>The National Environmental Policy offers an ambitious framework through which the government will respond to climate change and environmental degradation. The general objective of the Policy is to reverse environmental degradation and reduce vulnerability to climate change.</p> <p>The policy follows six lines of action that will be prioritised by the national government:</p> <ul style="list-style-type: none"> - Restoration of damaged ecosystems and landscapes; - Integral environmental sanitation; - Integrated management of water resources; - Integration of environmental policy and priorities into the general governance of the national territory; - Environmental responsibilities and compliance; - Adaptation and risk reduction in relation to climate change. <p>One of the major mandates of the policy is that each ministry must incorporate environmental concerns into their own policies and participate in an inter-ministerial environmental council co-ordinated by the Ministry of Environment and Natural Resources. This council will assist in the creation of an “action plan” that will lay out implementation plans for the tasks and responsibilities set out in the National Environmental Policy corresponding to each of the lines of action listed above.</p> <p>Adaptation is specifically prioritised along with reduction of environmental risks. The Policy calls for the development of a National Adaptation Plan that should include mechanisms to monitor and evaluate climate change and the risks it poses; projects to improve water management, especially in relation to flooding during the rainy season and droughts during the dry season; incorporation of adaptation into urban planning and housing designs; evaluation of epidemiological monitoring and public health systems in relation to specific health risks caused by climate change; promotion of environmental concerns and climate change within the national education curriculum; promotion of renewable energy; funding priorities and plans to take advantage of international financing schemes.</p>
Targets	None specified

Name of law	Fiscal Incentives for Increased Use of Renewable Energy in Electricity Generation Law (Legislative)
Date of entry into force	20 December 2007
Categories	<ul style="list-style-type: none"> – Energy Supply – Institutional/Administrative arrangements
Driver for implementation	Renewable energy
Summary of bill	The Law sets out to foster investments on renewable energy, including hydroelectric,

geothermal, wind, solar and biomass energy. For this purpose the law conceives a series of fiscal incentives for the development of new projects of electricity generation. Tax exemption can be claimed according to the volume of energy produced, varying from 5 to 10 years, depending on the nature of the tax.

The Law also exempts investors from any sort of tax on revenues directly generated from activities related to Emission Trading Schemes (ETS), subject to a certification issued by the government.

One of the eligibility criteria to apply for these tax exemptions is compliance with certification and registration norms of the Clean Development Mechanism, under the framework of the Kyoto Protocol. Breaches of law are subject to penalty.

The Law defines institutional competences over implementation and compliance.

Targets None specified

Name of law	Civil Protection, Disasters Prevention and Mitigation Law (Legislative)
Date of entry into force	31 August 2005
Categories	– Institutional/Administrative arrangements
Driver for implementation	Mitigation
Summary of bill	The Law aims to adopt mechanisms of prevention, mitigation and immediate response to natural and anthropogenic disasters, designating a public service of civil protection to operate in these eventualities. For this purpose, the Law creates the Civil Protection, Disasters Prevention and Mitigation National System. In addition to ensuring the implementation of the Law, the System is also in charge of ensuring the inclusion of provisions regarding risk management in development policies, as well as mapping areas of risk and raising public awareness on prevention and management of disasters.
Targets	None specified

Name of law	Forest Act 2002 (Legislative)
Date of entry into force	17 June 2002
Categories	– REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Forest management
Summary of bill	The Law aims to regulate the management and sustainable use of forest resources and the development of forestry activities.
	The Law recognises all forests as national heritage and delegates the responsibility to protect and manage these areas to the State. However, the law defines every planted tree as the private property of the person who planted it (shifting from a more regulatory approach to private property adopted in the previous Forest Code).
	The law calls for the establishment of conditions to foment the engagement of the private sector in reforestation activities, subject to fiscal incentives established by the Law.
	It also delegates competences over the establishment of market instruments to promote reforestation, taking into account the economic valuation of forest areas over the past

years.

The law mandates the Ministry of Agriculture and Livestock primary responsibility over the implementation of the Forest Code, and should, for that purpose: 1) create a “Forest Commission” composed of representatives of the government and the forest sector with the aim to promote industrial and technological development within the sector; 2) adopt policies that promote the productive use of forest resources; 3) manage national and international funds for activities addressing forest development and sustainable use of forest areas.

Targets None specified

Name of law	Environment Law 1998 (Legislative)
Date of entry into force	4 March 1998
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Environment protection
Summary of bill	<p>The 1998 Environment Law sets out to further develop constitutional provisions regarding: 1) environment conservation and protection; sustainable use of natural resources aiming at improving the quality of life of citizens; 2) regulation of public and private environment protection activities; 3) defining environmental protection as a legal obligation of the national and local governments shared with individuals; and 4) ensuring compliance with international agreements ratified by El Salvador.</p> <p>The Law delegates to the Ministry of Environment and Natural Resources the responsibility to draft and co-ordinate the execution of national plans addressing climate change and ozone layer protection.</p> <p>The Law adopts a series of criteria regulating land use, and the exploitation of natural resources, including forests, in addition to creating the Protected Areas System.</p>
Targets	None specified

4.17 Ethiopia



Fact Box

Greenhouse Gas emissions (MtCO₂e) incl. LULUCF excl. LULUCF Change from base year (1990)	38 48 NA
Latest reporting year	1995
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 10 June 1992 Date of ratification: 05 April 1994 Date of entry into force: 04 July 1994
Kyoto Protocol ratification status and date	Date of ratification: 14 April 2005 Date of entry into force: 13 July 2005
2020 pledge	Actions in renewable and alternative energy; water, transportation, industry, waste, agriculture, buildings forestry, soil, livestock, health and land sectors. Achieving carbon-neutral middle-income status by 2025.
Flagship legislation	Climate-Resilient Green Economy (CRGE) Initiative

Legislative Process

Ethiopia is a Federal parliamentary republic. It is a bicameral system – the Upper House known as the House of Federation (HOF) and the Lower House as the House of Peoples' Representatives (HPR). 550 Members of the HPR are elected every 5 years, with a minimum of 20 seats reserved by direction of the constitution for minority nationalities and peoples. The political party with most seats on the HPR will form and lead the executive branch. The HPR acts as the main legislative authority by issuing laws, called proclamations. The HPR nominates the candidate for President, who has more ceremonial obligations than real power. The HPR also ratifies international agreements and appoints federal judges.

The HOF serves as a representative house for nations, nationalities and people – each recognised ethnic-national group has one representative and an additional representative for every million of its population. Members of the HOF are elected by the State Councils in each regional state. The HOF does not have general legislative powers, but rather is dedicated to the interpretation of the constitution, issues of self-determination, disputes among states and distribution of federal and state revenues and federal subsidies among states.

In addition to the main form of legislation, i.e. HPR proclamations, the executive branch (Council of Ministers of the Federal Government and federal ministries) may issue decrees, regulations and directives according to a mandate issued by the HPR. Additionally, according to the constitution, international agreements ratified by the parliament are integral laws of the land.

Approach to Climate Change

Ethiopia's 1995 Constitution includes the principle of environmental rights, including the right to a clean and healthy environment and the principle of government responsibility to ensure this right. In 1997, the Environmental Protection Authority formulated the Environment Policy of Ethiopia, as part of a wider Conservation Strategy. The Environment Policy defines key guiding principles, including responsible and sustainable use of non-renewable and renewable sources. It defines policy guidelines (although no instruments) on atmospheric pollution and climate change; land use; forest, woodland and tree resources; biodiversity; water resources; and energy resources. Atmospheric pollution and climate change policies include: promoting a climate monitoring programme; acknowledging commitment to mitigate emissions, even at low or even insignificant levels of contribution to global emissions; actively participating in protecting the ozone layer as a means of reducing the vulnerability of the highlands of Ethiopia; and encouraging re-vegetation, monitoring grazing and rehabilitating degraded land to compensate for high biomass-fuel consumption.

After Ethiopia's ratification of UNFCCC, in 1994, there has been capacity-building at the National Meteorological Agency (NMA) – a climate change and air pollution research team that aims to provide research guidance and directives on climate related issues. The late Ethiopian Prime Minister Meles Zenawi, who

passed away in August 2012 after 21 years in power, spearheaded efforts to fight climate change in Africa and to generate green growth in the country and in the region. Zenawi played an important role in shaping the African Union position on climate change and was a 'friend of the Chair' at COP-15. On behalf of Africa and jointly with France, Ethiopia issued in Copenhagen an appeal to reach an ambitious accord, including halving global CO₂ emissions by 2050 compared to 1990 levels, full transparency of commitments, and adoption of a "fast-start" three-year fund of USD10 billion dedicated to adaptation and mitigation actions.

In 2011, at COP-16, Ethiopia, Norway and the UK established a strategic partnership to promote collaboration on international climate change policy. The partnership focuses on strengthening efforts to avoid deforestation and forest degradation; strengthening climate adaptation in agricultural and pastoral production systems; strengthening food security and disaster risk management systems; supporting the use of renewable energy resources and increased energy efficiency; strengthening open and transparent governance of natural resources; ensuring gender equality; establishing measuring, reporting and verification systems; reducing biodiversity loss; and supporting efforts to build Ethiopia's institutional capacity to respond to climate change.

Most importantly, in September 2011 the government finalised its "Climate-Resilient Green Economy" (CRGE) strategy. This is the first of its kind in Africa, and was established under the leadership of the Prime Minister's Office, the Environmental Protection Authority and the Ethiopian Development Research Institute. Whereas in its last report to the UNFCCC Ethiopia said that its GHG emissions in 1995 ranged between 38 and 48 MtCO₂e depending if emissions from LULUCF were included, the CRGE acknowledges that in 2010 Ethiopia's GHG emissions rose to 150 Mt CO₂e, and that by 2030 they might more than double to 400 Mt CO₂e.

The CRGE strategy builds on the Growth and Transformation Plan (GTP), the government's ambitious development plan, which sets the aspiration for Ethiopia to reach middle income levels by 2025. The first GTP planning period is 2010/11-2014/15, and was approved by the parliament in November 2010. As the highest national policy framework, it governs Ethiopia's developmental policies, budgets and government organizations, as well as actions of development partners and foreign investors until 2015. Subsequent GTP planning periods will lead the country towards poverty reduction and middle-income status.

The idea that green growth is crucial to achieve the ambitious targets in the GTP in a sustainable way underpins the CRGE strategy. It describes a new model of development that integrates key aspects of economic performance, such as poverty reduction, job creation, and social inclusion, with those of environmental performance, such as mitigation of climate change and biodiversity loss as well as ensuring access to clean water and energy. Strong development objectives are addressed simultaneously with climate change

objectives: the green economy that will lead Ethiopia to middle-income status before 2025 requires the promotion of climate resilience.

By promoting a green economy, Ethiopia aims to decouple growth from natural resource consumption and GHG emissions. As set forth in the GTP, achieving carbon-neutral middle-income status before 2025 will require increasing agricultural productivity, strengthening the industrial base, and fostering export growth. Economically, it means growing fast enough to increase the current gross domestic product per capita of around USD 380 to USD 1,000, decreasing the share of GDP contributed by agriculture from more than 40% to less than 30%, and migrating from farming and herding to jobs in the services and industry sectors. The CRGE initiative follows a sectoral approach and identifies more than 60 initiatives that could help Ethiopia to limit 2030 GHG emissions to today's levels. The plan is based on four pillars: improving crop and livestock production practices for higher food security and farmer income; protecting forests and promoting reforestation; expanding electricity generation from renewable sources; and leapfrogging to energy-efficient technologies in transportation, industry and buildings.

By promoting climate resilience, the CRGE deals with Ethiopia's current climate variability and with future climate change. This is important as Ethiopia's economy and social wellbeing are already very exposed to climate variability and extremes. Agriculture, primarily rain-fed and highly sensitive to fluctuations in rainfall, forms the basis of the economy. Chronic food insecurity affects 10% of the population and even in average rainfall years these households cannot meet their food needs. Droughts result in sharp reductions in agricultural output, while floods cause crop and infrastructure damage. Furthermore, Ethiopia's energy mix increases its vulnerability to climate change: 95% of Ethiopia's national energy needs are derived from fuel wood, crop/animal waste, and human/animal power; and 5% comes from electricity, the majority of which is hydro-power. In sum, Ethiopia's agriculture, water and energy are all highly vulnerable to climate variations.

The implementation of the CRGE was originally under the co-responsibility of the Ministry of Finance and Economic Development (MoFED) and the Environment Protection Authority (EPA), Ethiopia's body for environmental regulation and monitoring since 1994. In July 2013, the EPA was upgraded to a Ministry of Environment and Forest (MEF), which is better equipped to take the technical responsibility of building a climate-resilient green economy. Furthermore, by engaging both the Ministry of Finance and the Ministry of Environment in the implementation of the CRGE, the government acknowledges the importance of integrating climate change and development.

To implement the CRGE, the government will use a Sectoral Reduction Mechanism (SRM). The SRM is part of the CRGE and its purpose is to reduce emissions and vulnerability, and to build a climate-resilient green economy with zero-net growth in carbon emission by 2025. A framework of the SRM is currently under revision, and once finalised it will work as a mechanism for mobilising action on climate change on the ground. More specifically, the SRM

will help mainstream green growth and resilience into Ethiopia's development activities, ensure that the efforts to acquire low carbon and climate resilient technologies are aligned and co-ordinated, and leverage climate-related investments.

Energy supply

Access to energy is a key element for the economic and social development of Ethiopia. More than 80% of the country's population live in rural areas, and only 23% have access to electricity. Traditional energy sources represent the principal sources of energy in Ethiopia. Some 95% of Ethiopia's national energy needs are derived from fuel wood, crop/animal waste, and human/animal power; and 5% comes from electricity, the majority of which is hydro-power.

Ethiopia's National Energy Policy was adopted in 1994. The document focused on research and development aimed at building technological capacity in the sector, and on transforming the energy sector from traditional sources (especially biomass) to modern ones, while conserving and protecting the environment. This policy is still in force, though a new energy policy document is currently being drafted.

The CRGE initiative also focuses on Ethiopia's energy strategy to build a green economy, concentrating on four energy supply initiatives: (i) exploiting Ethiopia's hydro-power potential; (ii) large-scale promotion of advanced rural cooking technologies; (iii) efficiency improvements to the livestock value chain; and (iv) Reducing Emissions from Deforestation and forest Degradation (REDD). It foresees an increase of up to 25,000 MW in Ethiopia's generation potential by 2030. Of this hydro holds 22,000 MW, geothermal 1,000MW and wind 2,000MW. Since rural energy usage is likely to remain dependent on traditional fuel, especially for cooking purposes, the CRGE expects emissions abatement can be achieved through improving fuel efficiency and shifting fuels (from fuel wood to biogas etc.) for cooking stoves.

In December 2011 the government ratified its membership of the International Renewable Energy Agency while in January 2012 the Ministry of Water, Irrigation and Energy and the EPA finalised a draft of the "Ethiopian Investment Plan for Scaling-Up Renewable Energy in Low Income Countries (SREP)". The SREP is a targeted programme of the Strategic Climate Fund, one of two funds within the Climate Investment Funds framework. A Feed-in-Tariff proclamation was presented in October 2011 by the Ministry of Water and Energy Resource. However, the bill has gone through several revisions and it is not clear when it will become law.

Adaptation

Ethiopia is one of Africa's poorest and most vulnerable countries. The key climate hazards in Ethiopia are flooding, drought and rainfall variability. In the energy sector, there is an understanding of the importance of renewable energy, particularly hydropower, and how Ethiopia's future plans to expand that

subsector may be vulnerable to rainfall variability. A number of documents have dealt with the issue of climate change adaptation in Ethiopia.

Ethiopia's first Climate Change National Adaptation Programme of Action (NAPA) was finalised in 2007 by the Ministry of Water Resources and the Meteorological service. In 2010 the NAPA was updated and replaced by the Ethiopian Programme of Adaptation to Climate Change (EPACC). The EPACC outlines future climate change scenarios and their associated risks; details potential options to reduce vulnerability to climate change based on a review of projects; and reviews the commitments made to the UNFCCC and multi-lateral environmental agreements and national and regional consultation workshops.

A World Bank document on the economics of climate change identifies Ethiopia's vulnerability to climate change across a variety of sectors and the quantitative impact of climate change on the economy across six regional archetypes, and provides general direction on how Ethiopia can adapt to these changes. As part of the partnership established with the Government of Norway, the Ethiopian Ministry of Environment and Forest received \$1.5 million to protect vulnerable communities in Ethiopia from the impacts of climate change. The grant will allow existing projects, which encourage local communities to fight food insecurity and environmental degradation linked to climate change, to be upscaled and duplicated.

In 2011 the CRGE strategy also addressed climate change adaptation, integrating it into development planning objectives. It deals with adaptation initiatives to reduce climate change vulnerability by promoting "climate resilience". In parallel, the sectors of the economy most vulnerable to the hazards of climate change are identified for prioritised regional adaptation plans: agriculture; health; water and energy; buildings; and transportation. Further climate resilience initiatives include a large-scale afforestation and reforestation project and adopting a "green cities" approach to urbanisation.

Ethiopia: Flagship Legislation

Name of law	Climate-Resilient Green Economy (CRGE) Strategy (Executive)
Date of entry into force	Finalised in September 2011
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy demand – REDD+ and LULUCF – Transportation – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Green growth, sustainable development, vulnerability
Summary of bill	<p>The Climate-Resilient Green Economy (CRGE)'s vision is achieving middle-income status by 2025 in a climate-resilient green economy, outlining four pillars:</p> <ul style="list-style-type: none"> – Agriculture: Improving crop and livestock production practices for higher food security and farmer income while reducing emissions

- Deforestation: Reducing emissions by protecting and re-establishing forests for their economic and ecosystem services including as carbon stocks
- Power: expanding electricity generation from renewable energy for domestic and regional markets
- Transportation, industrial sectors and buildings: Leapfrogging to modern and energy efficient technologies

The strategy also targets climate change mitigation and adaptation, and sets a target of keeping emissions at their 2010 level by 2030. There are programmes to replace woodfuel for domestic use with less polluting fuels, such as biogas. There are plans to distribute 9 million stoves by 2015 and 34 million by 2030.

The initiative establishes a national financial mechanism called the “CRGE Facility” to mobilise, access, sequence and blend domestic and international, public and private sources of finance to support the institutional building and implementation of Ethiopia’s CRGE strategy.

The CRGE initially relies on existing institutions, notably the Environmental Protection Authority (which in 2013 was replaced by the Ministry of Environment and Forest), the Ethiopian Development Research Institute, six ministries, and several government agencies. Subsequent phases of the CRGE will strengthen institutions to implement the strategy.

Targets	To increase generating capacity by 25,000 MW by 2030 – hydro 22,000 MW, geothermal 1,000 MW and wind 2,000 MW.
	To limit 2030 emissions to 150 Mt CO ₂ e (level of 2010 emissions), approximately 250 Mt CO ₂ e less than in the business as usual scenario.

Ethiopia: Other Relevant Legislation

Name of law	Proclamation creating the Ministry of Environment and Forestry (Executive)
Date of entry into force	4 July 2013
Categories	– Institutional/Administrative arrangements
Driver for implementation	Environmental Protection
Summary of bill	The proclamation creates the ‘Ministry of Environment and Forestry’; and amends the designation ‘Ministry of Urban Development and Construction’ and ‘Ministry of Water and Energy’. It considers that to expand farm land and increase forest coverage it is necessary to separate the Forest area from the Ministry of Agriculture. Therefore, the provision gives to the Ministry of Environment and Forest the powers and duties previously given to the Ministry of agriculture with respect to matters relating to forestry issues.
	In its preamble, the proclamation states that industrialised nations will help Ethiopia to decarbonise its economy. It also says the EPA must be elevated to an executive level in order to promote a green economy and climate change resiliency.
Targets	None specified

Name of law	Ethiopian Programme of Adaptation to Climate Change (EPACC) (Executive)
Date of entry into force	2010

Categories	– Adaptation
Driver for implementation	Adaptation/vulnerability
Summary of bill	<p>The EPACC calls for the mainstreaming of climate change into decision-making at a national level and emphasises planning and implementation monitoring. It identifies 20 climate change risks, mainly in the following areas: health risks (human and animal); agriculture production decline; land degradation; water shortages; biodiversity; waste; displacement; distributive justice. The EPACC also identifies institutions responsible for mitigating these risks. Specific adaptation objectives include:</p> <ul style="list-style-type: none"> – Reducing impacts of droughts by cloud seeding to induce rain – Establishing building and construction codes that ensure structures withstand extreme weather events – Storing food and feed in good years for use in bad years – Ensuring transportation access to disaster prone areas – Developing insurance schemes for weather damage compensation – Organising local communities for quick response to extreme weather events – Preparing to cater for refugees driven out of their homes by climate change – Mapping and delineating areas likely to suffer from climate change and extreme weather events – Developing an accessible information network on climate change – Developing an early warning system to alert people of impending extreme weather events
Targets	None specified
Name of law	The Growth and Transformation Plan (GTP) (Executive)
Date of entry into force	2010
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Institutional/Administrative arrangements
Driver for implementation	Development
Summary of bill	<p>The GTP is the government’s development plan for 2010–2015. It sets some targets for energy – generation of electricity from renewables for domestic use and export, expansion of transmission and distribution systems (which suffer from a high loss rate) and near-doubling access to electricity. It sets out targets with regards to biofuels (ethanol and bio-diesel production and blending), minimising the gap between supply and demand.</p> <p>The GTP focuses on building institutional capacity nationally and in the regions, enhancing energy development and management capabilities and awareness. The electric power company is to undergo complete restructuring and regulation is to be developed and strengthened.</p> <p>A policy matrix helps to integrate the GTP, tracking the progress of key indicators in several sectors of the economy. The system provides the government with mechanisms to measure the efficiency of government actions and the effectiveness of public policies in achieving the objectives stated in the GTP. This policy matrix compares the annual targets against the indicators in the GTP. Each target and indicator is also linked with the Millennium Development Goals (MDGs).</p> <p>The GTP explicitly addresses the sustainability of growth, stating that “environmental conservation plays a vital role in sustainable development. Building a ‘green economy’ and on-going implementation of environmental laws are among the key strategic directions to be pursued during the plan period.</p>
Targets	<ul style="list-style-type: none"> – Generation of an additional 8,000 MW renewable energy – Increasing electricity customer base from 41% to 75%

- Increasing bio-ethanol production to 194.9 million litres and bio-diesel usage to 1.6 billion litres
- Increasing ethanol blending facilities to 8, and biodiesel to 72

Name of law	National Disaster Prevention and Preparedness Fund Establishment Proclamation (Executive)
Date of entry into force	2000
Categories	<ul style="list-style-type: none"> - Adaptation - Institutional/Administrative arrangements
Driver for implementation	Adaptation
Summary of bill	The proclamation establishes a disaster management fund, to maintain a readily available cash reserve to combat disasters, and to assist the implementation of Employment Generation Schemes (EGS) that would support the achievement of National Food Security.
Targets	None specified

Name of law	Environment Policy of Ethiopia (Executive)
Date of entry into force	1997
Categories	<ul style="list-style-type: none"> - Energy supply - Research and development
Driver for implementation	Sustainable development
Summary of bill	<p>The policy's stated goal is to "improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through the sound management and use of natural, human-made and cultural resources and the environment as a whole..." This is done through several sectoral policies as well as some cross-sectoral policies. One sectoral policy specifically addresses climate change and atmospheric pollution, through:</p> <ul style="list-style-type: none"> - promoting a climate monitoring programme - acknowledging a commitment to mitigate emissions, even at low or even insignificant levels of contribution to global emissions - actively participating in protecting the ozone layer, as a means to reduce vulnerability of the highlands of Ethiopia - encouraging re-vegetation, monitoring grazing and rehabilitating degraded land to compensate for high biomass-fuel consumption <p>Other sectoral policies include:</p> <ul style="list-style-type: none"> - soil husbandry and sustainable agriculture - forest, woodland and tree resources - genetic, species and ecosystem biodiversity - energy resource - water resources - mineral resources - human settlement, urban environment and environmental health - control of hazardous materials and pollution from industrial waste - cultural and natural heritage
Targets	None specified

Name of law	The Electricity Proclamation (No. 86-1997) (Executive)
Date of entry into force	1997
Categories	<ul style="list-style-type: none"> – Energy supply – Institutional/Administrative arrangements
Driver for implementation	Energy management
Summary of bill	The proclamation establishes the Ethiopian Electricity Agency (EEA) as an autonomous federal government organ (later changed to Ethiopian Energy Agency). The Agency's mandate is to regulate the operation of the energy sector on technical and economic issues – from standards, efficiency and reliability, to tariffs.
Targets	None specified

Name of law	Disaster Prevention and Preparedness Commission Establishment Proclamation (Executive)
Date of entry into force	1995, amended 2004 and 2008
Categories	<ul style="list-style-type: none"> – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Adaptation
Summary of bill	<p>The proclamation establishes a federal commission to oversee the management of national human-made and natural disasters. Climate change is not mentioned specifically.</p> <p>The Commission was originally established as an autonomous public institution of the Federal Government, but later proclamations transferred its rights and obligations to the Ministry of Agriculture and Rural Development.</p>
Targets	None specified

Name of law	Ethiopia Energy Policy (Executive)
Date of entry into force	1994
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Transportation – Institutional/Administrative arrangements
Driver for implementation	Increasing energy supply
Summary of bill	<p>Ethiopia's Energy Policy aims to increase availability of reliable and affordable energy supplies and ensure their use in a rational and sustainable manner in order to support national development goals, mostly by increasing <i>energy supply</i> to meet needs by developing and utilising hydro-electric power, natural gas and oil exploration, and providing alternative energy sources for the household, industry, agriculture, transportation and other sectors – naming coal as the main alternative to the popular biomass.</p> <p>It aims to introduce energy conservation and energy saving measures in all sectors. The plan also discusses community participation, with a focus on women, and promotes legal and institutional frameworks to deal with energy issues. Transportation is mentioned briefly, with the objective of introducing conservation measures to reduce fuel consumption.</p>
Targets	None specified

4.18 EU



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	4260
excl. LULUCF	4550
Change from base year (1990)	-1024
Latest reporting year	2011 ⁶
Importance as an emitter	Top 5
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 21 December 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 31 May 2002 Date of entry into force: 16 February 2005
2020 pledge	20% from 1990 unilaterally; move to 30% as part of a global and comprehensive agreement for the period beyond 2012 and provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities
Flagship legislation	Climate and Energy Package

⁶ The EU's emission ranking has been calculated as if it had been an individual country. Otherwise, EU member states have been ranked individually.

Legislative Process

Decision-making at the European Union (EU) level involves the European Commission (independent from national governments), the European Parliament (elected by EU citizens), and the Council of the European Union, which represents Member States. Most often, the European Commission (“the Commission”) proposes new legislation, but it is the Council and Parliament together that pass the laws.

The main forms of EU laws are directives, regulations and decisions. Adopted by the Council in conjunction with the European Parliament or by the Commission alone, a “regulation” is a general measure that is binding in all its parts, is directly applicable in the Member States and is addressed to everyone. Adopted by the Council in conjunction with the European Parliament or by the Commission alone, a “directive” is addressed to the Member States. It is binding as to the result to be achieved but leaves states the choice of the form and method they adopt to achieve it. The Commission is required to verify that Member States transpose correctly and in due time the different directives that have been adopted and can sanction them. Decisions are EU laws relating to specific cases. They can come from the EU Council (sometimes jointly with the European Parliament) or from the Commission.

The Commission can also publish “Action Plans”, “White Papers” and “Green Papers”. A White Paper sets out the Commission’s policy programme in a specific area. Before a White Paper is written, a Green Paper is published, which is a consultative document including suggestions and options for new policy. However, each single proposal for legislation announced in a White Paper or deriving from a policy initiative announced in it will be subject to one or more rounds of open consultation and impact assessment. They can thus be useful to identify future Commission proposals.

Approach to Climate Change

EU legislation on climate change has been characterised by a strategy of co-operation with the international community, compliance with the Kyoto Protocol and a will to maintain leadership in terms of ambitious targets and emission reduction mechanisms. This “international dimension” is illustrated by the decision to adopt a 30% emission reduction target below the 1990 level (instead of the 20% reduction target that is currently in place) provided that other industrialised nations commit themselves to comparable emission reductions and that “advanced developing countries” (i.e. China and India) also contribute under the framework of a post-2012 agreement.

Further to the European Council endorsement of the objective of reducing EU emissions of GHGs to 80–95% below 1990 levels by 2050, and since current policies are projected to reduce domestic emissions to -30% in 2030 and -40% in 2050, in March 2011 the European Commission adopted a *Roadmap for transforming the European Union into a competitive low carbon economy by 2050* describing a cost-effective pathway to reach the EU’s objective of cutting

GHG emissions by 80–95% of 1990 levels by 2050 and giving direction to sectoral policies for all economic sectors, national and regional low-carbon strategies and long-term investments. The EU also developed a 2050 Energy Roadmap and a White Paper on Transport detailing how these emission reductions are to be achieved.

The Roadmap recommended that Europe should achieve its target largely through domestic measures since by mid-century international credits to offset emissions will be less widely available and any credits used would increase the overall emissions reduction beyond 80%.

The economic modelling underlying the Roadmap showed that to achieve an 80% European “domestic” reduction by 2050, cuts of the order of 40% and 60% below 1990 levels should be achieved by 2030 and 2040, respectively. All sectors will need to contribute. It also showed that the most cost-efficient pathway to the 2050 target requires a 25% emissions cut in 2020, to be achieved through internal measures alone, rather than the current 20% reduction target. The Roadmap indicated that this 25% domestic cut could be reached in 2020 if the EU meets its 20% energy efficiency improvement goal and fully implements the Climate and Energy package of 2009.

The Roadmap estimated that over the next 40 years additional annual investment equivalent to 1.5% of EU GDP – or EUR270 billion (USD353 billion) – on top of overall current investment of 19% of GDP would be required. This proposed increase would return Europe to the investment levels seen before the economic crisis. Much or all of this extra investment would be recovered through lower import bills for oil and gas. These savings were estimated at EUR175 billion – EUR320 billion (USD237.9 billion – USD434.9 billion) a year. This investment in clean technologies, infrastructure such as “smart” electricity grids and environmental protection would have multiple benefits in terms of reduced energy dependency and created domestic value-added, the development of new sources of growth and employment creation, as well as lower air quality-related health costs which could reach up to EUR88 billion (USD119.6 billion) a year by 2050.

The European Parliament expressed its support for the Roadmap in March 2012, but in June the Environment Ministers of the EU 27 Member States were unable to adopt unanimous conclusions on the Low Carbon Roadmap in Council owing to the opposition of Poland. However, legislative progress along the lines laid down in the Roadmap is possible, as under the EU Lisbon Treaty climate policy decisions are taken by the qualified majority under environment policy legal base.

Carbon pricing

A key component of EU climate legislation is the “Emission Trading System” (ETS) that entered into force in 2005 in order to help reach the targets agreed at Kyoto. This mechanism has been amended several times to extend it to new sectors (for example, aviation) or to new GHGs (petrochemicals, ammonia and

aluminium, nitrous oxide and perfluorocarbons). Initiatives are under way to adjust the availability of certificates over the emission trading phases to address overallocation (i.e. backloading). In parallel, the EU has set up a Mechanism for monitoring GHG emissions to enable more accurate and regular evaluation of the progress of emissions reduction.

Energy supply and demand

The EU's "flagship" climate change legislation is the "Climate and Energy Package" that entered into force in June 2009. The package illustrates the integrated approach of the EU and proposes binding legislation to implement the 20-20-20 targets: 20% emission reduction; 20% EU energy consumption from renewable energies; and 20% reduction in primary energy use compared with projected level through energy efficiency improvement. This ambitious package is based on an extension and revision of the ETS, an Effort-sharing Decision between Member States taking into account respective capacities, national targets for renewable energy as well as the promotion of carbon capture and storage.

These targets are to be achieved through several pieces of legislation promoting more "energy efficient" products and uses. They include the directive on energy performance of buildings, the legislation on the eco-design requirements for energy-using products and the Biofuel Directive which sets targets for Member States.

The EU has also put in place European certification schemes, subsidies and other incentive mechanisms at the community level to support the use of renewable energy. The European Union also developed a Delegated Regulation on labelling and standard product information on energy consumption and other energy-related products. It introduces a product labelling scheme based on their energy efficiency and regulates standardised product information. This regulation is linked to the eco-design requirements for space/ combination heaters and aims to improve the cost-effectiveness and energy efficiency of heaters as well as improving the transparency for consumers via energy labelling. The combined Regulations on Eco-design and Energy Efficiency of Boilers are expected to bring an additional 2% of energy savings to add to the 15% expected from the implementation of the Energy Efficiency Directive.

In June 2011 the Commission published its Proposals for the EU 2014–2020 Multi-Annual Financial Framework. The proposed climate-related share of the future EU budget was significantly increased to include investment in projects with a significant climate component, in order to meet the Europe 2020 goals and to help countries worldwide step up their efforts to combat climate change. Climate mitigation and adaptation actions will become a part of all the major EU programmes including the objective to dedicate 20% of the 2014-2020 EU budget to climate mitigation and adaptation measures via mainstreaming.

REDD+/LULUCF

Following the decision adopted at the UNFCCC COP 17 on revised accounting rules from soils and forests, the EU adopted a Decision on accounting rules and

action plans on GHG emissions and removals resulting from activities related to land use, land use change and forestry, taking a first step towards incorporating removals and emissions from forests and agriculture, the last major sectors without common EU-wide rules, into the EU's climate policy. Member States are obliged to report on how they increase removals of carbon as well as decrease emissions of GHGs in forests and soils. The EU legislation goes further than the UNFCCC decision as it phases in mandatory accounting for the management of grassland and cropland at the national level. It is expected that these measures will contribute to enhancing the overall environmental integrity of GHG accounting. In line with the international context, the accounting for draining and rewetting of wetlands remains on a voluntary basis.

The Commission's proposal for the Reform of the EU Common Agricultural Policy (CAP) after 2013 was published in October 2011 and adopted in a co-decision procedure between the European Parliament and the Council in June 2013. The reformed CAP integrates climate change mitigation and adaptation measures by introducing two Rural Development policy priorities for restoring, preserving and enhancing ecosystems, for resource efficiency and for the fight against climate change. Some 30% of the direct payments to farmers are conditional upon the implementation of greening measures that have co-benefits for climate mitigation and adaptation. The payments must comply with EU policies, supporting the shift towards a low-carbon economy in all sectors and promoting climate change adaptation, risk prevention and management, such as the Energy Efficiency Directive, the Water Framework Directive and the Renewable Energy Directive.

Transportation

The transportation sector is also a key area where EU legislation attempts to reduce emissions and achieve energy efficiency. It has set emission performance standards for new passenger cars, new light commercial vehicles and supports the research and development of clean vehicles.

In 2009 the European Union legislated mandatory emission reduction targets for new cars. The regulation is currently undergoing amendment in order to implement the 2020 targets. The Commission put forward proposals to implement targets that will further considerably reduce CO₂ emissions from new cars and light commercial vehicles (vans) by 2020. The proposals cut average emissions from new cars to 95 grams of CO₂ per km (g CO₂/km) in 2020 from 135.7g in 2011 and a mandatory target of 130g in 2015. Emissions from vans will be reduced to 147g CO₂/km in 2020 from 181.4g in 2010 (the latest year for which figures are available) and a mandatory target of 175g in 2017. The mandatory targets for 2020 are already envisaged in existing legislation but are subject to implementation.

The European Commission's legislative proposal to address the indirect land-use change impacts (ILUC) of biofuels aims to limit global land conversion for biofuel production, and raise the climate benefits of biofuels used in the EU. The use of food-based biofuels to meet the 10% target of renewable energy in

transportation in the Renewable Energy Directive is intended to be limited to 5-7%. This is to stimulate the development of alternative, so-called second generation biofuels from non-food feedstock, such as waste or straw, which emit substantially fewer GHGs than fossil fuels and do not directly interfere with global food production. The estimated global land conversion impacts – Indirect Land Use Change (ILUC) – are going to be considered when assessing the GHG performance of biofuels.

EU: Flagship Legislation

Name of law	The EU Climate and Energy Package (contains 3 directives and 1 decision; see below) [Legislative]
Date of entry into force	2009
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – Energy Demand – REDD+ and LULUCF – Transportation – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	In March 2007 the EU's leaders endorsed an integrated approach to climate and energy policy that aims to combat climate change and increase the EU's energy security while strengthening its competitiveness. In January 2008 the European Commission proposed binding legislation to implement the 20-20-20 targets. This "climate and energy package" was agreed by the European Parliament and Council in December 2008 and became law in June 2009. The core of the package comprises four pieces of complementary legislation.
Targets	<p>The 20-20-20 targets: reduce EU GHG emissions by at least 20% below 1990 levels by 2020; 20% of EU energy consumption to come from renewable resources; and a 20% reduction in primary energy use compared with projected levels, by improving energy efficiency. The EU will increase its emissions reduction to 30%, on condition that other major emitting countries commit to do their fair share under a global climate agreement.</p> <p>Member States will limit GHG emissions between 2013 and 2020 according to a linear trajectory with binding annual targets. This will ensure a gradual move towards the 2020 targets in sectors where changes take time to implement, such as buildings, infrastructure and transportation. To increase the cost-effectiveness of policies and measures, Member States are allowed to deviate from the linear trajectory to a certain degree.</p>
Name of law	Improve and extend the greenhouse gas emission allowance trading scheme (Directive 2009/29/EC) (amending Directive 2003/87/) [Legislative]
Date of entry into force	2009
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – REDD+ and LULUCF – Transportation – Institutional/Administrative arrangements
Driver for	

implementation	Climate change
Summary of bill	A revision and strengthening of the Emissions Trading System (EU ETS). A single EU-wide cap on emission allowances will apply from 2013 and will be cut annually, reducing the number of allowances for businesses to 21% below the 2005 level in 2020. The free allocation of allowances will be progressively replaced by auctioning. From 2013 the power sector will have to buy all emissions permits under an EU-wide auction (with some time-limited exceptions for newer member countries). From 1 January 2013 (phase III of EU ETS, 2013–2020), the revised ETS will incorporate new sectors; petrochemicals, ammonia and aluminium, nitrous oxide and perfluorocarbons. Smaller emitters (<25,000 tCO ₂ /year) may opt out of the EU ETS. By end- 2009 the Commission determines the sectors or sub-sectors deemed to be exposed to a significant risk of carbon leakage. Production from sectors at significant risk of carbon leakage will receive relatively more free allowances than other sectors. The revised Directive also recognises that the competitive situation, and thus the risk of carbon leakage, may change unless there is an international climate change agreement.

Targets	None specified
----------------	----------------

Name of law	An “Effort Sharing Decision” (Decision No. 406/2009/EC of the Parliament and the Council) - [Legislative]
Date of entry into force	2009
Categories	– Energy Demand – REDD+ and LULUCF
Driver for implementation	Climate change
Summary of bill	It aims to reduce GHG emissions from sectors not included in the EU Emission Trading System (EU ETS) such as transportation, buildings, agriculture and waste.
Targets	Each Member State agreed to a binding national emissions limitation target for 2020 that reflects its relative wealth. The targets range from a reduction of 20% by the richest Member States, to an increase of 20% by the poorest. These national targets will cut the EU’s overall emissions from the non-ETS sectors by 10% by 2020 compared with 2005 levels. Member States may transfer unused emission allocations to the following year or to other Member States and purchase a proportion of credits from third countries. The ETS and effort-sharing together produce the 20% emissions reductions by 2020 from 1990 levels.

Name of law	Promotion of the use of energy from renewable sources (Directive 2009/28/EC) [Legislative]
Date of entry into force	2009
Categories	– Energy Supply
Driver for implementation	Renewable energy/climate change
Summary of bill	Establishes a common framework for the production and promotion of energy from renewable sources, including energy from biofuels and bio-liquids. The latter should contribute to a reduction of at least 35% of GHG emissions in order to be recognised. From 1 January 2017, their share in emissions savings should be increased to 50 %.

Commission to assess the inclusion of emissions and removals related to land use, land use change and forestry (LULUCF) – anticipated to follow up on any international agreement on

forestry and deforestation.

Member States should build the necessary infrastructure for energy from renewable sources in the transportation sector. They must establish national action plans which set the share of energy from renewable sources consumed in transportation, as well as in the production of electricity and heating, for 2020. These action plans must take into account the effects of other energy efficiency measures on final energy consumption (the higher the reduction in energy consumption, the less energy from renewable sources will be required to meet the target). These plans will also establish procedures to reform planning and pricing schemes and access to electricity networks, thereby promoting energy from renewable sources.

The Directive requires Commission reporting from 2012 with an impact and implementation review in 2014.

Targets	<p>Binding national targets for renewable energy to lift the average renewable share across the EU to 20% by 2020. Each Member State can “exchange” an amount of energy from renewable sources using a statistical transfer, and set up joint projects. Under certain conditions it is also possible to establish cooperation with third countries.</p> <p>Each Member State has a mandatory national target for the overall share of renewable energy in gross final consumption of energy for 2020, divided across Member States based on existing scale of effort and GDP. The national targets range from a share of 10% in Malta to 49% in Sweden. There are rules for determining the trading or offsetting of target requirements both within Europe and with third countries.</p> <p>At least 10% of final energy consumption in the transportation sector must be renewable by 2020.</p>
----------------	---

Name of law	Geological storage of carbon dioxide (Directive 2009/31/EC) [Legislative]
Date of entry into force	2009
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – Research and development
Driver for implementation	Climate change
Summary of bill	<p>The Directive establishes a legal framework for the environmentally safe geological storage of CO₂. It covers all CO₂ storage in geological formations in the EU, and lays down requirements covering the entire lifetime of a storage site. It implements a permit regime for exploration and storage, and selection criteria for storage sites.</p>

The Directive defines the relationship between carbon, capture and storage (CCS) and the EU ETS in terms of finance and also rules that CO₂ captured and stored will be considered as “not emitted”. The key debate will be linked to finance of CCS both in terms of support from EU and national funds and recycling of revenues from the EU ETS. Money has been set aside to fund up to 12 CCS demonstration projects and innovative renewable energy technologies demonstration projects. In addition, the European Economic Recovery Programme allocated around EUR1 billion (USD1.36 billion) to fund six CCS demonstration projects.

There are monitoring and reporting obligations, inspections, measures in case of irregularities and/or leakage and provision of financial security.

Site selection is the crucial stage for ensuring the integrity of a project and the Directive lays down extensive requirements. A site can only be selected for use if a prior analysis shows that, under the proposed conditions of use, there is no significant risk of leakage or damage to human health or the environment. The operation of the site must be closely

monitored and corrective measures taken in the case that leakage does occur. In addition, the Directive contains provisions on closure and post-closure obligations, and sets out criteria for the transfer of responsibility from the operator to the Member State.

Targets None specified

European Union: Other Relevant Legislation

Name of law	Common Agricultural Policy 2014-2020 [Legislative]
Date of entry into force	20 December 2013
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The Common Agricultural Policy (CAP) for the budget period of 2014-2020 has been reformed by strengthening the greening aspects based on the previous reforms. Climate mitigation and adaptation are explicitly among the key objectives of the CAP, which accounts for about 30% of the overall EU budget/ MFF 2014-2020.</p> <p>The greening measures in the CAP 2014-2020 particularly increase the carbon sink by encouraging more grassland, the protection of forest cover and address the challenges of soil quality.</p> <p>It makes direct payments to farmers conditional upon compliance with greening measures, which account for 30% of the overall direct payments (pillar I). These measures include crop diversification, conserving 5% (and later 7%) of areas of ecological interest and maintaining permanent grassland. 30% of the budget within the rural development programmes (pillar II) is to be dedicated to agri-environmental measures, projects related to environmentally friendly investment or innovation measures as well as to support for organic farming. It further improves agri-environmental measures via higher environmental protection targets.</p>
Targets	30% of direct payments conditional upon greening measures and cross-compliance

Name of law	Land Use, Land Use Change and Forestry Decision No 529/2013/EU on accounting rules on GHG emissions and removals resulting from activities relating to LULUCF and on information concerning actions relating to those activities; [Legislative]
Date of entry into force	8 July 2013
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>Harmonisation of accounting rules for emissions from land use, land use change and forestry.</p> <p>The objective is to include agriculture and forestry into European climate mitigation efforts.</p> <p>This decision is a direct response to the UNFCCC decision in 2011 to revise the accounting rules for GHG emissions and removals from forests and soils. It meets international standards by maintaining the voluntary nature of accounting for draining and rewetting of</p>

wetlands, but goes beyond the UNFCCC decision by making accounting for cropland and grassland management mandatory for member states.

The new rules are intended to better recognise the efforts of farmers and forest owners to maintain carbon stored in soils and forests and to facilitate a more climate-friendly architecture (funds are available through the Common Agricultural Policy's Rural Development pillar), protecting water resources and biodiversity.

It also contains reporting requirements for Member States on their initiatives to decrease emissions from forestry and agriculture-related activities as well as increase the carbon sink.

The directive does not set targets for reducing GHG in agriculture and forestry as the accounting rules set out by this directive first need to prove to be sufficiently robust.

Targets	None specified
----------------	----------------

Name of law	Directive on Energy Efficiency and repealing Directives 2004/8/EC and 2006/32/EC [Legislative]
--------------------	---

Date of entry into force	November 2012
---------------------------------	---------------

Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Energy saving, energy self-reliance, mitigation, competitiveness
----------------------------------	--

Summary of bill	Each Member State must set an indicative national energy efficiency target, based on either primary or final energy consumption, primary or final energy savings or energy intensity.
------------------------	---

Member States will have to ensure from 1 January 2014 that 3% of the total floor area of heated and/or cooled buildings owned by their central government is renovated each year. They must establish a long-term strategy to mobilise investment in the renovation of the national stock of residential and commercial buildings, both public and private.

Member States must set up an energy efficiency obligation scheme, ensuring that obligated energy distributors and/or retail energy sales companies achieve a cumulative end-use energy savings target by 31 December 2020 at least equivalent 1.5% a year from 1 January 2014 to 31 December 2020 of the annual energy sales to final customers of all energy distributors or all retail energy sales companies by volume, averaged over the most recent 3-year period prior to 1 January 2013. They can use a bundle of flexibility measures as well as equivalent alternative measures to achieve up to 25% of the amount of the energy savings target.

Large enterprises are subject to an energy audit carried out in an independent and cost-effective manner by qualified and/or accredited experts or implemented and supervised by independent authorities under national legislation within 3 years of the Directive entering into force and at least every 4 years from the date of the previous energy audit.

Billing of customers based on actual consumption in order to enable final customers to regulate their own energy consumption at least once a year, and billing information to be made available at least quarterly, on request or where the consumers have opted to receive electronic billing or else twice yearly.

By 31 December 2015, Member States shall carry out and notify to the Commission a comprehensive assessment of the potential for the application of high-efficiency co-generation and efficient district heating and cooling.

National Energy Efficiency Action Plans shall list significant measures and actions towards primary energy saving in all sectors of the economy and Member States must report on the expected savings for 2020 and savings achieved by the time of the reporting.

By 30 June 2014, the Commission will assess the progress achieved and whether the Union is likely to achieve energy consumption of no more than 1474 Mtoe of primary energy and/or no more than 1078 Mtoe of final energy in 2020.

Targets EU-wide energy savings of 15% by 2020.

Member States shall set an indicative national energy efficiency target, based on either primary or final energy consumption, primary or final energy savings, or energy intensity, expressed in terms of an absolute level of primary energy consumption and final energy consumption in 2020 and shall explain how, and using which data, this has been calculated.

Name of law Emission performance standards for new light commercial vehicles as part of the EU's integrated approach to reduce CO₂ emissions from light-duty vehicles (Regulation [EC] No. 510/2011) [Legislative]

Date of entry into force 2011

Categories – Transportation

Driver for implementation Transportation emissions

Summary of bill Sets emission performance standards for new light commercial vehicles.

In 2014, 70% of each manufacturer's newly registered units must comply on average with the limit value curve set by the legislation, rising to 75% in 2015, 80% in 2016 and 100% from 2017.

A "super-credit" scheme will help manufacturers comply: a multiplier figure decreasing from 3.5 from 2014 to 1.7 in 2017 will be applied to every vehicle with specific emissions of CO₂ of less than 50g CO₂/km, up to 25,000 units per manufacturer. To incentivise investment in new technologies, from 2014 onwards producers will have to pay an increasing penalty if their fleet fails to meet their target.

Vehicles running on E85 (petrol with 85% bioethanol) will benefit from a 5% lower emission target by 31 December 2015 in recognition of the greater technological and emission reduction capability when at least 30% of the filling stations provide EU-compliant sustainable biofuels. CO₂ savings achieved through the use of innovative technologies shall be taken into consideration up to 7g CO₂/km.

By 2014 the Commission shall, if appropriate, launch a proposal to include in the Regulation vehicles in category N2 and M2 with a reference mass not exceeding 2,160 kg and vehicles to which type-approval is extended in the Regulation (EC) No. 715/2007, with a view to achieving the longer-term target from 2020.

By 2014 the Commission shall publish a report on the availability of data on footprint and payload and their use as utility parameters for determining specific emissions targets and, if appropriate, submit a proposal to the European Parliament and to the Council.

Targets Limit of 175g CO₂/km for average CO₂ emissions from manufacturers' fleet of small vans by 2017. Specific targets for individual vehicles vary according to weight. A 2020 target of 147g CO₂/km has been included.

Name of law	Directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products (Legislative)
Date of entry into force	18 June 2010
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	Sets up a framework to harmonise national measures on end-user information. Member States must ensure that information relating to energy consumption is brought to the attention of end-users. The bill also adopts rules for the placing on the market/ putting into service of an “energy-using product (EuP), adopting also rules for importing these goods.
Targets	None specified.

Name of law	Fuel Quality Directive 2009 (Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce GHG emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC) [Legislative]
Date of entry into force	25 June 2009
Categories	– Energy Supply – Energy Demand – Transportation
Driver for implementation	Climate change
Summary of bill	<p>The directive provides the legislative basis for reducing the GHG intensity of fuels used in vehicles for transportation by 10% by 2020. It applies to all fuels used in road transportation, including petrol, diesel and biofuels, and to gasoil that is used in non-road mobile machinery.</p> <p>The 10% target comprises 6% reduction of GHG intensity of fuels by 2020, 2% reduction of GHG intensity depending on the development of new technologies and 2% reduction from purchasing Clean Development Mechanism credits. The Directive requires calculation of fuel GHG intensity on a life-cycle basis, calculated from a 2010 baseline.</p> <p>To limit the undesired impacts of biofuel production, it establishes criteria to enable biofuels to be counted towards GHG emission reduction targets. Biofuel GHG emissions must be >35% lower than the fossil fuel they are replacing, increasing to >50% by 2017 and >60% from 2018. Raw materials for biofuels may not be taken from land with high carbon stocks (e.g. peat lands) or high biodiversity.</p>
Targets	Reduce GHG intensity of fuels used in vehicles by 10% by 2020

Name of law	Emission performance standards for new passenger cars (Regulation [EC] No. 443/2009) [Legislative]
Date of entry into force	2009
Categories	– Transportation
Driver for implementation	Transportation/emissions
Summary of bill	This legislation sets emission performance standards for new passenger cars. In 2012, 65%

of each manufacturer's newly registered cars must comply on average with the limit value curve set by the legislation. This will rise to 75% in 2013, 80% in 2014, and 100% from 2015 onwards.

Commission to report on implementation by 2010 and to publish performance indicators for each manufacturer, highlighting success or failure to comply (by 31 October each year, beginning in 2011).

Until 2018 manufacturers have to pay an excess emissions premium for each car registered if average CO₂ emissions of a manufacturer's fleet exceed its limit value in any year from 2012.

Targets Car manufacturers must ensure average annual CO₂ emissions do not exceed 130g CO₂/km. A target of 95g/km is specified for the year 2020.

Name of law	Clean and energy-efficient road transport vehicles (Directive 2009/33/EC) [Legislative]
Date of entry into force	2009
Categories	<ul style="list-style-type: none"> – Energy Demand – Transportation
Driver for implementation	Transportation/energy efficiency
Summary of bill	Member States shall ensure that contracting authorities, contracting entities and operators under a public service contract, take into account the operational lifetime energy and environmental impacts when purchasing road transportation vehicles.
Targets	None specified

Name of law	Clean Sky JTI (Council Regulation [EC] No. 71/2008) [Legislative]
Date of entry into force	2008
Categories	<ul style="list-style-type: none"> – Energy Demand – Transportation – Research and development
Driver for implementation	Economy/transportation
Summary of bill	The "Clean Sky" Joint Technology Initiative (JTI) is aiming to unite public and private driving forces (human and financial) in European aviation and to develop the technologies necessary for a clean, innovative and competitive system of air transport, through research.
Targets	"Clean Sky" aims to reduce CO ₂ emissions by 50% and NO _x by 80%

Name of law	Reduction in fluorinated greenhouse gases (Regulation [EC] No. 842/2006) [Legislative]
Date of entry into force	2006
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	Reduces emissions of certain fluorinated gases (HFCs, PFCs and sulphur hexafluorides), to

	improve containment and monitoring of these gases and restrict their marketing and use.
	From 2008, anyone producing, importing or exporting more than one tonne of any of fluorinated GHGs must communicate the imported or exported amount produced, the applications in which they will be used including the expected emissions, and the amounts recycled, reclaimed or destroyed.
Targets	The Regulation was expected to lead to a reduction in emissions of 23 million tonnes of CO ₂ e by 2010, and an even greater reduction thereafter.
Name of law	Energy end-use efficiency and energy services (Directive 2006/32/EC [repealing Council Directive 93/76/EEC]) [Legislative]
Date of entry into force	2006
Categories	– Energy Demand
Driver for implementation	Energy efficiency
Summary of bill	<p>Aims to make the end use of energy more economic and efficient by eliminating market barriers and imperfections that prevent efficient end use of energy and facilitating a market for energy services and the delivery of energy-saving programmes and other measures.</p> <p>The Directive applies to the distribution and retail sale of energy and the delivery of measures to improve end-use energy efficiency. Activities included in the GHG emissions trading scheme and certain aspects of the armed forces are excepted.</p> <p>The public sector must improve energy efficiency, inform the public and businesses of the measures adopted and promote the exchange of good practice. Member States must appoint new or existing organisations to carry out administrative, management and implementation duties in order to meet their obligations. They must develop a series of National Energy Efficiency Action Plans. The first action plan was due on 30 June 2007; the second action plan was due on 30 June 2011; while the third action plan is due on 30 June 2014.</p>
Targets	9% energy saving by 2016, in the framework of a National Energy Efficiency Action Plan (NEEAP). Member States must also set an intermediate target to be achieved by 2009.
Name of law	Eco-design requirements for energy-using products (Directive 2005/32/EC) (Recast Proposal [COM(2008)] 399) [Legislative]
Date of entry into force	2005
Categories	– Energy Demand
Driver for implementation	Energy efficiency
Summary of bill	The directive aims to establish a coherent framework for eco-design requirements applied to energy-using products. Mandatory minimum requirements are set for products taking account of life-cycle costs. The extension expanded the directive's scope to encompass all energy related products.
Targets	None specified
Name of law	Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (Legislative)
Date of entry	

into force	1 January 2004
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	<p>The directive extends coverage of the EU's minimum rate system to include electricity, natural gas and coal, in addition to mineral oils (previously covered).</p> <p>It authorises member states to adopt tax refund mechanisms to businesses with significant investment record on energy efficiency. Non-energy intensive activities can receive up to 50% tax relief, whereas energy-intensive businesses are eligible to 100% tax exemption.</p> <p>The directive includes provisions on taxation of commercial diesel, to address trade distortion amongst EU member states. Member states are also allowed to apply higher taxes to non-business use of energy products than to business use. International air transportation is exempt.</p>
Targets	None specified.

Name of law	Directive 2009/125/EC establishing a framework for the setting of eco-design requirements for energy-related products (Legislative)
Date of entry into force	1 January 2004
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	<p>The Directive adopts a framework to set eco-design requirements for energy-related products, guaranteeing the free movement of such products within the internal market.</p> <p>Member States must adopt national legislation to implement the directive, create authorities for market surveillance and adopt penalties for infringements. Member states are prohibited from adopting measures that compromise the placing on the market/ putting into service any product that has complied with EC requirements on eco-design.</p>
Targets	None Specified

Name of law	Mechanism for monitoring greenhouse gas emissions (Decision 280/2004/EC) [Legislative]
Date of entry into force	2004
Categories	– Carbon Pricing
Driver for implementation	Climate change
Summary of bill	<p>The EU has established a mechanism for monitoring and reporting GHG emissions to evaluate the progress made in reducing emissions. The Member States and the Community must devise, publish and implement national programmes and a Community programme to limit or reduce anthropogenic emissions by sources, and enhance the removal by sinks, of all GHGs not controlled by the Montreal Protocol. The national programmes must include information on: the effect of national policies and measures on emissions and removals, broken down by gas and by sector; national projections for emissions and removal of CO₂ and other GHGs for 2005, 2010, 2015 and 2020; measures being taken or planned to implement relevant Community policies; and to comply with commitments under the Kyoto Protocol.</p>

Targets	Not applicable
----------------	----------------

Name of law	Cogeneration (Directive 2004/8/EC [amending Directive 92/42/EEC]) [Legislative]
Date of entry into force	2004
Categories	– Energy Supply
Driver for implementation	Energy efficiency
Summary of bill	<p>This Directive facilitates the installation and operation of electrical cogeneration plants. In the short term, the Directive should make it possible to consolidate existing cogeneration installations and promote new plants. In the medium to long term, the Directive should to create the necessary framework for high efficiency cogeneration.</p> <p>Member States must evaluate progress by 2007 at the latest and thereafter every four years.</p>

Targets	None specified
----------------	----------------

Name of law	Greenhouse gas emission allowance trading scheme (Emission Trading Scheme [ETS]) (Directive 2003/87/EC) [Legislative]
Date of entry into force	2003
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – Transportation – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>This Directive establishes a Community GHG emissions trading scheme from 1 January 2005 to enable the Community and the Member States to meet their Kyoto Protocol commitments. Directive 2004/101/EC reinforces the link between the EU's emission allowance trading scheme and the Kyoto Protocol by making the latter's "project-based" mechanisms (Joint Implementation and the Clean Development Mechanism) compatible with the scheme.</p> <p>From 2005, all installations in the energy sector, iron and steel production and processing, the mineral industry, and the wood pulp, paper and board industry, and emitting the specific GHG associated with that activity, must possess a permit issued by the appropriate authorities.</p> <p>Each Member State must draw up a national plan indicating the allowances it intends to allocate for the relevant period and how it proposes to allocate them to each installation.</p> <p>All flights that arrive or depart from a Member State's territory shall be subject to the EU ETS (from 2012).</p> <p>Any operator failing to surrender the quantity of allowances commensurate with the emissions from his/her installation during the previous year will have to pay EUR100 (US\$135.9) per tCO₂e and buy allowances for the excess emissions.</p>

Targets	None specified
----------------	----------------

Name of law	Community framework for the taxation of energy products and electricity (Council Directive 2003/96/EC) [Legislative]
Date of entry into force	2003
Categories	<ul style="list-style-type: none"> – Energy Demand – Institutional/Administrative arrangements
Driver for implementation	Energy efficiency
Summary of bill	<p>Generalised arrangements for the taxation of energy products and electricity. The Community system of minimum rates (previously confined to mineral oils) is extended to coal, natural gas and electricity. Energy products and electricity are only taxed when used as motor or heating fuel.</p> <p>The framework authorises Member States to grant tax advantages to businesses that take measures to reduce their emissions. Member States can apply for exemption for biofuels or energy from solar, wind, tidal, geothermal, biomass or waste.</p>
Targets	None specified

Name of law	Use of Biofuels (Directive 2003/30/EC) / replaced by Renewable Energy Directive 2009/ Fuel Quality Directive 2009 [Legislative]
Date of entry into force	2003
Categories	<ul style="list-style-type: none"> – Energy Supply – Transportation
Driver for implementation	Climate change; reduction of dependence on oil
Summary of bill	Member States must introduce legislation and take measures to ensure that as of 2005, biofuels account for a minimum proportion of fuel sold. Sets a minimum percentage of biofuels to replace diesel or petrol for transportation purposes in each Member State.
Targets	Member States must ensure that the minimum share of biofuels sold on their markets is 2% by end- 2005, and 5.75% by end-2010. Any Member State setting lower objectives will have to justify this on the basis of objective criteria.

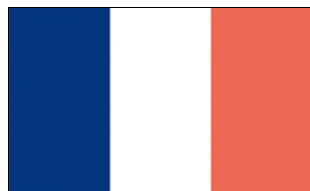
Name of law	Energy performance of buildings (Directive 2002/91/EC) ([Legislative]
Date of entry into force	2002 (also Recast adopted by parliament in 2010)
Categories	– Energy Demand
Driver for implementation	Energy efficiency
Summary of bill	<p>Minimum energy performance requirements of new and existing buildings, certification of their energy performance and the regular inspection of boilers and air conditioning systems in buildings in the residential sector and the tertiary sector (including offices and public buildings).</p> <p>Requires a common methodology for calculating the integrated energy performance of buildings. This includes: minimum standards on the energy performance of new buildings, and existing buildings that are subject to major renovation: systems for the energy certification of new and existing buildings and the prominent display of this certification and other relevant information for public buildings. Certificates must be less than five years</p>

	<p>old. Regular inspection of boilers and central air conditioning systems in buildings and an assessment of heating installations in which the boilers are more than 15 years old must be conducted.</p> <p>In the recast, by end -2018, public buildings will have nearly zero-energy standards and by 2020, all new buildings are to be nearly zero-energy. Eliminating the current 1,000m² threshold would mean that all existing buildings undergoing major renovations would have to meet minimum efficiency levels.</p> <p>Member States are responsible for drawing up the minimum standards and ensuring that the certification and inspection of buildings is carried out by qualified and independent personnel.</p>
Targets	In the 2010 recast, the EU executive expects the overhaul to bring its energy consumption down by 5–6%, consequently slashing CO ₂ emissions by 5% by 2020.

Name of law	Promotion of electricity from renewable energy sources (Directive 2001/77/EC) replaced by Renewable Energy Directive 2009/ Fuel Quality Directive 2009 [Legislative]
Date of entry into force	2001
Categories	– Energy Supply
Driver for implementation	Renewable energy
Summary of bill	Creates a framework to promote renewable energy sources for electricity production. Sets an objective for renewables of a 21% contribution to electricity production and specific measures relating to the evaluation of the origin of the electricity, connection to the grid and administrative measures. Repealed by Directive 2009/28/EC (cf. CARE).
Targets	12% renewable contribution to electricity production by 2010

Name of law	Information on the fuel consumption and CO₂ emissions of new cars (Directive 1999/94/EC), amended by Directive 2003/73/EC and Regulation (EC) No. 1882/2003 [Legislative]
Date of entry into force	2000
Categories	– Energy Supply – Energy Demand
Driver for implementation	Transportation/emissions
Summary of bill	Dealers of new passenger cars to provide potential buyers with useful information on fuel consumption and CO ₂ emissions. This consumer information system is to be set up using the following four methods: attaching a fuel consumption and CO ₂ emissions label to the vehicle; producing a fuel consumption and CO ₂ emissions guide; displaying posters in car showrooms; and including fuel consumption and CO ₂ emissions data in promotional material.
Targets	None specified

4.19 France



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	447
excl. LULUCF	491
Change from base year (1990)	-68
Latest reporting year	2011
Importance as an emitter	Top 20
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 25 March 1994 Date of entry into force: 23 June 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 31 May 2002 Date of entry into force: 16 February 2005
2020 pledge	30% reduction by 2020 compared to 1990 levels, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities.
Flagship legislation	Grenelle I and Grenelle II (2009 and 2010)

Legislative Process

France has a bicameral parliamentary system where legislative power belongs to the “Assemblée Nationale” and the “Sénat”. Statute legislation may be proposed by the Government (Council of Ministers) or by Members of Parliament. The Government has a strong influence in shaping the agenda of Parliament and only 10% of existing laws are proposed by Members of Parliament.

There is a strict separation between what “laws” and “regulations”. Laws determine general principles and rules in domains explicitly set out in the constitution such as civil rights, nationality and crime. Laws must be voted on by the Parliament and can be blocked by the Constitutional Court if it finds that the law goes against the constitution. In this case, the law must be modified and voted on again, or abandoned. Regulations can establish rules outside of the law’s domain or specify more precisely how to implement laws. Regulations do not need to be voted on by the Parliament.

Approach to Climate Change

In his first major speech as President, François Hollande set the course for France to become “the nation of environmental excellence” through an energy transition based on efficiency and the development of renewable energy. This transition involves a sustained reduction of GHG emissions coupled with a reduction of the weight of nuclear energy in the national energy mix from the current 75% to 50% by 2025.

The government held a National Environment Conference in 2012 where a set of measures in the field of climate and energy governance was announced, including: (1) A push to reduce the EU’s emissions of GHG by 40% in 2030 and 60% in 2040 and to introduce a carbon inclusion mechanism for sectors most exposed to international competition; (2) a target for heavy vehicles to consume no more than 2 litres of gasoline per 100km within 10 years; (3) continued support for wind and solar power; and (4) a call for tenders for the creation of offshore wind farms at Tréport and Noirmoutier.

To define the most appropriate way to change the energy system economically, environmentally, and socially, a “National Debate on Energy Transition” was held between November 2012 and July 2013. The debate focused on three key issues: developing renewables; housing energy efficiency; and nuclear energy.

The consultation led to a series of recommendations on energy policy, including reducing the proportion of nuclear energy in the energy mix from 75% to 50% by 2025. It also called for a 50% cut in total energy consumption by 2050. The recommendations have been submitted to the government and draft legislation is expected for early 2014.

In 2000, France produced its first National Programme for Tackling Climate Change, whose measures were either inscribed in laws or regulations on energy, finance, agriculture, urban planning, or abandoned. The same process occurred

with the Climate Plan 2004 and the Climate Plan 2006. The Climate Plan must be refreshed every two years according to the 2005 Energy Policy Framework Law and local authorities are encouraged to adopt the same process and to produce local climate plans.

Carbon Pricing

In October 2007, the “Grenelle de l’environnement” was initiated. One of its six working groups focused specifically on climate and energy, and was composed of 40 members divided into five sub-groups (state, authorities, non-government organisations, employers, and employees). Some of the measures agreed were adopted in the Grenelle I law in 2009. More precise policies (designed to implement the principles stated in Grenelle I) were voted on in the 2010 Grenelle II law. One of the key mechanisms was a carbon tax. However, this policy was abandoned by the government for reasons of national economic competitiveness. Instead, the French government announced that it would strongly push for a European carbon tax.

Another source of legislation related to carbon pricing in France comes from the European directives that France has transposed into national legislation, such as the French National Allocation Plan voted on in 2005 to implement the EU Emissions Trading Scheme.

Energy Demand

The integrated approach of the Grenelle has contributed in bringing principles and policies on energy demand, energy supply, and sustainable transportation into the mainstream. The Grenelle has either strengthened those policies and goals which already were part of national legislation, or has incorporated them into a dedicated law on the environment. Although some of the initially planned measures have proven challenging given the economic slowdown and budgetary constraints, the Grenelle II law still contains many positive provisions, including a focus on emission reductions and energy efficiency improvements in the buildings and transportation sectors, which account for the bulk of France’s GHG emissions. The Grenelle has also reinforced existing regulations in energy demand management such as, for example, the Thermal Regulation 2005. It now requires a 15% improvement in the thermal efficiency of new buildings and has created a labelling system to identify energy efficient buildings. The Energy Policy Framework Law 2005 includes a target to decrease energy intensity by 2.5% in 2030.

Energy Supply

The Energy Policy Framework Law 2005 also set a 10% renewable energy target for 2010, involving thermal energy sources as well as the use of biofuels in the transportation sector. Through the Grenelle I law the renewable energy target has been increased to 23% to be reached by 2020, beyond the official EU target of 20%. In support of these policies, France uses range of fiscal tools such as tax incentives for renewable energies or feed-in tariffs as part of the country’s finance laws.

Transportation

In France, there are various policies and laws with relevance to renewable energy in the transportation sector including the Climate Plan 2004, the Energy Policy Framework 2005, and the Farming Policy Framework 2006. Since 2009, France's sustainable transportation policies have been developed around the EU Renewable Energy Directive which includes a target of 10% of renewable energy (biofuels) in the transportation sector by 2020.

REDD+ and LULUCF

All forests in France (public and private) are regulated by the Forest Code, which specifies the roles and responsibilities of the various institutions in charge of its implementation. Regarding sustainable forestry management, France has been involved in the Helsinki process since its inception and plays a leading role in the discussion of indicators for sustainable forest management.⁷ According to the National Institute for Geographic and Forestry Information (IGN), there is 1.14 billion tons of carbon in French commercial forests. For the period of 1996-2007, the annual carbon sink is estimated to be 14 million tons.

Adaptation

Responsibilities for climate change adaptation are split between national, regional, and local levels. The creation of a National Observatory for the Effects of Global Warming in 2001 and the adoption of the National Adaptation Strategy 2006 marked the beginning of French government activity in the adaptation field. In 2011, France published the first National Adaptation Plan. Covering the period 2011-2015, the Plan includes measures designed to prepare for and exploit new climatic conditions in France. Regional adaptation guidelines are defined in Regional Climate, Air, and Energy Schemes and local adaptation actions are designed within Territorial Climate-Energy Plans.

Research and Development

In France, there are many research institutions, projects, and initiatives with relevance to climate change. Many receive funding through the French Centre for Scientific Research (CNRS). Some of the major national research programmes with relevance to climate change are: ECLIPSE (Past Environment and Climate History and Evolution); GICC (Management and Impact of Climate Change); PNEDC (National Programme of Climate Dynamics); PATOM (Mid-Scale Atmosphere and Ocean Programme); PROOF (Biogeochemical Processes in Ocean and Fluxes); PNCA (National Programme of Atmospheric Chemistry); PNRH (National Programme in Hydrology Research); and PNTS (National Programme of Space Teledetection)

⁷ The Helsinki Process, which began in 1990, developed guidelines for the sustainable management of forests in Europe. The Process has sought to identify measurable criteria and indicators to evaluate how European countries have progressed in their efforts to follow the principles of sustainable forest management and conservation of the biodiversity of European forests.

France: Flagship Legislation

Name of law	Grenelle I [Legislative]
Date of entry into force	2009
Categories	— Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>In July 2007, the French government established six working groups gathering state and non-state actors to address ways to redefine France's environment policy. The proposals were put to public consultation, leading to a set of recommendations presented to the French parliament in early 2008.</p> <p>One working group specifically addressed climate change. The Grenelle I Law states the principles of the Grenelle process. The Grenelle II Law will give a more detailed implementation framework. Not all the measures negotiated during the Grenelle process were adopted.</p> <p>The name of the process, "Le Grenelle de l'Environnement", refers to a 1968 conference when government negotiated with unions to end weeks of social unrest.</p> <p>Monitoring arrangements: a specific committee ("Comité national du développement durable et du Grenelle de l'Environnement") monitors the implementation of the measures adopted in the Grenelle Laws and report once a year to the parliament to suggest improvements. The committee also formulates, monitors and evaluates sustainable development and biodiversity national strategies.</p> <p>The committee is chaired by the Ministry of Environment, and consists of the inter-ministerial delegate for sustainable development and several groups made up of representatives of the State, the private sector, environmental NGOs and unions. It has also six members who represent family, consumer protection, solidarity, social integration, youth, development aid and a representative of the Chamber of Commerce and Industry. In total, it has 41 members.</p> <p>This committee has a secretariat within the Minister of Environment and Sustainable Development and must meet at least four times a year. It can also meet when requested to by the Ministry of Environment and if two thirds of its members demand it.</p>
Targets	None specified

Name of law	Grenelle II [Legislative]
Date of entry into force	2010
Categories	<ul style="list-style-type: none"> — Carbon pricing — Energy supply — Energy demand — Transportation — Research and Development — Institutional/Administrative arrangements
Driver for implementation	Environmental policy
Summary of bill	This law specifies the Grenelle I objectives in order to facilitate their implementation.

Putting a price on carbon: the first version of the Carbon Tax proposition was blocked by the "Conseil Constitutionnel" in December 2009 for reasons of fiscal inequalities.

Later, in the context of the economic crisis, the carbon tax project was increasingly seen by the government as an important issue for national economic competitiveness. Before the regional elections, President Sarkozy announced the withdrawal of the plan because the government wanted to see a carbon tax at the European level.

Energy – supply-side policies:

- Better linkage of renewable energy to the main energy network
- Support and administrative facilitation for wind power.
- Incentives for solar power
- Regulation of experimental carbon storage installations

Energy – demand-side policies:

- Carbon tax abandoned
- Publication of regional programmes for climate and energy within a year of the law entering into force.
- Improvement of energy saving certification schemes
- Improvement of energy consumers' information on their level of consumption and means of reduction

Targets	None specified
----------------	----------------

France: Other Relevant Legislation

Name of law	Finance Law [Legislative]
Date of entry into force	2009
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Institutional/Administrative arrangements
Driver for implementation	National finance
Summary of bill	The 2009 Finance Law contains various provisions to increase financing for energy efficiency investments and in support of renewable energy.
	The Law also includes some provisions targeting biofuels. Ethanol E85 is to benefit from progressively reduced consumption taxes.
	The Finance Law established a zero-interest loan programme for those purchasing a home for the first time (either new or existing construction); the loan amount is increased by EUR 20,000 (USD 27,183) if the building meets standards beyond those required under current building regulations.
	Eco-loan: 0% loan for energy-efficient renovation (thermal insulation for roofs, exterior walls, Installation, regulation or replacement of heating or hot water systems etc.).
Targets	None specified

Name of law	Bonus-Malus: vehicle CO₂ bonus and penalty system (Executive)
Date of entry into force	2007
Categories	– Transportation
Driver for implementation	Climate change
Summary of bill	<p>Following the “Grenelle of the environment” process, a combined bonus and penalty system (Bonus-Malus programme) was announced to encourage the purchase of low-polluting vehicles.</p> <p>The bonus system applies to new vehicles purchased from 5 December 2007 and is provided as a function of the CO₂ emitted</p>
Targets	None specified

Name of law	Farming Policy Framework No. 2006-11 (Legislative)
Date of entry into force	2006
Categories	– REDD+ and LULUCF
Driver for implementation	Land use
Summary of bill	Sets out the main targets and policies for the national agriculture policy
Targets	This Law goes beyond the 2010 European objective of a 5.75% share of biofuels in the energy mix and sets an ambitious target of 7% of biofuels in fuels for 2010.

Name of law	Plan Climat (Policy framework) (Executive)
Date of entry into force	2006
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Transportation – Adaptation
Driver for implementation	Climate change
Summary of bill	<p>As envisaged in the Energy Policy Framework (2005), the government elaborated a new Climate Plan two years after the 2004 Climate Plan. The Climate Plan 2006 was meant to reinforce the measures adopted in the Climate Plan 2004 and implement a few new measures. Most of the measures have been implemented under previous existing laws, decrees and regulations that do not need parliamentary approval.</p> <p>Energy – supply-side policies include increasing the number of Energy Savings certificates in order to incite energy producers to promote energy savings.</p> <ul style="list-style-type: none"> – Incentive and information mechanisms to promote wood heating and solar electricity: e.g.: increase of the feed-in tariffs for photovoltaics. <p>Energy – demand-side policies include:</p> <ul style="list-style-type: none"> – Reinforcement of tax exemption on renewable installations – Local authorities of more than 100,000 inhabitants must produce Local Climate Plans. – Increased focus on climate change in school curriculum. – Sustainable Development loan books that allow banks to finance low interest

rate loans for energy efficiency renovation of buildings

- Introduction of energy performance diagnostics monitored by an inter-ministerial task force. Increased transparency through an operational document annexed to the yearly Budgetary Law in order to give more visibility to members of parliament.

Transportation polices:

- Extension of the Energy Label to second hand cars.
- A set of measures is introduced for limiting air pollution (congestion charges, increase in the number of taxis and public transportation etc.).

September 2007: Creation of a 5-year National Adaptation Plan for climate change.

Targets	Improve energy efficiency by 10% by 2010. Cut emissions by a factor of four by 2050
----------------	--

Name of law	Thermal Regulation 2005 (RT 2005) (Executive)
--------------------	--

Date of entry into force	2005
---------------------------------	------

Categories	– Energy demand
-------------------	-----------------

Driver for implementation	Energy efficiency
----------------------------------	-------------------

Summary of bill	Thermal Regulation 2005 (Regulation Thermique 2005) directly replaces Thermal Regulation 2000, introducing more stringent regulations of thermal insulation and heating systems.
------------------------	--

RT 2005 requires 15% improvement of thermal efficiency and applies to new buildings. It also creates a labelling system to identify energy efficient buildings. Calculations now include natural lighting and renewable energy sources.

Imposition of distinct summer and winter requirements to encourage bioclimatic architecture.

Measures to discourage air conditioned buildings in France.

Targets	None specified
----------------	----------------

Name of law	Energy Policy Framework [POPE], No. 2005-781 (Legislative)
--------------------	---

Date of entry into force	2005
---------------------------------	------

Categories	– Energy supply – Energy demand – Research and Development – Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Energy supply and energy efficiency
----------------------------------	-------------------------------------

Summary of bill	This law, adopted after two years of public debate, defines the objectives and orientations of France's energy policy (energy security, competitive energy market, fight climate change, manage demand, diversify sources of supply, develop new technology). The bill states that tackling climate change is a priority of France's energy policy.
------------------------	---

It contains objectives to increase the share of renewable electricity in the national energy mix and to diversify energy sources: including a target that renewable energies' satisfy 10%

	<p>of French energy demand by 2010.</p> <p>The Law creates a High Council on Energy to manage all aspects of the energy sector (including a White Certificate scheme to encourage energy efficiency).</p> <p>The law aims to decrease energy intensity by 2.5% in 2030.</p> <p>It also includes new incentive mechanisms such as tax exemptions, energy label for building and a White Certificate Programme to encourage energy efficiency among firms in the energy sector as envisaged in the 2004 Climate Plan.</p> <p>Transposition of the EU directive on the energy performance of building (standards, energy performance certificate, energy efficiency studies before construction begins).</p> <p>Information campaigns targeting both schoolchildren and consumers.</p> <p>Energy Technology R&D: The government will publish its domestic research strategy, to be revised every five years, and report each year to Parliament regarding development of renewable energies and energy efficiency programmes. Funds have been given to the National Research Agency.</p> <p>The government must elaborate a Climate Plan every two years. It also demands support for regional and municipal programmes of energy management.</p>
Targets	<p>Annual reduction between now and 2015 of French energy intensity by 2%, and between now and 2030 by 2.5%</p> <p>Decrease the GHG emissions by 3% per year reduce total of emissions by 75% by 2050.</p> <p>Increase the share of renewable electricity in national energy production and diversify its sources: renewable energies to satisfy 10% of French energy demand by 2010.</p>
Name of law	Plan Climat 2004 (executive)
Date of entry into force	2004
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand – REDD+ and LULUCF – Transportation – Adaptation – Research and Development
Driver for implementation	Climate change
Summary of bill	<p>After extensive interministerial discussions the plan was postponed five times and finally adopted by the government in July 2004. The goal of the Climate Plan 2004 was to reinforce the National Programme for Tackling Climate Change and to implement a pragmatic set of tools to respect France’s Kyoto commitments. Some measures have been implemented.</p> <p>The Plan envisaged the February 2005 “French National Allocation Plan 2005–2007” (Implementation of the 2003 European Directive creating an EU Emissions Trading Scheme). The scope of the French NAP has been enlarged to installations of other sectors not mentioned in the European Directive (chemicals, agro-food, services), adding more than 700 installations. The new entrants reserve has increased to 5.69 Mt.</p> <p>Most of the Climate Plan energy supply side-measures rest on the 2005 Framework law on</p>

Energy. Tax exemption for solar energy installations (40% in 2005, 50% in 2006).

- The Finance Law 2005 includes the creation of a tax exemption that aims to support the integration of energy efficient equipment, materials and devices in private homes. This provision is to be applied from 2005 to 2009 with 40% tax relief on equipment producing renewable energy.
- April 2005: Air conditioners must have energy label.
- Finance Law 2006: Tax or malus on the registration document acquired for the purchase of cars producing more than 200g CO₂/km.
- Increase of tax relief for clean vehicles (from EUR1,525 (USD 2,073) to EUR2,000 (USD 2,718)).
- May 2006: Energy Label for new cars made mandatory (transposition of EU directive of 1999).
- Biofuel Plan: objective 5.75% share of Biofuels in 2010 (transposition of the Biofuel European Directive), development of a network of biofuel stations.
- Tax reliefs for organic farmers introduced.
- Extension of Company Mobility Plans. This is a set of measures that incites and helps companies to improve professional transportation plans, reducing the use of individual cars.
- Acceleration of the construction of new High Speed railways.

The Climate Plan applies across various ministries, which turn it into more detailed sectoral plans, after which different tools and regulations are developed and implemented. Elaboration of voluntary regional plans and subsidies for renewable energy (Alsace and Rhône-Alpes). Support of local administrations (regions, departments) to develop their own policies and regulations (urban planning, CO₂ quantification etc.).

The Plan Climat 2004 mandates ONERC to prepare a strategy for national adaptation to climate change and to lead a certain number of projects in this field.

The plan is monitored by an inter-ministerial mission on GHGs.

Targets	To reduce by 75% the level of emissions in 2050 and to cut 72 million tonnes of carbon dioxide emissions annually until 2010.
----------------	---

Name of law	Finance bill for 2003 (Law No. 2002-1575 of 30) (Legislative)
Date of entry into force	2003
Categories	– Energy supply – Energy demand
Driver for implementation	National finance
Summary of bill	This yearly law sets out the benefits and expenses of the state. It contains mechanisms to achieve emission or energy efficiency targets.

The Finance Law of 2003 extends the tax credit for buying renewable energy generation equipment, installed in new housing. The credit is equal to 15% of the amount of the purchase price.

The Finance Law extends until 31 December 2005 the tax credit for the acquisition of a new vehicle operating on natural gas, liquefied natural gas and hybrid vehicles (electric/combustion).

Targets	None specified
----------------	----------------

4.20 Gabon



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	-58
excl. LULUCF	6
Change from base year (1990)	NA
Latest reporting year	2000
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 / June 1992 Date of ratification: 21 January 1998 Date of entry into force: 21 April 1998
Kyoto Protocol ratification status and date	Date of signature: -- Date of ratification: 12 December 2006 Date of entry into force: 3 December 2007
2020 pledge	No pledge made
Flagship legislation	National Climate Change Action Plan; “Plan Climat”

Legislative Process

Gabon is a Presidential Republic. The constitution, written in 1961 following independence from France, was last revised in 2003. It provides basic freedoms and guarantees the separation of executive and legislative powers.

The government comprises a bicameral legislature with a National Assembly and a Senate. The National Assembly has 120 deputies elected for 5 years, whilst the Senate has 102 seats, with senators elected by municipal councils and regional assemblies for a six-year term. The Gabonese President is elected for a seven-year term with no presidential mandate limitation.

The Gabonese Democratic Party (PDG) has been in power since 1968 and has the most influence over Gabonese politics, both before and after the first multi-party National Assembly elections in 1990. President Omar Bongo Ondimba ruled the country for 42 years, though he was only officially elected President in 1975, a position in which he remained until his death in 2009. His son Ali Bongo Ondimba was then elected as his successor in an open contest against 18 other candidates.

Approach to Climate Change

Gabon is one of the most developed countries in sub-Saharan Africa, but it is particularly vulnerable to climate change since 75% of the country's 1.5m people live on the coast, while the major centre of oil production is at coastal Port Gentil, which is on average only 4m above sea level. The country is renowned for the richness of its natural capital. Some 85% of the country is still covered by rainforests, and there are patches of natural savannah in the south.

The UNDP estimates that mean temperatures rose by 0.6° in Gabon since 1960 and rainfall increased by 2.6% over the same period. The government is concerned that these changes will lead to increasing vulnerability both domestically and regionally. Climate change models predict regional reductions in precipitation but a Gabon with relatively stable and increasing rainfall. In the coastal zone, sea level rises; increased coastal erosion; saltwater intrusion into littoral aquifers that provide drinking water to the coastal population; and increased severity of storms present significant challenges on land and in the marine zone. Gabon identified its coastal zones, water resources, agriculture and health as the four most vulnerable sectors in its first National Communication to the UNFCCC in 2004.

Gabon's economy continues to be largely dependent upon oil and the export-led exploitation of raw materials. Oil provided about 50% of Gabon's GDP and 80% of exports between 2008 and 2010. Timber and manganese constitute the remainder of Gabon's exports, reflecting the lack of diversification in the economy and the potential for the exploitation of natural resources to crowd out other sectors of the economy. This dependency on fossil fuels and natural resources increases domestic exposure to international price volatility, and also presents challenges to the commitment to sustainable development. Oil production is now declining, which has further increased the urgency of

developing sustainable diversification strategies. This challenge is being met with ambitious proposals and plans to provide a new economic model based on sustainable development, and which respond to the challenges of climate change. Most significant is a new development programme called "Gabon Emergent", launched in 2010. This takes a long-term view and seeks a new model of economic development that is less environmentally destructive than past economic activity.

A National Council on Climate Change was established in 2010 along with a Climate Change Communication Committee. The Climate Council falls under the President's direct authority, and is charged with managing the National Action Plan on Climate Change. This plan has developed an approach to preserve the rainforests and manage industrial emissions. The plan is integrated into the government's broader strategic development goals produced with the National Commission on Sustainable Development, and through the newly-created Ministry of Economy and Sustainable Development.

In addition the UNDP/Africa Adaptation Programme has emphasised the significance of the creation of an environment department in each of Gabon's ministries, a sign of the country's commitment to integrating sustainable and climate-focused development into the heart of government and national development. Due to the economic reliance on natural resources and the threats that climate change brings, the environment is seen as a cross-cutting issue that underpins future prosperity, security and well-being.

Tropical forest countries such as Gabon need, on the one hand, to provide sustainable economic growth, enhance the capacity of society and the economy to adapt to climate change, and contribute to its mitigation by reducing environmental degradation. Yet on the other hand, these countries have large structural dependencies upon natural resource exploitation to drive economic growth. There is therefore a need to increase value added domestically in production, a philosophy that will be important in the development of the timber and forestry sector in Gabon, particularly under an anticipated REDD+ regime.

Energy supply

Gabon experiences frequent electricity shortages. The development of the electricity supply is therefore strategically very important. The government plans to move increasingly towards hydroelectric production, increasing production from 373 MW to 1200 MW by 2020. The African Development Bank estimates that Gabon has a total hydro potential of between 5,000 and 6,000 MW and has approved a EUR 57.5 million (USD 78.2 million) loan to support the Coder Hydropower Project. This consists of two hydroelectric power plants: a 52MW plant in north Gabon at Ivindo and a 70 MW plant in the Ngounie Province in Grand Poubara. It is hoped that these dams will provide sufficient power to be exported regionally, and through multiplier effects stimulate private sector investment and infrastructure development domestically. The AFDB estimates that these plants will produce 122 MW, saving 530,000 tons of CO₂ emissions annually.

REDD+ and LULUCF

Gabon is one of the 11 countries of the Congo Basin, the second largest tropical forest after the Amazon Basin, with 250 million ha. Some 11% of the country was allocated to form 13 national parks in 2002. Much of the remainder has been designated for industrial logging, and mining concessions. Much of the logging has historically involved selective rather than clear-cut logging, and some 85% of the country remains covered in a forest that still harbours significant populations of large mammals such as forest elephant, gorillas and chimpanzees, which were once found across all of central Africa.

The expansion of forestry and mining is expected to increase due economic growth and the structural dependency on natural resources. The sectors are also expected to increase their relative contribution to the economy due to continued decline in oil production. In recognition of this, the government has put the preservation and sustainable use of Gabon's natural heritage at the heart of its development strategy.

In 2010 the government placed a ban on raw timber exports and it has introduced a 100% domestic wood processing target with the intention of increasing the amount of value-added in the timber sector, to increase domestic profits from forest exploitation, and foster a domestic processing industry. The International Tropical Timber Organisation estimates that this ban has so far been effective. A further challenge for the sector is to reduce the amount of waste and forest damage in industrial logging, which should be addressed in the context of Gabon Emergent and improved forest management. The changes in this sector have been supported by international partners: Gabon has been selected as a target country by the World Bank Forest Carbon Partnership Facility and is supported by the Congo Basin Fund. In addition, Gabon is a part of the Central African Forests Commission (COMIFAC) and works with the eco-certification of Forest Concessions in Central Africa project (ECOFORAF), which seeks to improve forest management throughout the region.

Other measures include the introduction of incentives to improve local forest management through the development of community-based forestry. Community Forests are recognised in the Forest Code of 2001, while a 2004 Decree established the conditions for their creation. Pilot projects have been set up for Community Forests under the umbrella of Development of Community Alternatives to Illegal Logging (DACEFI). In addition, the International Tropical Timber organisation (ITTO) has established three pilot sites in three provinces to develop community forestry projects.

Finally, the work of the Africa Adaptation Programme has emphasised the role of the mangrove forests in climate change adaptation, while the First National Communication emphasised coastal vulnerability. Mangroves provide a buffer against coastal erosion, are crucial as spawning grounds for fish, and are thus essential for livelihoods. However local people in the coastal zone have been cutting the mangroves for firewood for fish-smoking businesses. The

government has therefore allocated a budget for mangrove protection in the 2013 budget.

Adaptation

The costs and benefits of adaptation are being estimated and integrated into various government agencies' development plans, which include vulnerability assessment and sectoral adaptation options. Adaptation work is being supported by the Japan-funded Africa Adaptation Programme (AAP), "Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa". The AAP's work covers 20 African countries, and in Gabon focuses on coastal adaptation and the prevention and mitigation of disasters. Its USD 2.465million budget is to be used to support improved institutional capacity for adaptation in coastal zones. This work has led to the development of the National Strategy on Coastal Adaptation to Climate Change and to the draft National Coastal Adaptation Law, which it is anticipated will be included in next year's review. In addition, the Ministries of Planning, Finance and Environment intend to create a National Adaptation Fund, although there had not been significant developments at the time of writing. However, since Gabon has quite a high level of development, especially regionally, it will not be producing a National Adaptation Programme of Action.

Research and development

Gabon has produced world class research in forestry and climate change, and has developed international co-operation with universities and researchers in France, the UK, Ghana, Cameroon and the USA. This has been facilitated by the Cellule du Changement Climatique and the French organisation Centre International de Recherches Medicales (CIRMF), hosted amongst other sites at the Centre for the Study of Gorillas and Chimpanzees at La Lope.

In 2010 the Gabonese Agency for Space Studies and Observations was created as a regional centre of excellence to monitor deforestation across two million km² of the Congo Basin. The agency has been created in collaboration with Brazil and France. The agency will install a satellite-receiving antenna and create a centre of excellence in remote sensing, to monitor forests in Gabon and the wider region.

Gabon: Flagship Legislation

Name of law	National Climate Change Action Plan; "Plan Climat" (Executive)
Date of entry into force	2012
Categories	– Adaptation – REDD+ and LULUCF
Driver for implementation	Climate change mitigation and adaptation
Summary of bill	The plan is designed to a) enable Gabon to be able to control its GHG emissions and reduce

climate risks across the country, b) enable the reconciliation of environmental protection and sustainable economic development, in accordance with the Gabon Emergent strategy.

The Plan provides improved spatial planning to precisely determine which areas are to be developed for agriculture, mining, infrastructure and conservation, with a focus on reducing vulnerability to coastal erosion and deforestation.

It also provides a national plan to reduce emissions from 'flaring' from gas and oil production, produced in collaboration with the oil sector.

The plan promotes increased reliance on domestic renewable energy sources, particularly through the development of hydro-electricity.

Targets	<p>Creation of a sovereign wealth fund</p> <p>Reduce the volume of waste products flared during oil production by 60% by 2015.</p> <p>Produce a carbon budget each year for all new projects and private enterprises.</p> <p>Produce a national carbon budget every two years.</p> <p>80% clean energy production by 2020</p>
----------------	---

Gabon: Other Relevant Legislation

Name of law	Resolution No. 20/2013 on Sustainable Development in the Republic of Gabon (Executive)
Date of entry into force	2013
Categories	<ul style="list-style-type: none"> – Adaptation – REDD+ and LULUCF
Driver for implementation	Sustainable development
Summary of bill	This resolution aims to create a national and international ecosystem services market in the services that natural biological systems provide, such as regulating water flow in watersheds and sequestering carbon. Market failures cause these services to be lost as the natural ecosystems are degraded and replaced with other land uses such as agriculture. Payments for Ecosystem Services (PES) are proposed as a way to attribute value to natural ecosystems, and provide financial incentives for their management and conservation.
Targets	None.

Name of law	The Forest Code (Law 16/01) (Legislative)
Date of entry into force	2001

Categories	– REDD+ and LULUCF
Driver for implementation	Forestry
Summary of bill	<p>This law governs forest and water management in Gabon. In 298 articles, it sets out the general principles of management and aspects of sustainable management. The law addresses the forests themselves and the fauna found in them. The core underlying principles of the law are to conserve biological diversity and develop the full potential of Gabon's ecosystems. Forest areas are owned by the state and are divided into protected and production areas, which are designated for exploitation. Rural forest areas are designated for villages to be able to exploit and manage local forest resources. No concessions or hunting are allowed in protected areas, where tourism is promoted. Hunting is only allowed in production forests. The law also regulates the processing of wood and customary rights over the forest.</p> <p>The sustainable management aspects of the law concern the requirements for the development of management plans and the demonstration of sustainable levels of removals of timber from the forest.</p>
Targets	None.

Name of law	National Parks Law (Legislative)
Date of entry	
Into force	27 th August 2007
Categories	– Institutional/Administrative arrangements
Driver for implementation	Sustainable development
Summary of bill	<p>This law created Gabon's national parks agency. It sets out the development of the general principles and the institutional framework for the development of the agency and the 13 national parks that have now been established in Gabon. These national parks constitute a key element in the sustainable development of Gabon. Because these parks cover mainly forest areas, the law contributes to the reduction of deforestation and degradation in the country.</p>
Targets	None.

4.21 Germany



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	926
excl. LULUCF	916
Change from base year (1990)	-334
Latest reporting year	2011
Importance as an emitter	Top 10
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 9 December 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 31 May 2002 Date of entry into force: 16 February 2005
2020 pledge	EU pledge under UNFCCC is a 30% reduction by 2020 compared to 1990 levels, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities; however, the current coalition government goes even further in its domestic pledge by setting a domestic target to reduce GHG emissions by 40% below 1990 levels by 2020.
Flagship legislation	Integrated Climate and Energy Programme

Legislative Process

In Germany, the Bundestag (parliament) is the most important organ of the legislative branch. The German Bundesrat is also involved in the legislative process as an organ through which the sixteen *Länder* of Germany participate in the legislation of the Federation. For federal laws to pass, they must obtain a majority in both chambers.

The Federal Government introduces most legislation; when it does so, the Bundesrat reviews the bill and then passes it on to the Bundestag. If a bill originates in the Bundesrat, it is submitted to the Bundestag through the executive branch. If the Bundestag introduces a bill, it is sent first to the Bundesrat. The Joint Conference Committee resolves any differences over legislation between the two legislative chambers. Once the compromise bill that emerges from the conference committee has been approved by a majority in both chambers and by the cabinet, it is signed into law by the federal president.

The German Basic Law assigns no general legislative powers to the Federal Government in respect of environmental protection. Rather, the respective legislative powers are separated out for air pollution control, noise abatement, waste management, nature conservation and water supply. Environmental responsibilities that fall either to a limited extent under these sectoral responsibilities or are not covered by them at all, can under certain circumstances be covered by the legislative power of “law relating to economic affairs”. Legislation on climate change can in part be covered by the legislative area of “air pollution control” but must also be covered by the “law relating to economic affairs”. Therefore, there is no uniform legislative area of climate change law in Germany.

Approach to Climate Change

Germany takes a leading role in climate change mitigation and adaptation. All political parties support action on climate change and the overall emission reduction target of 40% by 2020 compared to 1990. This strong commitment to climate mitigation is partly the responsibility of the Green Party, which formed a coalition government with the Social Democratic Party (SDP) from 1998 until 2005, when most of the post-Kyoto climate legislation was initiated. The conservative parties (Christian Democratic Union (CDU) and Christian Social Union (CSU)) continued this approach in the Great Coalition with the Social Democrats (2005-2009) under Chancellor Merkel within the 2020 commitments. The coalition government of CDU/CSU and the Free Democratic Party (FDP) repealed the phase-out of nuclear energy by extending the life span of nuclear power reactors in 2009/2010. However, the nuclear disaster in Fukushima, Japan led to a rethink and the decision to phase out all nuclear power stations by 2022 (a return to the original phase-out timetable legislated by the SPD/ Green coalition). The new coalition government formed after the 2013 elections aims to maintain momentum towards achieving the emission reduction targets and implementing the ‘Energiewende’, i.e. the focus on renewable energies.

Energy supply

Building on its national climate policy programmes of 2000 and 2005, Germany launched its first national climate change and energy programme in 2007 and a second package in 2008. In September 2010 the government launched its Energy Concept for an Environmentally Sound, Reliable and Affordable Energy Supply. This strategy included an extension of the operation of its nuclear reactors (by an average of 12 years) and the expansion of renewable energy sources. However, following the Fukushima disaster in Japan in March 2011, the government reassessed the risks associated with nuclear power, decided to phase out nuclear energy by 2022 and will increase its ambition for renewable energy, including a target to produce 35% of electricity from renewable sources by 2020 (from the original target of 30%). In 2011 the government amended the Atomic Energy Act and the Renewable Energies Sources Act to put these changes into law.

The government's integration of climate change mitigation into the legal system has been primarily focused on energy efficiency and renewable energy. Germany has introduced a range of statutory regulations on energy efficiency in key sectors. Amendments to the Combined Heat and Power Act in 2008, 2009 and 2012 increased the percentage share of high-efficiency combined heat and power (CHP) plants in electricity and heat generation (primary energy use over 90%) from 12% in 2008 and 2009 to reach a 25% share of the total conventional energy generated by 2020. District heat networks will also be expanded. The government amended the Combined Heat and Power Act in 2011 and again in 2012 on the basis of a monitoring report to strengthen energy production in CHP plants.

Use of renewable energy is of fundamental importance in German climate change legislation. The Renewable Energy Sources Act of 25 October 2008 remains the most important instrument for expanding the use of renewable energy sources. This law set a target to generate 30% of electricity supply from renewable energy resources by 2020 and this target was increased to 35% in 2011 following the post-Fukushima decision to phase out nuclear power by 2022. The feed-in-tariff regime for photovoltaic installations was revised in summer 2012. Payments for PV systems above 10 MW were cancelled. The feed-in-tariffs for installations below 10 MW have been adjusted for several classes of PV systems. For April 2012 ranges between 13.5 and 19.5 cent/kWh have been set which decrease 1% per month plus/minus a variable factor starting in September 2012 with a maximum depression fixed at 29%. The government wants to maintain a solar "growth corridor" of 2,500–3,500 MW per year, with support for new installations capped when a national total of 52 GW is reached. A class system for medium-sized roof-top installations will also be introduced.

In line with the Meseberg Integrated Energy and Climate Programme, new instruments were introduced under the Renewable Energies Heat Act in 2008, which is designed to foster the use of renewable energy for heat supply. Given that around half of German energy consumption goes to supplying heat and for refrigeration, the aim of this Act is not only to reduce energy consumption by

improving energy efficiency, partly through the Energy Saving Ordinance (EnEV), but also to switch the remaining energy consumption over to renewable energy.

The Act on Demonstration and Application of Technologies for Capture, Transport and Permanent Storage of Carbon Dioxide (CCS), transposing the EU Directive on CCS, was adopted in 2012, after a long conciliation process between the lower (Bundestag) and the upper (Bundesrat) Chambers. The federal regions (Länder) represented in the Bundesrat demanded the introduction of an annual storage limit of 4 million tonnes of CO₂, as well as provisions granting discretionary powers to the Länder on the authorisation of CCS demonstration sites on the basis of alternative uses for sites, their geological features and public opposition.

The government intends to adopt a Grid Expansion Acceleration Act to facilitate a quicker expansion of the grid to enable the connection of more renewable energy capacity. This is particularly relevant for electricity transmission grids transporting wind power from the North to the consumption centres of the South. The revised Energy Industry Act will create a stronger foundation for smart grids and storage facilities. The government is also preparing a Planning Acceleration Act to help ensure the required capacities of fossil fuel power plants are created quickly.

Another key component is the promotion of greater use of biofuels. The German government has introduced a package of rules that simplifies the procedure for feeding biogas into the gas grid. The package includes a revised Gas Grid Access Ordinance 2008 and the Gas Grid Fee Ordinance 2008. The Meseberg Integrated Energy and Climate Programme contained a 17% target for biofuels by 2020. The legal basis is provided by the Biofuel Quotas Act of 2009. Germany also transposed the European Renewables Directive requirements on sustainable biomass production into national law by means of the Federal Biofuels Sustainability Ordinance in 2009.

Energy efficiency

In the buildings sector, the Energy Saving Ordinance (EnEV) was amended (most recently in 2009) to tighten restrictions on primary energy use and transmission heat loss. An upcoming Energy Saving Ordinance will provide for a harmonisation of standards by 2020 for new buildings with the future European standard for near zero-energy buildings. In order to comply with stringent energy efficiency criteria (any products and services procured should have best performance with regard to energy efficiency), the government will adopt amendments to the Ordinance on the Award of Public Contracts. The Heat Cost Ordinance was also amended in 2009 to foster energy-saving behaviour among tenants of rented premises. The law for energy labelling implementing the EU Directive on energy performance labels for energy-related products was adopted in 2012.

Transportation

For road transportation, improvements are expected in the statutory reduction targets for CO₂ emissions per kilometre. Among other things, these include

enhanced engine efficiency and incentives for improving electric mobility. Consumer-side incentives come in the form of revised fuel consumption labelling for private vehicles (Ordinance on Fuel Consumption Labelling for Cars, last amended in 2006). In respect of industrial facilities, greater efficiency is expected to be achieved through the emissions trading scheme.

REDD+ and LULUCF

The Federal Ministry for Education and Research is funding a number of measures, including the Forest and Climate Fund (Waldklimafond) and the project “Interdependencies between Land Use and Climate Change Strategies for a Sustainable Land Use Management in Germany (CC-LandStraD)”. This runs from 2010 to 2015, to evaluate the mitigation and adaptation potential of various land management strategies across the major land-using sectors in Germany in order to develop sustainable land management strategies.

Germany: Flagship Legislation

Name of law	Integrated Climate and Energy Programme (Executive)
Date of entry into force	2007
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – Transportation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Energy security, energy efficiency and climate change
Summary of bill	This programme has as its guiding principles security of supply, economic efficiency and environmental protection. The integrated climate and energy programme aims to cut GHG emissions by 40% by 2020 compared with 1990 levels.
	<p>Through 29 measures, the programme addresses issues including combined heat and power generation, the expansion of renewable energy in the power sector, carbon capture and sequestration technologies, “smart” metering, clean power station technologies, the introduction of modern energy management systems, support programmes for climate protection and energy efficiency (apart from buildings), energy efficient products, provisions on the feed-in of biogas to natural gas grids, an energy savings ordinance, a modernisation programme to reduce CO₂ emissions from buildings, energy efficient modernisation of social infrastructure, the Renewable Energies Heat Act, a programme for the energy efficient modernisation of federal buildings, a CO₂ strategy for passenger cars, the expansion of the biofuels market, reform of vehicle tax on the basis of CO₂, energy labelling of passenger cars, reinforcement of the influence of the HGV toll, aviation, shipping, the reduction of emissions of fluorinated GHGs, procurement of energy efficient products and services, energy research and innovation, electric mobility, international projects on climate protection and energy efficiency, reporting on energy and climate policy by German embassies and consulates, and a transatlantic climate and technology initiative.</p>
Targets	Energy supply: to double electricity generation from combined heat and power to 25%; approval of an 850km underground grid to transport offshore wind energy to the south.

Energy demand: Energy-related requirements for new homes and fully renovated old homes to target a 30% reduction in energy use; also rules on replacement of central heating boilers and new standards for windows and the insulation of building facades. Incentives for “smart” meters; reform of the Energy Saving Ordinance.

Transportation: Increase in road tolls for trucks; reform of vehicle tax to a pollutant and CO₂ emissions basis; amendment to the Passenger Car Energy Consumption Labelling Scheme.

Research and development: EUR400 million (USD543.7 million) to be allocated from sales of carbon allowances in the EU ETS to invest in low carbon projects, including refrigeration technology and biomass research.

Germany: Other Relevant Legislation

Name of law	Implementation of the Government Programme for Electric Mobility from 23 November 2012, No. 634/12 [Executive]
Date of entry into force	1 January 2013
Categories	– Transportation
Driver for implementation	Transportation, climate change
Summary of bill	Key actions set out by the programme to be achieved in 2013 include an increase of the funding for R&D by EUR 1 billion (USD 1.36 billion) by 2013-10-22, tax exemption for 10 years for vehicles with less than 50g/km CO ₂ emissions, regional showcases and technical lighthouse projects and support the gradual transition of the passenger car fleet to electric cars including tax incentives.
Targets	None specified

Name of law	Act amending the regulatory framework for electricity from PV (EEG change) [Legislative]
Date of entry into force	23 August 2012
Categories	– Energy Supply – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Decarbonisation of energy mix
Summary of bill	This Act introduces monthly tariff depressions in the national feed-in tariff (FiT), replacing the annual FiT cut that typically occurs in January.
	The feed-in-tariffs for installations below 10 MW have been adjusted for several classes of PV systems. For April 2012 ranges between EUR 0.135 (USD 0.183) and EUR 0.195 (USD 0.265)/kWh have been set which decrease 1% per month plus/minus a variable factor starting in September 2012 with an annual maximum depression fixed at 29%.
	The feed-in-tariff for systems between 10kW and 1,000 kW will be calculated on the basis of 90% of the energy generated. This rate will be valid until January 2014.
	Funding for photovoltaic installations above 10 MW has been cancelled. All funding will be back-dated to the original date of 1 April 2012. A EUR 50 million (USD 67.95 million) research and development programme for PV storage solutions will be

	operational from 1 January 2013.
Targets	None specified

Name of law	Energy Concept for an Environmentally Sound, Reliable and Affordable Energy Supply [Executive]
Date of entry into force	28 September 2010
Categories	<ul style="list-style-type: none"> - Energy Supply - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Renewable energy, energy security, climate change
Summary of bill	<p>The Federal Government's Energy Concept for an Environmentally Sound, Reliable and Affordable Energy Supply sets out a long-term energy strategy to 2050 that will provide an environmentally sound, reliable and affordable energy supply.</p> <p>Scientifically-tested monitoring every three years, to be published. Methodology is to be established.</p>
Targets	Reduce emissions to 40% below 1990 levels by 2020; to 55% by 2030; to 70% by 2040 and to 80–95% by 2050

Name of law	Biofuel Quota Act [Executive and Legislative]
Date of entry into force	15 July 2009, amended on 17 September 2009
Categories	<ul style="list-style-type: none"> - Energy Supply - Transportation
Driver for implementation	Renewable energy
Summary of bill	The legal basis for the Meseberg Integrated Energy and Climate Programme, which contained a 17% target for biofuels by 2020.
Targets	Under the Act, a growing percentage of fuel for use in motor vehicles must be produced from biomass. The German Advisory Council on the Environment found the target to be far too high, and favours biomass use in stationary CHP plants. The European Union in Article 3 (4) of the Renewable Energy Directive (Directive 2009/28/EC) prescribes a renewables share of only 10% for the transportation sector.

Name of law	German Strategy for Adaptation to Climate Change [Executive]
Date of entry into force	17 December 2008
Categories	<ul style="list-style-type: none"> - Adaptation - Research and Development
Driver for implementation	Climate change
Summary of bill	The Strategy adopted by the Federal Cabinet creates a framework for adapting to the impacts of climate change in Germany. It primarily describes the contribution of the Federation, thus acting as a guide for other actors. The Strategy lays the

foundation for a medium-term, step-by-step process undertaken in cooperation with the federal Länder and other civil groups and aimed at assessing the risks of climate change, identifying the possible need for action, defining appropriate goals and developing and implementing options for adaptation measures.

Targets None specified

Name of law Renewable Energy Sources Act (EEG) [Executive and Legislative]

Date of entry into force 25 October 2008, amended in 2009 and 2011

Categories

- Carbon Pricing
- Energy Supply

Driver for implementation Climate change

Summary of bill This Act replaced the law on feeding electricity from renewable resources into the public grid of 7 December 1990.

The instrumental core of the former Electricity Grid Feed Act has been retained: grid operators must feed renewables-generated electricity into the grid and charge a state-prescribed price for it. However, the regulatory approach has been updated and made more sophisticated under the new Act.

On 1 January 2011 a degression of 13% for PV systems became effective. The 2011 revision also made comprehensive amendments to the Biomass Ordinance, which came into effect on 1 January 2012. The amended Biomass Ordinance stipulates which substances are eligible for an additional tariff payment based on the types of biomass, which energy-related reference values are to be used to calculate the tariff and how tariffs relating to biomass types should be calculated.

Targets The Act aims to generate 35% of electricity supply from renewable energy resources by 2020 (amended from 30% following the Fukushima disaster).

Name of law Renewable Energies Heat Act [Executive and Legislative]

Date of entry into force 7 August 2008, amended 2009 and 2011

Categories

- Energy Supply
- Energy Demand

Driver for implementation Energy efficiency; and switch the unavoidable portion of energy consumption over to renewable energy

Summary of bill The regulatory core of the Act comprises the statutory obligation to cover a percentage of heat demand from renewable energy sources. The percentage involved depends on the type of energy used and ranges from 15% for solar energy to 50% for biofuel. However, the obligation to meet heat demand using renewables may be replaced by other measures, e.g., high-performance CHP plants.

Targets It is hoped that the share of renewables in heat supply will be increased from the current 6.6% to 14% in 2020. An annual EUR 500 million (USD 679.6 million) in funding will be made available up to 2012 to promote energy efficiency in buildings.

Name of law	Energy Saving Ordinance (EnEV) on energy-saving insulation and energy-saving systems technology in buildings [Executive]
Date of entry into force	24 July 2007, last amended 29 April 2009
Categories	– Energy Demand
Driver for implementation	Energy efficiency
Summary of bill	The regulation prescribes requirements for buildings: that specific annual primary energy consumption may not be exceeded (Section 3 and 4 EnEV). These minimum requirements include thresholds for transmission heat loss and also apply in adapted form from existing buildings (Section 9 and 10 EnEV). It was amended in 2009, with the requirements for restricting primary energy use and transmission heat loss being significantly tightened.
Targets	The Federal Government expects these measures to effect a 20% reduction in CO ₂ emissions in the buildings sector by 2020.

Name of law	Energy Industry Act [Executive and Legislative]
Date of entry into force	13 July 2005 (amended in 2008 and 2011)
Categories	– Energy Supply – Energy Demand – Institutional/Administrative arrangements
Driver for implementation	Energy security, energy efficiency
Summary of bill	A framework policy to enhance competition, security of supply and sustainable energy production. It requires electricity labelling according to type of energy source, providing greater information on electricity sources to allow consumers to make informed decisions about suppliers.
Targets	None specified

Name of law	Law on the Conservation, Modernisation and Development of Combined Heat and Power [Executive and Legislative]
Date of entry into force	19 March 2002 amended 15 October 2008 and 21 August 2009
Categories	– Energy Supply
Driver for implementation	Renewable energy, decarbonisation of energy mix, energy conservation
Summary of bill	This law replaces the 2000 law on combined heat and power. Both laws are primarily intended to promote large CHP plants affected by decreasing electricity prices as a consequence of liberalisation. At the same time the share of CHP-produced electricity was to increase to lower CO ₂ emissions by 23 million tonnes by 2010. Half of this target is to be achieved by the CHP law, the other half by a voluntary agreement with industry. Renewable energy technologies not covered by the EEG may benefit from this law, including co-firing of biomass in fossil-fuelled power plants and biomass-fired CHP larger than 20 MW. The premium cannot be combined with other support, particularly not with the EEG. The purpose of the 2009 amendment to the Act is to increase the electricity generation from combined heat and power plants by promoting the modernisation

	and construction of combined heat and power plants, the support of the launch of the fuel cell and the funding for the construction and expansion of heating and cooling systems, and the construction and extension of heat and cold storage capacity.
Targets	With the amendments in 2008 and 2009, the percentage share of high-efficiency CHP plants in electricity and heat generation (primary energy use over 90%) will be increased from 12% to 25%. District heat networks will also be expanded.
Name of law	Law to amend the Mineral Oil Tax Law and Renewable Energy Law [Executive and Legislative]
Date of entry into force	June 2002
Categories	– Energy Supply
Driver for implementation	Renewable energy
Summary of bill	<p>The Law raises the cap on total photovoltaic capacity that is eligible for premium payments under the renewable energy law, and extends mineral oil tax exemption to cover all biomass fuels. This Law was accepted by the EU in February 2004. The Law raises the cap on the total photovoltaic capacity that is eligible for premium payments under the renewable energy law. It benefits biofuels by exempting them from oil tax from January 2004 until the end of 2009.</p> <p>The Law requires that the Federal Finance Ministry draw up a report with the aid of other relevant ministries every two years, with the first due at the end of March 2004, to chart progress in the market introduction of biofuels, and to examine price developments of biomass, crude oil and automobile fuels.</p>
Targets	None specified

4.22 Ghana



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	24
excl. LULUCF	18
Change from base year (1990)	9
Latest reporting year	2004
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 6 September 1995 Date of entry into force: 5 December 1995
Kyoto Protocol ratification status and date	Date of signature: -- Date of ratification: 30 May 2003 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	Renewable Energy Act, 2011 Act 832

Legislative Process

The Republic of Ghana is a constitutional democracy, whose constitution was approved in 1992. Its legal system is based on English common and customary law. The President is both the head of state and the government. The cabinet consists of the president, the vice-president and not fewer than 10 and not more than 19 ministers (The Council of Ministers). These are nominated by the president and approved by parliament. The single 275-seat Parliament is organised as a unicameral legislature. Chief legislative power is vested in the parliament, which carries out all primary legislative functions. The legislative branch passes bills that require the assent of the president, before becoming law.

A comprehensive review of the structures and procedures of the law-making process in Ghana has been produced by the organisation Friedrich-Ebert-Stiftung Ghana, aspects of which are condensed here. The review explains that all bills that are presented to parliament must include an “explanatory memorandum” that sets out the “policy and principles of the bill, the defects of the existing law, the remedies proposed to deal with those, and the necessity for its introduction”. If the cabinet then approves the memorandum, the sector ministry is informed. If the legislation was initiated by a different ministry, that ministry is notified of the decision. The chief director of the ministry concerned produces a set of drafting instructions for the attorney general. The Parliamentary Counsel (Legislative Drafters) will then begin drafting the legislation using the Cabinet Memorandum and drafting instructions. This is done in conjunction with the attorney general who uses consultations to obtain additional information and analysis prior to producing the final draft. This draft is then sent to the sector ministry for revision and approval, before being sent to the cabinet for review. If the cabinet assents, it is sent to the president for approval before becoming law.

Approach to Climate Change

The West African climate supports a range of agricultural products that form the mainstay of Ghana's economy, the second largest in West Africa. Small-scale rain-fed farms account for about 80% of domestic agricultural production. Rice, cassava (manioc), peanuts, corn, shea nuts, mangoes, and bananas are of particular importance. Cocoa exports in particular are an essential part of the economy: Ghana is the world's second-largest producer.

The expansion of agriculture forms a central part of Ghana's national development plan (GSGDA 2010-2013). The previous Ghana Poverty Reduction Strategy aspired to achieving middle-income status of USD1,000 GDP per capita by 2015, whilst the aim of the GSGDA is “to foster high and equitable levels of growth going towards upper middle-income status” by 2020. Climate change presents a challenge to achieving this objective, due to Ghana's dependence on the climate-sensitive agricultural sector. It is expected that climate change's impacts on both agriculture and the timber sector will simultaneously reduce national income and food security and lead to an increase in land degradation

and deforestation as people turn to other sources of income in the forest. Ultimately, if rural conditions continue to worsen, then rural-urban migration could increase. This will add to pressure on the services and infrastructure of the coastal urban zone, which is itself expected to become increasingly vulnerable to flooding and erosion. As a result, a comprehensive response to climate change is central to the government's development plans.

Given that the agricultural sector is both at risk from, and a driver of, climate change⁸, it is remarkable that it is not referred to in the sector policy of the Ministry of Food and Agriculture. Without adaptation strategies, the significance of the agricultural sector will fall if regional climate predictions are correct. Under these scenarios, Ghana will experience large changes in rainfall and increases in mean temperatures that will make most of the country unsuitable for the predominant crop, cocoa. Maize production is already declining in the country, with the EPA projecting a 7% reduction in production by 2020. This reinforces the need for adaptation in agriculture and for diversification to provide sustainable growth.

Energy supply

With a series of policies relating to energy supply diversification and development, Ghana appears to be aggressively developing its energy supply base, particularly through renewable resources. Bloomberg reported in 2012 that the Ministry of Energy was seeking USD1 billion of public and private investment in order to diversify supply; improve infrastructure and distribution networks; and ensure productive and efficient use of energy.

Currently, Ghana's primary energy sources are biomass (90-95%; though the Ministry of Energy quotes 72%); hydro-electric energy (5-10%) and solar energy (<1%). Additional emissions reductions against BAU and reduced dependence on fossil fuels are being sought by increasing renewable energy capacity, particularly solar and hydro-electric power generation (see Renewable Energy Act, 2011 Act 832). Some 10,000 homes in areas that are off the electricity grid have been electrified through the provision of photo-voltaic panels.

The government intends to reduce reliance on biomass energy by regulating woodfuel consumption; promoting and producing more efficient woodfuel; charcoal production and cooking stove technology. In addition the government is promoting alternative fuels such as Liquid Petroleum Gas as a woodfuel substitute, whilst using legislation and fiscal incentives to foster regeneration of biomass.

Electricity (though not energy per se which is largely derived from woodfuel) is already mainly provided from hydro-electric sources: Two hydro dams on the Volta river at Alosombo and Kpong have a combined capacity of about 1.1 GW

⁸According to central government, some 50% of forest land has been converted to agriculture by slash and burn. Agriculture is particularly sensitive due to its dependence on rainfall, but also contributes to climate change since it is a driver of deforestation.

out of a total capacity of about 1.5 GW, while the 400MW Bui hydro-electric plant is being developed on the Black Volta. The Renewable Energy and Efficiency Partnership believes an additional 22 mini-hydro sites in the country could be exploited, with total potential of between 5.6MW – 24.5MW.

Aside from renewables, Ghana supplements these hydro-electric resources with thermal energy generation at a 330MW combined-cycle plant near the coastal city of Sekondi-Takoradi that burns (primarily) light crude. In addition, a major discovery of offshore oil reserves was announced in June 2007, encouraging expectations of a major economic boost and a reduction in economic dependence on agriculture. The Jubilee oil field is expected to provide enough energy to meet 30% of Ghana's current electricity demand. Production officially began in 2010.

However, as with agricultural extensification, the oil field is a double edged sword, providing income at the cost of increased emissions. Ghana faces the realities of being a medium income country trying to rationally exploit its resources to achieve economic growth whilst minimising the impact on the environment. It has only recently become a net emitter of carbon.

Used wisely, oil revenues could fund broader macro-economic changes that send the country down a more sustainable growth path. The policy framework to guide this process is already under way – the Ministry for Environment, Science and Technology's (MEST) 2010 document "Ghana Goes for Green Growth: National Engagement on Climate Change" formed the basis for the subsequent National Climate Change Policy Framework (NCCPF; 2011). This was designed by the National Climate Change Committee (NCCC), which was itself created under MEST in 2010, and is composed of representatives from ministries, NGOs and academia⁹.

The NCCPF's aim is to commit Ghana to low carbon development; increase policy coherence on climate change, and increase Ghana's attractiveness to funding for mitigation strategies such as REDD+. Its aim is "to ensure a climate-resilient and climate-compatible economy while achieving sustainable development and equitable low-carbon economic growth for Ghana". It acknowledges that economic modernisation will increase emissions but argues that the new development path will reduce emissions against the BAU baseline through energy waste reduction, better infrastructure and improved public transport.

REDD+ and LULUCF

Today about 22% of Ghana remains forested. The forestry sector employs approximately 100,000 people and supports the livelihoods of 2.5 million people, contributing about 6% to GDP. Yet forests are being rapidly depleted.

⁹(MEST itself was created after the 1992 Rio Summit and is particularly important with regards to climate change in Ghana. In 1994, the Environmental Protection Agency Act (Act 490) created the Environmental Protection Agency (EPA) under MEST)

The 2006 Country Environmental Analysis anticipates complete loss of natural forest in or around 2025. Almost 70% of Ghana's land is prone to soil erosion. Ghana is participating in the Forest Investment Program (FIP). Innovations in Ghana's FIP investment plan include provisions for Payment for Environmental Services (PES); creating a rapid response unit for protected areas, illegal logging and wildfire; and developing a carbon benefits-sharing scheme linked to tree tenure. While the investment plan has not been finalised it is anticipated that Ghana will receive in the order of \$50m from the FIP.

Ghana is a participant country of the Forest Carbon Partnership Facility (FCPF). It is currently in the Implementation Phase of its National Readiness Preparation Proposal (R-PP). REDD Readiness started in 2010, including the development of a national REDD+ strategy. At the time of writing there are no REDD+ laws in Ghana but forestry programmes are being developed in line with REDD+ such as the REDDES project. The stated objective of the project is to "provide Ghana with proposals for the enhancement of sustainable off-reserve production systems under REDD+ schemes with a focus on local livelihood improvement".

This is crucial as the correlation between development and energy consumption, together with Ghana's huge reliance on wood to meet domestic energy demand, suggests that meeting development targets will further increase demand for firewood and put huge pressures on remaining forests. Increasing demand for wood will present a considerable challenge to efforts to implement REDD+ and to develop sustainable resource management in rural areas, highlighting the need to diversify energy production.

As a result of the tensions between short-term economic development and fuel wood supply on the one hand, and longer-term sustainable development and climate change mitigation on the other, REDD+ implementation has become quite contentious in Ghana. There are concerns that the climate change agenda is too heavily driven by external funders and actors concerned more with reducing emissions through mitigation, rather than focussing on the specific needs of Ghanaians, for whom adaptation is crucial. Press reports have highlighted fears that a focus on mitigation and REDD+ and LULUCF will reduce development options for the country, particularly given the economic dependence on agriculture and forestry.

If these concerns are representative of the view of REDD+ in Ghana, then international donors and economists will have to demonstrate how mitigation strategies such as REDD+ can support alternative development paths, such as subsidising schemes to improve yields and efficiency in forestry, and increasing domestic value-added in timber production and manufacturing. In addition, increasing the productivity of existing agricultural land and improving resilience to climate shocks could – in principle – improve human welfare and reduce pressure on remaining forest land.

Adaptation

The Ghana Goes Green (GGG) document says that to deal with the uncertainty of climate change impacts, the government must focus on four key areas:

infrastructure; natural resource management; agriculture and food security; and disaster preparedness and response (rather than traditional disaster response). This will involve improving resilience in the agricultural sector through mechanisation, improving transportation infrastructure so that it continues to function regardless of new weather patterns. A core part of all strategies will be addressing gender inequality, improving access to services, formal financial services and collateral for women¹⁰, who are disproportionately vulnerable to climate change.

Research and development

GGG acknowledges the importance of research and development, and also of integrating the traditional knowledge of Ghana's people. However there is currently fairly limited capacity to undertake the necessary work, which underpins the proposal to develop a dedicated research centre on climate change to complement existing initiatives by universities, research and development institutes, ministries, departments and agencies.

Ghana: Flagship Legislation

Name of law	Renewable Energy Act, 2011 Act 832 [Legislative]
Date of entry into force	Promulgated December 2011
Categories	– Energy supply
Driver for implementation	Renewable energy development.
Summary of bill	<p>The Act's objective is to provide for the development, management and utilisation of renewable energy sources for the production of heat and power in efficient and environmentally sustainable manner.</p> <p>Distribution utilities and bulk electricity consumers are obliged to purchase a proportion of their energy from electricity generated from renewable energy.</p> <p>A Feed-in-Tariff guarantees the price of electricity generated from renewable energy resources</p> <p>The Act establishes a fund to provide financial resources for the promotion, development and utilisation of renewable energy resources.</p> <p>Funds are to be used for capacity building, provision of financial incentives, feed-in-tariff, capital subsidies and equity participation for:</p> <ul style="list-style-type: none"> – Grid interactive renewable electricity. – Mini-grid and off-grid renewable power systems for remote areas and islands. – RE projects for non-electricity purposes. <p>and the promotion of:</p> <ul style="list-style-type: none"> – Scientific and technological research. – Research into the establishment of standards for the utilisation of renewable energy. – The production of equipment for the development and utilisation of renewable energy.
Targets	None specified

¹⁰ Women produce 70% of Ghana's subsistence crops, account for 52% of the labour force and contribute 46% of total GDP.

Ghana: Other Relevant Legislation

Name of law	National Climate Change Policy Framework (NCCPF) [Executive]
Date of entry into force	1 August 2011
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>Governance and co-ordination lie at the heart of the NCCPF. Its vision is to ensure a climate-resilient and climate-compatible economy while achieving sustainable development and equitable low carbon economic growth for Ghana. It aims to enhance the understanding of climate change issues among policy makers and implementers across all sectors at various levels.</p> <p>It aims to promote:</p> <ul style="list-style-type: none"> – Low carbon growth – Effective adaptation to climate change – Social development
Targets	None specified

Name of law	Ghana Shared Growth And Development Agenda [Executive]
Date of entry into force	7 September 2010
Categories	– Adaptation
Driver for implementation	Economic development, adaptation
Summary of bill	<p>This USD24m programme highlights the importance of addressing climate change impacts within development strategies. The document sets out the key strategy areas for the Ghana to adapt to climate change. Ultimately this should combine the goals of mitigation and low carbon development, adaptation and development.</p> <ul style="list-style-type: none"> – Ensuring and sustaining macroeconomic stability; – Enhanced competitiveness of Ghana's private sector; – Accelerated agricultural modernisation and natural resource management; – Oil and gas development; – Infrastructure and human settlements development; – Human development, employment and productivity; and – Transparent and accountable governance
Targets	None specified

Name of law	The National Energy Policy [Executive]
Date of entry into force	2010
Categories	– Energy supply
Driver for implementation	Sustainable energy supply
Summary of bill	The vision for the energy sector is "to develop an 'Energy Economy' that would ensure secure and reliable supply of high quality energy services for all (both urban

and rural) Ghanaian homes, businesses, industries and the transportation sector while making significant contribution to the export earnings of the country.

The Policy outlines goals, challenges and policies including:

Renewable Energy Sub-sector;

The Renewable Energy sub-sector covers biomass, solar and wind resources. Biomass policy focuses on improved production and efficient use of biomass. In the longer term it aims to increase regeneration and fuel substitution, and substitute away from biomass towards alternative energy sources.

Energy Efficiency and Conservation Sub-sector;

The policy focuses on the application of fiscal incentives, awareness creation, institutional and financial intermediation, and regulation to promote energy efficiency and conservation.

Targets	<ul style="list-style-type: none"> - In the power sub-sector: achieve installed power generation capacity of 4,000 MW and also universal access to affordable electricity by 2015 - Increase installed generation capacity from the current 1,986 MW to 5,000 MW by 2020. - Achieve 80% national electricity access by 2015 and universal access by 2020 - Achieve 10% contribution of modern Renewable Energy in the electricity-mix by 2020 - Reduce demand on woodfuel from current 66% to 30% by 2020. - Ensure the effective & transparent management of oil and gas revenues - Achieve 90% of local content within 10 years from the commencement of specific energy projects.
----------------	---

Name of law	Strategic National Energy Plan (SNEP) 2006:2020 [Executive]
Date of entry into force	2006
Categories	- Energy supply
Driver for implementation	Energy supply diversification.
Summary of bill	Reviews the energy supply structure for Ghana and sets out the energy needs to meet development objectives.
	<p>Volume One of SNEP covered the Demand from residential; commercial & services sector; agriculture & fisheries; industry and transportation sectors. Volume two covers the supply-side: electricity; petroleum; woodfuels and renewables.</p> <p>The Plan has four sectoral Annexes</p> <ul style="list-style-type: none"> - Energy Demand Sectors of the Economy - Electricity Plan - Petroleum Plan - Woodfuels & Renewables Plan
Targets	The overall national renewable energy policy target is to attain 10% Renewable Energy in the national energy mix by 2020.

4.23 Guatemala



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	25
excl. LULUCF	15
Change from base year (1990)	N/A
Latest reporting year	1990
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 15 December 1995 Date of entry into force: 1 March 1996
Kyoto Protocol ratification status and date	Date of signature: 10 July 1998 Date of ratification: 5 October 1999 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	2013 Framework law to regulate vulnerability reduction and obligatory adaptation to the effects of climate change and the mitigation of greenhouse gas effects

Legislative Process

The legislative process in Guatemala is defined by the 1985 Constitution, amended in 1993 by referendum. Guatemala has a unicameral legislative system, with legislative power delegated to the Congress of the Republic. The 158 Members of the Congress are directly elected through universal suffrage for a four years term, with possibility of re-election.

The right of legislative initiative is attributed to the members of the congress, executive bodies, the Supreme Court of Justice, the Supreme Electoral Tribunal, and the University of San Carlos of Guatemala. Proposals are submitted to the legislative direction of the Congress and then addressed to a working committee. Following recommendation of the committee the draft text is discussed at the plenary session, requiring three separate reading sessions. General laws require a simple majority of votes to be approved, but there are exceptions of decrees that may require higher majority of votes.

A bill passed in the Congress still requires presidential assent and publication before it is enacted. After the process in the Congress is successfully concluded, the draft is submitted to the Executive. If it is sanctioned by the president, the law comes into force after being published in the Official Gazette. In the case of presidential veto, the Congress can overturn the decision by a two-thirds majority of votes and send the new law for publication in the Gazette.

Approach to Climate Change

Although responsible for less than 1% of total global GHG emissions, Guatemala is extremely vulnerable to climate change. In the first national communication to the UNFCCC, issued in 2001, Guatemala highlighted land use and forest activities as the largest contributor to the country's GHG emissions. To 2050, the document identified the highest risks of climate change as temperature increases; precipitation reduction; expansion of semi-arid areas; and increase in the sea level.

Since the agreement of the Kyoto Protocol in 1997, Guatemala has set up an institutional and legal framework on climate change, with the Ministry of the Environment and Natural Resources (MARN) taking the lead.

In 2001 the Ministry created an internal unit to address climate change, highlighting the higher profile of climate change in the political agenda of Guatemala. Ever since, the national government has adopted a comprehensive range of policy and other instruments to create a solid political and legal framework to support Guatemala's response to climate change.

MARN also has responsibility for Guatemala's policy on the Clean Development Mechanism (CDM) and created the National Clean Development Mechanism Office in 2005. The primary objective of the office is to co-ordinate national measures to implement the instruments and policy guidelines from international conventions and national policies that relate to sustainable development.

In 2008, MARN adopted the National Climate Change Programme to support the ministry in implementing measures adopted under the UNFCCC agreements and other climate related issues. The general objective of the Programme is to promote national, regional and local policies oriented towards reducing the impact of climate change, as well as measuring and reducing GHG emissions.

The 2009 Climate Change National Policy is Guatemala's core policy document on climate change. It outlines legal and political basis and sets up the guidelines for the development of national adaptation and mitigation policies.

In late 2013 Congress adopted the Framework law to regulate vulnerability reduction and obligatory adaptation to the effects of climate change and the mitigation of GHG emissions.

Energy Supply

Adopted in 2008, the energy policy incorporated changes to reduce Guatemala's dependence on oil to generate electricity by significantly increasing the production of renewable energy. The objective is that by 2027 renewable energy will account for around 70% of electricity generation. Within the Energy Policy is included the Expansion Plan of the Transportation System. The National Commission of Electric Energy is in charge of this Plan.

REDD+ and LULUCF

Guatemala has a comprehensive institutional setting responsible for the formulation and management of REDD+ and LULUCF policies. This institutional arrangement includes: a) the National Forest Institute, an independent governmental agency that supervises the implementation of the 1996 forest law and promotes research and activities to develop the sector; b) the National Council on Protected Areas; c) the National Commission of Joint Implementation; d) Ministry of the Environment and Natural Resources.

The National Forest Action Plan provides institutional support for the development and assessment of forest-related laws. Guatemala is currently discussing the creation of a National Forest Programme that would focus on forest policy, competitiveness within the sector, land regulations and development.

Adaptation

Although adaptation priorities have been identified in a series of official documents, Guatemala has not adopted a national adaptation policy. Nevertheless, there are several adaptation activities in implementation. With the assistance of multilateral organisations, such as the World Bank and the UNDP, and external donors, Guatemala has successfully developed projects that increase the government's capacity to respond to climate-related natural disasters (capacity building), in sectors including water and agriculture.

Guatemala: Flagship Legislation

Name of law	Framework law to regulate vulnerability reduction and obligatory adaptation to the effects of climate change and the mitigation of greenhouse gas effects (Legislative)
Date of entry into force	September 2013
Categories	<ul style="list-style-type: none"> – Adaptation – Energy supply – Energy demand – Transportation – Research – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The primary objective of the law is to provide an immediate and co-ordinated response to climate change. The bill stresses the need to develop a national adaptation and mitigation plan.</p> <p>The law delegates responsibility to the various governmental agencies to develop and implement climate change policies within specific areas that will ultimately address: carbon emissions generated by land use; the creation of a carbon market; increasing public awareness and participation; public financing; and development of climate related policies.</p> <p>It also establishes the creation of a national climate change information system and the national climate change fund to finance projects that address risk management, adaptation and/or mitigation.</p> <p>It also asks the government to adopt regulation carbon emissions from public and private activities in the transportation sector. It also evokes the creation of a national energy plan that focuses on the development of renewable energy.</p>
Targets	None specified

Guatemala: Other Relevant Legislation

Name of law	Climate Change Policy (Government agreement N.329-2009) (Executive)
Date of entry into force	9 December 2009
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Adaptation – Research – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>It lays out the basis, objectives, entry points, guidelines and legal basis for national climate change adaptation and mitigation.</p> <p>It aims to develop climate change national capacities; promote vulnerability reduction and improvements in adaptation to climate change; and mitigate GHG emissions.</p> <p>To achieve these goals, the Policy proposes measures to increase public awareness and technology and knowledge transfer, improving risk management and adopting adaptation measures. GHG emissions are addressed under a broad and comprehensive approach that suggests actions related to forest and waste management, energy production and consumption, financial mechanisms, and carbon market.</p>
Targets	None specified

Name of law	Law of Incentives for Development Projects on Renewable Energy (Decree No 52-2003) (Legislative)
Date of entry into force	10 November 2003
Categories	<ul style="list-style-type: none"> – Energy supply – Research – Institutional/Administrative arrangements
Driver for implementation	Renewable energy
Summary of bill	<p>The law aims to promote the development of renewable energy projects and establish fiscal, economic and administrative incentives for the sector.</p> <p>It designates the Ministry of Energy and Mines as the responsible body for the creation of an inventory of renewable resources that can be used to generate energy. In addition, the ministry should also encourage research in this area and facilitate the certification process.</p> <p>Energy producers will be granted a certification of emission reduction that is expected to enhance trade of renewable energy.</p>
Targets	None specified

Name of law	National Council on Climate Change (Executive)
Date of entry into force	July 1997
Categories	– Institutional/Administrative arrangements

Driver for implementation	Climate change
Summary of bill	The National Council on Climate Change was created to serve as the national consultation entity between the Ministry of Environment and Natural Resources and the civil society and private sector. The Commission is formed of officials from ministries including the Ministry of Agriculture, Livestock and Food, and the National Environmental Commission.

Name of law	National Commission of Joint Implementation (Executive)
Date of entry into force	27 June 1997
Categories	– Institutional/Administrative arrangement
Driver for implementation	Climate change
Summary of bill	The commission evaluates and approves joint programmes developed under the UNFCCC agreements. It also should assist the development of certification projects and the agenda of Guatemala to international negotiations. Another objective of the commission is to support multilateral fund sponsorship of its activities, complemented with financial support from the private sector and other sources.
Targets	None specified

Name of law	1996 Forest Law (Legislative)
Date of entry into force	1996
Categories	– REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Forest management
Summary of bill	Establishes that the sustainable use of forest resources should be the basis for the economic and social development of Guatemala. It regulates the use, management and conservation of forest areas. In addition, the law makes explicit mention of the role of forest resources in reducing carbon emissions. The law creates the National Forest Institute to implement its regulations. It also distributes competences among the federal, regional and local administrations. To create incentives for activities in the sector, including reforestation, the law establishes that 1% of the federal budget should be allocate to forest activities for 20 years.
Targets	None specified

4.24 Guyana



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	-53.17
excl. LULUCF	1.66
Change from base year (1990)	13
Latest reporting year	2004
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 29 Aug 1994 Date of entry into force: 27 Nov 1994
Kyoto Protocol ratification status and date	Date of signature: N/A Date of ratification: 5 August 2003 Date of entry into force: 16 Feb 2005
2020 pledge	No pledge made
Flagship legislation	Low Carbon Development Strategy

Legislative Process

Guyana's 1980 constitution provides for an executive presidency and a unicameral legislature. The legislative National Assembly has 65 members directly elected under proportional representation. There are 40 members at national level and 25 members at regional level. In 2013 32 seats were held by the People's Progressive Party/Civic, 26 seats by A Partnership for National Unity; and 7 by the Alliance for Change party.

The leader of the majority party in the Assembly becomes the Prime Minister. The President appoints the cabinet called the Council of Ministers, which is responsible to parliament. Each parliament lasts for five years, as does the Presidency. However the President has a two-term limit. The President retains the power to dissolve parliament, whereas the parliament can only remove the President if he/she has been found to be acting unconstitutionally. Laws are passed by a simple majority in parliament, though certain constitutional changes require a 2/3 majority. The President has to assent to any Bill that comes through parliament.

Approach to Climate Change

Guyana is a small country on the north coast of South America, with a population of some 750,000 people. The majority of the population inhabits the coastal region which is six feet below sea level on average. Similarly the bulk of the country's agriculture and commerce is found here, with about 90% of the country's 25,000 farm households working 140,000 ha on this coastal plain. This makes the country particularly vulnerable to sea-level change and maritime weather-related events, in particular to flooding, which caused severe disruption in 2005. Whilst protected by a series of natural features and "rip-rap" walls, these can be over-topped by storm surges and spring tides. A major concern is that climate change will cause increases in the frequency and severity of events such as tropical storms.

More extreme weather patterns and flooding present significant problems for the economy, with large anticipated impacts on agricultural output, and disruption to communications and transportation; all of which threaten to reduce productivity. Higher health care costs may be imposed on Guyana through the spread of diseases under changing climate conditions. Malaria is now reported to be spreading in the coastal areas as wetness and temperatures increase and thereby improve habitat for the parasite-bearing mosquitoes.

Forests cover some 75% of the land area, and about 60% of this is primary forest: an area approximately the size of England under contiguous forest. Moreover, deforestation rates are low: it is thus a 'high forest cover, low deforestation' country. These huge forests represent a huge natural resource, but also with great potential for climate change mitigation if it can avoid deforestation increasing in the future. Accordingly Guyana has been targeted by

the international community as an ideal participant in climate change mitigation through REDD+.

Famously in 2007 Guyana offered up its forests to the government of the United Kingdom as the world's largest avoided deforestation project in return for development assistance. Whilst the UK government declined, Norway stepped in by developing a \$250m bilateral REDD+ deal via a 'Memorandum of Understanding' (MOU) with the government of Guyana. These funds will be disbursed from the Guyana REDD+ Investment Fund (GRIF) conditional upon performance and domestic arrangements and benchmarks. Funds are being spent by the government on projects intended to create a low-carbon development path, the philosophy and overlaying architecture of which is set out in the Low Carbon Development Strategy (LCDS). After the National Development Strategy, the LCDS is the central guiding strategy for the country, and despite not being enforceable law, it is considered the flagship legislation/policy for Guyana.

At the highest level the LCDS aspires to be a transformational strategy that allows a 'leapfrog' over a putative high carbon development phase in Guyana's development, and moving directly to clean energy production and low carbon growth. This strategy was catalysed by the finance offered by the deal with Norway, and which provides Guyana's only carbon price: this is set at USD5/tonne CO₂ in the Joint Concept Note to the MOU.

In the first stage of the LCDS the following eight areas were identified as priorities: renewable energy; Amerindian development; Amerindian land titling; expanding the digital economy and avoiding a digital divide; support for micro and small enterprises (MSEs); development of a centre for biodiversity research; climate resilience and adaptation; and Monitoring, Reporting and Verification of deforestation. In the second stage (2013-15), the following areas are highlighted in the strategy: Climate Resilience, Adaptation and Water Management; Supporting High Potential Low Carbon Sectors; Hinterland and Amerindian development; a centre for biodiversity; and a clean transportation programme.

As such the strategy is highly ambitious, attempting to address issues across all sectors of the economy from energy generation through to land tenure and sustainability of agricultural production in the remote rural areas. Rather than just addressing immediate causes of emissions (such as enforcement to control small-scale gold mining and illegal logging) the LCDS can be seen as an attempt to fundamentally restructure the economy and tackle the underlying drivers of deforestation and degradation.

Through the development of the USD800m Amaila Falls hydro-electricity project, the LCDS can be seen as an attempt to all but eliminate fossil fuel use. This objective sits neatly with the aims of the National Development Strategy (NDS; 2001-2010), which recognises that economic development depends on a reliable and sustainable energy strategy. The NDS and LCDS may have therefore been behind the drive to create the Ministry of Natural Resources and the Environment in December 2011. The LCDS was certainly the drive behind the

Special Land Use Committee established in 2010 to co-ordinate cross-sectoral planning on sustainable land use, and to give guidance for harmonisation of mining and forestry.

The Second National Communication to the UNFCCC is now being produced by the government. The activities required for the preparation of this document are broadly the continuation of work which was set out in the first National Communication with the underlying activities required by the first communication. Guyana's National Climate Change Adaptation Policy and Implementation Plan was passed in 2001. The National Climate Unit, with the support of the National Climate Change Committee, oversees all activities relating to climate change, ozone depletion and desertification. It reports to the Chairman of the NREAC Regional Climate Change Adaptation Policy developed by the Caribbean Community Climate Change Centre (CCCCC; a central body in Guyana's regional cooperation) and to the Office of Climate Change. Guyana has participated in several regional actions on climate change. Chronologically these are: 1. The CPACC Project, 2. The CARICOM ACC Project and 3. The MACC Project. The projects were designed to help Caribbean countries prepare for the adverse impacts of climate change, particularly sea level rise, adaptation planning and capacity building including institutional strengthening.

Energy supply

Guyana is currently dependent on imported fossil fuels, in particular bunker C diesel which is used for electricity generation. The Amaila Falls hydro-electric project is Guyana's flagship generation programme which aims to produce approximately 160 MW at a cost of \$1.1bn. In theory this should meet some 90% of existing energy demand in the country and substitute for current energy production from diesel. As such the government anticipates that the project will virtually eliminate emissions from this source. However the project is not without problems, with issues surrounding the robustness and efficiency of the electricity distribution network and whether there will be enough rainfall to maintain a sufficiently high water level under climate change projections. This in turn generates questions over operational risk: specifically the concern that there may be over-dependence on a single source of power generation without any redundancy in the system.

The Institute of Applied Sciences and Technology (IAST) has been researching the production of biodiesel on a commercial basis since 2006 with the aim of producing 65% of its diesel demand from agricultural feedstock by 2020. A 2010 UN Economic Commission for the Caribbean report cites the Wauna Palm Oil project as producing biodiesel for electricity in Region One of Guyana, while the Guyana Sugar Corporation was engaged in 2010 in negotiating a power purchase agreement with the Guyana Power and Light Inc for generation from the Skeldon Sugar processing facility. Further, the biofuel bagasse has been used to test generators to supply power to the national grid.

REDD+ and LULUCF

With its huge area of intact forest and low deforestation rates, Guyana could make a huge contribution to climate change mitigation if it chooses not to follow

a development path based on extensive resource extraction. As such REDD+ is at the heart of the LCDS, and conversely the LCDS is the most important document with regards climate change and REDD+. To prepare for the World Bank's Forest Carbon Partnership Facility's (FCPF) Readiness Mechanism, Guyana has developed both an R-PIN and an R-PLAN. Potentially enabling legislation for REDD+ includes the Protected Areas Act of 2011; the Mangrove Management Plan 2001; and the Forests Act 2009 which amends the Forest Act of 1953 upon which all regulation of forest activities in Guyana is based. Nonetheless, the motive of these documents was not climate change and so these are not included in the summary of legislation below.

Transportation

Up to USD2 million has been allocated by the LCDS for planning work to look at how to upgrade transportation infrastructure. The funds will be used to identify ways to reduce transportation costs and reduce the carbon intensity of Guyana's transportation sector. This will continue in the years to 2015, when LCDS work programmes will also start to look at low carbon transportation options for Guyana. The Clay Roads Project aims to improve road surfaces to reduce the amount of fuel required for travel in the interior. However some plans such as the proposed paving of the road from the Brazilian city of Lethem through to Guyana's capital Georgetown have raised concerns that this will provide improved access to Guyana's forests for illegal migrants and gold miners, which may undermine the goals of the LCDS in addition to providing a sovereignty problem for Guyana.

Adaptation

Adaptation is seen within the LCDS as a way to increase national income by reducing risks and building local capacity and resilience that should underpin sustainable development. Accordingly USD100m has been allocated for adaptation in 2013-2015. This funding is to be used across the country to develop infrastructure, technology and human capital. In the coastal regions, funds are allocated to upgrade infrastructure such as canals and embankments which protect against flooding. For instance The Conservancy Adaptation Project will improve flood control structures for the East Coast Conservancy area. The Cunha Canal Rehabilitation Project is one of Guyana's central adaptation initiatives, designed to manage water resources in the East Demerara Water Conservancy. This is a 150-year-old water storage system that provides irrigation and drinking water to the 90% of people living on the coastal plain, but which is threatened by sea level rise and storm damage.

In the rural hinterland, adaptation will focus on the provision of new agricultural techniques and plant varieties more suited to an extreme climate; and the provisions of access to renewable energy sources such as solar power. Interventions here will also involve training and education to help deal with extreme weather impacts. Government systems adaptation nationwide will involve planning for the resilience of communications networks and public health during extreme weather-related events, which extends to ensuring the provision of clean drinking water. Finally, in terms of behaviour and attitudes,

the LCDS aims to encourage management of, and wider insurance against, climate risk across the country.

Research and development

Within various components of the LCDS there are R&D projects, including research into flood resistant crops, energy production and natural resource management and conservation. As noted, Guyana's predominantly coastal agriculture is extremely vulnerable to flooding. This is a core challenge since it is estimated that agriculture, forestry and fishing was contributed 18% of GDP as of 2012. Moreover, agriculture is referred to in local reports as the way of life around which Guyana's culture and communities are formed. This only served to elevate the impact of the 2005 floods which caused the loss of some 67% of GDP that year. Indeed food security is a major regional concern highlighted by the – albeit extreme – example of violent disorder in Haiti after increasing food scarcity and rising prices. As such the LCDS plans investment in research into flood resistant crops and creation of flood resistant germ plasma banks in addition to the introduction of new technologies to allow crop cultivation even during prolonged flood conditions.

Key agencies in this area are IAST, the National Climate Change Unit; The Office of Climate Change and the Ministry of Agriculture. With its engagement in the Caribbean community, Guyana has hosted some important regional research meetings. Of particular note was the Climate Change Impact Assessment on Agriculture meeting: in April 2008, researchers from Caribbean countries attended an event in Georgetown for training in assessment of climate change impacts on agriculture.

Finally, the Iwokrama project site is noteworthy for its importance to the research and development aspects of forest management. It is an area of 371 000 ha of rainforest dedicated by Law to conservation and research.

Guyana: Flagship Legislation

Name of law	Low Carbon Development Strategy (Executive)
Date of entry into force	2009
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – REDD+ and LULUCF – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Transition to a low carbon economy.
Summary of bill	This ambitious strategy seeks to transform Guyana's economy from one on a high energy intensity 'business as usual' path towards one focussed on low carbon growth and reduced exploitation of forests with concomitant benefits for climate change mitigation.

The LCDS is being funded by international payments for ecosystem services, currently comprising a \$250m deal with the government of Norway. These funds are being invested

in areas which it is thought will facilitate the transition to a low-carbon economy. This includes investments in the following areas:

Adaptation and climate resilience, focussing on:

- Low carbon infrastructure
- High potential low carbon sectors
- Hinterland development
- Human capital
- Adaptation and climate resilience.

Amerindian and hinterland development. A series of programmes focussing on:

- Electrification
- A development fund to be disbursed in accordance with community development funds.
- ICT access, focusing on expanded network of fibre cables.

Facilitating investment in high-potential, low-carbon sectors, namely:

- Fruits and vegetables
- Aquaculture
- Sustainable forestry and wood processing,
- Business process outsourcing,
- Eco-tourism
- Bio-ethanol

Sustainably growing the extractive and forestry sectors

This includes:

- Improving the regulatory environment for forestry,
- Transition to more value-added production of timber including the integration of primary and secondary production;
- Increased efficiency in extraction, reduction of waste and increased recovery in timber processing.

Since the mining sector is such an important contributor to Guyana's economy, (c.20% GDP), and employment, mining is not required to cease under the terms of the LCDS. A Special Land Use Committee was established in 2010 which proposed the following projects:

- Strengthening Land Use Planning and Coordination among natural resource agencies
- Sustainable Land Management in the mining and forestry sectors
- Enhanced Land Reclamation
- Improved Infrastructure in Mining Districts
- Amendments to Mining Act and Regulations

In addition the Guyana Geology and Mining Commission is furthering efforts to reduce forest degradation including hiring 19 new mining inspectors to ensure adherence to mining regulations.

Low-carbon transportation is envisaged as an activity mainly for the period after 2015, when up to USD2m will be allocated to planning work to look at how transportation infrastructure can be upgraded and benefit the economy.

Targets	None Specified
----------------	----------------

Guyana: Other Relevant Legislation

Name of law	Protected Areas Act (Legislative)
Date of entry into force	2011
Categories	<ul style="list-style-type: none"> - REDD+ and LULCF - Institutional/Administrative Arrangements
Driver for implementation	Land Use Management
Summary of bill	Provides the legislative framework which allows for the establishment, maintenance and

	growth of a protected area system for the first time in Guyana.
Targets	None specified

Name of law	National Adaptation Strategy To Address Climate Change In The Agriculture Sector Of Guyana Strategy And Action Plan (Executive)
Date of entry into force	2009
Categories	– Adaptation
Driver for implementation	Climate change adaptation
Summary of bill	The overall goal of the strategy is to reduce the risks posed by climate change and position the agricultural sector. It seeks to allow the sector to adapt through technical innovation and diversification, and further to increase its competitiveness and sustainability by 2018.
Targets	To enhance the capacity within the agricultural sector to adapt to climate change and position this Strategy to foster a nationally consistent policy framework. To build resilience and adaptive capacity within the sector. To assist the government in providing primary producers with a policy framework that embraces research and development and promotes climate change adaptation techniques in agriculture. To build greater awareness about adaptive techniques.

Name of law	Guyana Climate Change Action Plan (Executive)
Date of entry into force	2001
Categories	– Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Climate Change
Summary of bill	Viewed as a supplement to the National Development Strategy, The Action Plan addresses Guyana's commitments to the UNFCCC by "formulating national programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change" - Article 4.1 (b). The plan also seeks to develop, apply and diffuse technologies, practices and processes that control, reduce or prevent anthropogenic emissions of GHGs in all relevant sectors, including energy, transportation, industry, agriculture, forestry, waste management and health. The bill strongly highlights the importance of assistance from developed countries in providing financial, technological and technical assistance.
Targets	None specified

4.25 India



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	1301
excl. LULUCF	1524
Change from base year (1990)	NA
Latest reporting year	2000
Importance as an emitter	Top 5
UNFCCC ratification status and date	Date of signature: 10 June 1992 Date of ratification: 1 November 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of ratification: 26 August 2002 Date of entry into force: 16 February 2005
2020 pledge	Voluntary action to reduce the emissions intensity of GDP (excluding agriculture) by 20–25% by 2020 relative to 2005
Flagship legislation	National Action Plan on Climate Change

Legislative Process

The Indian parliament is a bicameral legislature composed of a Lower House (the Lok Sabha or House of the People), and an Upper House (the Rajya Sabha or Council of States).

The legislature passes laws – also called “acts” – on constitutionally-specified matters, such as central government finances and constitutional amendments. The two houses have the same powers, but the Council of States’ power in the legislative process is subordinate to the House of the People. All legislative proposals have to be brought in the form of Bills before Parliament. A Bill is a statute in draft and cannot become law unless it has received the approval of both Houses of Parliament and the assent of the President of India.

There are 28 States and seven Union territories in the country. The system of government in states closely resembles that of the Union territories. Each State Government has the freedom to draft its own laws on subjects that are classified as state subjects. Laws passed by the Parliament of India and other pre-existing central laws on subjects that are classified as central subjects are binding on all citizens of the country.

Approach to Climate Change

India is a non-Annex I country under the Kyoto Protocol and thus has no binding target for emissions reduction. However, India is an active participant in the Clean Development Mechanism (CDM) established by the Protocol. It had more than 889 registered CDM projects as of 10 September 2012. India also has a number of policies that, while not primarily driven by climate concerns, contribute to reducing or avoiding GHG emissions.

In 2010, India released its GHG Emissions Inventory for 2007, with the aim of enabling informed decision-making and to ensure transparency. Before then the only official emissions estimates available had been for the year 1994. With this publication, India became the first “non-Annex I” country to publish such updated numbers. India also announced its intent to publish its emissions inventory in a two-year cycle going forward.

Rather than integrative binding legislation, India is developing a policy process to specifically address climate change. India adopted a “National Action Plan on Climate Change” (NAPCC) in 2008 outlining existing and future policies and programmes directed at climate change mitigation, adaptation and knowledge management. The focus of the NAPCC is on promoting understanding of climate change, and action on adaptation, mitigation, energy efficiency, and natural resource conservation while pursuing overall economic growth.

The NAPCC was outlined by the Advisory Council on Climate Change, which is chaired by the Prime Minister. The Advisory Council has broad-based representation from key stakeholders, including government, industry and civil

society and sets out broad directions for national actions in respect of climate change. The Council provides guidance on matters relating to co-ordinated national action on the domestic agenda and review of the implementation of the NAPCC including its R&D agenda.

The Council also provides guidance on matters relating to international negotiations including bilateral and multilateral programmes for collaboration, research and development. It is responsible for undertaking periodic reviews and annually reporting on the Missions' progress. A secretary-level Executive panel assists the Advisory Council and regularly monitors the implementation of the eight missions and strengthens inter-ministerial co-ordination.

The plan outlines eight national missions, which include the National Solar Mission, the National Mission for Enhanced Energy Efficiency, the National Mission on Sustainable Habitat and the National Mission for a Green India (focused on the increasing of forest cover), as well as the National Mission on Strategic Knowledge (aiming at establishing a research fund). In addition, it contains adaptation missions such as the National Mission for Sustaining the Himalayan Ecosystem to help protect India's water supply from the Himalaya and the National Mission for Sustainable Agriculture.

In June 2010, the Ministry of Environment and Forests at the Government of India released a document called *India: Taking on Climate Change – Post Copenhagen Domestic Actions*. In addition to evaluating the progress of the policies announced in the 2008 NAPCC, it stated that India would be the first developing country to publish its emissions inventory in a two-year cycle going forward. It started by publishing its 2007 inventory (which has not been officially submitted to the UNFCCC). In May 2012, India published its second communication to the UNFCCC, which includes an emissions inventory for the year 2000. The communication also includes a section on vulnerability assessment and adaptation: it presents climate change projections for India and impact assessments on water, forests, agriculture and human health. Consultations are under way for a third communication.

In 2012, the government approved India's 12th Five-Year Plan for 2012–2017, drafted by the Planning Commission, which sets a target of 8.2% growth during that period. The Plan makes clear that high growth requires supporting growth in energy and that the government must take steps to reduce the energy intensity of production processes and also to increase domestic energy supplies as quickly as possible. The government has set up an Expert Group on Low Carbon Strategy for Inclusive Growth with the mandate to develop a roadmap for low carbon development. It recommended prioritised actions in sectors such as Electricity, Transportation, Industry, Oil and Gas, Buildings, and Forestry, which are a central part of India's 12th Five-Year Plan. The Plan received final approval from the National Development Council in December 2012.

India has made important efforts in the last two decades to reduce its energy intensity. Factors contributing to the decline in energy intensity include

improved energy efficiency, increased use of renewable and nuclear power, expanded public transportation and energy pricing reform.

The government plans to develop 60 cities as solar cities during 11th Five-Year Plan and include more during the 12th Five-Year Plan. The draft master plans have been prepared for 28 cities, of which eight have been approved by the Ministry of New and Renewable Energy for implementation. This includes preparation of a master plan to increase energy efficiency and renewable energy supply in the city, targeting a minimum 10% reduction in projected demand of conventional energy at the end of five years. This includes setting up institutional arrangements for the implementation of the master plan and awareness generation and capacity building activities.

Carbon Pricing

In 2010, India announced a levy on coal, at the rate of INR. 50 (USD 0.80) per tonne, which will apply to both domestically-produced and imported coal. This money will go into a National Clean Energy Fund that will be used for research, innovative projects in clean energy technologies and environmental remediation programmes. Expected earnings from this levy were expected to be around USD 500 million for the financial year 2010–2011.

Energy demand

India's cabinet approved the National Mission on Enhanced Energy Efficiency (NMEEE) in 2010. The Mission includes several new initiatives – the most important being the Perform, Achieve and Trade (PAT) Mechanism, which will cover facilities that account for more than 50% of the fossil fuel used in India, and help reduce CO₂ emissions by 25 million tonnes per year by 2014–2015.

A number of regulation and incentive instruments promote energy efficiency and the use of renewable energy, at the Federal and the State levels. These include a revision in 2007 of the Energy Conservation Building Code that sets minimum requirements for building envelope components, lighting, HVAC, electrical systems and water heating and pumping systems.

Energy Supply

The Electricity Act 2003 sought to better co-ordinate development of the power sector in India. As an objective, it seeks to promote efficient and environmentally benign policies, among others. The Act recognised the role of renewable energy in the country's National Electricity Policy (issued by the government in 2005) and contains key provisions relating to renewable energy. This Act was supplemented by the 2006 National Tariff Policy, which stipulates that the targets for the Solar RPO (Renewable Purchase Obligation) shall be 0.25% by 2012-13 extending to 3% by 2022, which would require 34 GW of installed solar capacity by 2022. There are separate RPOs for other renewable sources. The 2006 Integrated Energy Policy that received Cabinet approval in 2008 aims to meet energy demand "at the least cost in a technically efficient, economically viable and environmentally sustainable manner". It contains a number of policies that contribute to avoiding GHG emissions.

In 2007, the cabinet proposed an indicative target of 20% blending of biofuels, both for bio-diesel and bio-ethanol, by 2017. A National Policy on Biofuels outlining the same target was approved by government in 2009. In order to avoid a conflict between energy security and food security, the policy promotes only fuels derived from non-edible plants, in waste, degraded or marginal lands. The policy offers farmers and cultivators a minimum support price for non-edible oil seeds, as well as a minimum purchase price for fuel.

Solar and wind power are strongly promoted as well through Solar and Wind Power Generation Based Incentives. As announced by the NAPCC, the National Solar Mission is a large-scale solar energy programme that runs from 2010 to 2022 and promotes electricity generation from both small- and large-scale solar plants. Presently, wind farm projects qualify for Generation Based Incentives (GBI) and a tax holiday as infrastructure projects, but accelerated depreciation under the Income Tax Act has been withdrawn from the 2013-14 Budget. Lots of local projects are also being implemented such as the Solar Photovoltaic Programme, the Solar Water Heating System Programme and the Village Electrification Programme.

REDD+ and LULUCF

The National Mission on Sustainable Habitats (NMSH) was approved as one of the eight National Missions under the Prime Minister's National Action Plan on Climate Change (NAPCC). A comprehensive strategic plan is being drafted to implement it.

The National Mission for Green India (GIM), also one of the eight National Missions under NAPCC, is being finalised. It aims to double the area to be taken up for afforestation/eco-restoration in the next 10 years, taking the total area to be afforested or eco-restored to 20 million ha. This would increase the above and below ground biomass in 10 million ha of forests/ecosystems, resulting in increased carbon sequestration of 43 million tonnes CO₂-equivalent annually.

In 2012, India held a national consultation on the preparedness for REDD+. A Technical Group has been set up to develop methodologies and procedures to assess and monitor REDD+ actions. Additionally, a National REDD+ Co-ordinating Agency has been approved in principle and methodologies for National Forest Carbon Accounting are being institutionalised.

Adaptation

The National Mission for Sustaining the Himalayan Ecosystem focuses on evolving suitable management and policy measures to sustain and safeguard the Himalayan glacier and mountain ecosystem.

Adaptation measures are key elements of state level plans, which will not be discussed in detail.

Research and Development

In 2010, The Indian Network for Climate Change Assessment (INCCA) released a "4X4" assessment of the impacts of climate change on four sectors – water

resources, agriculture, forests and human health – in four critical regions of India – the Himalayan region, the North East, Western Ghats and Coastal India. INCCA comprises 127 research institutions tasked with undertaking research on the science of climate change and its impacts on different sectors of the economy across the various regions of India.

The Indian Space Research Organisation (ISRO) plans to launch a satellite to monitor GHG emissions.

Sub-National Activities

All Indian States have to prepare State Action Plans for Climate Change (SAPCCs) in line with the objectives of the National Action Plan on Climate Change (NAPCC) and ensure its implementation at state level. Currently, the National Steering Committee on Climate Change has endorsed the SAPCCs of nine states (Andhra Pradesh, Arunachal Pradesh, Madhya Pradesh, Manipur, Mizoram, Rajasthan, Sikkim, Tripura and West Bengal. The SAPCCs of Assam, Meghalaya and Orissa are being considered by the Expert Committee on Climate Change. Other states are at various stages of preparing the SAPCCs.

State governments are preparing State-specific Action Plans on Climate Change, which draw upon India's National Action Plan and operationalise state-level measures in mitigation and adaptation. Delhi became the first state to complete and launch their Action Plans. Most other States are finalising their Action Plans.

India: Flagship Legislation

Name of law	National Action Plan on Climate Change [Executive]
Date of entry into force	2008
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand – REDD+ and LULUCF – Transportation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	India's National Action Plan on Climate Change (NAPCC) outlines existing and future policies and programmes directed at climate change mitigation and adaptation.

These National Missions will be institutionalised by respective ministries and will be organised through inter-sectoral groups that include, in addition to related Ministries, the Ministry of Finance and the Planning Commission, experts from industry, academia and civil society. The institutional structure will vary depending on the task to be addressed and will include the opportunity to compete on the best management model.

The Nodal Ministry for each Mission has been tasked to evolve specific objectives spanning the remaining years of the 11th Plan and the 12th Plan period 2012–2013 to 2016–2017. Appropriate indicators and methodologies will be developed to assess both avoided emissions and adaptation benefits.

The NAPCC recommends a minimum share of renewable energy in the national grid of 5% in 2010, subsequently to be increased by 1% every year to reach 15% by 2020.

Energy Supply is dealt with through the National Solar Mission, which aims to make solar electricity cost-competitive with coal power and increase the share of solar energy in the energy mix by developing new solar technologies, both photovoltaic and solar thermal. The Mission recommends implementation in three stages, leading to an installed capacity of 20,000 MW by the end of the 13th Five-Year Plan in 2022. It also sets the objective of establishing a solar research centre, increased international collaboration on technology development, strengthening of domestic manufacturing capacity and increased government funding and international support.

The Indian Solar Mission is a large-scale solar energy programme that will run from 2010 to 2022. Given the major policy focus of the Indian government to provide wider energy access in rural areas, the project promotes electricity generation from both small- and large-scale solar plants. The plan's long-term aim is to make solar energy competitive with fossil-based energy.

The Solar Roadmap establishes specific installed capacity targets for three different periods of three and four years. It sets specific goals for increasing use of solar thermal technologies in urban areas, industry and commercial establishments.

Under Phase One of the National Solar Mission, a reverse auction mechanism and rapidly falling solar PV module prices brought down the delivered cost of electricity from solar PV by more than half in three years.

Under Phase Two of the Solar Mission, a capital subsidy in the form of Viability Gap Funding (VGF) allows project developers to finance their projects and sell electricity at the fixed price.

In January 2008, the federal minister responsible for renewable energy announced that the Indian government would provide a subsidy for solar power plants to help develop renewable energy infrastructure. The subsidy consisted of INR 12 (USD 0.19) per kWh for solar photovoltaic power and INR 10 (USD 0.16) per kWh for solar thermal power fed to the electricity grid. A maximum capacity of 10MW from each Indian state and 5 MW per developer was eligible under the scheme. Investors were not eligible. Developers sell electricity to state-run utilities and the incentives are paid to them based on the tariff the utilities provide. The incentives, for a period of 10 years, are over and above any financial assistance provided by the states.

The power tariff for projects under phase two has been fixed as INR 5.45 (USD 0.09) per kWh. Half of the projects in Phase Two will have domestic content and be technology neutral.

The government has also made available following incentives for solar power

- Import of plant and machinery for the construction of solar power projects is exempted from Additional Custom Duty and the total custom duty has come down from 9.35% to 5.15%.
- Goods required for manufacturing of solar cells and modules have been exempted from Additional Custom Duty and the total custom duty has come down to 9.35%.
- Excise duty exemption for all machinery required to set up a solar power generation project or facility
- Basic customs duty on solar lantern/lamps has been reduced from 10% to 5%.

The Solar Mission also stimulates national R&D by providing innovation subsidies and scholarships to at least 1,000 young scientists and engineers, and by launching specific pilot projects aligned with the Mission's targets.

Energy demand is addressed via two programmes:

The National Mission for Enhanced Energy Efficiency (NMEEE) is likely to achieve about 23 million tons oil-equivalent of fuel savings in coal, gas, and petroleum products by 2014-15, along with an expected avoided capacity addition of over 19,000 MW. The CO₂ emission reduction is estimated to be 98.55 million tons annually. Building on this, the Perform, Achieve and Trade (PAT) scheme, a market-based mechanism, seeks to accelerate and incentivise energy efficiency in the large energy-intensive industries and envisages energy saving of 6.6 million tonnes oil equivalent by 2014-15.

National Mission on Sustainable Habitat: The Plan seeks to promote energy efficiency as an essential component of urban planning. It calls for extending the Energy Conservation Building Code, and emphasises urban waste management and recycling, including power production from waste. REDD+ and LULUCF aspects of the climate action plan are addressed through the National Mission for a Green India, which sets an afforestation target of 6 million ha of degraded forest lands, as well as expanding forest cover from 23% to 33% of the country's territory.

The plan also calls for stronger enforcement of automotive fuel economy standards, using pricing measures to encourage the purchase of efficient vehicles, and providing incentives for the use of public transportation.

The National Mission on Strategic Knowledge of Climate Change calls for the establishment of a Climate Science Research Fund, improved climate modelling capacities and increased international collaboration.

Other missions include the National Water Mission to improve efficiency in water use by 20% through pricing and other measures; the National Mission for Sustaining the Himalayan Ecosystem, with targets for biodiversity, forest cover and other ecological conservation in the Himalayan region; and the National Mission for Sustainable Agriculture, supporting adaptation to climate change in agriculture by developing climate-resilient crops and adapting agricultural practices, as well as the expansion of weather insurance mechanisms.

Targets

Targets are specified per specific missions

Key targets of the National Solar Mission:

- To create an enabling policy framework for the deployment of 20GW of solar power by 2022
- To ramp up utility grid-connected solar power including rooftop generation to 1,100MW by 2013, 10,000MW by 2017 and 20,000 MW by 2022 through the mandatory use of the renewable purchase obligation by utilities backed with a preferential tariff
- To promote programmes for off-grid applications, reaching 1,000MW by 2017 and 2000MW by 2022
- To achieve 15 million m² solar thermal collector area by 2017 and 20 million m² by 2022
- To deploy 20 million solar lighting systems for rural areas by 2022
- Phase Two of the National Solar Mission has a target of 9,000 MW grid-connected and 800 MW off-grid solar power by 2017

Key Targets of the National Mission for a Green India: Afforestation target of 6 million ha of degraded forest lands, as well as expanding forest cover from 23% to 33% of the country's territory.

India: Other Relevant Legislation

Name of law	National Electricity Plan (Generation) [Executive]
Date of entry into force	January 2012

Categories	– Energy Supply
Driver for implementation	Climate change, energy efficiency
Summary of bill	<p>This Plan aims to ensure reliable access to electricity. The Plan's 4th chapter deals with initiatives and measures for GHG mitigation, and aims to keep CO₂ intensity declining while massively expanding rural access and increasing power generation to meet the demands of a rapidly growing economy.</p> <p>The main initiatives are in technological improvements of power stations – increase of unit size, introduction of clean-coal technologies (super-critical technology; ultra-super-critical technology; CFBC- Circulating Fluidised Bed Combustion technology; IGCC- integrated gasification combined cycle technology); renovation and modernisation of thermal power plants; renovation, modernisation and uprating of hydro-electric power projects; retirement of old and inefficient thermal plants; generation and energy efficiency measures; efficient use of resources (including combined cooling heating and power); distributed generation; coal quality improvement.</p> <p>It also calls for the development of renewable sources, including solar, through the mandatory use of the renewable purchase obligation by utilities backed with a preferential tariff.</p>
Targets	As set out in the national solar mission

Name of law	National Policy on Biofuels [Executive]
Date of entry into force	December 2009
Categories	– Energy Supply
Driver for implementation	Biofuel
Summary of bill	<p>In October 2007, India's cabinet made a series of announcements regarding ethanol production and proposed an indicative target of 20% blending of biofuels, by 2017, both for bio-diesel and bio-ethanol.</p> <p>A National Policy on Biofuels outlining the same target was approved by government in December 2009. In order to avoid a conflict between energy security and food security, the policy promotes only fuels derived from non-edible plants, waste, degraded or marginal lands. The policy offers farmers and cultivators a minimum support price for non-edible oil seeds, as well as a minimum purchase price for fuel.</p> <p>The government is formulating a national policy on biofuels to introduce financial incentives, develop R&D for production and commercialisation of ethanol and jatropha and establish a national biofuel development board.</p> <p>The policy set a uniform price of INR 21.50 (USD 0.34) per litre for ethanol. Since October 2007, 5% blending of ethanol with petrol has been mandatory, increasing to 10% from October 2008.</p>
Targets	20% blending of biofuels, by 2017, both for bio-diesel and bio-ethanol

Name of law	Energy Conservation Building Code [Executive]
Date of entry into force	2007
Categories	– Energy demand

-
- Institutional/Administrative arrangements
-

Driver for implementation Energy efficiency

Summary of bill The Energy Conservation Act of 2001 mandated the creation of the Bureau of Energy Efficiency (BEE), established in March 2002. The BEE was mandated with establishing an Energy Conservation Building Code (ECBC).

A National building code (NBC) was developed by the Bureau of Indian Standards, and last revised in 2005. However, it does not specifically address energy efficiency issues. Rather, it promotes the use of new and innovative technologies and methods. This code serves as a building block to achieve the Sustainable Habitat mission of the National Climate Action Plan.

The ECBC, launched in 2007, specifies the energy performance requirement of commercial buildings in India and sets minimum requirements for building envelope components, lighting, HVAC, electrical systems, water heating and pumping systems.

It has been developed to account for five different climatic zones, particularly for envelope component requirements. It was not mandatory the first three years, to allow the necessary implementation capacity to be developed, but became so in 2010.

The code will be mandatory for all new buildings (commercial buildings or complexes) with a connected load of 100kW or more, or a contract demand of 120 kVA or greater. It will also apply to buildings with a conditioned floor space of 1,000m² or greater.

Targets None specified

Name of law **Tariff Policy 2006 [Executive]**

Date of entry into force 2006, amended 2011

Categories

- Energy Supply
- Institutional/Administrative arrangements

Driver for implementation Energy framework/renewable energy

Summary of bill In January 2006, the Ministry of Power announced the Tariff Policy, in continuation of the National Electricity Policy of 2005.

The Tariff Policy included certain provisions regarding renewable energy and cogeneration.

Under the Electricity Act 2003 and the National Tariff Policy 2006, the central and the state electricity regulatory commissions must purchase a certain percentage of grid-based power from renewable sources.

The appropriate electricity commission is to fix a minimum percentage for purchase of energy from renewable and cogeneration sources, taking into account resource availability and impact on tariffs.

Percentages for energy purchase were made applicable for tariffs to be determined by the State Electricity Regulatory Commission (SERC) by 1 April 2006.

Procurement by distribution companies is to be done at preferential tariffs, determined by the appropriate commission, to encourage non-conventional energy technologies to eventually compete with conventional ones. Such procurement is to be done through a competitive bidding process.

In January 2011, the Tariff Policy was amended to align with the National Solar Mission

strategy. State electricity regulators to purchase a fixed percentage of solar power. This will be supported by a Renewable Energy Certificate (REC) mechanism.

Targets Solar power to comprise 0.25% of power purchases by states by 2013, and 3% by 2022

Name of law **Integrated Energy Policy [Executive]**

Date of entry into force 2006

Categories

- Energy Supply
- Energy Demand
- Institutional/Administrative arrangements

Driver for implementation Energy framework

Summary of bill At the direction of the Prime Minister and Deputy Chair of the Planning Commission, an expert committee was established to develop a comprehensive energy policy in 2004. The Integrated Energy Policy, released in August 2006, addresses all aspects of energy, including energy security, access and availability, affordability and pricing, efficiency and the environment.

The Policy aims to meet energy demand “at the least cost in a technically efficient, economically viable and environmentally sustainable manner”. It contains a number of policies that contribute to avoiding GHG emissions. It received Cabinet approval in 2008.

In relation to renewable energy, the policy proposed:

- The phase-out of capital subsidies by the end of the 10th Plan linked to creation of renewable grid power capacity
- Requiring power regulators to seek alternative incentive structures that encourage utilities to integrate wind, small hydro, cogeneration and so on into their systems, and the linking of all such incentives to energy generated as opposed to capacity created
- Requiring power regulators to mandate feed-in laws for renewable energy, where appropriate, as provided under the Electricity Act 2003. The policy also made a range of more specific recommendations in relation to particular renewable energy sources, including mini hydro, wind and wood gasification power

The Energy Co-ordination Committee (under the chairmanship of the prime minister) oversees implementation of the policy.

Targets None specified

Name of law **National Electricity Policy [Executive]**

Date of entry into force 2005

Categories

- Energy Supply
- Energy Demand
- Research and Development
- Institutional/Administrative arrangements

Driver for implementation Renewable energy

Summary of bill Among other goals, this policy stressed the need for the promotion of non-conventional energy sources.

The policy noted the need to reduce the capital cost of projects based on non-conventional and renewable sources of energy; stressed the importance of promoting competition among renewables projects; provided for state electricity regulatory commissions to increase progressively the share of electricity that must be purchased from non-conventional resources, and further provided that the purchase of such electricity should be conducted via a competitive bidding process; suggests tax neutrality across energy sources; states that “maximum emphasis” would be put on the development of hydro-power. Use of thermal power could be made cleaner by using low-ash coal, improving lignite mining, and through increased use of natural gas and nuclear power. It also calls for the use of the most efficient technologies and more funding for R&D; emphasises the need for conservation and demand-side management including a national awareness campaign.

Targets	None specified
----------------	----------------

Name of law	Electricity Act 2003 [Legislative]
Date of entry into force	2003, amended in 2007
Categories	<ul style="list-style-type: none"> – Energy Supply – Institutional/Administrative arrangements
Driver for implementation	Energy framework
Summary of bill	<p>The Electricity Act 2003 sought to better co-ordinate development of the power sector in India, providing a comprehensive framework for power development. Objectives include: consolidating laws relating to generation, transmission, distribution, trading and the use of electricity; and promoting competition in the industry; and promoting efficient and environmentally benign policies.</p> <p>The Act recognised the role of renewable energy in the country’s National Electricity Policy and in stand-alone systems. Key provisions of the Act in relation to renewable energy include (IEA):</p> <ul style="list-style-type: none"> – Preparation of a National Energy Policy and tariff policy based on optimal utilisation of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy – The specification, by State Electricity Regulatory commissions, of the terms and conditions for the determination of tariffs, as guided by the promotion of cogeneration and the generation of electricity from renewable sources – Promotion of cogeneration and the generation of electricity through renewable sources by providing suitable means for connectivity with the grid and sale, and by specifying for the purchase from such sources a percentage of the total consumption of electricity in the area of a distribution licensee.

Targets	None specified
----------------	----------------

Name of law	National Auto Fuel Policy [Executive]
Date of entry into force	2003
Categories	– Transportation
Driver for implementation	Transportation/air pollution
Summary of bill	The National Auto Fuel Policy (2003) mandated that all new four-wheeled vehicles in 11 cities meet Bharat Stage III emission norms for conventional air pollutants (similar to Euro III emission norms) and comply with Euro IV standards by 2010.

Targets	None specified
----------------	----------------

Name of law	Energy Conservation Act [Legislative]
--------------------	---------------------------------------

Date of entry into force	2001, amended in 2010
---------------------------------	-----------------------

Categories	<ul style="list-style-type: none"> - Energy Demand - Institutional/Administrative arrangements
-------------------	--

Driver for implementation	Energy efficiency
----------------------------------	-------------------

Summary of bill	<p>The act empowers central government to grant energy savings certificates to designated consumers whose energy consumption is less than the prescribed norms and standards and consumers whose energy consumption is more than the prescribed norms and standards shall be entitled to purchase the energy savings certificate to comply with the prescribed norms and standards.</p>
------------------------	---

This Act requires large energy consumers to adhere to energy consumption norms; new buildings to follow the Energy Conservation Building Code; and appliances to meet energy performance standards and to display energy consumption labels.

The 2008 National Climate Action Plan builds on this legislation to achieve its energy efficiency target. Under the Act, large energy-consuming industries are required to undertake energy audits and an energy-labelling programme for appliances has been introduced.

The Act establishes the Bureau of Energy Efficiency to implement the provisions of the Act.

Targets	None specified. The plan estimates that current initiatives based on the Energy Conservation Act of 2001, will yield 10,000MW of savings by 2012.
----------------	---

4.26 Indonesia



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	1376
excl. LULUCF	554
Change from base year (1990)	NA
Latest reporting year	2000
Importance as an emitter	Top 10
UNFCCC ratification status and date	Date of signature: 5 June 1992 Date of ratification: 23 August 1994 Date of entry into force: 21 November 1994
Kyoto Protocol ratification status and date	Date of signature: 13 July 1998 Date of ratification: 3 December 2004 Date of entry into force: 3 March 2005
2020 pledge	26% emission reduction by 2020 in relation to business as usual scenario to be achieved through 7 mitigation actions
Flagship legislation	Presidential Decree (PerPres) No. 61 2011, National Action Plan to reduce GHG emissions (RAN-GRK)

Legislative Process

The Indonesian legal system is based on Roman-Dutch law, custom and Islamic law. The legislature is bicameral and comprises the House of People's Representatives (Dewan Perwakilan Rakyat or DPR) and the House of Regional Representatives (Dewan Perwakilan Daerah or DPD). The ensemble of DPR and DPD members forms a third representative body known as the People's Consultative Assembly (Majelis Permusyawaratan Rakyat or MPR). The DPR and the President jointly discuss and approve every Bill. Bills may come from the DPR, the President or the DPD. A wide range of legislation is produced from different sources and with different levels of authority, so there is a hierarchy of legislation, as follows: the 1945 Constitution; MPR Resolution; Law; Government Regulation Substituting a Law; Government Regulation; Presidential Decree; Regional Regulation.

Also binding are Presidential Instructions, Ministerial Decrees and Circular Letters.

Approach to Climate Change

Indonesia has passed meaningful legislation on climate change. However key initiatives are often embodied in decrees and regulations passed by individual ministries as opposed to parliamentarians, which implies – given the hierarchy of law set out above – that they will be less effective than resolutions of the People's Assembly.

Nonetheless, at the highest level the government has demonstrated a willingness to tackle climate change. While the country is strongly committed to the principle of “common but differentiated responsibility” it has long since opened pathways to implement domestic activities. In 2007 the Environment Ministry launched the Action Plan to Respond to Climate Change (RANPI). Indonesia launched its “National Action Plan – Addressing Climate Change” when it hosted the 13th Conference of the Parties in Bali in 2007. Following this, it created the National Council on Climate Change in July 2008. The Council, formed by 17 Ministers and chaired by the President, co-ordinates Indonesia's climate change policies and international positions, including the creation of a cap-and-trade mechanism.

The planning agency BAPPENAS launched the country's Climate Change Sectoral Roadmap in 2010. The Climate Change Trust Fund, which has been operational since 2010, demonstrates a commitment to scale up financing by seeking to develop innovative links between international finance and domestic investment.

There is also now a presidential decree on the National Action Plan to Reduce Greenhouse Emissions (RAN GRK), signed in 2011. This is intended as a framework document to plan Nationally Appropriate Management Activities (NAMAs). The RAN GRK sits alongside the Gubernatorial regulations on provincial action plans to reduce greenhouse gases (RAD GRK). The RAN GRK is a

broad cross-sectoral plan addressing areas such as agriculture, forestry, industry, energy and infrastructure with instruments such as taxation, investment policies and awareness raising .

In September 2009 at the G-20 Summit in Pittsburgh President Susilo Bambang Yudhoyono pledged to voluntarily reduce Indonesian emissions by 26% (but up to 41% depending on international support) by 2020 against the business-as-usual scenario. This corresponds to Indonesia's commitment with the UNFCCC, to be achieved through 7 mitigation actions: 1) sustainable peat land management, 2) reducing the rate of deforestation and land degradation, 3) developing carbon sequestration projects in forestry and agriculture, 4) promoting energy efficiency, 5) developing alternative and renewable energy sources, 6) reducing solid and liquid waste, and 7) shifting to low-emission transportation mode.

Norway's pledge of USD 1 billion to help Indonesia cut emissions from deforestation and forest degradation has created further stimulus for a more comprehensive legal response to climate change in the forestry sector. However, despite the country's active legislative response, enforcement and land tenure issues continue to be central challenges when it comes to action on deforestation, the country's main source of emissions.

Energy supply

Indonesia's commitment to renewable energy is centred on geothermal power and biofuels. Indonesia is currently the third-largest producer of geothermal energy after the US and Philippines. Over the 2007–2008 period, the country's geothermal power plant capacity increased by 317 MW. Indonesia plans to further expand capacity, taking advantage of its position on the "Ring of Fire" of volcanic activity.

To stimulate supply, the 2nd Stage of the 10,000 MW "Crash Programme" is intended to accelerate geothermal development so that it generates 3,967 MW by 2014. A series of other regulations control the geothermal energy price structure and fiscal incentives for geothermal development.

A Ministerial Decree in 2004 promoted renewable energy and energy conservation, encompassing investment and funding policy; incentives; energy pricing; human resource development; information dissemination; standardisation and certification; promotion of research and development; and institutionalisation of renewable energy. More significant in legal terms, given its position in the hierarchy of laws set out above, is the comprehensive Geothermal. This was passed in 2003, but is being revised at the time of writing. The law is further supported by the Geothermal Regulation and a Ministerial Regulation.

Action on renewables is pursued more through executive action than a legislative approach. The government has passed a series of regulations in recent years including a Presidential Instruction on Biofuel Development in 2006 and a

Ministerial Regulation that sets out plans for a greater role for biodiesel and ethanol-blend fuel in transportation.

The Biofuel Decree issued by the Ministry of Energy and Mineral Resources in 2008 establishes mandatory use rules in the transportation, industrial, commercial and power generation sectors. It mandates the use of biodiesel, bio-ethanol and bio-oil from 2009 to 2025. The minimum biodiesel use is set at about 20% for all four sectors in 2025, from around 1–2% in 2008.

The Ministry of Energy and Mineral Resources also launched the National Biofuel Roadmap 2006–2025, which establishes actions to accelerate the use of biofuels to replace fossil-based fuel and targets 5% of biofuel utilisation in the energy mix, 20% biodiesel use in diesel fuel consumption and 15% bio-ethanol use in gasoline consumption by 2025. The National Energy Blueprint (2005) sets out a comprehensive development plan to ensure 15% of the country's electricity demand is met by renewable energy sources by 2025. This may include nuclear energy: The House of Representatives has officially asked the government's National Energy Board to consider and explore nuclear energy options for Indonesia.

The main opposition to Indonesia's renewable energy initiatives comes from national and international civil society groups, which point to a potential conflict between biofuel development and forest conservation objectives in general and under REDD+. In addition, the expansion of Indonesia's thermal power programme may also conflict with forest conservation laws. The Ministry of Forestry reports that some 80% of geothermal sources are in conservation forests, so exploitation of these resources could lead to further deforestation and degradation.

REDD+ and LULUCF

Indonesia has one of the highest rates of deforestation and degradation in the world. Approximately 80% of Indonesia's GHG emissions result from deforestation and degradation, and about half of these from carbon-rich peat lands. From 1990 to 2005 deforestation rates equalled nearly 28 million ha; it is the world's third largest GHG emitter due primarily to land use change and fires on peatland. There are large financial incentives involved: forest industries contribute approximately USD 21 billion to Indonesia's economy, about 3.5% of GDP. So, while a multi-sectoral approach is important, any attempt to reduce Indonesia's carbon emissions must focus on LULUCF.

A Letter of Intent between the governments of Norway and Indonesia signed in 2010 has created momentum for a new internationalised response to reduce deforestation and forest degradation. The letter establishes a climate change partnership between the two countries intended to support the development and implementation of Indonesia's REDD+ strategy. It makes USD 1 billion available over seven years, conditional on verified progress on various projects.

In addition, the initiative set out to create an institution to monitor Indonesia's REDD+ plans as well as an independent Monitoring, Reporting and Verification (MRV) system for anthropogenic forest and peat-related GHG emissions.

The Ministry of Forestry, which has been one of the most active with regards to climate change in Indonesia, has established a working group on climate change. However, the centrepiece of the agreement between Indonesia and Norway has been the moratorium on new forestry licences and development of peat land in Indonesia for two years, starting in May 2011. This was intended to provide breathing space to facilitate transition to a more sustainable forestry sector. This was extended in 2013 for another two years, while a further decree created a national REDD+ agency.

The moratorium affects only what is mapped as natural primary forest. Existing concessions are not affected by the moratorium. No new licences for concessions can be granted during the moratorium, including on carbon-rich peat land.

In addition to exemptions in place for secondary forests and existing concessions, projects of national significance such as geothermal, oil and

natural gas are also exempt from the moratorium. A Regulation provides the legal basis for changing the status of convertible production forests into non-forest lands for development purposes such as mining, plantations and road development. Where protected forests designated for conservation have already been degraded, there is a law which allows them to be converted into logging concessions.

Further enabling regulations are intended to respond to the high demand from both international partners and national stakeholders to participate in REDD+ activities, as well as to exercise outcomes of COP/SBSTA processes on REDD+. A further enabling regulation seeks to clarify property rights for forest carbon and sets out licensing procedures for businesses seeking to exploit the carbon storage and sequestration potential of production and protection forests.

Reforestation is a potential activity under the 'plus' of REDD+, and also under the Kyoto Protocol's Clean Development Mechanism and another regulation outlines procedures for reforestation of land that has not been forest for 50 years or more, and reforestation of land that has not been a forest since 31 December 1989.

Indonesia: Flagship Legislation

Name of law	Presidential Decree (PerPres) No. 61 2011, National Action Plan to reduce GHG emissions (RAN-GRK) [Executive]
Date of entry into force	1st September 2011

Categories	– Institutional/Administrative arrangements
Driver for implementation	Formal follow-up of the commitments made by President Susilo Bambang Yudhoyono to reduce GHGs by 2020 at the G20 in Pittsburgh.
Summary of bill	RAN-GRK is a national guideline for emission reduction covering 70 programmes, to be conducted together by the Central Government, Local Governments, private sectors/business actors and civil society. It is the reference document for activities in Indonesia directly and indirectly related to reducing GHG emissions. It sets out the different sectors in which Indonesia will make emissions reductions, namely Forestry and Peat land, Agriculture, Energy and Transportation, Industry and Waste Management. The Provinces are expected to make their own action plans within one year, and have these formalised within a governor's decree.
Targets	None specified

Indonesia: Other Relevant Legislation

Name of law	Decree 62 / 2013 Regarding a Managing Agency for the Reduction of Emission (<i>sic</i>) from Deforestation and Degradation of Forest and Peatlands. [Executive]
Date of entry into force	2013
Categories	– REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	REDD+ Implementation
Summary of bill	The Managing Agency will be in charge of developing a national strategy to: <ul style="list-style-type: none"> – develop a national strategy to implement REDD+ in the country – form and develop REDD+ safeguards – develop standards and methodologies to measure GHG emissions – co-ordinate law enforcement with regards to implementation of REDD+ programmes, projects or activities
Targets	None specified

Name of law	Presidential Instruction Inpres 6/2013 on extension of the forest moratorium [Executive]
Date of entry into force	2013
Categories	– REDD+ and LULUCF
Driver for implementation	Climate change, forestry
Summary of bill	This extends Presidential Instruction No. 10/2011 on Forest Moratorium (Development of REDD+ schemes including Indicative Moratorium maps)
Targets	None specified

Name of law	Ministerial Regulation No. 01/2012 Accelerating Development of Geothermal Energy Supply (revised Ministerial Regulation No. 15/2010) [Executive]
Date of entry into force	2012

Categories	<ul style="list-style-type: none"> - Energy supply - Institutional/Administrative arrangements
Driver for implementation	Renewable energy
Summary of bill	This is a revision of the Ministerial Regulation 15/2010, which is intended to accelerate the development of Indonesia's Geothermal energy.
Targets	None specified

Name of law	President Regulation No. 71/2011 on the Implementation of a National Greenhouse Gases Inventory [Executive]
Date of entry into force	2011
Categories	— Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	The regulation is a component of the RAN-GDK GHG emissions reductions plan. The purpose of the bill is to establish a GHG inventory administration guideline, and an administration to co-ordinate that inventory. Furthermore the legislation should lead to a system to provide regular information on the level, status and trend of GHG emission change and absorption. This will include national and sub-national carbon stock as well as GHG emission reduction information.
Targets	None specified

Name of law	Presidential Instruction No. 10/2011 on Forest Moratorium (Development of REDD+ schemes including Indicative Moratorium maps) [Executive]
Date of entry into force	2011
Categories	— REDD+ and LULUCF
Driver for implementation	Climate change, forestry
Summary of bill	This instruction is part of Indonesia's commitments under the agreements in the Letter of Intent signed with the Kingdom of Norway in May 2011. The Instruction is intended to facilitate Indonesia's participation in internationally financed REDD+ activities.
Targets	None specified

Name of law	National Medium Term Development Plan 2010-14. [Executive]
Date of entry into force	2010
Categories	<ul style="list-style-type: none"> - Adaptation - Institutional/Administrative arrangements
Driver for implementation	Sustainable development
Summary of bill	This is the second phase of Indonesia's National Long Term Development Plan 2005-2025,

the goal of which is to make Indonesia more advanced, peaceful and democratic.

Priority 9 of the plan concerns Environment and Disaster Management: "Conservation and Environmental utilisation supports economic growth and sustainable welfare in accordance with risk mastering (*sic*) and management in the context of climate change"

Targets None specified

Name of law Ministerial Regulation No. 15/2010 Re. 10,000 MW Crash Programme [Executive]

Date of entry into force 2010

Categories — Energy Supply

Driver for implementation Diversification of energy mix; increasing energy security

Summary of bill This is the 2nd Stage of 10,000 MW Crash Programme, and is intended to accelerate the development of geothermal power.

Targets Indonesia should generate 3,967 MW of geothermal power by the year 2014

Name of law Law 32/ 2009 Environmental Protection and Management [Legislative]

Date of entry into force 2009

Categories — REDD+ and LULUCF

Driver for implementation Sustainable development

Summary of bill This law formally recognises that decreasing environmental quality is a serious problem for Indonesia, and that climate change presents further systemic threats. It seeks to ensure that development is underpinned with the principle of sustainably and environmentally sound development principles.

In practice this means that environmental protection and management should be integrated into all efforts to preserve the functioning of the environment, which includes the development of environmental monitoring programmes and development project impact evaluations. It concerns ecosystem integrity (such as forest ecosystems, which is why the legislation is relevant to REDD+) but also the release of toxic materials into the environment.

Targets None specified.

Name of law P. 30/Menhut-II/2009 On the implementation of REDD+ activities [Executive]

Date of entry into force 2009

Categories — REDD+ and LULUCF

Driver for implementation REDD+

Summary of bill P. 30 sets out the regulations for the implementation of REDD+ in Indonesia, including previously unresolved questions over which land classes could be used to develop REDD+ activities.

Targets None specified

Name of law	Presidential regulation 70/2009 concerning Energy Conservation [Executive]
Date of entry into force	16 November 2009
Categories	— Energy supply
Driver for implementation	Energy efficiency
Summary of bill	<p>This is the implementing legislation on energy conservation with regard to the Energy Law. It mandates the drafting and adoption of a new National Energy Conservation Master Plan called RIKEN, the Rencana Induk Konservasi Energi Nasional. This should be updated every five years, or annually if required. It specifies the mandatory assignment of an energy manager, to implement energy auditing, and energy conservation programme for users of final energy of more than 6,000 tonnes of oil equivalent. In addition the regulation introduces voluntary energy efficiency standards and energy labeling.</p> <p>The regulation also seek to develop and implement a series of incentives for improved energy management. These include tax exemption and fiscal incentives on imports of energy saving equipment and appliances, and special low interest rates on investments in energy conservation. To reduce non-compliance, the regulation seeks to provide disincentives. These include written notices to comply, public announcements of non-compliance, fines and reductions of energy supply.</p>
Targets	None specified

Name of law	Law 31/2009 Concerning Meterology, Climatology and Geophysics [Legislative]
Date of entry into force	2009
Categories	— Institutional/Administrative arrangements
Driver for implementation	Institutional development
Summary of bill	Sets out the need to develop GHG inventory for climate change policy development.
Targets	None specified

Name of law	Minister of Forestry Regulation No. P.68/Menhut-II/2008 on Implementation of Demonstration Activities Reducing Carbon Emissions from Deforestation and Forest Degradation [Executive]
Date of entry into force	2008
Categories	— REDD+ and LULUCF
Driver for implementation	LULUCF, REDD+
Summary of bill	This regulations set out the rules that REDD+ demonstration activities should adhere to/. It is therefore fundamental enabling legislation for the development of REDD+ in Indonesia.
Targets	None specified

Name of law	Presidential Regulation on the National Council for Climate Change (NCCC or DNPI) [Executive]
Date of entry into force	4 July 2008
Categories	– Energy supply – REDD+ and LULUCF
Driver for implementation	Climate change, deforestation and land use
Summary of bill	Establishes the NCCC to co-ordinate climate change policy-making and strengthen Indonesia's position in international forums. The Council is composed of 17 Ministers and chaired by the President. The NCCC is to be assisted by the following Working Units: Adaptation, Mitigation, Transfer-of-Technology, Funding, Post-Kyoto 2012, and Forestry and Land Use Conversion. The adaptation programme focuses on agriculture, disaster risk reduction, data dissemination and establishes an integrated development plan to improve climate-resilience.
Targets	None specified

Name of law	Presidential Instruction No. 2/2008 – Regulation on Energy and Water Efficiency [Executive]
Date of entry into force	2008
Categories	– Energy demand
Driver for implementation	Energy efficiency, water efficiency
Summary of bill	Sets out instructions to Ministers, Governors and Mayors to implement energy and water efficiency in government offices. It optimises national policy on energy and water efficiency through establishment of the National Taskforce for Energy and Water Efficiency. The main tasks are: 1. Research, plan and prepare policies, strategies and programmes for energy and water efficiency, including energy conservation programme by taking into account that a) most national energy and water are supplied with a subsidy, b) tighten the non-essential use of energy and water use by ensuring it reflects the economic price, c) ensuring the price of water and energy for industry reflects the true economic cost, d) all government offices should take steps to improve energy and water efficiency. 2 Monitoring and reporting these activities to the President. The instruction works towards mainstreaming climate change, by establishing that all government offices should observe energy efficiency – lighting, AC, electrical equipment, official vehicle and other buildings, and water efficiency – in all activities that use water.
Targets	None specified

Name of law	Regulation No. 46 / 2008 National Council on Climate Change [Executive]
Date of entry into force	2008
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate change management
Summary of bill	The Regulation established the National Council on Climate Change to co-ordinate management of climate change and develops Indonesia's negotiating position in international climate change forums. The Council focuses on:

-
- Formulating climate change strategies
 - Developing a carbon trading mechanism.
 - Implementing climate change strategies
 - Co-ordinating adaptation, mitigation, technology and funding
-

Targets None specified

Name of law Law No. 6 / 2007 on Spatial Planning [Legislative]

Date of entry into force 2007

Categories — REDD+ and LULUCF

Driver for implementation Land use planning

Summary of bill This Law is designed to improve spatial planning in Indonesia, focussing on sustainability and recognising that there are ultimate limits for land conversion across the archipelago. It says that spatial plans must include conservation areas and ensure that forest covers 30% of river and stream areas.

Targets None specified

Name of law PP6/2007 on Forest Management [Executive]

Date of entry into force 2007

Categories — REDD+ and LULUCF

Driver for implementation Forest rehabilitation

Summary of bill This legislation allowed for the first time the ownership of a forestry concession in Indonesia with the expressed objective of restoring natural forest and biodiversity. This was created within the general framework of sustainable development in Indonesia, ensuring good governance and management of Indonesia's natural resources.
This law could be important in implementation of REDD+.

Targets None specified

Name of law Law No. 59/ 2007 on Geothermal Energy (N.B. see subsequent amendment under Law 70/2010) [Legislative]

Date of entry into force 2007

Categories — Energy supply

Driver for implementation Renewable energy development; diversification of energy mix and security

Summary of bill This is the basic framework law governing geothermal development in Indonesia. It sets out all the requirements and obligations for businesses seeking to establish themselves in this sector, including the coordination with the different levels of government, and the requirements to adhere to environmental quality and conservation legislation.

Targets None specified

Name of law	Law No. 30/ 2007 – Energy [Legislative]
Date of entry into force	2007
Categories	<ul style="list-style-type: none"> – Energy supply – Research and development
Driver for implementation	Renewable energy, energy efficiency
Summary of bill	<p>This comprehensive energy legislation stresses the importance of sustainable development, environmental preservation and energy resilience in national energy management. In terms of supply-side policies, it requires that more attention should be given to new and renewable energy development and that incentives should be developed for energy providers to do this.</p> <p>The Law promotes national energy efficiency. There are a series of measures proposed to achieve this. First is the creation of an inventory of energy resources. Then, energy stocks resources should be increased. Furthermore, the energy supply should be diversified, with a simultaneous promotion of energy conservation. The Law also addresses the distribution network, with the goal of improving the quality of storage and transmission.</p> <p>The Law also requires that energy is provided for under-developed, remote and rural areas by exploiting local energy potential, and renewable energy in particular. Throughout these developments, there should be a prioritisation of environmentally friendly technologies.</p>
Targets	None specified

Name of law	Regulation Of The Minister Of Forestry Number : P.27/Menhut-II/2006 on Indonesia's Forestry Long Term Development Plan [Executive]
Date of entry into force	2006
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF
Driver for implementation	Sustainable forest management
Summary of bill	The plan aims to improve the sustainability of the use of Indonesia's forest resources, via improved management of extractive forest, improved conservation in protected areas, and greater community participation. It also aims to reform the forest sector, including the promotion of forest products and services, including their sustainability credentials.
Targets	<ul style="list-style-type: none"> – Rehabilitate Forest Areas and ecosystems in the amount of 5 million ha through the National Forest Rehabilitation Movement – Establish 5 million ha of plantation forest – Create 2 million ha of private forests

Name of law	Presidential Regulation No. 5/2006 concerning National Energy Policy [Executive]
Date of entry into force	25 January 2006
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand
Driver for implementation	To ensure sufficient domestic energy supply and promote sustainable development in

	Indonesia
Summary of bill	The goal of the National Energy Policy is to direct efforts to the creation of sufficiency of domestic energy supply. It aims to optimise the energy mix in Indonesia; reducing the dependency on fossil fuels and increasing the use of renewables. It set out a comprehensive series of targets:
Targets	By 2005 the policy aimed to achieve energy elasticity of less than one (energy elasticity in this case is the ratio of between energy demand and economic growth). It sets out the creation of optimal energy mix by 2020, achieving the following proportions in the energy mix: Oil less than 20%; gas than 30%; Coal less than 33%; Biofuel more than 5%; Geothermal more than 5%; Other new energy and renewable energy, particularly biomass, nuclear, hydropower, solar power, and wind power more than 5%; liquified coal more than 2%.

Name of law	Presidential Instruction No. 1/2006 on Biofuel Development [Executive]
Date of entry into force	2006
Categories	<ul style="list-style-type: none"> – Energy supply – REDD+ LULUCF
Driver for implementation	Renewable energy supply development
Summary of bill	<p>The Instruction calls on 13 Ministers, Governors and Mayors to take the necessary actions for biofuel development from supply (feedstock) through to commercialisation and consumption.</p> <p>The Instruction issues forest utilisation permits for biofuel plants in critical or abandoned forest/land. It further promotes biofuel use, and seeks to replace fossil fuels as an alternative for transportation.</p>
Targets	None specified

Name of law	Law No. 17/2004 Ratification of the Kyoto Protocol to the UNFCCC [Legislative]
Date of entry into force	2003
Category	– Institutional/Administrative arrangements
Driver for implementation	Institutional development
Summary of bill	The Law legislates for the ratification of the Kyoto Protocol in Indonesia.
Targets	None specified

Name of law	Law No. 27/2003 – Geothermal Law [Legislative]
Date of entry into force	2003
Categories	– Energy supply
Driver for implementation	Renewable energy
Summary of bill	The Law seeks to provide a stronger legal basis for upstream geothermal energy development, including private investments in the sector and to expand regional autonomy to support sustainable energy alternatives to fossil fuels.

The Law establishes the regulatory structure for geothermal development. Geothermal Business Permits (IUP) are to be granted by the state through competitive bidding among prospective investors. In 2005, the Directorate of Geothermal Enterprise Supervision and Groundwater Management was created, to strengthen the sector's management efficiency.

There is a fiscal incentive for new renewable energy development.

Targets	None specified
----------------	----------------

Name of law	Law No. 6 / 1994 on Ratification of the United Nations Framework Convention on Climate Change [Legislative]
--------------------	---

Date of entry into force	1994
---------------------------------	------

Categories	— Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Ratifying UNFCCC
----------------------------------	------------------

Summary of bill	This legislation ratifies the United Nations Framework Convention on Climate Change.
------------------------	--

Targets	Indonesia is obligated to periodically develop its national communication. A GHG inventory is a part of the national communication.
----------------	---

4.27 Israel



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	75
excl. LULUCF	75
Change from base year (1990)	NA
Latest reporting year	2010
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 4 June 1992 Date of ratification: 4 June 1996 Date of entry into force: 2 September 1996
Kyoto Protocol ratification status and date	Date of signature: 16 December 1998 Date of ratification: 15 March 2004 Date of entry into force: 16 February 2005
2020 pledge	To do its utmost to cut emissions by 20% by 2020 compared to a business as usual scenario
Flagship legislation	The National Greenhouse Gas Emissions Mitigation Plan

Legislative Process

Israel is a parliamentary unicameral democracy. The legislative body is called the Knesset and it has 120 members who are elected in general elections every four years.

Legislation can be initiated by a single member of the Knesset, a group of Knesset members (these would be called private bills), by a Knesset committee, or by the government. A bill requires three readings to pass. After the first reading, it is referred to a committee for preparation for the second reading. The committee may propose amendments as long as these amendments do not diverge from the subject of the bill. The voting on second reading is performed article by article. At this stage the bill may be returned to the Committee, if it is necessary to draft the reservations that were adopted in second reading, or be put immediately to the vote in third reading. Until the bill is adopted in third reading, the government is entitled to withdraw it.

A bill that has been approved to be placed on the Knesset agenda is usually placed on the agenda at least 45 days before it is brought to the plenum for preliminary reading. The plenum can remove it from its agenda, or refer it to a committee, for preparation for first reading. As of the stage of first reading, the legislative process is similar to that of a Government bill. A private members' bill can be withdrawn until the end of the deliberation in the Committee, after the first reading.

Since July 2002, any bill, whose annual budgetary cost is over ILS 5 million (USD 1.4 million), and is not supported by the government, can only be adopted with the votes of at least 50 Members of the Knesset, at every stage of the legislation.

Approach to Climate Change

Israel faces a number of challenges that require clear and robust energy and climate policies – having average population growth rate of 1.8% per year (2000-2010), soaring energy demand and high emissions per capita despite negligible overall emissions. It is also an arid, coastal country that is exposed to the risks of climate change. Regulatory developments in the last few years have been informed by both international and domestic processes, including the process of joining the OECD (completed in 2010), under which Israel was required to undertake various environmental commitments.

Israel is a non-annex 1 signatory to the Kyoto protocol, having ratified the protocol in 2002. At COP 15 in Copenhagen in 2009, President Shimon Peres declared that Israel would do its utmost to reduce the amount of GHG emissions by 20% by 2020, compared to a business as usual scenario – a reduction of approximately 21 MT CO₂. The president's commitment led to the formulation of a National Greenhouse Gas Emissions Mitigation Plan in 2010. An inter-

ministerial committee, headed by the director general of the Ministry of Finance, formulated a plan which included various measures in the areas of energy efficiency, green building and transportation. Much of the work on energy efficiency was based on a working paper by the Ministry of Energy and Water. Policy measures concerning energy supply (including renewable energy), which were in the committee's mandate, have not been included in the National GHG Plan.

The National GHG Plan was approved in 2010 and budgeted at ILS 2.2 billion (USD625 million). However, in March 2013 the plan was frozen for three budget years by the Ministry of Finance, as part of wider funding cuts. As a result, the Ministry of Environmental Protection has declared that 'there is almost no likelihood that the declared target of a 20% GHG emissions reduction by 2020 will be achieved.'

A voluntary national GHG registry scheme was launched by the Ministry of Environmental Protection in July 2010. The reporting protocol, prepared by the Ministry of Environmental Protection and by the Samuel Neaman Institute for National Policy Research, in co-operation with a wide range of stakeholders, includes guidelines for mapping, quantifying and reporting GHG emissions in Israel. It is meant to develop capacities and tools for the private sector and industry to calculate their emissions and to help estimate the potential for savings and emissions reductions. Over 50 companies and organisations, including several of Israel's major companies, have joined the project on a voluntary basis, covering more than two thirds of the total emissions of the country.

The Israeli forum of self-governed cities ('Forum of the 15'), which account for 40% of the population, and are estimated to provide services to 70%-80% of the population, has committed to reducing GHG emissions by 20% compared to 2000 emissions, by 2020. The forum requires all new building permitting requests to include green building principles. In June 2013, the Forum decided to adopt the Israeli Green Building Standard as a guideline, with the aim of making it mandatory.

Energy demand

In 2008, the Government passed a resolution to promote energy efficiency and to reduce energy consumption by 20% by 2020. In accordance with the resolution, the Ministry of Energy and Water published in 2010 a National Energy Efficiency Plan for 2010-2020. The plan contributed key inputs into The National GHG plan, and also suggested establishing an energy efficiency fund of approximately ILS 200 million (USD 56.8 million), to be funded by a 1% levy on electricity bills.

An Israeli Green Building Standard that applies both to new buildings and to building renovations was launched by the Ministry of Environmental Protection

and the Standards Institution of Israel in July 2011. It encompasses nine fields: energy, land, water, building materials, health and welfare, waste, transportation, construction site management, and innovation.

The Ministry of Energy and Water carried out a scheme to subsidise replacement of inefficient refrigerators, solar water heating tanks and air conditioners. Solar water heating has for residential buildings been mandatory in Israel since the 1980s. These measures are applied in addition to mandatory energy labelling for appliances and minimum energy efficiency requirements for light bulbs

The Ministry of Environmental Protection and The Ministry of Economy are promoting energy efficiency projects in industry, municipal, agriculture, trade and transportation sectors, to which ILS 106 million (USD 30.1 million) were allocated for 209 projects in 2011-2012. This included ILS 9 million (USD 2.56 million) in grants from the Chief Scientist. The Ministry of Economy allocated additional incentives for the application of Israeli technology in these projects. The aggregate net benefit from these projects, as discounted until 2020, is estimated at ILS 830 million (USD 235.8 million).

Energy supply

In 2009, the government set a target of 10% renewable energy by 2020, to be achieved by feed-in tariffs and public tenders, subsidising the difference between renewable energy production costs and power prices. Feed in tariffs were introduced in Israel in 2008, establishing fixed quotas and prices per technology. In 2011 an inter-ministerial committee was formed to assess the costs and benefits of renewable energy (including grid parity price), and to promote market-based mechanisms over the quota scheme.

Offshore natural gas discoveries prompted a heated debate on energy security vs. commercial interests to export the gas. A government-appointed committee determined that Israel must secure enough natural gas to supply its own needs for 25 years, limiting to just above 50% the export of the offshore reserves. Critics have accused the committee of over-estimating gas reserves and under-estimating future demand for gas. The government adopted the findings of the committee, but limited export to 40% of reserves. The Supreme Court rejected an appeal on the legality of the government resolution. In November 2013, a bill was brought before the Knesset, entitled 'Energy Independence for Israel', aiming to limit exports of gas to guarantee gas reserves for 50 years. The bill was rejected by the coalition members of the Knesset in December 2013.

Transportation

A Green Taxation scheme for vehicles has been in place since August 2009, determining the import tax level based on pollutant levels, taking into account five major pollutants – CO₂, CO, PM, NO_x and HC. The scheme gives clear benefits to electric and hybrid vehicles. In August 2013, the green taxation scheme was updated, making the criteria for tax deductions more stringent.

Vehicle importers have removed some diesel-powered vehicles from their portfolio, because these are now classified as highly-polluting vehicles. The green taxation scheme also includes additional tax benefits based on level of pollution, as well as a scrapping scheme for old vehicles, offering owner ILS 3000 (USD 852) per vehicle. Follow-up research showed that sales of smaller, more efficient cars have increased following the green taxation scheme.

The National GHG programme promoted regulation to enhance energy efficiency in vehicles, as well as eco-driving programmes.

The electric vehicle company 'Better Place' deployed approximately 1,000 vehicles in Israel; however, in May 2013 the company filed for bankruptcy and plans are to liquidate its assets.

Adaptation

In 2009, an inter-ministerial climate change adaptation committee was formed and instructed the preparation of a national climate change adaptation programme.

The committee is headed by the Ministry of Environmental Protection, and focuses on the key climate risks Israel faces – water scarcity, drought and increased frequency of extreme weather events. In March 2011, the Ministry set up the Israeli Climate Change Information Center (ICCIC), which aims to develop the scientific knowledge base and policy documents which will feed into the national adaptation plan. The ICCIC has since submitted three reports – the first, in 2012, reviewed existing knowledge on the issue, and identified and prioritised knowledge gaps. The second, also in 2012, provided policy recommendations and an international marketing programme for ICCIC deliverables, while the third, in 2013, reviewed adaptation to climate change in local authorities.

The key policy recommendations of the ICCIC are to make information on climate change more available to improve economic efficiency; a change in water resources strategy: implementing solutions from least cost to highest cost, with a priority on maximising water supply efficiency, water recycling, water loss prevention and water demand management, with investments in desalination plants seen as a last resort; regulation that stimulates the autonomous adaptation of markets: promoting policies and regulations that support autonomous adaptation actions that would not otherwise be implemented due to lack of public awareness or bureaucratic obstacles. The ICCIC also recommends addressing other vulnerable areas such as energy, agriculture, tourism, transportation, sea-level rise and local government.

Research and development

In 2010, the government authorised a multi-million dollar, 10-year national programme on oil alternatives in transportation to reduce the share of crude oil in Israel's transportation sector and turn Israel into a centre of knowledge on oil substitutes. Two research centres and three research programmes have been

launched, covering research on biofuels, batteries and fuel cells, energy agriculture, and grant and scholarship programmes. An international competition in the field of alternative energy, bearing a prize of USD 1 million, was launched in 2012. Start-up investment encouragement programmes, applied research grants and a pilot-project scheme have been launched in partnership with the Ministry of Energy and Water and the Ministry of Economy (formerly Ministry of Industry, Commerce and Labour).

Israel is a partner in CIRCLE 2 - Climate Impact Research & Response Co-ordination for a Larger Europe (ERA-NET). This research and knowledge-sharing network of institutions co-ordinates European research on climate change impacts, vulnerability and adaptation practices on the national and regional levels. Within this framework, an international conference on climate change and forest fires was convened in Israel in 2012, focused on forest fire prevention and ecological rehabilitation under climate change in the Mediterranean basin.

Israel: Flagship Legislation

Name of law	The First National Greenhouse Gas Mitigation Plan and Government decision 2508 [Executive]
Date of entry into force	28 November 2010
Categories	<ul style="list-style-type: none"> – Energy demand – Transportation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	GHG Mitigation Energy efficiency
Summary of bill	The National Plan for the Reduction of Greenhouse Gas Emissions was approved in November 2010.

The plan's main strategies relate to energy efficiency, green building, and transportation. A key element was a government-sponsored programme of subsidies administered jointly by the Ministry of Environmental Protection and the Investment Centre in the Ministry of Economy, aimed at encouraging investments in energy efficiency and GHG reduction projects and at advancing new Israeli technologies. The Chief Scientist in the Ministry of Economy grants additional assistance (ILS 40 million USD 11.4 million) to approved projects, based on new Israeli technologies (first installation).

Key elements of the National Plan included:

- Reducing residential energy consumption - (responsibility of Ministry of Energy and Water Resources)
- Support for investments in GHG emissions reductions (responsibility of Ministry of Environmental Protection)
- Support for Israeli technologies and green innovation (responsibility of Ministry of Economy)
- Pilot projects for green building and green building teaching and training (responsibility of Ministry of Environmental Protection)
- Pilot project for retrofits ((responsibility of Ministry of Construction and Housing)
- Education and awareness (responsibility of Ministries of Environmental Protection and Transportation)
- Promotion of energy efficiency (responsibility of Ministries of Environmental

- Protection and Economy)
- Setting standards for energy efficiency (responsibility of Ministry of Energy and Water Resources)
 - Transportation (responsibility of Transportation Ministry) – including energy efficient components in imported cars and eco-driving education

The approved budget for the implementation of the plan was ILS 2.2 billion (USD 625 million) until 2020. During 2011-2012 ILS 106 million (USD 30 million) were allocated to 208 projects, with a reduction potential of ~ 450,000 tons of CO₂eq per year and a savings potential of approximately ILS 100 million (USD 28.4 million) per year in electricity and fuel costs. The programme leveraged investments of more than ILS 550 million (USD 156 million) by industries, businesses and municipalities during those first two years.

The inter-ministerial committee was set to begin to examine additional reduction measures for the years 2013-2014, including renewable energies. In July 2013, however, the National Plan for the Reduction of GHG Emissions was frozen for three years by the Ministry of Finance, with the passage of the 2013 budget. This meant the cessation of many of the GHG mitigation programs. Only those that were already funded in previous budgets or that could be funded via other means will continue.

Targets	To reduce 20% of emissions compared to a business as usual scenario by 2020
----------------	---

Israel: Other Relevant Legislation

Name of law	The Planning and Construction Regulations () 1970 [Legislative]
Date of entry into force	1970; amendment from 1 December 2012
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	The regulations mandate the installation of solar water heaters for all residential buildings.
Targets	None specified

Name of law	Energy Sources Regulations - The Energy Sources Regulations (Minimal Energetic Efficiency for Indoor Light Bulb) 2011 [Legislative]
Date of entry into force	8 February 2012
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	The regulations set minimum energy efficiency requirements for light bulbs and ban the import, manufacture for use in Israel, sale or marketing of electric light bulbs that don't meet the requirements.
Targets	None specified

Name of law	Environmental Protection Act (pollutant release and transfer – reporting and registry obligations), 2012 [Legislative]
Date of entry	

into force	1 April 2012
Categories	– Energy demand
Driver for implementation	Energy efficiency, pollution reduction
Summary of bill	<p>This law, modelled on the European Union's PRTR (Pollutant Release and Transfer Register), sets a requirement for industrial plants to report emissions of various pollutants, and to report their annual water and energy consumption, including the method in which the reported figures were calculated.</p> <p>It also mandates the setting up of a central public pollutant registry based on the reported data.</p>
Targets	None specified

Name of law	The Energy Sources Regulations (Maximum Electric Output in Standby Mode for Domestic and Office Electric Appliances), 2011; and The Energy Sources Regulations (Maximum Electric Output for a Television Receiver), 2011 [Legislative]
Date of entry into force	1 January 2012
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	<p>The regulations ban the import, manufacture for use in Israel or sale of appliances, unless approved by an authorised lab that their electrical output in standby mode does not exceed the maximum electrical output stated in the regulations (1-2 Watt, depending on the appliance).</p> <p>The regulations also set forth a maximum electric output for televisions, including full HD ones.</p>
Targets	None specified

Name of law	Clean Air Act, 2008 [Legislative] and the National Plan for reduction of Air Pollution, 2013 [Executive]
Date of entry into force	1 January 2011 (last updated 4 June 2012)
Categories	<ul style="list-style-type: none"> – Energy supply – Institutional/Administrative arrangements
Driver for implementation	Air pollution
Summary of bill	<p>The Clean Air Law provides that a multi-year plan must be established for the reduction of air pollution, including GHG emissions.</p> <p>A national plan for the reduction of air pollution was formulated, and was approved in August 2013. A low budget of ILS 140 million (USD 37.8 billion) for five years has been approved for the plan.</p> <p>The plan includes renewing the vehicle scrappage scheme; increased monitoring of quarries; a pilot project for CNG buses, and encouragement of public transportation usage.</p>
Targets	None specified

Name of law	Energy Resources Regulations (Energy Efficiency and Energy Information of Cooling Appliances), 2004 ; Energy Sources Regulations (Energy Efficiency, Energy Markings And Energy Ratings Of Air Conditioners), 2004; [Legislative]
Date of entry into force	2 January 2005 1 January 2004
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	The regulations set energy efficiency standards for air conditioners, refrigerators and freezers, preventing the manufacturing, sale, import, marketing or exhibition of appliances which fail to meet the standard. Energy efficiency labelling requirements are also set for the appliances.
Targets	None specified

Name of law	Energy Resources Regulations (Energy Efficiency of Electrical Induction Motors) 2004; Energy Resources Regulations (Testing Energy Efficiency of Pumping Installations) 2004; Energy Resources Regulations (Examining the efficient combustion of Oil or Gas Heaters), 2004; Energy Resources Regulations (Energy labeling of electric heating furnaces), 1993 [Legislative]
Date of entry into force	2004
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	The regulations set energy efficiency induction motors, preventing the manufacturing, sale, import, marketing or exhibition of the following, if they fail to meet the standards set in the regulations: <ul style="list-style-type: none"> – Three-phase asynchronous electrical induction motors, – Pumps (installations composed of an electrical motor and water pump with an electrical consumption of 150,000 KWH per year or more); – Boilers or generators for hot water, hot air or thermal oil with an output greater than 580 kilowatt Energy efficiency labelling requirements are set for electric heating furnaces and induction motors.
Targets	None specified

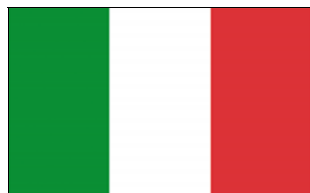
Name of law	Energy Sources Regulations (Monitoring Energy Consumption Efficiency, 1993 [Legislative]
Date of entry into force	1993
Categories	– Energy demand – Institutional/Administrative arrangements
Driver for implementation	Energy efficiency
Summary of bill	This bills mandates the appointment of an energy efficiency monitor in any plant whose annual energy consumption is less than 300 tonne-equivalent fuel oil of other fuels, or any corporation established by law or pursuant to a law unrelated to its energy consumption; the person responsible must be a graduate of an energy commissioners' course at an

	approved institution or have passed a test by the experts' committee that appointed the commissioner.
	The person in charge will be responsible for ensuring speedy repair of faults resulting in loss of energy, to prevent supply of energy to where it is not needed, to take actions to maximise energy efficiency, to guarantee installation of monitoring equipment to train and educate employees etc.
Targets	None specified

Name of law	The Energy Resources Regulations (Performing a Study to Find a Potential to Energy Conservation) 1993 [Legislative]
Date of entry into force	1993
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	The regulations instruct plants whose annual energy consumption is less than 2,000 tonne-equivalent fuel oil of other fuels or electricity, to perform every five years a study to find potential energy conservation measures and to update it annually until a new study is undertaken.
Targets	None specified

Name of law	The Energy Resources Act 1989 [Legislative]
Date of entry into force	31 December 1989; last amendment 14 March 2011
Categories	– Energy demand
Driver for implementation	Energy efficiency
Summary of bill	The Act requires the government to authorise, by June 2011, a national energy efficiency programme, to update it and to report annually on progress on its implementation. The Act sets an incentive to public funded institutions, according to which any savings which were achieved thanks to energy efficiency measures, will be added to the institution budget. The act allows the Minister of Energy and Water and the Minister of Finance to put forth regulations regarding ways to promote energy efficiency in the private and public sectors.
Targets	None specified

4.28 Italy



Fact Box

Greenhouse Gas emissions	
incl. LULUCF	445
excl. LULUCF	501
Change from base year (1990)	-18
Latest reporting year	2010
Importance as an emitter	Top 20
UNFCCC ratification status and date	Date of signature: 5 June 1992 Date of ratification: 15 April 1994 Date of entry into force: 14 July 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 31 May 2002 Date of entry into force: 16 February 2005
2020 pledge	As part of the EU: 20% from 1990 unilaterally; move to 30% as part of a global and comprehensive agreement for the period beyond 2012 and provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities
Flagship legislation	Climate Change Action Plan (2007)

Legislative Process

Italy has a bicameral parliamentary system. The Lower House is the Chamber of Deputies and the Upper House is the Senate. For a text to become law, it must receive the vote of both Houses independently in the same form. A bill is discussed in one of the Houses, amended, and approved or rejected. If approved, it is passed to the other House, which can amend it and approve or reject it.

Laws may be applied directly, or require the government to issue a regulation in order to indicate how they should be enforced, or how citizens should ask for what they are entitled to. Regulations have the advantage that the government can be swifter than the Parliament in updating them according to advances in technology, but they cannot always be used. Some legal matters are reserved to laws, and most regulations have to be authorised by a specific law. A regulation may belong to one of these categories: Presidential Decree, Decree from the President of the Council of Ministers, or Ministerial Decree. The Presidential Decree is the most common and does not usually require prior authorisation by a law.

The Italian Constitution reserves some specific matters to Regions. Moreover, the laws of the Republic may delegate power to the Region to issue norms for their enforcement.

Approach to Climate Change

Soon after Kyoto, the Inter-Ministerial Committee on Economic Planning (CIPE) established the guidelines for the national policies and measures for GHG emissions reduction. It also set the targets for such reduction for the period 2008–2012. These specific provisions on GHG emissions were later confirmed by several pieces of legislation. To partly implement these measures, industry organisations, environmental NGOs and other groups in Italy concluded the Voluntary Climate Pact with the government scheduled to begin in 1999, under which they agree to curb CO₂ emissions. Furthermore, the financial law, approved in 2000, established a fund for the reduction of atmospheric emissions and the promotion of energy efficiency and sustainable energy sources. The fund is financed from a portion equal to 3% of the receipts accruing from the carbon tax. However, the carbon tax law ended in 2002 and a 2004 law cancelled the provision entirely for economic reasons.

In 2002, the Environment Ministry released the government's strategy to cut national GHG emissions. The plan relies on the Protocol's three flexible mechanisms of emissions trading and joint projects with other countries to deliver over half of the required emissions cuts. Several plans, including a reforestation plan, are the basis of this strategy. For the most part, they have yet to be implemented. In 2007, the Italian parliament's environment committee set out the Climate Change Action Plan to help Italy comply with its GHG reduction

targets. The plan was later endorsed by the Lower House, but has yet to be taken up by the government as national policy.

As a member of the European Union, Italy implemented the EU Emissions Trading Scheme in 2006. It issued two National Allocation Plans, the first one running from 2005 to 2007 (agreed on by the Italian Council of Ministers in 2004), and the second one running from 2008 to 2012 (finalised in early March 2008).

Energy efficiency

A ministerial decree in 2000 and subsequent amendments establish national targets for increasing energy efficiency in end-uses of energy up to 2012 for electricity and gas distributors. To reach these targets, decrees passed in 2004 require Italian electricity and gas suppliers to help their customers save energy and established the 2005 White Certificates trading scheme. All Italian electricity and gas distributors with at least 100,000 end customers at the close of 2001 can – as of May 2006 – trade white certificates of certified energy savings. The white certificates represent marketable documents issued by the Energy Market Administrator testifying the energy saved by the energy distribution companies – as well as by their controlled partnerships – and by the Energy Service Companies (ESCO). In 2009 a new decree was issued confirming the scheme's extension until 2012 and allowing the programme to automatically renew for three additional years in 2012 unless steps are taken by parliament. The Ministry of Environment said in January 2009 that the programme had prevented approximately 2 million tonnes of CO₂ emissions.

These measures are supplemented by other pieces of legislation addressing energy efficiency. The Reorganisation of Energy Sector Regulation (2004) devolved power to Italian regions to promote energy efficiency and renewable energy sources while maintaining the national scale of such promotion. Furthermore, the Budget Law 2007 provides for various fiscal incentives and financial measures to improve energy efficiency and to abate emissions. Among them is the establishment of the "Revolving fund for Kyoto". It provides EUR200 million (USD272 million) for financing measures to promote GHG emission reductions for the period 2010–2012 and to achieve the targets. A 2009 Law aimed at tackling the financial crisis includes three articles designed to accelerate the deployment of more advanced, efficient and energy-saving technologies. In 2010, a special fund to support the implementation of energy efficiency targets was set up.

Italian legislation also includes the transposition of European directives such as the Implementation of EU Energy Performance of Buildings Directive (EPBD). In accordance with EU rules, Italy submitted its National Energy Efficiency Action Plan in 2007. The proposed measures aim to achieve an energy saving target of 9.6% by 2016. The plan considers measures already undertaken under the budgetary law of 2007 and other measures, such as application of energy efficiency standards in buildings and the promotion of high efficiency CHP plants. These measures are supplemented by regional law promoting energy efficiency.

Energy Supply

Italy adopted a Green Certificates System (several decrees from 1999 to 2004) to increase its share of renewable energy in total energy supply. This cap-and-trade system requires Italian energy producers and importers (producing or importing more than 100 GWh/year from conventional sources) to ensure that a certain quota of electricity fed into the grid comes from renewable energy sources. The quota has been progressively strengthened (2002 and 2008). Producers and importers can buy green certificates through bilateral contracts or by participating in the green certificates platform (managed by GME, the energy markets operator). Suppliers can fulfil the obligation by buying green certificates from eligible new renewable energy plants, by building new renewable energy plants, or by importing electricity from new renewable energy plants from countries with similar instruments on the basis of reciprocity. The 2008 Budget Law raised the incentive period to 15 years for renewable plants that came into operation before 31 December 2007.

This mechanism is supplemented by the legislation that sets out a national reference framework for the promotion of renewable energy sources (RES) and particularly for their use in micro-generation plants. Additionally, several national and regional incentives exist to promote solar and wind energy supply. At the national level, it includes the New Feed-In Tariff (FiT) for photovoltaic systems. At the regional level, it includes, for instance, the Lazio Solar Thermal Water Heating programme.

Policies on biofuels build on various regional incentives as well as a CIPE (Inter-Ministerial Committee for Economic Planning) resolution of 2000, known as the Biomass Fuels National Plan (PROBIO) that aims to promote the deployment of biomass to replace fossil fuels through incentive systems. In 2005, a national indicative target was established of 2.5% of substitution of traditional fuels with biofuels by 31 December 2010. From 1 January 2007 the quota for that date has been increased to 5.75%, in line with European rules.

A number of incentives exist at the national and regional levels to promote cleaner transportation and vehicles. An Environment Ministry decree in 2000 created incentives to encourage car-sharing. In 2004, the Ministry of Environment set up a programme that will reimburse Italian city governments up to 65% of the cost of adding environmentally friendly vehicles to each city's fleet.

Italy: Flagship Legislation

Name of law	Climate Change Action Plan (Executive)	
Date of entry into force	2007	
Categories	-	Carbon Pricing
	-	Energy Supply
	-	Energy Demand

Driver for implementation	Climate change
Summary of bill	In June 2007, the Italian Parliament's environment committee set out a comprehensive action plan aimed at helping Italy comply with GHG reduction targets under the Kyoto Protocol. Energy supply: among the proposals was a ban on the sale of household appliances ranked below A on the EU energy efficiency labelling scale. The industrial sector would be encouraged to switch to low energy devices and install more efficient engines and motors. Small and medium sized firms would be targeted. Energy saving is encouraged through various incentives aimed at industrial and domestic consumers. Under a new system of energy tariffs, heavy users and daytime users pay more per unit of energy.
Targets	None specified

Italy: Other Relevant Legislation

Name of law	2010 Finance Law (Legislative)
Date of entry into force	2010
Categories	<ul style="list-style-type: none"> - Energy Supply - Energy Demand
Driver for implementation	Energy supply and consumption, biofuels
Summary of bill	The Finance law 2010 provides incentives for energy efficient buildings and the use of biofuel. Fossil fuels are subject to specific excise duties on the basis of weight or volume units. Biofuels are incentivised through a reduction of this excise duty. In particular, the Budget Law 2010 defines a maximum of 18,000 tonnes of biofuels that can benefit from this reduction. Italian legislation also stipulates that fossil fuel producers should annually supply a minimum quota of biofuels based on the total amount of fuel supplied during the previous year.
Targets	None specified

Name of law	Special fund to support the implementation of energy efficiency targets (Decree Law of 25 March 2010, no. 40) (Legislative)
Date of entry into force	2010
Categories	<ul style="list-style-type: none"> - Energy Demand - Institutional/Administrative arrangements
Driver for implementation	Energy efficiency

Summary of bill	This decree established a special fund for the implementation of objectives related to energy efficiency, environmental protection and workplace safety. The Decree specifies the activities towards which funding is dedicated.
	The fund provides incentives for the following: High efficiency appliances; replacing motorcycles; purchase of new energy efficient buildings; purchase and installation of inverters; high efficiency motors; uninterruptible power sources; purchase of newer and more efficient farm machinery and machinery for construction and boats.
Targets	None specified

Name of law	Cleaner vehicle purchase incentives (Decree Law No. 5 of 2009) (Executive)_
Date of entry into force	2009
Categories	– Transportation
Driver for implementation	Transportation
Summary of bill	In February 2009, as part of measures aimed at supporting industrial sectors in crisis, Italy's Council of Ministers launched a temporary incentive scheme for consumers to replace their old vehicles with new ones meeting certain environmental criteria.
	Energy – demand-side policies: the scheme applies to cars, light commercial vehicles, as well as motorcycles and scooters. The incentives are provided in the form of a discount obtained by consumers directly from the dealers, who in turn receive this as a tax credit.
	A bonus of EUR 1,500 (USD 2,039) is provided when a car older than nine years meeting Euro 0, 1 or 2 standards is exchanged for a new vehicle meeting Euro 4 or 5 standards and that emits a maximum of 130g CO ₂ /km for diesel cars or 140g CO ₂ /km for others. The exchanged vehicle must have been registered by December 1999.
	This can be combined with a purchase incentive of EUR 1,500 (USD 2,039) should the new vehicle run on electricity, hydrogen or methane. Similar bonuses are provided for lightweight commercial vehicles, motorcycles and scooters.
Targets	None specified

Name of law	Law concerning anti-crisis measures: energy provisions (Law no. 102 of 3 August 2009) (Legislative)
Date of entry into force	2009
Categories	– Energy Demand
Driver for implementation	Energy consumption
Summary of bill	The Law concerning anti-crisis measures is designed to accelerate the deployment of more advanced, efficient and energy-saving technologies.
	While the law does not specify energy performance thresholds for the equipment, the measure aims to encourage the replacement of existing equipment with newer, more efficient technology.
	The law also provides that depreciation rates for capital goods should vary according to energy use, in order to take account of the evolving impact on production processes of more efficient equipment.

Targets	None specified
Name of law	Finance Law 2008 (Law No. 244 24/12/2007 and Law No. 222 29/11/2007); M.D. 18.12.08; Law 99/09) (Legislative)
Date of entry into force	2008
Categories	– Energy Supply
Driver for implementation	Renewable energy
Summary of bill	<p>This Law confirmed the 2007 Budget Law measures, and extended the deadline of borne expenditures from December 2007 to 2010.</p> <p>Putting a price on carbon: the revisions concerning green certificates are twofold. First, the incentive period is raised to 15 years. Second, the number of certificates issued varies depending on the type of renewable source, according to a coefficient of multiplicative energy produced.</p> <p>Energy – demand-side policies: the 2008 Budget Law includes new measures relating to the production of electricity from renewable energy sources. In particular, it allows small renewable plants (<1 MW and < 200 kW for wind plants) commissioned after 1 January 2008 to choose between green certificates and a feed-in tariff mechanism (called “all inclusive tariff”) for an incentive period of 15 years. Both green certificates and all-inclusive tariffs are differentiated by renewable energy source.</p>
Targets	None specified

Name of law	New Feed-In premium for photovoltaic systems (Ministerial Decree 19/02/2007) (Executive)
Date of entry into force	2007
Categories	– Energy Supply
Driver for implementation	Renewable energy
Summary of bill	<p>The decree introduced a new version of the feed-in premium scheme applied to photovoltaic plants connected to the grid by individuals, registered companies, condominiums and public bodies, with a nominal capacity higher than 1 kWp.</p> <p>The decree provided a set of tariffs, valid for a period of 20 years, with a bonus in cases of a high degree of photovoltaic integration in the buildings.</p>
Targets	None specified

Name of law	2007 Finance Law (Legislative)
Date of entry into force	2007
Categories	– Energy Supply
Driver for implementation	Energy efficiency

Summary of bill	<p>This law provides for various fiscal incentives and financial measures to improve energy efficiency and to abate emissions.</p> <p>It also established an obligation for all traditional fuel producers to supply, each year, a minimum quota of biofuels determined as a percentage of the previous year's total supply volume. The initial quota was 1% for 2007; subsequently it was increased to 2% for 2008 and 3% for 2009. Non-compliance with the quota is subject to penalties. The Ministry of Agriculture and Forestry is responsible for verifying the fulfilment of this obligation.</p> <p>The Law introduced tax allowances for purchase or installation of high-efficiency electric motors and for high-efficiency fridges and freezers. It also promotes the reduction of duty for biofuels used for transportation and fiscal incentives for enhancing energy efficiency and use of renewable energy in buildings.</p> <p>The Law also established the Revolving fund for Kyoto: it provides EUR 200 million (USD 272 million) for financing measures to promote GHG emission reductions for 2010–2012 and to achieve the targets. It finances, for instance, a high-performance micro-cogeneration plant.</p>
------------------------	---

Targets	None specified
----------------	----------------

Name of law	White Certificate Trading for End-Use Energy Efficiency (Legislative)
Date of entry into force	2005
Categories	<ul style="list-style-type: none"> - Energy Demand - Institutional/Administrative arrangements
Driver for implementation	Energy consumption
Summary of bill	<p>Two Decrees voted in 2004 require Italian electricity and gas suppliers to help their customers save energy and engendered the 2005 White Certificates trading scheme.</p> <p>The two decrees repealed two previous decrees of 2001 about the identification of quantitative national targets for energy savings and development of renewable sources.</p> <p>Energy – demand-side policies: In compliance with specific energy conservation targets, all Italian electricity and gas distributors with at least 100,000 end customers at the close of 2001 can – as of May 2006 – trade white certificates of certified energy savings.</p> <p>The white certificates represent marketable documents issued by the Energy Market Administrator testifying the energy saved by the energy distribution companies – as well as by their controlled partnerships – and by the Energy Service Companies (ESCO). The white certificates can be exchanged by means of bilateral contracts, or in the frame of a specific market ruled by GME.</p> <p>Energy service providers, subsidiaries of electricity and gas distributors and distributors themselves will all sell energy efficiency certificates (white certificates) each representing primary energy savings of one tonne of oil equivalent (toe).</p> <p>Distribution companies must meet specified energy savings targets, either by implementing energy conservation projects that benefit their customers, which will earn them white certificates, or through the purchase of white certificates produced by energy conservation projects undertaken by others.</p>
Targets	None specified

Name of law	Biofuel (decree no. 128/2005) (Legislative)
Date of entry into force	2005
Categories	– Energy Supply
Driver for implementation	Biofuels
Summary of bill	This Decree established a national indicative target of 2.5% of substitution of traditional fuels with biofuels by 31 December 2010. From 1 January 2007 the quota for that date has been increased to 5.75%.
Targets	None specified

Name of law	Reorganisation of Energy Sector Regulation (Law 23 August 2004, no. 239) (Legislative)
Date of entry into force	2004
Categories	– Energy Demand
Driver for implementation	Energy efficiency
Summary of bill	In 2004, the Italian government devolved power to Italian regions to promote energy efficiency and renewable energy sources while maintaining the national scale of such promotion. Energy – demand-side policies: several measures served to reorganise the energy markets and encourage competition, including the expansion of green certificate trading from renewable and CHP projects to include hydrogen. The law also reduces the size of green certificates from the initial value of 100 MWh to 50 MWh.
Targets	None specified

Name of law	Introduction of the Green Certificates System (Legislative decree 79/99 of 16 March 1999 entitled; Ministry of Productive Activities decree 18.03.02; Followed by Ministry of Productive Activities decree 14.03.04, implementing the rules for the green certificates) (Legislative and Executive)
Date of entry into force	2002
Categories	– Energy Supply – Institutional/Administrative arrangements
Driver for implementation	Renewable energy
Summary of bill	This legislation completes the introduction of a cap-and-trade mechanism to promote renewable energy sources. It introduces the green certificates that producers and importers can buy. Energy – demand-side policies: the 1999 Electricity Liberalisation Act and Decrees from Italy's Ministries of Trade and Industry and of Environment introduced a cap-and-trade mechanism to promote renewable energy sources. It required Italian energy producers and importers (producing or importing more than 100 GWh/year from conventional sources) to ensure that a certain quota of electricity fed into the grid comes from renewable energy sources. A 2% quota obligation was set, strengthened in 2003 and again in 2008. Producers and importers can comply with the obligation by means of green certificates. They can buy those certificates through bilateral contracts or by participating in the green certificates

platform (managed by GME, the energy markets operator).

Suppliers can fulfil the obligation by buying green certificates from eligible new renewable energy plants, by building new renewable energy plants or by importing electricity from new renewable energy plants from countries with similar instruments on the basis of reciprocity. Renewable energy producers in operation before 31 December 2007 can obtain green certificates for 12 years. Subsequent regulatory interventions have increased the incentive period to 15 years.

Targets A CO₂ reduction of about 4Mt – 6Mt by 2006

Name of law Strategy to Cut National Greenhouse Gas Emissions (Kyoto implementation) (Executive)

Date of entry into force

2002

Categories

- Carbon Pricing
- Institutional/Administrative arrangements

Driver for implementation

Climate change

Summary of bill The Environment Ministry released the government's strategy to cut national GHG emissions by 6.5% on 1990 levels by 2008–2012, as agreed under the Kyoto Protocol.

Putting a price on carbon: the plan relies on the Protocol's three flexible mechanisms of emissions trading and joint projects with other countries to deliver over half of the required emissions cuts.

Emission reduction targets: the estimated 93 million tonnes of CO₂ cuts are to be achieved through existing – but yet to be implemented – plans (reducing emissions by 52 million tonnes) plus reforestation (minus 10.2 million tonnes). The remaining 30m tonnes are to be cut through measures yet to be detailed.

Targets 6.5% (93MtCO₂e) reduction from 1990 levels by 2008–2012.

Name of law Fund for GHG emissions reduction and energy efficiency (Finance Law 2001 Art. 10) (Legislative)

Date of entry into force

2001

Categories

- Energy Supply
- REDD+ and LULUCF
- Institutional/Administrative arrangements

Driver for implementation

Climate change, energy efficiency

Summary of bill The financial law, approved at the end of the year 2000, establishes a fund for the reduction of atmospheric emissions and the promotion of energy efficiency and sustainable energy sources. The fund is financed from a portion equal to 3% of the receipts accruing from Italy's carbon tax.

The fund will finance up to 80% of the cost of programmes for installation of solar collectors (mostly PV), particularly in southern Italy.

The fund will also finance reforestation programmes to increase absorption of CO₂.

Targets None specified

Name of law	Utility targets for increasing energy efficiency/introduction of white certificates (Ministerial Decree, 24/04/2001) (Executive)
Date of entry into force	2001, amended 2007
Categories	<ul style="list-style-type: none"> - Energy Demand - Institutional/Administrative arrangements
Driver for implementation	Energy efficiency
Summary of bill	<p>Ministerial decrees of 2000 and subsequent amendments establish national targets for increasing energy efficiency in end-uses of energy up to 2012 for electricity and gas distributors. Italian Distribution System Operators (DSO) of gas and electricity with more than 100,000 customers were obliged to achieve energy savings not lower than the target defined within the scheme.</p> <p>Companies that carry out energy efficiency improvement projects related to district heating, including use of renewable energy sources and technologies, may obtain white certificates, tradable on a specific environmental exchange managed by GME.</p> <p>The 2007 amendment extended the system to 2012 and extended the scope of the programme to companies with more than 50,000 customers.</p>
Targets	Minimum savings targets established up to 2012.
Name of law	National Plan for Biofuels and Biomass (CIPE resolutions: 15/02/2000 [PROBIO]; 24/06/1998 [PNERB]; 18/06/1999 [PNVBAF]) (Executive)
Date of entry into force	2000
Categories	<ul style="list-style-type: none"> - Energy Supply - Institutional/Administrative arrangements
Driver for implementation	Biofuel
Summary of bill	<p>The Biomass Fuels National Plan (PROBIO) aims to promote the deployment of biomass to replace fossil fuels through incentive systems. This is projected to affect mainly the agricultural, transportation and energy sectors.</p> <p>It represents the first operative tool of the two CIPE resolutions "National Programme for the Valorisation of Agricultural and Forestry Biomass (PNVBAF)" and the "National Programme for the Energy Valorisation of Biomass (PNERB)", which set goals for the reduction of GHGs (3–4% by 2010/12), the production of renewable energy from agro-forestry products and by-products, the development of eco-compatible agricultural methods and increased use of energy crops.</p>
Targets	None specified
Name of law	Provisions on GHG emissions reduction (Kyoto targets) (CIPE resolutions: 137/98; 126/99; 123/02; Budget Law 2007; Ministerial decree 25.11.2008) (Executive)
Date of entry into force	1998
Categories	<ul style="list-style-type: none"> - Energy Demand - Institutional/Administrative arrangements
Driver for implementation	Climate change

Summary of bill The resolution establishes the guidelines for national policies and measures for GHG emissions reduction. It also sets the targets of such reduction for 2008–2012.

A further CIPE deliberation known as the “Italian white paper on renewable energy” identifies, for each renewable source, the targets that have to be achieved in order to realise the planned reduction and the relative strategies and instruments needed. In 2002 the targets were revised, setting new reduction targets of 6.5% (from 1990 levels) for the period of 2008–2012.

Targets 6.5% (93MtCO₂e) reduction from 1990 levels by 2008–2012

4.29 Jamaica



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	116
excl. LULUCF	116
Change from base year (1990)	NA
Latest reporting year	2011
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 6 January 1995 Date of entry into force: 6 April 1995
Kyoto Protocol ratification status and date	Date of ratification: 28 June 1999 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship /National Plan	Vision 2030 Jamaica – National Development Plan

Legislative Process

Jamaica is a constitutional monarchy and a parliamentary democracy, which has remained stable since independence in 1962. It is a member of the Commonwealth and therefore has a Governor General as the representative of the British Monarch. The role is largely ceremonial, and is appointed on the recommendation of the Jamaican Prime Minister.

Jamaica's parliament is bicameral, featuring a House of Representatives and a Senate. Members of the House of Representatives are directly elected, while the 21 members of the Senate are appointed by the Governor-General; of these, 13 are appointed on the advice of the Prime Minister; and eight on the advice of the Leader of the Opposition. Under the 1962 constitution, Parliament is given power to make laws. The Senate largely serves as a review chamber for legislation developed by the cabinet. The Cabinet is the main instrument of government policy, and consists of the Prime Minister and at least 13 other members of the House.

Approach to Climate Change

As a tropical island state, Jamaica is vulnerable to a series of risks that are predicted to worsen due to climate change. It will need to adapt to changes in sea level and an increase in the intensity of tropical storms and hurricanes. Accordingly, Jamaica has been taking action through a combination of national and regional initiatives. At the national level, it has implemented several projects to develop capacity for climate change adaptation, mitigation and disaster risk reduction. This includes the Project on Community Based Adaptation to Climate Change, a pilot project funded by the Global Environment Facility; the Pilot Project for Climate Resilience (PPCR) funded by the Carbon Investment Fund (Inter-American Development Bank and the World Bank); and several other projects by the USAID, DFID, the German Government and others. The EU has funded Jamaica's Climate Change Adaptation and Disaster Risk Reduction Project, which involves rehabilitation of watersheds through reforestation; improving coastal ecosystems; maintaining forest resources; and improving climate change awareness.

In addition there has also been a great deal of work done in Jamaica with and by several Non-Governmental Organisations, which have actively engaged with the donors mentioned above. The Global Environment Facility Small Grants Programme is focussing here on two priority areas of Sustainable Livelihoods and Conservation Areas and Species. The Nature Conservancy helped to create the Blue and John Crow Mountain National Park for which it brokered a Debt for Nature Swap. This converted USD16 million debt into a USD1.5 million Forest Conservation Fund. The organisation CaribSave has also been active here, for instance producing a climate change risk profile in their risk atlas.

There have also been a series of regional initiatives addressing climate change, with which Jamaica has actively engaged. The Caribbean Community (CARICOM) has been particularly important. Jamaica participated in the 2001 Caribbean

Planning for Adaptation on Climate Change Project (CPACCP), which was established to improve capacity building for adaptation across the region. This was followed by The Adaptation to Climate Change in the Caribbean (ACCC) Project, which ran between 2001 and 2004. Its aims were to continue activities developed during the CPACCP, in addition to the development of further adaptation activities. In turn this was followed by the Mainstreaming Adaptation to Climate (MACC) Project between 2004 and 2007, designed to mainstream adaptation activities into CARICOM states' national and sectoral planning. One outcome is that Jamaica's Development Orders are undergoing revision and will in future include consideration of climate change in certain high-risk coastal zone areas. At least six development orders have already been reviewed, updated and published in the Jamaica Gazette.

Finally, but probably most significantly, Jamaica's National Development Plan, "Vision 2030 Jamaica", offers a comprehensive planning framework in which the economic, social, environmental and governance aspects of national development are integrated. The Plan aims to put Jamaica in a position to achieve developed country status by 2030 and in the process, make it: "... the place of choice to live, work, raise families, and do business". The Plan presents adaptation to climate change as one of 15 national outcomes. It states that climate change is a cross-cutting issue that should be integrated into all future national economic and social policies, legislation and other plans. Under this national outcome, two national strategies should be created: 1. Develop measures to adapt to climate change, and 2. Contribute to the effort to reduce the global rate of climate change.

In terms of institutional capacity, the Climate Change Advisory Committee was appointed in 2012. In September 2013, the Ministry established the Climate Change Division, whose role is to mainstream climate change activities in the Jamaican government. Nonetheless, the Air Quality Regulations 2002 appears to be the only legislation that addresses climate change, since it regulates GHG emissions. Otherwise, the response is integrated into broader policy development, supported by some historic environmental regulations that could incidentally support adaptation and mitigation actions. This could change in the immediate future however, since The National Climate Change Policy Framework and Action Plan has now been prepared as a Green Paper for consultation. This was developed by the Ministry of Water, Land, Environment and Climate Change, with support from the government, the EU, UNEP's Climate Change Adaptation and Disaster Risk Reduction Project (CCADRRP) in collaboration with USAID.

Energy supply

In May 2012, The Ministry of Science, Technology, Energy & Mining (STEM) launched the Energy Efficiency & Conservation Programme. This is intended to make advancements in energy efficiency, mainly within the public sector by strengthening the Ministry's institutional capacities to implement energy efficiency and conservation, in addition to designing and implementing cost-saving energy efficiency and conservation measures in the public sector. The programme is intended to increase awareness among both public and private

sector stakeholders of energy efficiency issues, in conjunction with demand-side energy management.

Jamaica's National Energy Policy 2009 – 2030 was promulgated in 2010.

The Policy is designed to achieve by 2030 “a modern, efficient, diversified and environmentally sustainable energy sector providing affordable and accessible energy supplies with long-term energy security and supported by informed public behaviour on energy issues and an appropriate policy, regulatory and institutional framework”.

This policy relates directly to climate change through concerns over energy supply and demand. In particular, the recognition that as much as 87% of Jamaica's foreign exchange earnings are spent on fossil fuel imports has led to a drive to diversify the energy mix and look toward sustainable energy sources. Currently, Jamaica has 11% renewables in its energy mix. Activities set out in this policy range from advocating the incorporation of energy conservation measures into Jamaicans' behaviour to modernising the nation's energy infrastructure and increasing the amount of renewables in the energy mix to 20% by 2030.

Specific strategies related to climate change mitigation and adaptation mentioned within this policy include carbon trading and auctions; and energy conservation and efficiency through technology transfer (including technologies relating to the development of renewable energy sources). Finally the policy mandates the proportion of renewable sources required in Jamaica's energy mix. As a potential policy linkage, the Forest Policy of 2001 also states that sustainable wood-based energy programmes will be fostered, facilitated and encouraged to provide more biomass energy.

The Air Quality Regulations 2002, which impose fees for pollutants and GHG emissions from industrial sources, provide exemptions for emissions from the combustion of renewable energy sources, such as bagasse and gas from landfill. Finally, Vision 2030 promotes energy diversification in the transportation sector to include renewable fuels such as ethanol for cars.

REDD+ and LULUCF

Jamaica was once covered by forest but only small fragments of the original ecosystem remain relatively undisturbed, covering around 8% of the land area. However, 30% of Jamaica is still classified as forest of varying types. In the mountainous regions, forests provide critical ecosystem services such as watershed protection, most noticeably against accelerated rates of erosion and the maintenance of fresh water quality.

The Forest Act of 1996 allows for the reforestation and afforestation of degraded lands, an activity with funding potential under the mitigation strategy REDD+. The Forestry Department in the Ministry of Lands, Water, Environment and Climate Change implements an annual reforestation programme on state lands. Additional reforestation activities include the Private Forestry Programme and the annual National Tree Planting Day, which encourages social participation and raises awareness.

The Forest Regulations (2001) state that “the Minister may establish a Forestry Management and Conservation Fund which shall be used exclusively in support of the following activities on both public and privately owned lands: Reforestation, Carbon Conservation projects” among others. It also states that “the fund may be capitalised from local and international sources by a combination of (1) carbon credits, 2) bilateral and multilateral funds 3) debt reduction agreements”. There is no explicit reference to climate change in this document. The Regulation pre-dates the development of REDD+ negotiations.

Other policies and plans that could potentially support climate change mitigation and adaptation in Jamaica include the National Forest Management and Conservation Plan; the National Land Policy; the Watersheds Policy; the National Biodiversity Strategy and Action Plan; and the National Hazard Mitigation Policy. However, probably the most influential forthcoming plan will be the National Forest Policy 2012, draft versions of which refer to essential climate resilience and adaptation functions of forests, in addition to vital ecosystem services. The Policy also refers to innovative financing mechanisms to achieve these goals, such as the issuance of reforestation bonds.

Adaptation

Key adaptation activities in Jamaica include the Project on Community Based Adaptation to Climate Change; and the Pilot Project for Climate Resilience (PPCR). However additional impetus and finance has come from The Adaptation Fund. This was established to finance concrete adaptation projects and programmes in developing countries that are parties to the Kyoto Protocol and are particularly vulnerable to the adverse effects of climate change and has been important to Jamaica: it was the third country and the first small island developing state to have its National Implementing Entity (the Planning Institute of Jamaica) approved under the Adaptation Fund. The project “Enhancing the Resilience of the Agriculture Sector and Coastal Areas to Protect Livelihoods and Improve Food Security” is now under way.

Another key programme is the Strategic Programme for Climate Resilience (SPCR), under the Pilot Programme for Climate Resilience (PPCR). The objective of this pilot is to assist in climate-proofing the country’s development. Under the PPCR, the 2012 State of the Jamaican Climate report and a Summary for Policy Makers were prepared by the Climate Studies Group Mona, University of the West Indies for the Planning Institute of Jamaica. The documents were tabled in Parliament in June 2013 by the Minister of Water, Land, Environment and Climate Change.

Jamaica: Flagship Legislation

Name of Law	Vision 2030 Jamaica [Executive]
Date of approval by Parliament	May 2009
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - Adaptation - Research and development - Institutional/Administrative arrangements
Driver for implementation	Sustainable development
Summary of bill	<p>Vision 2030 offers a comprehensive planning framework in which the economic, social, environmental and governance aspects of national development are integrated. The Plan aims to put Jamaica in a position to achieve developed country status by 2030 and in the process, make it: "... the place of choice to live, work, raise families, and do business".</p> <p>This is Jamaica's first long-term national development plan and covers a 21-year period. It provides a framework to ensure that the management of natural hazards, which are predicted to increase in frequency and severity under climate change, is integrated into Jamaica's development and that hazard considerations are systematically incorporated into development policy.</p> <p>Vision 2030 Jamaica has four national goals, aligned to 15 National Outcomes. Following from the national outcomes are 82 National Strategies, with sector strategies and actions. Climate change is positioned under the goal of Jamaica having a healthy natural environment. Another goal is "Hazard Risk Reduction and adaptation to climate change". There are four specific National Strategies here:</p> <ul style="list-style-type: none"> Improve resilience to all forms of hazards Develop measures to adapt to climate change Contribute to the effort to reduce the global rate of climate change Improve emergency response capability <p>There is also a sector plan on Climate Change, whose National Strategies include diversification of the energy supply and the promotion of energy efficiency and conservation. The Vision sees this as a "win-win" opportunity, reducing spending on imported oil, pollution and pollution-related illness. Finally, reforestation efforts are seen as a means to mitigate climate change and improve watersheds and reduce landslides and erosion.</p>
Targets	None Specified

Jamaica: Other relevant legislation

Name of Law	Ministry of Energy and Mining long-term National Energy Policy 2009–2030 [Executive]
Date of entry into force	Promulgated 2010
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand
Driver for implementation	Energy security and efficiency
Summary of bill	Developed in parallel with the Vision 2030 Jamaica document, the overarching goal of the National Energy Policy is to develop: "a modern, efficient, diversified and environmentally

sustainable energy sector providing affordable and accessible energy supplies with long-term energy security and supported by informed public behaviour on energy issues and an appropriate policy, regulatory and institutional framework”.

The Strategic Framework underpinning the policy addresses both the supply and demand energy issues Jamaica faces. It prioritises seven key areas:

- Security of energy supply through diversification of fuels as well as development of renewable energy sources
- Modernising the country’s energy infrastructure
- Development of renewable energy sources
- Conservation and efficiency in energy use
- Development of a comprehensive governance/regulatory framework for the energy sector
- Enabling government ministries and agencies to be models/best practice for the rest of society in terms of energy management
- Eco-efficiency in industries

Finding environmentally sustainable energy solutions is central to the document. It seeks to facilitate cultural, institutional and technological change in a way that supports “aggressive” advances in energy efficiency and conservation, minimises greenhouse emissions and ultimately provides green growth. These energy efficiency and conservation goals are seen as “no regrets” mitigation actions which can have positive impacts on society and the economy, principally by reducing costs and dependency on fossil fuel imports.

Among stated goals of the policy is that Jamaica realises its energy resource potential through the development of renewable energy sources and enhances its international competitiveness and energy security while reducing its carbon footprint.

Five sub-policies exist to support the National Energy Policy, namely:

- A Carbon Emissions Trading Policy developed to address Jamaica’s participation in the Clean Development Mechanism
- National Renewable Energy Policy 2010–2030
- National Energy from Waste Policy 2010–2030
- Energy Conservation and Efficiency Policy
- Biofuels Policy

Targets	<p>Reduce the percentage of petroleum in the country’s energy supply mix from the current 95% (does not state to what level).</p> <p>Increase in the percentage of renewables in the energy mix with proposed targets of 11% by 2012, 12.5% by 2015 and 20% by 2030.</p> <p>The Policy document itself contains a section “Proposed Energy Sector Indicators and Targets” on electricity supply, efficiency targets etc. However, the section does not provide the actual indicators and targets.</p>
----------------	---

Name of law	The Natural Resources Conservation Authority (Air Quality) Regulations [Legislative]
Date of entry into force	2002
Categories	<ul style="list-style-type: none"> – Energy supply – Institutional/Administrative Arrangements.
Driver for implementation	Regulating pollution
Summary of bill	Regulates the emissions of particulates and substances deleterious to human health. This includes the licensing of premises and plants which produce such polluting substance; fees for discharge; and inspection.

The Natural Resources Conservation Authority Act enabled the implementation of the Air Quality Regulations and these regulations legislate for the licensing, monitoring, and collection of fees for emissions. These emissions specifically include the term GHGs, and

name these. The regulations seem to refer only to industrial sources, specifying facilities and stack emissions. The implication of these regulations is that industrial emissions will be licensed, monitored and have fees levied against them.

Every owner of a major facility must apply for an air pollutant discharge licence and licensees must submit emissions reports for each calendar year. This report should contain estimates of the emissions for the year, based on the following details:

- Continuous emission monitoring data
- Calculation of SO₂ emissions based on fuel use and sulphur content data (combustion processes in which exhaust gases do not come in contact with products);
- Most recent and representative stack monitoring measurements conducted in the previous five years and activity data for the year for which emissions are estimated;
- AP42 emission factor or equivalent methods and activity data for the year;
- AP42 emission factor or equivalent methods and plant capacity data;
- Mass balance (including fuel use data) based on the two previous years or the most recent representative year;
- Other approved methods supported by calculation and documentation,

Further, the Regulations impose Discharge Fees on Licensees. Crucially, these fees are waived for emissions derived from the burning of renewable fuels, such as landfill gas and agricultural waste.

Where the regulations are not adhered to, sanctions may be applied to the licence holder. The management Authority (individual or body authorised under the regulations) may then:

- Issue a control order;
- Impose administrative penalties;
- Suspend or revoke any licence;
- Refuse an application for renewal of any licence;
- Apply to the Supreme Court for an injunction to prohibit the operation of the facility or any source at the facility.

The regulations also mandate the development of a National Emissions Inventory to track air quality, which should be made available to the public and reported to the House of Representatives at least once every three years.

Targets	None specified
----------------	----------------

Name of law	The Forest Act [Legislative]
Date of entry into force	1996; Regulations developed in 2001
Categories	– REDD+ and LULUCF
Driver for implementation	Management of Jamaica's remaining forest resources
Summary of bill	This is the primary legislation governing the management of forests in Jamaica. This law mandates the Forestry Department as the lead agency responsible for forests on crown land. The law mandates that the Department establish the rules on directing and controlling the exploitation of forest resources, promote reforestation, conduct research, establish public education, and develop recreational activities in forests.
Targets	None specified

4.30 Japan



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	1232
excl. LULUCF	1258
Change from base year (1990)	8.5
Latest reporting year	2011
Importance as an emitter	Top 5
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 28 May 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 28 April 1998 Date of ratification: 4 June 2002 Date of entry into force: 16 February 2005
2020 pledge	Reduction of 3.8% of emissions compared to 2005 – in effect 3.1% increase in emissions from 1990. ¹¹
Flagship legislation	Law Concerning the Promotion of the Measures to Cope with Global Warming

¹¹ The original pledge targeted a 25% reduction in emissions compared to 1990.

Legislative Process

The National Diet of Japan is the sole law-making organ of the State based on the post-war Constitution. The Diet comprises two houses, the House of Representatives (the Lower House, with 480 members) and the House of Councillors (the Upper House, with 242 members). Japan is a parliamentary cabinet system, and more than half of cabinet members are selected from the Parliament by the prime minister.

A bill can be suggested by a Diet member (from either house) or by the cabinet. It is passed to a committee for deliberation, which sometimes includes open hearings. After the committee votes on the bill, it is passed for approval to Diet plenary session in both houses. If the two chambers' votes are at odds, a conference committee is convened in an attempt to reach a compromise. After a law is passed it is promulgated by the Emperor and announced in the government gazette.

The approval of the budget, ratification of international treaties, and the amendment to the constitution are other important functions of the Diet.

Approach to Climate Change

Japan has a long-established tradition of legislation on climate change issues. In 1998 Japan introduced the Guideline of Measures to Prevent Global Warming and Law Concerning the Promotion of Measures to Cope with Global Warming (Act on Promotion of Global Warming Countermeasures), which created a legal framework for climate change policy. The Law stipulated that a plan for reaching Japan's target should be established when the Kyoto Protocol came into effect. In response to the Protocol coming into effect in 2005, the Kyoto Protocol Target Achievement Plan was established.

In 2010, the cabinet approved a new Japanese bill called 'the Basic Act on Global Warming Countermeasures'. The bill was submitted to the Diet, and passed the Lower House but stalled in the Senate. The same version of the bill was again passed by the Cabinet later in the year but was discarded due to dissolution of the House of Representatives.

If passed, the bill would have put into legislation an emissions reduction target of 25% below 1990 levels by 2020 and 80% below 1990 levels by 2050, premised on the establishment of a fair and effective international framework in which all major economies participate and on agreement by those economies on ambitious targets. The bill would also have set up a national cap-and-trade scheme as the major delivery mechanism. Additionally, the draft bill included a target to produce 10% of primary energy supply from renewable sources by 2020, including the introduction of a feed-in tariff.

However, after the earthquake and the accident at the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Co. (TEPCO), Japan undertook a

complete review of its energy policy to take into account a commitment to reduce Japan's reliance on nuclear energy.

Despite the challenges associated with the 2011 earthquake, the government has taken forward a number of measures to tackle climate change. The Act on Purchase of Renewable Energy Sourced Electricity by Electric Utilities was approved in the Diet in 2011. This law introduced a feed-in tariff system for renewable energy from July 2012. In its Fourth Basic Environment Plan (2012), Japan decided that it would aim for an 80% reduction of GHG emissions by 2050 for a long term goal. The government decided to formulate the "Global Warming Action Plan" from 2013, based on the "Innovative Strategy for Energy and Environment" by the end of 2012. In addition, a carbon taxation system was introduced. The carbon tax is designed to help reduce Japan's emissions of GHGs and builds on the pre-existing tax regime on crude oil and coal imports. The introduction of the carbon tax is one of the items of the Tax Reform Act (2012).

At COP-19 in November 2013, following a change of government, Japan announced that instead of aiming for a 25% reduction in GHG emissions by 2020, it would increase its emissions by 3%, following the shutdown of many nuclear reactors after the Fukushima disaster.

Energy Supply

The two oil crises in the 1970s triggered the Law Concerning the Rational Use of Energy in 1979 in order to promote energy conservation to reduce total energy demand. It has been amended six times, most recently in 2008. In order to initiate energy policy in a comprehensive and consistent manner, the National Fundamental Law on Energy was enacted in 2002. This law sets forth the basic principles regarding energy policy – energy security; adaptability to the environment, and; utilisation of market mechanisms.

The government was directed to amend and publish the Basic Energy Plan in order to promote energy demand and supply-related policies in a long-term, comprehensive, and strategic manner. The accident at the Fukushima Daiichi Nuclear Power Station in 2011 triggered heated public debate about nuclear safety and the validity of an energy system that is dependent on nuclear power. The government set up the Energy and Environment Council in 2011 to review Japan's national energy strategy and examine climate change countermeasures as two sides of the same coin.

In 2012, the Energy and Environment Council announced the Options for Energy and the Environment, which is constituted of three scenarios (0% scenario, 15% scenario, 20–25% scenario) depending on the degree of dependence on nuclear power. National consultations on these options were held throughout Japan for over a month and the Energy and Environment Council then decided on the Innovative Strategy for Energy and Environment. The Innovative Strategy's basic policy was to reduce the dependence on nuclear energy and fossil fuels by maximising green energy. The three pillars of this new strategy are to wean Japan off nuclear power as soon as possible, to bring about a green energy revolution and security of supply.

Energy Demand

In 2012, the Low Carbon City Promotion Act entered into force, establishing a recognition system for low-emitting buildings, as a part of a plan to incentivise low carbon cities.

REDD+ and LULUCF

Japan has been co-chair of the REDD+ partnership, together with Papua New Guinea, until 2010. The government contributed USD 3million to the UN REDD programme in 2011, and USD10 million to the Forest Carbon Partnership Facility.

The Japan Science and Technology Agency (JST) and Japan International Co-operation Agency (JICA) have set up SATREPS, a three-to-five-year programme for joint research activities involving expert researchers in Japan and developing countries. SATREPS has 2 projects – one in Brazil to develop technology to assess changes in the quantity of carbon from degraded forests in the Amazon target area, and the other in Indonesia, to establish a management system for tropical peat land.

The Japan Space agency (JAXA) will launch the first climate satellite in the Global Change Observation Mission (GCOM) in 2016 to improve the accuracy of climate change prediction. In 2010, JAXA and the Brazilian National Institute for Space Research (INPE), signed a Letter of Intention to co-operate in the programme on REDD+ using JAXA's Observation Satellite "Daichi".

Japan: Flagship Legislation

Name of law	Law Concerning the Promotion of the Measures to Cope with Global Warming (Act on Promotion of Global Warming Countermeasures) [Legislative]
Date of entry into force	Passed 9 October 1998, amended 2003, came into force 16 February 2005
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Transportation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<ul style="list-style-type: none"> – Establishment of the Council of Ministers for Global Environmental Conservation by law – Development of the 'Plan for Global Warming Countermeasures' – Stipulation of the establishment and implementation of countermeasures by local governments <p style="margin-left: 40px;">It requires those who emit more than a certain amount of GHGs to assess and report these global warming gas emissions to the government. It also requires the government to introduce a system to compile and publish these data.</p>
Targets	None specified

Japan: Other Relevant Legislation

Name of law	Low Carbon City Promotion Act [Legislative]
Date of entry into force	4 December 2012
Categories	<ul style="list-style-type: none"> – Energy Demand – Institutional/Administrative arrangements
Driver for implementation	Energy efficiency
Summary of bill	The Law is designed to establish a recognition system for low-carbon buildings that contribute to the reduction of CO ₂ , and give preferential treatment to high-performance buildings through incentives such as tax reduction. Local government is required to make a “Low Carbon City Development Plan”, and the government gives financial support to the local government which aims for a compact, energy-efficient city.
Targets	None specified

Name of law	The Tax Reform Act [Legislative]
Date of entry into force	31 March 2012
Categories	<ul style="list-style-type: none"> – Carbon pricing
Driver for implementation	Climate change
Summary of bill	Part of the tax reform implemented by the Tax Reform Act was the introduction of a carbon tax, beginning in October 2012. The tax builds on the pre-existing tax regime on crude oil and coal imports. The amount of tax that companies have to pay on a kiloliter of oil was introduced at a rate of JPY 250 (US 2.44) during the fiscal year to March 2013. The tax will be increased every 2 years until fiscal year 2016.
Targets	None specified

Name of law	Act on Purchase of Renewable Energy Sourced Electricity by Electric Utilities [Legislative]
Date of entry into force	1 July 2012, amended 27 June 2012
Categories	<ul style="list-style-type: none"> – Energy supply
Driver for implementation	Renewable energy
Summary of bill	This act obliges electric utilities to purchase electricity generated from renewable energy sources (solar PV, wind power, hydraulic power, geothermal and biomass) based on a fixed-period contract with a fixed price. Costs incurred by the utility in purchasing renewable energy sourced electricity shall be transferred to all electricity customers, who pay the “surcharge for renewable energy” in general proportional to electricity usage.
Targets	None specified

Name of law	National Fundamental Law on Energy (Basic Act on Energy Policy) [Legislative]
Date of entry into force	14 June 2002
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand

	– Institutional/Administrative arrangements
Driver for implementation	Energy security
Summary of bill	A lawmaker-initiated legislation, this Law sought to set out the country's fundamental and overall energy policy direction after the approval of the Diet. It set the principles on the use of market mechanisms to encourage a secure and more environmentally friendly supply of energy.
Targets	None specified

Name of law	Law Concerning Special Measures for Promotion of New Energy Use (Special Measures Law for Promoting the Use of New Energy) [Legislative]
Date of entry into force	23 June 1997, amended January 2002, 8 July 2009
Categories	– Energy demand – Institutional/Administrative arrangements
Driver for implementation	Renewable energy
Summary of bill	The Law aims to accelerate the advancement of the introduction of New Energy. This Law, while clarifying the role of each area for the overall advancement of New Energy usage, provided financial support measures for utilities that use new energy. Based on this Law, a fundamental policy to provide for basic matters concerning measures for each area that the public, utilities and governments should consider was determined in September 1997. The amendment added "New Energy use, etc." to Article 1 of the Act. Then, Biomass Energy and Cool Energy could be added. In April 2008, the definition of "New Energy" was changed and became almost equivalent to renewable energy, but large-size hydropower generation and geothermal power are excluded.
Targets	None specified

Name of law	Law Concerning Promotion of Development and Introduction of Oil Alternative Energy [Legislative]
Date of entry into force	30 May 1980
Categories	– Energy supply – Energy demand – Research and development – Institutional/Administrative arrangements
Driver for implementation	Renewable energy
Summary of bill	After the oil price crises in the 1970s, the government enacted this Law and implemented measures for the development and introduction of alternatives to oil, including renewable energy. Under the Law, the New Energy Development Organisation (NEDO; from 1988, the New Energy and Industrial Technology Development Organisation) was established. In 2003, NEDO was reorganised as an Incorporated Administrative Agency.
Targets	None specified

Name of law	Law Concerning the Rational Use of Energy (Energy Conservation Act) [Legislative]
Date of entry into force	Passed in 1979, enforced in October 1979; wholly amended lastly in April 2010
Categories	<ul style="list-style-type: none"> – Energy demand – Transportation
Driver for implementation	Energy efficiency
Summary of bill	<p>The Law is the pillar of Japanese energy conservation policy. It was enacted in 1979 in the light of the oil shock. It covers all sectors as following:</p> <ul style="list-style-type: none"> – Energy management in manufacturing, commercial and transportation sectors – Energy efficiency standards for vehicles and appliances – Energy efficiency standards for houses and buildings <p>In 2008, the Law was revised to strengthen measures to enhance energy efficiency, including those for the commercial sector. Also in this revision, sectoral approaches used in domestic regulation were introduced. Regulation on the building materials under Top Runner Program was also introduced along with this revision.</p> <p>The Law stipulates rules for rational energy use in buildings. It requires that manufacturers and importers of equipment such as automobiles, air-conditioners or other electrical or heat-using appliances ensure the rational use of energy by that equipment.</p> <p>It provides a regulatory framework for mandatory and voluntary energy audits.</p>
Targets	None specified

4.31 Jordan



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	20
excl. LULUCF	19
Change from base year (1990)	N/A
Latest reporting year	2000
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 11 June 1992 Date of ratification: 12 November 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 2003 Date of ratification: 17 January 2003 Date of entry into force: 16 February 2005
2020 pledge	Mitigation action in the transportation, environment, energy, waste, agriculture and forestry sections; an Armed Forces and Air Force environment strategy and action plans.
Flagship legislation	Renewable Energy & Energy Efficiency Law, No. 3 of 2010

Legislative Process

The Hashemite Kingdom of Jordan is a constitutional monarchy composed of three branches: the executive branch, the government (the Prime Minister and Cabinet), the legislature, and the judiciary. The legislative branch is bicameral: the House of Notables (Majilis al-A'yan), containing 75 senators appointed by the King, and the House of Deputies, containing 150 deputies directly elected by the King's subjects. The constitution grants the King authority to dissolve either house of Parliament and to expel any member of either the House or Senate at will. The normal parliamentary term is four years, which may be extended for one year by royal decree.

Jordan has a multi-party parliamentary political system. There are 30 political parties registered but few are considered to oppose the ruling government or executive authority. During the "Arab Spring", protests and popular pressure resulted in the King of Jordan reshuffling the Cabinet (including the Prime Minister) and passing some political reforms to further democratic participation.

Legislative power is shared between the government and both houses of Parliament. Legislation may be submitted as a bill by either house of Parliament, although it is more commonly the Prime Minister who proposes legislation to the House of Deputies (considered the Lower House), where a special legislative committee considers the proposal. The deputies may accept, amend or reject the proposal. Should a proposal pass the sub-committee, the government drafts a formal bill, which it then submits to the House of Deputies for a vote. If approved by the House of Deputies, the bill is considered by the House of Notables for debate and vote. Should a bill fail to pass the Senate, it is returned to the Lower House for amendment. Should the House and Senate fail to agree on draft legislation, it can be passed by a two-thirds majority vote of a joint session.

A bill passed by both Houses of Parliament becomes law if the King declares it so through Royal Decree. Should the King reject the bill, it returns to the House of Deputies with explanations for his refusal; and the elected officials repeat the debate and vote again. If the elected Lower House and the King-appointed Senate meet for a joint vote and pass a bill formerly rejected by the King by a two-thirds majority, the draft legislation becomes law by Legislative Decree.

Approach to Climate Change

In May 2013 Jordan launched its National Climate Change Policy for 2013-2020, claiming it as a first of its kind in the Middle East, setting Jordan apart as a regional leader on climate change.

The plan has three long-term goals:

- 1) To achieve a pro-active, climate risk resilient Jordan; remaining a low-carbon growing economy with sustainable water and agricultural resources, healthy ecosystems and climate resilient communities;

- 2) To build adaptive capacity of communities and institutions, including social issues related to gender and vulnerable groups, increasing resiliency of ecosystems to climate change, especially as it relates to water resources and agriculture; taking full advantage of any mitigation opportunities;
- 3) To prioritise both mitigation and adaptation to climate change, but with emphasis on adaptation, given Jordan's relatively low carbon-emitting economy and vulnerability to water shortages as a result of climate change.

Jordan considers itself a leader in climate change, having presented the first UNFCCC report of all the non-Annex 1 countries that are party to the treaty. It is also the first in the Middle Eastern region to develop a comprehensive National Climate Change Policy, published this year, with great emphasis on adaptation.

As detailed in Jordan's second report to the UNFCCC (submitted in 2009), the country stands to disproportionately suffer from climate change in the future, especially with regards to drought and water scarcity. Jordan is currently the fourth most water-scarce country in the world (measuring 145 cubic meters per capita, per year). Thus, the government has stressed adaptation to threatened water sources, especially as they relate to the country's agriculture sector. The Minister of Environment has declared water scarcity as "the single most important constraint to country growth and development".

In addition to the National Climate Change Policy, written by the Ministry of Environment and endorsed by the Council of Ministers, other ministries are also in the process of revising current strategic plans or drafting new strategic plans that incorporate and/or strengthen climate change objectives. This includes the Ministry of Energy and Mineral Resources, the Ministry of Agriculture and the Ministry of Health.

Strategic plans developed by specific ministries and in some cases, such as the National Climate Change Policy, considered and endorsed by the executive, represented by the Council of Ministers, have been the choice policy tool to confront climate change to date. Only two pieces of legislation, both related to renewable energy or energy efficiency, were identified as laws directly in response to climate change for the purposes of this study. Given the authority of the executive branch, the Council of Ministers and their respected ministries, strategic ministerial plans carry considerable weight despite lacking the juridical aspect of parliamentary legislation.

Energy demand

The Ministry of Energy and Mineral Resources estimates that energy demand will reach 16,773,000 tonnes of oil-equivalent by 2020, and a full 50% increase from current levels in 50 years' time. This represents a stress on the economy because Jordan imports nearly all of its energy (96% as of 2007), namely oil and natural gas. But based on recent energy efficiency measures, energy consumption could be reduced by 20% solely by introducing more efficient means of extraction, supply and consumption.

The General Energy Law in Jordan regulates energy efficiency for some electronic devices to increase efficiency at the consumer level. The government is also phasing out electricity subsidies that artificially lowered the cost paid by households for their energy. By 2008, it is reported that most subsidies had been eliminated or reduced, incentivising users to curtail wasteful consumption.

Energy supply

Jordan sees significant opportunities to increase energy efficiency and overcome a number of supply-side barriers. According to the second UNFCCC report barriers to efficiency are: (1) lack of knowledge among energy users of the benefits of energy efficiency, (2) lack of expertise to develop energy efficiency projects, (3) high initial implementation cost, (4) lack of suitable financing mechanisms, as banks lack experience and awareness in energy efficiency and need assistance on risk analysis and mitigation to achieve bankability, and (5) lack of consistent institutional frameworks.

Much of the savings projected by Jordan will be achieved by increasing the amount of natural gas imported from Egypt and possibly Iraq and Saudi Arabia; but the government has also introduced legislation to increase national production and consumption of energy from renewable sources (defined as solar, wind, biofuels, geothermal and hydropower). The Renewable Energy and Energy Efficiency Law was passed in 2010 and establishes the legal framework to open land to renewable energy extraction as well as a fund to finance such projects.

The law was developed with reference to the Master Strategy of the Energy Sector, approved by the Council of Ministers in 2004 and updated in 2007. The plan set the goal of raising renewable energy to 20% of total energy consumed (from 1% of the total in 2007). Additionally, it detailed obstacles to achieving national energy objectives. One obstacle to increasing renewable energy production was the high cost of investment and lack of large tracts of the land necessary for many types of renewable technologies. Such challenges have been addressed by establishing funds to encourage investment and the legal means to allocate state-owned lands and to buy privately-owned lands.

As of April 2012, the Ministry of Energy and Mineral Resources had approved 34 renewable energy investments by international and local companies, 22 in solar power and 12 in wind power for a total of 1,000 MW production.

LULUCF

The Ministry of Agriculture is reportedly revising its National Strategy of Agriculture for 2013-2020. It should take into account the National Climate Change Policy. Specifically, the revised plan shall focus on the agricultural sector's resilience to climate change.

Research and development

Jordan's Climate Change Policy includes provisions to strengthen science-based policy as well as to increase the amount of climate change research initiated by national scientists and institutions. Recognising that few research projects have been realised at national universities, the Higher Council for Science and Technology (the organisation charged with R&D policy) was reportedly finalising a draft of the National Science and Technology Innovation Policy and Strategy 2012-2016 at time of press. The strategy will incorporate climate change as a national research priority and seek to link environmental and climate change research institutions with policy makers.

Jordan: Flagship Legislation

Name of law	Renewable Energy & Energy Efficiency Law, No. 3 of 2010 [Legislative]
Date of entry into force	2012
Categories	— Energy supply
Driver for implementation	Renewable energy, energy efficiency
Summary of bill	The renewable energy and energy efficiency law provides the legislative framework to encourage exploitation of enable energy sources, further supply-side energy efficiency and streamline private sector investment through incentives.

The law states that to achieve the objectives the government will focus on:

- Increasing investment in renewable energy extraction, thereby increasing the proportion of renewables in the energy mix
- Working towards sustainable development through environment-friendly energy extraction
- Pursuing rational and efficient energy extraction

The Ministry of Energy and Mineral Resources is in charge of enacting the law, and a first order of business was the identification of geographic areas for renewable energy exploitation. These areas, co-ordinated with the Ministry's Energy Master Plan, will be prioritised for development in a Land Use List, approved by the Council of Ministers. Areas identified for exploitation that are "treasury land" (owned by the state) shall be allocated to renewable energy projects. Lands owned by individuals shall be purchased based on existing legislative authority, if approved by the Council of Ministers.

In addition to hosting a competitive bidding processes to develop projects on lands prioritised on the Land Use List, individuals or projects may approach the Ministry of Energy and Mineral Resources with a specific proposal to develop an extraction site on any lands in the country (already identified on the Land Use List or not) which have not already been allocated by a public tender. The law outlines the requirements for such proposals and a general outline for the decision making process.

The law specifies the purchasing arrangements of the electricity from bulk suppliers; much

of this framework is pre-existing in the General Electricity Law.

Under the renewable energy law, individual homes may also produce their own renewable electricity, and sell any surplus energy back to the grid, with the price set by the purchase tariff specified in the Bulk Supply Licensees or the Retail Supply Licensees.

This law establishes the Renewable Energy and Energy Efficiency Fund, which shall be administratively and financially independent. The Fund is overseen by the Board of Directors of the Fund, composed of the vice-chairman of the Ministry of Energy and Mineral Resources; the secretaries-general of the Ministries of Environment, Planning and International Co-operation, and Finance; a commissioner nominated by the Chairman of the Board of Commissioners of the Commission, and three representatives of the private sector appointed by the Council of Ministers. The Fund draws resources from: government allocations from the general budget, returns on investments, aid or gifts from national or international donors.

Targets	None specified
----------------	----------------

Jordan: Other Relevant Legislation

Name of law	The National Climate Change Policy of the Hashemite Kingdom of Jordan 2013-2020 [Executive]
Date of entry into force	May 2013
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - REDD+ and LULUCF - Adaptation - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Climate Change, adaptation
Summary of bill	<p>Jordan's National Climate Change Strategy is a seven-year plan with three main objectives:</p> <ul style="list-style-type: none"> - To achieve a pro-active, climate risk resilient Jordan; remaining a low-carbon growing economy, sustainable water and agricultural resources, healthy ecosystems and climate resilient communities; - To build adaptive capacity of communities and institutions, including social issues related to gender and vulnerable groups, increasing resiliency of ecosystems to climate change, especially as it relates to water resources and agriculture; taking full advantages of any mitigation opportunities; - To prioritise both mitigation and adaptation to climate change, but with emphasis on adaptation [given Jordan's relatively low carbon emissions] <p>The strategy lists seven short-term goals.</p> <ul style="list-style-type: none"> - Provide guidance to government ministries in order to implement policy related to climate change adaptation and mitigation. - Facilitate the incorporation of climate change adaptation and mitigation into various private and public sectors, policies and legal frameworks. - Encourage strategies maximising co-benefits as it relates to health and minimising unintended negative consequences.

-
- Encourage the integration of climate change mitigation objectives into key sectors' policies (energy, transportation and waste)
 - Take note of the needs of vulnerable groups while devising adaptation and mitigation policies, and incorporating adaptation and mitigation into green growth strategies and other policies as they relate to vulnerable groups (youth, elderly, women, poor).
 - Mainstream climate change considerations in infrastructure and land-use planning and services.
 - Provide a strategy to ensure adequate financing for mitigation and adaptation objectives, strengthening institutional and human resource capacity.

The Strategy document overviews the country's strategies to combat climate change across various sectors and delineates the strategic actions that the country will implement in the coming years. Special attention is given to "vulnerable groups" that stand to disproportionately suffer from the negative effects of climate change, as well as strategies to address gender imbalances between men and women. The document also details how the Climate Change Strategy will be monitored from a policy implementation perspective as well as institutional arrangements that will encourage adoption of climate change perspective in ministries outside of those directly involved with environmental management.

Targets	None specified
----------------	----------------

Name of law	General Electricity Law No 64 of 2003 [Legislative]
Date of entry into force	2003
Categories	- Energy demand
Driver for implementation	Energy efficiency
Summary of bill	<p>This law is a general regulatory framework for the generation, distribution and sale of electricity in the Kingdom, and has been updated over the years. The 2003 update includes language that is directly related to climate change despite the fact that the law does not name climate change as an objective. The law states that energy efficiency shall be a national priority, a precursor to the law concerning renewable energy summarised above. In addition, the General Electricity Law grants authority to the Electricity Sector Regulatory Commission to provide incentives (not specified in the law) to encourage improved technological efficiency; and to participate in the regulation of efficiency standards for electric devices officially issued by the Standards and Meteorology Corporation.</p> <p>Previous additions to the law passed in 2002 allowed private energy companies to access to the electricity grids as well as set guidelines for renewable energy projects. Large-scale projects (above 5MW) would be contracted through competitive tendering (no longer necessary due to the provision in the renewable energy law), small-scale (below 5MW) through direct negotiations and very small scale (below 1MW) for auto-generation and only to be bought during peak demand.</p>
Targets	None specified

4.32 Kazakhstan



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	271
excl. LULUCF	274
Change from base year (1990)	-84
Latest reporting year	2011
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 8 June 1992 Date of ratification: 17 May 1995 Date of entry into force: 15 August 1995
Kyoto Protocol ratification status and date	Date of signature: 12 March 1999 Date of ratification: 19 June 2009 Date of entry into force: 17 September 2009
2020 pledge	To reduce GHGE by 15% by 2020 and by 25% by 2050 (from 1992 as base year)
Flagship legislation	The Concept of Transition of the Republic of Kazakhstan to Sustainable Development for the Period 2007-2024, Presidential Decree No 753 of 2006

Legislative Process

Legislative authority in Kazakhstan is shared between the executive government (consisting of the President, Prime Minister and the Council of Ministers) and the bicameral parliament consisting of the Senate (upper house) and the Mazhilis (lower house).

The president is elected by popular vote for a five-year term. The president appoints the Prime Minister (who serves as head of government) and the Council of Ministers. Nursultan Nazarbayev has ruled as President of Kazakhstan since its independence in 1991. While in office, he has passed a number of Presidential Decrees expanding executive authority.

The Senate has 47 members, 32 of whom are elected to four-year terms from local assemblies (two from each of the 14 defined regions, and the cities of Astana and Almaty); the President appoints the remaining fifteen. In the Mazhilis, there are 107 deputies, of whom 98 are elected from parties and 9 are elected by the People's Assembly of Kazakhstan. Mazhilis deputies serve for five-year terms.

The executive branch initiates most draft legislation. If both houses of parliament pass a bill that the president vetoes, a two-thirds majority in both houses are necessary to override the veto.

Approach to Climate Change

Kazakhstan's stated national priority is to focus on low-carbon development following the models of Denmark and Norway. This is showcased in the two-decade national strategic plan of sustainable development. An "ecological" perspective across all sectors of the economy has been adopted, and various national ministries and government programmes have incorporated climate change and sustainability into their strategic frameworks.

The majority of legislation on energy efficiency and renewable energy has been passed in the past 10 years. From 1985 to 2005, Kazakhstan's production of hydrocarbons rose 225%. GHG emissions stand to rise significantly as national exploitation of natural gas, petroleum and coal increase. Inefficient technology and practices have resulted in significant energy losses and higher GHG emissions. As the government considers the exploitation of the country's oil, natural gas and coal reserves essential to economic development and quality of life of its citizens, much emphasis has been placed on modernising the energy industry, maximising efficiency as well diversifying the industry through incentivising exploitation of renewable sources. Legislative action in this arena culminated in the introduction of a pilot Emissions Trading Scheme in 2013.

Desertification is a major concern of Kazakhstan, with two thirds of the country vulnerable to it. Reduced water levels in the Aral Sea lead to the salinification of inland soils. Climate conditions lower crop yields and are predicted to worsen as

a result of climate change. Reversing the degradation of land through reforestation and restoration of abandoned farmlands is a priority. Likewise, water scarcity is major concern for Kazakhstan, complicated by the geopolitics of the region, since much of Kazakhstan's water flows from neighbouring countries. Adapting to a harsher climate and water scarcity, especially as it relates to agricultural production and to the sheep rearing industry, has been the focus of the adaptation debate.

Carbon pricing

Kazakhstan began trading carbon in 2013 for a pilot period of one year. Should the trading scheme be successful, a second trading period will be enacted to continue trading until 2020. Carbon trading on the Kazakh Emission Trading Scheme (ETS) was codified through an amendment to the *Ecological Code* law on 3 December 2011 and is further regulated by 17 government decrees and 14 ministerial decrees. Six sectors trade on the market: agriculture, transportation, oil and gas, mining and metallurgy, chemical industry, and the energy industry.

At the start of year one, 178 companies from these six sectors were expected to participate in the scheme, all with annual CO₂ emissions estimated to exceed 20,000 tons per year. An offset scheme is also in development, with some details about which types of projects would be considered to offset carbon emissions, but incomplete details as to whether any limits would be applied to offsets claimed by operators. The ETS was developed with a close eye towards EU policies regulating carbon trading, with the aim of linking the national scheme to the larger market in the future.

Energy supply

Kazakhstan has made significant legislative progress over the past decade to diversify its energy production with renewable sources as well as through regulation to incentivise and require more efficient energy technologies on the supply side. The Law on Power Industry of 2004 established a list of policy directives for regulating the power industry, including greater efficiency and the development of renewable energy sources. Two years later, in 2006, The Concept of Transition of the Republic of Kazakhstan to Sustainable Development for the Period 2007-2024 further strengthened the policy framework for energy efficiency and renewable energy by tying them to the cross-sector and cross-ministerial strategic plans for economic and social development. It states an objective of raising the national sustainability index to 25% by 2024, through the use of energy technology and efficiency. Parliament in 2007 incorporated global warming as an explicit reason for pursuing energy efficiency and renewable energy. A 2011 amendment established the regulatory authority to establish emissions quotas and to plan the ETS. Also in 2011, the Law on Energy Saving reinforced the government's legal authority to regulate the energy supply markets based on principles of energy savings and efficiencies and authorised a government commission to require certain minimum standards of energy efficiency for mechanical equipment, buildings, and other energy consuming structures.

REDD+ and LULUCF

Over two thirds of Kazakhstan's national territory is prone to desertification, a vulnerability that, along with water scarcity, the government has prioritised in recent years. In 2013 the government announced it would establish a National Centre to Combat Desertification, for which it hopes to attract international investments and collaboration. It has been working to combat desertification by preserving the water level of the Aral Sea, successfully reversing its shrinking and reducing the amount of salt that has been blown inwards. The World Bank has financed reforestation projects for some 25,000 ha of land as well as the restoration of over 150,000 ha of either abandoned or degraded farmlands.

Adaptation

Kazakhstan's 2005 Second National Report to the UNFCCC presents climate change scenarios and possible adaptation measures. The report says the agricultural sector stands to suffer the most from changes in climate due to soil degradation, desertification, higher temperatures and decreased fresh water resources. As 50% of the water that Kazakhstan uses flows from China and other neighbouring countries, the government has repeatedly expressed concern for water security in long-term risk assessments.

Kazakhstan has incorporated adaptation measures into its long-term ecological and economic plans. The Concept of Transition of the Republic of Kazakhstan to Sustainable Development for the Period 2007-2024 incorporates many of the priorities of the Concept of Ecological Security of the Republic of Kazakhstan 2004-2015. Ministerial programmes to combat desertification, secure and preserve potable water, and sustainably develop rural lands for agricultural use may be considered adaptation programming.

The Ministry of Environment is reported to be drafting a national strategic plan specific to adaptation. No drafts had been released at time of publication.

Kazakhstan: Flagship Legislation

Name of law	The Concept of Transition of the Republic of Kazakhstan to Sustainable Development for the Period 2007-2024, Presidential Decree No 216 of 2006 [Executive]
Date of entry into force	14 November 2006
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – REDD+ and LULUCF – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Sustainable Development
Summary of bill	The Concept for Sustainable Development (Concept) is a comprehensive guide to planning national development over a period of nearly two decades. The Concept was developed within the framework of the World Summit on Sustainable Development (Johannesburg,

2002) by the Ministry of Environment with support from UNDP, UNEP-EU, as well as scientists and experts.

The Concept lays out the four stages of development:

- Preparation stage (2007-2009) is to establish the institutional readiness to integrate sustainable development principles into all aspects of political and economics spheres
- In the first stage (2010-2012) the country aims to become one of the fifty most competitive countries in the world economy
- During the second stage (2013-2018) the focus is on quality of life for citizens, decrease in environmental degradation, and increase of environmental sustainability
- The third stage (2019-2024) Kazakhstan will achieve international standards of sustainable development

The general goal of the Concept is “to achieve an economic, social, environmental, and political balance of the development of the Republic of Kazakhstan as a base for improvement of quality of life and provision for the competitiveness of the country in the long-term period.”

The decree lays out eight principles for Kazakhstan’s sustainable development broadly related to improving the economic and social development indicators of the country. The principles are followed by 16 priorities, a number of which are related directly or indirectly to climate change mitigation or adaption. Those priorities are:

- Introduction of sustainable models of production and consumption
- Introduction of innovative environmentally safe technologies
- Development of sustainable transportation systems
- Energy efficiency and energy saving
- Development of science and education for sustainable development
- Prevention and alleviation of environmental threats to the human health
- Decrease of emissions, including GHG and ODS
- Access to quality drinking water
- Solutions to trans-boundary environmental problems
- Waste management

The section on environmental sustainability highlights the need to follow a development path that decreases the anthropogenic impact on climate change. The plan stipulates that the country should use national and local budgets in addition to international loans and grants to achieve its sustainable development goals; the adoption and enforcement of “polluter pays” policies meant to penalise those entities that contaminate the environment (including excessive CO₂emissions), the introduction of trading emissions quota system (the ETS, now in its first year of operation).

Targets	Increase of the environmental sustainable index up to 10% by 2012, 15% by 2018, and 25% by 2024
----------------	---

Kazakhstan: Other Relevant Legislation

Name of law	Law on Energy Saving [Legislative]
Date of entry into force	September 2011
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand
Driver for implementation	Energy Efficiency
Summary of bill	This law establishes the legal framework to regulate markets as they relate to the consumption of energy. It explains that the government has the authority to regulate markets according to the principles of energy saving and energy efficiency. Such principles shall be disseminated to the public through national mass media. It authorises and requires

local and regional executive authorities to develop and approve of energy saving programmes as well as scientific research into energy efficiency. Funds to finance such programmes and research are to be allocated accordingly by the national budget.

The government is granted the authority to establish energy efficiency minimums for mechanical equipment, buildings and additional fuel-consuming structures.

Lastly it recognises the legal legitimacy of any international treaties signed by Kazakhstan, so that if those treaties should establish rules or regulations, they shall supersede any conflicting national legislation.

Targets	None specified
----------------	----------------

Name of law	The Ecological Code of the Republic of Kazakhstan, No. 212 of 2007 and Amendment to said legislation on 3 December 2011 [Legislative]
--------------------	--

Date of entry into force	9 January 2007
---------------------------------	----------------

Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand
-------------------	--

Driver for implementation	Climate change, carbon trading
----------------------------------	--------------------------------

Summary of bill	The Ecological Code is a general law that addresses a variety of environmental and climate issues in Kazakhstan. It codifies ecological definitions of terms into law, establishes the authority of the government to regulate different aspects of the natural environment, stipulates various institutional relations between governmental departments, and lays the groundwork for environmental impact studies among many other regulatory provisions. It includes provisions related to climate change and an amendment passed in 2011 allows Kazakhstan to operate a national carbon trading scheme.
------------------------	--

It states that the state shall prioritise prevention and mitigation of climate change and regulate according to principles that limit the amount of GHGs released into the atmosphere. The law authorises a governmental body to monitor climate change and ozone layer and further charges that body with using scientific information to develop measures at the national level specific to various economic sectors to reduce the discharge of GHGs into the atmosphere.

The law also outlines the regulatory authority of the state of Kazakhstan to issue limits (quotas) on the emissions of GHGs and ozone-destroying gases. The regulatory authority lies with a government body to be specified by the state, which will determine maximum quotas, and issue permits for the import of substances harmful to the ozone. The details of the carbon trading scheme were not included in the amendment but issued in a series of executive decrees.

Targets	None specified
----------------	----------------

Name of law	About Support of Use of Renewable Sources of Energy [Legislative] No. 165-4
--------------------	--

Date of entry into force	5 July 2009
---------------------------------	-------------

Categories	<ul style="list-style-type: none"> – Energy supply – Research and Development
-------------------	---

Driver for implementation	Renewable energy, GHG reductions
----------------------------------	----------------------------------

Summary of bill	This piece of legislation aims to eliminate previous legal and financial barriers to the
------------------------	--

development of renewable energy projects, thus facilitating new projects and access to regional energy grids, as well as regulating energy pricing to ensure that energy from renewable sources is cost-comparable to fossil fuels.

The law was a necessary step in order to realise the reduction in GHG emissions, increasing the share of renewable energy (defined as solar, wind hydropower, biomass, and geothermal energy) consumed relative to fossil fuels. The law does not, however, specify a percentage share of renewable energy.

The text lays the legal framework to develop national and regional programmes to exploit renewable energy, establish norms associated with renewable energy production, and issue permits for new projects and plants. This regulatory authority will rest in a government-authorised body (of the executive branch) in charge of all renewable energy programmes.

At the regional and local levels, the Authority both authorises local executive authorities to participate in the planning and approval of local and regional projects to develop renewable energy up to 25MW and obliges them to reserve and allocate local lands to said projects, within the framework of the law.

Renewable energy prices are set by the provider but must not exceed the estimated price stated in the feasibility study submitted to and approved by the appropriate governing body. Those companies operating regional power grids are legally obliged to buy all renewable energy produced by plants connected to the grid up to 50% of their total energy purchases. Should renewable energy exceed 50% of energy purchased by companies operating regional energy grids, the national grid shall purchase the surplus in its entirety. Additional incentives to develop renewable energy projects include prioritising the connection of renewable energy plants to energy grids and the use of renewable energy once those plants have access to the grids, and the exclusion of “service payments” associated with the sale and purchase of traditionally produced energy.

Targets	None specified
----------------	----------------

Name of law	On Power Industry, No 588-II [Legislative]
--------------------	---

Date of entry into force	9 July 2004
---------------------------------	-------------

Categories	– Energy supply
-------------------	-----------------

Driver for implementation	Energy efficiency, renewable energy
----------------------------------	-------------------------------------

Summary of bill	This legislation contains broad directives about managing the country’s power resources, distribution of power and energy priorities. It establishes a list of priorities for future regulation and policy related to the power industry. Included in those priorities are the development of renewable energy sources and the rational and efficient use of current sources (thus reducing the amount of energy consumed). It also explains that regulation includes passing of technological standards to increase efficiency.
------------------------	--

It grants the government the authority and obligation to develop and implement policy along the framework established in this law; thus facilitating the implementation of climate change policies without legislative debate and approval.

Targets	None specified
----------------	----------------

4.33 Kenya



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	-7
excl. LULUCF	21
Change from base year (1990)	NA
Latest reporting year	1994
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 30 August 1994 Date of entry into force: 28 November 1994
Kyoto Protocol ratification status and date	Date of signature: 15 February Date of ratification: 25 February 2005 Date of entry into force: 26 May 2005
2020 pledge	No pledge made
Flagship legislation	2013-2017 Climate Change Action Plan

4.19.2 Legislative Process

Law-making in Kenya is the responsibility of Parliament, which comprises the National Assembly and the Senate. Depending on the nature of the law (or bill) this process engages the Executive and is also open to public consultation.

Kenya's legal system divides laws into two categories: 1) Public and 2) Private. Public Bills concern matters of public policy or they alter legislation, and are initiated by the government. Private Bills, on the other hand, are promoted by a private member of the Parliament.

Climate legislation falls under "Public Bills", thus engaging the Executive power in law-making. The first stage of this process is the drafting of a law by a Ministry of the government, in co-ordination with the Kenya Law Reform Commission (KLRC) and the Attorney-General Chambers (AGC). The first draft is sent to the Commission for the Implementation of the Constitution (CIC), which opens a compulsory consultation process with stakeholders and civil society. Drawing from the various contributions, the AGC prepares the Bill, working with the CIC. At the next stage, the draft Bill is submitted for the Cabinet's approval. The Bill is then published in the Kenya Gazette and introduced in Parliament.

Responsible for debating and enacting a bill, the Parliament scrutinises the proposal in three readings. The first reading is normally conducted by the Committee in charge of a specific issue-area. Next, the Parliament discusses the Bill, before returning the text to the Committee with amendments. The third reading takes place after the Committee has reviewed the draft. Once passed in Parliament, the AG presents the Bill to the Cabinet before it returns to Parliament for a last round of debate. The final text approved by Parliament is submitted to the President for his/her assent. If the bill is signed by the President, it is published and becomes a law.

Approach to Climate Change

Following the development of the international climate change regime, since the 1990s Kenya has expended significant efforts to forge a comprehensive framework to address climate issues. Even though the executive and the legislature are both directly involved in the law-making process, there are significantly more policies than laws addressing environmental and climate problems. In spite of significant progress achieved over the past decades, Kenya's legal framework has a sectoral (and fragmented) approach. The legal basis for environmental policies (the Environmental Management Co-ordination Act) dates back to 1999, and there are suggestions that a new and updated Act is needed.

Over the past five years the Ministry of Environment and Natural Resources has produced several drafts of a National Environmental Policy (NEP). According to the 13th revised draft (February 2013), one of the core objectives of the NEP is to establish "a framework for an integrated approach to planning and

sustainable management of Kenya's environment and its natural resources". The draft recognises climate change as one of the direct causes of natural disasters, and proposes measures to address climate issues. The five actions suggested are: 1) implement the National Climate Change Strategy; 2) raise awareness on the opportunities for adaptation, mainly through technology transfer and capacity building; 3) develop and implement investment and technology transfer projects under the Clean Development Mechanism (CDM) of the Kyoto Protocol; 4) develop an integrated, improved early warning and response system for climate and disaster risks; and 5) build and strengthen research capacity on climate change and related environmental issues.

As one of the six countries to benefit from the Scaling-Up Renewable Energy Programme in Low Income Countries (SREP), which operates under the Climate Investment Funds (CIF), in May 2011 the Kenya Government presented a Draft Investment Plan for the SREP.

Over the past few years Kenya's government has been committed to promoting a new and comprehensive climate law. The process leading to the enactment of the Climate Change Authority Bill has been followed closely by the international community. Additionally, the National Climate Change Response Strategy (NCCRS) was launched in 2010, complemented by the 2013-2017 Climate Change Action Plan.

Initiatives at the executive level surpass the amount of legislation adopted by Parliament. Lacking a specific piece of legislation on climate change, the government has promoted a Climate Change Authority Bill. The law was approved by the Parliament in December 2012 and sent to the executive branch to be sanctioned and published in the official Gazette. However, in January 2013 the president vetoed the law, citing the lack of public involvement in the discussion of the new bill. The proposal was returned to Parliament and is now under discussion again. With elections in 4 March, the new Parliament will be responsible for addressing the president's requirements to successfully promote the Climate Change Authority Bill.

According to the proposal, the main functions of the Climate Change Authority shall be: 1) co-ordinating negotiations on climate issues at local, regional and international levels; 2) adopting and managing a national registry for energy and carbon emission applied to both public and private sectors; 3) advising the government on legislative and other measures on adaptation and mitigation to be adopted; 4) recording GHG emissions and set reduction targets; 5) co-ordinating research activities, as well as engagement between government and non-governmental agencies focusing on climate issues; 6) formulating, co-ordinating, and publishing climate change programmes on adaptation, mitigation, R&D and education on climate related issues. The Bill also foresees the creation of the Climate Change Trust Fund to finance projects and programmes developed by the Authority.

Institutional and Administrative Arrangements

Adopted in 1999, the Environmental Management and Co-ordination Act (EMCA) focuses on regulation, management and protection of the environment. The Act establishes important institutions that have been among the central authorities responsible for environmental policies/legislations in Kenya, namely: the National Environment Management Authority (NEMA); the National Environmental Council ("Council"); and the National Environment Action Plan Committee ("the Authority").

Adaptation and mitigation

In April 2010 the Ministry for Environment and Mineral Resources adopted The National Climate Change Response Strategy (NCCRS). The document's "primary focus is ensuring adaptation and mitigation measures are integrated in all government planning, budgeting and development objectives". Towards this end, the Strategy identifies and recommends specific measures to be adopted by the government in addressing climate change. The issues covered range from adaptation and mitigation (including suggestions on carbon markets and green energy development), to R&D and climate governance. The 2012 Action Plan provides a platform for the implementation of the NCCRS, adopting concrete measures on adaptation and mitigation.

In 2011 the government adopted the National Food and Nutrition Security Policy, in which it recognises the direct implications of climate change for food and nutrition security. In order to tackle the issue, the 2011 Policy proposes a set of measures addressing both risk management and adaptation to climate change. The government committed to "Promote integration of climate change adaptation in agricultural development programmes and policies". In addition to assisting local communities to develop rapid adaptation mechanisms, the Policy also sets out to develop more effective mechanisms of drought prevention, preparedness and mitigation; instruments of irrigation; and, eventually, exploring the creation of a Drought Management Authority and Drought Contingency Fund "to ensure rapid response to climate change related calamities".

Energy supply

The 2005 Energy Act regulates activities in all areas of the sector. The Act stimulates the promotion of renewable energy, delegating competences for the Ministry of Energy to forge a National Plan towards this goal. Furthermore, the Act creates the Energy Regulatory Commission (ERC). No specific measure on how to promote renewables is set up.

REDD+ and LULUCF

The Constitution of Kenya requires maintenance of forest on at least 10% of the country's land area. The 2005 Forest Policy addresses indigenous forest management, farm forestry, industrial forest development, dryland forestry, forest health and protection, private sector involvement and participatory forest management. It recognises that there are benefits arising from involvement of local communities and other stakeholders in forest management. The new policy

will mainstream the forestry sector in economic recovery and enable it to contribute significantly to poverty alleviation strategies.

The Kenya Forest Act establishes the autonomous Kenya Forest Service, and contains provisions on forest management, with emphasis on the engagement of local communities and the promotion of private investments. While the Forest Act sets up the basis for a Forest Policy, its objectives can only be achieved by implementing subsidiary legislation rules.

Land use in forest areas is also regulated by the Agriculture (Farm Forestry) Rules. Adopted in 2009, these Rules require farmers to establish and maintain farm forestry on at least 10% of every agricultural land holding. One of the objectives of the Rules is to preserve and sustain the environment and combat climate change and global warming. They also include provisions on enforcement measures and inspection.

Water Management

In 2012 Kenya adopted a new water policy, in line with the 2010 Constitution and the 2030 Vision plan. Recognising the challenges posed by climate change, and that 'industrialised agriculture contributes on a massive scale to climate problems, the policy highlights some specific measures to address problems directly associated to climate change. These include: ensure awareness of ecosystem services is increased by practitioners and policy-makers alike, taking cognisance of conditions of climate change and the demand for development of the already deteriorating state of natural ecosystems; adapt to climate change variations by collaborating in the implementation of a Climate Change Policy and Response Strategy, and a Disaster Management Policy.

Kenya: Flagship Legislation

Name of law	2013-2017 Climate Change Action Plan (Executive)
Date of entry into force	8 February 2013
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Adaptation – Institutional/Administrative Arrangements
Driver for implementation	Climate Change
Summary of bill	Developed by the Kenyan Government, through the Ministry of Environment and Mineral Resources, in conjunction with donor partners, the Action Plan provides a platform for the implementation of the 2010 National Climate Change Response Strategy (NCCRS). For this reason, the Plan addresses eight action areas identified by the NCCRS, in addition to including a new subcomponent focusing on co-ordination. Overall, adopting a comprehensive approach, the document defines clear measures on adaptation and mitigation to climate change across a wide range of issues, bringing an important contribution to the development of Kenya's legal and political framework in this realm. The 2013-2017 Climate Change Action Plan fits in the Kenya 2030 Vision, a long-term development plan adopted by the government in 2008. Implemented in successive five year plans, the 2030 vision is comprises three pillars (economic, social, and political).
Targets	None specified

Kenya: Other Relevant Legislation

Name of law	Agriculture (Farm Forestry) Rules 2009 (Legislative)
Date of entry into force	20 November 2009
Categories	— REDD+ and LULUCF
Driver for implementation	Forest and land management and conservation
Summary of bill	<p>As a subsidiary legislation to the Agriculture Act, the Agriculture Rules adopted in 2009 aim to promote sustainable management of farm forestry. More specifically, these Rules require every agricultural land holding to maintain farm forest cover of at least 10%.</p> <p>Other declared objectives of the 2009 Agriculture Rules are:</p> <ul style="list-style-type: none"> – The conservation of water, soil and biodiversity; – The protection of riverbanks, shorelines, riparian and wetland areas; – The sustainable production of wood charcoal and non-wood products; – The providing of fruits and fodder; – Carbon sequestration and other environmental services. <p>The Agriculture Rules also contain provisions on enforcement measures and inspection. The responsibility for ensuring compliance is mainly delegated to The District Agricultural Committee.</p>
Targets	Maintenance of 10% of tree cover in forestry farms

Name of law	Energy Act 2006 (Legislative)
Date of entry into force	7 July 2007
Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – Institutional/Administrative arrangements
Driver for implementation	Energy supply and demand
Summary of bill	<p>Encompassing several laws related to energy, the Act has a very broad scope, covering all forms of energy, from fossil fuels to renewables.</p> <p>The Act mandates the government to promote the development and use of renewable energy, including biodiesel, bioethanol, biomass, solar, wind, hydropower, biogas, charcoal, fuel-wood, tidal, wave, municipal waste, among others.</p> <p>The Act elaborates the responsibilities of the Ministry of Energy for renewables, which include the development of a national strategy of research in this field. However, the legislation fails to establish specific measures to reach the goal of promoting renewables, including policies/ financing. It also establishes the creation of the Energy Regulatory Commission (ERC), in charge of regulating activities in the sector, including the production, distribution, supply and use of renewable energy.</p>
Targets	None specified

Name of law	The Environmental Management and Co-ordination Act 1999 (Legislative)
Date of entry	

into force	14 January 2000
Categories	– Institutional/Administrative arrangements
Driver for implementation	Institutional setting
Summary of bill	<p>The Environmental Management and Co-ordination Act (EMCA) provides for the establishment of a comprehensive legal and institutional framework for the management of environmental related matters.</p> <p>The Act recognises the legal right of every Kenyan citizen to a healthy and clean environment; a right later endorsed by the 2010 Kenya Constitution.</p> <p>The Act establishes the National Environment Management Authority (NEMA), responsible for the safeguarding and enhancement of environmental quality through coordination, research, facilitation and enforcement. The NEMA is the main governmental instrument for the implementation of environmental policies.</p> <p>The EMCA sets up the National Environmental Council (“Council”), the authority directly associated with the Ministry of the Environment in charge of policy formulations concerning the Act, as well as the identifying of national goals and programmes addressing environmental protection.</p> <p>Additionally, the EMCA creates the National Environment Action Plan Committee (“the Authority”), responsible for environmental planning activities, and the National Environment Tribunal.</p> <p>To foment research in the field of the environment, the Act creates the National Environment Trust Fund, consisting of donations, grants, gifts, endowments or contributions of other sources specifically designated for the Fund.</p> <p>The Act sets the rules for environmental Impact Assessment (EIA), environmental audit and monitoring, and environmental standards. The National Environment Tribunal has the role of establishing order and direction regarding environmental issues in dispute.</p> <p>The Act established the “Trust Fund” to support activities on capacity building, environmental publications, scholarships and grants for projects in the field of the environment.</p>
Targets	None specified

Name of law	Forest Act 2005 (Legislative)
Date of entry into force	2 February 2007
Categories	– REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Forest management
Summary of bill	<p>The Forest Act was adopted by the government in 2005 and aimed to promote the management of forests under a decentralised approach. The focal point of the Act is the involvement of local communities living in the adjacent forests, and other stakeholders, with actions to promote the sustainable use and conservation of forest. For this purpose, it regulates human activity in forest areas under national control, setting up rights and duties for citizens operating/living within these areas.</p> <p>The Act provides guidance for the implementation of the 2007 Forest Policy and establishes incentive mechanisms to promote conservation, sustainable use and</p>

management of forests.

Reorganising the national institutional framework responsible for forest issues, the Act converted the Forest Department into the Kenya Forest Service. As a semi-autonomous authority, the Service: provides for management of all forests, formulates policies and guidelines regarding forest conservation, use and management; assists local communities, including Indigenous, on forest management; enforces legislation regulating forest use activities; among other competences.

Targets	None specified
----------------	----------------

4.34 Malaysia



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	-27
excl. LULUCF	193
Change from base year (1990)	NA
Latest reporting year	2011
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 9 June 1992 Date of ratification: 13 July 1994 Date of entry into force: 11 October 1994
Kyoto Protocol ratification status and date	Date of signature: 12 March 1999 Date of ratification: 4 September 2002 Date of entry into force: 16 February 2005
2020 pledge	Voluntary 40% cut in carbon emissions by 2020 compared to 2005 levels (on the condition of receiving the transfer of technology and finance of adequate and effective levels from Annex 1 countries)
Flagship legislation	Renewable Energy Act 2011

Legislative Process

Modelled on the British Parliamentary system, the Malaysian Parliament is bicameral. The two chambers are the House of Representatives (Dewan Rakyat) and the Senate (Dewan Negara). The Parliament is the ultimate legislative body in Malaysia. Its main function is to pass, amend, and repeal acts of law. It is subordinate to the King (Yang di-Pertuan Agong) who is the Head of State.

The House of Representatives consists of 222 members. General elections take place every five years and are based on the first-past-the-post-system. The party with the most votes forms the federal government and supplies the prime minister. The Senate has 70 members. Each of the 13 states elects two senators and four senators represent the three federal territories, Kuala Lumpur (two senators), Putrajaya, and Labuan (each one senator). The remaining 40 senators are appointed by the King.

Laws are introduced to Parliament as bills and go through a process of three parliamentary readings. Typically, bills are introduced by a particular government minister or ministry. There is also the possibility of a Private Member's Bill or a bill introduced by a member of the Senate. However, this is less frequent. The first reading principally consists of the act of submission. Then, in second and third readings, the bill is debated and voted on. Bills that have successfully passed the House of Representatives are referred to the Senate. The Senate may choose not to pass the bill. However, non-approval by the Senate can only delay and not prevent a bill from being passed. The legislative process is completed when the King signs the bill into law (Royal Assent).

Approach to Climate Change

In 2009, Malaysia launched a National Policy on Climate Change. The policy's central aim is to mainstream and to provide a framework for the country's various activities in this area. It contains a number of strategic thrusts (policy goals) and key actions, with a focus on climate change mitigation, adaptation, and capacity building. However, the policy document does not provide any detailed descriptions or timeline for their achievement.

The analysis of existing climate change legislation and other policy initiatives reveals a strong focus on the energy sector. Beginning with Malaysia's 8th Development Plan (2001-2005) the government identified the promotion of renewable energy as a priority area. Subsequently, the 9th Development Plan (2005-2010) and 10th Development Plan (2010-2015) have given further impetus to this policy objective.

Some of the earlier projects in the energy sector include Malaysia's Small Renewable Energy Power Programme (SREP), the Biomass for Generation and Co-Generation Project (BIOGEN) and the Sarawak Corridor of Renewable Energy (SCORE). The government has also introduced a National Green Technology Policy and the formulation of a National Renewable Energy Policy and Action

Plan in 2009. More recently, the Parliament passed the Renewable Energy Act 2011 and the Sustainable Energy Development Authority Act 2011. These acts established a feed-in tariff system, guaranteeing the producers of renewable energy a fixed premium price for their product.

The Prime Minister has also announced a “*voluntary reduction of up to 40% in terms of carbon emission intensity of GDP by the year 2020 compared to 2005 levels on the condition of receiving the transfer of technology and finance of adequate and effective levels from Annex 1 countries*” at the 15th Conference of Parties to the UNFCCC in December 2009. The government has, among other initiatives, launched the Low Carbon City Framework (LCCF). Under the LCCF, five cities (among them Kuala Lumpur) will pioneer low-carbon solutions and practices in four main areas: urban environment, urban transportation, urban infrastructure, and buildings. For this purpose, the government has approved 36 loans worth over USD200 million.

The government also aims to increase Malaysia’s forest cover to 50% of its total land area and the National Landscape Department has initiated a project to plant 20 million trees until 2020. Another afforestation initiative, announced by the Prime Minister in April 2010, includes plans to plant 26 million trees until 2015, one for each Malaysian.

Energy demand

Malaysia is developing a National Energy Efficiency Master Plan. This will complement the Malaysian Industrial Energy Efficiency Improvement Project, a joint initiative of the government, the United Nations Development Programme, and the Green Environmental Facility that was completed in 2009. Outcomes included the development of energy efficiency and conservation guidelines for electrical equipment, guidelines for industrial energy audits, and the development of a benchmarking system and database. In 2008, the government issued the Efficient Management of Electrical Energy Regulation as part of the Electricity Supply Act 1990. Under the regulation, all installations that consume 3 million kWh or more of electricity over a period of six months must have an energy efficiency manager.

Energy supply

Beginning with the 8th Development Plan (2001-2005), the development of the renewable energy sector has been a priority. The latest Development Plan (2010-2015) includes policy objectives and initiatives aimed at scaling-up renewable energy projects such as: removal of subsidies for natural gas by 2015; removal of subsidies for petroleum/gasoline; creation of a feed-in tariff system for renewable energy; and promotion of biofuel from palm oil).

Within this broader policy framework, the government formulated a National Green Technology Strategy in 2009 and made the newly-created Ministry of Energy, Green Technology and Water the focal institution for promoting renewable energy, energy efficiency, and green technology in Malaysia. A National Renewable Energy Policy and Action Plan was also formulated that requires renewables to make up 5% of the total energy mix by 2015.

The two most recent policy initiatives are the Renewable Energy Act 2011 and the Sustainable Energy Development Authority Act 2011. The Renewable Energy Act established a system of feed-in tariffs as outlined in the 10th Development Plan. The system sets fixed tariff rates for electricity generated from solar, biomass, biogas, and hydro energy. Depending on the type of resource used, these tariffs are guaranteed for a period of 16-21 years. The Sustainable Energy Development Authority administers and manages the feed-in tariff system, which according to Malaysia's latest report to the UNFCCC, is expected to reach a capacity of 2,080 MW (approx. 11% of peak electricity demand) by 2020. It is estimated that this would avoid 42.2 million tCO₂e.

Other initiatives in the area of energy supply include the SREP, SCORE and BIOGEN programmes. Established in 2001, SREP provides small power generation plants generating electricity from renewable resources with access to the distribution grid system. Renewable energy sources covered under the programme include biomass, biogas, municipal waste, solar, mini-hydro, and wind. According to government sources, SREP had approved 43 projects by March 2010, producing a total of 286.15 MW of electricity. In place since 2002, BIOGEN develops and implements biomass power generation programmes in the palm oil sector. One of its most significant programmes is a 14 MW power plant in Sabah, generating electricity from oil palm residues. The primary focus of the SCORE programme is to develop 28,000 MW of hydro-power in Sarawak. The programme's centre piece is the Bakun hydro-power dam. Completed in 2011, the Bakun dam has a production capacity of 2,400 MW. Other hydropower projects being developed under SCORE include Pelagus (770 MW), Baleh (950 MW), Murum (990 MW), Baram (1,000 MW), and Limbang (1,000 MW).

REDD+ and LULUCF

Malaysia has one of the highest deforestation rates in the world. From 2000 to 2012, the country lost 14.4% or 47,278 km² of its forest cover, an area larger than Denmark. The central piece of legislation to protect the Malaysian rainforest is the National Forestry (Amendment) Act 1993. The act supersedes all previous forestry legislation and sets out a more comprehensive approach to sustainable forestry management and conservation. In particular, its amendments to the National Forestry Act 1984 involve mandatory and higher fines for illegal logging practices. Furthermore, the government has pledged to maintain a forest cover of 50% of its total land mass. In this context, Malaysia's latest report to the UNFCCC mentions two afforestation initiatives –the National Landscape Department plans to plant 20 million trees by 2020, while in April 2010, the Prime Minister announced plans to plant 26 million trees by 2015, one for each Malaysian.

Transportation

In 2006, Malaysia launched a National Biofuel Policy to promote the production and consumption of biodiesel from palm oil. Among other objectives (e.g. reduce dependency on fossil fuels, create new demand for palm oil, and mobilise local resources for biofuels) the policy aimed to mitigate climate

change by reducing GHG emissions. To support the launch of its biofuel policy, the Malaysian Government reportedly provided USD26.8 million in subsidies in the period of 2004-2006. In 2007, the National Biofuel Policy was supplemented by the Malaysian Biofuel Industry Act, which created a blending mandate for palm oil biodiesel (B5 blend) and a regulatory regime to license blending, storage, transportation, and export. Malaysia's B5 scheme has a volume of 500,000 metric tons, but has not been fully implemented yet.

Adaptation

Malaysia has initiated and partakes in various initiatives related to climate change adaptation. It is a member of the Coral Triangle Initiative, a multilateral partnership of six countries (Malaysia, Philippines, Indonesia, Timor-Leste, Papua New Guinea, and Solomon Islands) to protect the region's marine and coastal ecosystems, in recognition that global marine and coastal ecosystems capture and store more than 30% of man-made carbon emissions. However, to date, Malaysia has not issued legislation on climate change adaptation. In its second communication to the UNFCCC, the government outlines several adaption measures and develops a "no-regrets" policy approach. This means that adaption measures will be limited to actions which "*prove useful regardless whether future climate change impacts do indeed occur.*"

Research and development

The government has funded several studies and research projects with relevance to climate change, particularly in the energy sector. According to government sources, since the 7th Development Plan (1996-2000), universities and research institutes have received research grants of approximately USD5 million. One of Malaysia's most significant achievements has been the development of a Regional Hydro-Climate Model for Peninsular Malaysia to generate climate and hydrological projections. Another initiative supported under the 9th Development plan is the development of a Coastal Vulnerability Index.

Malaysia: Flagship Legislation

Name of law	Renewable Energy Act 2011 (Legislative)
Date of entry into force	2 June 2011
Categories	– Energy supply
Driver for implementation	Climate change Energy security
Summary of bill	The Renewable Energy Act 2011 establishes a system of feed-in tariffs for renewables. The system sets fixed tariff rates for electricity generated from solar, biomass, biogas, and hydro energy. Depending on the type of resource used, these tariffs are guaranteed for a period of 16 to 21 years.
Targets	None specified

Malaysia: Other Relevant Legislation

Name of law	Sustainable Energy Development Authority Act 2011 (Legislative)
Date of entry into force	2 June 2011
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate change Energy security
Summary of bill	The Sustainable Energy Development Authority Act 2011 created the Sustainable Energy Development Authority (SEDA). SEDA is charged with overseeing the implementation and operation of the renewable energy feed-in tariff system established under the Renewable Energy Act 2011.
Targets	None specified

Name of law	Efficient Management of Electrical Energy Regulations 2008 (Executive)
Date of entry into force	15 December 2008
Categories	– Energy demand – Institutional/Administrative arrangements
Driver for implementation	Climate change Energy security
Summary of bill	The Efficient Management of Electrical Energy Regulation 2008 is part of the 1990 Electricity Supply Act. Under the regulation, all installations that consume 3 million kWh or more of electricity over six months must have an electrical energy manager. The energy manager is responsible for analysing the total consumption of electrical energy, advising on the development and implementation of measures to ensure efficient management of electrical energy and monitoring the effectiveness of the measures taken.
Targets	None specified

Name of law	Malaysia Biofuels Industry Act 2007 (Legislative)
Date of entry into force	26 July 2007
Categories	– Energy supply – Institutional/Administrative arrangements
Driver for implementation	Climate change Energy security
Summary of bill	The Malaysia Biofuels Industry Act 2007 creates a blending mandate for palm oil biodiesel with petroleum diesel (B5 blend). Furthermore, the act establishes a regulatory regime for the licensing of blending, storage, transportation, and export of biodiesel from palm oil.
Targets	None specified

Name of law	National Forestry (Amendment) Act 1993 (Legislative)
Date of entry into force	8 September 1993

Categories	<ul style="list-style-type: none">– REDD+ and LULUCF– Institutional/Administrative arrangements
Driver for implementation	Deforestation
Summary of bill	The National Forestry (Amendment) Act 1993 which supersedes all previous forestry legislation lays out a more comprehensive approach to sustainable forestry management and conservation. In particular, its amendments to the National Forestry Act 1984 involve mandatory and higher fines and penalties for illegal logging practices. It also increases the power of the police and the armed forces to act against illegal logging and timber theft.
Targets	None specified

4.35 Maldives



Fact Box

Greenhouse Gas emissions (MtCO₂e) incl. LULUCF excl. LULUCF Change from base year (1990)	0 0 N/A
Latest reporting year	1994
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 09 November 1992 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 16 March 1998 Date of ratification: 30 December 1998 Date of entry into force: 16 February 2005
2020 pledge	Achieve carbon neutrality as a country by 2020.
Flagship legislation	National Adaptation Programme of Action of 2006

Legislative Process

The Republic of Maldives is a presidential representative republic. The executive branch consists of the President, Vice-President and Cabinet. The President and Vice-President are elected on the same ticket by popular votes for a five-year term with a two-term limit. The President serves as head of government and appoints a cabinet, subject to approval by Parliament.

Parliament is unicameral and called the Majlis, with 77 representatives serving five-year terms elected from population-decided constituencies. The government or elected members of the Majlis may present a proposed legislation (called a bill) to the “floor” where it is then relegated to a legislative committee for debate and amendments. Standing committees are permanent and members are assigned for a period of two and a half years. Selected committees are purpose-specific and dissolved after achieving their mandate. Once through the committee process, the bill is sent back to the floor for a vote, where it may pass with a simple majority and be promulgated by the president within 30 days. The president has the authority to send a bill back to the Majlis with observations and objections. These may be considered by representatives who then amend the legislation or pass the bill again as is.

Approach to Climate Change

The Republic of Maldives is the sixth smallest sovereign state with a total land area of 235km². Of the 1,192 coral islands making up the territory, only 358 are in use for human activity, accounting for 176km².

The Maldives faces perhaps one of the most severe potential effects of climate change: the complete, or near complete, submersion of their national territory. The island country’s average height of is 1.5m and the highest point is a coastal cliff measuring 4m above sea level. Over 80% of inhabited land is less than 1m above sea level. While the territory is protected against most oceanic storms by an expansive coral reef that surrounds the island, rising sea levels may literally wipe out the island’s dry land through regular tidal flooding.

The risk assessment presented in the National Adaptation Plan is bleak. Housing, infrastructure, economic sectors and fresh water resources are all at great peril. Fifty percent of housing structures are within 100m of the coastline, and very few are built to withstand tidal flooding. Likewise, nearly all of the national infrastructure, including roadways, airports, schools, hospitals, tourist resorts and energy generators risk submersion if sea levels rise to projected levels.

Under worst-case climate change projected scenarios, the entirety of the Maldives would be submerged by water. This fact led the President to go so far as to suggest moving the entire Maldives population to a new sovereign territory, paid for by funnelling tourist dollars into a sovereign wealth fund.

However, currently no pieces of legislation that directly confront climate change have been passed. In the country's 2001 national report to the UNFCCC, policy recommendations include participating in international advocacy, incorporating climate change concerns into regulatory policies, creating financing mechanisms to implement climate change programmes, building capacity to adapt to climate change, incorporating adaptive measures into national planning and developing strategies to mitigate GHG emissions.

The National Adaptation Plan is a significant and comprehensive planning document; but there remains a lack of detail about how to finance the 12 climate change programmes detailed.

A joint venture between the government of the Maldives, the World Bank and the European Union set up the Maldives Climate Change Trust Fund, to be administered by the World Bank and to fund climate change mitigation and adaptation projects. To date three small-scale projects are in some state of implementation: a solid waste management pilot project, a renewable energy grid with solar energy, and a coral reef monitoring system.

Adaptation

The National Adaptation Programme of Action was prepared by the Integrated Climate Change Strategy (ICCS) and published by the Ministry of Environment, Energy and Water. The report states that the drafting included input from a wide array of experts and civil society groups as well as community stakeholders. In the foreword, President Abdulla Yameen states that the Kyoto Protocol falls far short of reversing climate change and adaptation to climate change is the most pressing priority for countries such as the Maldives.

The stated goal of the Adaptation Plan is to present a coherent framework to climate change adaptation that enhances the resilience of the natural, human, and social systems and ensures their sustainability in the face of predicted climate hazards. The plan admits its imperfections, given the complexity of the problem and incomplete scientific knowledge; but it stresses a plurality of values to construct a framework that brings climate change into the national agenda while allowing for flexibility in implementation.

The Republic of Maldives: Flagship Legislation

Name of law	National Adaptation Program of Action of 2006 [Executive]
Date of entry into force	26 December 2006
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – REDD+ and LULUCF – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for	

implementation Climate change

Summary of bill The Plan is divided into five policy components: (i) climate change-related hazards; (ii) adaption of systems vulnerable to climate change (ecosystems, biodiversity, non-renewable resources, land use, human social relations); (iii) sustainable development outcomes of adaption strategies; (iv) processes to compensate for lost, damaged or negatively altered systems (as listed above) as a result of climate change; and (v) barriers to implementation.

Adaptation priorities have been categorised as follows:

Land, beach and human settlements:

- Consolidate population and development
- Acquire support for the speedy and efficient implementation of Safer Island Strategy.
- Strengthen land-use planning as a tool for protection of human settlements.
- Build capacity for coastal protection, coastal zone management and flood control.
- Protect beaches through soft and hard-engineering solutions.
- Protect house reef to maintain natural defence of islands.
- Improve building designs and regulations to increase resilience.
- Integrate climate change adaption into national disaster management framework.

Critical infrastructure

- Develop coastal protection for airports and development focus islands.
- Strengthen capacity for planning and design of infrastructure to ensure development of resilient infrastructure.
- Protect powerhouses and utilities.
- Protect telecommunications infrastructure.

Tourism

- Protect beaches and tourist infrastructure.
- Develop climate change adaptation policy and strategy for tourism.
- Diversify the tourism product to reduce over-dependency on marine environment.
- Strengthen tourism institutions to coordinate climate response in the tourism sector.
- Incorporate climate change adaptation measures to upcoming resorts.

Fisheries

- Improve fish finding and fish harvesting.
- Establish aquaculture/mariculture as an alternative to natural breeding to reduce the economic and social impacts of changing tuna abundance.
- Undertake research and disseminate information on fisheries and climate change.
- Experiment with new and alternative species and breeding methods for live bait.
- Integrated reef fishery management.
- Exploit new species and promote poultry farming as alternative sources of protein to reduce over-dependency on tuna for protein.

Human health

- Strengthen regulatory and institutional capacity for vector control.
- Streamline the planning of healthcare services and strengthen medical emergency response.
- Promote healthy lifestyles, healthy islands and healthy buildings.
- Strengthen the capacity for healthcare delivery.
- Undertake research and disseminate information on climate change related diseases.
- Increase nutrition promotion campaigns.

Water resources

- Acquire appropriate sewage treatment and disposal technologies to protect water resources.
- Increase safe rainwater harvesting.
- Acquire desalination technologies appropriate for small islands.

-
- Undertake recharging of aquifers to reduce salinisation from saltwater intrusion and storm surge flooding.
 - Protect and preserve natural water catchment areas.

Agriculture and food security

- Develop a national food security strategy.
- Secure trade agreements with foreign trade partners to ensure food security.
- Establish capacity for emergency food storage in development focus islands at regional level.
- Introduce new technologies to increase local food production.
- Strengthen marketing and sale of local food items.
- Improve allocation of land for agriculture.
- Promote traditional food preservation and storage practices for local food.
- Enforce and strengthen quarantine and integrated pest control to prevent pests and diseases.
- Introduce new irrigation technologies.

Coral reef biodiversity

- Provide alternatives to coral and sand as construction materials and enforce the ban on coral mining.
- Enhance the capacity for waste management to prevent pollution of marine environment.
- Formulate and implement an oil pollution contingency plan.
- Acquire appropriate sewage treatment technologies.
- Establish marine protected areas.
- Establish an information base on coral reefs and climate change.
- Undertake monitoring and research to prevent coral diseases and rehabilitate coral reefs.
- Develop measures to protect coral reefs from development activities.

The 30 priorities listed above are then ranked, reportedly with input from community stakeholders. Those 30 priorities are then incorporated into 12 programme profiles that the Plan calls to be developed and implemented immediately. Each of the 12 programmes is structured according to rationale, specific object, activities to be realised, expected outcomes, benefits and an estimated cost. The total cost to realise all 12 programmes as estimated come to slightly less than USD108 million.

Implementation will be largely overseen by the National Commission for Protection of the Environment, and a special task force will be charged with the procurement and allocation of funds.

Targets	None specified
----------------	----------------

4.36 Mexico



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	712
excl. LULUCF	641
Change from base year (1990)	NA
Latest reporting year	2006
Importance as an emitter	Top 20
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 11 March 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 9 June 1998 Date of ratification: 7 September 2000 Date of entry into force: 16 February 2005
2020 pledge	30% GHG emissions reduction with respect to business as usual scenario by 2020 (given adequate financial and technical support from developed countries)
Flagship legislation	General Law on Climate Change

Legislative Process

Mexico has a bicameral legislature (Congress) and is constituted by the Chamber of Deputies and the Senate. The Lower Chamber is formed of 300 members elected in a system of electoral districts, and 200 members elected through a system of regional lists. The Senate is formed of 2 senators and their respective proxies representing each state and the federal district, making a total of 128 senators. All members of the Congress are elected for a three-year term.

The Constitution establishes that only the President, senators and members of the parliament can introduce a bill in Congress. With a few exceptions, the legislative process requires the discussion and approval of a draft bill by both the senate and the parliament. The Senate addresses all matters concerning foreign policy, approves international agreements and confirms presidential appointments. The Chamber of Deputies addresses all matters pertaining to the government's budget and public expenditures.

Once introduced to one of the chambers, the text passes under the scrutiny of different committees in charge of verifying legal and technical aspects of the law, evaluating its relevance and impact in a certain policy area. The text is then discussed and voted on at the plenary session. If approved, a law is then sent to the other chamber, where it undergoes a similar process of scrutiny and voting.

If passed in both Chambers, a bill becomes law once it has received presidential assent and been published in the official gazette. If not sanctioned, the bill is sent back to one of the chambers with suggested amendments, re-launching the legislative process for the adoption of that law.

Approach to Climate Change

In January 2008 the government announced the creation of the Climate Change National System with the objective of defining a consensual public policy agenda to tackle climate change. The president called on representatives from the legislative, executive and judiciary, private sector and civil society to integrate the System and work for the promotion of a "truly sustainable development". The president also announced the launch of the Inter-secretarial Committee on Climate change, formed of 13 secretaries.

In July 2013 Mexico adopted the 10-20-40 National Climate Change Strategy. Part of the 2012 General Law on Climate Change, the Strategy represents another milestone in the country's efforts to develop a comprehensive response to the challenges posed by climate change, and outlines actions to be implemented until 2040. It sets out the main focal areas regarding cross-sectorial climate policy, adaptation to climate change and reduction of GHG emissions, presented as "eight axes of action".

These are: 1) reduce vulnerability to climate change of Mexicans living at risk and strengthen their resilience; 2) reduce the vulnerability of production

systems and strategic infrastructure against weather contingencies; 3) foster adaptability of ecosystems to the effects of global warming; 4) accelerate energy transition towards clean energy sources; 5) reduce power consumption intensity through efficiency and rationality schemes; 6) transition to sustainable city models, with intelligent mobility systems, integrated waste management and buildings with a low carbon footprint; 7) encourage better agricultural and forestry practices, with schemes for Reducing Emissions from Deforestation and Degradation (REDD+); and 8) reduce "short life" pollutant emissions, such as black carbon and methane, to improve the health and welfare of Mexicans.

The Strategy also reinforces Mexico's mitigation goals to reduce emissions by 30% by 2020 with respect to the business-as-usual scenario, and by 50% by 2050, as compared with emissions in 2000.

The Inter-Secretariat Commission on Climate Change, launched in 2005 via presidential agreement, was the first initiative to address the issue directly. It was followed by the National Strategy on Climate Change, launched in 2007, and was concerned with putting forward a line of action to inform mitigation and adaptation efforts in Mexico. The National Development Plan 2007–2012, in turn, included an environmental sustainability axis concerned with addressing climate change. Finally, the Special Programme on Climate Change 2009–2012 established goals, targets and actions necessary to promote climate change mitigation in the short term while securing Mexico's economic competitiveness and allowing time for the development of adaptation strategies. The government expects full implementation of the latter to achieve cut total annual emissions by 51 million tonnes of CO₂-equivalent by 2012 in relation to the business as usual scenario.

Internationally, Mexico has been one of the most active developing countries in relation to conducting and updating the UNFCCC's National Inventories on Greenhouse Emissions. It was the first developing country to submit the Fourth National Communication and is on the verge of presenting its Fifth National Communication. Mexico's hosting of COP16 in 2010 created momentum in Mexico to address climate change, as evidenced by the four draft laws put forward to Congress by the major political parties that eventually led to the approval of the General Law on Climate Change (GLCC).

The GLCC became law in 2012. This was a major advance in Mexico's actions to tackle climate change. After a process of negotiation that lasted two years, the key breakthrough was a meeting in October 2011, convened by GLOBE International and addressed by former UK Deputy Prime Minister Lord Prescott. At this meeting the legislators from different parties, who had proposed separate drafts of a climate change law, agreed to merge them into one single proposal.

The GLCC was voted on, and approved, in the Mexican Senate in December 2011, coinciding with the UNFCCC COP17/CMP7 in Durban, South Africa.

LULUCF

In 2012 Congress passed a series of legal reforms on the Environmental Law (1988, last amended in 2010) and on the Sustainable Forest Development Law (2003), to facilitate the implementation of the REDD+ mechanism in Mexico. The amendments focus on harmonising the definitions of key terms, the development of economic instruments that benefit forest owners and users and the inclusion of REDD+ safeguards.

The development and passing of these legal reforms was led by the Mexico Programme of the GLOBE Legislators' Forest Initiative and highlight the beginning of a transition towards integrating REDD+ within national legal frameworks. Until then, the REDD+ mechanism has predominantly been discussed within the UNFCCC and the executive branch of governments.

The legal reforms take a critical step towards ensuring that local communities who sustainably manage their forests receive economic benefits derived from any future carbon payment scheme.

The definition of environmental services is adapted to emphasise the relationship between the benefits and the functionality of the natural ecosystem and the individuals settled in the territory. In addition, it is recognised that environmental services are regulated by the Forest Sustainable Development Law (2003).

The terms "deforestation" and "degradation" and the concept of forest management have been adjusted to encompass the notion of environmental services and recognise their economic value. The national forest inventory is linked to the REDD+ MRV system, which will be created according to the latest UNFCCC developments.

All economic instruments will be considered to promote environmental services, thus establishing a legal basis for new mechanisms that support the "who conserves is paid" principle, while forest land owners will be the direct beneficiaries of the economic revenues generated by the sustainable management of their forests.

Eight socio-economic safeguards are established according to the decisions at the latest UNFCCC COP and the national REDD+ strategy of Mexico and finally, it urges the executive power to establish, over a period no longer than three years, a national system for monitoring, registering and verifying emissions reductions derived from actions to prevent deforestation and forest degradation.

Renewable energy and energy efficiency

The Law for the Use of Renewable Energies and for the Finance of the Energy Transition (LAERFTE) and the Law for Sustainable Energy Use (LASE) were both passed in 2008. In 2009 a fund for renewable energy was created at the initial value of MXN 3 billion (USD 229 million). In a similar vein, the Law of Bioenergy Promotion and Development was passed in 2007 with the purpose of developing bioenergy in the country, thus contributing to energy diversification and sustainable development while supporting rural areas and promoting social

inclusion. These bills all outline a broad framework for action and request the establishment of multiple bodies and funding mechanisms. In this sense, they represented the first step, a binding commitment of future action, which has been built on by the General Law on Climate Change.

Mexico: Flagship Legislation

Name of law	General Law on Climate Change (Legislative)
Date of entry into force	6 June 2012
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – Energy Demand – REDD+ and LULUCF – Transportation – Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The approval of the GLCC gives certainty and continuity to climate policy in Mexico and sets the country on a path to a low carbon economy. It establishes the basis for the creation of institutions, legal frameworks and financing to move towards a low carbon economy. As a General Law, it specifies the different responsibilities of the Federation, Mexico's pledge under the Copenhagen Accord, in terms of committing the country to an emissions reduction target of 30% below Business As Usual (BAU) by 2020, subject to the availability of financial resources and technology transfer.</p>

The Law transforms the National Institute of Ecology into the National Institute of Ecology and Climate Change (INECC). The INECC will be responsible for compiling the National Emissions Inventory, will collaborate in the development of strategies, plans, programmes, instruments and actions related to sustainable development, the environment and climate change, and will help in the evaluation of national climate change policy. Through the Law, the Inter-ministerial Commission on Climate Change (IMCC), initially created by presidential agreement, is now formally the institution in charge of co-ordinating climate change government actions and formulating and implementing national adaptation and mitigation policies. The GLCC also establishes the National Climate Change System, formed by the IMCC, the INECC, state and municipal governments and representatives of Congress. Its main responsibility will be to co-ordinate the efforts of the Federal Government, states and municipalities.

Taking into account Mexico's vulnerability to climate impacts, the Law puts a strong emphasis on adaptation measures. The objective is to reduce social and ecosystem vulnerability by strengthening the resilience of natural and human systems to reduce damage and risk. One of the tools to achieve this is the "Risk Atlas" which includes information about current and future vulnerability scenarios.

The GLCC states that the national mitigation policy should include diagnosis, planning, measurement, reporting, verification and assessment of national GHG emissions. The national mitigation strategy will be implemented gradually; initially promoting the strengthening of national capacities and subsequently beginning mitigation activities in the most cost-effective sectors – energy production, transport, agriculture, forests and other land use, waste and industrial processes.

The GLCC also creates a climate change fund, which will channel public, private, national and international funding projects that simultaneously contribute to adaptation and

	mitigation actions, such as supporting state-level actions, research and innovation projects, technological development and transfer, and the purchase of Certified Emissions Reductions (CERs). The Law establishes a voluntary market for emissions trading to promote GHG reductions in a cost-effective, verifiable, measurable and reportable manner.
	Regulations still need to be determined for the implementation of the Law, the details of which should be completed by mid-2013 by the new government.
Targets	The General Law on Climate Change puts into law Mexico's Copenhagen Accord Commitment of reducing emissions to 30% below BAU by 2020.

Mexico: Other Relevant Legislation

Name of law	National Climate Change Strategy (Executive)
Date of entry into force	5 June 2013
Categories	<ul style="list-style-type: none"> – Energy Supply – REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The strategy sets out the main focal areas regarding cross-sectorial climate policy, adaptation to climate change and reduction of GHG emissions, presented as “eight axes of action”. These are:</p> <ol style="list-style-type: none"> 1) Reduce vulnerability to climate change of Mexicans living at risk and strengthen their resilience; 2) Reduce the vulnerability of production systems and strategic infrastructure against weather contingencies; 3) Foster adaptability of ecosystems to the effects of global warming; 4) Accelerate energy transition towards clean energy sources; 5) Reduce power consumption intensity through efficiency and rationality schemes; 6) Transition to sustainable city models, with intelligent mobility systems, integrated waste management and buildings with a low carbon footprint; 7) Encourage better agricultural and forestry practices, with schemes for Reducing Emissions from Deforestation and Degradation (REDD+); 8) Reduce short lived pollutant emissions, such as black carbon and methane, to improve the health and welfare of Mexicans. <p>The Strategy also reinforces Mexico's mitigation goals to reduce emissions by 30% by the year 2020 with respect to the business-as-usual scenario, and by 50% by 2050, as compared with emissions in 2000.</p>
Targets	Reduce emission in 30% by 2020 (BAU) and in 50% by 2050 when compared to 2000

Name of law	Law for the Use of Renewable Energies and Funding the Energy Transition (LAERFTE) (Legislative)
Date of entry into force	28 November 2008
Categories	<ul style="list-style-type: none"> – Energy Supply – Transportation – Institutional/Administrative arrangements
Driver for implementation	Climate change, renewable energy, energy efficiency

Summary of bill The law seeks to reduce Mexico's dependence on hydrocarbons as the primary source of energy. Promotes and regulates the use of renewable energy sources and clean technology for electricity generation through the Special Programme for Renewable Energy Use. Establishes the National Strategy for the Energy Transition and Sustainable Energy Use and the Energy Transition Fund charged with creating financial mechanisms to support the energy transition. The Secretary of Energy is responsible for the implementation of the Law.

The law determines that the Federal Executive, in the context of the National Strategy for Energy Transition and Sustainable Energy Use, will design policies and measures to facilitate the inflow of resources from international mechanisms related to climate change mitigation.

It promotes renewable energy generation including wind, solar, geothermal and hydropower. Charges the Regulatory Commission on Energy with creating methodologies to assess the contribution of renewable energy technologies to the National Electric System. In 2009, a new regulation on the Law created a 14-member National Consultative Council for Renewable Energy. This new regulation charged the Secretariat of Energy with establishing a National Inventory of Renewable Energy and a methodology to value the externalities of renewable electricity generation vis-à-vis fossil fuels. In preparation for the Special Programme, the Secretariat of Energy is also meant to create an annual forecast on the penetration rate of renewable energy so as to establish targets for renewable electricity.

The regulatory instruments overseeing the services exchanged between energy suppliers and generators will be established by the Secretariat of Energy. The National Centre for Energy Control will observe the adequacy of the rules and fulfilment of the Law.

Targets None specified

Name of law Law for Sustainable Energy Use (LASE) (Legislative)

Date of entry into force 28 November 2008

Categories

- Energy Demand
- Institutional/Administrative arrangements

Driver for implementation Energy efficiency

Summary of bill The Programme and the Commission is expected to promote scientific research related to sustainable energy use and shall design and implement permanent sustainable energy use programmes in all properties owned by the Federal Administration as well as apply sustainable use criteria in all acquired and rented properties or public works and services. In order to integrate and update the National Information Sub-system, Federal Administration entities and users with high energy consumption shall provide the Commission with information on production, exports, imports and consumption of all types of energy; energy efficiency in consumption; and measures implemented to save energy and its results.

The Secretariat of Energy shall periodically revise the Programme and publish the results in the Federation's Official Gazette. The Consultative Council shall evaluate the fulfilment of the Programme's objectives. The National Commission shall request verification visits and information from those engaged in activities related to the sustainable use of energy.

The Programme and the Commission shall promote scientific research related to sustainable energy use and shall design and implement permanent sustainable energy use programmes in all properties owned by the Federal Administration as well as apply sustainable use criteria in all acquired and rented properties or public works and services. In order to integrate and update the National Information Sub-system, Federal

Administration entities and users with high energy consumption shall provide the Commission with information on production, exports, imports and consumption of all types of energy; energy efficiency in consumption, measures implemented to save energy and its results.

The Secretariat of Energy shall periodically revise the Programme and publish the results in the Federation's Official Gazette. The Consultative Council shall evaluate the fulfilment of the Programme's objectives. The National Commission shall request verification visits and information from those engaged in activities related to the sustainable use of energy.

Targets	None specified
----------------	----------------

Name of law	Law for Bioenergy Promotion and Development (Legislative)
--------------------	--

Date of entry into force	13 December 2007
---------------------------------	------------------

Categories	<ul style="list-style-type: none"> – Energy Supply – REDD+ and LULUCF – Research and development
-------------------	---

Driver for implementation	Renewable energy
----------------------------------	------------------

Summary of bill	This law seeks to reduce GHG emissions as per the international instruments to which Mexico is a signatory.
------------------------	---

The Secretariat of Agriculture is charged with developing the Programme of Sustainable Input Production for Bioenergy and Scientific and Technological Development.

The Inter-sectoral Commission for Bioenergy Development, in the context of the Development Plan, will promote the production and commercialisation of bioenergy inputs from activities in rural areas related to agriculture and animal husbandry, forests, seaweed, biotechnology and enzymatic processes.

The Secretariat of Agriculture and the Secretariat of Energy shall support scientific and technological research for sustainable bioenergy production and use as well as capacity building in this area. The Commission for Bioenergy shall implement measures including the creation of a National Network of Information and Research on Inputs.

The Secretariat of Energy is responsible for defining co-ordination mechanisms between different sectors of the Public Administration, federal entities and municipalities as well as different productive sectors in the country.

The Secretariat of Energy is also responsible for reviewing the annual budget and evaluating established programmes and their respective support instruments. It is also charged with monitoring the observance of environmental laws and measures, and of sanctioning infractions derived from the application of the bill.

Targets	None specified
----------------	----------------

Name of law	Inter-secretariat Commission on Climate Change (Executive)
--------------------	---

Date of entry into force	25 April 2005
---------------------------------	---------------

Categories	<ul style="list-style-type: none"> – Energy Supply – Energy Demand – REDD+ and LULUCF – Transportation
-------------------	--

	<ul style="list-style-type: none"> - Adaptation - Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The permanent Inter-Secretariat Commission on Climate Change was created by presidential agreement and is formed by the Secretariats of Foreign Relations, Social Development, Environment and Natural Resources, Energy, Economy, Agriculture and Communications and Transport. The Commission is responsible for co-ordinating national policies on climate change mitigation and adaptation as well as programmes and strategies for the fulfilment of Mexico's commitments under the Kyoto Protocol. The head of the Secretariat of Energy and Natural Resources will be the Commission's permanent head, and a Consultative Council on Climate Change will be formed including members of the public, private and academic sectors.</p> <p>The Commission will promote and develop Clean Development Mechanism (CDM) projects in the public and private sectors. To this end it will work with the permanent working group Mexican Committee for Greenhouse Gas Emission Reduction and Capture Projects.</p> <p>The Commission shall report progress on an annual basis.</p>
Targets	None specified

Name of law	Accelerated Depreciation for Investments with Environmental Benefits (Legislative)
Date of entry into force	2005
Categories	<ul style="list-style-type: none"> - Energy Supply - Institutional/Administrative arrangements
Driver for implementation	Renewable energy, energy efficiency
Summary of bill	<p>The bill establishes that investments in environmentally friendly technologies, including renewable energy, could profit from accelerated depreciation. The information of the bill involves the Secretariat of Natural Resources and Environment as well as the Secretariat of Finance.</p> <p>The bill allows investors to deduct up to 100% of the investment in renewable energy projects from tax liability during the first year, in accordance with General Law for Ecological Equilibrium and Environmental Protection. Once the tax deduction is granted, the plant must remain active for at least 5 years.</p>
Targets	None specified

Name of law	General Law for Sustainable Forest Development (Legislative)
Date of entry into force	13 December 2002
Categories	<ul style="list-style-type: none"> - REDD+ and LULUCF - Research and development - Institutional/Administrative arrangements
Driver for implementation	Deforestation
Summary of bill	<p>The bill seeks to regulate and promote the conservation, protection, restoration, production, organisation, agricultural activity and management of Mexico's forests in order to secure sustainable forest development. To this end, it creates the National Forest Service, formed by different government authorities and the Mexican Forest Fund, charged with facilitating access to financial services and promoting payment for environmental services schemes.</p>

The bill also seeks to develop environmental goods and services in forests while preserving and enhancing biodiversity, and improving the social standards of forest peoples. It creates certification schemes in accordance with international practices. There is a strong focus on the creation of economic instruments for the development of forest activity such as fiscal stimulus, credit and funds.

The National Forest Commission shall formulate and co-ordinate the National Programme for Forest Research and Technological Development, supported by national institutions dedicated to the theme and charged with promoting research, development, innovation and technological transfers for sustainable development.

Targets	None specified
----------------	----------------

Name of law	General Law of Ecological Equilibrium and Environmental Protection [Legislative]
--------------------	---

Date of entry into force	1 March 1998
---------------------------------	--------------

Categories	– Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Sustainable development, air pollution
----------------------------------	--

Summary of bill	The bill seeks to promote the preservation and restoration of ecological balance and environmental protection in Mexico. The law sets guidelines to prevent and control air, water and soil pollution, including the establishment of official Mexican standards of environmental quality and of inventories of emissions sources. It puts forward provisions for the establishment and management of protected natural areas. It determines that the sustainable use, preservation and restoration of soil, water and other natural resources should be compatible with economic benefits and activities. The bill also promotes responsible participation of the people, individually or collectively, in the preservation and restoration of ecological balance and environmental protection.
------------------------	--

The bill charges the Secretariat of Environment and Natural Resources with issuing official Mexican standards of environmental quality according to the maximum permissible level of emissions of odours, gases and solid particles and liquid to the atmosphere. The Secretariat should also integrate and update the inventory of emissions sources of air pollutants and coordinate with local governments for the integration of national and regional inventories. Finally, the Secretariat is further responsible for the development and implementation of programmes to reduce emissions of pollutants in the atmosphere.

Targets	None specified
----------------	----------------

4.37 Federated States of Micronesia



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	0
excl. LULUCF	0
Change from base year (1990)	NA
Latest reporting year	1994
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 18 November 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 17 March 1998 Date of ratification: 21 June 1999 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	Federated States of Micronesia Climate Change Act

Legislative Process

The Federated States of Micronesia (“FSM”) is a constitutional government in free association with the US. Its four states are Chuuk, Kosrae, Pohnpei and Yap. The FSM has a unicameral congress, which has 14 members elected by popular vote. Four senators, representing the four states, serve for a four-year term. Ten senators, who are elected for two-year terms, represent single-member districts based on population. The congress elects the president and vice-president from among the four state-based senators, for a four-year executive term. Special elections are held in order to fill their congressional seats. The cabinet is appointed. The president and vice-president are supported by an appointed cabinet. There are no formal political parties.

The Constitution of the Federated States of Micronesia states that in order to become a law, a bill must pass two readings on separate days. The first reading must pass with two thirds of all members. On the final vote, each state delegation must cast one vote, and the bill will pass if it gains two thirds of the votes of the delegations. The bill is then presented to the president for approval. If the president does not return the bill with any objections to Congress within 10 days, the bill becomes a law. Bills may have but one subject, and provisions outside the title of the law are void.

Approach to Climate Change

The FSM is a non-annex-1 party to the Kyoto Protocol, having submitted its first communication to the UNFCCC in 1997. It is also a member of the Alliance of Small Island States (AOSIS) to address global climate change.

In 2004 the government of the FSM formulated the Strategic Development Plan 2004-2024, which calls for a 50% cut in imported petroleum fuels by 2020 through improved energy efficiency, energy conservation, elimination of energy subsidies and public education. It sets a renewable energy target of 10% of electricity in urban centres and 50% in rural areas by 2020, through incentives and public education, whilst upgrading local capacity to carry out operation and maintenance of all renewable energy hardware. It also sets a target of meeting US standards for energy efficiency in 100% of new public buildings and 50% of private buildings by 2006.

In October 2013 Congress passed the Nationwide Integrated Disaster Risk Management and Climate Change Policy (‘the Climate Change Policy’). The policy sets out in its guiding principles a ‘multi-hazard’ risk management approach that integrates disaster risk management, climate change adaptation and GHG emissions reduction.

In order to implement The Nationwide Integrated Disaster Risk Management and Climate Change Policy, The Climate Change Act was introduced in Congress in October 2013, and passed in Congress in late November 2013. The Climate

Change Act instructs government offices and departments to prepare plans and policies consistent with the Climate Change Policy by October 2015; it also includes an obligation on the President to report to Congress on the progress of implementation of the Climate Change, and for the budget request to include one or more lines on the implementation of the Climate Change Policy.

The Asian Development Bank's Country Operations Business Plan (COBP) 2011-2013 and the COPBP 2012-2014 are focused on infrastructure and the energy sector, namely implementing renewable energy projects in Yap and Pohnpei in the form of hydropower, solar energy and wind energy. Emphasis has been placed on the need for institutional and tariff reforms supported by full cost recovery at utility and state levels.

The FSM has also been supported under the REP-5 Programme, which is the 9th European Development Fund (9th EDF, 2000-2007) multi-country initiative to reduce dependency on fossil fuel in five Pacific countries, both as a means to reach fiscal balance and to increase the availability of electricity to outer island communities. Most funds have been allocated to solar PV installations across four states – focusing on electrification of outer islands in Yap, Chuuk and Pohnpei, and on connection to the main grid on the single-island state of Kosrae. Renewable energy and reducing dependency on fossil fuels remained the focus for the 10th EDF (2008-2013).

Energy demand

The Nationwide Energy Policy calls for a 50% increase in energy efficiency by 2020, via a government facility conservation plan; regulation on building and construction; an awareness campaign on energy efficiency and conservation; and training and capacity building programme.

Energy supply

The main fuel used in the FSM is locally produced biomass – especially wood, charcoal and coconut husk products. Fuels for electricity generation and transportation are mainly a mix coconut oil and diesel. Solar energy is approximately 1% of the energy mix. A small hydro-electric plant operates in Pohnpei, and is being restored, with the aid of European Union EDF grants of nearly USD15 million over a 10-year period. Other projects include a 180kw solar energy pilot project funded by Japan International Co-operation Agency (JICA), a USD 800,000 grant for a PV grid connection system in Chuuk.

Under the FSM federal system, the utilities are owned and regulated by the constituent states. There is no national-level legislation and standards. The governance of the utilities at the state level varies. Although some states like Pohnpei State have regulatory legislation, in practice the utilities are self-regulating. The FSM Petroleum Corporation was established in 2008 as a wholly government-owned enterprise, which aims to achieve greater economies of scale in the import of fuel to all four states.

REDD+ and LULUCF

The first national communication to the UNFCCC lists, among its adaptation goals, reforestation of mangroves, upland forests and other forests in need of restoration.

The US Forest Service and the FSM collaborated on a forest management plan, Federated States of Micronesia State-Wide Assessment and Resource Strategy 2010–2015+ (2010), which is a strategic plan to harvest timber and manage forest resources in a way that preserves the soils and resource. The plan integrates climate adaptation considerations.

Adaptation

The FSM, a coastal nation comprised of 607 islands, is highly vulnerable to climate change. As outlined in its first National Communication to the UNFCCC in 1997, the FSM's major concerns as a coastal nation are vulnerability to sea level rise and to more frequent, intense, or long lasting El-Niño droughts and La Niña floods and storms. It identifies six sectoral areas and four cross-sectoral areas in which effect-oriented adaptation and source-oriented mitigation measures need to be adopted to address the known and potential impacts of climate change. The six sectoral areas are: coral reef ecosystems; coastal zone ecosystems; waste management; upland forest ecosystems; agriculture/agroforestry; water supply. The cross- sectoral areas are: public awareness programmes; research programmes; technology development and transfer; interagency strengthening.

The Climate Change Policy is the most recent and most significant development with regards to adaptation efforts. The policy, adopted by the FSM Congress in October 2013, aims to achieve economic growth and self-reliance within a framework of sustainable development that seeks to maximize opportunities presented by climate change, while minimising the risks associated with all slow and rapid-onset natural and human-induced hazards, including those associated with climate change.

Micronesia: Flagship Legislation

Name of law	Federated States of Micronesia Climate Change Act [Legislative]
Date of entry into force	27 November, 2013
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – REDD+ and LULUCF – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Climate change; Risk management
Summary of bill	The Climate Change Act, adopted by the FSM congress in late November 2013 implements the recently adopted Nationwide Integrated Disaster Risk Management and Climate Change Policy. It instructs government offices and departments to prepare plans and policies consistent with the Climate Change Policy by October 2015; it also includes an

obligation on the President to report to Congress on the progress of implementation of the Climate Change, and for the budget request to include one or more lines on the implementation of the Climate Change Policy.

Targets None specified

Micronesia: Other Relevant Legislation

Name of law	Nationwide Integrated Disaster Risk Management and Climate Change Policy [Executive]
Date of entry into force	20 September, 2013
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – REDD+ and LULUCF – Adaptation – Research and Development
Driver for implementation	Climate change; Risk management
Summary of bill	The Policy, adopted by the FSM congress in October 2013, aims to achieve economic growth and self-reliance within a framework of sustainable development that seeks to maximize opportunities presented by climate change and minimise the risks associated with all slow and rapid-onset natural and human-induced hazards, including those associated with climate change.

It will assist in meeting regional and international treaty obligations and objectives that the Government of FSM has agreed are worth pursuing such as the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 – 2015 (RFA), the Pacific Islands Framework for Action on Climate Change 2006 – 2015 (PIFACC), the international Hyogo Framework for Action: Building the Resilience of Nations and Communities to Disasters 2005 – 2015, and the United Nations Framework Convention on Climate Change (UNFCCC).

The following text includes selected paragraphs from the policy, with minor or no edits:

The guiding principles of the policy include:

- A ‘multi-hazard’ risk management approach that integrates disaster risk management, climate change adaptation and GHG emissions reduction.
- Recognition that the assessment and treatment of existing risks is the starting point for reducing and managing future risks.
- Innovative and creative thinking to seek approaches that simultaneously reduce threats and identify possible opportunities arising from climate change.
- Strong horizontal and vertical coordination between sectors, national, state and community levels using an ‘all-of-government’, ‘all-of-country’ co-ordinated approach that emphasizes partnerships between the public sector, private sector and civil society.
- Knowledge-based decision-making with an emphasis on understanding and addressing root causes of hazards and vulnerabilities and using a science-based , no regrets and precautionary approach.
- Holistic, integrated community- and ecosystem-based ‘ridge to reef’ approach to risk reduction and natural resources management to ensure that adaptation measures are socially and ecologically sound.
- Special attention to gender issues and the needs of marginalised groups, such as small atoll communities, the disabled and the elderly.
- Recognising the rights of island communities to their ancestral lands, while acknowledging the role that migration has played, and will continue to play, as an adaptation strategy to a changing environment.

The strategic outcomes, in support of the FSM Development Plan 2004-2023, include:

- Economic resilience – among others through robust agriculture, forestry, fisheries, green economy, Reduced reliance on imported commodities, and an environmentally responsible tourism sector
- Food, water and energy security – with safe, consistent access to water and clean, affordable energy
- Infrastructure and settlements – with resilience towards climate change effects, especially sea level rise.
- Waste Management and Sanitation
- Health and Social Protection
- Education – including public awareness to enable best practice in adaptation and risk management.

The strategic objectives of the plan, to which the government is committed to invest in, include:

- Capacity Building and Public Awareness
- Disaster Risk Management – using existing and new policy and planning instruments, resources and capacities
- Climate Change Adaptation - through the allowing of adjustment of natural and human systems, development and economic activities to the gradual changes in climate and its impacts (sea level, air and sea temperature, precipitation etc.); reducing and managing the risks associated with more frequent, severe and unpredictable extreme weather events.
- Prevent environmental migration through adaptation strategies, while addressing human mobility associated with natural disasters and climate change through durable solutions.
- Ensure environmental migration is managed to the extent possible in a humane and orderly manner, including the protection of displaced populations.
- Reduce GHG Emissions – through reducing dependence on, and use of, fossil fuels; Increased investment in the development of renewable energy sources; energy efficiency and conservation
- Establish sustainable funding for Disaster Risk Management, Climate Change Adaptation and GHG Emissions Reduction through participation in international financing programmes, the establishment and use of national funding mechanisms (including the Calamity Trust Fund), and the mainstreaming of Disaster Risk Management, Climate Change Adaptation and GHG Emissions Reduction into national, sectoral, state and municipal-level budgetary processes.
- Develop and implement national, state and community-level Integrated Disaster Risk Management and Climate Change Action Plans.
- Strengthen governance and management arrangements for Disaster Risk Management, Climate Change Adaptation and GHG Emissions Reduction including policy, compliance, legislative and regulatory frameworks, data management, performance monitoring and reporting frameworks that enable the ongoing assessment and management of disaster and climate risks and impacts.

Implementation should be sought through a combination of dedicated initiatives and through mainstreaming of associated issues into all existing and future development programmes.

Targets	None specified
----------------	----------------

Name of law	Energy Policy
Date of entry into force	October 2012
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Sustainable energy
Summary of bill	<p>The FSM Congress has adopted the Energy Policy, which aims to reduce the dependence on imported sources of energy and on fluctuating energy prices, by increasing share of renewable energy in the energy mix, cross-sectoral energy conservation and energy efficiency standards. .</p> <p>The policy includes action plans on four main components:</p> <p>Institutional</p> <p>A National Energy Workgroup has been established, co-ordinated by the Energy Division in the Department of R&D, which is responsible for:</p> <ul style="list-style-type: none"> – Overseeing all national efforts in the energy sector – Co-ordinating overseas development assistance that will be used for implementing the Action Plans – Developing timely a nationwide energy statistic database for effective and fact-finding planning, monitoring and evaluation. – Assisting in implementing the action plans by the State Energy Workgroup (SEW) – Providing technical assistance to the State Energy Workgroup, as requested – Annually reviewing the Energy Policy and revising this Energy Policy as needed in consultation with the SEW <p>Conventional Energy</p> <ul style="list-style-type: none"> – Effectively co-ordinate with regional/sub-regional organisations for stable and affordable energy supply – Energy Division (R&D) to act as a centre for implementation of Energy Policy <p>Renewable Energy</p> <ul style="list-style-type: none"> – Effectively co-ordinate with donors and regional/sub-regional organisations to support – Technical/financial source of states' investment plans – Conduct nationwide study for renewable energy assessment <p>The action plan includes a renewable energy target across all four states, focusing on solar, and also on wind, hydro, biofuel and bio-gas.</p> <p>Energy Efficiency and Conservation</p> <ul style="list-style-type: none"> – Implement government facility conservation plan – Advance regulation on building and construction – Conduct awareness campaign on energy efficiency and conservation – Conduct training and capacity building programme
Targets	<p>30% of energy produced by renewables, and 50% increase in energy efficiency by 2020</p> <p>Policy intermediate goals:</p> <ul style="list-style-type: none"> – Provision of affordable and safe electricity to all the households in the main island centres by 2015 – Electrification of 80% of rural public facilities by 2015 – Electrification of 90% of rural households by 2020 – Enhance the supply-side energy efficiency of the FSM utilities by 20% by 2015

4.38 Mongolia



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	25
excl. LULUCF	19
Change from base year (1990)	2%
Latest reporting year	2006
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 30 September 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: N/A Date of ratification: 15 December 1999 Date of entry into force: 16 February 2005
2020 pledge	Nationally Appropriate Mitigation Actions in the energy supply, building, industry, transportation, agriculture and forestry sectors
Flagship legislation	National Action Programme on Climate Change (NAPCC)

Legislative Process

Mongolia has a sole legislative body, the State Great Hural (Parliament). The State Great Hural is unicameral and consists of 76 elected members, 48 of them are elected by a mixed member proportional system representing single member constituencies, and 28 elected by a proportional representation system. Members serve a four-year term, and the State Great Hural can override any presidential veto with a two-thirds majority vote.

The State Great Hural holds two sessions per year, one in the spring and one in the autumn. As Mongolia's supreme governmental body, the 76 members are empowered to pass and amend laws, define domestic, foreign and financial policy, set economic and social development guidelines, ratify international agreements, and supervise the implementation of its laws and decisions.

The President, the government (usually the Prime Minister or a Deputy Prime Minister, or Ministers who are members of the State Great Hural) and individual members of the State Great Hural have the right to propose legislation. Within the government, the Ministry of Justice and Home Affairs is responsible for drafting laws in collaboration with the relevant ministry for a specific proposal; a working group is then formed to draft the law, which will be submitted to parliament. The working group may seek input from private and public organisations, NGOs, and community-based organizations. Draft laws come in three varieties: a new law, an amendment of an existing law, a rewriting of an existing law.

Approach to Climate Change

In recent years Mongolia has joined 14 environment-related UN conventions and treaties, including the UNFCCC, the Convention to Combat Desertification, and the Convention on Biological Diversity (CBD). In addition, since 1992, the State Great Hural has passed several laws and regulations on environmental protection. The main legal instruments for the protection of the environment and natural resources in Mongolia are the Law on Environmental Protection (1995, amended in 2007), the Water Law (2004), the Forest Law (2012, last amended in 2013), the Law on Air (1995, amended in 2012), the Energy Law (2001) and the Disaster Prevention Law (2003).

The government also introduced a number of action plans. These include the Mongolian Environmental Action Plan, The Mongolian Action Programme for the 21st Century (MAP 21), the National Action Plan to Combat Desertification, the National Biodiversity Action Plan, the Action Programme to Protect Air Quality, and the National Action Programme to Protect the Ozone Layer. MAP 21 includes concrete considerations and recommendations related to adaptation to climate change and mitigation of GHGs emissions. The Law on Air Quality and the Law on Environmental Protection are also central legal instruments for climate change related issues.

The National Action Programme on Climate Change (NAPCC) is the most relevant policy document in Mongolia addressing climate change. It was approved by the Mongolian Parliament on February 6, 2011. The NAPCC intends to meet UNFCCC obligations and commitments, establishing national policy and strategy to tackle the adverse impacts of climate change and to mitigate GHG emissions.

The NAPCC is to be implemented in two phases. The first phase (2011-2016) aims to strengthen national mitigation and adaptation capacity, setting up the legal environment, structure, institutional and management system, and improving community and public awareness and participation in climate change activities. The first phase was approved by the government in November 2011. The second phase (2017-2021) aims to implement climate change adaptation and mitigation measures.

The goals of the programme are to ensure environmental sustainability, develop social-economic sectors adapted to climate change, reduce vulnerabilities and risks, and mitigate GHG emissions as well as promote economic effectiveness and efficiency and implement 'green growth' policies. With such an end, the NAPCC sets priorities for action and requires climate change concerns to be integrated into other national and sectoral development plans and programmes. The Action plan includes a set of measures, actions and strategies that enable vulnerable sectors to adapt to potential climate change and to mitigate GHGs emissions.

In addition to the NAPCC, Mongolia developed an institutional base to implement climate policies. The Climate Change Co-ordination Office (CCCO) was established to carry out the activities necessary to implement the commitments and duties under the UNFCCC and the Kyoto Protocol, to manage nationwide activities, and to bring into action the integration of climate change-related problems in various sectors. The government also established an interdisciplinary and inter-sectoral National Climate Committee (NCC), now led by the Ministry of Environment and Green Development, to co-ordinate and guide national activities and measures aimed at adapting to climate change and mitigating GHG emissions. High level officials such as Deputy Ministers, State Secretaries and Director-Generals of the main Departments of all related ministries, agencies and other key officials are members of the NCC. A number of other entities are involved in climate change and energy policy, such as the CDM Bureau, the National Renewable Energy Centre, and the Clean Air Foundation.

The Mongolian Parliament is currently discussing Mongolia's Green Development Strategy (GDS). The GDS was drafted by a working group within the Ministry of Environment and Green Development in response to the Rio +20 conference in 2012. It aims to make green development fundamental to Mongolia's development policies. With such an end, Mongolia's GDS will operate in line with the governments' two high-level development strategies: the Comprehensive National Development Strategy (CNDS) for 2008-2021, which is based on the Millennium Development Goals, and Mongolia's 2012 four-year plan for 2012-2016.

Two high-level documents were prepared to formally establish the GDS: the Green Development Concept, and the Mid-term Programme on Green Development. The concept paper determines the goals and purposes for green development until 2030, whereas the Mid-term Programme designs policy and strategies to ensure these goals and purposes are implemented. Under the GDS, the development of the green sector is to be conducted in two phases, and the results will be presented at Rio+40. The first phase, between 2013 and 2021, will mark the transition to green development by creating a legal framework and governance for green development, intensifying infrastructure development and establishing the basis for heavy and processing industries. It also implies developing a heavy and light industry, creating green infrastructure, renewable energy production and decreasing GHG emissions. The second phase, between 2022 and 2032, will strengthen the basis of green development, and consolidate an economy based on technology and innovation.

Carbon pricing

Mongolia's CDM National Bureau was established by a ministerial order within the Ministry of Nature, Environment and Tourism on November 14, 2004. The National Bureau was officially registered with the Secretariat of the UNFCCC. Since its establishment the Bureau has been dealing with acceptance of CDM project proposals for comment, assessment, support, and approval and issuance of official letters.

The CDM Bureau benefited from some capacity-building projects. The World Bank contributed with the "Capacity-Building for Development and Implementation of Carbon Finance Projects" (2008-1020), the Asian Development Bank (ADB) with the "Capacity-Building Programme on Clean Development Mechanism" (2009-2010), and the Global Environment Fund (GEF) funded a UNEP Project on Technology Needs Assessment (2011-2012). So far four Mongolian CDM projects have been registered by the CDM Executive Board.

In January 2013, the government signed a bilateral document of Joint Crediting Mechanism (JMC) agreement with Japan to help offset its GHG emissions. Under this agreement, the two countries aim to facilitate the diffusion of leading low carbon technologies, products, services and implement mitigation actions.

Energy supply and demand

Coal comprises about 98% of total solid fuel consumption in Mongolia. According to the Second Communication presented to the UNFCCC, because of Mongolia's sizeable coal reserves, coal is expected to remain the most important primary energy resource. About 23% of the coal is used in electrical power stations and increased energy consumption is the main reason for the 7.6% increase in GHG emissions in Mongolia from 14,519 Gg in 2005 to 15,628 Gg in CO_{2e} in 2006.

Therefore, the priority goal for the energy sector is to reduce fuel consumption. About 40% of heat generated by burning fuel is lost. Resolution No. 72, passed in 2000, established that by 2014 the energy sector should operate without

incurring losses. In 2010, the Law on Concession was approved, providing opportunities to private enterprises to implement projects in the energy sector. The strategies for sustainable development and reduction of GHG in the energy sector are focused on renewable and other clean energy use, clean coal, improving the efficiency of energy supply, and energy efficiency improvement in buildings and industry. Despite the intensive use of coal, Mongolia has considerable renewable energy resources but their use remains underdeveloped. Currently small-scale hydro-power plants produce less than 1% of the total energy generation. But according to the “Master Plan Study for Rural Power Supply by Renewable Energy in Mongolia”, by the end of 2020 up to 20% of the country’s electrical power energy will be supplied from renewable energy sources.

Mongolia’s Second National Communication also lists a number of strategies to promote GHG mitigation from the energy sector, including an increase in renewable and other clean energy use by implementing a National Renewable Energy Programme, the Renewable Energy Law, the 100,000 solar ger (homes) programme, energy supply by solar, wind and diesel hybrid systems, and the implementation of the National Programme of LPG use. Other strategies involve improving the efficiency of energy supply, promoting clean coal technology (through implementation of the Coal Programme), and a study of nuclear power development (through implementation of the Nuclear Energy Law). On the demand side, the strategy involves promoting conservation policy (via a law on energy conservation) and improving energy efficiency in industries through better equipment and technology changes.

In June 2005, the government approved the National Renewable Energy Programme (2005-2020) to “enhance ecological balance, to improve economic efficiency, to reduce poverty and unemployment and to create favourable conditions for sustainable social development by increasing the share of renewable energy in the electricity supply of Mongolia”. The long-term goal is to have total installed capacity generated from renewable sources of 20-25% by 2020. Phase one of the project (2005 to 2010) saw the construction of 12MW and 11MW hydropower plants in Durgun and Taishir. Additionally, 12 renewable energy systems with a capacity of 60-150kW were constructed. The target of 3-5% of renewables sourced capacity was achieved for phase one. The programme is currently in its second phase (2010 to 2020).

In January 2007 the Parliament passed the Renewable Energy Law to regulate the generation of power using renewable energy sources and its delivery. It provides a feed-in tariff for the grid and the independent power generation from renewable energy. Any price difference of electricity generated by a renewable energy power source that is connected to a transmission network shall be absorbed into the selling price from other power plants on the grid. The Ministry of Energy is planning to change the structure of the sector and amend the Law to provide better conditions for private companies to import technology and invest in the sector.

REDD+ and LULUCF

Since 1990 the legal framework of forestry sector has changed several times. There are three primary forest laws in Mongolia: the Forest Law (2012, amended in 2013), the Law on Forest and Grassland Fire Protection (1996), and the Law on Fees for Harvest of Timber and Fuel Wood (1995). These laws are the basic framework for protection, use and generation of Mongolia's forests and forests resources. Animal husbandry is the main source of livelihoods and a major sector of the economy. Desertification has become a national disaster for Mongolia, affecting 70% of grassland. In 2010, the National Action for Combating Desertification was adopted in co-ordination with the National Programme for Climate Change.

In November 2011 a UN-REDD Programme team visited Mongolia to provide technical assistance and training on REDD+, and to conduct consultations with regional and local stakeholders. Within the government, a National REDD+ Taskforce was established to guide the development of the National REDD+ Roadmap. The Taskforce has 20 members and includes a broad range of representatives from different government sectors, the private sector and civil society. In May 2013 the UN-REDD Programme presented a study that calculated the economic value of the forest sector and assessed key financial constraints. In July 2013 Mongolia's Forest Law was amended and now foresees the use of forests for GHG sequestration. Over the coming months, the UN-REDD Programme will work with the government to assess the institutional context and entry points for these instruments, and integrate them into national strategies for REDD+ and green development. In addition, GIZ are looking to raise USD 4-5 million for the Climate Readiness REDD+ project to create a national inventory.

Transportation

The government has encouraged the use of fuel-efficient cars as well as hydrogen and hybrid fuel cars in order to reduce the negative impact of cars on environment and human health. The Excise Duty Tax Law of 2006 cut import taxes on hybrid vehicles and increased taxes on used cars. From April 2011, the usage of public transportation vehicles that are more than 12 years old and taxis more than 10 years old was prohibited. The State Great Hural also approved the Law on Hazardous and Toxic Chemicals (2006), the Law on Technology Transfer (1998) and the Law on Science and Technology (2006) to improve legal conditions for the transfer of modern technology for development sectors including transportation.

Adaptation

In Mongolia, climate change will exacerbate existing natural resource concerns, such as a diminution of water resources and desertification. Desertification already affects 78% of the country. According to a recent study by the Asian Development Bank on the economics of climate change in East Asia, under the business-as-usual (BAU) scenario, Mongolia will be the country most severely affected.

Based on The Millennium Development Goals, Mongolia's comprehensive National Development Strategy of 2008 defines the country's policy up to the

year 2021. The strategy calls for the promotion of Mongolia's "capacity to adapt to climate change and desertification, to reduce their negative impacts", with adaptation activities and measures identified.

Mongolia's Second National Communication to the UNFCCC also lists a number of priority adaptation options and measures in different sectors vulnerable to climate change: animal husbandry, arable farming, water resources, human health and forestry. Within these sectors, strategies and measures to combat land and pasture degradation and desertification are identified in the National Programme to Combat Desertification and in the National Action Plan on Climate Change. The government also approved The Livestock Programme, which includes directives relevant for climate change adaptation in animal husbandry. These include: ensuring sustainable development and creating good governance in animal husbandry; improving quality and market competitiveness through breeding and services; ensuring health of livestock by bringing the veterinary service up to international standards; creating a network of meat procurement and sale markets.

In 2004, an Early Warning System for livestock (Gobi Forage Project) was developed through a project funded by the United States Agency for International Development and the Global Livestock Collaborative Research Support Programme. It included a forage monitoring system which enables real-time assessment of forage conditions, in addition to allowing livestock herders to monitor nutritional conditions of their herds and assess changes in body conditions. More recently the UNDP made Mongolia a pilot country on the economics of adaptation and trained three officials to run the programme. Country teams in Asia design and evaluate climate change adaptation projects, developing skills in climate change adaptation economics.

Research and development

The National Agency for Meteorology, Hydrology and Environment Monitoring (NAMHEM) monitors the environment and climate in Mongolia, carrying out a range of different climate change studies and researches. In addition, the government is working to raise public awareness on climate change and its impacts.

Mongolia: Flagship Legislation

Name of law	National Action Programme on Climate Change (NAPCC) [Executive]
Date of entry into force	6 February 2011
Categories	<ul style="list-style-type: none"> – Energy supply – Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	The National Action Programme on Climate Change (NAPCC) is implemented within the framework of the Millennium Development Goals and the Comprehensive National

Development Strategy of Mongolia.

The NAPCC aims to create a sustainable environment for development by promoting capacities and measures on adaptation to climate change, halting imbalances in the country's ecosystems and protecting them. The implementation strategies in this NAPCC include institutional, legislative, financial, human, education and public awareness, and research programmes, as well as co-ordination with other national and sectoral development plans.

The goal is to ensure ecological balance, development of socio-economic sectors adapted to climate change, reducing vulnerabilities and risks, mitigating GHG emissions and promoting economic effectiveness and efficiencies and implementation of green development goals. The NAPCC also includes adaptation and mitigation strategies and measures for key socio-economic sectors of the country. It establishes a foundation for green economic growth and development.

In November 2011, the State Great Hural approved the NAPCC's implementation plan for the first phase. In the first phase (2011-2016), national mitigation and adaptation capacities will be strengthened, and legal, structural and management systems will be set up and community and public participation will be improved. In the second phase (2017-2021), climate change adaptation measures will be implemented and GHG mitigation actions will be started.

Targets	None specified
----------------	----------------

Mongolia: Other Relevant Legislation

Name of law	The Forest Law [Legislative]
Date of entry into force	17 May 2012. Revised 9 July 2013
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Forest protection and climate change
Summary of bill	The purpose of this Law is to regulate relations for protection, restoration, forestation, tenure, use of forests and prevention from forest and steppe fires in Mongolia.
	<p>The Law regulates the ownership of planted forests and tenure forests in Mongolia. It also classifies a Forest Fund based on two conservation and utilisation regimes: conservation forest zones and production forest zone.</p> <p>The Law (in its amended version of July 9, 2013) foresees the use of forests for GHG sequestration and defines "Forest inventory and forest taxation" as the comprehensive measures to define forest protection, sustainable use and restoration activities through assessing the area, resources, distribution, composition, quality, conditions, changes of forest fund as well as estimation of GHG sequestration and study on forest biomass. The forest inventory is to be executed by a professional forest organisation authorised by the State Administrative Central Body, and implemented within five years. Forest taxation is to be implemented within 10 years. The government shall approve regulation on conducting forest inventory and forest taxation.</p>
Targets	None specified

Name of law	Law on Soil Protection and Prevention of Desertification [Legislative]
Date of entry into force	17 May 2012
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Adaptation
Driver for implementation	Soil protection and desertification
Summary of bill	<p>The soil protection law includes measures to prevent desertification as a consequence of the intensification of agriculture, mining, road construction, and urban land use as well as climate change.</p> <p>The law provides the guidance to facilitate a safe and healthy environment for the population, and to prevent soil and lower soil fertility from the negative and destructive impacts which result in overgrazing and desertification, and decrease systems for prevention of soil erosion.</p> <p>The law also contains measures which include the establishment of accountability in environmental protection along with more elaboration on soil degradation, desertification gradation criteria and soil assessment methodology.</p>
Targets	None specified

Name of law	Law on Air Quality [Legislative]
Date of entry into force	17 May 2012
Categories	<ul style="list-style-type: none"> – Research and development – Institutional/Administrative arrangements
Driver for implementation	Air pollution and climate change
Summary of bill	<p>The purpose of this law is to regulate the actions related to the protection of ambient air, prevention from air pollution, and reduction and monitoring of emissions of air pollutants. If an international treaty to which Mongolia is a party is inconsistent with this law then the provisions of the international treaty shall prevail. It also lists the government powers with respect to air quality protection, including the approval and management of the implementation of the National Programme for Air Protection and Climate Change. It also establishes that the National Committee for Climate Change shall organise, manage, and provide guidance to the implementation of the UNFCCC, focusing on climate change adaptation and mitigation of ecological vulnerability and climate change impacts at the national level.</p> <p>Chapter 4 of the Law lists the actions and measures for air protection. Among these the State administrative central organisation is responsible for running the Task Force /Secretariat of Climate Change responsible for management of implementation of action plans of international conventions and respective national programmes and regulations, assessment, and reporting on the project activities implemented under the climate change adaptation fund and clean development mechanisms. The task force shall run inventories of GHG emissions and uptakes at the national level in accordance with the methodology approved by the UNFCCC. The State administration shall approve the maximum permissible amounts of GHG to be emitted by high emitters.</p>

Targets	None specified
Name of law	Renewable Energy Law [Legislative]
Date of entry into force	11 January 2007. Revised 19 December 2008 and 10 February 2011
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Adaptation
Driver for implementation	Energy security
Summary of bill	<p>The Law allows private sector independent power producers to build and operate facilities using renewable energy sources and to deliver the electricity produced to distribution networks and a few incentives to encourage private sector investments in renewable energy, the main one being the establishment of thresholds for feed-in-tariffs.</p> <p>Under the Law, the Energy Regulatory Authority will set tariffs and prices for other renewable energy generation facilities such as geothermal and biomass. Project developers will be compensated from the Renewable Energy Fund for the price differential between actual cost and the end-user tariffs applied under the jurisdiction of the respective authority. Tariffs set under this Law will be consistently valid for a minimum of 10 years.</p> <p>The Ministry of Mineral Resources & Energy can use public funds to carry out feasibility studies for the sector; governors of various administrative units are required to make decisions allowing ‘possession’ of state lands for the purpose of establishing renewable energy facilities; governors are encouraged to lease independent renewable energy power sources to an entity or individuals.</p> <p>The Energy Law underpins the Renewable Energy Law so it should be referred to for the general rules and conditions relevant to power generation.</p>
Targets	None specified
Name of law	National Renewable Energy Programme (2005-2020) [Executive]
Date of entry into force	2005
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Institutional/Administrative arrangements
Driver for implementation	Energy security
Summary of bill	<p>The National Renewable Energy Programme was approved by the Parliament to increase the adoption of renewable energy in the energy system, improve the structure of power supplies, and promote renewable energy in off-grid settlements to ensure ecological balance and improve economic efficiency. The Programme is being implemented in two stages: the first stage from 2005-2010 and second stage from 2011-2020.</p> <p>It aims to promote reliable, independent and effective operation of centralised energy grids and regional power supply systems by increased use of renewable energy. Another objective of this Programme is to provide power to all distant settlements, which require a significant amount of resources to be connected to the centralised power grid system, by introducing renewable energy generating systems. The Programme is related to the Energy Law and the 100,000 Solar Houses (Gers), which aims to provide rural areas with electricity through the utilisation of solar energy.</p>

Targets	Increase the share of renewable energy in the total electricity production, reaching 3-5% by 2010 and 20-25% by 2020
----------------	--

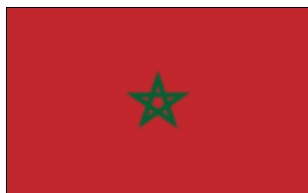
Name of law	National Action Program to Promote Quality and Environmental Management Systems [Executive]
Date of entry into force	2002
Categories	<ul style="list-style-type: none"> – Research and development – Institutional/Administrative arrangements
Driver for implementation	Cleaner production and eco-labelling
Summary of bill	The National Programme to promote quality and environmental management systems calls for legislative and structural changes to support cleaner production and an eco-labeling scheme. The Programme is implemented in 3 stages: the first stage from 2002-2006, the second from 2007-2011, and the third between 2012-2016.
Targets	None specified

Name of law	The Energy Law [Legislative]
Date of entry into force	15 April 2001, revised in 2001, 2002, 2007, 2008, 2009 and 2012
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand
Driver for implementation	Energy security; energy conservation
Summary of bill	<p>The Energy Law went into force on April 15, 2001 and it regulates matters relating to energy generation, transmission, distribution, dispatching and supply activities, construction of energy facilities and energy consumption. The law is based on economic principles, market mechanisms and the rights and obligations of both the industry and the consumers. The law changes the operations and regulations of the energy sector. On the structural side, the law creates generation, transmission, dispatch, distribution and supply entities for the energy industry. On the regulatory side, it provides that each of these new entities will have to apply for licences for operation, and separately for electricity and district heating. The Law calls for the establishment of an Energy Regulatory Agency (ERA) that will be responsible for administering its provisions.</p> <p>The amendment to the Energy Law adds a new regulation that sets energy prices and tariffs which account for power production costs and profit margins. The price and tariffs for electricity and heating production, and the amount of fuel supplied (for generation of heat and electricity) will be regulated. The amendment aims to increase private sector participation, business development and investments in the energy sector. The increased business interest and participation of private sector will result in the increased development of the energy sector.</p>
Targets	None specified

Name of law	Law on Environmental Protection [Legislative]
Date of entry into force	30 March 1995. Revised 22 January 1998, 24 April 2002, 10 July 2002, 2 January 2003, 6 January 2005, 18 November 2005, 29 June 2006, 22 December 2006, 31 January 2008, 10 June 2010, 8 July 2010, 17 May 2012, and 5 July 2013

Categories	<ul style="list-style-type: none"> – Research and development – Institutional/Administrative arrangements
Driver for implementation	Institutional arrangements for environmental protection
Summary of bill	<p>The purpose of this law is to regulate relations between the State, citizens, businesses and organisations in order to guarantee a healthy and safe environment, an ecologically balanced social and economic development, the protection of the environment for present and future generations, the proper use of natural resources and the restoration of available resources. It aims to protect (1) land and soil; (2) underground resources and mineral wealth; (3) water; (4) plants; (5) animals; and (6) air. It does not refer explicitly to climate change, the term “air”, for instance, means “the air strata above the territory of Mongolia”.</p> <p>The Law regulates environmental research and funding in Mongolia. Research shall be funded by state and local budgets. The central state administrative body and relevant governors shall request certified organisations to conduct environmental research, with funds of the Science and Technology Fund and relevant budgets.</p> <p>It also establishes the plenary Rights of State Organisations on Environmental Protection. The plenary rights of the parliament in respect of environmental protection include: formulate a national policy for protection of the environment; approve a national programme for environmental protection; legislate and supervise the implementation of legislation on environmental protection; establish payments and fees for the use of natural resources and for pollution of the environment; approve and amend a list of endangered animal and plant species. The Law also lists the plenary rights of the government, of the central state administrative body of Aimag, and capital city representatives, the Hurals and governors, of Soum, Duureg Bag and Horoo.</p>
Targets	None specified

4.39 Morocco



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	63
excl. LULUCF	60
Change from base year (1990)	NA
Latest reporting year	2000
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 13 Jun 1992 Date of ratification: 28 Dec 1995 Date of entry into force: 27 Mar 1996
Kyoto Protocol ratification status and date	Date of signature: NA Date of ratification: 25 January 2002 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	National Plan of Action Against Climate Change

Legislative Process

Morocco is a constitutional monarchy with an elected parliament. Political reforms in the 1990s expanded parliamentary power, and in 1996 a bicameral legislature was established. Responding to the Arab Spring movements and pro-reform demonstrations in Morocco, in March 2011 King Mohammed VI proposed constitutional amendments. The electorate voted the amendments into law on the 1st of July 2011, and the new constitutional text was enacted on 29 July 2011.

The 2011 constitution expanded the legislative power of the parliament. It maintained the bicameral parliament composed of a Chamber of Representatives (*majlis al-nuwwab*) with 395 members, elected by universal direct suffrage for five years, and a Chamber of Councillors (*majlis al-mustasharin*), elected indirectly by local and national electoral colleges, with a minimum of 90 and a maximum of 120 members, who are elected for six years. The parliament enacts national laws, oversees the government, and assesses public policies.

The king exercises his powers through *dahirs* (Royal Decrees). *Dahirs* are part of the king's discretionary powers in a variety of fields related to administration, legislation and other regulatory mechanisms. They are enforced as laws and constitute one of the most important sources of legislation in Morocco. There are two types of *dahirs*: those that allow the king to exercise his religious prerogatives (article 41) and those related to his status as head of state. The constitution also distinguishes between *dahirs* that are countersigned by the head of government and those that are signed only by the king.

The new constitution grants citizens the right to submit motions on legislation, but the conditions and modalities under which that right can be exercised are established by an organic law (article 14). In addition, under the new constitution international treaties ratified by the Moroccan state supersede national laws.

Approach to Climate Change

In 2001 Morocco hosted COP 7 in Marrakech. In the same year, a National Committee for Climate Change was set up. The National Committee is chaired by the Department for the Environment, the national focal point for the UNFCCC, and includes nominated contacts from other ministries. The National Committee's main role has been to draft Morocco's national communications to UNFCCC. Morocco's first and second national communications were submitted in 2001 and 2010 respectively. The government is currently preparing its third national communication, which will be presented at the UNFCCC conference in Paris.

Following the ratification of the Kyoto Protocol, and with the support of a UNEP/UNDP programme, Morocco established the institutional set-up for the CDM in Morocco (2003–2005). CDM projects are dominated by renewable

energy, especially wind. Of the 14 projects currently under way, nearly half are wind projects, with one solar project.

In 2009 Morocco adopted a National Plan of Action against Climate Change (*Plan National de Lutte Contre le Réchauffement Climatique* - PNRC), presented at COP15, in Copenhagen, alongside with the Second National Communication. The PNRC focuses on developing renewable sources of electricity generation, particularly solar, and investing in energy efficiency. The plan includes a summary of current emissions and projections of climate impacts, and it picks up the plans of individual ministries. The plan comprises a portfolio of governmental actions to adapt to and mitigate climate change, but with more of a focus on the latter. It confirms the target established by the National Energy Strategy of Morocco and the related National Priority Action Plan (PNAP), both launched in 2008, to meet 10–12% of the country's primary energy demand by 2020 and 15–20% by 2030 from renewable energy sources. A range of sectoral strategies, including the "Plan Maroc Vert" for agriculture complement the Climate Change Plan.

In addition, Morocco has a number of environmental laws, norms and policies addressing water and waste management, air and soil pollution, protection of biodiversity and coastal areas. The most relevant are the National Strategy for the Environment, established in 1995, which was put into effect by the 2003 National Environmental Action Plan. The National Environmental Action Plan prioritises the protection and sustainable management of water, soil and natural resources, the protection of air quality and promotion of renewable energies, preventing major natural and man-made disasters, improving the urban environment, and environmental management. Other relevant laws are the laws on protected areas (2010) and on the protection of wild species of fauna and flora (2011). In 2011 a National Charter for Environment and Sustainable Development was presented. The charter was voted on by the chamber of representatives, on January 8, 2014. The charter forms the framework for national environmental laws as well as for future environmental policy.

Carbon pricing

In April 2012 Morocco obtained USD350,000 under the World Bank Partnership for Market Readiness (PMR) to launch its pilot carbon markets. The project includes a plan to establish a domestic Emission Trading Scheme (ETS) and programmes aimed at issuing carbon credits based on Nationally Appropriate Mitigation Actions (NAMAs). The Moroccan government identified three main areas of action: electricity generation, cement production and the phosphate extraction sector. The government started the PMR preparation phase in 2013, and intends to establish a pilot carbon market instrument based on NAMAs by 2016. A domestic carbon market would start operating in 2018, and by 2020 the Moroccan market would be linked with international carbon markets.

In addition, Morocco joined the Low-Emission Capacity Building Project to develop a Low-Emission Strategy (LEDS) as well as a NAMA project portfolio along with MRV systems and an associated knowledge base.

Energy demand and supply

Morocco is the only North African country with no natural oil resources, and is the largest energy importer in the region, with 96% of its energy needs being sourced externally. Power generation is primarily fuelled by fossil energy sources, mainly oil (70%) but also coal and natural gas, all imported. Due to industrialisation and urbanisation, energy demand has risen in recent years by an average of 8% per year.

Morocco has ambitious plans for the renewable energy sector. The National Energy Strategy of Morocco and the related National Priority Action Plan (PNAP), both launched in 2008, set a target to meet 10–12% of the country's primary energy demand by 2020 and 15–20% by 2030 from renewable energy. These targets were incorporated into the National Plan of Action against Climate Change. Morocco also expects solar, wind and hydro power to account for 42% (equivalent to about 6,000 MW) of its total energy mix by 2020.

In order to achieve these targets, Morocco is promoting policy and regulatory reform. In 2010, the Moroccan Agency for Development of Renewable Energy and Energy Efficiency (ADEREE), and the Moroccan Agency for Solar Energy (MASEN) were established. These agencies work in partnership with other institutions, such as the Research Institute on Renewable Energy (IRESEN), created in 2009, which aims to link the private sector and research institutions, and the Energy Development and Energy Investment Company (Société d'Investissements Energétiques - SIE), founded in 2010, which aims to promote renewable energy and energy efficiency.

REDD+ and LULUCF

The National Climate Change Plan establishes that the Ministry for Agriculture and Marine Fisheries and the High Commission for Water and Forests should promote the reduction of GHG emissions from agriculture and deforestation. The measures include improving the efficiency of agricultural land, promoting the recovery of methane from manure, and promoting sustainable farming through a certification scheme. There are also plans to implement a reforestation plan, establish green taxes for reforestation, and implement a fire-fighting plan. Further strategies for agriculture are expected to follow the Energy Strategy.

Transportation

The National Climate Change Plan establishes mitigation measures in the transportation sector. These include measures to change the transportation mix and fuels used. Since 2009 the Ministry of Energy and Mines has required the use of Gasoil 50ppm and unleaded petrol. Further strategies for transportation are expected to follow the Energy Strategy.

Adaptation

So far no assessment has been conducted on the potential benefits of adaptation to climate change in Morocco. The National Plan against Climate Change identifies a number of adaptation priorities in agriculture, coastal areas and water scarcity.

For agriculture, measures include developing the adaptive capacity of rural populations; developing a national forecast system for agricultural production; creating resistant varieties of wheat; improving the productivity and durability of farming systems through planting techniques; changing agricultural practices; optimising irrigation; improving tenure of agricultural land; incentives and subsidies for training farmers in sustainable farming; and establishing water pricing based on volumetric counting. For coastal areas, legislation will enable the implementation of integrated management of coastal zones and their adaptation to rising sea level by building dykes or other protective structures. Measures to tackle water scarcity include education and public awareness about water conservation; installation of individual meters; revising tariff systems; investing in water saving and water recycling measures; and investing in new dams and drilling of deep wells.

Between 2009 and 2012 the government developed the Adaptation to Climatic Change in Morocco for Resilient Oasis (PACC/Oasis). PACC/Oasis is part of the "Programme Africain d'Adaptation au Changement Climatique", which includes 20 different African countries, and involved the UNDP, the government of Japan, the National Commission on Water, Forests and Fight Against Desertification, as well as a range of other ministries, provinces and agencies. The project aimed to manage and reduce the risks of climate change to Morocco's economy by introducing adaptation approaches and by strengthening local capacities. As a result of this project, reports were produced covering: climatic scenarios for the oasis zones for 2021-2050, a vulnerability assessment, evaluation of possible risks (flooding, drought, fire and locusts), establishment of automatic climate stations, establishment of pilot sites, and a communication strategy.

Research and development

The National Plan against Climate Change establishes a number of research initiatives to promote climate change mitigation and adaptation. These include creating a human and technical apparatus to allow the identification, monitoring and alert of extreme climate events; promoting research on climate variation and climate change prediction; preparing climate risk assessments on regional and local levels; helping different sectors to evaluate their vulnerabilities to climate change; and elaborating climate change adaptation strategies.

In addition, Morocco receives technical and financial assistance from a number of international organisations to develop and implement climate policies. For example, the World Bank supports Morocco in institutionalising the national GHG inventory and implementing its climate change/green growth strategy. The EU and UNDP support the implementation of a project on low-carbon. GIZ, under the CDM/JI regional programme, supports capacity-building activities for the development of CDM projects, PoA, and NAMAs.

Morocco: Flagship Legislation

Name of law	National Plan Against Climate Change [Executive]
Date of entry into force	November, 2009
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – LULUCF – Transportation – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Climate change, energy security
Summary of bill	<p>The National Plan presents the mitigation and adaptation actions taken by the government to combat climate change. It consolidates within the Department for the Environment a number of initiatives related to climate change established by other ministries.</p> <p>The Plan includes a summary of current emissions and projections of climate impacts. The mitigation measures draw upon the 2008 National Energy Strategy and are mainly related to energy efficiency and the production of renewable energy. They comprise seven areas: energy demand and supply, transportation, industry, waste management, agriculture, forestry and construction. In order to promote mitigation measures, the Department for the Environment should: promote CDM projects; elaborate GHG inventories, particularly aiming at establishing carbon pricing; and establish green taxes for electric equipment and energy efficiency improvement in existing buildings.</p> <p>Adaptation measures are proposed within the areas of weather forecast, water resources, agriculture, forestry, desertification, fisheries, public health, and tourism.</p>
Targets	Renewables to represent 10-12% of primary energy by 2020 and 15-20% by 2030. Energy efficiency improvements of 15 % by 2020 and 20 % by 2030.

Morocco: Other Relevant Legislation

Name of law	Law 47-09 on energy efficiency [Legislative]
Date of entry into force	29 September 2011
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Institutional/Administrative arrangements
Driver for implementation	Energy security, energy efficiency
Summary of bill	<p>This law sets the criteria of "minimum energy performance" for appliances and electrical equipment powered by natural gas, liquid or gaseous petroleum products, coal and renewable energies sold on the Moroccan market (article 2). It makes mandatory energy audits for companies and institutions in the production, transmission and distribution of energy, as well as the performance of an energy impact study for new construction and urban projects. It also defines the role of energy services and facilities and establishes technical control.</p>
Targets	None specified

Name of law	Law 13-09 on renewable energy [Legislative] and Decree 2-10-578[Executive]
Date of entry into force	11 February 2010 (law) 21 April 2011 (decree)
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Climate change, energy security
Summary of bill	<p>This law provides a legal framework for the development of renewable energy projects in Morocco. These are defined as all sources of energy that are naturally renewable, with the exception of hydraulic energy, where the installed power is above 12MW, particularly solar energy, wind energy, geothermal energy, wave and tidal energy, as well as energy generated through biomass, waste and biogas (article 1). The law prioritises the development of renewable sources in order to promote energy security, access to energy, sustainable development, reduction of GHG emissions, reduction of deforestation, and integration/harmonisation of Morocco's renewable energy production with other Euro-Mediterranean markets.</p> <p>It also sets an authorisation/declaration system, depending on the capacity of the facility: a declaration if an electricity generating facility capacity is between 20kW and 2MW; an authorisation if an electricity generating facility capacity is equal to or higher than 2MW; and in respect of facilities that produce thermal energy, there is only a declaration if the capacity is equal to or higher than 8MW. It also allows the supply of the electricity produced to the local market and/or its export through the national grid and interconnections with other countries.</p>
Targets	None specified

Name of law	Law 57-09, creating the Moroccan Agency for Solar Energy (MASEN) [Legislative]
Date of entry into force	14 January 2010
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Institutional/Administrative arrangements
Driver for implementation	Energy security, energy efficiency
Summary of bill	<p>Established the Moroccan Agency for Solar Energy (MASEN) as a Public Private Partnership. MASEN was established to ensure the implementation of the Moroccan solar programme. The MASEN aims to achieve the development of integrated production of electricity from solar energy, with a minimum total capacity of 2,000 MW. MASEN ensures the management of the projects and is liable for the decisions taken within the projects.</p>
Targets	Launch of Solar Programme of 2000 MW by 2020

Name of law	Law 16-09, creating the Moroccan Agency for Development of Renewable Energy and Energy Efficiency (ADEREE) [Legislative]
Date of entry into force	13 January 2010
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Institutional/Administrative arrangements
Driver for	

implementation	Energy security, energy efficiency
Summary of bill	Establishes The Moroccan Agency for Development of Renewable Energy and Energy Efficiency (ADEREE), as a public agency. The ADEERE aims to contribute to the implementation of the national policy on renewable energy and energy efficiency. It proposes national, regional and sectoral plans for the development of renewable energy and energy efficiency. The ADEREE is also competent to design and implement development programmes in the areas of renewable energy and energy efficiency (Article 3).
Targets	None specified

Name of law	Law 13-03 on air pollution control [Legislative]
Date of entry into force	19 June 2003
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Climate change, air pollution
Summary of bill	The Law is intended to prevent and fight emissions of air pollutants into the atmosphere, which affect human health, fauna, soil, climate, cultural heritage and the environment in general. It applies to anyone having, holding, using or operating buildings, mining, industrial, commercial or agricultural facilities, or vehicles, gear motor, combustion devices, waste incineration, heating or refrigeration (article 2).
Targets	None specified

4.40 Mozambique



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	16
excl. LULUCF	8
Change from base year (1990)	NA
Latest reporting year	1994
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 25 August 1995 Date of entry into force: 23 November 1995
Kyoto Protocol ratification status and date	Date of signature: N/a Date of ratification: 18 January 2005 Date of entry into force: 18 April 2005
2020 pledge	No pledge made
Flagship legislation	2013-2025 National Strategy for Climate Change

Legislative Process

The legislative process of Mozambique is a unicameral system. Holding the authority over law-making, the National Parliament of Mozambique (or Assembly of the Republic) is made up of 250 Members of Parliament (MPs), directly elected with a five-year mandate.

As established by the 2004 Constitution, individual MPs, political groups within the Parliament or other governmental institutions all have the right to informally initiate a legislative process. Formal consideration of a law proposal requires its submission to the president of the Parliament, after which the text is presented to the various working committees of the Assembly. After discussion within these groups, the proposal is circulated amongst all MPs, followed by a debate between representatives of the political parties. The working committees then summarise the main aspects of these discussions before sending the bill to the plenary.

Law proposals are subjected to two readings in different plenary sessions and require the approval by at least half of the MPs present in these sessions. If it wins majority support, the law proposal is then signed by the president of the parliament before being sent to the executive.

The President has 30 days to consider the Bill, with the possibility of referring to the Constitutional Council to verify the constitutionality of a law proposal. With presidential assent, the Bill comes into force once published in the Official Gazette.

Approach to Climate Change

Climate change poses challenges to many sectors in Mozambique, but until very recently, government has lacked a clear strategy for addressing these issues. However, in recent years, climate change has acquired more prominence in Mozambique's political agenda, resulting in more legislation and policies. The most significant recent progress in this direction was the adoption of the 2013–2025 National Climate Change Strategy, in November 2012. Representing a milestone in Mozambique's climate policy, the strategy widened the government's approach to climate change in proposing actions that combine measures of adaptation and mitigation with the development of a low-carbon economy. The strategy is expected to provide a policy framework for climate priorities identified at sector, provincial and district level.

Adaptation and Mitigation

The 2011–2014 National Poverty Plan identifies climate issues as one of the obstacles for the country's economic development and includes measures to reduce disaster risks and to adapt to climate change. These are to: Promote a strategy to reduce emissions from deforestation and forest degradation, to control wildfires and to promote reforestation; Promote conservation agriculture and diversification of income sources in areas prone to natural

disasters; Establish, train and equip local risk management committees in areas prone to natural disaster or vulnerable to climate change; Make the natural resource management committees operational; Promote a programme for reforestation and reducing emissions from deforestation and forest degradation and establishing carbon stocks (REDD+).

The need to adopt measures to tackle climate change was later endorsed by The Five-Year Government Plan (PQG – *Plano Quinquenal do Governo*), launched in 2010. Mitigation and adaptation to climate change are considered strategic objectives of the Plan, guiding governmental policies from 2010–2014. Again, climate change is approached in association with economic development and poverty reduction issues. Details on how to achieve this strategic objective are not presented in detail, but the Five-Year Plan points out a list of general measures

to improve environmental protection and address climate change, such as the promotion of environmental management addressing forest fires, soil erosion and recovery of arid areas, all applying climate change adaptation technologies.

In 2010 the government also adopted the Strategy and Action Plan on Gender, Environment and Climate Change. The plan aims to improve women's and poor communities' participation in climate change mitigation and adaptation interventions, but also foster their engagement in environment management. As a Least Developed Country (LDC) in the UNFCCC, Mozambique elaborated a National Adaptation Programme of Action (NAPA), in 2007. The document identifies the most critical and vulnerable areas to climate change, and proposes immediate actions to promote adaptation to these urgent issues. The initiatives to tackle climate change are: 1) Strengthening of an early warning system; 2) Strengthening of capacities of agricultural producers to cope with climate change; 3) Reduction of climate change impacts in coastal zones; and 4) Management of water resources under climate change.

REDD+ and LULUCF

The 1999 Forest and Wildlife Act regulates forest and wildlife management and conservation, legislating over illegal activities, such as illegal fires in forest areas. Similarly, the 1997 National Strategy for Forest and Wildlife Development aims to protect, preserve and develop in a sustainable manner all forest and animal resources for the socio-economic and environmental benefit of the people of Mozambique. To this end, the Strategy calls for the development of local and national investment plans to activities related to forest and wildlife and the adoption of more regulations in the sector.

The 1995 National Environmental Policy aims to promote sustainable development in Mozambique, translated into the integrating environmental issues in socio-economic planning. Under this broad scope, the Policy proposes the adoption of sectoral policies in a wide range of areas. In associating deforestation with expansion of activities within the energy sector, the document draws attention to the importance of adopting an energy policy that promotes the use of renewable energy and discourages the use of fossil fuels

and biomass. In addition, it suggests the adoption of a forest management plan for areas close to urban spaces to increase supply of wood-based fuels.

Energy Supply

In 2009, the Council of Ministers approved the National Biofuels Policy and Strategy. The instrument aims to contribute to energy security and sustainable socio-economic development and energy security, by developing a biofuel sector. The document provides a general framework and guidelines for increasing activities in the sector; the policy and strategy adopts several measures for the promotion of biofuel production, adopting sustainability criteria, as well as limits for land allocation to be exploited by the sector. Proposing the adoption of the Biofuels Development National Programme, the Resolution establishes an institutional framework and a chronogram for the gradual increase of biofuel production and distribution.

The 2011- 2025 Renewable Energy Development Strategy was adopted by the Ministry of Energy to establish core guidelines and success indicators for the development of the renewable energy sub-sector. Actions target energy security and efficiency, increasing financing for new sources of energies, including solar PV, wind, hydropower, and biomass. The Strategy calls for the adoption of fiscal benefits and credit to the production of renewables, emphasising that projects in these areas are potentially eligible for benefits from the Clean Development Mechanism (CDM).

Mozambique: Flagship Legislation

Name of law	2013-2025 National Strategy for Climate Change ((ENMC) (Executive)
Date of entry into force	November 2013
Categories	<ul style="list-style-type: none"> - Adaptation - Research and development - Institutional/Administrative arrangements
Driver for implementation	Climate Change

Summary of bill The National Climate Change Strategy aims to reduce vulnerability to climate change and improve the living conditions of the Mozambican people. It proposes climate change adaptation and disaster risk reduction measures and also focuses on mitigation by targeting low carbon development. Overall, the ENMC is structured around three core themes: (i) adaptation and climate risk management; (ii) mitigation and low carbon development (iii) cross cutting issues. These include institutional and legal reform for climate change, research on climate change, and training and technology transfer.

Covering the period 2013-2025, the implementation of the ENMC is planned in three phases. The first phase (2013-2015) focuses on improving the response of local communities to climate change, reducing poverty, planning adaptation measures, as well as identifying opportunities for the development of low-carbon economy in local communities.

The Strategy also proposes the establishment of a Centre of Knowledge on Climate Change (CGC) within the Ministry of Science and Technology. The primary objective of the centre should be to collect, manage and disseminate scientific knowledge on climate change,

	providing crucial information fro the development of policies and plans.
Targets	None specified

Mozambique: Other Relevant Legislation

Name of law	Biofuels Policy and Strategy (Executive)
Date of entry into force	21 May 2009
Categories	<ul style="list-style-type: none"> - Energy Supply - Institutional/Administrative arrangements
Driver for implementation	Biofuels
Summary of bill	<p>The Biofuels Policy and Strategy aims to strengthen the production of biofuels in Mozambique, establishing general guidelines for the development of the sector.</p> <p>For that purpose, the document adopts an Action Plan, identifying specific measures to be taken in the first five years following the entry into force of the Policy/Strategy. The Plan calls for the institution of the Biofuels Development National Programme; the Biofuels Purchase Programme; and the Biofuels National Commission.</p> <p>A calendar for the gradual implementation of the Biofuel Policy and Strategy is also defined, consisting of three phases. The “pilot phase” should extend from 2009–2015 and foresees the first acquisitions of biofuels from national suppliers, on a small scale. The “operational phase” consists of the consolidation of activities within the sector, with prospects for expansion from 2015. Finally, the “expansion phase” expects to develop independent distribution networks for fuels with a high percentage of ethanol, and purely for biofuels.</p> <p>The document includes a budget for defining the allocation of resources for specific projects from 2009–2013.</p>
Targets	None specified

Name of law	Forest and Wildlife Act (Executive)
Date of entry into force	7 July 1999
Categories	<ul style="list-style-type: none"> - REDD+ and LULUCF - Institutional/Administrative arrangements
Driver for implementation	Forest and wildlife conservation
Summary of bill	<p>The Bill establishes the basic principles and norms for the protection, conservation and sustainable utilisation of forest and wildlife resources, defining different categories of forests/ protected area.</p> <p>Divided into 9 chapters, the Act regulates forest management and conservation, defining the responsibilities of the public and private sectors. It gives the public sector responsibility for reforestation for commercial, energy or industrial purposes, in addition to the creation of local councils to engage local communities with the management of forestry and wildlife resources.</p>

Regulating on illegal activities, the Act sets up penalties (imprisonment and/or fine) for offences to the law, with particular emphasis on illegal fires.

Targets None specified

Name of law **Environmental Act (Legislative)**

Date of entry into force 1 October 1997

Categories

- REDD+ and LULUCF
- Institutional/Administrative arrangements

Driver for implementation Legal framework

Summary of bill The Environmental Act defines a legal basis for the use of natural resources and environmental management, with the ultimate goal to establish a sustainable development system in Mozambique.

The 1997 Law defines the competences of the government on the execution of the Environmental Management National Plan, co-ordinated by the newly created Sustainable Development National Council. The Law forbids the import of hazardous waste and the disposal of polluting or toxic waste outside pre-established normative parameters.

Regulating the protection of biodiversity, the Law condemns any activity that threatens to the conservation, reproduction, quality or quantity of biological resources, with particular attention to species under threat of extinction. In addition, it argues for the establishment of Areas of Permanent Protection.

The Environmental Law defines the principles under which permits relating to land use will be issued, and proposes the adoption of norms and deadlines for the adaption of industrial and agricultural activities to strict environmental standards that reduces the disposal of potentially polluting substances.

Other provisions set up rights and obligations of the citizens to access information, education, justice and legal obligations in regard to environmental protections and natural resource use management.

Targets None specified

Name of law **National Environmental Policy (Executive)**

Date of entry into force 3 August 1995

Categories

- Adaptation
- Research and development
- Institutional/Administrative arrangements

Driver for implementation Setting up an institutional and legal framework

Summary of bill The National Environmental Policy was adopted by the Council of Ministers as a part of the implementation of the Five-Year Government Plan (1995–1999). The Policy provides guidance for the establishment of national environment plans and legislations, aiming at conciliating development with environment protection. Under this broad scope, the 1995 National Policy proposes a set of activities in the short and long term in the field of the environment.

The Policy suggests the adoption of an Environment Law and regulations, followed by the

creation of a Ministry for Co-ordination of Environmental Action, and an Environmental Monitoring Centre.

General recommendation of the following issues: marine and coastal area protection; engagement of the private sector in environmental management; development of databases and research activities; investments in environmental education projects; the engagement of civil society with environmental protection; waste management; and international co-operation.

Targets	None specified
----------------	----------------

4.41 Nepal



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	39
excl. LULUCF	31
Change from base year (1990)	NA
Latest reporting year	1994
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 2 May 1994 Date of entry into force: 31 July 1994
Kyoto Protocol ratification status and date	Date of signature: 16 September 2005 Date of ratification: 16 September 2005 Date of entry into force: 12 December 2005
2020 pledge	No pledge made
Flagship legislation	Climate Change Policy, 2011

Legislative Process

The institutional structure of Nepal has been weakened through its recent experience of political instability. The king seized all power in 2005, which precipitated the mass demonstrations of the People's Movement (Jana Andolan), which sought a return to, and the further development of, democracy in Nepal. This occurred in parallel with the culmination of the Maoist insurgency, which ended in 2006 under the Comprehensive Peace Agreement. Rebel leaders demanded a move to republicanism, and the convening of an assembly to draft a new constitution for the Himalayan state. These events heralded the beginnings of the constitutional reform process. Central to the facilitation of the reform is the Interim Constitution of Nepal, 2007, which replaces the 1990 Constitution of the Kingdom of Nepal. A president was elected in 2008.

The Nepalese legal system is based on English Common Law. It adopted secularism as a key tenet of the constitution (and thereby declassified the country as a "Hindu Kingdom"). However it retains some Hindu legal concepts. Despite the transition to a republic, the basis of the parliamentary system remains. However, there is now no Second House, the members of which were merged into the House of Representatives. As an interim document, the 2007 Constitution provides for the establishment of the Constituent Assembly and the preparation of the new constitution. However, a new constitution has yet to be promulgated. The failure to agree on this, which caused the Prime Minister to call fresh elections for November 2012, led to further public protest.

Approach to Climate Change

On top of the challenges of political instability, the geography and economy of Nepal place its people under some severe risks from the impacts of climate change. The country has a large dependency on rain-fed agriculture. Approximately 86% of the population are dependent on agriculture for their livelihoods; and the sector contributes about 33% of GDP. This means there is a high sensitivity to fluctuations in precipitation, while the mountainous topography makes the land prone to flash floods. The severity of these is predicted to increase under climate change scenarios with more intense precipitation. Of particular concern are hazards associated with Glacier Lake Outburst Flood (GLOF) events. These relatively rare events have massive impacts. Temperature rises in mountain regions increase the amount of meltwater from the retreating glaciers¹², which then accumulates behind natural dams of rock and soil (moraine). The moraine dams eventually break and release huge quantities of water with catastrophic consequences for people living in the valleys below.

Moreover, changes in Himalayan glaciers present a huge challenge to populations downstream who are dependent on steady supplies of meltwater

¹² Glaciers in the Dudh Koshi basin are retreating at rates of 10m/yr to 60m/yr

feeding streams and rivers. These concerns are all the more pressing given that temperatures appear to be rising more quickly at higher elevations.

In its response to such risks, consultancy reports have highlighted the knowledge challenges for the development of climate change policy and actions for Nepal. That is, appropriate responses to climate change have been limited by the amount of research and evaluation of the local impacts of global climate models. This has raised concerns that without fully understanding the projected impacts and vulnerability, particularly on agriculture and water supplies, it will be difficult to make appropriate policy.

Within the international arena, Nepal has showed its commitment to climate change. Before the abolition of the monarchy, the government of Nepal ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1994 and signed the Kyoto Protocol in September 1995. The government identified the Ministry of Environment as the Designated National Authority (DNA) for implementation of climate change policies. The Initial National Communication was prepared and shared with the Parties in 2004.

Nepal later ratified the Kyoto protocol in 2005 and has been promoting activities to benefit from the Clean Development Mechanism (CDM). Since 2007, Nepal has been actively participating in climate negotiation under the UNFCCC process. As a result of its initiatives on climate change, Nepal has been nominated as the Chair of the Least Developed Countries (LDC) Co-ordination Group for 2013 and 2014 under the UNFCCC process. This provides an opportunity to lead 48 LDCs, and enhance climate change activities in the country.

Historically, policy documents such as the Nepal Environment and Policy Action Plan made little reference to climate change. The last 10-year development plan does acknowledge the role of weather and climate on economic performance, but there is only brief mention of the development impacts of climate change. Policy on agriculture has not systematically taken account of the expected impacts of climate change on the sector, and hence the majority of Nepal's population. More recently however, this has been changing.

The three-year plans that have been used to guide Nepal's development following the fall of the monarchy open avenues to implement climate change related activities, but particularly adaptation. The Interim Plan (2010/11–2012/13) identifies the potential of the forestry sector to benefit from carbon trading and stresses the need to conserve natural resources for livelihoods. More recently, the new Three-Year Plan (for the period 2010/11–2012/13) provides a path to promote green development and “climate proof” development, mitigate the adverse impacts of climate change and promote adaptation.

REDD+ and LULUCF

The 2007 interim three-year plan referred to climate change and specifically the potential of REDD+ and carbon trading. There is anticipation that mitigation approaches through forestry can provide win-win outcomes, conferring

watershed, biodiversity and soil conservation benefits. Moreover, there is expectation that REDD+ can contribute to government objectives of poverty reduction in the context of climate change. Given the high proportions of people dependent upon agriculture and natural resources including forests, there is a strong focus on community-based forestry management under REDD+. However, there are concerns among forest users such as the Federation of Community Forest Users, Nepal (FeCoFUN) that REDD+ implementation involves too much recentralisation, and that too much revenue from collaborative forest management programmes will also be passed back to central government.

Institutionally, the Ministry of Forests and Soil Conservation (MoFSC) has taken the lead role in implementing REDD+ in Nepal, and has developed a REDD+ department (“cell”) in addition to declaring it a ministerial priority. The cell is responsible for co-ordinating REDD+ readiness processes under the World Bank’s Forest Carbon Partnership Facility (FCPF) and other REDD projects including developing the REDD+ Preparedness Plan (RPP).

Adaptation

With the objective of making the country’s economy and infrastructure climate-resilient, the National Planning Commission (NPC) has emphasised the need to screen Nepal’s development plans for resiliency. Furthermore, the government established the Climate Change Management Division in the Ministry of Environment (MoE) in 2010. In that same year, the CCC prepared The Climate Change Policy and approved the MoE’s National Adaptation Programme of Action (NAPA). This was the first high-level response to climate change, intended to mainstream adaptation to climate change within national policies and reduce vulnerability. The Climate Change Policy also encourages development sectors to incorporate climate change concerns into policies and other instruments of relevant sectors. The Policy equally emphasises development and utilisation of clean and renewable energies and knowledge generation to address impacts of climate change through adaptation and impact mitigation.

In addition to national activities, a National Framework on Local Adaptation Plans of Action (LAPAs) is being prepared. These will act as major guiding policy instruments for mainstreaming climate change activities in general, and climate change adaptation in particular. Other activities are “Strengthening Capacity for Managing Climate Change and the Environment”, and implementation of the “Pilot Programme for Climate Resilience” (PPCR). MoEST is also preparing the Second National Communication (SNC) report and Technology Action Plan under its Technology Needs Assessment (TNA) Project for submission to UNFCCC. Between 2007 and 2009 it prepared action plans for capacity building under the National Capacity Needs Self-Assessment Project. MoEST is now engaged in implementing NAPA prioritised projects with support from DFID and EU, and the LDC Fund. Similarly, the Climate and Development Knowledge Network (CDKN) has supported Nepal to implement knowledge generation and communication activities, climate negotiations and economic impact assessment of climate change in key sectors. These programmes, projects and activities support to implement NAPA, LAPA and Climate Change Policy in a broader sense. These

developments and plans are largely in lieu of laws or legal instruments to implement them.

Research and development

The 2005 National Water Plan refers specifically to the need for research into the impacts of climate change on the environment, mandating the construction of a Himalayan Climate Change Study Centre. The three-year interim plan of 2007 also refers to climate change; and several new government councils charged with tackling climate change have recently been created. Overall, the Ministry of Environment, Science and Technology (MoEST) is responsible for the co-ordination of climate change adaptation and mitigation. But a more targeted response comes from the 2009 establishment of the 25-member Climate Change Council (CCC), headed by the Prime Minister. In addition, to co-ordinate climate change activities and implement collaborative programmes, a multi-stakeholder Climate Change Initiatives Co-ordination Committee (MCCICC) has been formed with representation from relevant ministries and institutions, international and national non-government organisations, academia, private sector and donors.

Nepal: Flagship Legislation

Name of law	Climate Change Policy, 2011 [Executive]
Date of entry into force	3 March 2011
Categories	<ul style="list-style-type: none"> – Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Adaptation; sustainable development
Summary of bill	<p>The Climate Change Policy is the centrepiece of Nepal's response to climate change. The Policy's preamble discusses a vision of limiting the impacts of climate change on Nepal, through environmental conservation and sustainable development. It further states that the mission of the policy is to address the adverse impacts of climate change and take opportunities to improve livelihoods and encourage climate-friendly change.</p> <p>After summarising the significance of climate change to Nepal, the document sets out the condition and context of Nepal's institutional response, before moving on to the following policies that have been adopted:</p> <ul style="list-style-type: none"> – Climate adaptation and disaster risk reduction – Low carbon development and climate resilience – Access to financial resources and utilisation – Capacity building, peoples' participation and empowerment – Study and research – Technology development, transfer and utilisation – Climate-friendly natural resources management
Targets	<ul style="list-style-type: none"> – Establishment of a Climate Change Centre within 1 year for conducting climate change research and monitoring, and regularly providing policy and technical advice to the Government of Nepal – Initiation of community-based local adaptation actions as mentioned in the National Adaptation Programme of Action (NAPA) through managing financial resources by 2011 – Preparation of a national strategy for carbon trade in order to benefit from the

-
- Clean Development Mechanism by 2012
 - Formulation and implementation of a low-carbon economic development strategy that supports climate-resilient socio-economic development by 2014
 - Assessment of losses and benefits from climate change in various geographical areas and development sectors by 2013
 - Promotion of climate adaptation and adoption of effective measures to address adverse impacts of Climate change through technology development and transfer, public awareness raising, capacity building and access to financial resources
-

Nepal: Other Relevant Legislation

Name of law	National Adaptation Programme of Action [Executive]
Date of entry into force	Endorsed in 2010
Categories	<ul style="list-style-type: none"> – Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Adaptation
Summary of bill	<p>A NAPA constitutes a multidisciplinary process for least developed countries to identify priority activities that respond to their urgent and immediate needs for adapting to climate change. The production of a NAPA will enable Nepal to access and utilise various international adaptation funds which are allocated for the least developed countries.</p> <p>Rather than concentrating on scenario modelling and national policy, the NAPA was intended to be a participatory process focussing on vulnerability to current climate variability and extreme events, and on areas where risks would increase due to climate change. It focuses largely on identifying areas of impact; developing the adaptive potential of Nepal's communities; establishment of criteria for prioritising activities; and selecting prioritised short-listed activities by each development sector.</p> <p>Climate change is anticipated to have major impacts on agriculture and food security; energy; disasters; forests and biodiversity; public health; and urban settlement and infrastructure. Across these there is a particular focus on the gender divide, whereby women are more exposed to climate-affected sectors.</p> <p>Nepal's NAPA clustered these activities into nine groupings:</p> <ul style="list-style-type: none"> – Promotion of community-based adaptation through integrated management of agriculture, water, forests and biodiversity – Building and enhancing the adaptive capacity of vulnerable communities through improved access to services for agricultural development – Community based disaster management for facilitating climate adaptation – Glacier Lake Flood monitoring and disaster risk reduction – Forest and ecosystem management for supporting climate-led adaptation innovations – Adapting to climate challenges in public health – Ecosystem management for climate adaptation – Empowering vulnerable communities through sustainable management of water resources and clean energy supplies – promoting climate-smart urban development
Targets	None specified

Name of law	The National Water Plan [Executive]
Date of entry into force	2005
Categories	<ul style="list-style-type: none"> – Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Adaptation, research (these are the drivers for the climate aspect of the legislation, but overall the emphasis is on ecosystem services provision)
Summary of bill	<p>The water policy is a comprehensive strategy document that addresses the major issues relevant to water use in Nepal, including agriculture, tourism, hydroelectric power production potential, and other ecosystem services such as fisheries.</p> <p>It is included in this study since importantly it mandates research into climate change and the creation of the Himalayan Climate Change Study and Research centre. It also sets out the need to conduct further research into the impacts of climate change in Nepal.</p>
Targets	<ul style="list-style-type: none"> – The number of rainfall stations is increased to 370 – Sufficient number of stations is equipped with telemetry facility to assist weather and flood forecasting – The Himalayan Climate Change Study and Research Centre is established within the DHM <p>By 2017:</p> <ul style="list-style-type: none"> – The DHM station network is expanded to meet the WMO standards – The dissemination of relevant quality data is improved

4.42 Netherlands



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	198
excl. LULUCF	194
Change from base year (1990)	-17
Latest reporting year	2011
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 4 June 1992 Date of ratification: 20 December 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 31 May 2002 Date of entry into force: 16 February 2005 KP target (2008-2012): 1.2%
2020 pledge	30% from 1990 baseline provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities.
Flagship legislation	New Energy for Climate Policy: The Clean and Efficient Programme

Legislative Process

As a constitutional monarchy, the key institutions in the Netherlands' legislative process are the First Chamber (the Upper House or Senate) of the Netherlands' Parliament, with 75 members elected by the 12 provinces, and the Second Chamber (the Lower House or the House of Representatives) with 150 directly elected members. Besides the national government, the provinces and 441 municipalities are also major actors, particularly in implementing the outcomes of the legislative process.

Legislation can be introduced by one or more members of the government or one or more members of the Lower House. Draft laws (bills) usually originate from recommendations either by a royal commission or a parliamentary committee. Once the preparatory work is completed by one or more ministries, the bill is discussed in Cabinet. If accepted, it is sent to the Monarch's secretariat, in their capacity as Head of State. From there the bill is sent to the Council of State (of which the Monarch is President) for advice. This body chiefly pays attention to the legal quality of the bill and generally does not concern itself with political merit. Its report is sent directly to the relevant minister(s) who, in turn, must respond with a more detailed report to the Monarch. The bill is then presented to the Lower House, which consigns the bill to a committee, where it is discussed and potentially amended, before being debated in plenary and then passed to the Upper House. The Upper House has no right of amendment; it must either accept or reject the bill. Once the Monarch and Minister(s) responsible have signed the Act, it is published in the Bulletin of Acts, Orders and Decrees ('Het Staatsblad'). Unless the Act decrees otherwise, it comes into force on the first day of the second calendar month following its date of publication.

Approach to climate change

The Netherlands is particularly vulnerable to the impacts of climate change due to its high population density, river deltas and its location on and below sea level. The government's approach to climate change combines adaptation and mitigation measures integrated within the overall objective of sustainable development. Priority sectors for climate policy are energy efficiency in new and existing buildings and reducing emissions from agriculture and industry.

Although the Netherlands has a number of climate programmes, there is no specific climate change law. Instead, most policies and programmes have their legal basis in the Environmental Management Act of 2004. As a member state of the European Union, the Netherlands' climate policy is largely determined by agreements at the European level, such as the decision on burden-sharing of the EU's Kyoto Protocol commitments and the European Emission Trading Scheme (EU ETS), as well as European legislation regarding renewable energy, energy efficiency and the overall 2020 emission reduction target.

Carbon pricing

The Netherlands participates as an EU Member State and Annex-1 party to the Kyoto Protocol both in the EU ETS and the Clean Development Mechanism

(CDM) as well as the Joint Implementation (JI) mechanism under the Kyoto Protocol. Relevant legislation in these areas implements commitments made at the international level and EU burden-sharing agreements.

Energy Demand

The Netherlands has a number of laws and policies in place that reduce CO₂ emissions by improving industrial efficiency, including measures that implement the Environmental Management Act and the Energy Investment Tax Deduction regime under the corporate tax system. Measures to reduce energy demand are usually formulated in long-term agreements. These include the sustainable production of energy for electricity and heat, including the use of biomass. Energy efficiency efforts have focused on industry, buildings, and agriculture. Most measures fall within the Clean and Efficient Programme (CEP) at the national level or the Stimulating Local Climate Initiatives remittance scheme at the local level.

Legislation in the building sector consists of both implementing EU directives and further national development. Relevant EU directives are the Eco-design directive and the Energy Performance of Buildings Directive (EPBD). Targets include improving energy efficiency by up to 50% and constructing energy neutral new buildings by 2020. These objectives are detailed in the Build Environment Innovation Agenda. Measures include financial instruments such as subsidy schemes, lowering VAT for insulating glazing, tailor-made energy advice, energy investment tax deductions, implementing EU legislation such as the mandatory Energy Performance Certificate, and setting a standard for privately-owned buildings by making new government buildings 25% more energy efficient than official requirements and striving for CO₂-neutral government buildings via purchasing CO₂-neutral energy.

Energy Supply

The Netherlands plans to meet its future energy needs using all fuels, including nuclear, and increasing renewable energy from the 4% it represented in 2010 to 14% by 2020. The Intergovernmental Wind Energy Agreement (BLOW) under the CEP aims to increase the onshore wind power capacity to 6,000 MW by 2020. Subsidies for investments in renewable energy are channelled via the Stimulating Renewable Energy Production (SDE) scheme, which replaced the Environmentally Friendly Electricity Production Programme (MEP) in 2008. It puts a ceiling on the amount of subsidy based on estimates of electricity and gas prices. The subsidy scheme for Sustainable Heat aims to prepare the large-scale implementation of solar heat and (hybrid) heat pumps in existing buildings from 2011 onwards.

REDD+ and LULUCF

Some 10% of the country is covered with forests, some of which are newly planted. These are managed in adherence to the principles of sustainable forest management. The National Forest Strategy aims to create recreational facilities with the added benefit of mitigating climate change. To reduce emissions from

LULUCF, the Netherlands aims to create a National Ecological Network of 728,000 ha by 2018, consisting of wetland and woodland.

Transportation

Key legislation to reduce emissions in transportation includes the implementation of European directives on biofuels, a road-pricing scheme that includes the replacement of fixed car taxes with a charge levied per km travelled, energy labelling for passenger cars and the Automobile Scrapping Regulation. The indicative biofuels target of 5.75% by 2010 was initially copied from the EU biofuels directive. However, this was re-adjusted following increasing scientific evidence and public concern about the negative impacts of first generation biofuels on indirect land use changes, high CO₂ emissions and potential links to the increase of global food prices. The adjusted target of biofuels in transportation for 2009 was 3.75% and 4% for 2010. The Automobile Scrapping Regulation was designed to stimulate demand for new, cleaner passenger cars and vans by offering a subsidy of up to EUR 1,000 (USD 1360) for old, polluting passenger cars and up to EUR 1,750 (USD 2,379) for old delivery vans until the overall budget of EUR 85 million (USD 115 million) is exhausted.

Adaptation

The Netherlands contributes to climate change adaptation internally and through support for other countries. The external support follows the guiding principle that countries in Annex I of the UNFCCC should contribute technical and financial assistance to countries with low emissions that suffer the consequences of climate change. Key adaptation legislation in the Netherlands is the National Programme for Spatial Adaptation to Climate Change (ARK), (2006) a joint effort of national and local government departments. The National Adaptation Strategy resulted from this programme in 2007.

Research and Development

Climate-related research and the development of mitigation/adaptation measures is integrated into many disciplines, particularly within the life sciences, and supported by a wide range of governmental funding schemes in co-operation with private, European and international partners (e.g. via the EU's 6th and 7th Framework Programmes). Research results can be obtained free of charge or for a low fee. Major initiatives include the Dutch Policy Research Programme on Air and Climate (BOLK 2008), national research programmes under the Global Change (KNAW) and the Earth and Life Sciences (ALW) themes, Knowledge for Climate (KvK), the interdepartmental Energy Innovation Agenda and more specific R&D programmes on climate-proofing and climate variability under different government ministries, as well as the interdepartmental energy innovation and transition agenda.

Netherlands – Flagship Legislation

Name of law	New Energy for Climate Policy: The Clean and Efficient Programme (Executive)
Date of entry	

into force	November 2007, amended 2009
Categories	<ul style="list-style-type: none"> - Carbon pricing - Energy supply - Energy demand - REDD+ and LULUCF - Transportation - Adaptation - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Climate Change, energy efficiency, overall sustainable development
Summary of bill	<p>The 'New Energy for Climate Policy: The Clean and Efficient Programme' (CEP) has three main objectives: setting and implementing firm targets for reducing GHG emissions, increasing the share of renewable energy and improving energy efficiency.</p> <p>The target is to reduce annual GHG emissions to 150 Mt in 2020 as compared to 215 Mt CO₂-equiv in 2010 and 246 Mt CO₂-equiv in 2020 at BAU projections.</p> <p>The overall CO₂-equivalent emission reduction target set out for 2020 is 30% from the 1990 baseline.</p> <p>Policy instruments used in the CEP are market incentives via the implementation of the European Emission Trading Scheme; Standardisation in energy efficiency, CO₂ emissions and sustainability as minimum requirements and phased standards as means of stimulating innovation; Instruments focusing on innovation and temporary incentives such as subsidies for renewable energy.</p> <p>Built environment: the plan makes provisions for periodic tightening of energy performance standards for new buildings, stimulation of energy efficiency of appliances; reducing CO₂ emissions by 6-11 Mt CO₂ by 2020 compared to BAU.</p> <p>On energy, the Programme makes provisions for additional wind energy capacity of 2,000 MW onshore and 450 MW offshore. It also aims to add additional capacity of 500 MW in biomass.</p> <p>Industry: the CEP focuses on emission trading via EU ETS for large-scale, energy-intensive industry and comparable efforts for non-ETS industry, sustainability agreements between government and industry on improving energy efficiency by at least 20% in 2020 (from 2005 levels) and saving 10% of fossil fuels in production chain.</p> <p>Transportation: an emission reduction target of 13-17 Mt CO₂ compared to BAU</p> <p>Agriculture and horticulture: provide expected emission reductions of 1-2 Mt CO₂ per year by 2020 compared to BAU.</p> <p>Non-CO₂ GHGs: the main focus is on R&D for 2007-2011 with the target to reduce emissions by 8-10 Mt CO₂/year in 2020 compared to BAU</p> <p>The government aims to cut energy use by an average of 2% per year in government buildings by speeding up the introduction of energy-saving lighting in public spaces, developing an approach to tackle obstructive laws and regulations and a subsidy scheme to stimulate local authorities to intensify their local energy-saving and climate policy.</p> <p>An extra EUR 262 million (USD 356 million) for innovation between 2007 and 2011 particularly for demonstration and acceleration phases to make the innovation chain more target-oriented and to resolve bottlenecks especially in CCS, solar electricity, offshore wind, bioenergy and built environment.</p>
Targets	<p>30% by 2020 from 1990 baseline</p> <p>2% annual increase in the energy saving rate until 2020</p> <p>20% share of renewable energies by 2020</p>

Netherlands: Other Relevant Legislation

Name of law	Support scheme for solar panels [Executive]
Date of entry into force	2011
Categories	– Energy supply
Driver for implementation	Whichever applies (1-2 max) from the list on rough guide
Summary of bill	Grant scheme to subsidise buyers of solar panels in the private sector. Overall size of the support scheme is EUR 50 million (USD 68 million).
Targets	None specified

Name of law	Crisis and Recovery Act (Legislative)
Date of entry into force	2010
Categories	– Energy Supply
Driver for implementation	Economic Recovery
Summary of bill	This bill was introduced to aid economic recovery in the Netherlands after the financial crisis. The CRA has four main elements: special provisions for specific projects, experimental rules on 'development areas', special provisions for residential construction projects and provisions simplifying and streamlining twenty existing Acts. Among other things, it includes the introduction of rules to simplify and speed up decision-making on the construction or extension of sustainable energy installations, particularly relating to the Electricity Act and the Spatial Planning Act.
Targets	None specified

Name of law	Stimulating Renewable Energy Production; replaced in April 2008 by the Environmentally Friendly Electricity Production Programme (ceased 18.10.2008) number 410 [Executive]
Date of entry into force	16 October 2007
Categories	– Carbon pricing – Energy supply – Research and Development
Driver for implementation	Renewable energy provision, energy efficiency, climate mitigation
Summary of bill	Subsidy scheme to facilitate and incentivise the uptake of renewable energies, intended as last stimulation step in the development of renewable energy technologies. The focus is also on learning effects regarding the specific deployment of renewable technologies and an innovation-based assessment in addition to the cost-effectiveness assessment. Provision of EUR 326 million (USD 443 million) between 2007 and 2011 in combination with a rigorous greening of the tax system in line with the Coalition Agreement <ul style="list-style-type: none"> – Deployment of SDE for onshore and offshore wind, biomass and solar electricity – Broadening of the SDE by sustainable (green) gas and more effective stimulation of bio-cogeneration

	<ul style="list-style-type: none"> - Option for installations to switch in the long term to a mandatory system for generated energy - Harmonisation of the subsidy with the life span of installations - Requirements for biofuels (sustainability criteria, methane/NOx emissions)
--	--

Targets	None specified
----------------	----------------

Name of law	National Programme for Spatial Adaptation to Climate Change (ARK), (April 2007) Implementation via the National Adaptation Strategy (November 2007), 7222 [Executive]
--------------------	--

Date of entry into force	April 2007
---------------------------------	------------

Categories	<ul style="list-style-type: none"> - Energy demand - Adaptation
-------------------	---

Driver for implementation	Adaptation, energy demand, climate change
----------------------------------	---

Summary of bill	<p>The Programme recognises that the Netherlands needs to adapt to the unavoidable consequences of climate change and attempt at the same time to realise co-benefits for other sectors. It follows three areas of priority:</p> <p>Raising awareness, forming networks and developing strategy. This is to be achieved via communication of the climate change problem, involvement of all relevant stakeholders to raise awareness and increase support, encouraging co-ordination among stakeholders, clarifying prospects for action and joint development of a national adaptation strategy and adaptation agenda.</p>
------------------------	---

It also aims to develop and disseminate knowledge and develop a common view to understand climate impacts, their interactions and develop a common view of risks and responsibilities among all stakeholders and develop knowledge via the programmes under the Investments in Knowledge Infrastructure (Subsidies) Decree (BSIK) in this area. It also aims to develop instruments, provide advice on measures and implementation by setting priorities for adaptation measures and capacity building to adapt via projects.

Targets	None specified
----------------	----------------

Name of law	Environmental Management Act 2004 [Legislative]
--------------------	--

Date of entry into force	1 May 2004
---------------------------------	------------

Categories	<ul style="list-style-type: none"> - Carbon pricing - Energy supply - Energy demand - Transportation
-------------------	--

Driver for implementation	Environmental management, climate change
----------------------------------	--

Summary of bill	<p>In fields such as environmental permits, CO₂ emissions trading, waste prevention, water quality and landfill policy, most environmental regulations affecting GHG emissions are based on the Environmental Management Act. It is also the legal basis to enforce commitments by companies not covered under the ETS that are undertaken within Long-Term Agreements and the Benchmarking Covenant.</p>
------------------------	--

The Act lays out enforcement of legal measures, allocating responsibilities for enforcement and monitoring among authorities. Sanctioning options include demanding compliance at the expense of the violator, financial penalties, withdrawal of operating licences and criminal sanctions such as high financial penalties or imprisonment up to six years.

Targets	None specified
----------------	----------------

Name of law	Energy Investment Tax Deduction scheme (WEM) [Executive]
Date of entry into force	1 January 1997
Categories	<ul style="list-style-type: none">– Energy supply– Energy demand
Driver for implementation	Energy provision, energy efficiency
Summary of bill	Provides a direct financial advantage to companies investing in sustainable energy and energy-saving equipment. The Energy Investment Tax Deduction scheme allows entrepreneurs to deduct 44% of the purchase/production costs for energy-saving equipment from their company's profits for the year in which the equipment was purchased, up to EUR 113 million (USD 154 million) annually.
Targets	None specified

4.43 New Zealand



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	59
excl. LULUCF	73
Change from base year (1990)	13
Latest reporting year	2009
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 4 June 1992 Date of ratification: 16 September 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 22 May 1998 Date of ratification: 19 December 2002 Date of entry into force: 16 February 2005
2020 pledge	Reduction of net GHG emissions (below 1990s levels) <ul style="list-style-type: none"> • Unconditional target of 5 percent by 2020 • Conditional target range of 10 to 20 percent by 2020 if there is a comprehensive global agreement • 50 percent by 2050
Flagship legislation	Climate Change Response Act 2002

Legislative Process

New Zealand's parliamentary system is unicameral. It has only one chamber (House of Representatives) and there is no upper house. The members of the House of Representatives serve a term of three years. They are elected using the mixed member proportional representation voting system. In this system, each citizen of voting age gets two votes. The first vote is for a local Member of Parliament, whilst the second one is for a political party. Typically, the House of Representatives has 120 members. However, under certain circumstances this number can vary. The representation of political parties in the House of Representatives is proportional to the number of votes they receive in the general elections.

Proposed laws are called bills and are introduced to the House of Representatives. Before becoming a law (Act of Parliament), a bill has to pass several stages. The legislative process begins with a first reading in the House of Representatives. The bill is debated and a decision is reached on whether it progresses to the next stage or not. If a bill passes the first reading, it is usually referred to a select committee where it is considered in more detail. In a second reading, the bill and any changes recommended by the select committee are again considered by the House. These debates can take several days, in particular when the bill is controversial. If successful, all the changes made are worked into the bill before it is considered for a final reading, typically in form of a summing-up debate. In a final step, the bill is put to vote to either pass or reject it. However, a bill does not become an Act of Parliament until it is signed by the Sovereign of New Zealand or his/her representative (the Governor-General). This is called the Royal Assent.

New Zealand is a unitary state rather than a federation. Local governments in New Zealand play no role in the legislative process other than by making submissions on bills.

Approach to Climate Change

In the early 2000s, New Zealand passed two important Acts of Parliament that still form the backbone of its climate change policy today: The Energy Efficiency and Conservation Act 2000 and the Climate Change Response Act 2002. In 2004, an important amendment was made to the Resource Management Act 1991.

The Energy Efficiency and Conservation Act 2000 established the Energy Efficiency and Conservation Authority (EECA). The EECA promotes energy efficiency, the use and production of renewable energy, and prepares a National Energy Efficiency and Conservation Strategy. In 2011, the third edition of New Zealand's Energy Efficiency Strategy was published. It states the government's policies, objectives, and targets for the next five years. One of the main goals of

the current strategy is to achieve an economy-wide improvement of energy intensity of 1.3% per year.

The second major pillar of New Zealand's climate policy is the Climate Change Response Act 2002. In its initial version, the Act included plans to introduce a carbon tax. Designed to cover most economic sectors (with the exceptions of agriculture and highly carbon intensive businesses), the planned carbon tax was scheduled to come into force in April 2007. However, after the general elections in 2005, parliamentary support for a carbon tax waned and, following a full policy review, it was decided not to introduce the tax. Instead, the government introduced a national emissions trading scheme (NZ ETS). In September 2008, the NZ ETS was formally implemented, with a retrospective aspect that included forestry emissions and removals from 1 January 2008. However, after a government change in 2008 and in the midst of the global financial crisis, several changes were made to the initial legislation (e.g. longer transition periods) that were aimed intended to reduce the impact of emission trading on New Zealand's economy. Despite these changes, the NZ ETS remains New Zealand's primary response to climate change. Today, the following sectors are covered under the scheme: agriculture¹³, industrial processes, forestry, transportation fuels, synthetic gases, and waste.

The third legislative pillar of New Zealand's response to climate change is the Resource Management (Energy and Climate Change) Amendment Act 2004. The Act strengthens national co-ordination of controls on GHG emissions and gives greater emphasis to climate change and energy matters in resource management, planning, and decision-making.

Two national GHG emissions reduction targets have also been formulated. In 2009, the government announced a conditional pledge to reduce emissions in the range of 10 to 20% from 1990s levels by 2020. In 2011, a second target of a 50% cut from 1990s levels by 2050 was set. In August 2013, an unconditional target of 5% by 2020 was announced.

Carbon pricing

New Zealand's Climate Change Response Act 2002 initially included the introduction of a carbon tax. However, political support for such a tax crumbled after the 2005 elections. Instead, the government switched policy instruments and promoted a national emission trading scheme. In December 2006, it released a discussion document on the topic. The proposed scheme would cover all gases and sectors. The document also described how the NZ ETS could be linked to other emissions trading schemes such as the European Union ETS. In September 2008, the Government made the necessary amendments to the Climate Change Response Act 2002 and forestry became the first sector to be covered under the scheme.

¹³ Under the NZ ETS only agricultural methane and nitrous oxide (the main emissions from the sector) have to be reported.

In November 2008, a new government was elected and announced a full review of the country's climate change legislation, with a parliamentary select committee set up to discuss New Zealand's approach to climate change and the NZ ETS in particular. In November 2009, legislation to reform the NZ ETS was passed and several amendments to the Climate Change Response Act 2002 were made. According to government sources, their principal aim was to ease the NZ ETS's impact on New Zealand's economy in a period of economic crisis. Under the modified scheme, agriculture, for example, was to enter the scheme in 2015 rather than 2013. Other measures include a different approach to free allocations of emission units to the most emission-intensive and trade-exposed industries. The allocation of emission units was to be indexed to output and therefore uncapped. Furthermore, until 2013 participating sectors (with the exception of forestry) had to surrender one unit for every two tonnes instead of one unit per tonne of emissions.

The Climate Change (Emissions Trading and Other Matters) Amendment Act 2012 made further amendments to the NZ ETS in order to ensure that businesses and households do not face additional costs during a phase of economic recovery. The 2012 amendments prolong the transitional measures introduced in 2009: Non-forestry obligations remain at one emission unit for two tonnes of actual emissions, there is no phase-out of free allocations, the unit price is capped at NZ\$25 and agriculture will not have surrender obligations from 2015.

Energy demand

At the heart of New Zealand's energy demand-side policies is the Energy Efficiency and Conservation Act 2000. The Act established the EECA, which is charged with developing and overseeing the implementation of New Zealand's National Energy Efficiency and Conservation Strategy. The first version of the strategy was published in 2001. With regard to energy efficiency, it defined a national target of 20% reduction in economy wide energy intensity by 2012. Furthermore, various programmes were initiated, including ENERGYWISE. Administered by EECA, ENERGYWISE provides information and funding to householders and businesses in the areas of energy efficiency, energy conservation, and renewable energy. A review of the 2001 strategy, however, revealed that the proposed measures were insufficient in reaching the proclaimed energy savings targets. Based on the findings of the review process, the EECA published an updated version of its Energy Efficiency Strategy in 2007. The revised strategy more strongly focused on demand-side measures and included a number of new programmes. It also scaled-up the ENERGYWISE programme which in the review process was identified as one of the more successful programmes. The expanded ENERGYWISE scheme sets a target to provide 70,000 interest free loans for insulation, energy efficiency, and clean heat by 2015. In 2011, the third version of New Zealand's Energy Efficiency Strategy was published. Among other things, it set an economy-wide target of improving energy efficiency by 1.3% per annum.

Other measures in the area of energy demand management include the formulation of the Efficient Lighting Strategy, including a three-year Efficient

Lighting Action Plan. Among other objectives, the Plan includes a target to reduce lighting energy consumption by 20% by 2015.

Energy supply

About two-thirds of New Zealand's electricity is produced from renewable energy sources, most of it from hydro-electric power. In 2009, the government set an aspirational target for the energy sector, that 90% of the country's electricity should be produced from renewable sources by 2025. Although no mandatory legislation has been put in place to support this pledge, a number of government schemes provide funding for renewable energy projects. One example is the Marine Energy Development Fund. Established in 2007, during its four-year life, the programme invested NZD 8 million (USD 6.5 million) in the development and installation of generating devices that convert wave or tidal energy into electricity. The Distributed Generation Fund (DGF), which has been running since 2008, provides financial assistance for feasibility studies on small-scale power generation technologies used to generate electricity, including wind turbines, photovoltaics, hydro-power turbines, geothermal heat, and bioenergy.

REDD+ and LULUCF

The agriculture and forestry sectors play a major role in New Zealand's economy. They are also major emitters of GHGs and therefore critical to New Zealand's response to climate change. The emissions trading scheme is the main policy tool to encourage afforestation and reduce deforestation. New Zealand has also made several amendments to existing legislation and launched several programmes of relevance to REDD+ and LULUCF.

In 1993, the government passed an amendment to the Forest Act 1949, restricting commercial logging from private native forest and areas managed under sustainable forest management plans. In 2002, further restrictions were made, prohibiting logging of native forests on public land. The government says that, today, less than 0.1% of the country's forest production stems from native forests.

In 2007, the government presented a policy package for the forestry and agriculture sectors, the Sustainable Land Management and Climate Change Plan of Action. The plan consisted of a NZD 175 million (USD 142.4 million) work programme to promote adaptation, reduce emissions, and enhance carbon sinks. Among other things, the programme provides support to three afforestation initiatives: The Afforestation Grant Scheme, the Permanent Forests Sinks Initiative, and the East Coast Forestry Project. Under the Afforestation Grant Scheme, the government provides grants to landowners that have created new forests on Kyoto-compliant land (land that was not forested before 31 December 1989). The scheme also aims to reduce erosion, nutrient leaching, and flood peaks. The Permanent Forests Sinks initiative gives landowners who create new forest on Kyoto-compliant land carbon credits that they can trade freely on domestic and international carbon markets. Established in 1993, the East Coast

Forestry Project's primary goal is to create an additional 200,000 ha of commercially productive forests by 2020. Although the primary aim is to reduce soil erosion, the government claims that it also enhances the sequestration of carbon in forest sinks.

Transportation

New Zealand's primary policy to reduce emissions from the transportation sector is to include transportation fuels in the national emissions trading scheme. In addition, the government launched several initiatives and support schemes.

In 2008, it published the New Zealand Transport Strategy. The document develops a long-term strategy for the transportation sector and sets a number of aspirational targets for the year 2040. In the area of environmental sustainability, these include: (1) Reducing per capita GHG emissions from domestic transportation by 50%; (2) increase rail's share of freight to 25% of tonne-kms; and (3) reduce the distance travelled by single occupancy vehicles in major urban areas by 10%.

For a brief period, New Zealand had a mandatory quota for biofuels. In September 2008, amendments were made to the Energy (Fuels, Levies, and References) Act 1989 to establish an initial blending mandate for biofuels of 0.5%, which was set to increase to 2.5% by 2012. However, after a change of government, the obligation was removed the same year. Later attempts to create a mandatory sustainability scheme for biofuels (Sustainable Biofuel Bill) were not successful. However, the government continues to support the production and use of biofuels through a number of measures. Bioethanol is currently exempted from excise tax and the government-funded Biodiesel Grant Scheme provided NZD 36 million (USD 29.3 million) of subsidies to the biodiesel industry during 2009-2012.

Electric vehicles are exempt from road user charges in the period of 2009-2020 and in 2008, the government introduced a Vehicle Fuel Economy Labelling Scheme. The label provides information about fuel efficiency of a vehicle and aims to allow consumers to make more informed buying decisions.

Adaptation

New Zealand's Sustainable Land Management and Climate Change Plan of Action provides a platform for several initiatives in the area of adaptation. This includes a five-year adaptation programme, featuring a NZD 5.7 million (USD 4.6 million) community irrigation fund to help rural communities adapt to increasing drought risk. The Ministry for the Environment provides information and guidance to support local government, engineers, businesses, and individuals to make adaptive decisions. This includes guidance on climate change effects on flooding and coastal hazards. The On-Farm Adverse Events Recovery Plan developed and administered by the Ministry for Primary Industries outlines strategies to build resilient farming businesses and describes the government assistance available in such incidences.

Research and development

The New Zealand government supports a wide range of research projects and activities with relevance to climate change. In 2009, the government announced plans to create a global alliance for research in the area of agricultural GHG mitigation. To this end, NZD 45 million (USD 36.6 million) in public funds were made available. Related programmes are the Pastoral Greenhouse Gas Research Consortium (PGGRC) and the Livestock Emissions and Abatement Research Network (LEARN). Formed in 2003, PGGRC is a public sector-industry partnership that promotes research and supports livestock farmers in their efforts to mitigate their GHG emissions. Between 2001 and 2008, the programme spent around NZD 19 million (USD 15.5 million) supporting research on the production of methane and nitrous oxide from grazing livestock. Established in 2007, LEARN is an international research and collaboration initiative, involving more than 300 researchers from 47 countries. The network seeks to improve the measurement and monitoring of methane and nitrous GHG emissions from animal agriculture and to develop cost-effective mitigation solutions. Other important initiatives are the ANDRILL project (investigating past Antarctic climate from sediment cores in the McMurdo region of Antarctica) and the Natural Hazards Research Platform (dedicated to increase New Zealand's resilience to natural hazards).

New Zealand: Flagship Legislation

Name of law	Climate Change Response Act 2002 (Legislative)
Date of entry into force	18 November 2002
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate Change
Summary of bill	The Climate Change Response Act 2002 established an institutional and legal framework for New Zealand to ratify and meet its obligations and the Kyoto Protocol and the United Nations Framework Convention on Climate Change. To this end, the Act authorised the Ministry of Finance to manage New Zealand's holdings of units for GHG emissions under the Kyoto Protocol and to trade them on international carbon markets. Furthermore, the Act established a national inventory agency. The Agency is charged with recording and reporting information relating to GHG emissions in accordance with New Zealand's international requirements.
Targets	None specified

New Zealand: Other Relevant Legislation

Name of law	Energy Efficiency and Conservation Act 2000 (Legislative)
Date of entry into force	15 May 2000
Categories	– Energy supply – Energy demand – Institutional/Administrative arrangements

Driver for implementation	Energy supply; energy demand
Summary of bill	The Energy Efficiency and Conservation Act 2000 promotes energy efficiency, energy conservation, and the use of renewable energy in New Zealand. The Act establishes an Energy Efficiency and Conservation Authority which is charged with developing and implementing a national energy efficiency and conservation strategy.
Targets	None specified

Name of law	Resource Management (Energy and Climate Change) Amendment Act 2004 (Legislative)
Date of entry into force	2 March 2004
Categories	– Institutional/Administrative Arrangements
Driver for implementation	Climate Change
Summary of bill	This Act recognises the government's preference for national co-ordination of controls on GHG emissions and gives greater emphasis to climate change and energy matters in resource management, planning, and decision-making. The Act makes explicit provisions within section 7 of the Resource Management Act 1991 for all persons exercising functions and powers under the Act to have particular regard to the: <ul style="list-style-type: none"> - Effects of climate change - The efficiency of the end use of energy - Benefits to be derived from the use and development of renewable energy.
Targets	None specified

Name of law	Climate Change Response (Emission Trading) Amendment Act 2008 (Legislative)
Date of entry into force	25 September 2008
Categories	– Carbon pricing
Driver for implementation	Climate Change
Summary of bill	This Act amended the Climate Change Response Act 2002 to introduce a GHG emissions trading scheme in New Zealand. The Department of Inland Revenue specifies how the Climate Change Response Act amends the Income Tax Act 2004, the Income Tax Act 2007, and the Goods and Services Tax Act 1985 (GST Act) to cover the income tax consequences to the forestry sector and the GST consequences to all sectors of transactions in emissions units.
Targets	None specified

Name of law	Climate Change Response (Moderated Emissions Trading) Amendment Act 2009 (Legislative)
Date of entry into force	7 December 2009
Categories	– Carbon pricing
Driver for implementation	Reduce adverse impact of emission trading on the economy
Summary of bill	The Act made several changes to the Climate Change Response Act 2002. These

	<p>amendments aimed at modifying New Zealand's emissions trading scheme. Some of the major changes introduced by the Act are:</p> <ul style="list-style-type: none"> - The participation of agriculture sector in the NZ ETS will be delayed until 1 January 2015 - Additional allocations of emission certificates will be given to the agriculture sector on an intensity basis. They will be phased out at 1.3 percent rate starting from 2016. - Additional allocations of emission certificates will be given to emissions-intensive, trade-exposed industries.
Targets	None specified

Name of law	Climate Change Response (Emissions Trading and Other Matters) Amendment Act 2012 (Legislative)
Date of entry into force	19 April 2013
Categories	– Carbon pricing
Driver for implementation	Reduce adverse impact of emission trading on the economy
Summary of bill	The purpose of this legislation is to maintain the costs that the ETS places on the economy at current levels. Essentially, the 2012 amendments prolong the transitional measures introduced in 2009: non-forestry obligations remain at one emission unit for two tonnes of actual emissions, there is no phase-out of free allocations, and the unit price is capped at NZ\$25, and agriculture will not have surrender obligations from 2015.
Targets	None specified

4.44 Nigeria



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	348
excl. LULUCF	243
Change from base year (1990)	NA
Latest reporting year	2003
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 29 August 1994 Date of entry into force: 27 November 1994
Kyoto Protocol ratification status and date	Date of signature: Date of ratification: 10 December 2004 Date of entry into force: 10 March 2005
2020 pledge	No pledge made
Flagship legislation	National Policy on Climate Change

Legislative Process

Modelled after the political system of the United States, Nigeria features a bicameral legislature (the National Assembly). The National Assembly is divided into an upper house (Senate) and a lower house (House of Representatives). The Senate has 109 members, three from each state and one from the capital region of Abuja. Every four years, senators are elected in a popular vote. The House of Representatives has 360 members who are elected for a four-year term, using a simple majority (first-past-the-post) system.

In Nigeria, proposed laws are called bills and can be introduced either to the Senate or the House. After its introduction in the legislative process, a bill is reviewed by a relevant committee. In a next step, it is referred to the National Assembly. In a sequence of three readings, the bill is discussed and modifications can be made. A bill is passed by a simple majority of the upper and lower house, which vote independently from one another. In order to formally complete the legislative process, acts have to be signed by the President (Presidential Assent).

Approach to Climate Change

National efforts to address climatic change are guided by a number of principles including the following: (1) Strategic climate change response is consistent with national development priorities; (2) Climate change is addressed within the framework of sustainable development, which ensures that climate change response must be sensitive to issues of equity, gender, youth, children and other vulnerable groups; (3) The use of energy as a key driver for high economic growth is pursued within the broad context of sustainable development; (4) Mitigation and adaptation are integral components of the policy response and strategy to cope with climate change; (5) Climate change policy is integrated with other policies to promote economic and environmental efficiency; (6) Climate change is cross-cutting and demands integration across the work programmes of several government ministries/agencies/parastatals and stakeholders, and across sectors of industry, business and the community; (7) Climate change response provides viable entrepreneurship opportunities.

Since the submission of its first national report to the UNFCCC in 2003, Nigeria has made some progress on climate change governance. In its current national development plan (Vision 2020), the government recognises climate change as threatening its economic prosperity and future development. For improving policy formulation and co-ordination in this area, Nigeria's Ministry of the Environment created a Special Climate Change Unit which recently has been transformed into the Department of Climate Change. Last year, the Department signed a co-operation agreement with Germany and nine other West African Countries (Benin, Burkina Faso, Cote d'Ivoire, Ghana, Gambia, Mali, Niger, Senegal, and Togo) to collaborate in the review and development of climate change policies. In September 2013, the Federal Executive Council of Nigeria (cabinet) approved the agreement for ratification. The collaboration will take

place within the framework of the newly created West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL).

In 2008, two competing bills were introduced into Parliament with the aim of improving Nigeria's ability to set, co-ordinate, and implement climate change policies. The first bill proposed the creation of a climate change agency with close ties to the Ministry of the Environment, while the second bill aimed to create an independent National Commission on Climate Change. However, both bills became trapped in the legislative process. In 2010, Parliament passed the so-called Commission Bill but it did not receive assent by the President. The current parliament, formed in 2011, re-introduced the National Commission on Climate change and, again, it has been passed by the lower chamber (House of Representatives) and is at the second reading stage at the upper chamber (Senate). The bill, if passed into law by the Senate, would formally establish a robust institution/agency that would shoulder the full responsibility of climate change governance in Nigeria, building on the work the climate change department of the Federal Ministry of Environment is doing. The House Committee on Climate Change is also working on a Climate Change law that would address synergy between the various agencies of government in mainstreaming climate change into their development planning.

Besides these efforts to improve the country's institutional capacity to deal with climate change, there have been several policy initiatives with relevance to climate change. For example, since 2007, civil society organisations and international donor organisations have been working together to identify Nigeria's climate change vulnerabilities and develop a comprehensive adaptation strategy. In 2011, these efforts resulted in the publication of the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN). The Strategy outlines responses to climate change in key areas such as agriculture (crops and livestock), freshwater resources, coastal water resources and fisheries, forests, biodiversity, health and sanitation, human settlements and housing, energy, transportation and communications, industry and commerce, disaster, migration and security, livelihoods, vulnerable groups, and education. However, the policy document did not find official support. Instead, in September 2012, the Executive Council approved the adoption of a National Climate Change Policy and Response Strategy (NCCP-RS). NCCP-RS aims to provide Nigeria with a framework for responding to climate change-induced challenges such as increased flooding and rising sea levels. There are also plans to create a National Strategic Climate Change Trust Fund and develop a National Appropriate Mitigation Action document. In October 2013, a *National Policy on Climate Change* was finally approved and adopted by the Federal Executive Council of Nigeria. This will form the basis for any new climate change law.

Energy demand

In the past, Nigeria has worked with international donors to improve its energy efficiency. In 2011, the government entered a partnership with the United Nations Environment Programme and the Global Environmental Facility to promote energy efficiency in the residential and public sectors. Concrete measures include outreach and training programmes as well as the distribution of 1 million compact florescent lamps in residential and public buildings in

Nigeria. There has also been assistance to develop national legislation in the area of energy efficiency, including the Clean Technology Fund's (CTF) support of energy efficiency projects in Nigeria. The CTF Investment Plan envisages a total of USD1.3 billion to support low-carbon growth objectives in Nigeria.

Energy supply

Under its current development plan (Vision 2020), the government has set targets to promote the production and utilisation of renewable energy in Nigeria. These include wind, solar, hydro, and biomass. The Vision 2020 includes plans to construct several solar and hydro power plants. The Ministry of the Environment has announced plans to increase Nigeria's share of renewable energy to 20% by 2020. Several government documents and sources also mention the development of a Renewable Energy Master Plan for Nigeria. However, the process of realising the above targets is still under way. The government adopted a national biofuel policy in 2007. The policy document aims to create an enabling environment for the country's biofuel sector. A Biofuel Energy Commission and a Biofuel Research Agency have been established, as well as tax exemptions and other incentives for biofuel producers.

REDD+ and LULUCF

Nigeria has one of the highest deforestation rates in the world. According to the statistics of the Food and Agricultural Organisation, the country lost 55.7% of its primary forests between 2000 and 2005. To protect its forests, Nigeria has adopted a number of acts and legislations. The legislation that most directly addresses deforestation is the Natural Conservation Act of 1989. Nigeria's Vision 2020 includes measures to reduce the rate of deforestation such as a target to increase Nigeria's forest cover from currently 6%-10%. However, no clear timeframe is provided. The 2012 Appropriation Act called for the provision of clean stoves and cooking fuels to discourage tree felling for use in traditional cooking methods. Nigeria also entered into a partnership agreement with the United Nations REDD Programme in 2010.

Adaptation

Nigeria's constitution states that "the State shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria" (Constitution, Chapter 2, Article 28). However, Nigeria has currently no explicit climate change adaptation legislation in place. But recently the Ministry of the Environment has joined forces with civil society actors and international donors for the Building Nigeria's Response to Climate Change (BNRCC) project. In 2011, the BNRCC produced the NASPA-CCN, which identifies climate change vulnerabilities and contains guidance to develop a comprehensive climate change adaptation strategy for Nigeria. Nigeria's Vision 2020 also includes a number of concrete adaptation targets such as the establishment of a 1500km "green wall" in 11 states bordering the Sahara to reduce the rate and speed of desertification..

A number of policy approaches will provide an organising framework to develop and implement sectoral strategies, measures and initiatives for effective adaptation responses. These will include: (1) Generate adequate energy from a

mix of sources for rapid socio-economic development without significantly increasing the country's GHG emissions; (2) Continuously reduce GHG emissions in all sectors, particularly in the oil and gas, and transportation sectors; (3) Enhance food security, reduce poverty and promote healthy living for all Nigerians; (4) Integrate disaster risk management of climate-related hazards into development.

Nigeria: Flagship Legislation

Name of law	National Policy on Climate Change (Executive)
Date of entry into force	October 2013
Categories	<ul style="list-style-type: none"> – Energy supply – Adaptation – REDD and LULUCF – Transportation – Research and Development – Agriculture – Health – Culture and Tourism

Driver for implementation Climate change, economic development

Summary of bill Nigeria's National Policy on Climate Change is a strategic policy response to climate change with the objectives of fostering low-carbon, high growth economic development path and building a climate-resilient society through the attainment of set targets. The current plan explicitly identifies climate change as one of the major threats to Nigeria's economic development goals and food security. To meet these challenges, the plan includes concrete targets in the areas of climate change adaptation, afforestation, and energy supply. The vision of the National Climate Change Policy Response and Strategy (NCCPRS) is a climate change resilient Nigeria ready for rapid and sustainable socio-economic development. Its mission is to strengthen national initiatives to adapt to and mitigate climate change and involve all sectors of the Nigerian society, including the poor and other vulnerable groups (women, youth etc.) within the overall context of advancing sustainable socio-economic development in Nigeria.

The vision of the National Climate Change Policy Response and Strategy (NCCPRS) is a climate change resilient Nigeria for rapid and sustainable socio-economic development. Its mission is

to strengthen national initiatives to adapt to and mitigate climate change in a participatory manner involving all sectors of the Nigerian society, including the poor and other vulnerable groups (women, youth etc.) within the overall context of advancing sustainable socio- economic development in Nigeria.

Its main objectives are:

- Implementing mitigation measures that will promote low carbon as well as sustainable and high economic growth;
- Strengthening national capacity to adapt to climate change;
- Raising climate change-related science, technology and R&D to a new level that will enable the country to better participate in international scientific and technological co-operation on climate change;
- Significantly increasing public awareness and involving private sector participation in addressing the challenges of climate change;
- Strengthening national institutions and mechanisms (policy, legislative and economic) to establish a suitable and functional framework for climate change governance.

Furthermore, the National Policy on Climate Change defines a number of concrete policy targets in the area of climate change adaptation and mitigation:

Energy

- Promote a diverse energy mix with an increasing proportion from renewable and other sources using clean technologies.
- Enhance energy efficiency in all sectors.
- Strengthen private sector participation in the production and use of clean energy.
- Support on-going initiatives to gradually eliminate gas flaring.

Agriculture

- Strengthen integrated agricultural intervention planning to reduce the sector's vulnerability to climate change and enhance its productivity for food security and poverty reduction.
- Review the implementation of existing agricultural policies, laws and regulations to make them appropriate to addressing the challenges of climate change in crop production, fisheries and livestock.
- Review and strengthen climate information systems to provide early warning in a manner useful to the local farmers.
- Support existing regulatory frameworks for innovative agricultural financing, insurance, etc.
- Strengthen the capabilities of Extension Services providers in training farmers in best practice, including the use of weather and climate data.
- Enlarge the national food storage capacity to store surplus harvests.

Water

- Use regulatory and fiscal measures to manage the supply of water including watershed re-charge.
- Review existing institutional, legal and regulatory frameworks for water supply and wastewater discharge within river basins.
- Invest in programmes to upgrade canals and storage infrastructure to increase capacity and to reduce losses in transportation and storage.
- Exploit alternative water supplies such as use of seawater and brackish water through desalination, inter- and intra-basin water transfer.
- Scale up international co-operation on River Basin Management by co-ordinating different interest groups among upstream and downstream users.
- Delimit and protect watersheds to promote stream life and recharge aquifers.
- Continue the advancement of hydrometric network to monitor river flows and flood warning telemetric systems.

Coastal Areas

- Actively support the implementation of the Integrated Coastal Zone Management (ICZM) Plan of Gulf of Guinea and translate it into an Integrated Coastal Area Management Plan for Nigeria.
- Develop storm and flood protection as well as preparedness plans for climate-related emergencies in the coastal areas.
- Adjust physical development plans in line with implications of actual and potential sea level rise.
- Review and upgrade sea dykes, storm breakers and sea walls.
- Initiate new and or reinforce existing studies on the function of coastal ecological system, and the impact of the climate change and their adapting capacity.
- Improve mangrove cover for the management of flood control.
- Rehabilitate degraded areas in the coastal zone.

Forestry and Land Use (LULUCF)

- Increase forest coverage and carbon sink density through afforestation, reforestation and prevention of deforestation.
- Enhance carbon density at plot and landscape level through rehabilitation of degraded areas and increased tree planting activities, and promotion of agro-forestry.
- Adopt fiscal and regulatory measures to reduction the use of wood particularly in construction and charcoal production.
- Ensure the sustainable use of forest resources to contribute to the livelihoods of rural communities as they adapt to climate change.

- Promote sustainable forestry that will enable Nigeria to maximise the benefit from the potential of UN-REDD and adequately protects individual communities whose traditional forest-based income would be impacted.

Transportation

- Promote efficient, low-emission transportation
- Enhance mass transportation systems in major cities such as the Bus Rapid Transport (BRT) concept adopted in Lagos State.
- Use urban and regional planning to optimise location of facilities so as to reduce travel time and cost.
- Provide fiscal and regulatory incentives to make air transport safer and more accessible.
- Re-invest in and revive other transportation modes particularly railway to reduce GHG emissions in the sector.

The policy also includes broad guidelines on Health, Population and Human Settlement, Information and Communications Technology, culture and tourism.

Targets	None specified
----------------	----------------

Nigeria: Other Relevant Legislation

Name of law	Nigeria Vision 2020 (Executive)
Date of entry into force	May 2010
Categories	<ul style="list-style-type: none"> – Energy supply – Adaptation – REDD and LULUCF
Driver for implementation	Climate Change, Economic development
Summary of bill	Vision 2020 aims to reduce the impact of climate change on development processes and the environment. It would (i) strengthen environmental governance; (ii) promote environmental education; (iii) optimise economic benefits from sustainable environmental management.
Targets	<ul style="list-style-type: none"> – Increase the share of the energy mix of hydro-power to 25% by 2013 – Increase wind energy capacity to 10MW by 2013 – Increase solar energy capacity to 10MW by 2013 – Increase biomass power generation capacity to 1,000 MW – Increase Nigeria's forest cover from 6% to 10% – Reduce losses and impacts due to floods and drought by 10% by 2013

Name of law	Nigerian Biofuel and Incentives (executive)
Date of entry into force	24 July 2007
Categories	<ul style="list-style-type: none"> – Energy supply – Institutional/Administrative arrangements
Driver for implementation	Economic development, energy independence
Summary of bill	The policy aims to help develop Nigeria's biofuel industry in order to gradually reduce the nation's dependence on imported gasoline, reduce GHG emissions while promoting economic development. Concrete measures include the introduction of a biofuel blend

(10% ethanol) and various measures aimed at stimulating market demand for biofuels and promoting their production (e.g. tax exemptions). The policy includes the establishment of a Biofuel Energy Commission and Biofuel Research Agency.

Targets - Achieve 100% domestic production of biofuels consumed in the country by 2020

4.45 Norway



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	26
excl. LULUCF	53
Change from base year (1990)	3
Latest reporting year	2011
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 4 June 1992 Date of ratification: 9 July 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 30 May 2002 Date of entry into force: 16 February 2005
2020 pledge	30- 40% reduction. As part of a global and comprehensive agreement for the period beyond 2012 where major emitting Parties agree on emissions reductions in line with the 2 degrees Celsius target, Norway will move to a level of 40% reduction for 2020.
Flagship legislation	Climate Settlement

Legislative Process

Norway is a constitutional monarchy, with legislative power being vested in its unicameral parliament, the Storting ('Great Council'). The Storting's 169 members are directly elected by a system of proportional representation for four-year terms. It is led by a presidium consisting of a President and five vice-presidents. This system replaced a bicameral one during the country's September 2009 election.

Draft bills or resolutions, respectively proposing either new laws or revisions to existing legislature, are introduced to Parliament either (most commonly) upon the proposal of the government, or by individual Members of Parliament. Propositions made by the government undergo a lengthy initial process of inter-agency input and debate, being formally prepared by the relevant ministry and presented to the monarch for approval before being sent to parliament. The Storting in turn refers bills and resolutions to the relevant standing committee (of which there are 12). These committees consider each bill and resolution in detail and often make changes to them before presenting any recommendations on legislative matters to Parliament for a vote. A bill can be read to Parliament and voted on up to three times before a final decision is reached. In order for an approved bill to be enacted, it must be signed by the monarch, in a process known as 'Royal Assent', and counter-signed by the Prime Minister. The Norwegian constitution technically grants the monarch the right to withhold Royal Assent, though in reality this has never occurred in modern history and the constitution allows for any royal veto to be ultimately overridden by Parliament.

As well as proposing bills and resolutions, the government may also submit 'White Papers' to the Storting, which either report on an issue within a particular field or outline future government policy. Any administration requires the support of the Storting in order to have its bills passed by Parliament and minority governments often adjust their proposals in order to remain in office. Having experienced over 30 years of coalition or minority governments, a result of the proportional representation voting system, an emphasis on consensus is well entrenched in the legislative process.

Approach to Climate Change

The Norwegian government is currently tackling climate change directly through a number of different national and international plans and policies. Its latest steps to reduce GHG emissions and promote technological advances through which to combat climate change took the form of the 2012 Climate Settlement, which followed the adoption of the ambitious White Paper on Climate Efforts. The paper contains a number of political, non-binding goals and outlines the country's principles of fair distribution, international solidarity and sustainable development, as well as the precautionary principle and the 'polluter pays' principle. It also keeps to targets set out by the Government in the 2008 agreement on climate policy.

The 2007 white paper on climate policy and subsequent 2008 agreement on climate policy between Norway's political parties concluded that a realistic target is to reduce Norwegian emissions by 15–17 million tonnes CO₂-equivalent relative to the reference scenario presented in the National Budget for 2007, when CO₂ uptake by forest is included in line with existing rules. When Norway joins the EU Emissions Trading Scheme (ETS), about 70% of domestic emissions will either be covered by the scheme or subject to the CO₂ tax.

In 2008, Norway enacted its National Allocation Plan for the ETS (2008-2012). This set out the framework for allocation to those installations obliged to surrender emission allowances under the ETS. The ETS covered 35-40% of Norway's GHG emissions and was important in ensuring the country's compliance with the Kyoto Protocol. The System's underlying principles gave incentives for emission reductions and enabled cost-effectiveness across a number of sectors. About half of the allowances were allocated free of charge, with the rest being sold at market prices. The Plan set aside a reserve for new gas-fired power plants with carbon capture and storage (CCS) technology and for highly-efficient heat and power plants. Post-2012, no business can rely on such allocations being free of charge.

Norway is one of the few countries in the world to make a political pledge to achieve carbon neutrality, committing to reduce emissions by the equivalent of 100% of its own emissions by 2050. If an ambitious global climate agreement is achieved in which other developed countries also take on extensive obligations, Norway will aim to achieve this by the earlier date of 2030. Norway will encourage other countries to set ambitious climate goals and will fund emission reduction measures in other (mainly developing) countries as part of its effort to meet these commitments. It has also pledged to play a leading role in negotiations towards a more ambitious international climate agreement, using as a starting point the aim of limiting the average rise in global temperature to no more than 2°C above the pre-industrial level. Norway invests heavily in climate commitments as part of its co-operative schemes with developing countries – focusing on clean, renewable energy resources, climate change adaptation and food security – primarily through the Norwegian Clean Energy for Development initiative launched in 2007 and the international energy and climate change initiative Energy+ (launched in 2011). The government is also proposing an allocation of approx. USD 107 million to purchase carbon offsets.

Research and Development

Norway's Climate Settlement maintains that Norwegian society will become less vulnerable to climate change, and Norway's adaptive capacity will be strengthened. It attests that special measures may be considered to encourage the Norwegian population whole to begin a change-over to a low-emission consumption pattern sooner than they would as a result of the projected rise in carbon prices alone. It also establishes a climate and energy fund – the Green Climate Fund – to promote the development of GHG emission-reducing technologies, under the state-owned enterprise Enova SF, which will work in close co-operation with Norwegian industry, research communities, the Climate and Pollution Agency and other public agencies.

The fund has a total capital of almost USD 6 billion, which will gradually be increased to almost USD 8.5 billion by 2016. Enova SF was established in 2001 to promote environmentally-friendly energy production. The enterprise also administers the Energy Fund, established in 2002, which is financed by government funds and a small charge added to electricity bills. An additional USD 8 million of funding to boost climate-related research will be divided among the Ministry of Education and Research, the Ministry of the Environment, the Ministry of Fisheries and Coastal Affairs and the Ministry of Agriculture and Food. In 2005, Gassnova SF (the government-established enterprise for CCS) implemented its CCS research, development and deployment (RD&D) programme, CLIMIT, in collaboration with the Research Council of Norway, with a view to accelerating the commercialisation of CCS technologies through the financial stimulation of RD&D. CLIMIT promotes and funds CCS projects at fossil fuel power plants and large industrial point emission sources, as well as promoting active international collaboration in CCS RD&D. The programme has an annual budget of almost USD 29 million.

Energy Supply

The government plans to oversee an increase in the offshore industry's use of electricity generated onshore – increasing incentives for petroleum companies to do so by almost doubling the CO₂ tax (introduced in 1991) for the sector to almost USD 34 per tonne emitted. In addition to the carbon tax, the petroleum sector must surrender allowances in accordance with the GHG Emissions Trading Act. The government has stated that the tax may be reduced if the price of EU allowances rises. The government will promote the development of the value chain for second-generation biofuel and contribute to the production of biogas, through farm-based installations and large facilities for the treatment of manure and waste.

In 2013, Norway established its large-scale programme for Energy Research (ENERGIX), which evolved out of Clean Energy for the Future (RENERGI) – established in 2004. ENERGIX is designed to provide support for the long-term, sustainable restructuring of Norway's energy system in order to accommodate a greater supply of new renewable energy, improve efficiency and flexibility, and facilitate closer energy integration with Europe, with due consideration given to environmental perspectives. It funds research aimed at achieving the sustainable use and consumption of renewable energy resources, the reduction of Norwegian and global emissions of GHGs, ensuring the security of Norway's energy supply, strengthening innovation in Norwegian trade and industry and further developing Norway's research communities.

The EU Renewables Directive was implemented into the EEA Agreement at the end of 2011 and was implemented by Norway in 2012. The Norwegian goal for the share of renewable energy in 2020 is 67.5%, an increase from 60.1% in 2005. The governments of Sweden and Norway have agreed on a common market for green certificates in order to promote new renewable energy projects until 2020. The new market mechanism is expected to annually generate 26.4 TWh electricity by 2020, where each country is financing 13.2 TWh. The system is

neutral regarding renewable technologies, and the two countries share the same level of ambition regarding production increases of the common market.

Energy Demand

The government is introducing measures to reduce energy consumption and GHG emissions from buildings, as well as tightening energy use requirements in building regulations, with an aim to achieve a 'zero-energy' standard by 2020. It will continue its work on a number of national collaboration programmes in order to increase and spread knowledge about energy requirements and energy-efficient buildings. Enova will use the money in the Energy Fund to finance a special subsidy scheme to replace inefficient oil-fired boilers in households and as the base load in public buildings.

Transportation

Norway will take measures to increase public transportation, cycling and walking facilities, particularly in urban areas, with approximately USD 1.9 billion being allocated for investments, operation and maintenance of railways. It will also increase both the CO₂ and the NO_x elements in the non-recurring tax on the purchase of cars and introduce a new class for heavy vehicles in line with new tighter European emissions requirements, while using the incentive of tax-reliefs for electric vehicles. Transnova (a funding programme established by the government in 2009 to develop policy instruments and measures to reduce environmental pollution caused by the transportation sector) will support the continuing development of rapid charging for electric vehicles and climate-friendly transportation of goods. Also in 2009, the government presented a 10-year (2010-2019) National Transport Plan outlining the areas of the sector with the greatest potential for improvement. These included: improving standards in transportation infrastructure to support environmental targets (particularly through the development of railways), measures to stimulate maritime transportation, a pilot project using more environmentally-friendly 'road trains' (up to 25.25m in length) on Norwegian roads, contributing to more environmentally friendly urban development through careful land use planning, increasing investment in R&D, stimulating the use of more energy efficient vehicles and aircraft and a general reduction in the use of private vehicles.

REDD+ and LULUCF

The government will maintain or increase the carbon pool through an active, sustainable forest policy, including tree breeding, increased and denser planting, reintroduction of the ban on felling young trees and a general strengthening of forest conservation. It will also fund efforts to reduce deforestation and forest degradation in developing countries, with a view to reduce their GHG emissions and promote sustainable development and poverty reduction. Norway's International Climate and Forest Initiative (NICFI) began operating in 2008. NICFI supports the development of the REDD+ international agenda and architecture and explicitly aims to work towards the inclusion of emissions from deforestation and forest degradation in a new international climate regime, take early action to achieve cost-effective and verifiable reductions in GHGs and promote the conservation of natural forests in order to maintain carbon storage capacity.

The 2012 Climate Settlement pledges that, by 2020, ecosystem resilience in Norway and the contribution of biodiversity to carbon stocks will have been significantly enhanced through conservation and restoration, including the restoration of at least 15 % of degraded ecosystems, thus contributing to climate change mitigation and reducing Norwegian vulnerability to climate change.

Norway: Flagship Legislation

Name of law	Climate Settlement (Legislative)
Date of entry into force	11 June 2012
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – REDD+ and LULUCF – Transportation – Institutional/Administrative arrangement
Driver for implementation	Climate Change
Summary of bill	<p>The paper reinforced the targets set out in the 2008 agreement on climate policy on transportation; construction; agriculture and carbon uptake by forests; and mainland industry and petroleum activities. Some of the core measures the document recommends to be adopted within these areas include:</p> <ul style="list-style-type: none"> – Create a climate and energy fund for development of technology and industrial transformation; – Increase the offshore supply of electric power from the mainland, while safeguarding biological diversity; – Increase state subsidies for investment in, and operation of, municipal public transportation and other environmentally-friendly forms of transportation; – Adopt climate measures in agriculture and carbon removals in forests through active forest management; – Maintain or increase the forest carbon stock through active, sustainable forest policies; – Improve incentives for the use of bio-energy derived from wood (with emphasis on forest residues); – Increase the mandatory sale of bio-fuels to 5%; – Tighten the energy requirements in the building code to passive house level in 2015 and nearly zero energy level in 2020.
Targets	Norway will bring forward its target for carbon neutrality to 2030, by 2020 Norway plans to commit to reducing its GHG emissions to an equivalent of 30% of the 1990 emissions level.

Norway: Other Relevant Legislation

Name of law	Forestry Act (Legislative)
Date of entry into force	2005
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Institutional/Administrative arrangements
Driver for implementation	Forest management

Summary of bill	<p>The Act aims to promote the sustainable management of forest resources in Norway with a view to promotion of local and national economic development, and to secure biological diversity, consideration for the landscape, outdoor recreation and the cultural values associated with the forest.</p> <p>It gives the Ministry of Agriculture and Food supreme forestry authority over issues relating to road building, felling, regeneration, forest management and damage prevention but also allocates various administrative responsibilities to forest owners.</p> <p>It empowers County Agricultural Committees to issue regulations relating to protective forest, whilst the Ministry is responsible for imposing restrictions on forest management in forest areas of particular environmental value associated with biodiversity, landscape, outdoor recreation or cultural heritage.</p> <p>The Forest Trust Fund, an obligatory reserve, provides forest owners with a sounder basis for financing measures aimed at sustainable management of forest resources. The Ministry may, in regulations, provide that a tax shall be paid on timber in order to promote research and development in forestry.</p>
------------------------	---

Targets	None specified
----------------	----------------

Name of law	Act No. 99 Relating to Greenhouse Gas Emission Allowance Trading and the Duty to Surrender Emission Allowances (Legislative)
--------------------	---

Date of entry into force	17 December 2004
---------------------------------	------------------

Categories	– Carbon Pricing
-------------------	------------------

Driver for implementation	Climate Change
----------------------------------	----------------

Summary of bill	<p>The Act aims to limit emissions of GHGs in a cost-effective manner by means of a system involving the duty to surrender GHG emission allowances and freely transferable emission allowances.</p>
------------------------	---

It establishes government authority over the number of allowances to be allocated and which of these allowances will be issued free of charge. It regulates reporting and control related to emissions and allowances and sets out penal measures for those operators not complying with reporting obligations.

It authorises the Norwegian Emissions Trading Registry to contain information on the allocation, issue, holding, transfer, surrender and cancellation of allowances. The pollution control authorities will control and verify the reports on GHG emissions submitted by each operator.

Targets	None specified
----------------	----------------

Name of law	Act No.31 Relating to the Right to Environmental Information and Public Participation in Decision-making Processes Relating to the Environment (Legislative)
--------------------	---

Date of entry into force	9 May 2003
---------------------------------	------------

Categories	– Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Environmental policy
----------------------------------	----------------------

Summary of bill	<p>This Act aims to ensure public access to environmental information and make it easier for individuals to contribute to the protection of the environment, to protect themselves against injury to health and environmental damage, and to influence public and private decision-makers in environmental matters. The Act is also intended to promote public</p>
------------------------	--

participation in decision-making processes of significance relating to the environment.

It states that administrative agencies must hold general environmental information relevant to their responsibilities and functions and make this information accessible to the public. Information access must not be restricted in regards to harmful pollution, measures to prevent or reduce damage or unlawful intervention in or damage to the environment, unless it is information that is important to keep secret and special procedural rules apply.

Targets None specified

Name of law Water Resources Act (Legislative)

Date of entry

into force 24 November 2000

Categories – Adaptation

Driver for

implementation Water policy

Summary of bill This Act aims to ensure socially proper use and management of river systems and groundwater. It lays out regulations for the land rights, maintenance and supervision of water resources and the framework by which quality checks and controls will be implemented by the water authorities for their protection. It also regulates the development of hydropower and run-of-river power stations.

It states that the water authorities may issue regulations to promote safeguarding against harm/hazards to people, property and the environment and allows for the development of emergency preparedness plans to prevent substantial harm to people, poverty or the environment if an accident occurs or in the event of a sudden increase of risk.

Targets None specified

Name of law The Land Act (Legislative)

Date of entry

into force 12 May 1995

Categories – REDD+ and LULUCF

Driver for

implementation Land use

Summary of bill The Act aims to provide suitable conditions to ensure that the land areas in the country, including forests and mountains and all other land resources may be used in the manner that is most beneficial to society and to those working in the agricultural sector. It dictates that land resources are used in a manner beneficial to society, which entails disposing of such resources with a view to the needs of future generations.

The Act calls for land resource management to be environmentally sound and take into consideration the protection of the soil as a production factor and preservation of land and cultural landscapes as a basis for life, health and well-being for human beings, animals and plants. It gives the municipalities responsibility for dealing with agricultural matters and establishes County Land Boards to oversee sales of land and draw up land use plans which concern agriculture, pursuant to the Planning and Building Act of May 1984.

The Act also calls for the maintenance and cultivation of all cultivated land that can provide a basis for profitable operations. It provides that the Ministry of Agriculture can lay down such provisions that may, among other things, aim at preventing erosion and regulating the use and storage of fertilizer and other inputs in the production process.

Targets None specified

Name of law	Aviation Act (Legislative)
Date of entry into force	11 June 1993
Categories	– Transportation
Driver for implementation	Regulation of the aviation sector
Summary of bill	<p>The Act covers aircraft registrations, markings, legal rights, staffing, navigation, commercial activities, trafficking, damage, accidents and incidents, military usage, sales and airport licensing. It also regulates their airworthiness and compliance with environmental requirements.</p> <p>Aircraft must not be registered unless equipped with a valid certificate of air worthiness and of compliance with environmental requirements issued or approved by the civil aviation authority. An aircraft cannot be considered as complying with the environmental requirements unless it meets the requirements laid down by the ministry regarding noise abatement, air pollution and other forms of environmental disruptions that are harmful or cause inconvenience to people or property outside the aircraft.</p> <p>If the owner or the operator of an aircraft uses it for aviation purposes even though it is not airworthy or does not comply with the environmental requirements, or for other reasons is not in a condition that meets the safety requirements, he shall be punished with fines or imprisonment. The same goes for any person who omits to submit a certificate of airworthiness or a certificate of compliance with environmental requirements.</p>
Targets	None specified

Name of law	The Energy Act (Legislative)
Date of entry into force	29 June 1990
Categories	– Energy supply – Institutional/administrative arrangement
Driver for implementation	Energy policy
Summary of bill	<p>The Act covers the generation, conversion, transmission, trading, distribution and use of energy in Norway. It regulates exports and imports, the licensing, metering and settlements of power trading, energy pricing, and responsibilities for energy system operations, rationing and supply quality.</p> <p>It establishes the role of the Power Supply Preparedness Organisation in controlling power supplies in states of emergency, as well as taking on some responsibilities during peacetime. It confirms the authority of the government to make decisions regarding the protection of power supply installations against damage, as well as to set out contingency measures and orders to this end.</p>
Targets	None specified

4.46 Pakistan



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	167
excl. LULUCF	161
Change from base year (1990)	NA
Latest reporting year	1994
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 1 June 1994 Date of entry into force: 30 August 1994
Kyoto Protocol ratification status and date	Date of signature: 11 January 2005 Date of ratification: 11 January 2005 Date of entry into force: 11 April 2005
2020 pledge	No pledge made
Flagship legislation	National Climate Change Policy

Legislative Process

The legislative of the Democratic Islamic Federal Republic of Pakistan constitutes a bicameral parliament called the Majlis-e-Shoora. This is composed of the Senate and the National Assembly. The Senate has 100 seats, and members are indirectly elected by provincial assemblies and the territories' representatives in the National Assembly to serve six-year terms. One half of the representatives are elected every three years. The National Assembly has 342 seats of which 272 members elected for 5-year terms by popular vote. There are 60 seats reserved for women; 10 seats reserved for non-Muslims.

The President of Pakistan is elected by members of both Houses of the Parliament and the Provincial Assemblies. The Prime Minister, who heads the Cabinet and is meant to aid and advise the President in his functions, belongs to the National Assembly. Members of the Cabinet are appointed by the President on the advice of the Prime Minister. The Cabinet's members are taken from the National Assembly (75%) and the Senate (25%).

A bill relating to the Federal Legislative List can be originated in either House. If the House passes the Bill through majority vote, it is transmitted to the other House. If the other House passes it without amendment, it is then presented to the President for assent.

However, if the Bill is not passed within 90 days or is rejected by the non-originating House, it is considered in a joint sitting to be summoned by the President on the request of the House in which the Bill was originated. If the Bill is passed in the joint sitting by the votes of the majority of the members of the two Houses, it is then presented to the President for assent. If the Bill is presented to the President for assent, a decision to assent should be made within 10 days. However if after 10 days no statement of assent has been made, it is deemed to have been given.

Under the Constitution, the Parliament may also legislate directly for the Provinces where there is a request made by those Provinces. If the Federal Government proclaims a State of Emergency in any province, the power to legislate over that province is also then vested in the Parliament. However, Bills passed by the Parliament during a State of Emergency remain in force only for six months after the State of Emergency is lifted. Actions taken during a State of Emergency remain valid once the crisis has passed.

Approach to Climate Change

Pakistan has been a party of the UNFCCC since 1994 and of the Kyoto Protocol since 2005. The first draft of the National Climate Change Policy (NCCP) was published by the Ministry of Environment in April 2011, was adopted by parliament in 2012 and was officially launched in 2013.

The NCCP was developed with extensive consultation with Pakistan's provinces, federal institutions and civil society. Its goal is "to ensure that climate change is mainstreamed in the economically and socially vulnerable sectors of the economy and to steer Pakistan towards climate-resilient development". However, it is a living document and will be subject to regular reviews and updates. Notwithstanding any such reviews, the NCCP should help Pakistan to continue on a development path to achieve Pakistan's goals as envisioned in the Planning Commission's Vision 2030 document.

The main focus of this Vision 2030 document is adaptation, in view of Pakistan's high vulnerability to the impacts of climate change including degraded ecosystems and high levels of rural poverty, illiteracy and marginalisation of women. Mitigation measures for energy efficiency and conservation, transportation, forestry, industry, agriculture, livestock and town planning are also part of the Policy. As an example the National Forestry Policy (2010) sets out to restore existing forests in addition to restoring deforested and degraded areas. There is a strong focus on watershed reforestation which should confer additional benefits in terms of reduced downstream siltation; more stable river discharge; and benefits to hillside communities in terms of improved supplies of timber and non-timber products.

Institutional arrangements

On 14 April 2012 the federal-level Ministry of National Disaster Management was renamed the Ministry of Climate Change in reflection of the importance with which the government considers climate change. In addition, the National Assembly has set up a 21-strong Standing Committee on Climate Change.

One of the provisions of the NCCP is that following its adoption, there will be an Action Plan to ensure that it is implemented. All relevant ministries, departments and agencies will have to devise their own plans and programmes to implement policy provisions relating to their sectors. Similarly, the lower levels of government, provincial governments; the regions of Azad Jammu and Kashmir and Gilgit Baltistan; federally administrated territories and local governments are expected to establish their own strategies, plans and programmes for NCCP implementation.

To ensure effective implementation and to oversee the progress in this regard, Climate Change Policy Implementation Committees are expected to be established at the federal and provincial levels. One of the tasks of these committees is the regular monitoring and upgrading of the National Climate Change Policy at an interval of five years. The federal level committees will be chaired by the Minister of Climate Change as the focal Ministry and will be integrated by the Secretaries of Ministries responsible for climate change. These are: Planning and Development, Foreign Affairs, Industries and Production, Finance, Water and Power, Food and Agriculture, Health and Defence.

The provincial Climate Change Policy Implementation Committees will be chaired by the provincial Minister for Environment and integrated by the

Chairperson and the Additional Chiefs of the Secretary of Planning and Development Departments; Secretaries of Environment, Agriculture, Forest, Irrigation, Local Government and Public Health Departments; three representatives from the corporate sector, Chambers of Commerce and industries; three experts; three representatives from civil society organisations and the Director General of the Environmental Protection Agency who will serve as a Member and as the Secretary of the Committee.

The National and Provincial Climate Change Policy Implementation Committees are intended to meet biannually. The Provincial Committees, which will be the key actors in the implementation of the proposed climate change agenda, will report to the National Committee. The National Committee will report to the Prime Minister's Committee on Climate Change on a regular basis.

Pakistan: Flagship Legislation

Name of law	National Climate Change Policy (Executive)
Date of entry into force	September 2012
Categories	<ul style="list-style-type: none"> - Energy Supply - Energy Demand - REDD+ and LULUCF - Transportation - Adaptation - Research and development - Institutional/Administrative arrangements
Driver for implementation	Climate change, sustainable economic development
Summary of bill	<p>The Policy identifies vulnerabilities to climate change in the sectors of water resources, agriculture, forestry, coastal areas, biodiversity and vulnerable ecosystems and spells out the appropriate adaptation measures to be adopted. It also puts forward appropriate measures concerning disaster preparedness, capacity building, institutional strengthening, technology transfer and international cooperation.</p> <p>The Policy provides a comprehensive framework for the National Action Plan for adaptation and mitigation. The objectives of the new policy are to pursue sustainable economic growth with a series of measures that appropriately address the challenges of climate change. These measures should integrate climate change policy with interrelated national policies. It is intended that policies should focus on pro-poor and gender-sensitive adaptation while also promoting mitigation. There is an explicit acknowledgement of the risks posed to water, food and energy security posed by climate change; and the need to minimise the risks from the increased frequency and intensity of events like floods and droughts. The policy seeks international finance to support the development required to meet these numerous challenges. However, in addition to directly seeking finance, the policy seeks to create economic incentives to encourage public and private sector investment in adaptation measures and the promotion of conservation of natural resources and long-term sustainability.</p>
Targets	None specified

Pakistan: Other Relevant Legislation

Name of law	The Pakistan Energy Efficiency and Conservation Act (Legislative)
Date of entry into force	2011
Categories	<ul style="list-style-type: none"> – Energy Demand – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Energy efficiency
Summary of bill	<p>The bill is a driver of institutional development to improve energy efficiency in Pakistan, specifically mandating the creation of: ENERCON, the National Energy Conservation Authority; the Fund of ENERCON; and The Pakistan Energy Conservation Council. ENERCON will take multiple roles, including (a) serving as the sole federal authority for initiating, catalysing, carrying out and co-ordinating the implementation of all energy conservation programmes in all sectors of the economy, and, (b) initiating research and development programmes in renewable energy.</p> <p>The Energy Conservation Council is custodian of national policy for energy conservation and ensures proper utilisation, planning and management of energy in all sectors of the economy. It is intended to co-ordinate, supervise and carry out enforcement of the provisions of this Act. It should create awareness and disseminate information related to efficient use of energy resources, and coordinate integration and inculcation of energy conservation concerns in national development plans and policies. In addition, the Council should approve energy efficiency standards and ensure their enforcement and compliance; direct the Authority in the conduct of research and development, and the preparation and execution of demonstration projects and national programmes on energy conservation and recommend to the Federal Government the adoption of measures directly or indirectly conducive to energy conservation.</p> <p>The Council should promote investment by the public and private sectors in energy conservation through partnership or other innovative arrangements. The Council is also mandated to provide policy support to encourage and facilitate import and local manufacture of technologies for the promotion of energy conservation. In order to mark achievements in the sector, the Council should institute national energy conservation and management awards for energy consumers to promote and encourage energy conservation.</p> <p>Finally, the ENERCON fund is to be used to meet expenses incurred in promoting the objectives of the Act including payments of salaries etc., rather than the actual implementation of activities per se.</p>
Targets	None specified

Name of law	National Sustainable Development Strategy (NSDS): Pakistan's pathway to a sustainable and resilient future (Executive)
Date of entry into force	May 2010
Categories	<ul style="list-style-type: none"> – REDD+ and LULUCF – Transportation – Adaptation
Driver for implementation	Sustainable development
Summary of bill	The goal of the NSDS is "vibrant and equitable economic growth" for Pakistan that delivers benefits to all, particularly the poor and the vulnerable, in a way which does not lead to

undue exploitation or degradation of natural resources. The need for the NSDS is stark since the country faces a series of significant challenges: The country's GDP growth rates are currently largely coupled to resource and natural material use, leading to continued environmental degradation. This has contributed to increasing water scarcity, which is a significant problem given that storage capacity and water efficiency delivery is low. In the energy sector, thermal efficiency is low, distribution losses are high, and power cuts are reported to be a common frustration for domestic and business users. In addition, Pakistan's strategic energy reserves are low. These problems are set against a backdrop of high poverty and illiteracy rates in addition to increased impacts of natural hazards, notably the impact of disastrous flooding.

The three core programme areas addressed are:

Economic: Sustainable trade, Cleaner Production, and Sustainable Consumption.

Environment: Natural capital and Biodiversity.

Social: Social protection, poverty alleviation and equal opportunity/human development.

The strategic goals of the programme are to:

- Promote green investment and green jobs
- Improve eco-efficiency by changing production and consumption systems
- Internalisation of environmental costs into pricing
- Develop sustainable infrastructure focusing on transportation and communication
- Develop demand for sustainable consumption among consumers through awareness raising
- Account for depletion of natural resources in national accounts
- Promote efficient use of energy and water, including through improved watershed management and reforestation
- Improve biodiversity management and increase forest cover; prepare lists of endangered species
- Deliver basic services of acceptably high quality to all citizens. These would cover 10 years of schooling, healthcare, food, water, shelter and energy
- Ensure preparedness for natural and human-made calamity and emergencies through mitigation and integration of disaster contingencies in broader development strategies

Targets	Doubling of forest cover by 2030 as envisaged in Vision 2030 Eliminate absolute poverty
----------------	--

Name of law	Alternative Energy Development Board Act (Legislative)
--------------------	---

Date of entry into force	2010
---------------------------------	------

Categories	<ul style="list-style-type: none"> - Energy supply - Research and development - Institutional/Administrative arrangements
-------------------	--

Driver for implementation	Development of alternative energy
----------------------------------	-----------------------------------

Summary of bill	The Act sets out to create an alternative and renewable energy development board for Pakistan. The text largely sets out the formal standing of the board, outlining its financial status and how to appoint members of the board etc.
------------------------	--

Specifically the functions of the board are to:

- Develop national strategy, policies and plans for utilisation of alternative and renewable energy resources to achieve the targets.
- Act as a forum for evaluating, monitoring and certification of alternative or renewable energy projects and products. This includes a) acting as a co-ordination agency for commercial application of alternative or renewable technology; and b) facilitating energy generation through alternative or

renewable energy resources, including: inter alia the promotion or development of renewable energy projects; and interacting with other agencies domestically and internationally for alternative energy production

Finally, The Act also allows the board to establish an institute of renewable energy technologies.

Targets	None specified
----------------	----------------

Name of law	National Forest Policy (Executive)
Date of entry into force	2010
Categories	REDD+ and LULUCF Institutional and Administrative arrangements
Driver for implementation	Sustainable development of natural resource use
Summary of bill	<p>This policy (supported by caveats in the National Environment Policy) addresses the sustainable use of Pakistan's renewable natural resources. It acknowledges the multiple functions of Pakistan's forests, such as carbon storage for climate change mitigation. However, there is a particularly strong focus on forests' role in mountain areas where they provide protection from soil erosion and reduction of downstream siltation; and crucially, watershed protection. It also notes the potential of forests to support local livelihoods in terms of provision of non-timber forest products (mushrooms, medicinal plants etc).</p> <p>Much of Pakistan's forests have now been cleared, increasing the importance of managing what remains under a framework of sustainable use. In particular the sustainable use should benefit marginalised groups such as women and children. Use of existing resources should be complemented with forest restoration activities to attempt to regenerate forests in order to safeguard economic growth.</p> <p>Approaches to achieve the desired sustainable use of forests include the substitution of firewood and timber (specifically discouraging the use of rare species in government buildings); and the prevention of encroachment on remaining forest lands through regulation of grazing.</p> <p>In order to finance the protection of watersheds and safeguard Pakistan's water supply, the forest policy stipulates the creation of a forest fund. The fund may also be used to finance the promotion of forestry research and education in Pakistan.</p>
Targets	None specified

Name of law	The Pakistan Council of Renewable Energy Technologies Act (Legislative)
Date of entry into force	2010
Categories	<ul style="list-style-type: none"> – Energy supply – Institutions/Administrative arrangements
Driver for implementation	Development of renewable energy capacity
Summary of bill	The Bill legislates for institutional development by mandating the establishment of the Pakistan Council of Renewable Energy Technologies. The council will be responsible for promoting the development, acquisition, propagation and dissemination of renewable

energy technologies. Specifically named technologies are: solar/photovoltaic; thermal, hydrogen, biogas/biomass, mini and micro hydro power; and wind technologies.

The council will also be responsible for the liaison with national and international organisations to promote technical co-operation in addition to assisting the government in the industrial production of renewable energy technologies.

Targets None specified

Name of law **Clean Development Mechanism (CDM) – National Operational Strategy (Executive)**

Date of entry into force January 2006

Categories – Institutional/Administrative arrangements

Driver for implementation Climate change

Summary of bill The strategy describes the functions and powers of a Designated National Authority for CDM projects and the national project approval process.

Targets None specified

4.47 Peru



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	120
excl. LULUCF	63
Change from base year (1990)	NA
Latest reporting year	2000
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 7 June 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 13 November 1998 Date of ratification: 12 September 2002 Date of entry into force: 16 February 2005
2020 pledge	Voluntary pledges: Reduce the net rate of deforestation (of primary forests) to zero. Increase use of alternative energy sources (hydrogen and biofuels) to represent at least 33% of national energy consumption. Reduce emissions caused by inadequate treatment of solid waste.
Flagship legislation	National Strategy on Climate Change

Legislative Process

Peru is a presidential republic made up of 25 administrative regions. The federal legislature is a unicameral congress, composed of 130 representatives who are elected by popular vote for five-year terms. National legislation is proposed by the executive branch (the President, elected by popular vote for a five-year term, the Prime Minister, appointed by the President, and the council of ministers, also appointed by the President), members of Congress, the Judiciary, autonomous public bodies, municipalities or professional associations. Citizen groups and individuals are also constitutionally guaranteed the right to submit legislation to congress for consideration.

After bureaucratic filing and numbering, the Secretary General refers the proposed legislation to the corresponding congressional committee(s). The committees are formed of elected representatives from all parties and work to draft an evaluating report seeking unanimous, majority or minority consensus. If no such consensus is possible, or if the committee issues an “unfavourable report”, the bill is rejected and filed in the Parliamentary Archives. If the committee issues a “favourable report”, the bill is scheduled for debate by the Executive Council in a full parliamentary session. If the bill is passed by Congress, the President may sign it into law within 15 days, or send it back to Congress for further review. Once promulgated by the President, the legislation is enacted and in force on the date of publication in the official congressional gazette, *El Peruano*.

Laws passed by Congress and signed by the President represent the strongest form of legislation in the Peruvian judiciary-legal system. Supplemental legislation exists by the way of legislative resolutions, which are employed to ratify international treaties or specify and modify rules and regulations of existing legislation. Likewise the executive branch may issue a “supreme decree” (executive decree), which does not need congressional approval but does require the signature of at least one sitting cabinet minister. Much of the current legislation specific to climate change, including Peru’s flagship legislation, is in the form of executive decrees.

The government has championed decentralisation. In 2002 under President Toledo, Congress passed the *Decentralization Framework Law*, which, in accordance with complimentary laws passed shortly thereafter, seeks to decentralise fiscal planning from the central government to the 25 regional governments. A federally supported proposal to consolidate the 25 regional administrative governments into five sub-national regions was a pillar of the plan for decentralisation; however, this proposal was rejected in a national plebiscite in 2005. Thus implementation of federal legislation (including environmental legislation concerning climate change) is left to each of the 25 regional governments, which are composed of a Regional President and a Council (both President and Council Members are elected for four-year terms). The Council debates and votes on legislation proposed by the Regional President. Elected mayors from sub-regional provinces form advisory Co-

ordinating Councils that advise and consult on budgetary and planning issues but hold no legislative authority.

Approach to Climate Change

Peru ratified the UNFCCC in 1992 and created the National Commission on Climate Change (NCCC) in 1993. The NCCC's primary function is to co-ordinate the implementation of the UNFCCC. Over the next decade, the government focused on synergising sustainable development, poverty reduction and environmental management; however, no significant legislation was enacted until after Peru ratified the Kyoto Protocol in 2002. That same year Congress passed legislation that obliged regional governments to formulate, co-ordinate and supervise the application of sub-national strategies related to climate change. The NCCC elaborated the National Strategy on Climate Change, which was passed by federal decree.

The National Strategy on Climate Change (NSCC) is a detailed accounting of 11 strategic focuses that prioritise scientific research, mitigating the disproportionate and inequitable suffering of the poor caused by climate change and developing mitigation and adaptation policies within the framework of the Mechanisms for Clean Development (MCD). Each of the strategic focuses is broken down into strategic objectives that are further detailed by specific, realisable aims. Although the NSCC is not congressional legislation, implementation by the regional governments is obligatory. At time of publication, the NSCC was being reviewed and updated to include guidelines for the sectors and regional governments to include climate change provisions in all development programmes, plans and projects.

In 2010 the Ministry of Environment, under the direction of the vice-minister of strategic development of natural resources, published The Plan of Action for Adaption and Mitigation of Climate Change. The document served both as a report of ministerial projects and programmes related to climate change as well as a plan for future action between the years 2011 and 2021. The Plan categorises present and future programmes into seven thematic lines of actions, including reporting mechanisms on GHG emissions, mitigation, adaptation, research and development of technology of systems, financing and management, and public education. It also includes detailed budget information and analysis which indicate Peru's fiscal priorities pertaining to climate change. Of the 31 existing projects addressing climate change implemented by the Ministry of Environment, 19 are specific to adaption and absorb 57% of the total expenditure on climate change. The Plan has been the most comprehensive government report on climate change strategy and was passed by ministerial decree in 2010; however, because it does not create new normative legal regulations, it is not considered a legislative approach for the purposes of the present study.

In 2011 a new planning project was launched (PlanCC) in order to study and analyse future national scenarios for climate change and potential for sectoral GHG reductions. PlanCC set out updated GHG emission data for 2009, and will

produce a plan for sectoral mitigation based on economic and social co-benefits, that will be applied to NAMA formulation and the design of the MRV system. The legislation that will be issued for its implementation has not yet been decided.

The Third National Communication on Climate Change is being prepared and will include the data results of PlanCC, which will be ready for 2014. New GHG emissions will also be reported in 2014, but were not listed above as this study relies strictly on official UNFCCC data to maintain consistency.

Sub-National activity

Peru has decentralised much of its governance structure over the past decade. National legislation therefore seeks to strike a balance between federal mandates and regionalised and localised strategies. The Organic Law of Regional Governments establishes that responsibility for managing natural resources and the natural environment resides with the regional governments and specifically delegates authority to strategically plan environmental projects, implement federal legislation, enact regionally specific environmental legislation, and monitor and evaluate both regionally and nationally enacted policy from the central government to the 25 regional governments.

However, because the natural environment and the processes of climate change are not determined by political borders, legislation regarding climate change has been driven at the national level, and legal and managerial authority still largely rests with the National Commission on Climate Change housed within the National Ministry of Environment. The General Law for the Environment, which acts as the foundation of environmental legislation in Peru, states that the role of the regional governments is to formulate policies and co-ordinate strategic programmes within the national framework. As such, regional governments must develop strategies for implementation of policy and project development, assisted by the National Strategic Planning Centre and additional corresponding national ministries and commissions.

REDD+ and LULUCF

Peru has the fourth-largest reserve of tropical forests in the world, a total of 72 million hectares. Deforestation, particularly in the Amazon, is a principal concern. According to the second national report to the UNFCCC, deforestation is the single largest source of GHG emissions, accounting for 47% of national emissions in the year 2000. Accordingly, Peru's voluntary pledges on the international stage have prioritised forest conservation and reducing slash-and-burn agriculture practices. At the UNFCCC meeting in Poland in 2008, Peru pledged to conserve 54 million ha of tropical forests; and in 2009 at the Copenhagen UNFCCC meeting, the country pledged to reduce net deforestation of primary forests to zero by the end of 2020.

The Ministry of the Environment has created the National Programme for Forest Conservation, with a specific mention of GHG reduction in the forestry sector.

The Programme will be in charge of forestry and climate change projects, and programmes and projects submitted to the Climate Investment Funds – Forest Investment Programme, which has recently approved a USD 50 million fund to Peru, one of the eight pilot countries selected for this CIF-FIP mechanism.

Peru: Flagship Legislation

Name of law	National Strategy on Climate Change, Executive Decree No. 086-2003-PCM [Executive]
Date of entry into force	27 October 2003
Categories	<ul style="list-style-type: none"> – Energy Demand – REDD+ and LULUCF – Adaptation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The National Strategy on Climate Change has the general objective of reducing the adverse impacts of climate change by conducting research that identifies vulnerability and development strategic action plans to mitigate climate change as well as adaption techniques. The decree acts as a national framework within which the regional and local governments can develop their own policies and action plans. The decree lists 11 strategic lines of action:</p> <ul style="list-style-type: none"> – Promote and develop scientific, technological and socio-economic research about vulnerability, adaptation and mitigation in regards to climate change in Peru – Promote policies, measurements (indicators) and projects to develop the capacity for adaptation to the effects of climate change and reduce vulnerability – Actively participate in international climate change negotiations in order to defend Peru's national interests and protect the global atmosphere – Develop policies and measurements for the management of GHG emissions and other air pollutants and for the mitigation of climate change considering the mechanisms available in the Kyoto Protocol and other economic instruments – Disseminate knowledge and information about climate change in Peru and aspects concerning vulnerability, adaptation and mitigation – Promotion of projects that have as primary objectives poverty alleviation, reduction of vulnerability and/or mitigation of GHGs – Promotion of the use of technologies that are adequate and appropriate to adapt to climate change, mitigate GHG emissions and atmospheric contamination – Achieve the participation of citizens to strengthen the capacity to adapt to climate change and mitigate GHG emissions and atmospheric pollution – Management of forest ecosystems to mitigate the vulnerability to climate change and increase the absorption of CO₂ – Explore the possibility of achieving just compensation for the adverse affects of climate change principally caused by industrialised countries – Management of fragile ecosystems, especially mountainous ecosystems, in regards to reducing vulnerability to climate change <p>Each strategic point listed above is broken down by objectives and specific actions to be realised.</p>
Targets	None specified

Peru: Other Relevant Legislation

Name of law	National Plan for the Conservation of Forests to Mitigate Climate Change, Executive Decree No. 008-2010-MINAN [Executive]
Date of entry into force	15 July 2010
Categories	– REDD+ and LULUCF
Driver for implementation	Climate change
Summary of bill	<p>This Decree establishes a national programme to conserve tropical forests in Peru, the general objective of which is to protect 54 million ha of tropical forests as a contribution to the mitigation of climate change and to sustainable development. Specific objectives are:</p> <ul style="list-style-type: none"> Identify and map the areas to be conserved Promote productive forms of income connected to forest conservation for the most economically vulnerable local populations Strengthen the capacity to conserve forested areas at the regional gubernatorial level, as well as in indigenous and peasant communities <p>The programme will be housed within the Ministry of Environment. These state interventions should be co-ordinated with the Ministry of Agriculture and the Ministry of International Trade and Tourism. Programme funds will be allocated from the existing budget of the Ministry of Environment and/or with international funds.</p>
Targets	This legislation corresponds to pledges made by Peru to conserve 54 million ha of forests and halt slash-and-burn agriculture tactics (2008, UNFCCC-Poznan) and to reduce the rate of deforestation (of primary forests) to zero by 2020 (2009, UNFCCC Copenhagen).

Name of law	Promotion of Investment for the Generation of Electricity from Renewable Energies, Legislative Decree No. 1002 [Legislative]
Date of entry into force	1 May 2008
Categories	<ul style="list-style-type: none"> – Energy supply – Research and development
Driver for implementation	Climate change, energy diversification
Summary of bill	<p>This legislation declares the production of electricity from renewable sources of energy a national priority. It designates the Ministry of Energy and Mines as the implementing authority, which will establish goals specifying a percentage of electricity to be generated by renewable energy sources (excluding hydroelectric energy), in maximum increments of 5%.</p> <p>Renewable energy sources will have priority distribution on the energy grid and are defined as: biomass, wind, solar, geothermal, tidal, and hydropower when potential yield does not surpass 20 MW.</p> <p>The Decree sets out a number of ways in which the government will promote technological investigation and capacity, including the development of a National Plan for the Promotion of Renewal Energies and through co-ordination between regional governments, universities and technical schools, and the National Board of Science, Technology and Technological Innovation.</p> <p>Lastly, the Legislative Decree modifies existing laws and decrees that regulate energy use in</p>

	order to further prioritise the consumption of renewable energy.
Targets	None specified

Name of law	Law to Promote a Market of Biofuels Fuels, Law No. 28054 and corresponding regulations specified in Federal Decree No. 013-2005-EM [Legislative]
--------------------	---

Date of entry into force	15 July 2003 (Law No. 28054) 31 March 2005 (Federal Decree No. 013-2005-EM)
---------------------------------	--

Categories	– Energy supply – Research and development
-------------------	---

Driver for implementation	Climate change, energy diversification, war on drugs
----------------------------------	--

Summary of bill	The Law's primary objective is to incentivise the diversification of the fuel industry by promoting investment in the production of biofuels, defined as any chemical fuel type originating in agricultural products to a standard defined by the national government.
------------------------	--

The policies defined in the legislation, to be implemented by the executive branch, are:

- to strengthen the scientific research system necessary to developing biofuels;
- to educate workers about innovative fuel technologies;
- to incentivise the application of biofuel technologies;
- to incentivise private capital investment in biofuel production;
- to incentivise the commercialisation of biofuels;
- to promote the production of biofuels in rainforest regions within the framework of sustainable development.

The Law also operates within the Peruvian anti-drug programmes, so that national and international funds designated to The War on Drugs are used to incentivise farmers to cultivate crops designated for biofuels rather than illicit narcotics

The legislation calls for the creation of a technical commission, which will create quality standards related to the production of various biofuels.

The executive authority issued a decree to regulate the Law nearly two years after its promulgation. The Decree offers further legal definitions of terminology (such as biodiesel, denaturated chemical compounds etc.) as well as specifying the chemical make up of commercialised biodiesel (95% gasoline, 5% biodiesel) and ethanol fuel (92.2% gasoline, 7.8% ethanol). Additionally, the Decree identifies different funding streams to accomplish the legislative objectives established in Law No. 28054, including through the National Clean Development Mechanism, government-backed credits and funds designated for The War on Drugs.

Targets	None specified
----------------	----------------

Name of law	Organic Law of Regional Governments, Law No. 27867 [Legislative]
--------------------	---

Date of entry into force	18 November 2002
---------------------------------	------------------

Categories	– Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Decentralisation, climate change
----------------------------------	----------------------------------

Summary of bill	This is broad legislation meant to decentralise governance in the country and is a pillar of the juridical-legal framework of contemporary Peru. As such, most of the legislation is unrelated to climate change or the natural environment. However, it states explicitly that
------------------------	---

regional governments must formulate, co-ordinate, manage and supervise regional strategies to address climate change within the national framework (the National Strategy on Climate Change and additional legislation, executive decrees and ministerial resolutions).

Targets Not applicable

Name of law Law to Promote Efficient Use of Energy, Law No. 27345 and Executive Decree No. 053-2007-EM to Regulate Corresponding Law No. 27345 [Legislative]

Date of entry 8 September 2000 (Law No. 27345)

into force 23 October 2007 (Executive Decree No. 053-2007-EM)

Categories

- Energy Demand
- Transportation

Driver for implementation Energy efficiency, climate change

Summary of bill The Law declares the promotion of energy efficiency a matter of national interest. The motivations listed in the bill are to ensure a stable energy supply, protect the consumer, improve competitiveness of the national market and to reduce environmental damage caused by energy consumption. The Law requires the Ministry of Energy and Mining to promote a culture of energy efficiency and to design and fund energy efficiency projects. However, the legislation is vague on details and activities to be realised. The one exception is the labelling of electronic appliances and machines of energy consumption information within 90 days after the law has taken into affect.

The Executive Decree details how the Ministry of Energy and Mining is to realise the mandates of the corresponding law.

In order to encourage a culture of energy efficiency, the Ministry is to co-ordinate education programmes for the general public and in primary and secondary schools, as well as co-ordinate the establishment of undergraduate and graduate degree programmes in energy efficiency. Additionally, 21 October is celebrated as National Energy Saving Day.

The Ministry will encourage energy efficiency in homes and residences with publicity campaigns meant to change consumption behaviour; promote the financing of energy efficient electrical systems appliances; and encourage the use of energy efficient technologies in remote areas.

In the service and private industry sectors the Ministry will promote the creation of an “energy efficiency market”; create standards of energy efficiency for private enterprises; create minimum standards of energy efficiency depending on the type of productive activity; co-ordinate the financing of small and medium enterprises to establish pilot projects meant to make energy use more efficient; and coordinate with the National Commission on Climate Change and the National Environmental Fund to facilitate international financing through the Clean Development Mechanisms.

In the public sector the Ministry will audit the use of energy by public entities that use more than a pre-established amount of energy units; co-ordinate efficient lighting systems; and co-ordinate the conversion of public sector vehicles to run on natural gas.

In the transportation sector, the Ministry will co-ordinate with the appropriate public entities to encourage efficient use of public transportationsystems and optimise traffic systems to mitigate idle use of fuels.

The Ministry should co-ordinate the replication of successful projects at the Regional Government level.

Targets None specified

4.48 Philippines



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	101
excl. LULUCF	101
Change from base year (1990)	NA
Latest reporting year	1994
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 2 August 1994 Date of entry into force: 31 October 1994
Kyoto Protocol ratification status and date	Date of signature: 15 April 1998 Date of ratification: 20 November 2003 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	Climate Change Act of 2009 (Republic Act No. 9729) (and Implementing Rules and Regulations [IRR] of the "Climate Change Act of 2009"

Legislative Process

The legal system of the Philippines is a unique combination of civil law and common law, together with Muslim (Islamic) law and indigenous law. The current constitution was enacted in 1987, and is the supreme law of the Philippines. It defines the Philippines as a “democratic and republican state”, with the President heading the executive branch, the Congress as the legislative branch and the Supreme Court as the highest judicial body.

Congress is bicameral, consisting of the House of Representatives (commonly known as the Lower House, but frequently referred to as the Congress), and the Senate (often referred to as the Upper House). The Senate is composed of 24 senators, who are elected by the entire electorate. Senators serve for 6 years each, with elections held every 3 years for half of them. Senators can serve for not more than two consecutive terms. The House of Representatives is composed of approximately 250 congressmen. These represent either geographical districts (provinces or cities) or different sectors. The latter represent no more than 20% of the House, and are referred to as party-list representatives. All members of the House are elected for periods of three years, and for a maximum of three consecutive terms.

Proposed laws are called bills and may be introduced by the Senate or by the House of Representatives. A bill goes through a first reading in which the number and title are read, after which it is referred to an appropriate committee, which prepares a committee report. It is then passed to the Rules committee, and returned for a second hearing, and is subject to debate and amendment before proceeding to the final third hearing. After passing in one House, the bill goes through the same process in the other House.

Major legislation is often introduced in both Houses in the form of companion (identical) bills, to speed up the legislative process by encouraging both chambers to consider the measure simultaneously, and to emphasise the urgency or importance of the issue. After it has passed in both Houses and been signed by their respective leaders, it goes for final approval to the President. The President may sign the bill into a law, or veto all or part of it. A presidential veto can be overridden by a Congressional vote of two thirds of all its members.

Another form of legislation, equivalent to a bill, is a Joint Resolution, generally used when dealing with a single item or issue, such as a continuing or emergency appropriations bill. Joint resolutions are also used to propose amendments to the Constitution.

Approach to Climate Change

The Philippines ratified the UNFCCC in 1994 and the Kyoto Protocol (as a non-Annex I country) in 2003. It submitted its first communication to the UNFCCC in 2000, which included a national inventory of anthropogenic emissions by sources and removals by sinks of GHGs (updated to 1994), and a description of

steps taken or planned to implement its commitment. The second communication to the UNFCCC is in the process of preparation.

The Philippines' vulnerability to climate change, recently demonstrated once again by the devastation caused by typhoon Haiyan, has served as a backdrop to extensive policymaking on sustainable development and climate change since the early 1990s. As early as 1991, the Philippines established by presidential order the Inter-Agency Committee on Climate Change (IACCC) under the Environmental Management Bureau of the Department of Environment and Natural Resources (DENR). The IACCC's responsibilities are to serve as the national co-ordination mechanism and implementation mechanism of commitments towards the UNFCCC. A designated authority for managing the countries' CDM projects was established in June 2004, and to date, 62 projects have been registered. The Clean Air Act of 1999 included a section on GHG emissions, and called for a national plan on GHGs to be prepared.

The Philippines has acted to integrate the United Nations Conference on Environment and Development Agenda 21 principles on sustainable development into development programmes and plans, led by the Philippine Council for Sustainable Development (PCSD), which integrated priority actions into the Philippine Medium Term Development Plan of 1993–1998. A national agenda for integrating sustainable development (Philippines Agenda 21) was finalised in 1996. The Philippine Medium Term Development Plan of 2004–2010 (MTDP) identified climate change mitigation as a national priority and incorporated adaptation measures in the form of disaster risk reduction.

The Climate Change Act of 2009, the Philippines' flagship climate change legislation, created a legal framework to mainstream climate change into all levels of decision making. The Act established the Climate Change Commission, which was required to create a National Framework strategy on climate change (the framework for 2010–2022 was published in April 2010) and a National Climate Change Action Plan (NCCAP, finalised in November 2011). The Action Plan identifies seven strategic priorities to address climate change effects between 2011 and 2028: food security; water sufficiency; environmental and ecological stability; human security; sustainable energy; climate-smart industries and services; and knowledge and capacity development. These priorities will be implemented by financing, valuation of natural resources, multi-stakeholder partnership, and capacity building.

The Climate Change Act emphasised the important frontline role of local governments, and mandated them to draft Local Climate Change Action Plans (LCCAP) consistent with the National Framework and the National Action Plan. The Climate Change Commission provides support to local governments in these efforts.

Energy supply

Since the 2006 Biofuels Act, a minimum percentage of biofuels and biodiesel must be included in the fuel mix. Other pieces of legislation, such as the Mini Hydroelectric Power Incentives Act (1990), have been adopted for energy

security and energy independence reasons, but also help to change the country's energy mix.

Energy demand

The Department of Energy (DOE) aims to save 50.9 million tonnes CO₂ equivalent by employing various energy efficiency and alternative fuels programmes for 2005–2014.

REDD+ and LULUCF

A national workshop on REDD+ was held in April 2009 by several NGOs, which later formed the CoDe REDD2 Philippines. By July 2010, A National REDD+ Strategy for the Philippines for 2008–2017 had been formulated, and has been included in the National Climate Change Action Plan.

In August 2012, the Department of Environment and Natural Resources (DENR) completed the delineation of the country's forests. Once the data are validated, steps will be taken to anchor forest boundaries in legislation. After 15 years of being filed in Congress, the House of Representatives approved the "Sustainable Management of Forest Act 2011" in March 2012. It has been pending Senate approval since then. The Bill provides for sustainable management of forests as well as for mitigation of climate change risks and reduction of poverty in forest areas.

Transportation

In 2002, the Department of Energy initiated the Natural Vehicle Programme for Public Transport (NGVPPT). The programme included the reduction of Import duties on Compressed Gas Motor Vehicles and Natural Gas Vehicle Industry-Related Equipment, Parts and Components.

Adaptation

Typhoon Haiyan, which devastated the Philippines in November 2013, served as a reminder of the country's vulnerability to extreme weather events and climate change effects, and of the critical need for adaptation and disaster management policies and measures.

The Climate Change Commission has launched initiatives for climate resilient communities, under the Eco-Town Framework. Ten municipalities are in different stages of participating in demonstrating the Framework. The Commission also participates in several international adaptation initiatives, such as the Philippine Climate Change Adaptation Project (PhilCCAP), a five-year project funded by the Global Environment Facility (GEF) through the World Bank and co-financed by the government of the Philippines.

The enactment of the Philippine Disaster Reduction and Management Act of 2010 (RA 10121) shifted the policy environment and the way the country deals with disasters from mere response to preparedness. RA 10121 provides a comprehensive, all-hazard, multi-sectoral, inter-agency, and community-based approach to disaster risk management through the National Disaster Risk Management Framework. To develop this concept, a National Disaster Risk

Management Plan (NDRMP) is being mandated to serve as the master plan that will provide the strategies, organisation, tasks of concerned agencies and local government units, and other guidelines in dealing with disasters or emergencies.

The new law also promotes the development of capacities in disaster management at the individual, organisational, and institutional levels. A very important feature of this law is its call to mainstream disaster risk reduction in physical and land-use planning, budget, infrastructure, education, health, environment, housing, and other sectors.

RA 10121 also recognises local risk patterns and trends and decentralisation of resources and responsibilities, thus encouraging the participation of NGOs, private sectors, community-based organisations, and community members in disaster management. Finally, the law allows for the calamity fund to be used to support disaster risk reduction or mitigation, prevention, and preparedness activities and not just for response, relief, and rehabilitation efforts.

Republic Act 10121 or the Disaster Risk Reduction and Management Act of 2010 - has a centralised, top-down administrative system that inhibits the full participation of the Local Government Units (LGUs) and communities in governance. The approach tends to be response-oriented or reactive with a widespread emphasis on post-disaster relief and short-term preparedness, such as forecasting and evacuation, rather than on mitigation and post-disaster support for economic recovery.

Section 12 of RA10121 and its Implementing Rules and Regulations (IRR) mandate the establishment of a Disaster Risk Reduction and Management Office (DRRMO) in every province, city and municipality, and a Barangay Disaster Risk Reduction and Management Committee (BDRRMC) in every barangay [the smallest administrative division in the Philippines].

The Strategic National Action Plan on Disaster Risk Reduction for 2009-2019 aims to enhance the capacities of Local Disaster Co-ordinating Councils, now referred to as Local Disaster Risk Reduction and Management Councils.

Philippines: Flagship Legislation

Name of law	Climate Change Act of 2009 (Republic Act No. 9729) (and Implementing Rules and Regulations [IRR] of the "Climate Change Act of 2009" [Administrative Order No. 2010-01]) [Legislative]
Date of entry into force	27 July 2009 (IRR on 20 January 2010)
Categories	<ul style="list-style-type: none"> - Energy Supply - Energy Demand - REDD+ and LULUCF - Transportation - Adaptation - Research and development

-
- Institutional/Administrative arrangements
-

Driver for**implementation** Climate change, vulnerability**Summary of bill**

The Climate Change Act of 2009 acknowledges the Philippines' vulnerability to climate change and the need for appropriate adaptation, and creates a comprehensive framework for systematically integrating the concept of climate change, in synergy with disaster risk reduction, in various phases of policy formulation, development plans, poverty reduction strategies and other development tools and techniques.

The Act states the main principles of the Philippines climate change policy: principle of common but differentiated responsibilities; the Precautionary Principle; UNFCCC objectives (GHG mitigation and adaptation), and the Hyogo Framework for Action addressing disaster risk reduction. It adopts a gender-sensitive, pro-children and pro-poor approach.

The Act establishes the Climate Change Commission as the sole policy-making body within government, which oversees, co-ordinates and evaluates climate change policies and plans. The commission is established under the office of the President (abolishing the Presidential Task Force on Climate Change which was established in 2007) and has a diverse advisory board composed of government ministries and agencies.

The Act requires the Commission to draft several policies:

- A National Climate Change Framework within 6 months, as a basis for research and action planning. This was finalised in April 2010
- A detailed National Climate Change Action Plan. This was finalised in August 2011
- A Local Climate Change Action Plan – guidelines developed by the Commission

Additional powers and functions include:

- Mainstreaming of climate change, in synergy with disaster risk reduction, into the national, sectoral and local development plans and programmes and co-ordinating climate change programmes of national government agencies
 - Recommending legislation, policies, strategies, programmes on adaptation and mitigation
 - Recommending key development investments in climate-sensitive sectors such as water resources, agriculture, forestry, coastal and marine resources, health and infrastructure
 - Creating an enabling environment for the design of relevant and appropriate risk-sharing and risk-transfer instruments and promotion of broader multi-stakeholder participation and integrate climate change mitigation and adaptation
 - Representing the Philippines in the climate change negotiations
 - Formulating and implementing guidelines for determining vulnerability to climate change impacts and adaptation assessments
 - Facilitating capacity building for local adaptation planning, implementation and monitoring of climate change initiatives in vulnerable communities and areas
-

Targets

None specified

Philippines: Other Relevant Legislation

Name of law	The People Survival Fund Act of 2012 [Legislative]
Date of entry into force	16 August 2012
Categories	<ul style="list-style-type: none"> – Energy Demand – REDD+ and LULUCF – Transportation

	<ul style="list-style-type: none"> - Adaptation - Research and development - Institutional/Administrative arrangements
Driver for implementation	Climate change, sustainable development, financing for adaptation at the local levels
Summary of bill	<p>Republic Act 10171, "An Act Establishing the People's Survival Fund to provide long-term finance streams to enable the government to effectively address the problem of Climate Change, Amending for the purpose Republic Act. No. 9729, otherwise known as the Climate Change Act of 2009," and for other purposes."</p> <p>The People's Survival Fund Law amends the Climate Change Act of 2009 to provide the special funding and create the nine-member People's Survival Fund board tasked to oversee policy and strategy on how the funds will be used. The board will be chaired by the finance secretary. The budget will be funded under the General Appropriations Act and may be augmented by donations, endowments, grants and contributions.</p> <p>The law guarantees an annual one-billion peso (USD 22.9 billion) replenishable fund to finance PAPs based on the NFSCC.</p> <p>Activities that would be supported through the PSF Act include: (a) adaptation activities in water resources management, land management, agriculture and fisheries, health, infrastructure development, natural ecosystems including mountainous and coastal ecosystems; (b) improvement of the monitoring of vector-borne diseases triggered by climate change, and in this context improving disease control and prevention; (c) forecasting and early warning systems as part of preparedness for climate-related hazards; (d) institutional development, for the LGUs in partnership with local communities and NGOs, for preventive measures, planning, preparedness and management of impacts relating to climate change, including contingency planning, in particular, for droughts and floods in areas prone to extreme climate events; and (e) strengthening or establishing regional centres and information networks to support climate change adaptation initiatives and projects. The fund may also serve as a guarantee for risk insurance needs for farmers, agricultural workers, and other stakeholders.</p>
Targets	None specified

Name of law	Philippine Disaster Reduction and Management Act of 2010 (RA 10121) [Legislative]
Date of entry into force	27 May 2010
Categories	<ul style="list-style-type: none"> - Adaptation - Institutional/Administrative arrangements
Driver for implementation	Adaptation, risk management
Summary of bill	<p>The enactment of the Philippine Disaster Reduction and Management Act of 2010 (RA 10121) shifted the policy environment and the way the country deals with disasters from mere response to preparedness. RA 10121 provides a comprehensive, all-hazard, multi-sectoral, inter-agency, and community-based approach to disaster risk management through the formulation of the National Disaster Risk Management Framework. To actualise this concept, a National Disaster Risk Management Plan (NDRMP) is also being mandated to be formulated, developed, and implemented to serve as the master plan that will provide the strategies, organisation, tasks of concerned agencies and local government units, and other guidelines in dealing with disasters or emergencies. Through this plan, a coherent, integrated, efficient, and responsive disaster risk management at all levels will hopefully be achieved.</p> <p>The new law on DRR also promotes the development of capacities in disaster management at the individual, organisational, and institutional levels. A very important feature of this law is its call for the mainstreaming of disaster risk reduction in physical and land-use</p>

planning, budget, infrastructure, education, health, environment, housing, and other sectors.

RA 10121 also recognises local risk patterns and trends and decentralisation of resources and responsibilities and thus encourages the participation of NGOs, private sectors, community-based organisations, and community members in disaster management. Finally, the law provides for the calamity fund to be used in support of disaster risk reduction or mitigation, prevention, and preparedness activities for the potential occurrence of disasters and not just for response, relief, and rehabilitation efforts.

Republic Act 10121 or the Disaster Risk Reduction and Management Act of 2010 - has a centralised, top-down administrative system, which inhibits the full participation of the Local Government Units (LGUs) and communities in governance. The approach tends to be "response-oriented" or "reactive." This is evidenced by the widespread emphasis on post-disaster relief and short-term preparedness, such as forecasting and evacuation, rather than on mitigation and post-disaster support for economic recovery.

The passage of Republic Act 10121, or the Disaster Risk Reduction and Management Act of 2010, led to a paradigm and policy shift on dealing with disasters from mere response to preparedness and rehabilitation. The law mainstreams disaster risk reduction and management in national and local development plans, programmes, projects, and budget allocations.

Further, this Act recognises local risk patterns across the country and directs the strengthening of local government capacities in disaster risk reduction and management through decentralised powers, responsibilities and resources.

Executive Order No. 888, s. 2010, adopts the Strategic National Action Plan on Disaster Risk Reduction for 2009-2019. Principal among the concerns of this Department is the enhancement of the capacities of Local Disaster Co-ordinating Councils, now referred to as Local Disaster Risk Reduction and Management Councils.

Moreover, Section 12 of RA10121 and its Implementing Rules and Regulations (IRR) mandate the establishment of a Disaster Risk Reduction and Management Office (DRRMO) in every province, city and municipality, and a Barangay Disaster Risk Reduction and Management Committee (BDRRMC) in every barangay.

Targets	None Specified
----------------	----------------

Name of law	Framework Strategy on Climate Change (2010) [Executive]
Date of entry into force	Approved by the President on 16 December 2008
Categories	<ul style="list-style-type: none"> - Energy Supply - Energy Demand - REDD+ and LULUCF - Transportation - Adaptation - Research and development - Institutional/Administrative arrangements
Driver for implementation	Climate change, sustainable development
Summary of bill	The National Framework Strategy sketches a clean development path, and serves as a roadmap for national and sub-national development and investment programmes, physical and land use programmes. Acknowledging the Philippines' vulnerability to climate change, the Framework's vision is "to build the adaptive capacity of communities and increase resilience of natural eco-systems to climate change, and optimise mitigation opportunities

towards sustainable development”.

The mitigation pillar leans on managing energy demand, via energy efficiency and conservation programmes, and on energy supply, via utilisation of low-carbon and renewable energy resources, targeting a doubling of the renewable energy sources by 2030. It encourages low-carbon transportation modules (liquefied petroleum gas, bio-fuels, mass transportationsystems) and sustainable, energy-conserving infrastructure building. The infrastructure emphasises the importance of REDD+ policies as a measure to reduce emissions from deforestation and forest degradation. Waste management and methane collection are also included in mitigation priorities.

The Adaptation pillar includes enhanced vulnerability and adaptation assessments, ecosystem management (river basin management, coastal and marine systems, biodiversity); water management; climate-responsive agriculture; climate-responsive health sector; climate-proofing infrastructure; and disaster risk reduction.

The synergy between mitigation and adaptation is emphasised, and cross-cutting strategies are portrayed, among others capacity building in all level of governance, knowledge management and education; research and development and technology transfer.

The framework presents the Philippines’ second GHG emission inventory (updated to 2000), which has been prepared for the second communication to the UNFCCC.

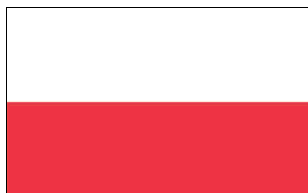
Targets	Doubling renewable energy capacity from 4,500 MW to 9,000 MW in the next 20 years
----------------	---

Name of law	Renewable Energy Act (2008) [Legislative]
Date of entry into force	Approved by the President 16 December 2008
Categories	<ul style="list-style-type: none"> – Energy supply – Institutional/Administrative arrangements
Driver for implementation	Energy independence, climate change, public health
Summary of bill	This Act, overseen by the department of energy, employs various instruments to encourage the supply of electricity from renewable sources.
	<p>The Act creates a Renewable Portfolio Standard for electricity generation from renewable sources, setting a minimum percentage of renewables supply for every electricity supplier.</p> <p>A feed-in tariff is introduced, which includes priority connection to the grid of all renewable sources, as well as priority purchase and transmission.</p> <p>Additional incentives are also offered to suppliers, manufacturers of equipment who are registered with the DOE, in order to encourage renewable energy projects. These include, among others, duty-free import of machinery, equipment and materials in the first 10 years of registration; tax caps of 15% on renewable energy equipment, accelerated depreciation scheme, cash incentives for missionary electrification, tax exemption of carbon credits and tax credit on domestic capital equipment services.</p> <p>The Act creates the National Renewable Energy Board (NREB) to facilitate implementation of the National Renewable Energy Programme.</p>
Targets	None specified

Name of law	Biofuels Act (2006) [Legislative]
Date of entry into force	12 January 2007
Categories	<ul style="list-style-type: none"> – Energy Supply – Research and development – Institutional/Administrative arrangements
Driver for implementation	Energy independence, public health, climate change, sustainable development
Summary of bill	<p>The Act introduces mandatory use of biofuels in the fuel mix of the Philippines, as follows: a minimum 5% of bioethanol in the gasoline mix sold and distributed within 2 years; a minimum of 10% within 4 years is required. There is priority for locally produced bioethanol, and only if in shortage may it be imported. The Act also requires a minimum of 1% of biodiesel in the diesel mix within 1 year, and a minimum of 2% within 2 years.</p> <p>Incentives are introduced to encourage biofuel projects – no specific tax on local or imported biofuels; exemption of raw materials (such as coconut, jatropha, cassava, corn, sugarcane etc.) from VAT; exemption from wastewater charges on water effluents; financial assistance to biofuel activities which are certified by the DOE and at least 60% of which are held by Filipino citizens or entities.</p> <p>The DOE is required to prepare a National Biofuel Programme; a national biofuel board is created under the Act, to monitor and evaluate the Act and the National Programme's implementation.</p> <p>The supply and price stability of sugar are guaranteed under the Act.</p> <p>A Joint Administrative order, which was published in 2008, outlines Guidelines Governing the Biofuel Feedstocks Production, and Biofuels and Biofuel Blends Production, Distribution and Sale under the Biofuels Act.</p>
Targets	None specified

Name of law	Presidential executive order 320 (2004) – establishing the Designated National Authority (DNA) for CDM in the Philippines (2004) [Executive]
Date of entry into force	25 June 2004
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate change, development
Summary of bill	<p>The Act establishes the Designated National Authority (DNA) for CDM, which is responsible for promoting, facilitating and supporting CDM projects. The DNA has the following mechanisms:</p> <ul style="list-style-type: none"> – The CDM Secretariat, which serves as a focal point for all CDM projects – The CDM Helpdesk, which addresses inquiries and provides information and practical guidance, as well as interface with government agencies and among stakeholders – CDM Technical Evaluation Committees – The CDM Steering Committee
Targets	None specified

4.49 Poland



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	377
excl. LULUCF	399
Change from base year (1988)	-164
Latest reporting year	2011
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 5 June 1992 Date of ratification: 28 July 1994 Date of entry into force: 26 October 1994
Kyoto Protocol ratification status and date	Date of signature: 15 July 1998 Date of ratification: 13 December 2002 Date of entry into force: 16 February 2005
2020 pledge	30% reduction by 2020 compared to 1990 levels, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities
Flagship legislation	Strategies for Greenhouse Gas Emission Reductions in Poland until 2020

Legislative Process

Legislative procedure is governed by the Constitution (Articles 118-124) and the Rules of Procedure of Parliament (the Sejm) and the Senate. Article 5 of the Polish Constitution establishes that “The Republic of Poland (...) shall ensure the protection of the natural environment pursuant to the principles of sustainable development”.

Legislation can be initiated by the Cabinet, by no fewer than 15 Members of Parliament, by the Senate, and by the President of the Republic while a group of at least 100,000 citizens can also suggest new laws. Bills are submitted to the Sejm, where they are dealt with in three readings. In the course of this process the Sejm examines the bill and transmits it to the appropriate parliamentary committees for amendment. The bill is then returned to the Sejm, which votes on the amendments and the bill as a whole. The Sejm approves the bill by a simple majority, subject to at least half of the statutory number of members being present. Once the Sejm has passed it, the bill is transmitted to the Senate, which has one month in which to adopt it without amendment, amend it or discard it. If a bill is amended or thrown out by the Senate, it must be re-examined by the Sejm. In this case the Sejm needs an absolute majority, subject to at least half of the statutory number of members being present, in order to override a recommendation by the Senate.

If the Parliament completes the legislative process, the bill is transmitted to the President, who should sign it and order its publication in the Journal of Laws. Before signing a bill, the President can refer it to the Constitutional Court for constitutional review. If the Constitutional Court deems the bill to be compatible with the Constitution, the President may not refuse to sign it. The President also has the option of not referring a bill to the Constitutional Court but simply reject to sign the bill and returning it to the Sejm for a further consideration (“presidential veto”). However, the Sejm may reject a presidential veto by a majority of 3/5, subject to at least half of the statutory number of Members being present. If the bill is once again adopted by the Sejm, the President has one week in which to sign it and order its publication.

Approach to Climate Change

The base year for Poland under the UN Climate Change Convention is 1988 rather than 1990 as defined by decisions 9/CP.2 and 11/CP.4. In general, Parties with economies in transition were allowed to choose a base year other than 1990. For Poland, 1988 was the last year of the relatively normal functioning of the economy before the crisis, when GHG emission levels were at their highest level.

Poland has reduced its GHG emissions substantially since its economic transformation started in 1990 and is on track to meet its international and European commitments. As elsewhere in Central and Eastern Europe, the economic collapse of the former Soviet bloc resulted in a considerable drop in

domestic and foreign demand for the country's very energy- and carbon-intensive products. As a result of the structural shift towards less energy-intensive sectors, the country's overall GHG emissions fell by around 24% between 1988, the base year, and 1994. Despite the economic catch-up that has subsequently taken place, a further decrease of more than 10% had occurred by 2000, reflecting mainly investment in more energy-efficient technologies. Since the early 2000s, annual GHG emissions have remained broadly stable. In managing to cut its total GHG emissions by nearly 30% between 1988 and 2011 and more than doubling its GDP, Poland looks set to go well beyond its Kyoto commitment of a 6% reduction between 1988 and the average of 2008–2012. The Polish success in decoupling economic growth from GHG emissions is higher than the European average. Poland is also on track to meet the EU 2020 target for the sectors not included in the European Union's Emissions Trading System (EU-ETS), primarily the residential, transportation and agriculture sectors.

The EU-wide goal of cutting emissions by 20% from 1990 levels by 2020 translates into a national target for Poland's non-EU-ETS sectors of up to a 14% increase by 2020 compared to 2005, whereas emissions actually declined slightly between 2005 and 2009. Given the country's 8% share in total EU27 GHG emissions, Poland's compliance with the 2020 non-ETS target is an important factor of the EU's ability to meet that objective.

The country's energy policy strategy, outlined in Energy Policy of Poland until 2030 (EPP 2030), issued by the Ministry of Economy in November 2009, is mostly focused on improving energy security, efficiency and competitiveness. It implies a small reduction in overall GHG emissions by 2020, and a 4% increase between 2020 and 2030. The document presents a sectoral strategy aiming to address the key challenges that the Polish power industry must face until 2030, including growing demand for energy, inadequate fuel, energy generation and transmission infrastructure, significant dependence on external supplies of natural gas and almost full dependence on external supplies of crude oil, as well as commitments in the field of environmental protection, including climate protection.

The EPP 2030 lists a number of measures aimed at mitigating the environmental impact of power industry. These include: (i) establishing a system to manage national emission caps of GHGs and other substances; (ii) introducing acceptable product emission rates for electricity and heat generation as a tool which allows reducing SO₂ and NO_x emission levels and reaching the emissions cap set forth for Poland in the EU Accession Treaty; (iii) meeting the commitments for the power and heat sectors stemming from the new ETS Directive; (iv) using the income from auctions of CO₂ emission allowances to support measures aimed at reducing GHG emission volumes; (v) introducing standards for building new power plants under the system of preparation for carbon capture and setting national capacity for geological CO₂ storage; (vi) implementing the European Commission initiative of building large-scale demonstration facilities for carbon capture and storage (CCS) technologies; (vii) applying CCS technologies to support crude oil and natural gas extraction; (viii) intensifying research and development on the CCS technology and on new technologies which use

captured CO₂ as a raw material by other industry branches; (ix) promoting the industrial use of waste coal; (x) increasing the use of incineration by-products; and (xi) using high-efficiency closed cooling cycles in power plants and in heat and power stations.

Poland is formulating a national plan to reduce GHG emissions, the National Programme for a Low-Emission Economy Development. It is also working on the transposition of the EU Renewables Directive of 2009 and of the EU-ETS Directive into national law.

Poland is also putting in place a national development system, consistent of nine integrated development strategies. Two are directly linked to climate change: the Strategy for Economic Innovation and Effectiveness (2012-2020), adopted in 2013, and the Strategy for Energy Security and Environment, which is to be adopted by the Council of Ministers soon.

The Strategy for Economic Innovation and Effectiveness was drafted by the Ministry of Economy with the aim of narrowing the gap between Poland and EU frontrunners. Its objective is to make Poland part of the highly innovative countries by 2020, reinforcing the links between research, innovation and industry, creating instruments to support the innovation cycle, and improving access to finance for innovative companies.

The draft of the Strategy for Energy Security and Environment assesses the energy and environment sectors, and presents a number of directions for measures in both sectors. It highlights the need to modernise energy production and distribution, with a focus on renewables, to reorganise the water management system and enhance flood protection. The strategy sets targets to increase energy efficiency (Aggregated Energy Efficiency Index – ODEX of 63), to increase the share of energy from renewable sources in gross final energy consumption (at least 15%), and to increase the number of households with smart energy meters (to 80%).

Carbon pricing

The restructuring of the Polish economy in the 1990s focused on reducing the impact of the national economy on the environment and decoupling its GDP growth from GHG emissions. Presently, Poland's GHG emissions are below the target established under the Kyoto Protocol. As a result, Poland has a surplus of 500 million of Assigned Amount Units (AAUs) in the period 2008-2012, the third largest after Russia and Ukraine.

As of April 29, 2008 Poland became eligible to engage in international emissions trading, including trading of AAUs. The Act on Management of GHG Emissions Other Substances came into force in September 2009. This Act defines operational rules of the National Green Investment Scheme (GIS). It also addresses the use of proceeds from the transactions on hard and soft greening, and the mechanisms for monitoring, reporting and verification. The Act establishes that the National Fund for Environmental Protection and Water Management (NFEP&WM) should be the operating entity for the GIS.

Projects implemented in following areas can be considered for implementation under the GIS Act: (i) energy efficiency; (ii) clean coal technologies; (iii) replacement of high-emission by low-emission fuel; (iv) avoidance or reduction of GHG emissions from the transportation sector; (v) use of renewable energy sources; (vi) avoidance or reduction of methane emissions through recycling and use in power generation; (vii) GHG sequestration; (viii) actions to reduce or avoid GHG emissions, to absorb CO₂ and adapt to climate change; (ix) research and development of renewable energy sources and advanced and innovative environmentally-friendly technologies; (x) educational activities.

A number of programmes are already being implemented. For example, energy management in public buildings (GIS grant budget of PLN650 million – USD210 million); agricultural biogas plants (GIS grant budget of PLN50 million – USD16.15 million); biomass combined heat and power stations (GIS grant budget of PLN25 million - USD8.1 million); construction, extension and conversion of electricity networks to enable the connection of wind energy generation sources (GIS grant budget of PLN80 million – USD25.8 million); energy-efficient street lightning (GIS grant budget of PLN120 million – USD38.8 million); and low-emission urban transportation (GIS grant budget of PLN40million – USD12.9 million).

Energy demand

The *EPP 2030* strategy document establishes a number of measures addressing energy demand, including (i) national energy efficiency targets and a systemic mechanism to support measures to meet the targets; (ii) mandatory energy performance certificates for buildings and apartments upon their marketing or renting; (iii) determining the energy intensity of devices and power-consuming products, and introducing minimum standards for power-consuming products; (iv) committing the public sector to serve as a role model of economical energy usage; (v) supporting investments in energy saving through preferential loans and grants from domestic and European funds, also under the Act on Supporting the Modernisation and Renovations, the Operational Programme Infrastructure and Environment, and the National Fund for Environmental Protection and Water Management; (vi) applying Demand Side Management techniques.

Energy efficiency is a priority in Poland's energy policy. Implementing the provisions of the European Union's energy end-use efficiency and energy services directive, in April 2011 Poland issued its Act on Energy Efficiency. Following the obligations assumed through this Act, as well as the obligations established by the energy efficiency directive and the Energy Performance of Buildings Directive, the Polish government has to prepare its National Energy Efficiency Action Plans (EEAP). Poland's first EEAP, forwarded to the European Commission in August 2007, included intermediate national energy savings targets for 2010. The Plan envisages a minimum of 9% energy savings for 2016 of average annual consumption from 2001-2005. Poland's second EEAP, issued in February 2012, includes measures intended to improve energy efficiency, focusing on energy end-use efficiency, and calculations concerning energy savings achieved in 2008-2009 and expected in 2016. It shows the energy

savings achieved in 2009 (top-down) and expected in 2016 (top-down and bottom-up).

Energy supply

According to the EPP 2030 strategy document, energy supply should consist of a mix between cogeneration, renewables, grid modernisation, and nuclear. More specifically, it aims to (i) stimulate development of cogeneration; (ii) increase the percentage of renewable energy sources to 15% by 2020 and to 20% by 2030; (iii) retain support mechanisms for producers of renewable power; (iv) boost the share of biofuels in the transportation fuels market to 10%, and increase the use of second-generation biofuels while avoiding competition between renewable energy and agriculture; (v) introduce additional support instruments for production of heat and cold from renewable energy sources; (vi) implement directions for building of at least one biogas agricultural plant in each commune by 2020; (vii) facilitate investment to build off-shore wind farms; (viii) build new renewable energy generation units and power grids with European and environmental protection funds; (ix) stimulate manufacturers of renewable energy equipment; (x) support technologies and build installations to obtain renewable energy from biodegradable waste; (xi) evaluate the plausibility of using existing damming structures; (xii) establish an institutional basis for implementing the Polish nuclear power programme; (xiii) prepare a draft of the Polish nuclear power programme for further public consultation; (xiv) hold an informational and educational campaign on the Polish Nuclear Power Programme; (xv) analyse locations for nuclear energy plants and a radioactive cemetery; (xvi) promote industry participation in the nuclear energy production programme; and (xvii) prospect uranium deposits.

However, with respect to energy generation, coal still remains the dominant source of fuel, while renewables remain at low levels. The share of renewable energy sources in final energy consumption was 10.4% in 2011; Poland was on track to meet its national action plan trajectory, with the exception of the electricity sector. However, the country still has to make a considerable effort to ensure continuous growth of its renewable energy sector to reach renewable energy targets for 2020. Thus, there needs to be faster removal of non-cost barriers to large-scale development of renewable energy, especially in the electricity sector, which is furthest from Europe 2020 target. However, the necessary legal requirements have not yet been implemented, because the legislation including the Draft Law on Renewable Energy proposed by Ministry of Economy in December 2011 has still not been adopted.

Transportation

The EPP 2030 strategy document establishes the need to gradually increase the share of bio-components in transportation fuels so as to meet planned objectives.

Adaptation

The decision to prepare a national strategy for adaptation to climate change was made in 2010. The preparation of this document involved the participation of representatives from all interested Ministries and their research institutes, on the basis of a comprehensive research programme, KLIMADA. The Polish

National Strategy for Adaptation to climate Change (SPA 2020) was adopted by the Council of Ministers on 29 October 2013. This is the first strategic document directly focused on adaptation to climate change.

SPA 2020 foresees the mainstreaming of the adaptation programme into sectoral policies, primarily those related to agriculture and forestry, biodiversity, ecosystems and water resources, coastal zones, infrastructure and, subsequently, the preparation of a draft programme for their implementation.

Climate change adaptation is also being mainstreamed into the process of implementing the relevant national and sectoral development strategies and policies such as the Polish Long-term Development Strategy by 2030; the Medium-term National Development Strategy by 2020; the National Spatial Management Conception by 2030; the Strategy for Economy Innovation and Effectiveness; the Human Capital Development Strategy; the Energy Security and Environment Strategy; the National Strategy of Regional Development 2010–2020 for regions, cities and rural areas; the Transport Development Strategy by 2020; the Strategy for Sustainable Development of Rural Areas, Agriculture and Fisheries; the Effective State Strategy 2011–2020; the Social Capital Strategy; and the National Urban Policy.

Flood management issues are foreseen as priority directions mainly in two strategies – the Energy Security and Environment Strategy (direction 1: Water management for flood, drought and water deficit protection) and the Sustainable Development of Rural Areas, Agriculture and Fisheries Strategy (target 5: Protection of the Environment and adaptation to climate change on rural areas).

Research and Development

The EPP 2030 strategy document mandates the government to support research and development on new solutions and technologies, with the aim of reducing energy consumption. Two energy efficiency programmes have been set up in order to deliver the energy efficiency objectives set by the EPP 2030.

The Energy Efficiency in Industry Programme is the Priority Programme of the National Fund for Environmental Protection and Water Management. It aims to initiate and support energy efficiency investments in the most energy intensive enterprises. Approximately PLN820 million (USD264.9 million) was allocated for the period 2011–2015, funded by fees and penalties imposed on energy enterprises. Any company which consumed 50 GWh in the year preceding the application can be a beneficiary. The support is provided by financing 70% of the energy audit cost and by soft loans for up to 70% of the investment costs. The Energy Loan for Energy Saving fund of the Industrial Development Agency was set up in June 2010 to finance projects to improve energy efficiency. Micro, small- and medium-sized enterprises are eligible for loans with low interest rates, long-term repayment (up to 48 months), and low own contribution (min. 10%).

The Polish Nuclear Power Programme was adopted in January 2009. It incorporates the objectives of the *Europe 2020 Strategy* adopted by the European Council on 17 June 2010. The achievement of the 20/20/20 objective in the area of climate and energy is seen as especially important. The programme's objective is to reach an installed capacity of at least 1,000 MW of nuclear power by 2020 and at least 4,500 MW by 2030. The implementation of the Programme is monitored by the Department of Nuclear Energy of the Ministry of Economy. The Programme is planned to be updated every four years. Outcomes of completed works will be considered in such updates.

Poland: Flagship Legislation

Name of law	Strategies for Greenhouse Gas Emission Reductions in Poland until 2020 [Executive]
Date of entry into force	4 November 2003
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Transportation – Research and development – Institutional/Administrative arrangements
Driver for implementation	Compliance with Kyoto Protocol
Summary of bill	<p>The document presents the fundamental problems and determinants of Poland's climate policy, the country's international commitments in the area of climate change and the actions to be taken in each sector of the economy to counteract such changes, i.e., energy, industry, transport, agriculture, forestry, waste and sewage treatment as well as in the public utility, services and households sectors. It contains a list of political instruments to aid climate protection, including emission reduction schemes laid down by the Kyoto Protocol.</p> <p>The document recommends the promotion, development and growth of new and renewable energy sources, CO₂ sequestration, as well as advanced and innovative, environmentally friendly technologies and the identification and elimination of barriers to their use. It also recommends support for restructuring the economy to promote policies and measures to limit or reduce GHG emissions, with priority given to the energy sector, energy intensive industrial sectors, transportation and waste management.</p> <p>For energy demand, it recommends the introduction of a system of incentives for enterprises encouraging energy-saving investment projects, as well as of incentives for the public sector to launch investment projects leading to rational energy consumption.</p> <p>The strategy also promotes research and development including research on the use of energy and its production, continuing research on tracking climate change and climate variability, and continues research on climate change adaptation and mitigation scenarios for Poland.</p>
Targets	6% GHG reduction by 2008–2012 with respect to 1988 levels (Kyoto baseline)

Poland: Other Relevant Legislation

Name of law	Polish National Strategy for Adaptation to climate Change (SPA 2020) [Executive]
Date of entry into force	29 October 2013

into force	
Categories	– Adaptation
Driver for implementation Climate change	
Summary of bill	<p>The SPA 2020 foresees the mainstreaming of the adaptation programme into sectoral policies, primarily those related to agriculture and forestry, biodiversity, ecosystems and water resources, coastal zones, infrastructure and, subsequently, the preparation of a draft programme for their implementation.</p> <p>The Strategy presents an analysis of current climate change and the development of future change scenarios for Poland up to the end of the 21st century. It also assesses the impact of expected change in the socioeconomic area, and the vulnerability of various sectors of the economy.</p> <p>The implementation of the SAP 2020 involves 3 stages: the elaboration of the Strategic Adaptation Plan taking into account climate change in the reference period of 1971-2000; the preparation of the Strategic Adaptation Plan for a long-term period, taking into account expected climate change up until 2070-2100; and cost estimation.</p>
Targets	None specified

Name of law	Act on the System to Manage the Emissions of Greenhouse Gases and Other Substances [Legislative]
Date of entry into force	18 September 2009
Categories	– Institutional/Administrative arrangements
Driver for implementation Climate change	
Summary of bill	<p>This Act introduces the legal basis for the management of national GHG emissions and other substances in order to fulfill Poland's obligations towards the EU and the UNFCCC. It allows the optimisation of cost reduction of pollutants released into the air, and it introduces into Polish law the three mechanisms under the Kyoto Protocol: Emissions Trading, the Clean Development Mechanism and Joint Implementation</p> <p>This Act sets forth the responsibilities of the National Centre for Emission Balancing and Management; the principles of the operation of the National System for Emission Balancing and Forecasting; the principles of the management of emissions of GHGs and other substances; the principles of the operation of the National Registry of the Kyoto Units and emission allowance; the principles of trading in and managing the Kyoto units; the principles of the operation of the National Green Investment Scheme and the Climate Account; the terms and conditions of the management of the Joint Implementation projects in the territory of the Republic of Poland; and the terms and conditions of the management outside the territory of the Republic of Poland for the Joint Implementation projects, and the Clean Development Mechanism projects.</p>
Targets	None specified

Name of law	Regulation of the Council of Ministers on types of programmes and projects to be implemented under the National Green Investment Scheme (GIS) [Legislative]
Date of entry into force	3 November 2009
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – REDD+ and LULUCF – Transportation

-
- Research and development
 - Institutional/Administrative arrangements
-

Driver for implementation Climate change

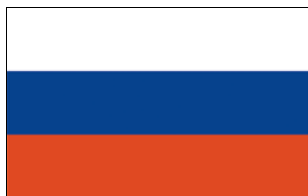
Summary of bill Implementation of Article 22(3) of the Act on the system to manage the emissions of GHGs and other substances of 17 July 2009.

The regulation stipulates the types of programmes and projects to be implemented in the areas referred to in Article 22(2) of the Act on the system to manage the emissions of GHGs and other substances of 17 July 2009.

It also stipulates: improvement of energy efficiency in various sectors; improvement of coal use efficiency including clean coal technologies; the use of low-emission fuels; avoidance or reduction of GHG emissions in the transportation sector; use of renewable energy sources; avoidance or reduction of methane emissions by its recycling and use in the mining industry, waste and waste-water disposal and in farming, as well as by use in power generation; actions in relation with GHG sequestration; other actions to reduce or avoid national emission of GHGs or to absorb CO₂ and adapt to climate change; research and development works on the use of renewable energy sources and advanced and innovative environmentally friendly technologies; and educational activities, including training events in support of the national obligations.

Targets None specified

4.50 Russia



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	1692
excl. LULUCF	2321
Change from base year (1990)	-1031
Latest reporting year	2011
Importance as an emitter	Top 5
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 28 December 1994 Date of entry into force: 28 March 1995
Kyoto Protocol ratification status and date	Date of signature: 11 March 1999 Date of ratification: 18 November 2004 Date of entry into force: 16 February 2005
2020 pledge	25% emission reduction by 2020 (1990 as a reference year) as defined by the presidential decree 861 adopted in 30 September 2013
Flagship legislation	Climate Doctrine of the Russian Federation

Legislative Process

Russia has a bicameral system and the Federal Assembly consists of the State Duma (Lower Chamber) and the Federation Council, which have different powers and responsibilities. The Duma passes laws, which are then sent to the Council for confirmation and forwarded to the President of the Russian Federation for signing and publication. Federal laws have priority over regional laws and direct effect throughout the territory of Russia. Often, Russian laws are adopted in the form of a Code of Law. A Code is a complete collection of rules in an entire subject area.

Another source of law, graded lower in the hierarchy of laws, are executive regulations (decrees and directives). The President can pass decrees on any issue without limits if a valid federal law does not regulate that issue, except in cases when the Constitution directly says that the question requires the adoption of a federal law. Usually, Presidential decrees implement higher-level acts of law.

An additional group of legislation is comprised of normative acts of federal executive authorities. These acts are related to laws through directives of the government. They develop, add and consolidate existing legal norms. Although ministerial documents are acts of special jurisdiction and regulate activities of the subordinated persons and legal entities, sometimes they can be of interdepartmental or even general significance.

Approach to Climate Change

The ratification of the Kyoto Protocol by Russia in 2004 was crucial for the entry into force of the international treaty. Russia's main legislation on climate and emissions mitigation rests mainly on various laws on establishing the domestic compliance instruments as required by the Protocol as well as the recent Climate Doctrine. An important component of the Protocol's framework, the Joint Implementation mechanism, was adopted in Russian legislation in October 2009. The original 2007 Joint Implementation legislation was considered too complicated so the responsibilities were redistributed by involving Sberbank, one of the Russian major state-owned banks, which fulfils the functions of the "carbon units' operator", and the approval system was re-established.

The Climate Doctrine, approved in December 2009, marks a crucial step in Russia's recognition of the potential benefits of mitigation measures and its will to engage with the international community. Although it is not legally binding, it has a strong declarational nature. It is meant to set strategic guidelines and targets as well as serving as a foundation for developing and implementing future climate policy, covering issues related to climate change and its consequences. The doctrine will serve as a blueprint to harmonise domestic climate-related legislation with international standards, improve climate monitoring, stimulate the adoption of stronger environmental standards, the adoption of energy-efficiency and energy-saving measures, as well as greater use of alternative (including renewable) energy sources.

Although the doctrine recognises the potential of the vast Russian forests as a carbon sink and recommends their use, it does not set up any major forestry action. However, Russia's commitment under the Copenhagen Accord includes measures to provide the "appropriate accounting of the potential of Russia's forestry in frame of contribution in meeting the obligations of the anthropogenic emissions reduction".

Energy efficiency

Russia is one of the main global suppliers of gas and oil. In order to improve its energy conservation and efficiency, Russia has passed several laws and rules, including the 2003 federal Thermal Performance of Buildings code and the 2009 Energy Efficiency legislation "On Saving Energy and Increasing Energy Efficiency", which establishes basic principles for the regulation of energy consumption to increase its efficiency and to encourage energy saving, and provides for various amendments to existing legislation. There are various subsequent sub-laws to define the tasks and responsibilities. In addition, there are various federal or regional programmes on heating or building efficiency such as the 1998 Heat Efficiency Leveraging Programme (HELP) under the auspices of US AID, the Russian Investment Initiative and the US–Russian Commission on Scientific and Technological Co-operation.

Russia also has several framework policies or energy strategies where the goals, objectives and main directions of long-term energy policy are set out, with a strong emphasis on energy efficiency. These include the 2001 Federal Targeted Programme for an Energy Efficient Economy for 2002–2005, the 2003 Energy Strategy to 2020, and the 2009 Energy Strategy to 2030 where, by the end of the third stage, Russia was expected to have switched to highly efficient use of traditional energy and stood ready for the transition to alternative energy.

Legislation on renewable energies is less extensive. The main law is the State Policy of Energy Efficiency Increase through Use of Renewables for the Period up to 2020 adopted in 2009. The guidelines establish targets for the share of electricity generation from renewable energy sources up to 2020, excluding large hydro (over 25 MW). The target is 1.5% in 2010, 2.5% in 2015 and 4.5% in 2020 and a series of measures are to be implemented and monitored to achieve this.

Russia has the world's largest emissions from gas flaring. The World Bank estimates the reduction potential from flaring to be 70 Mt CO₂ at 2007 gas prices. In January 2009, a government decree was adopted that seeks to reduce emissions from gas flaring. A 5% limit for gas flaring has been set for the year 2012 and subsequent years with fines being imposed if this threshold is exceeded or there is no measurement equipment.

Russia: Flagship Legislation

Name of law	Climate Doctrine of the Russian Federation (Executive)
Date of entry into force	2009
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate change

Summary of bill The Doctrine has a declarational nature, sets strategic guidelines and serves as a foundation for the development and implementation of future climate policy, covering issues related to climate change and its consequences. It is not a binding bill.

The Doctrine is based on fundamental and applied scientific knowledge, including various studies carried out within the Russian Federation, and is a political document recognising the challenges and issues surrounding climate change.

The Doctrine will serve as a blueprint to harmonise domestic climate-related legislation with international standards, improve climate monitoring, stimulate the adoption of stronger environmental standards, the adoption of energy-efficiency and energy-saving measures, as well as greater use of alternative (including renewable) energy sources.

It underlines three areas for future climate policy: improving research to better understand the climate system and assess future impacts and risks; developing and implementing short- and long-term measures for mitigation and adaptation; and engagement with the international community.

Participation in international efforts is recognised as crucial for a long-term solution to climate problems.

Putting a price on carbon: Participation in international mechanisms facilitating the reduction of GHG emissions constitutes one of the most important priorities of Russian climate policy.

Energy – supply-side policies: Russia will aim to reduce the share of energy generated from natural gas to 46% or 47% by 2030 (from more than 50% currently) while doubling the capacity of nuclear power plants. It will also limit the burning of gas produced from oil wells, and increase the share of electricity produced from renewable energy sources to: 1.5% by 2010, 2.5% by 2015 and 4.5% by 2020.

Energy – demand-side policies: Russia will develop and implement measures to enhance energy efficiency across the economy and expand the use of renewable and alternative energy sources.

Mainstreaming climate change: Climate policy will be implemented on the basis of action plans, at a federal, regional and sectoral level.

Federal authorities will be responsible for fiscal and financial incentives for technology development and deployment, including energy-efficient and energy-saving technologies as well as renewable energy technologies, across various industrial and other sectors. It will also be responsible for developing a national GHG inventory along with regional authorities.

Enterprises will be responsible for implementing measures to improve the energy efficiency of thermal and electric power, vehicles and buildings, as well as facilities. They will also implement measures to increase the share of alternative (including non-carbon) energy sources.

Objective information coverage of the problems connected with climate change and its consequences, including climate change outreach programmes (including in mass media), is among the priorities of the Russian Federation climate policy.

“Anticipatory adaptation to climatic change consequences is among the priorities of the Russian Federation climate policy... Climate change adaptation measures are regulated by state authorities’ decisions, including decisions related to interaction of the Russian Federation with the international community.”

Targets None specified

Russia: Other Relevant Legislation

Name of law	Greenhouse Gas Emission Reduction (Presidential Decree 861) (Executive)
Date of entry into force	30 September 2013
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate Change
Summary of bill	The Decree adopts a target for GHG emissions, establishing that by 2020 they cannot exceed 75% of the total emissions of 1990. A plan to assist promoting this goal should be developed and implemented within six months from the entry into force of the decree.
Targets	25% emission reductions by 2020 (1990 as a reference year)

Name of law	Energy Efficiency legislation (Federal Law 261-F3, “On Saving Energy and Increasing Energy Efficiency Increase and Amending Certain Legislative Acts of the Russian Federation”) (Legislative)
Date of entry into force	2009
Categories	– Energy Demand
Driver for implementation	Energy efficiency
Summary of bill	<p>The Law establishes basic principles for the regulation of energy consumption to increase its efficiency and, <i>inter alia</i>, to encourage energy saving, and provides for various amendments to existing legislation (on technical regulation, housing, town planning, taxation, etc.) to enforce energy-saving rules.</p> <p>The Law in essence is a framework act calling for a number of follow-up implementing by-laws. Various sub-laws to the 2009 Energy Efficiency legislation further define the tasks and responsibilities.</p> <p>Under the Law, all energy resources produced, transmitted, and consumed are subject to compulsory accounting by virtue of the respective meters.</p> <p>The Law contains energy efficiency rules for circulation of goods (energy efficiency classification of goods, labelling, prohibition of non-efficient incandescent bulbs etc.).</p> <p>The Law establishes a general rule that buildings and other structures should meet applicable energy efficiency requirements both when being commissioned and during their subsequent operation.</p> <p>State construction supervisory authorities shall assign energy efficiency classes to apartment buildings.</p> <p>The Law sets the conditions for voluntary or mandatory energy audits. Encouragement of energy saving technologies including, but not limited to, the use of secondary energy resources and renewable energy sources.</p>

State programs aimed at energy savings and energy efficiency increases are expected to set such targets as the number of facilities relying on secondary energy resources or renewable energy sources for their energy supplies.

Instruments: The tax incentives include investment tax credits of up to 30% for companies investing in energy efficiency technologies, accelerated depreciation of high energy efficiency assets or sites and partial compensation of interest on loans granted by Russian banks for the purpose of investing in energy saving and increased energy efficiency technologies.

Seventeen Decrees of application will be adopted by the government (covering such issues as energy efficiency requirements for goods, including electric bulbs, buildings and constructions, energy efficiency classes of goods and apartment buildings, requirements for public procurements, requirements for regional and municipal programmes in the sphere of EE1, etc.).

In addition, plural by-laws and secondary legislation were required to be adopted by relevant federal ministries before 1 May 2010.

Targets	None specified
----------------	----------------

Name of law	On the Measures of Implementing Article 6 of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (Government Decree No. 844) (Executive)
--------------------	---

Date of entry into force	2009
---------------------------------	------

Categories	– Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Climate change
----------------------------------	----------------

Summary of bill	Document providing for new opportunities for the realisation of Joint Implementation projects envisaged under the Kyoto Protocol (legislation establishing Articles 6 and 17 of the Protocol).
------------------------	--

Yet to be completed by the “Selection rules” regulating the three first stages of project approval. The Selection Rules were prepared and approved in the beginning of December 2009 and have been submitted for registration (legal expertise) at the Russian Ministry of Justice. Companies entitled to act as applicants for JI projects are energy, agriculture, forestry, waste products, industrial processes and use of solvents and other products.

Application for the approval of a JI project is lodged to Sberbank (a state-owned bank), which fulfils the functions of the “carbon units’ operator”.

This document expedited the procedure for JI projects’ implementation, changed the state bodies involved in the project approval procedure, modified the eligibility criteria for JI projects and introduced some other major changes to Russian legislation in the sphere of Kyoto Protocol mechanisms.

Targets	None specified
----------------	----------------

Name of law	Energy Strategy to 2030 (Executive)
--------------------	--

Date of entry into force	2009
---------------------------------	------

Categories	– Energy Supply – Institutional/Administrative arrangements
-------------------	--

Driver for implementation	Energy framework
----------------------------------	------------------

Summary of bill	<p>The strategy, approved until 2030, is aimed at increasing domestic oil and gas production.</p> <p>The main goal of the first stage is to eliminate the impact of the on-going economic crisis on the energy sector and pave the way for post-crisis development.</p> <p>The second stage will focus on improving energy efficiency.</p> <p>By the end of the third stage, Russia is expected to have switched to highly efficient use of traditional energy and stand ready for transition to alternative energy.</p>
Targets	None specified

Name of law	State Policy of Energy Efficiency Increase through Use of Renewables for the Period up to 2020 (guidelines approved by Government Decree No. 1-r) (Executive)
Date of entry into force	2009
Categories	<ul style="list-style-type: none"> - Energy Demand - Institutional/Administrative arrangements
Driver for implementation	Renewable energy
Summary of bill	<p>The state policy of increasing energy efficiency through use of renewables sets objectives, directions and forms of efforts to be made by state authorities to develop the electric power industry through use of renewables. This document underlines the lack of renewable energy development in Russia, and identifies the barriers to be overcome.</p> <p>The guidelines mandate the Ministry of Energy to co-ordinate implementation and monitoring of the measures, and to monitor progress against the targets. To strengthen and improve state oversight for renewable energy the measures undertaken are to:</p> <ul style="list-style-type: none"> - Improve targets and monitor progress towards meeting them; this may involve periodically updating targets based on evolving economic, energy and environmental priorities - Improve statistical reporting on renewable energy in electricity generation and consumption <p>The guidelines outline measures to be taken in three broad areas: improving the state oversight system for renewable energy generation, levelling the playing field to make renewable energy more competitive, and improving renewable energy generation infrastructure.</p> <p>The guidelines establish targets for the share of electricity generation from renewable energy sources up to 2020, excluding large hydro (over 25 MW). The target is 1.5% in 2010, 2.5% in 2015 and 4.5% in 2020. At the time the policy passed, less than 1% of total electricity generation came from renewable energy sources, excluding large hydro.</p> <p>This policy will lead to the establishment of a system that provides consumers with incentives to purchase an increasing amount of renewable energy generated electricity.</p> <p>Improving research, development and deployment in renewable energy power generation, and developing domestic industry capacity in this sector.</p>
Targets	None specified

Name of law	Legislation on the limitations of associated gas flaring (Government Decree No. 7) (Legislative)
Date of entry	

into force	2009
Categories	– Energy Supply
Driver for implementation	Energy efficiency
Summary of bill	This Decree seeks to reduce emissions from gas flaring. A 5% limit for gas flaring has been set for the year 2012 and subsequent years, with fines being imposed if this threshold is exceeded or if there is no measurement equipment.
Targets	None specified

Name of law	2006 Forest Code (Legislative)
Date of entry into force	8 November 2006
Categories	– REDD+ and LULUCF
Driver for implementation	Forest
Summary of bill	The 2006 Forest Code is part of the Forest Legislation sets up general legal basis for the development of norms and legislations that address several aspects of forest management, exploitation and conservation, including afforestation activities.
Targets	None specified

Name of law	Rules of Using Thermal Performance of Buildings (Executive)
Date of entry into force	2003
Categories	– Energy Demand – Institutional/Administrative arrangements
Driver for implementation	Building/energy efficiency
Summary of bill	<p>Announced in February 2003, the federal Thermal Performance of Buildings code entirely replaced the federal building code, Thermal Engineering for Buildings, revised in 1995 and 1998.</p> <p>Effective 1 October 2003, the new code:</p> <ul style="list-style-type: none"> – Establishes numerical values for required performance targets, corresponding to world levels – Classifies new and existing buildings according to their energy efficiency – Encourages buildings that are more efficient than required by code – Creates a mechanism for identifying low-performing existing buildings and mandating necessary upgrades – Develops design guidelines for both prescriptive and performance-based compliance paths – Develops methods for oversight and enforcement of compliance in terms of thermal performance and energy efficiency (energy passports), during design, construction and prospective operation phases <p>Between 1995 and 2004, 50 regions of the Russian Federation implemented their own building codes in accordance with federal building standards.</p> <p>Some local enforcement agencies offered incentives for exemplary performance, others mandated auditing. Regions established their own requirements for calculating a building's energy consumption and compliance with local code.</p>
Targets	None specified

Name of law	Programme for Energy Efficient Economy (Framework policy adopted by Government Decree № 796) (Executive)
Date of entry into force	2001
Categories	<ul style="list-style-type: none">– Energy Demand– Institutional/Administrative arrangements
Driver for implementation	Energy efficiency
Summary of bill	In 2001, Russia launched a Federal Targeted Programme for an Energy Efficient Economy for the period 2002–2005, with an outlook to 2010. It sets targets and outlines measures for energy efficiency improvements in different sectors of the economy. It was to be financed partially by the federal budget, partially by municipal/regional budgets and other sources.
Targets	The key targets set in the 2001 programme were to reduce energy intensity by 13.4% (total final energy consumption/GDP) below 2000 levels by 2005, increasing to a 26% reduction below 2000 levels by 2010.

4.51 Rwanda



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	-2
excl. LULUCF	6
Change from base year (1990)	NA
Latest reporting year	2005
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 10 June 1992 Date of ratification: 18 August 1998 Date of entry into force: 16 November 1998
Kyoto Protocol ratification status and date	Date of signature: NA Date of ratification: 22 July 2004 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	Green Growth and Climate Resilience – National Strategy on Climate Change and Low Carbon Development

Legislative Process

Rwanda is a presidential republic with a legal system based on German and Belgian civil law systems and customary law. The president is head of the government and head of the state. The parliament is bicameral and comprises the Senate and the Chamber of Deputies. The Senate has 26 members, some of whom are appointed and some elected for an eight-year term. The Chamber of Deputies has 80 members, who are elected for a five-year term. The current legislature periods of the Chamber of Deputies and the Senate are 2013–2018 and 2011–2019 respectively.

The constitution of 2003 is Rwanda's supreme law. International treaties ratified by Rwanda come second in the legislative hierarchy, followed by organic laws (which require a special majority), ordinary laws (requiring a regular majority) and decrees by the President, Prime Minister, Ministers and the Council of Ministers.

The main legislative organ is the Parliament, although the President has legislative powers as well. Laws can be initiated by the Chamber of Deputies or by the cabinet. The president of the Chamber of Deputies then passes the proposals to a permanent commission. Proposals are debated in detail in the plenary session and then voted on. The President has the authority to request a second examination by parliament of organic laws and ordinary laws after they have been voted on. If no re-examination is requested (or after it has been re-examined), the President promulgates the law within 30 days.

Approach to Climate Change

Rwanda ratified the UNFCCC and the Kyoto Protocol in 1998. It submitted its initial report to the UNFCCC in 2005 and its second communication in June 2012, including a stand-alone mitigation strategy, the Carbon Policy and an updated emissions inventory.

Rwanda completed its NAPA (National Adaptation Programme of Action), which addressed issues of water shortage and the effects on agricultural productivity of flooding, landslides, heavy rain falls, extreme temperatures, heat waves and drought. Several districts have been selected to pilot adaptation measures.

In 2011 the government published the National Climate Change and Low Carbon Development Strategy (NCCLCDS), a collaborative effort between the government, the Smith School of Enterprise and Environment (SSEE) at the University of Oxford and the donor institutes UK DFID-Rwanda and the Climate and Development Knowledge Network (CDKN). As a result, nine sectoral working papers have been produced – among others on the energy, forests and transportation sectors.

Resource Efficient and Cleaner Production (RECP) is a scheme to apply integrated preventive environmental strategy to processes, products and

services to increase efficiency and reduce risks to humans and the environment. It was introduced by the Rwanda Environment Management Authority with the support of UNEP in 2005 and was later renamed the Rwanda Resource Efficient and Cleaner Production Programme. In 2008 the Rwanda National Cleaner Production Centre (Rwanda-NCPC) was established, and carried out various projects to raise awareness and promote resource and energy efficiency in industry and domestic environments.

The Action Plan for the Ministry of Natural Resources July 2011–June 2012 sets specific targets for reducing climate change vulnerability.

In May 2012, a law establishing a national fund for climate change financing (FONERWA) was passed, and is expected to contribute approximately 20–30% to Rwanda's existing financing gap, which is estimated at approximately USD100 million per year. In June 2013 FONERWA was operationalised, with the launch of the first application round. In the same month, the fund received GBP22.5 million (USD36.8 million) from the British International Climate Fund, making it the largest demand-based climate fund in Africa.

In November 2009, the Ministry of Natural Resources (MINIRENA), which oversaw environmental matters in Rwanda, was administratively split into the Ministry of Environment and Lands (MINELA) and the Ministry of Forestry and Mines. Acting under MINELA is the Rwanda Environment Management Authority (REMA), a non-sectoral institution mandated to facilitate the co-ordination and oversight of the implementation of the national environmental policy and the subsequent legislation.

In 2009 a Climate Change and International Obligations Unit (CCIOU) was established within REMA overseeing its Designated National Authority (DNA) to co-ordinate carbon market activities. Rwanda's climate change efforts are supported by various donors, including the Japanese government, the LDCF (Least Developed Countries Fund), the AAP (Adaptation in Africa Programme) and the Climate and Development Knowledge Network (CDKN).

In May 2013 the second Economic Development and Poverty Reduction Strategy (EDPRS 2) for 2013–2018 was approved by the Cabinet and in September 2013 it was launched by the President in Parliament. The strategy forms the centrepiece of Rwanda's medium-term plan for development and the framework within which the government will focus efforts on transforming the economy and realising its Vision 2020. Pursuing a green economy approach to development is one of five economic priorities in the EDPRS 2. Climate change and the environment have been integrated into EDPRS 2 as a 'cross-cutting issue' with the focus on mainstreaming environmental sustainability into productive and social sectors and reducing vulnerability to climate change. The EDPRS 2 identifies both the Green Growth and Climate Resilience Strategy (GGCRS) and FONERWA as strategic tools for guiding specific interventions within national sector strategic plans and their implementation.

Energy supply

Energy consumption in Rwanda is dominated by biomass consumption (wood-fuel and agricultural residues), accounting for 86% of consumed energy, followed by petroleum products (11%) and electricity (3%), roughly half of which is generated from hydro sources and half from thermal power plants. Rwanda's Vision 2020 Programme aims to connect at least 35% of the population to electricity (up from the current 6%) by 2020, and to reduce consumption of wood to 40% of national energy consumption by 2020.

To increase energy generation to meet projected future demand and better develop Rwanda's sources of energy, the new EDPRS proposes two measures: (i) the development of a clear roadmap for investment in electricity generation, involving a balanced mix of energy sources, eliminating electricity subsidies and cutting the cost of energy; and (ii) private investment in the sector. The EDPRS also mentions an electrification programme to promote universal access to electricity, through on-grid and off-grid solutions. The electrification programme aims to connect to the grid 45% of households by 2017, as well as industrial, mining, agriculture and commercial users. Off-grid options such as solar and biogas are presented as the most economical and sustainable options for poor households.

REDD+ and LULUCF

The second communication to the UNFCCC suggests the following measures to deal with emissions from land use change: afforestation, reforestation, forest management, reduced deforestation, management of timber products, use of forest products to replace oil (bio-energy), improvement of tree species to increase biomass productivity and carbon sequestration, and improved remote sensing technologies to study vegetation and soil, the potential for carbon sequestration and to map land use and land use change.

Adaptation

In 2010, the government of Rwanda, the government of Japan, UNDP and UNEP launched two climate change adaptation programmes, one focusing on reducing vulnerability to climate change by establishing early warning and disaster preparedness systems and support for integrated watershed management in flood prone areas (LDCF). This programme will be funded under the Global Environment Fund (GEF). The second focuses on building an integrated comprehensive national adaptation approach in Rwanda, and will be funded by the Government of Japan.

Rwanda: Flagship Legislation

Name of law	Green Growth and Climate Resilience – National Strategy on Climate Change and Low Carbon Development [Executive]
Date of entry into force	Published November 2011
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – REDD+ and LULUCF

-
- Transportation
 - Adaptation
 - Research and development
 - Institutional/Administrative arrangements
-

Driver for implementation Sustainable development

Summary of bill The National Strategy on Climate Change and Low Carbon Development seeks to meet development goals while reducing the country's vulnerability through mitigation and adaptation. The key mitigation "big wins" the strategy identifies are geothermal power generation, with an estimated potential of 700 MW, enough to meet all of Rwanda's demand if implemented by 2020; integrated soil fertility management, which would cut use of inorganic fertilisers, improve soil structure and the water retention capacity of soil; and high density walkable cities, fighting anticipated trends of energy-intensive urban sprawl on hilly terrain.

Key adaptation elements are irrigation infrastructure, which will reduce uncertainty regarding rainfall variation; a robust road network to mitigate loss of food during transportation to markets and to ensure access during extreme weather events; the establishment of a centre for climate knowledge for development; and development of agroforestry.

The strategy calls for existing programmes to be used to make quick advances – the Integrated Development Programme (IDP) to facilitate implementation of climate-resilient low-carbon development in rural areas; the National Fund for Climate and Environment (FONERWA) to facilitate access to international climate finance, especially Fast Start Finance for adaptation; implementing measuring and reporting of cross-sectoral energy use for planning and international reporting purposes; setting up an online Climate Portal to communicate the National Strategy to the public and the international community.

Nine working papers have been produced: Cities and the Built Environment Sector; Water Sector; Agriculture Sector; Energy Sector; Finance Sector; Forests and Tree-based Systems Sector; Land Sector; Mining Sector; Transportation Sector.

Targets None specified

Rwanda: Other Relevant Legislation

Name of law	Second Economic Development and Poverty Reduction Strategy (EDPRS 2) for 2013-2018 [Executive]
--------------------	---

Date of entry into force	8 May 2013
---------------------------------	------------

Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - Transportation - Adaptation - Research and development - Institutional/Administrative arrangements
-------------------	---

Driver for implementation Economy, climate change

Summary of bill The Second Economic Development and Poverty Reduction Strategy (EDPRS 2) aims to implement Rwanda's Vision 2020, ensuring that the country achieves middle-income status by 2020 by accelerating economic growth to (11.5% average), reducing poverty to below 30%, and restructuring the economy towards services and industry. Its main targets relate to: strategic infrastructure investment for exports; more private sector financing to increase exports; urbanisation; and a green economy approach to sustainability. Five priority areas will spearhead this thematic strategy.

Priority 1 is to increase the domestic interconnectivity of the Rwandan economy by investing in infrastructure to meet private sector energy demand; increasing access to public goods and resources in priority sectors; and deepening the integration of key value chains.

Priority 5 is the pursuit of a 'green economy' approach to economic transformation. This favours the development of sustainable cities and villages. Key innovations include: piloting a green city; piloting a model mine; and attracting investors in green construction. There will be a focus on green urbanisation and promoting green innovation in industry and the private sector. A Green Urbanisation Centre of Excellence and an Environment and Climate Change Innovation Centre will be created. The Environment and Climate Change Centre will promote transformational green innovation in the industrial and private sectors through (i) support to research and development through links to industry and academia in Rwanda and internationally; (ii) promoting technology transfer in priority sectors through business advice and training; (iii) linking innovation with finance through identifying international funding sources (e.g. FONERWA); (iv) providing analyses and information on market and sector trends.

Environment and climate change are considered 'cross cutting issues'. They involve (i) mainstreaming environmental sustainability into productive and social sectors; (ii) reducing vulnerability to climate change and (iii) preventing and controlling pollution. Key sectors include agriculture, energy, environment and natural resources, infrastructure, health, private sector and financial sector.

Targets	None specified
----------------	----------------

Name of law	Law No. 26 Determining the Organisation, Functioning and Mission of the National Fund for Environment (FONERWA) [Legislative]
--------------------	--

Date of entry into force	22 May 2012
---------------------------------	-------------

Categories	<ul style="list-style-type: none"> – Energy supply – REDD+ and LULUCF – Adaptation – Research and development – Institutional/Administrative arrangements
-------------------	--

Driver for implementation	Health, climate change
----------------------------------	------------------------

Summary of bill	This Law determines the organisation, functioning and mission of the National Fund for environment in Rwanda (FONERWA).
------------------------	---

The fund will be the primary instrument to channel, distribute and monitor international and national climate finance.

FONERWA has four finance windows: conservation and sustainable management of natural resources; R&D and technology transfer; streamlining of climate change issues into policies and programmes; and Environmental Impact Assessment (EIA) monitoring & enforcement.

FONERWA is expected to contribute approximately 20–30% to Rwanda's existing financing gap, which is estimated at approximately USD100 million per year.

Targets	None specified
----------------	----------------

Name of law	Ministerial Order No. 003/16.01 of 15 July 2010 Preventing Activities that Pollute the Atmosphere [Executive]
Date of entry into force	15 July 2010
Categories	– Energy supply
Driver for implementation	Health, climate change
Summary of bill	Annex A specifies emission standards for CO ₂ , along with other pollutants (such as NO _x , SO _x , PM10, Lead and Ozone).
Targets	None specified

Name of law	Organic Law 4/2005 determining the modalities of protection, conservation and promotion of environment in Rwanda [Legislative]
Date of entry into force	8 April 2005
Categories	– Institutional/Administrative arrangements
Driver for implementation	Sustainable development, environmental protection
Summary of bill	<p>This law gives effect to The National Policy on Environment, which sets out how to protect, conserve and promote the environment in Rwanda. It defines the responsibilities of citizen and state and defines principles for using natural resources, such as air and water, protecting biodiversity etc. It orders an environmental impact assessment</p> <p>Article 27 states that “the use of substances that pollute the atmosphere..., that deplete the ozone layer or that may cause climatic changes is governed by an order of the Minister having environment in his or her attributions.”</p> <p>The National Policy includes suggested policy statements on several areas, which can be used as an entry point for more elaborate policies. The Policy Statement on Atmosphere, Climate and Disasters declares two objectives: to help establish a framework for early warning and management of natural and/or human-made disasters; and to help establish a policy and legislation to monitor regularly climatic change and reduce to a strict minimum substances that pollute the atmosphere</p> <p>The law provides for the establishment of a National Fund for Environment (FONERWA).</p>
Targets	None specified

4.52 Saudi Arabia



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	282
excl. LULUCF	296
Change from base year (1990)	131
Latest reporting year	2011
Importance as an emitter	Top 20
UNFCCC ratification status and date	Date of ratification: 28 December 1994 Date of entry into force: 28 March 1995
Kyoto Protocol ratification status and date	Date of ratification: 31 January 2005 Date of entry into force: 1 May 2005
2020 pledge	No pledge made
Flagship legislation	No flagship legislation

Legislative Process

Saudi Arabia is a monarchy based on Islam. The government is headed by the King, who is also the commander in chief of the military. The King governs with the help of the Council of Ministers, also called the Cabinet. There are 22 government ministries that are part of the Cabinet. Each ministry specialises in a different part of the government, such as foreign affairs, education, petroleum and mineral resources, finance, etc. The King is also advised by a legislative body called the Consultative Council (Majlis Al-Shura). The Council proposes new laws and amends existing ones. It consists of 150 members who are appointed by the King for four-year terms that can be renewed. The country is divided into 13 provinces, each with a governor and deputy governor. Each province has its own council that advises the governor and deals with the development of the province. Because Saudi Arabia is an Islamic state, its judicial system is based on Islamic law (Shari'ah), with the King acting as the highest court of appeal.

Approach to Climate Change

The Saudi government occupies a difficult position in the debate on climate change. On the one hand, Saudi Arabia has the world's largest oil reserves. Its economy is almost exclusively based on the export of fossil fuels which are known to be one of the major drivers of climate change. On the other hand, Saudi Arabia with its arid climate is highly vulnerable to the adverse effects of global warming and other climate change-induced extreme weather phenomena. In addition, as a fast-growing economy, Saudi Arabia is experiencing a rapid growth in demand for energy, partly due to the country's heavy reliance on energy-hungry desalination, which in turn is driven by its need for water.

Under these pressures, the government has taken steps to reduce energy consumption through policy initiatives such as the launch of a National Energy Efficiency Programme (NEEP) in 2008 and the creation of the Saudi Energy Efficiency Centre (SEEC) in 2010. Also in 2010, a royal decree established the King Abdullah City for Atomic and Renewable Energy (KACARE). KACARE is in charge of conducting research and setting and implementing national atomic and renewable energy policies. In May 2012, KACARE launched an ambitious programme to generate 23.9 GW of renewable (mostly solar) energy by 2020 and 54 GW by 2032.

Saudi Arabia has been a member of the Carbon Sequestration Leadership Forum (CSLF), since 2005; it joined the Global Methane Initiative (GMI) in 2013; and is actively involved in the four Kingdoms (UK, Netherlands, Norway, and Saudi Arabia) initiative for Carbon Capture Utilisation and Storage (CCUS).

Energy demand

The most important policy in energy demand is Saudi Arabia's NEEP. Launched in 2008, the NEEP defined eight objectives. These include the introduction of energy audits, energy efficiency labels, standards for appliances, and a construction code. Furthermore, NEEP promotes a more efficient use of oil and

gas and provides technical management and training. The policy aims to increase energy efficiency.

The SEEC's main focus is on making households and industrial consumers more energy efficient. Measures under its demand-side management programme include the replacement of low-efficiency air conditioning units and better insulation for new buildings.

Saudi Arabia's latest report under the United Nations Framework Convention on Climate Change (UNFCCC) lists several activities in the area of energy efficiency, including the creation of the Energy Conservation and Awareness Department as part of the Ministry of Water and Electricity. The Department imposes limits on the maximum power that can be used by electricity consumers.

Energy supply

In 2012, KACARE announced plans to launch an ambitious Renewable Energy Programme for Saudi Arabia. Its main target is to generate 23.9 GW of renewable energy by 2020, which is set to increase to 54 GW by 2032. The majority of this (41 GW) will come from solar power generation such as photovoltaic projects and solar thermal projects. The solar programme will require investments in the order of USD 109 billion. To attract investments of this scale – for comparison, total global investments in solar energy amounted to US\$ 136 billion in 2011 – the government is supporting foreign investors through its Industrial Clusters programme.

In February 2013, KACARE issued a white paper containing a roadmap and description of policy tools for launching the Renewable Energy Programme. At the centre of these efforts will be a Competitive Procurement Process (CPP). Under the CPP, producers of renewable energy will be invited to submit bids for 20-year power purchase contracts.

Saudi Arabia is conducting a demonstration carbon capture and storage project through the "CO₂ Enhanced Oil Recovery" project to run in 2014 and is joining international fora to share experiences and knowledge with other countries, for example the Carbon Sequestration Leadership Forum (CSLF).

REDD+ and LULUCF

The 2011 report to the UNFCCC mentions an afforestation project in the city of Jeddah that would involve planting half a million trees. Mangroves and other areas are being planted by the public and private sectors and the country is developing policies to enhance carbon sinks, biodiversity and coral reefs.

Research and development

In 2007, a Centre of Research Excellence in Renewable Energy was formed at the King Fahd University of Petroleum & Minerals and in 2009, the Centre of Excellence for Climate Change Research was created at King Abdelaziz University in Jeddah. Research facilities for renewable energy are also part of KACARE. As a member of the Carbon Sequestration Leadership Forum (CSLF), a ministerial-level international climate change initiative focused on the development of

improved cost-effective technologies for carbon capture and storage, Saudi Arabia is also involved in developing technological solutions to reducing CO₂ levels in the atmosphere. Research in this field is carried out through the King Abdullah University of Science and Technology (KAUST) and the King Abdullah Petroleum Studies and Research Centre (KAPSARC). Saudi Arabia's Ministry of Petroleum and Mineral Resources is promoting a carbon management research and technology development roadmap in the following five focus areas: carbon capture from stationary sources; carbon capture from mobile sources; industrial applications for carbon and CO₂; geological sequestration of CO₂; and CO₂ Enhanced Oil Recovery

Saudi Arabia: Flagship Legislation

Saudi Arabia currently has no flagship climate legislation.

Saudi Arabia: Other Relevant Legislation

Name of law	Royal Decree establishing King Abdullah City for Atomic and Renewable Energy 2010 (Executive)
Date of entry into force	17 April 2010
Categories	– Institutional/Administrative arrangements
Driver for implementation	Energy security
Summary of bill	<p>The decree established the King Abdullah City for Atomic and Renewable Energy (KACARE). KACARE. As an institution, KACARE is responsible for conducting research, setting and implementing the Kingdom's atomic and renewable energy policies. Major KACARE initiatives include:</p> <ul style="list-style-type: none"> – A project aimed at measuring and mapping renewable energy resources in Saudi Arabia – The establishment of a Nuclear Holding Company (NHC), responsible for building and operating nuclear power plants. – Plans to introduce a sustainable energy mix to Saudi Arabia
Targets	None specified

Name of law	National Energy Efficiency Programme 2008 (Executive)
Date of entry into force	2008
Categories	– Energy demand
Driver for implementation	Energy security
Summary of bill	<p>The National Energy Efficiency Programme (NEEP) launched in 2008 defined eight policy objectives. These include the introduction of energy audits, energy efficiency labels, standards for appliances and a construction code. NEEP promotes a more efficient use of oil and gas and provides technical management and training. The policy's overall aim is to increase energy efficiency in electricity) by 30% between 2005 and 2030 as well as the</p>

growth in peak demand by 50% compared to the average 2000-2005 increase. The NEEP also contains provisions to reduce state subsidies on electricity prices.

Targets	<ul style="list-style-type: none"> - Reduction of electricity intensity by 30% between 2005 and 2030 - Reduction in the growth of peak demand by 50% compared with the average 2000-2005 increase
----------------	---

Name of law	General Environmental Law and Rules for Implementation by the Presidency of Meteorology and Environment (Legislative)
--------------------	--

Date of entry into force	2001
---------------------------------	------

Categories	<ul style="list-style-type: none"> - Transportation - Adaptation - Institutional/Administrative Arrangements
-------------------	---

Driver for implementation	Environmental Protection
----------------------------------	--------------------------

Summary of bill	<ul style="list-style-type: none"> - The main aims of this law are to: <ul style="list-style-type: none"> - Preserve, protect and develop the environment and safeguard it from pollution. - Conserve and develop natural resources and rationalize their use. - Include environmental planning as an integral part of overall development planning in all industrial, agricultural, architectural and other areas. - Raise awareness of environmental issues and strengthen individual and collective feelings of the sole and collective responsibility for preserving and improving the environment and encourage national voluntary efforts in this area. - Review and evaluate the condition of the environment, develop observational means and tools for the collection of information and conduct environmental studies. - Document and publish the environmental information. - Prepare, review, develop, interpret and issue environmental protection standards. - Prepare environmental regulations relevant to its areas of responsibility. - Ensure that public agencies and individuals abide by the environmental regulations, standards and criteria, as well as adopt necessary procedures thereof in coordination and cooperation with the concerned and licensing agencies. - Review the latest developments in the field of the environment and its management at the regional and international levels.
------------------------	--

Targets

4.53 Senegal



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	6
excl. LULUCF	17
Change from base year (1990)	N/a
Latest reporting year	2000
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 13 June 1993 Date of ratification: 17 October 1994 Date of entry into force: 15 January 1995
Kyoto Protocol ratification status and date	Date of signature: N/a Date of ratification: 20 July 2001 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	Ministerial Decree 1220 establishing the National Climate Change Committee

Legislative Process

The legislative power of Senegal has a bicameral Parliament formed by the National Assembly and the Senate. The Assembly has 150 seats, with 90 members directly elected through popular vote and 60 members selected on the basis of proportional representation from a list of political parties. All 150 members serve a five-year term. The Senate house has 100 members, 65 of whom are appointed by the president and 35 members are indirectly elected.

Law-making in Senegal is comprised of three stages: drafting of the text, parliamentary scrutiny, and presidential sanction. Laws regarding public finance and security have a special procedure, but ordinary laws all follow the same process. Proposals can be drafted by members of the Assembly, senators or by the competent bodies of the various ministries of the executive power and officially presented at the National Assembly to be publicised. A committee then certifies that the same text was received by both houses of the Parliament.

Law proposals are subjected to the scrutiny of the National Assembly followed by the Senate. On the first phase, the draft text is evaluated by one of eight permanent commissions or a special committee of the Assembly, depending on the subject. Once passed at that level, the text is included in the agenda of the plenary session and discussed amongst all members of the Assembly in a public session. Once approved and amended by a majority of votes, the draft proposal is sent to the second house of the Parliament: the Senate. On this second phase, the text is subjected to the same process as in the Assembly, requiring the evaluation by a commission and the discussion at the plenary session. If the Senate approves the text as received from the Assembly it is sent to the Presidency. In case of amendments, the text is re-evaluated by the Assembly.

Once agreed between the two houses of the legislative power, the final text is submitted to the general secretariat of the government. The president has 15 days to sanction the new law, which will then be published in the official journal to enter into force.

Approach to Climate Change

Climate change policy and legislation in Senegal feature in a complex framework of co-operation. Since the 1996 institutional reform, policy-making is highly decentralised, as local and regional authorities share competences with the national government over several issue-areas, including climate change. Moreover, the international community also plays a leading role in this process, with international organisations and foreign countries working closely with the government of Senegal and/or civil society on climate issues. As a result, climate change is linked to the promotion of sustainable development, defined in both social and economic terms, and features in a huge range of policy areas, being

related to poverty reduction and the promotion of the United Nations Millennium Development Goals.

Senegal has been very active in taking part in global climate governance, especially at the UN level. National Deforestation National Adaptation Plan (2006) for the UNFCCC and a National Strategy for Sustainable Development (in 2005), as part of the regional initiative of the UN Economic Commission for Africa. Beyond the political level, Senegal is one of the key players behind the Great Green Wall Project. Conceived by the African Union, the project aims to halt the advance of the Sahara desert and entails co-operation amongst 11 countries in the region.

At the national level, the foundation of the National Committee on Climate Change (COMNACC), in 2011 contributed to creating a central platform for co-operation on climate change. One of the key roles of the Committee is following the activities developed at the UNFCCC, thus reinforcing the link between global and national climate politics.

Senegal approaches climate-related issues in association with its quest for development. On this basis, the 2009-2015 Environment and Natural Resources Sector Policy Letter defines as main objectives of Senegal's environmental policy the promotion of a sustainable environment to be achieved by the incorporation of sustainable development principles in various national policies.

Energy Sector

Energy policy is outlined under the so-called "Letters of Policy Development of the Energy Sector" (LPDSE). The first letter was drafted in 1997 adopting policy measures to be implemented in a five-year period aiming at decreasing costs of energy supply, curbing inefficiency, and increasing funds to develop the energy sector. The second LPDSE was adopted in 2003, giving continuity to the policies of the first letter. Coming into force in 2008, the third LPDSE identifies the strategic role renewables could play in Senegal's energy and transportation sector. The focus of the 2008 policy is on enhancing the national electrification rate to an average of 75% by 2012 in an environmentally-sound manner.

Biofuels

In 2006 Senegal adopted the National Bioenergy Strategy, aiming at contributing to reinforcing national energy security through the increase of bioenergy production. The strategy centered on the development of jatropha (a species of flowering plant) for biodiesel and sugarcane for ethanol production. The production of ethanol is also included in policies on agriculture sector. Following the launching of the 2008 Strategy, the government institutionalised the National Committee on Biofuels (CNB) to promote co-ordination between the various governmental bodies involved in the policy-making on biofuels.

Energy Efficiency

Working closely with international donors and organisations, in 2008 the Senegalese Rural Electrification Agency (ASER) concluded an agreement with the World Bank launching a series of activities under the Clean Development Mechanism (CDM). The Energy Efficient Lighting Programme aims at providing more affordable electricity to rural areas, providing 1.5 million compact fluorescent lamps, significantly more energy efficient than regular light bulbs, to rural communities. Expecting to save 120,000 tonnes of CO₂-equivalent GHG emission reductions with the new light bulbs, ASER will then sell these GHG reductions to the Community Development Carbon Fund, managed by the World Bank.

REDD+ and LUCF

As a result of the decentralisation of policy-making implemented in 1996, local authorities have a high degree of autonomy over the management of land use and natural resources, including forests. Thus, policies formulated at the national level provide main guidelines for the development of local initiatives. In this sense, the National Forest Service plays crucial role in advising and supporting local communities, advising the management and financing activities on forest and land use issues. As part of these initiatives, in 1998 the Ministry of Environment launched the National Action Programme Against Desertification, developing a long-term plan with specific measures to tackle the issue.

The 2005-2025 National Forest Policy provides the basis for national plans and programmes in these areas. Grounded on the principle of decentralisation and the fight against poverty, the main objective of the plan is to contribute to poverty reduction through the promotion of a sustainable management and conservation of biodiversity and forest resources, reaching a socio-environmental balance, but also meeting the needs of the population.

Senegal: Flagship Legislation

Name of law	Ministerial Decree 1220 establishing the National Climate Change Committee (amended by the Decree 2011-1689) (Executive)
Date of entry into force	7 March 2003
Categories	– Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	The Decree formalises the creation of the National Climate Change Committee (NCCC) with jurisdiction over all domains related to the activities related to the UNFCCC and its legal instruments, such as: a) technological transfer; b) energy efficiency; c) promotion of renewable energy; d) carbon emissions reduction; capacity building for biodiversity preservation; d) management of marine resources; e) pollution management.

The NCCC plays key role in raising awareness and disseminating information on climate change issues, as well as assisting the development of national and local projects within

this area.

Constituted of several bodies of the executive power, non-governmental organisations, universities and research institutes, and civil society organisations, the NCCC is directed by a president and a vice-president nominated by the Ministry of Environment. Meetings are convened upon request of the presidency and decisions are adopted by consensus.

Targets	None specified
----------------	----------------

Senegal: Other Relevant Legislation

Name of law	Decree Regulating the Interministerial Committee on Renewable Energy (Executive)
Date of entry into force	17 February 2011
Categories	<ul style="list-style-type: none"> – Energy supply – Institutional/Administrative arrangements
Driver for implementation	Renewable energy
Summary of bill	<p>Decree 1577 creates and regulates the functioning of the Interministerial Committee on Renewable Energy, bringing together the Ministry of Energy and the Ministry of Renewable Energies. Operating under the supervision of the two ministries, the Committee aims at ensuring co-ordination of actions and programmes on renewables, improving efficiency in the sector.</p> <p>Meeting monthly, the Committee is formed of four representatives from each of the two Ministries, although members of the staff of other governmental bodies may take part in the meeting when the issues discussed relate to their agendas.</p>
Targets	None specified

Name of law	Law 2010-22 Regulating the Biofuels Industry (Legislative)
Date of entry into force	22 June 2010
Categories	<ul style="list-style-type: none"> – Energy supply
Driver for implementation	Renewable energy
Summary of bill	<p>The Law aims at developing the biofuels sector, establishing norms and conditions for the production and exploitation of biofuels in the national territory as well as for international co-operation. More broadly, the law aims to contribute to environmental protection and increase the value of forest and agricultural resources. Overall, the law expects to favour the access to energy supply, promoting economic growth and social welfare. The law covers all components of biofuels sector, from production to processing, storage to transportation and distribution.</p> <p>It grants biofuels the fiscal benefits established under the Great Agricultural Offensive for Food and Abundance Programme. Thus, revenues generated from biofuel activities are exempted from taxation for a period of five years. In addition, the purchase of seeds and equipment for the production and export of biofuels are exempted from value added taxes for an indeterminate period of time.</p> <p>According to the new law, biofuels projects are eligible to certifications under the CDM. The ownership over these carbon credits should be negotiated between the State and the</p>

	"promoters".
Targets	None specified

Name of law	Air Pollution – Norm 05-062 (Executive)
Date of entry into force	28 October 2003
Categories	– Transportation
Driver for implementation	Pollution control
Summary of bill	Norm 05-062 regulates the emissions of pollutant gases in the atmosphere, specifying limit values for air pollution concentration. It requires the responsible for the management or the construction of developments to provide the competent authorities with an "emission declaration" as part of criteria for a permit for the functioning of the structure. The authorities should also conduct periodic measurement of the release of pollutant gases, ensuring they are within the specified limit values. Special rules and targets apply to vehicles and infrastructure designated to transportation activities.
Targets	None specified

Name of law	Environment Code (Law 2001-01) (Legislative)
Date of entry into force	12 April 2001
Categories	– Adaptation – REDD+ and LULUCF
Driver for implementation	Environmental protection
Summary of bill	<p>The Code recognises the environment as national and international patrimony, establishing that all citizens are entitled the right to live in a healthy environment, but are also responsible for its protection. Thus, environmental conservation must be integrated in national policies addressing socio-economic development and cultural issues.</p> <p>The key instruments for environmental protections outlines in the Code address: biodiversity; desertification; forest management; air pollution; urban planning; and hazardous waste disposal. Commitments undertaken under the framework of the United Nations are highlighted as the basis for actions on climate change (with reference to the UNFCCC) and the control the emission of pollutants (recalling the Vienna Convention and the Montreal Protocol).</p> <p>All activities within this broad range of areas must have an environment permit issued by the competent authorities, on the basis of an impact assessment study. The assessment criteria consider the impact of the activity on climate change, ecosystem, natural resources, archaeological and historical buildings and the welfare of the population.</p> <p>Infringements to the articles of the Code are subjected to penalties, varying from fines to imprisonment.</p>
Targets	None specified

Name of law	Forest Code (Law 98/03) (Legislative)
Date of entry into force	20 February 1998
Categories	– Institutional/Administrative arrangements
Driver for implementation	Environmental policy
Summary of bill	<p>The 1998 Forest code regulates forest management, exploitation and ownership by private and public entities.</p> <p>Establishing different categories of “forest”, the code bans human activities (leisure or commercial) in natural reserves and in areas defined by the government as “special reserves”. All forest areas (private or public) must be covered by a management plan composed of two parts: a) a socio-environmental and administrative assessment; b) a detailed account of all activities to be developed in the area. In special, the management plan should define a ceiling for deforestation within each individual area. Deforestation activities must be previously approved by the Water and Forest Service.</p> <p>Regulating the financial resources and the objectives of the National Forest Funds, the Code establishes that the Funds are to be designated to sponsor activities that: a) contribute to the protection and conservation of forest resources, including fighting against poaching, deforestation; b) management and conservation projects of forest resources; c) infrastructure and equipment of the Water and Forest Service, and d) remuneration of temporary staff.</p> <p>The National Forest Funds are funded by a percentage of taxes from licences and permits, 10% of financial transactions from commercial activities developed by the communities settled in forest areas as well as other sources of funding.</p> <p>The 1998 Forest Code also defines criteria for forest classification on the basis of a topographic planning to be drafted by the Regional Soil Conservation Commission, working in co-ordination with the National Soil Conservation Commission. The Code forbids any type of fire within national forests and sets up limits for fires in private forest areas. Special attention is devoted to plants classified as “protected species” by the Code.</p> <p>Fines and imprisonment can apply in case of violations to the Code.</p>
Targets	None specified

4.54 South Africa



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	361
excl. LULUCF	380
Change from base year (1990)	32
Latest reporting year	1994
Importance as an emitter	Top 20
UNFCCC ratification status and date	Date of signature: 15 June 1993 Date of ratification: 29 August 1997 Date of entry into force: 27 November 1997
Kyoto Protocol ratification status and date	Date of signature: 31 July 2002 Date of ratification: 31 July 2002 Date of entry into force: 16 February 2005
2020 pledge	Nationally appropriate mitigation action for a 34% deviation from business as usual by 2020 and 42% by 2025
Flagship legislation	National Climate Change Response Policy White Paper

Legislative Process

The legislative authority in South Africa is centred on Parliament, which is constituted by two Houses, the National Assembly, which has 400 members, and the National Council of Provinces (NCOP), with 90 members. In order for a bill to become law, both Houses of Parliament must approve it. A bill can be introduced in Parliament by a Minister, a Deputy Minister, a parliamentary committee or an individual MP. However, most bills are drawn up by a government department under the direction of the relevant Minister or Deputy Minister. The majority of bills are introduced in the National Assembly, but certain bills that affect provinces may be introduced in the NCOP. The law-making process usually starts with the introduction of a Green Paper – a discussion document drafted by the relevant department that is then subject to public consultation. The Green Paper may be followed by a White Paper, a more developed discussion document that broadly outlines government policy and may also be subject to review by interested parties. Once introduced, a bill is referred to the relevant committee, where it is debated in detail and, if necessary, amended. Then the House takes a decision on whether to pass the bill.

Approach to Climate Change

South Africa has almost exclusively dealt with climate change through policies, strategies and regulations rather than legislation. Through these measures South Africa is showing its commitment to tackling climate change, particularly in developing market-based mitigation mechanisms and promoting renewable energy and energy efficiency. Legislation on this issue has been rather scarce until a proposal on carbon tax has been introduced in 2012.

The process of developing climate change legislation started with the National Climate Change Response Strategy developed in 2004, which represents the first direct recognition of the need for action on climate change. Two years later, the Cabinet commissioned the Long-Term Mitigation Scenario (LTMS) study, in an attempt to produce sound scientific analysis from which the government could derive a long-term climate policy. The LTMS produced a series of policy recommendations, which will be at the heart of South Africa's climate change legislation.

In July 2008, the Vision, Strategic Direction and Framework for Climate Policy was announced by the then Ministry of Environmental Affairs and Tourism. The Vision sets a framework for a long-term net zero-carbon electricity sector. It resulted from two and a half years of public consultation with members of government, civil society and the private sector and is based on the LTMS process. The Framework establishes general guidelines for tackling climate change including a target to curb the growth of GHG emissions by 2020–2025 at the latest; the introduction of a carbon tax, renewable energy feed-in tariffs and a carbon capture and storage system; and mandatory targets for renewable energy, energy efficiency and transportation.

The current flagship policy in South Africa is the National Climate Change Response Policy (NCCRP), approved by Cabinet in October 2011. The NCCRP started as a Green Paper on climate change and was gazetted for public comment in late 2010. The Department of Environmental Affairs conducted extensive public hearings on the Green Paper in all nine provinces in February 2011, while Parliament conducted a public hearing on the paper in mid-March 2011. Final comments were collected by the Department of Environmental Affairs, leading to the publication and adoption by the cabinet of the National Climate Change Response White Paper (which is the next legislative step after a Green Paper) in October 2011. In November 2011 and in June 2012 public hearings were held regarding the implementation of the White Paper. The NCCRP White Paper presents the South African Government's vision for an effective climate change response and the long-term, just transition to a climate-resilient and lower-carbon economy and society. It reflects a strategic approach referred to as "climate change-resilient development", addressing both adaptation and mitigation, which makes use of three time-bound planning horizons: Short-term – five years from date of publication of the policy; Medium-term – 20 years from date of publication of the policy; Long-term – a planning horizon that extends to 2050.

The White Paper outlines a risk-based process to identify and prioritise adaptation strategies and interventions that have to be taken in the short and medium term, to be reviewed every five years. Strategies are specified for the following areas: Water; Agriculture and Commercial Forestry; Health; Biodiversity and Ecosystems; Human Settlements – Urban, Rural and Coastal Settlements; and Disaster Risk Reduction and Management. It includes mitigation proposals to set emission reduction outcomes for each significant sector and sub-sector of the economy based on an in-depth assessment of the mitigation potential, best available mitigation options, science, evidence and a full assessment of the costs and benefits using a "carbon budgets" approach. It also proposed the deployment of a range of economic instruments, including the appropriate pricing of carbon and economic incentives, as well as the possible use of emissions offset or emission reduction trading mechanisms for those relevant sectors, sub-sectors, companies or entities where a carbon budget approach has been selected. The White Paper includes near-term priority "flagship programmes", on climate change response public works; renewable energy supply, energy efficiency and energy demand management, water conservation and demand management; waste management; transportation, carbon capture and sequestration, and adaptation research.

The Taxation Law Amendment Bill of 2009 amends the 1962 Income Tax Act to include, among other things, income tax incentives for participation in Clean Development Mechanism (CDM) projects as well as for energy efficiency savings. The CDM projects are run by a designated national authority established under the Department of Energy, and governed by regulations published under the National Environmental Management Act 1998 (the CDM Regulations).

Pricing carbon

During the 2012–2013 budget discussions in February 2012, the Minister of Finance introduced a proposed carbon tax on annual emissions for all sectors, including electricity, petroleum, iron, steel and aluminium. In May 2013 draft legislation was released for comments, which were due by August 2013. The proposed design, planned to be implemented in January 2015, features a percentage-based emissions thresholds below which the tax will not be payable.

The proposal includes a basic tax-free threshold of 60%, with an additional 10% concession for process emissions and an additional 10% relief for trade-exposed sectors. Under this scheme, the electricity sector would receive the 60% threshold, Petroleum would receive 70%, while iron and steel, cement, glass, ceramics, chemicals and fugitive emissions from coal mining will receive exemptions of up to 80%, while the agricultural and waste sectors will be fully exempt.

The scheme offers maximum offsets of 5 or 10% until 2019/20. A carbon tax at R120 (USD 11.78) per tonne of CO₂e above the suggested thresholds is proposed to take effect during 2013/14, with annual increases of 10% until 2019/20. The rate of annual increase for the second period between 2020–2025 will be announced by February 2019. The proposal includes a higher tax-free threshold for process emission, with consideration given to the limitations of the cement, iron and steel, aluminium and glass sectors to mitigate emissions over the near term. Additional relief for trade-exposed sectors is offered. The tax design suggests use of offsets by companies to reduce their carbon tax liability.

The budget proposal for 2012–2013 also includes an increase in the electricity levy generated from non-renewable sources (increase by 1c/kWh to 3.5c/kWh). The additional revenues will be used to fund energy-efficiency initiatives, for example, the solar water heater programme. This arrangement will replace the current funding mechanism that is incorporated into the Eskom's (South Africa's largest public utility) annual tariff application. According to the budget proposal, the net impact on electricity tariffs should be neutral. The electricity levy is expected to be phased out as the carbon tax is phased in.

A number of institutional arrangements have been established to implement the policy: an Inter-governmental Committee on Climate Change; a National Committee on Climate Change; a Monitoring and Evaluation Task Team; a Technical Working Group on Adaptation and a Technical Working Group on Mitigation.

A tax incentive for Certified Emission Reductions (CERs) has been implemented to stimulate the uptake of CDM projects in South Africa, by exempting income from primary CERs from income tax from 2009 to 2012. In light of the adoption of a second commitment period of the Kyoto Protocol, the 2013 budget has extended the incentive to 31 December 2020.

Energy supply

Despite the fact that renewable energy sources are still at an embryonic stage in South Africa, where most of the energy matrix is coal-based, the government

has been investing heavily in the promotion of renewable energy and energy efficiency. Accordingly, the National Energy Act 2008 is, among other things, concerned with increasing the generation and consumption of renewable energy. The Act also creates the South African National Energy Development Institute, responsible for promoting efficient generation and consumption of energy and energy research and development. Besides, the bulk of government action in this domain is translated into policies, strategies and regulations, namely the White Paper on the Promotion of Renewable Energy and Clean Energy Development 2003; the Integrated Clean Household Energy Strategy 2003, the Implementation Strategy for the Control of Exhaust Emissions from Road-going Vehicles in South Africa 2003, the Renewable Energy Policy 2004, the Cleaner Production Strategy 2005, the Energy Efficiency Strategy 2005, the Biofuels Industrial Strategy 2007, and Renewable Energy Feed-in Tariffs 2009.

A National Integrated Resource Plan for 2010–2030 was published under the Electricity Regulation Act (2006) in 2010. The plan outlines a diversification of energy resources, including nuclear, coal, wind, solar photovoltaic, concentrated solar and other sources, balancing cost optimisation with constraints and risks, such as uncertainties, and key policy considerations, such as the need for emission reduction, creation of local employment resulting from renewables installations, and energy efficiency. The IRP is intended to be constantly revised and updated by the Department of Energy. The IRP's first revision was published in October 2010 and the second revision was released in March 2011.

The Draft 2012 Integrated Energy Planning (IEP) Report is currently out for public consultations. The purpose and objectives of the IEP are anchored in the National Energy Act, 2008. Integrated energy planning is undertaken to determine the best way to meet current and future energy service needs in the most efficient and socially beneficial manner. The IEP takes into consideration the crucial role that energy plays in the entire economy and is informed by the output of analyses founded on a solid fact base. It is a multi-faceted, long-term energy framework which has multiple objectives.

While none of these regulations has the status of law, they set a series of meaningful national targets. For instance, the White Paper on Renewable Energy 2003 requires that 10,000 gigawatt hours (GWh) of energy be derived from renewable energy sources (mostly from biomass, wind, solar and small-scale hydro) by 2013. The IRP 2010 includes an emission constraint of 275 million tonnes of CO₂ per year after 2024, with 42% of total new capacity installed derived from renewables.

In March 2009, the National Energy Regulator of South Africa (NERSA) announced the implementation of Renewable Energy Feed-in Tariffs (REFITS) set to produce 10 TWh of electricity per year by 2013 to be paid for over a period of 20 years; the selected technologies were wind, hydro, landfill gas and concentrated solar. In November 2009, REFITS Phase II was launched with tariffs approved for six new technologies. In August 2011, the feed in tariff system has been replaced by a bidding process to procure 3.725 GW of renewable electricity from independent power producers (IPP). The new scheme evaluates

IPPs on bid price as well as on a set of pre-set qualifications, rather than setting a fixed tariff. To date, the Department of Energy has:

Under Bid Window 1, entered into 28 agreements on 5 November 2012;

Under Bid Window 2, entered into 19 agreements on 9 May 2013.

With regards to Bid Window 3: the Department received 93 bids on the 19 August 2013. These bids amounted to 6.023GW whilst the available MW for allocation was 1.473GW.

Energy demand

The Energy Efficiency Strategy of 2005 sets the target of a 12% energy efficiency improvement by 2015, with targets of 10% and 15% in the residential and commercial sectors respectively. These are to be met through economic and legislative means, efficiency labels and performance standards, energy management activities and energy audits, as well as the promotion of efficient practices. The plan includes sectoral plans for the industry and mining sector; commercial and public buildings sector; residential sector; transportation sector; as well as references to cross-cutting issues such as integrated energy planning, renewable energy, cleaner fuel programmes and health. The Integrated Resource Plan 2010 also takes into account aspects of energy efficiency. However, the Energy Efficiency Strategy is currently being reviewed.

Section 12L of the Income Tax Act proposes an energy efficiency savings allowance, by a deduction, in determining the taxable income of a taxpayer, an amount in respect of energy efficiency savings by the taxpayer with regard to that year of assessment. The deduction will be calculated at 45 cents per kW/h (or equivalent) of energy efficiency savings. Deductions will not be allowed if the taxpayer receives a concurrent government benefit in respect of energy efficiency savings. The measurement and certification of the savings will be performed by an institution, board or body determined by the Regulations.

This section, although promulgated in the Income Tax Act, has not yet come into effect. It will be effective on a date as prescribed by the Minister of Finance in the Government Gazette. It is likely that this will coincide with the implementation of the carbon tax (potentially during 2015) because the National Treasury has indicated that “some of the revenues generated through the carbon tax will be recycled to fund the energy efficiency savings tax incentive.”

Transportation

One of the few legal instruments dealing directly with climate change in South Africa, is the CO₂ emissions tax on passenger vehicles. Introduced in the 2009–2010 budget, it levies a flat rate tax on CO₂ emissions above a certain threshold, although originally designed as an *ad valorem* tax. As mentioned above, there is a transportation sector programme in the Energy Efficiency Strategy 2005, which aims to promote fuel efficiency labelling, fleet audits, programmes for encouraging public transportation development and use, and efficient vehicle technologies. Data shows declining average CO₂ emissions for passenger vehicles since the tax was introduced. Government proposes an increase in the tax for passenger vehicles from R75 to R90 (USD 7.4-USD8.8) for every gram of emissions/km above 120 gCO₂/km and, in the case of double cabs, from R100

(USD 9.8) to R125 (USD 12.3) for every gram/km in excess of 175 gCO₂/km, effective from 1 April 2013.

From 1 October 2011, the tax on International air passenger departure on flights to Southern African Customs Union member states and other international destinations increased.

South Africa: Flagship Legislation

Name of law	National Climate Change Response Policy White Paper (NCCRP) (Executive)
Date of entry into force	Approved by cabinet on 18 October 2011
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Energy Supply – Transportation – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Climate change, renewable energy, energy efficiency
Summary of bill	<p>The National Climate Change Response Policy is a comprehensive plan to address both mitigation and adaptation in South Africa in the short, medium and long term (up to 2050). Strategies are specified for the following areas:</p> <ul style="list-style-type: none"> – Carbon Pricing – Water – Agriculture and commercial forestry – Health – Biodiversity and ecosystems – Human settlements – Disaster risk reduction and management

Announced by the Ministry of Water and Environmental Affairs and approved by the Cabinet in October 2011, the policy has two main objectives: first, to manage inevitable climate change impacts through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity. Secondly, to make a fair contribution to the global effort to stabilise GHG concentrations in the atmosphere.

The Policy specifies strategies for climate change adaptation and mitigation, making use of the short-, medium- and long-term planning horizons (up to 5 years from publication of policy, up to 20 years, up to 2050, respectively). The White Paper outlines a risk-based process to identify and prioritise adaptation strategies and interventions that have to be taken in the short and medium term, while reviewed every five years.

Concerning mitigation, it includes proposals to set emission reduction outcomes for each significant sector and sub-sector of the economy based on an in-depth assessment of the mitigation potential, best available mitigation options and a full assessment of the costs and benefits using a "carbon budgets" approach. It also proposed the deployment of a range of economic instruments, including the appropriate pricing of carbon and economic incentives, as well as the possible use of emissions offset or emission reduction trading mechanisms for those relevant sectors, sub-sectors, companies or entities where a carbon budget approach has been selected.

Energy Efficiency and Energy and Demand Management flagship programmes cover development and facilitation of an aggressive energy efficiency programme in industry,

building on previous Demand Side Management programmes, and covering non-electricity energy efficiency as well. A structured programme will be established with appropriate initiatives, incentives and regulation, along with a well-resourced information collection and dissemination process. Local governments are encouraged to take an active part in demand-side management.

There is a short-term transportation flagship programme, which aims to facilitate the development of an enhanced public transportation programme to promote lower-carbon mobility in five metros and in ten smaller cities and create an Efficient Vehicles Programme with interventions that result in measurable improvements in the average efficiency of the South African vehicle fleet by 2020. The planned rail re-capitalisation programme is considered an important component of this Flagship Programme due to its projected contribution to modal shifts of passengers and freight. The programme further introduces a Government Vehicle Efficiency Programme that will measurably improve the efficiency of the government vehicle fleet by 2020, by setting procurement objectives for efficient technology vehicles such as electric vehicles.

In the medium term, the plan calls for significant up-scaling of energy efficiency applications in transportation; and for promoting transport-related interventions including transportation modal shifts (road to rail, private to public transport) and switches to alternative vehicles (e.g. electric and hybrid vehicles) and lower-carbon fuels.

The principles of the White Paper include prioritising co-operation and the promotion of research, investment in and/or acquisition of adaptation, lower-carbon and energy-efficient technologies, practices and processes for employment by existing or new sectors or sub-sectors. All fields and flagship programmes include a key element of research and development, data collection and analysis tools in their respective areas.

Adaptation efforts are prioritised, acknowledging the vulnerability of the country. Adaptation efforts will require: early warning and forecasting for disaster risk reduction; medium-term (decade-scale) climate forecasting to identify potential resource challenges well in advance; and long-term climate projections that define the range of future climate conditions. Adaptation strategies are to be integrated into sectoral plans, including: The National Water Resource Strategy, as well as reconciliation strategies for particular catchments and water supply systems; The Strategic Plan for South African Agriculture; The National Biodiversity Strategy and Action Plan, as well as provincial biodiversity sector plans and local bioregional plans; The Department of Health Strategic Plan; The Comprehensive Plan for the Development of Sustainable Human Settlements; and the National Framework for Disaster Risk Management.

In order to monitor success of measures, South Africa will, within two years of the publication of the policy, design and publish a draft Climate Change Response Measurement and Evaluation System.

Targets	GHG emissions are set to stop increasing at the latest by 2020–2025, to stabilise for up to 10 years and then to decline in absolute terms.
----------------	---

South Africa: Other Relevant Legislation

Name of law	Carbon Emissions Motor Vehicles tax (within 2009–2010 budget) (Legislative)
Date of entry into force	September 2010
Categories	– Carbon Pricing – Energy Demand
Driver for	

implementation	Climate change
Summary of bill	The 2009 Budget introduced an <i>ad valorem</i> CO ₂ emissions tax on new passenger motor vehicles. However, it was later recommended that the original tax proposal be converted into a flat rate CO ₂ emissions tax, effective from 1 September 2010. The emissions tax has initially been applied to passenger cars, and extended to commercial vehicles once agreed CO ₂ standards for these vehicles are set. New passenger cars will be taxed based on their certified CO ₂ emissions at R75 (USD7.4) per g/km for each g/km above 120 g/km. This emissions tax will be in addition to the current <i>ad valorem</i> luxury tax on new vehicles.
Targets	None specified

Name of law	Taxation Laws Amendment Bill, 2009 – Sections 12K and 12L inserted in Act 58 (Legislative)
Date of entry into force	1 September 2009
Categories	– Energy Demand
Driver for implementation	Climate change, energy efficiency
Summary of bill	Amends the 1962 Income Tax Act. Section 12K – “Exemption of certified emission reductions” – grants income tax exemption to the sale of certified emission reductions derived from Clean Development Mechanism (CDM) projects in the context of the Kyoto Protocol. The measure has been applied since February 2009 and has been extended until December 2020. Section 12L grants income tax reductions for energy efficiency savings from certified baselines based on “energy efficiency savings certificates” issued by an organ determined by Regulations from the Ministry of Energy. These regulations are in tune with the National Energy Act, 2008. The measure applies to the taxable income of any persons in any year of assessment until 1 January 2020. This section, although promulgated in the Income Tax Act, has not yet come into effect. It will be effective on a date as prescribed by the Minister of Finance in the Government Gazette. It is likely that this will coincide with the implementation of the carbon tax (potentially during 2015).
Targets	None specified

Name of law	National Energy Act 2008 (Legislative)
Date of entry into force	2008, last amended April 2012
Categories	– Energy Supply – Energy Demand – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Renewable energy, energy efficiency
Summary of bill	The bill seeks to ensure the availability of diverse energy resources to the economy while supporting economic growth and poverty alleviation. To this end, it intends to provide for energy planning, increased generation and consumption of renewable energies, contingency energy supply, energy feedstock and carriers, and energy infrastructure. It further establishes the South African National Energy Development Institute, responsible for promoting efficient generation and consumption of energy and energy research.

The Minister of Energy is charged with implementing the Integrated Energy Plan, dealing with all issues related to energy (supply, transformation, storage and demand) including plans related to GHG mitigation within the energy sector.

The South African National Energy Development Institute is responsible for promoting energy research and development. This function includes, among other things, directing, monitoring, conducting and implementing energy research and technology development in all fields except nuclear energy; fostering innovation, by making grants to educational and scientific institutions.

Targets	None specified
----------------	----------------

4.55 South Korea



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	508
excl. LULUCF	543
Change from base year (1990)	253
Latest reporting year	2001
Importance as an emitter	Top 20
UNFCCC ratification status and date	Date of signature: 13 June 1992 Date of ratification: 14 December 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 25 September 1998 Date of ratification: 8 November 2002 Date of entry into force: 16 February 2005
2020 pledge	Reduce national GHG emissions by 30% from business as usual by 2020
Flagship legislation	Framework Act on Low Carbon Green Growth

Legislative Process

The legal system of South Korea is a civil law system that has its basis in the Constitution of the Republic of Korea, which is at the pinnacle of the country's hierarchy of laws. Korea's Acts and Subordinate Statutes form a consolidated system as a whole that is designed to prevent contradictions or conflicts.

The power to enact Acts belongs exclusively to the National Assembly, and the lawmaking power held by the Executive for subordinate statutes is confined to matters delegated by Acts and other matters necessary to enforce Acts. Since such subordinate statutes are required to conform with Acts, the National Assembly is the supreme lawmaking organ.

The lawmaking process can be initiated by the national assembly or by government representatives. In the first case, a bill is proposed by 10 or more national assembly representatives. The proposed bill is deliberated by the standing committee. After the bill passes the committee, it is referred to the plenary session. Bills that pass the plenary session will then be sent to the government to be promulgated. Bills can also be submitted by a relevant ministry. Other ministries will be consulted and a public notice will be issued. The bill is then reviewed by the Ministry of Legislation (MOLEG), an independent and specialised self-legislative control agency within the government in order to exercise overall control of and co-ordinate the government's legislative activities and to review whether individual bills contravene higher laws or conflict with relevant laws. The bill is deliberated at the State Council and sent for presidential approval. After that it is submitted to the National Assembly for decision. After it is passed in the National Assembly, it returns to MOLEG and is finally promulgated. Presidential decrees are promulgated directly after their approval by the President and do not go through the National Assembly.

Approach to Climate Change

All climate change-related laws, policies and regulations should be in harmony with the basic principles for the promotion of low-carbon, green growth under Korea's flagship legislation, the Framework Act on Low Carbon, Green Growth. The Framework Act, passed in December 2009, builds on the National Strategy for Green Growth (2009-2050) and the Five-Year Plan (2009-2013).

The National Strategy for Green Growth aims to promote eco-friendly new growth engines, enhance peoples' quality of life and contribute to international efforts to fight climate change. The Five-Year Plan outlines government actions for implementation of the Strategy, and detailed tasks for ministries and local governing entities as well as specific budgets. Under the plan, the government will spend approximately 2% of annual GDP on green growth programmes and projects. Investments will initially be geared towards infrastructure systems in order to boost the economy.

During the COP 15 meeting held in Copenhagen in 2009, Korea announced its national GHG reduction goal of 30% below business-as-usual (BAU) projection by 2020. In order to accomplish this goal, in June 2010 the government established the Greenhouse Gas Inventory & Research Centre of Korea (GIR). GIR's main mission is to manage the national GHG inventory and analyse GHG reduction potentials. It is also responsible for providing the guidelines for Measurement, Reporting, and Verification (MRV) for the National GHG Inventory, and supporting the operation of the ETS plan.

In April 2010, the Framework Act on Low Carbon, Green Growth and its Enforcement Decree entered into force. These instruments create the legislative framework for mid- and long-term emissions reduction targets, cap-and-trade, carbon tax, carbon labelling, carbon disclosure and the expansion of new and renewable energy. They also set out the target to reduce national emissions by 30% in 2020 below the BAU scenario. The Framework Act includes a system of mandatory reporting of carbon emissions by all carbon- and energy-intensive industries and provides a basis for the creation of a carbon trading system. The Enforcement Decree mandates a cap on emissions, but leaves out the operational structure, how permits will be issued, the sectoral coverage and other details, for implementing laws to decide.

The Framework Act takes precedence over other Acts in application to low-carbon green growth. Other related Acts include Energy Use Rationalisation, the Electricity Business Act, the Act to Promote the Purchase of Environment-friendly Products, and the Energy Basic Law. These Acts must conform to the purposes and basic principles of the Framework Act, and many of them emphasise the important role environmental technology has in the economy.

Carbon pricing

According to the 2009 Framework Act on Low Carbon Green Growth, in order to accomplish its target of reduction of GHGs "the government may operate a system for trading emissions of GHGs by utilising market functions". In March 2011 the government of Korea enacted a GHG & Energy Target Management Scheme (TMS) as a precursor to the ETS. This scheme was designed to manage and impose specific GHG reductions and energy consumption standards on large businesses with high energy consumption and GHG emissions. Through this scheme, the government managed more than 90% of industrial GHG emissions and 70% of overall national GHG emissions. The implementation of this target management involved the development of a Measurement, Reporting, and Verification (MRV) scheme for the GHG emissions and energy consumption, which became the basis for the national ETS.

In May 2012, the national assembly passed the Act on the Allocation and Trade of Greenhouse Gas Emissions Rights, establishing a domestic cap-and-trade ETS. The Korean ETS is closely modelled on the EU's ETS. The motivations to promote the ETS included development of green industry technologies and pushing green businesses ahead of other countries. The ETS Act, however, only called for the government to operate a system for trading emissions of GHGs.

In November 2012 the Enforcement Decree of the Emissions Trading Act was approved by the Cabinet. The Enforcement Decree outlined the rules and governance structure of the ETS, planned to commence in 1 January 2015. It also establishes two plans to implement the ETS: the Master Plan and the Allocation Plan. The Master Plan, scheduled to be implemented by December 2013, will provide the legal basis for the ETS, and will be revised every five years, providing a 10-year plan for the operation of the market. The Allocation Plan will be established by the Ministry of Environment by June 2014, and will hand out free allowances to participants of the scheme by October 2014.

In February 2013 the Ministry of Environment, which is responsible for the development and implementation of the ETS, set up a taskforce involving a number of government departments to promote the design and implementation of the scheme. The taskforce is co-ordinating the legislative design process for the ETS, and establishing laws and a trading platform which will enable the operation of the market.

Energy supply and energy demand

Korea's Energy Vision 2030, a governmental plan launched in November 2006, sets an ambitious target of reducing energy intensity by 46% between 2007 and 2030. It leans on three pillars ("the 3 Es") to dictate the direction of the national energy policy until 2030: energy security, energy efficiency, and environment-friendly. It also sets a target of 11% renewable energy in the production portfolio by 2030, and allows all households to access affordable energy.

REDD+ and LULUCF

Korea is one of the most successful countries in its reforestation results. During Japanese rule and the Korean War, most of the forested area in Korea was destroyed by illegal logging and over-harvesting. In the late 1960s, policy and strict law enforcement on forest management were put in place. The comprehensive forest rehabilitation plan was established with the enactment of the forest law in 1961. The first (1973-1978) and second (1979-1987) 10-year National Forest Rehabilitation Plans focused on rehabilitation and restoration of devastated mountainous areas. The third National Forest Plan (1988-1997) shifted the forestry policy from greening the nation to achieving an environmentally healthy forest. The fourth National Forest Plan (1998-2007) introduced a new paradigm of sustainable forest management.

The current Fifth National Forest Plan (2008-2017) was designed to further expand the implementation of sustainable forest management in pursuit of maximizing forest functions. The Plan especially highlights the importance of forest functions in response to climate change. The overall vision of the Fifth Plan is "to realize a green nation with sustainable welfare and growth" by sustainably managing forests as key resources for strengthening the nation's economic development, land conservation and an improved quality of life.

Adaptation

The National Framework on Low Carbon Green Growth states that the government shall establish and implement every five years a basic 20-year plan

for coping with climate change. This spurred the generation of several national and local plans dealing with climate change adaptation. In August 2010, Korea established the National Climate Change Adaptation Master Plan (NCCAMP) for the years 2011–2015, and set up the National Government Adaptation Committee (NGAC) to implement the NCCAMP. The NGAC is composed of the representatives of 13 ministries. The Ministry of Environment is in charge of the NGAC and also of supporting local governments.

The National Master Plan has 86 major projects, covering 10 sectors: public health, disaster management and infrastructure, agriculture, forestry, marine and fisheries, water, eco-system, climate change monitoring and projection, adaptation business and industry, and publication, education and international cooperation. The Master Plan includes provisions for local action planning. The 1st Adaptation Action Plan by local governments was expected to be set up in 2012. The national climate change scenario was updated in 2011, customised and adapted for the whole country, leading to a new vulnerability assessment and the publication of an updated NCCAMP in May 2012.

South Korea: Flagship Legislation

Name of law	Framework Act on Low Carbon Green Growth [Legislative]
Date of entry into force	14 April 2010
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand – REDD+ and LULUCF – Transportation – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Green growth, climate change
Summary of bill	South Korea's Framework Act on Low Carbon Green Growth creates the legislative framework for mid- and long-term emissions reduction targets, cap-and-trade, carbon tax, carbon labelling, carbon disclosure, and the expansion of new and renewable energy.
	<p>The Framework Act requires the government to establish and implement a national strategy, action plans, and a detailed 5-year plan for a planning period of 20 years, which will deal with various aspects of climate change mitigation and adaptation. The framework defines the main principles of a green economy, including green growth via environmental technologies and industries, and the balance between environment and economy. The Committee on Green Growth is established to deliberate on the State's major policies and plans related to low carbon green growth. Since October 2013 this Committee has operated under the Prime Minister's Office.</p> <p>The Framework declares that the government will foster new green industries with high growth potential, by formulating means to transform traditional industries into green ones, setting targets and adapting infrastructure to an environmentally friendly structure; green investment companies shall be established and may be supported by the government; and</p>

the Framework also calls for facilitation of research, development and commercialisation of green technology.

The Framework prescribes mandatory annual GHG emission reporting to the government, and the establishment of an Integrated Information Management System for GHGs.

A cap-and-trade system is introduced for pricing carbon. This is the basis for the South Korean ETS which was approved in May 2012.

The Framework instructs the government to prepare and enforce a basic plan for energy every 5 years for a planning period of 20 years. The plan should include aspects of energy security and independence, as well as targets for energy supply from renewable sources and energy demand management via saving and efficiency.

The Framework calls for the preparation of REDD/Land Use policies and transportation policies – including the establishment of standards for emissions from different classes of automobiles.

The Framework Act prescribes an assessment of impacts of climate change and the implementation of measures for adaptation.

Targets	None specified
----------------	----------------

South Korea: Other Relevant Legislation

Name of law	The Enforcement Decree of the Framework Act on Low Carbon Green Growth [Executive]
Date of entry into force	14 April 2010. Some provisions (on financial support to green investment) entered into force in July 2011. Amended twice – in October 2010 (Presidential Decree No. 22449) and June 2011 (Decree No. 22977)
Categories	<ul style="list-style-type: none"> – Transportation – Adaptation – Institutional/Administrative arrangements
Driver for implementation	Green growth, climate change
Summary of bill	<p>The Enforcement Decree is designed to provide for matters delegated by the Act and matters necessary for enforcement thereof including establishment of central and local action plans, operation of the Presidential Committee on Green Growth, establishment of and support for green industries investment companies and control of quantity of GHGs emitted and the quantity of energy consumed in each area including transportation and architecture, etc.</p> <p>Regarding transportation policies, the Decree addresses the management of the standards for corporate-average energy consumption efficiency of automobiles and compatible corporate-average allowable exhaust emissions of GHGs from automobiles.</p> <p>The Decree deals with the establishment of green industries investment companies. It also provides that the Minister of Environment shall establish and implement, every 5 years, measures for adaptation to climate change based on consultation with the heads of the central administrative agencies concerned.</p> <p>The Decree establishes the national integrated information management system for GHGs.</p>
Targets	A reduction in total national GHG emissions in 2020 by 30% from the business-as-usual projection for 2020

Name of law	Act on the Allocation and Trading of Greenhouse Gas Emissions Rights [Legislative]
Date of entry into force	15 November 2012
Categories	<ul style="list-style-type: none"> – Carbon pricing – Institutional/Administrative arrangements
Driver for implementation	Green growth, climate change
Summary of bill	<p>The Act aims to achieve the national targets for reducing GHG by introducing a system for trading GHG allowances through market mechanisms. The first phase of the trading scheme is due to start in 2015, covering companies that emit 125,000 metric tonnes or more of CO₂ a year and factories, buildings and livestock farms that produce at least 25,000 tonnes of the gas annually.</p> <p>The basic plan for the emissions rights trading system shall be established every 5 years for a unit period of 10 years. An Emissions Rights Allocation Committee chaired by the Minister of Strategy and Finance will be established for deliberation and mediation of major issues regarding the emissions rights trading system. The competent authorities will allocate the total emissions rights for the unit period and for each year to relevant corporations. The emissions rights may be traded. Anyone who wants to trade their rights shall enter an account in the emissions rights register.</p> <p>The scheme determines that in the event that a corporation produces more GHGs than its allotted amount, the excess will be subject to a penalty of up to three times the average market price of the year, up to a limit of 100,000 Won (USD 94.47) per one tonne of CO₂.</p>
Targets	None specified

Name of law	Enforcement Decree of Allocation and Trading of Greenhouse Gas Emissions Rights Act [Executive]
Date of entry into force	15 November 2012
Categories	<ul style="list-style-type: none"> – Carbon pricing – Institutional/Administrative arrangements
Driver for implementation	Green growth, climate change
Summary of bill	<p>Outlines the rules and governance structure for the ETS, planned to begin on 1 January 2015. The ETS requires each company or organisation to set the goal of emissions reduction and fulfill the required reduction goal by utilising a market mechanism. All six Kyoto Protocol GHGs are included, and the scheme covers direct and indirect emissions from individual facilities producing over 25ktCO₂e/yr, companies with multiple installations producing over 125ktCO₂e/yr, and any other firm that voluntarily wishes to join the ETS.</p> <p>The Minister of Environment is responsible for controlling and operating the ETS. It operates the quota evaluation commission and the emissions certification committee, and encourages the participation of relevant ministries such as the Ministry of Industry, Trade and Energy, the Ministry of Agriculture, Food and Rural Affairs, and Ministry of Land, Infrastructure and Transport. The Minister of Strategy and Finance must set up the plan so that influential factors such as commodity price are taken into account.</p> <p>During the first phase of the ETS (2015-2017), liable entities will be allocated 100% of their emissions permits for free based on their average emissions. Therefore demand for units will only be generated by entities exceeding their predicted emission levels. This free allocation level will drop to 97% during the second phase (2018 to 2020) and below 90% in the third phase (2021-2025). By easing the cost burden of allowable emissions at an initial</p>

stage, it minimises the burden on industry; by expanding the range of paid quota in a mid- and long-term, it lays the foundation for cost-effective GHG reduction. Targeted reduction by industry and business requires a strict set of quotas based on the country's GHG reduction goal.

Offsets are allowed for up to 10% of compliance obligations. International offsets can be used from Phase III, and shall be set within the range of less than 50% of the maximum offsets for the efficient reduction of domestic GHG. The specific criteria and procedures for the approval and certification of international offsets are yet to be established.

The government agency in charge can receive applications from qualified organisations and may select the emissions trading system's exchange among them through the evaluation of the Committee on Green Growth. In order to stabilise the market at an initial stage, companies will be subject to quota assignment through Phases I and II. When necessary, the government agency in charge, through the quota committee, will take measures to stabilise the market: adding up to 25% of the allowance reserve, specifying the minimum and maximum of emissions rights to be held, restricting borrowing and carry-over, and restricting the limit of offset emissions right's offers.

Financial support measures are allowed to industries whose competitiveness is negatively affected by the scheme. Financial and taxation incentives or subsidies can be provided for GHG reduction, technological development and distribution projects in relation to new and renewable energy.

Targets	None specified
----------------	----------------

Name of law	Act on the Creation and Facilitation of Use of Smart Grids [Legislative]
Date of entry into force	24 November 2011
Categories	<ul style="list-style-type: none"> – Energy supply – Research and development
Driver for implementation	Climate change, green growth
Summary of bill	The Act aims to create smart grids and to facilitate them to create green growth and to deal with climate change. The government is to develop and implement a 5-year plan for creating and facilitating the use of smart grids. Research and development resources are to be provided for. The Act also details requirements to establish smart grids, and deals with information use and protection. The Act is Supported by a presidential decree from November 2011 (Enforcement Decree of Act on the Creation and Facilitation of Use of Smart Grids)
Targets	None specified

Name of law	Support for Environmental Technology and Environmental Industry Act [Legislative]
Date of entry into force	Wholly amended February 2000, last amended July 2013
Categories	<ul style="list-style-type: none"> – Research and development – Institutional/Administrative arrangements
Driver for implementation	Green growth
Summary of bill	The purpose of the Act is to promote the development of environmental technologies and industries, contributing to green growth and the sustainable development of Korea's economy.

The Act requires the Minister of Environment to establish and implement plans for the development of environmental technologies and promotion of the relevant industry, including domestic and international technology outlooks and investment plans.

The government may authorise institutions to carry out designated environmental technology development projects. It may award "new technology certifications" to relevant technologies and projects, which may grant the developer subsidies and other forms of support.

The Act establishes the Korea Environmental Technology and Industry Institute, which will serve for planning, evaluation and management of development projects, while carrying out functions of start-up support, research and development support, industry data collection and utilisation etc.

Targets	None specified
----------------	----------------

Name of law	Act to Promote the Purchase of Environmentally Friendly Products [Legislative]
--------------------	---

Date of entry	
----------------------	--

into force	Wholly amended February 2010, last amended July 2013
-------------------	--

Categories	– Institutional/Administrative arrangements
-------------------	---

Driver for	
-------------------	--

implementation	Green growth
-----------------------	--------------

Summary of bill	The purpose of the Act is to promote the purchase of environmentally friendly products, as defined in the Framework Act on Low Carbon Green Growth. The Act obliges public institutions to purchase environmentally friendly products whenever possible to do so without jeopardising quality or without conflict with other specified prioritised matters.
------------------------	---

A data management system to provide information about environmentally friendly products will be set up. There is no specific reference to climate change in the Act.

Targets	None specified
----------------	----------------

Name of law	Sustainable Transportation Logistics Development Act [Legislative]
--------------------	---

Date of entry	
----------------------	--

into force	December 2009, last amended in July 2013
-------------------	--

Categories	– Transportation
-------------------	------------------

Driver for	
-------------------	--

implementation	Climate change, energy crisis, sustainable development
-----------------------	--

Summary of bill	This act, under the responsibility of the Ministry of Land, Infrastructure and Transport, promotes the development of a sustainable transportation logistics system, in accordance with several basic principles: promoting a low-carbon transportation logistics system by reducing emission of GHGs; promoting an environment-friendly, energy and resource saving transportation logistics system; improving the mobility, accessibility and safety of the transportation logistics system; securing a balance between modes of transportation, classes and regions; effectively connecting the use of land and a transportation logistics system.
------------------------	---

The state and the local authorities are to formulate basic plans (for 10 years) and implementation plans (annually) and to allocate necessary budgets for the development of a sustainable transportation logistics system. These plans should be consistent with South Korea's 2007 Sustainable Development Act (amended 2010).

Necessary measures shall be taken by the state and local governments to reduce GHG emissions in order to implement the UNFCCC. The Ministry will develop a coefficient for

	calculating emissions per unit of transportation logistics, and utilise the data collected in policy development.
	Other provisions deal with calculation and management of socio-economic costs, traffic management, transportation sharing structures, promotion of mass transportation and carbon free transportation, development of environment friendly facilities and technology, linking with urban planning, education etc.
Targets	None specified

Name of law	Energy Act [Legislative]
Date of entry into force	Entered into force September 2006, last amended July 2011
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Research and development – Institutional/Administrative arrangements
Driver for implementation	Green growth, energy management

Summary of bill	<p>Under the Act, local governments must formulate and implement 5-year energy plans, which will include matters regarding stable supply of energy, measures for using renewable energy, rationalisation of energy use and reduction of GHG emissions, development of energy sources etc.</p> <p>A national energy supply contingency plan will be formulated, as well as Energy Technology Development Plans.</p> <p>An Energy Committee will be created to deliberate on matters concerning major energy policies and energy-related plans. The Act also establishes the Korea Institute of Energy Technology Evaluation and Planning, to efficiently support the planning, evaluation, management, etc. of the energy technology development-related projects. The Act includes provisions for the establishment of a state supported technology development fund.</p>
Targets	None specified

Name of law	Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy [Legislative]
Date of entry into force	2004, significantly amended in April 2010, last amended in July 2013
Categories	<ul style="list-style-type: none"> – Energy supply
Driver for implementation	Renewable energy
Summary of bill	The Ministry of Trade, Industry and Energy is to promote the diversification of energy sources through the promotion of technological development, use and distribution of new energy and renewable energy, and the activation of the new energy industry and the renewable energy industry. It also promotes the stable supply of energy, environment-friendly conversion of the energy structure, and the reduction of GHG emissions. Forms of renewable energy included are, among other solar, bio-energy, wind, water, fuel cells, hydrogen, marine, geothermal and other forms other than coal, nuclear or natural gas.
Targets	None specified

Name of law	Act on the promotion of Development and Distribution of Environmentally Friendly Automobiles [Legislative]
Date of entry into force	2004, last amended in May 2011
Categories	<ul style="list-style-type: none"> – Energy demand – Research and development
Driver for implementation	Energy efficiency, public health, green growth
Summary of bill	The Minister of Trade, Industry and Energy is to establish a master plan and implementation plans to promote the development and distribution of environmentally friendly automobiles (electric cars, solar powered cars, hybrid cars, fuel cell vehicles, natural gas vehicles or clean diesel vehicles). General provisions declare that the state may provide assistance to developers and consumers of environmentally friendly automobiles.
Targets	None specified

Name of law	Energy Basic Law (Law No. 7860) [Legislative]
Date of entry into force	September 2006, last amended July 2013
Categories	<ul style="list-style-type: none"> – Energy supply
Driver for implementation	Energy conservation
Summary of bill	The Act aims to present long-term and comprehensive vision to clarify basic principles of energy basic policy: establishment of basic principles of energy policy; formulation of national basic energy plan; establishment of national energy committee; formulation of plan for energy technology development.
Targets	None specified

Name of law	Integrated Energy Supply Act [Legislative]
Date of entry into force	1991, last amended April 2010
Categories	<ul style="list-style-type: none"> – Energy supply – Research and development
Driver for implementation	Climate change, energy conservation
Summary of bill	The Act's purpose is to promote energy conservation in line with the UNFCCC principles. It calls for the development of a master plan for integrated energy (heat or heat and electricity) supply, and prescribes the matters concerning the construction, operation and safety of integrated energy facilities.
Targets	None specified

Name of law	Electricity Business Act [Legislative]
Date of entry into force	Wholly amended 1990, most recently amended 12 April 2010
Categories	<ul style="list-style-type: none"> – Energy supply – Institutional/Administrative arrangements

Driver for implementation	Renewable energy
Summary of bill	The Electricity Business Law mandates both the purchase and the fixed price of electricity generated from renewable sources. Any renewable energy generator that is connected to the grid is eligible to sell electricity to the grid at fixed prices. Korea Electric Power Corporation (KEPCO) is responsible for purchasing electricity from renewables. The government compensates for the difference between nuclear and renewable energy and fossil fuel generation prices. The Act requires the Ministry of Knowledge Economy (MKE) to prepare and announce the Basic Plan of Long-term Electricity Supply and Demand (BPE) on a biennial basis. The BPE stipulates electricity policy directions on supply and demand, long-term outlook, construction plans, Demand Side Management, etc. The 4th Basic Plan of Long-Term Electricity Supply and Demand (2008–2022) was announced in 2008.
Targets	None specified

Name of law	Energy Use Rationalisation Act [Legislative]
Date of entry into force	January 1980, amended in 2007, 2011 and July 2013
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand – Institutional/Administrative arrangements

Driver for implementation	Climate change, energy security and energy efficiency
Summary of bill	<p>The purpose of this Act is to promote green growth while contributing to international efforts to tackle climate change. The Act requires the government to consider the measures to attain effectively the goal of the national energy policy on the stability of demand and supply of the energy required for the sound development of the national economy, the minimisation of the factors of environmental damage caused by energy consumption, and the rationalisation of the energy utilisation. According to the Act, the government is to establish and enforce a comprehensive GHG mitigation policy, and local governments are to establish local plans accordingly.</p> <p>A Basic National Energy Plan and the Basic Plan for Rational Use of Energy are to be drafted by the Minister of Trade, Industry and Energy, addressing demand-side and supply-side issues of energy efficiency, substitution between energy sources, measures to reduce GHG emissions by rational use of energy, education and publicity. The Plan should also include "matters concerning the implementation of the system for price indication for the rationalisation of energy use". A national energy saving committee is formed under the provisions of the Act.</p> <p>Based on previous versions of the Act, the government of Korea has provided long-term and low interest rate loans from the Fund for Rational Use of Energy for energy efficiency and conservation investments since 1980. Every fiscal year, a given amount from the Fund is allotted to the eligible loan applications from a government financial source named the Special Accounts for Energy and Resources.</p> <p>Based on the Act, Korea's energy conservation programmes and activities are planned and put into action by the Republic of Korea Energy Management Corporation (KEMCO), established in 1980 based on the Act. KEMCO functions as the national energy efficiency centre responsible for the implementation of the national energy efficiency and conservation programmes. The Act continues to detail issues which need to be addressed, such as standby-power standards, utilisation of waste heat, management of equipment, support to enterprises specialising in energy savings, etc.</p>
Targets	None specified

4.56 Sweden



Fact Box

Greenhouse gas emissions (MtCO₂e)	
incl. LULUCF	26
excl. LULUCF	61
Change from base year (1990)	-11
Latest reporting year	2011
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 08 June 1992 Date of ratification: 23 June 1993 Date of entry into force: 31 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 31 May 2002 Date of entry into force: 16 February 2005
2020 pledge	Overall 30% reduction by 2020 compared to 1990 levels, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities -40% for non-EU ETS emissions by 2020 from 1990 levels
Flagship legislation	Integrated Climate and Energy Policy

Legislative Process

As a parliamentary and representative democracy, Sweden's government is led by the Prime Minister and appointed by the parliament (Riksdag), which is elected by popular vote every four years. Parliamentary approval is required for political/ governmental decisions such as climate and energy policy to become effective. The government is responsible for implementing decisions made by the Riksdag, directing state administrative activities, representing Sweden in the European Union and submitting new legislative proposals to the parliament for consideration. The Riksdag must approve international decisions, such as commitments under the UNFCCC.

Governmental ministries implement policies and serve as expert bodies in the legislative process. At the regional and local level of Sweden's multilevel governance structure are 21 regional county administrations and 290 municipalities, self-governing entities whose governments are elected by the citizens in separate elections.

Approach to Climate Change

As a member of the European Union and Annex-1 party to the Kyoto Protocol, Sweden's approach to climate change is predominantly influenced by the commitment to implement the international emission reduction targets and corresponding legislation from the European level. The government introduced no specific legislation to implement the Kyoto Protocol. Instead, the different governmental departments, regions and municipalities implemented the commitments under the Kyoto Protocol via policies, programmes and action plans.

Sweden has a more ambitious target than the official commitments accepted under the European burden sharing agreement, which only requires an emission reduction of 17% outside the European Emission Trading Scheme (EU ETS). The EU ETS covers the energy sector and energy-intensive industry installations, while the major remaining sectors to which the specific Swedish target applies include transportation, agriculture, the residential/ service sector, waste and non-CO₂ gases such as methane, nitrous oxide and F-gases. Sweden is committed to reducing emissions in sectors not covered by the EU ETS by 40% in 2020 from 1990 levels and to increase the share of renewable energy to 50% by the same date.

Sweden's approach to climate change is focused on market-based initiatives cutting across different sectors and thus integrating climate mitigation via price signals in different areas. The Swedish climate strategy emphasises cross-cutting economic policy instruments, supplemented with targeted initiatives such as financial support for technological innovation and the introduction of new technologies into the market.

Sweden implements EU legislation and thus closely mirrors European initiatives to reduce GHG emissions. These focus on achieving an overall emission reduction target, a target for renewable energy (although Sweden's target under

the EU's 'burden-sharing' is 49% by 2020, it has a domestic target of 50% by the same date) and improving energy efficiency. A key policy instrument is the EU ETS, covering one third of Swedish emissions via cap-and-trade. Sweden aims to reduce the remaining two thirds of emissions by 40% in 2020 from 1990 levels. The legislation to achieve this consists of policies, government initiatives and programmes. Overall projections of avoided emissions due to introduced policy measures in the energy, transportation, industry, agriculture and waste sectors since 1990 indicate a total of 30-35 million tonnes CO₂ will be avoided annually between 2010 and 2020 compared to business-as-usual scenarios which project emissions of about 95-100 MtCO₂e per year for 2010-2020.

The municipalities play a crucial role in meeting international climate mitigation commitments as they formulate and implement plans for policy measures in all areas including energy management, land use, waste and transportation. Sub-national activity is co-ordinated by the central government, which implements climate legislation mandated by the parliament. Sub-national activities also include a focus on awareness-raising among the population, the involvement of citizens in local decision-making and measures that aim at communicating climate policy to the population and improving education on the issue to improve understanding, public support and facilitate behavioural changes in energy consumption.

Carbon pricing

Emission trading and carbon taxes are the major cross-cutting policy instruments to meet targets under the EU burden-sharing agreement. Most emissions originate in the energy, industry and transportation sectors. Energy and industry installations covered by the EU ETS account for 33% of the CO₂ emissions. Furthermore, most emission reductions in the non-ETS covered sectors such as the residential, district heating and service sectors are a result of the energy and CO₂ taxes.

Energy demand

Carbon and energy taxes are the primary instruments to reduce energy demand via price signals and raising the costs of carbon-intensive means of production (via the EU ETS), transportation and residential use of energy as the major energy-consuming sectors. Energy use was affected not only by energy and carbon taxes, but also by grants, the expansion of and connection to district heating, energy efficiency requirements for new and existing buildings as well as the influence of EU legislation. In particular, the Eco-design Directive, the Energy Labelling Directive and the Energy Performance of Buildings Directive had a positive impact on avoiding and reducing emissions.

Energy supply

Several energy-related policy measures exist that encourage emission reduction in the energy supply sector: the *Electricity Certificates Act* represents a quota system, requiring energy suppliers to purchase certificates corresponding to a certain percentage of their electricity sales, subsidies for photovoltaic installations and tax regulation mechanisms such as reductions in the energy/carbon tax for biofuels. Overall, emission reductions in the energy supply

sector are seen as a result of the EU ETS, energy and carbon taxes, the electricity certificate system, special support for wind power and targeted energy efficiency measures. Estimates project a business-as-usual surplus of emissions of 15 million tonnes in 2007 had the energy supply policies of 1990 been retained. This indicates that Sweden's emissions (excluding LULUCF) would be about 25-30% higher without the existing policy measures in place, mainly because the profitability of coal would have been high enough to crowd out lower emission energy supply sources. The tightening of appropriate policy instruments is the key explanation for the avoided emissions.

REDD+ and LULUCF

Sweden has a large stock of forests that serve as carbon sinks. About 70% of the area is covered with forests that are predominantly privately owned (77%). The forest area accounts for 28.4 million ha, of which 4.4 million ha are protected. The land use, land-use change and forestry sector accounted for a net sink of 21-36 million tonnes of CO₂ over the period from 1990 until 2007. More recently, the sink was reduced by severe storms that brought down a large quantity of forests and increased logging activities. Furthermore, the use of biofuels from wood products has increased from 40TWh to 100 TWh since 1990, which also contributed to a reduction of the carbon sink and partly counteracted the biofuels-based emission reductions in the transportation sector.

Transportation

Sweden predominantly addresses emission growth in the transportation sector via market-based instruments, especially tax increases that reduce demand and encourage more energy- and fuel-efficient vehicles. Sweden implemented the European Biofuels Directive and the European Renewable Energy Directive, thus moving from the indicative 5.75% target for biofuels to a mandatory target of 10% renewable energy sources in transportation. Tax incentives are particularly linked to the fuel efficiency of vehicles and their overall climate performance. The biofuels strategy included a temporary exemption for all vehicle biofuels until 2013 from the energy and carbon tax, while at the same time requiring that larger filling stations must sell at least one fuel containing biofuels. This was also linked to the green-car rebate introduced in 2007 that encourages the purchase of vehicles running on biogas or E85, hybrid-electric cars and fuel-efficient vehicles emitting less than 120 grams CO₂/km. The annual vehicle tax for passenger cars is differentiated based on CO₂ emissions. Furthermore, the energy efficiency of the car fleet improved due to the higher proportion of vehicles with diesel engines. These measures are expected to avoid emissions from transportation of 5.4 million tonnes CO₂ by 2020 from 1990 levels as compared to business-as-usual scenarios.

Adaptation

Sweden put adaptation measures in place to address the expected adverse effects of climate change. There is no central responsibility for climate change adaptation, which is instead spread across different specialised government agencies. The implementation of the measures falls within the remit of the municipalities, which are responsible for contingency planning, emergency

services, technical supplies and overall public planning. Recent extreme weather events motivated investments in pumping systems to address flooding and raise the minimum standards for construction. The *Planning and Building Act* in 2008 was amended to prevent new buildings from being erected in unsuitable locations. It also requires taking into account the risks associated with flooding, erosion and accidents in municipal comprehensive and detailed development plans. It also requires risk assessments and the formulation of adaptation strategies in the public infrastructure sector, particularly concerning the rail networks and roads. Storms pose risks to the energy sector, which is required to analyse its risk exposure to extreme weather events and address its vulnerabilities, for example by replacing overhead power lines with buried cables for electricity distribution. Adaptation is also addressed in the Budget Bill (Autumn 2008) and the Climate and Energy Bill (2009). In the period of 2009-2011, SEK400 million (USD61.1 million) were earmarked for adaptation measures.

Research and development

Climate change research is focused on climate processes and climate modelling to develop regional scenarios that form the basis of adaptation plans as well as measures on co-benefits for climate mitigation and sectoral policies. Studies are undertaken on changes in water resources and forests as well as the effects of climate change-related effects on ecosystems. Social science research ranges from energy systems to research on climate policy processes and planning tools for adaptation to the impact on biodiversity and land use. Swedish research institutions are involved in numerous international research co-operations with European partners and institutions in developing countries alike, where the focus is on environmental technologies, climate-related agricultural research and environmental policy.

Sweden: Flagship Legislation

Name of law	An Integrated Climate and Energy Policy - Government bills 2008/09: 162 and 2008/09: 163 [Executive]
Date of entry into force	30 March 2009
Categories	<ul style="list-style-type: none"> - Carbon pricing - Energy supply - Energy demand - REDD+ and LULUCF - Transportation - Adaptation - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Climate Change, Implementation of EU Climate and Energy Package
Summary of bill	Two government bills form the basis for Sweden's flagship climate policy, which are supplemented by action plans and further adjusting legislation.

The Climate Policy Bill specifies targets for reducing GHG emissions and provides a joint action plan to achieve emission reductions. The climate tax package changes to different taxes and subsidies (2 MtCO₂e by 2020) to balance future increases in energy and environmental taxes for enterprises and households against equivalent tax concessions, allows for a tax exemption for green cars (emissions of less than 120 grams of CO₂/ km) from vehicle tax. Furthermore the bill contains a carbon tax, which increases for heating in industry outside EU ETS, agriculture, forestry and aquaculture (30% in 2011, 60% in 2015) and reduces carbon tax rebate for diesel. It also facilitates green investments in developing countries, climate policy and development co-operation and an increased focus on climate change adaptation (responsibility to co-ordinate climate adaptation is given to country administrative boards; adapt spatial planning to increased risks of landslides; research on how climate change affects the loss of biodiversity and ecosystem services and how negative effects can be limited).

Furthermore, the Integrated Climate and Energy Policy contains action plans to promote renewable energy, improve energy efficiency and implement measures leading to a fossil-independent transportation sector.

Targets	<ul style="list-style-type: none"> – 40% GHGs from non-ETS sectors by 2020 (compared to 1990 levels) – 50% renewable energy by 2020 – 20% more efficient energy use – 10% renewable energy in the transportation sector – Vehicle fleet that is independent of fossil fuels in 2030 – Reduce Sweden's net emissions of GHGs to zero by 2050
----------------	---

Sweden: Other Relevant Legislation

Name of law	Action Plan for a fossil-fuel independent vehicle fleet [Executive]
Date of entry into force	2009/2010
Categories	<ul style="list-style-type: none"> – Carbon Pricing – Transportation – Research and Development
Driver for implementation	Climate change, economic development
Summary of bill	The action plan is part of the Swedish flagship legislation on climate and energy policy. It sets out the measures to achieve the objective of achieving a fossil fuel independent vehicle fleet by 2030. Given that one third of emissions occur in the road-based transportation sector, the fossil fuel independent vehicle fleet is a key contribution to Sweden's GHG emission reduction target.

The key principle is to put a price on the GHG emissions emitted by the transportation sector and thus encouraging a move towards fossil fuel independent fuels as non-fossil fuel based vehicles are becoming cheaper than fossil fuel based vehicles. This is to be achieved through various policy instruments, measures, initiatives and incentives. These include carbon pricing (emission trading, energy and especially carbon taxes) in the transportation sector, increasing the dialogue between the government and the automotive cluster to strengthen its long-term competitiveness and promote greener fuel development and vehicle technology, extension of subsidies to establish filling stations for renewable fuels, increasing the share of biofuels in road transportation fuels via implementing the EU fuel quality directive (up to 10% share of biodiesel in the mixture), the requirement that the sustainability criteria must be fulfilled if the biofuels are to count towards the 10% target of fuels from renewable energy sources by 2020; mandating of binding emission standards for automotive manufacturers at 120 gCO₂/km for new passenger cars, which will be gradually reduced to 95 gCO₂/km in 2020; exploring the potential for the use of biogas (e.g. from waste) as transportation fuel, i.e. the development of 2nd generation biofuel via financial support (SEK875 million USD133.6 million) for biofuel demo-plants and the

commercialisation of new energy technology; research and development initiatives to assess the incentives for the emerging electric vehicles and plug-in hybrids market, including appropriate stimulus and raising public awareness via consumer information on vehicle fuel consumption.

Targets Fossil fuel independent fleet of vehicles by 2030

Name of law Changes in the act concerning energy tax (part of climate and energy package within 2013 national budget bill) [Legislative]

Date of entry into force 1 February 2013

Categories

- Carbon pricing
- Energy demand
- Transportation

Driver for implementation Climate change.

Summary of bill The bill aims to support the uptake of biofuels via tax incentives:

- All biofuels are exempt from the carbon tax
- Exemption from normal fuel taxes for fuels that contain hydrogenated vegetable and animal fats and oils (HVO) in blends of up to 15%
- Continued exemption from fuel tax for E85 and other high-blend biofuels
- Reduction of the fuel tax exemption for low-blend biofuels.

Targets None specified

Name of law Act on Electricity certificates- Act No. 2011:1200 and Regulation on Electricity certificates - Regulation No. 2011:1480 (Legislative)

Date of entry into force 1 January 2012

Status Executive and Legislative

Categories

- Carbon pricing
- Energy supply

Driver for implementation Energy policy

Summary of bill Electricity producers whose electricity production meets the requirements of the Electricity Certificates Act receive one electricity certificate unit for each MWh of electricity that they produce. Demand for certificates is created by the fact that all electricity suppliers, and also certain electricity end users, are required to purchase certificates corresponding to a certain proportion (quota) of their electricity sales or electricity use.

Electricity from the following energy sources entitles its producers to certificates in Sweden: wind power, solar energy, wave energy, geothermal energy, biofuels, peat and hydro power.

The act applies to

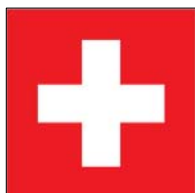
- Companies that supply electricity to consumers
- Consumers of electricity using self-produced electricity, while the consumption must exceed 60MWh/ year and must have been produced in a plant that has a capacity of more than 50kW
- Registered energy-intensive companies
- Electricity consumers that purchased/imported electricity from the Nordic electricity market

As of 1 January 2012, the Swedish-Norwegian common electricity certificate market started. The producers receive their certificates in the country where the electricity production takes place and can trade their certificates in both Norway and Sweden.

Targets	Quotas for the period from 2012 to 2013.
Name of law	Government bill on nuclear power—opening the way for a generation change (2009/10:172) [Executive]
Date of entry into force	1 January 2011
Categories	<ul style="list-style-type: none"> – Energy supply – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Energy supply
Summary of bill	<p>The bill regulates the conditions for constructing and operating new nuclear facilities. New units are only permitted when they replace existing units (a maximum of 10), whereby the older reactor must be permanently disabled and the new reactor needs to be built on an existing nuclear facility instead of a new location.</p> <p>The bill reverses the phase-out of nuclear power production and the ban on new nuclear power facilities</p> <p>The purpose of the bill is to allow old nuclear reactors to be replaced with newer, safer models. It also reflects the recent shift towards new carbon technologies as opposed to a stronger expansion of renewable energies classified as counting towards climate mitigation. The Swedish parliament approved the act under the condition that no direct or indirect public funding may be available for the new nuclear power reactors.</p> <p>Parliament also stipulated that operators of nuclear facilities and the owners of nuclear power reactors carry unlimited liability in the event of a nuclear accident. Companies are required to hold insurance against third-party claims up to EUR 1.2 billion (USD1.63 billion).</p>
Targets	None specified
Name of law	Regulation on State Subsidies for Solar Panels - Regulation No. 2009:689, updated/amended by Regulation no. 2011:1473 [Legislative]
Date of entry into force	2010
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Research and Development
Driver for implementation	Climate change, energy policy
Summary of bill	<p>The Regulation on State Subsidies for Solar Panels provides for financial support to facilitate the uptake of solar installations. This regulation forms the basis of grants for all types of solar/PV installations. The solar/PV market in Sweden is predominantly focused on off-grid installations in homes in remote areas and utilities such as communication stations or lighthouses. Grid-connected facilities with solar/PV are mostly used for research or demonstration purposes. The regulation is aimed at private individuals, companies and municipalities.</p> <p>In November 2011 the regulation was amended, which reduced the subsidies from 46% to a maximum of 43% of the eligible costs per installation from 1 February 2013 onwards. The total budget allocated to the 2013-2016 period is SEK210 million (USD32.1 million).</p>
Targets	None specified

Name of law	Environmental Code DS2000:61 [Executive and Legislative]
Date of entry into force	1 January 1999
Categories	<ul style="list-style-type: none">- Energy demand- REDD+ and LULUCF- Transportation- Adaptation- Research and Development
Driver for implementation	Climate change, environmental protection
Summary of bill	<p>The Swedish Environmental Code contains 15 separate environmental acts, which have been consolidated into the environmental code.</p> <p>These concern the management of land and water areas, environmental quality standards, environmental impact statements and other decision guidance data, protection of nature (animals and plant species), environmentally hazardous activities and health protection, polluted areas, water operations and agriculture, genetic engineering, chemical products and biotechnical organisms as well as waste and producer responsibility.</p> <p>The Environmental Code requires permits for major activities that are expected to be environmentally hazardous. Evaluating the impact on GHG emissions forms a part of the procedure for permit appraisal.</p>
Targets	None specified

4.57 Switzerland



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	47
excl. LULUCF	50
Change from base year (1990)	-3
Latest reporting year	2011
Importance as an emitter	Below top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 10 December 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 16 March 1998 Date of ratification: 9 July 2003 Date of entry into force: 16 February 2005
2020 pledge	20% to 30% emissions reduction by 2020 compared to 1990 levels, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities.
Flagship legislation	Revised CO₂ Act

Legislative Process

Switzerland is a federal state with 26 cantons that enjoy far-reaching autonomy. The government, parliament and courts are organised across the federal level, the cantonal level and the communal level. There is a strong tradition of subsidiarity in the form of cantonal and communal self-determination and self-governance. The federal level aims to establish a minimal amount of national standards and holds responsibility for supra-cantonal policy areas. In consequence, constitutional law states that legislative power rests with the sovereign cantons unless it is explicitly assigned to the federal level.

The Swiss Parliament consists of two legislative chambers. The 200 members of the National Council are elected every four years based on a refined proportional election system with modifications for smaller cantons. The cantons are represented in the second chamber, the Council of States. Its 46 members represent the 20 full cantons (two representatives each) and the 6 half cantons (one representative). The two chambers discuss new laws separately in an iterative process until an agreement can be reached. Because representing a constituency in the Parliament is not a full-time job, parliament meets only 4 times per year for several weeks. The meetings are supplemented with one-day conferences of the different commissions, where members of parliament represent their parties' interests. The seven members of the federal government form the 'Bundesrat' (Federal Council). As heads of government departments they hold equal rights and can be re-elected without legal limit to their total term of office. They meet weekly and take decisions either by majority voting or consensus. At the beginning of a new four-year team, the Federal Assembly consisting of the National Council and the Council of States elects the Federal Assembly in the December following the parliamentary election (and the frequently jointly held Council of States election). The Swiss Presidency rotates among the members of the Federal Council each year.

Direct democracy plays a crucial role in the legislative process. There are frequent referenda on laws passed by parliament, some mandatory while others are discretionary if 50,000 citizens demand for it. Citizens can also submit proposals to change the Swiss constitution if supported by 100,000 votes. The relatively small population and long tradition of direct democracy have had a stabilising effect on Swiss politics as they increase parties' willingness to compromise, favour large coalitions and are likely to block extreme laws.

Approach to Climate Change

Swiss climate legislation takes an integrated approach, whereby climate objectives are mainstreamed into areas with major GHG emissions. While Switzerland is not a member of the European Union, it has made many laws compatible with European legislation and co-ordinates in a wide range of policy areas with the EU via bilateral agreements and the European Economic Area.

The *CO₂ Act* was originally passed in 2000 and set emission reduction objectives for the period 2008 to 2012. It was fully revised in January 2013 to set new emission reduction objectives for the post-2012 period.

In 2011, in the aftermath of the nuclear accident in Fukushima, the Federal Council and the Parliament decided to exit step by step from nuclear power production. This decision led to the formulation of a new long-term energy policy ("Energy Strategy 2050"). In September 2013 the Federal Council submitted to Parliament for debate a first set of measures under the strategy. The package includes a set of policies and instruments to foster the use of renewable energies, to improve energy efficiency and so to reduce energy and power consumption until 2020. The ultimate aim of the new energy strategy is to contribute to the long-term goals of Switzerland's climate policy – to reduce annual GHG emissions to 1-1.5 tonnes per person.

Key proposals for the Swiss Climate and Energy Policy include phasing out nuclear power, stabilising electricity use by 2020, reduction of energy use by 35% in 2035 compared to 2000, encouraging energy efficiency and investment in renewable energies and a post-2020 ecological tax reform on fuels and electricity that includes a re-distribution of revenues and merges the feed-in tariffs and CO₂ levy into a single levy.

Switzerland has a multitude of laws, ordinances, plans and programmes that have co-benefits for climate mitigation and adaptation, which are too numerous to provide an exhaustive list in this report. Policy measures are frequently combined to implement or modify initiatives and can be superseded by more recent policies, while a multitude of policies integrate climate objectives at the cantonal level.

Sub-National Activity

The cantons are self-governed and widely independent entities that set up a wide range of climate-related measures, which are further implemented by the communities and municipalities. Most of these initiatives focus on measurable emission reductions in sectors including heating in buildings, municipal transportation, adaptation measures and education. Despite the federal structure and special status of the cantons, many direct climate-related measures are co-ordinated and implemented at the federal level with further detail added when they are implemented by the cantons. For example in the industry sector, the CO₂ levy, the ETS and the emission reduction targets for companies not participating in the ETS are implemented at the federal level.

Carbon pricing

Pricing GHG emissions to incentivise lower energy consumption and to raise revenue for climate mitigation and adaptation measures are key features of Swiss climate policy. Switzerland introduced a carbon levy for stationary fuels in 2008, which was increased from CHF12 to CHF36 (USD13.2-USD39.7) per tonne CO₂ in 2010, and then further increased to CHF60 (USD66.2) in 2014, with a third of the revenues used to cut emissions in the building sector (approximately CHF300 million (USD330.9 million) a year as of 1.1.2013).

Energy demand

The Swiss Energy programme aims to reduce fossil fuels consumption by 10% compared to 2000 levels, with electricity consumption being no more than 5% above 2000 levels and renewable energy meeting 3% of electricity and heat demand. Other measures to reduce energy demand include liberalisation of the electricity market; new building codes and energy efficiency and renewable energy action plans. Industrial emissions are predominantly addressed with carbon pricing measures such as the CO₂ levy.

Energy supply

Electricity generation predominantly focuses on hydropower (56%) and nuclear power (39%), with oil and gas imported for transportation and heating. Switzerland introduced a feed-in tariff for electricity from renewable energy sources in 2009 in conjunction with a liberalisation of the electricity market to make renewable energy more competitive with fossil-fuel based electricity. In 2011 the solar/PV scheme was so popular that the allocated funding was exhausted and several projects were postponed. The funding of CHF320 million (USD353 million) for 2013 is capped for the different types of renewable energy sources at 50% for hydropower, 30% for wind power and 5% for solar/ PV.

On 4 September 2013 the Federal Council adopted a legislative package that sets the country on course for its Energy Strategy 2050, in the wake of the 2011 decision to phase out nuclear power. After Fukushima, it became clear that Swiss citizens would not approve any new nuclear plants. The present legislative package results from over two years of energy modelling and firming up policy options, including a wide public consultation. The package, which consists of amendments to various laws, will now be debated in Parliament and is scheduled to enter into force in 2015.

Qualitative targets: The average annual per capita energy demand in 2020 is to be lowered by 16% from 2000 levels; and by 43% by 2035. Energy demand in 2020 is to amount to 213TWh, compared to 245TWh in 2012. Average annual electricity use per capita is to decline by 3% by 2020 and 13% by 2035 vs. 2000. This implies electricity demand will stabilise (64TWh in 2020 against 63.4TWh in 2012) despite continued population (and economic) growth.

REDD+ and LULUCF

Switzerland's forests are protected from land use changes via the Forest Act, which prescribes sustainable forest management, bans deforestation unless an equal area of afforested land replaces the cleared area or equivalent measures to improve biodiversity are implemented. The national forest programme describes in its action plan for 2004-2015 the priority areas of guaranteeing the forest's protective functions, conserving biodiversity, improving the economic viability of the forestry sector, strengthening the value chain for wood and protecting forest soils, trees and drinking water. The rate of wood harvesting is likely to increase, partly to replace fossil fuel intensive building materials such as cement and steel with wood products and partly because of the mature state of the forest stock, which is likely to be harvested in the near future, thus reducing

the carbon sink. The agriculture sector accounts for 10% of emissions. Measures integrated into Swiss agricultural policy mirror the increasing greening measures within the European Common Agricultural Policy. Swiss policy focuses on product-independent direct payments encouraging farmers to maintain the land according to good environmental standards, subsidising the more efficient use of natural resources, maintaining a suitable proportion of ecological compensation areas, encouraging crop rotation and soil protection, selective application of crop protection agents and reducing the GHG intensity of agricultural production.

Transportation

The transportation sector accounts for over 30% of emissions and thus has a large potential for reducing emissions. The focus is on introducing more sustainable modes of infrastructure and transportation by supporting low emission technologies. Regulations encourage more sustainable modes of passenger transportation through emission standards, the promotion of biofuels, environmental labels for vehicles and supportive climate mitigation measures at the communal and cantonal level. Freight transportation is to be moved from the road to the railways and subject to a heavy vehicle fee (HVF), which differentiates not only according to the distance travelled in Switzerland and the gross weight, but also the pollution intensity of the vehicle based on EURO classes/ emission standards. There are also aircraft engine emissions charges. From 2005 to 2012, transportation fuels were subject to the Climate Cent, a CHF0.015/litre (USD0.017) levy. As of January 1st 2013, it was replaced by an obligation for petrol and diesel importers to offset 5-40% of transportation-related CO₂ emissions, with costs not to exceed CHF0.05/litre (USD0.06).

Adaptation

The Swiss National Adaptation Strategy is a response to the risks associated with the unavoidable consequences of climate change. In Switzerland, these are in particular increased melting rates of the Alpine glaciers and the destabilisation of permafrost soil resulting in landslides, changes in surface runoff, flooding of valleys and irregular water levels in rivers and hydropower-related reservoirs. Biodiversity in the fragile Alpine ecosystems is also very likely to be affected. An integrated approach spanning different policy areas and involving various stakeholders is required to effectively address these challenges.

The Swiss National Adaptation Strategy aims to serve as framework for federal offices to adapt a co-ordinated course of action in response to adverse climate effects. It is split into two parts. The first part, which describes the goals, challenges and fields of action in adapting to climate change in Switzerland, was adopted by the Federal Council on 2 March 2012. In the second part, adaptation measures are presented and co-ordinated in a joint action plan. It will be completed by the end of 2013 and is expected to be adopted in early 2014.

Research and development

Climate change related research is carried out in various university-based research institutions and supported via different funding streams. The NCCR Climate was created in April 2001 with an intended duration of 12 years. The

official closing event took place in October 2012. The Oeschger Centre for Climate Change Research and the Centre for Climate Systems Modelling have been recently created.

Switzerland: Flagship Legislation

Name of law	CO₂ Act (fully revised version) [Legislative]
Date of entry into force	1 January 2013
Categories	<ul style="list-style-type: none"> - Carbon pricing - Energy supply - Energy demand - REDD+ and LULUCF - Transportation - Adaptation - Research and Development - Institutional/Administrative arrangements

Driver for implementation Climate change

Summary of bill The CO₂ Act is at the core of Swiss climate legislation and has been updated several times, including for meeting Swiss commitments under the UNFCCC.

The most recent version of the CO₂ Act is a full revision of the 2000 CO₂ Act, which has been partially revised several times, and a response to the need for a post-2012 climate legislation until 2020.

The revision of 1 January 2013 sets out a number of measures and strategies to address climate change via emission reductions in Switzerland and externally via market-based carbon trading mechanisms. Key aspects are:

- CO₂ levy on heating and process fuels 3 ct / l (CHF12 (USD13.2)/ t CO₂) since 2008 and 9 ct / l (CHF36/t CO₂ USD39.7/t CO₂) since 2010 and CHF60 (USD66.2) since 2014 with further increases up to 30 ct./ l (CHF120(USD132.4)/t CO₂) if predefined intermediate objectives for the emission reduction pathway until 2020 are not met
- Incentives for energies from renewable sources and energy efficiency
- The annual revenue of approximately CHF600 million (USD661.9 million) is to be redistributed to taxpayers and companies, with one third to be channelled to the buildings programme
- If companies join a binding agreement to reduce their energy-related CO₂ emissions, there is the possibility to exempt companies

Reform of the Swiss ETS post-2012 to allow comparable situations for Swiss and EU companies and improve cost efficiency of emission trading

- Prepare linking with EU ETS
- Determine total cap and trade emission allowances for 2013-2020 with an annual reduction of allowances by 1.74%
- Sanctioning of each ton CO₂ not covered by credit with CHF125 (USD137.9) and obligation to surrender missing emission credits for the following year
- Carbon leakage sectors enjoy free allocation of emission allowances (up to benchmark), the free allocation for non-carbon leakage sectors is decreased and allowances are auctioned
- The Swiss ETS covers among others energy supply, processing of mineral oil, production and processing of metals, glass, ceramic, cement, production of paper, production of chemical products
- Expected coverage is 30-40 companies emitting 4-5 MtCO₂, compulsory for large

emitters with over > 25'000 tCO₂/year and a voluntary opt-in for medium size emitters (above 10 MW)

Measures in the transportation sector include the obligation for motor fuel importers to domestically offset CO₂ emitted by the transportation sector (5-40%) and emission limits for new passenger cars

Emissions in the buildings sector are to be reduced by technical prescriptions for buildings, a CO₂ levy on fossil fuels and earmarking of the CO₂ levy for the national buildings programme (financing the renovation of buildings). The Buildings programme aims to reduce CO₂ emissions via lower energy use in buildings. One third of the revenues from the CO₂ tax and cantonal funds are channelled into the Building programme. Two updates of the programme were necessary as a result of its popularity. These aim at accommodating the 48,000 applications that were received since 2010.

The 2000 CO₂ Act focused on meeting the Kyoto Protocol commitment of overall GHG emission reductions of 8% in the 2008 – 2012 period compared to the 1990 base line. The CO₂ Act set an emission reduction objective of 10% for CO₂ emissions for the period 2008-12 compared to 1990 levels (CO₂ emissions represent around 80% of Switzerland's GHG emissions under the Kyoto Protocol). It contains a number of policy measures, which are further specified in action plans, programmes and policies and have been amended based on the changes to the CO₂ Act since 2000:

- CO₂ levy for heating and process fuels
- Climate cent on transportation fuels
- Voluntary commitments
- Cross-cutting measures in areas suitable to climate policy integration
- Use of cap and trade market mechanisms and flexible mechanisms
- Requires the Federal Council to propose further GHG emission reduction targets for period after 2012 leading up to 2020

Key points of this revised CO₂ Act for commitments beyond 2012 are the following:

- Emission reductions by 20% by 2020 below 1990 with domestic measures (possibly 30% depending on other nation's commitments); any increase beyond the -20% reduction can be met up to 75% with measures carried out abroad.
 - Continue the CO₂ levy on heating fuels and possibility for exemption for companies taking on binding emission reduction targets
 - Increase incentives for the uptake of renewable energies and energy efficiency, including subsidies of up to CHF300 million (USD 330.9 million) (via the CO₂ levy)
 - CO₂ emission limits for new cars (compatible with EU regulations)
 - Compensation of emissions from transportation sector via international or domestic projects
 - National emission trading scheme, which can be linked with the European Emission Trading Scheme
 - Co-ordination of domestic adaptation measures on the Federal level
-

Targets	Overall GHG emission reductions of 8% in the 2008 – 2012 period compared to the 1990 base line under the Kyoto Protocol. 20% of GHG emissions compared to 1990 by 2020
----------------	---

Switzerland: Other Relevant Legislation

Name of law	CO₂ emission regulations for new cars SR 541.711 (30 November 2012) and vehicle performance standards (1 July 2012) [Executive]
Categories	<ul style="list-style-type: none"> - Energy demand - Transportation
Driver for implementation	Climate change
Summary of bill	<p>All newly registered cars are subject to the overall average value of CO₂-emissions of 130 g CO₂/ km by 2015. If the car has higher emission standard values, the vehicle importer must pay a fee. There are exemptions for second hand cars (registered for more than 6 months at home or abroad) and (residential) utility vehicles.</p> <p>From 2012 to 2018, the first gram of CO₂ above target will be penalised at CHF7.5 (USD8.3), second gram at CHF22.5 (USD24.8), third at CHF37.5 (USD41.4). Excess emissions beyond will incur a sanction of CHF 142.5 (USD157.2). From 2019, the maximum sanction applies to all excess emissions.</p>
Targets	None specified

Name of law	Adaptation to Climate Change in Switzerland UD-1055-E [Executive]
Date of entry into force	2 March 2012
Categories	<ul style="list-style-type: none"> - Adaptation - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The Swiss National Adaptation Strategy aims to serve as framework for the federal offices to adapt a co-ordinated course of action in response to adverse climate effects. It is split into two parts. The first part was adopted by the Federal Council on 2 March 2012. It describes the goals, challenges and fields of action in adapting to climate change in Switzerland. The overall goal of the strategy is to seize the opportunities provided by climate change, to minimise climate change related risks and to improve the adaptive capacity of society, the environment and the economy.</p> <p>The first part examines the climate change impacts and identifies the most important fields of action of adaptation to climate change in the following sectors:</p> <ul style="list-style-type: none"> - Natural hazard management - Water management - Agriculture - Forestry - Energy - Tourism - Biodiversity management - Health - Spatial development <p>The second part of the strategy is an action plan to reach the strategy's goals. These measures are co-ordinated between the federal offices in order to address the challenges posed by climate change, i.e., effects of heat waves in urban areas, droughts, floods, increasing slope instabilities in the Alps, decreasing snow cover, adverse effects on water, soil and air quality, changes in biodiversity, and the potential spreading of invasive species, vermin and infectious diseases. The adaptation measures need to be carefully aligned with other cross-cutting strategies of the Federal Council.</p>

The joint action plan is expected to be completed by the end of 2013 with the target of having it adopted by parliament in early 2014.

Targets None specified

Name of law **Feed-in remuneration at cost tariff for electricity from renewable energy sources 730.01 [Executive]**

Date of entry into force 1 January 2009

Categories

- Carbon pricing
- Energy supply
- Energy demand
- Transportation

Driver for implementation Climate change, energy policy

Summary of bill The feed-in tariff for electricity from renewable sources is an ordinance linked to the Federal Electricity Supply Act, which forms the legal basis to the opening up of the Swiss energy market. Both were decided by the Federal Council on 14 March 2008 to allow a stepwise liberalisation of the electricity market while at the same time supporting electricity from renewable energy sources. The purpose of the feed-in tariff is to encourage investment in electricity generation from renewable sources by bridging the price difference between fossil-fuel based electricity production and electricity from renewable energy sources. Its terms and conditions are adjusted periodically depending on the uptake of the renewable energy sources. The most recent update on the level of tariffs took place on 1 October 2012 taking effect 1 January 2013.

The ordinance regulates feed-in tariffs, payable per kilowatt-hours (kWh) for renewable energies including wind, hydro up to 10 MW, biomass, solar/PV and geothermal energy. The payments are made for 20-25 years and are differentiated according to application, technology and size of the installation. They only apply to installations built after 1 January 2006, renovated and expanded installations.

The overall funding for available feed-in tariffs is capped in 2013 at approximately CHF320 million (USD353 million), hydropower at 50% of the fund, wind energy at 30% of the fund and solar/PV at 5% of the fund (which is expected to be increased to 10% when the average costs fall below CHF 0.6 (USD0.66)/kWh).

Targets None specified

Name of law **Mineral oil tax reduction on biofuels and natural gas (amendment) [Executive]**

Date of entry into force 1 July 2008

Categories

- Carbon pricing
- Energy demand
- Transportation

Driver for implementation Energy policy, transportation policy, climate change

Summary of bill The Mineral Oil Tax Act was amended to provide tax incentives for low carbon fuels. It contains provisions that allow a tax reduction of 40 Swiss cents per litre petrol for natural gas and liquefied petroleum gas (LPG). Furthermore, biogas and other fuels from renewable energy sources are fully exempted from the Mineral Oil Tax under the condition that they fulfil ecological and social criteria. These include:

- Minimum of 40% GHG reduction
- Net environmental burden does not significantly exceed the environmental

burden of fossil fuels
– The cultivation of biofuels must not endanger biodiversity, in particular rainforests

In contrast to other countries, in particular the EU, Switzerland has no percentage target for biofuels.

Targets	None specified
----------------	----------------

Name of law	CO₂ levy on process and heating fuels No. 641.712 [Executive]
Date of entry into force	1 January 2008 (amended 2010)
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand
Driver for implementation	Climate change, energy policy
Summary of bill	<p>Switzerland taxes CO₂ emissions from stationary fuels, i.e. heating and process fuels. The initial levy was set at CHF12 (USD13.2) per tonne of CO₂, which equates to CHF0.03/ litre of heating oil and CHF 0.025/ m³ of natural gas. As Switzerland's CO₂ emission reductions were not on track to meet the commitments, the CO₂ tax was increased to CHF36 (USD39.7) per tonne of CO₂.</p> <p>The revenues of the first phase (2008-2010) were re-distributed to employers and to the population on a per-capita basis. Since 2010, one third of the revenues have been channelled to the building refurbishment programme (about CHF300 million/USD330.9 million).</p>

Targets	None specified
----------------	----------------

Name of law	Federal Heavy Vehicle Fee Act 641.81 and Federal Heavy Vehicle Fee Ordinance 641.811 [Legislative and Executive]
Date of entry into force	1 February 2000 (Federal Heavy Vehicle Fee Act) 1 January 2001 (Federal Heavy Vehicle Fee Ordinance)
Categories	– Transportation
Driver for implementation	Transportation policy
Summary of bill	<p>Freight transportation is subject to the heavy vehicle fee (HVF). In 2008 it was levelled off at CHF 0.0275 (USD0.0303)/tonne/km.</p> <p>It differentiates according to three aspects:</p> <ul style="list-style-type: none"> – Distance travelled in Switzerland – Gross weight – Pollution intensity of the vehicle based on EURO classes/ emission standards <p>It applies to road vehicles over 3.5 tonnes and aims at internalising the external costs of road transportation, especially goods in transit through Switzerland.</p> <p>The revenue is shared between the cantons (33%) and the federal government (67%). While the cantons predominantly use the revenues as compensation for road costs they incur, the revenues attributed to the federal government are invested into rail transportation projects such as Rail 2000, New Transalpine Rail Routes (NEAT), links to the European high-speed network and rail noise control programmes.</p>

Targets	None specified
----------------	----------------

Name of law	Forest Act 921.0 [Legislative]
Date of entry into force	1 January 1993
Categories	<ul style="list-style-type: none"> - REDD+ and LULUCF - Adaptation - Institutional/Administrative arrangements
Driver for implementation	Climate change, sustainable resource management
Summary of bill	<p>Legislation to support sustainable management of forests and adaptation to climate change.</p> <p>Its objective is to maintain existing forest cover and protect it as natural habitat. These objectives are combined with maintaining the forests' protective, welfare and usefulness function as well as to support and maintain the forest economic sector. The forest act also aims to protect humans and capital from landslides, erosion and natural disasters.</p> <p>Deforestation permits are required for land use changes and public accessibility is to be ensured (except for vehicles). The key overall principle is the sustainable management of the forest to ensure its continued existence with its current level of forest cover, biodiversity and functionality (e.g. its protective function against landslides resulting from melting of glaciers and permafrost soils).</p> <p>The national forest programme based on the Forest Act describes in its action plan for 2004-2015 the priority areas of guaranteeing the forest's protective functions, conserving biodiversity, improving the economic viability of the forestry sector, strengthening the value-added chain for wood and protecting forest soils, trees and drinking water.</p>
Targets	None specified

4.58 Tanzania



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	953
excl. LULUCF	39
Change from base year (1990)	0
Latest reporting year	1994
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 17 April 1996 Date of entry into force: 16 July 1996
Kyoto Protocol ratification status and date	Date of signature: N/a Date of ratification: 26 August 2002 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	2012 National Climate Change Strategy

Legislative Process

Tanzania is a unitary presidential democratic republic, with legislative power being vested in both its government and its unicameral National Assembly, the *Bunge*. The *Bunge* has 236 members elected by popular vote – 75 being allocated to women chosen by their parties, 10 being nominated by the president, and five members being chosen by the Zanzibar House of Representatives. All members serve five-year terms.

Bills may be introduced by the government, a Minister or by a private member. Bills are published in at least two issues of the official government gazette before being read to the Assembly. In the case of Government Bills, this process can be foregone if a certificate authorised by the President is laid on the table of the Assembly by a Minister or the Attorney-General stating that the relevant bill is of such an unusually urgent nature that time does not permit for compliance with the prescribed procedure.

Upon the first reading of each bill, it is referred to the appropriate Standing Committee for consideration. Committees have no power to amend bills referred to them, but may request that the Minister responsible for the bill introduces amendments to it in the Assembly. When the Committee has concluded its considerations, the draft text is subjected to a general debate by members.

When approved by the majority of MPs, the bill is submitted to the President for his assent, and upon gaining it, becomes an Act of Parliament. If the President withholds his assent, he must return the bill to the Assembly, stating his reasons. In order for it to be re-submitted to the President, it must be supported by the votes of at least two-thirds of the Members of the Assembly. The President is obliged to assent to the Bill within twenty-one days of its being presented to him; otherwise he must dissolve Parliament and call for a new general election.

Approach to Climate Change

Tanzania has enacted a number of policies and legislative acts that either directly address climate change issues, or indirectly support these objectives through environmental conservation in the related areas of alternative energy, protection of forest lands, and disaster response. The country's approach to climate change notably runs parallel to its goals of social and economic development. Tanzania has also been active in several global climate governance measures, most notably through its membership of the East African Community (EAC), but also through bilateral and larger multilateral processes.

Tanzania's 2012 Long Term Perspective Plan (LTPP) is designed to guide the implementation of The Tanzania Development Vision 2025 and strives to build a 'roadmap to a Middle Income Country.' The LTPP reviews environment and climate change issues in the context of their potentially negative impact on

development in Tanzania and calls for further institutional arrangements to enhance competences of the National Environmental Council over climate issues.

Adopted in 2012, the Tanzania Five Year Development Plan is a part of a series of plans to implement the Tanzania Development Vision 2020. The Plan notes a considerable number of risks to the development of industry and the cost to GDP that may be incurred by climate change, and recommends mitigation and adaptation measures as well as the creation of a financing framework. More specifically, the plan calls for a National Climate Change Strategy – an institutional framework to identify, mobilise and monitor global climate funding – as well as environmental impact monitoring for large industrial and infrastructural projects, the stronger enforcement of environmental management development initiatives and programmes for training and increased awareness of climate change.

In 2006's National Plan, a document on Mainstreaming Environment and Climate Change Concerns outlines concerns regarding climate change and strategies to promote environmental awareness, collaboration and monitoring across sectors and government agencies, and between national and local governments. The strategy includes plans to combat deforestation and desertification, promote alternative energy and address climate change in other areas.

The 2007 National Capacity Self-Assessment Report and Action Plan for the Implementation of Post Rio Conventions (NSCA) was prompted by the Global Environment Facility, in collaboration with the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP).

The 2010 National Strategy for Growth and Reduction of Poverty II addresses challenges posed by climate change to economic growth and poverty reduction in Tanzania. Firstly, the Strategy seeks to make energy more accessible to the population, and promote alternative energy including wind, solar and biofuels. Secondly, agriculture and food security are addressed through increased food crops, livestock and fishery production, better infant nutrition and the introduction of crop, livestock and fish varieties that are suited to adverse conditions resulting from climate change. Finally, the Strategy seeks to mitigate the adverse impact of climate change through strengthening early warning systems for disasters, risk management and preparedness and disaster management and response. The strategy was planned for implementation between 2010/11 and 2014/15.

The Environmental Management Act of 2004 called for the creation of a National Environmental Action Plan (NEAP) every five years, and incorporates environmental concerns with the implementation of development plans and programmes, requiring Sector Ministries and Local Government Authorities to prepare Environmental Action Plans according to NEAP. NEAP 2012–2017 calls for

an assessment of vulnerability regarding climate change in order to strengthen the National Climate Change Strategy Action Plan, promote adaptation policies, plans, budgets, and local government programmes, develop public awareness of climate change mitigation and adaptation and strengthen early warning systems. The Plan also outlines measures by which to strengthen the enforcement of land and deforestation related legislation.

REDD+ and LULUCF

In March 2013 The The 2013 Action Plan for Implementation of the National Strategy for Reduced Emissions from Deforestation and Forest Degradation (REDD+) details the drivers of deforestation and degradation in Tanzania. Strategies and actions outlined include: setting up a reference emission level and monitoring, reporting and verification systems, creating a financial mechanism to incentivise REDD+ schemes, working with stakeholders and ensuring active participation in the implementation of REDD+ schemes, exploring REDD+ financing options, developing institutional arrangements for governance and a legal framework, establishing a national training programme, a national research programme and communication network and addressing the drivers of and deforestation and degradation directly.

The 2008-2020 Zanzibar National Forest Resources Management Plan supports the implementation of forest policy and provides legal room for communities to participate and engage in forest management programmes in the Zanzibar Islands. The Plan supports the formulation of Community Forest Management Agreements.

The National Forest Programme in Tanzania 2001-2010 (NFP) was created to implement the National Forest Policy. The NFP is based on four development programmes: a) Forest Resources Conservation and Management programme; b) Institutions and Human Resources Development programme; c) Legal and Regulatory Framework programme; d) Forestry Based Industries' and Sustainable Livelihoods programme.

The overall goal of the 1998 National Forest Policy is to enhance the contribution of Tanzania's forest sector, while ensuring its sustainable development and the conservation and management of its natural resources in the long term. The policy recognises the high value of forests, due to the high potential for royalty collection (stumpage), export and tourism earnings. The policy also seeks to effectively manage and preserve forest areas in the long term and ensure the conservation of forest biodiversity, water catchments and soil fertility.

The 2006 Strategy for Urgent Action on Land Degradation and Water Catchments seeks to map water sources in the country. Amongst other things, it identifies the use of trees for urban construction, firewood and charcoal as a cause of deforestation. It also prescribes the promotion of wood plantations and

nurseries, empowering local leaders to prevent and control wildfires, as well as a national tree-planting campaign to counter deforestation.

The 1997 National Environmental Policy seeks to establish a framework that will bring environmental issues to the mainstream of decision-making in Tanzania, to provide policy guidelines, plans and guidance on priority actions, and to create a system for monitoring and review of policies, plans and programmes. The policy calls for regulation on the use of public land; increased use of renewable energy, rational exploitation of forest resources, deforestation control and afforestation activities; waste management; and increased research on climate change issues.

Energy Supply

The 2003 National Energy Policy focuses in part on the sustainable use of energy resources with minimal adverse impact to the environment, noting their important role in economic development. The Policy stresses the use of renewable and alternative energy sources such as wind, solar, hydro, liquefied petroleum gas (LPG) and natural gas. The use of alternative energy sources, such as biogas and briquettes, both for domestic and industrial uses is encouraged to offset the use of charcoal and firewood associated with deforestation. The 2010 Mining Act requires that mining companies must have insurance that covers pollution and environmental damage compensation.

Tanzania: Flagship Legislation

Name of law	2012 National Climate Change Strategy
Date of entry into force	2012
Categories	<ul style="list-style-type: none"> - REDD+ and LULUCF - Research - Adaptation - Energy supply - Transportation - Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	The 2012 National Climate Change Strategy aims to enable Tanzania to effectively adapt to climate change and participate in global efforts to mitigate climate change, whilst also achieving sustainable development. Adaptation strategies are outlined for water resources, coastal and marine environment, forestry, wildlife, agriculture and food security, human health, tourism, energy (hydropower dams), industry, livestock, and fisheries, infrastructure, human settlements and land use. Mitigation is addressed through low-emission energy technologies, policies to conserve energy usage by industries, improved livestock management and feed stuffs, greater efficiency in the transportation, mining, agriculture and waste management industries, and afforestation and reforestation policies (including REDD+). Additionally, cross-cutting programmes seek to implement public awareness programmes, establish research capacity and training institutions for climate change. The Strategy's estimated financial requirements are USD

750 million per year through to 2030, with the funding plan including international and some domestic support.

Targets None specified

Tanzania: Other Relevant Legislation

Name of law **National Strategy for Reduced Emissions from Deforestation and Forest degradation (REDD+) (Executive)**

Date of entry into force March 2013

Categories

- REDD+ and LULUCF
- Research and development
- Institutional/Administrative arrangements

Driver for implementation Forest management

Summary of bill As a comprehensive document, the Strategy aims at facilitating and coordinating the implementation of REDD+ policies in Tanzania. This general objective is translated into nine specific goals, namely:

a) establish robust baseline scenarios and an effective MRV system for determining forest carbon changes; b) establish and operationalize a fair and transparent REDD+ financial mechanism and incentive schemes; c) engage and enhance active participation of the stakeholders in REDD+ processes; d) strengthen a national system for governance and coordination of REDD+ processes; e) build capacity in terms of training, infrastructure, systems and equipment to support the REDD+ policy; f) generate knowledge and promote scientific understanding on REDD+ issues through research; g) strengthen public awareness, communication and information sharing systems on REDD+ issues; h) strengthen mechanisms to address drivers of deforestation and forest degradation in various agro-ecological zones; i) ensure that gender is mainstreamed in the implementation of REDD+ process and action plan.

The strategy also adopts a series of strategic actions to curb deforestation, including the diversification of energy sources other than traditional biomass; Support implementation of land reforms and issuance of Customary Certificate Rights of Occupancy (CCROS); review the livestock policy and strategies to reduce overgrazing and nomadic pastoral practices; Introduction and promotion of innovations that contribute to reducing carbon emissions from productive activities; Advocate for government policy on large scale farming investment in the context of REDD+; amongst others.

Targets None specified.

Name of law **The Environmental Management Act (EMA) (Legislative)**

Date of entry into force July 2005

Categories - Institutional/Administrative Arrangements

Driver for implementation Environment, climate change

Summary of bill The EMA provides for a legal and institutional framework for sustainable management of the environment. It also outlines principles for management, impact and risk assessments, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement. It goes on to establish a basis for the implementation of international instruments on environment, as well as providing for the implementation of the National Environment Policy, repealing the National Environment Management Act of 1983 and advocating the continued existence of the National

Environment Management Council. Finally, it provides for establishment of The National Environmental Advisory Committee to oversee other related matters.

EMA establishes the following government bodies with respective powers and responsibilities:

- The Ministry for Environment is established within the Office of the Vice-President, and is responsible for overall co-ordination and policy articulation of environmental management in the country and provision of the central support functions;
- The National Environmental Advisory Committee (NEAC) advises the Minister responsible for environment and other bodies of government;
- The National Environment Management Council (NEMC) is responsible for enforcement of EMA;
- Sector Environment Sections deliver oversight and management of environmental sectors regarding EMA;
- Regional Secretariats are empowered to designate Regional Environmental Management Experts (REMEs);
- The Regional Environmental Management Expert (REME) is responsible for advising and overseeing implementation and enforcement of EMA at the regional level;
- LGAs (City, Municipal, District, Township) are empowered to designate or appoint Environmental Management Officers;
- Environmental Management Officers are responsible for oversight of implementation of EMA at the local levels;
- Environmental Committees are established at different LGAs levels with responsibility for oversight and implementation of the EMA within their jurisdiction.

The Act gives the Local Government Authorities mandate to ensure environmental compliance in their areas of jurisdiction. Additionally, local authorities are charged with drafting Environmental Action Plans relevant to their geographical areas, and in compliance with the National Environmental Action Plan.

The EMA also specifically addresses areas directly or indirectly relevant to climate change. The Act instructs the Minister (and relevant sector ministries) to take measures to address climate change, with a particular focus on the impacts of climate change and adaptation measures. The Act also manages forests in accordance with the Management of Forest Resources Act of 2002. Furthermore, the Act authorises the Minister and relevant sector Ministries to establish land management guidelines and land planning directives, and allocates responsibility protection, improvement and nourishment of land to its users and occupiers. Finally, all developers of projects are required to carry out an environmental impact assessment to be reviewed by the National Environment Management Council and bills, regulations, policies, strategies, programmes and plans that may impact the environment or natural resources are required to conduct and submit a Strategic Environmental Assessment Statement that outlines the likely effects.

Targets	None specified
----------------	----------------

Name of law	The Forest Act (Legislative)
--------------------	-------------------------------------

Date of entry into force	7 June 2002
---------------------------------	-------------

Categories	<ul style="list-style-type: none"> - REDD+ and LULUCF - Institutional/Administrative arrangements
-------------------	---

Driver for implementation	Forest management
----------------------------------	-------------------

Summary of bill The Act replaces the 1957 Forest Ordinance. It provides a general legal framework for the management and conservation of forest in the long-term. The Act addresses legislation and local measures to address forest conservation through different communities and stakeholders including local government, civil society and the private sector. At the national level, the Minister is responsible for declaring forest reserves and managing them by enforcing relevant prohibitions and restrictions adverse to their conservation. They may also regulate the use of forest land reserves or any natural resources within the reserve. The Act allows for villages to establish village land forest reserves that may also be jointly owned by forests through village land forest management. Privately-held lands require an environmental impact assessment for any development projects and plans and private forest management plans that enable local management of forestlands. The Act also establishes the Tanzania Forest Fund.

Targets None specified

Name of law Forest Resources Conservation and Management Act No. 10 (Legislative)

Date of entry into force December 1997

Categories

- REDD+ and LULUCF
- Institutional/Administrative arrangements

Driver for implementation Forest management

Summary of bill The Act provides the legal framework for the implementation of forest policy and the management of forestry programmes by communities in the Zanzibar Islands and supports the formation of Community Forest Management Agreements.

Targets None specified

4.59 Thailand



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	229
excl. LULUCF	237
Change from base year (1990)	NA
Latest reporting year	2011
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 12 January 1992 Date of ratification: 28 December 1994 Date of entry into force: 28 March 1995
Kyoto Protocol ratification status and date	Date of signature: 2 February 1999 Date of ratification: 28 August 2002 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	Strategic Plan on Climate Change (2008-2012)

Legislative Process

Thailand is a constitutional monarchy. Its legislative branch (National Assembly) is modeled after the Westminster System and consists of a lower house (House of Representatives) and an upper house (Senate).

The House of Representatives has 480 members, who are elected in general elections every four years. The voting system is that of a mixed member majoritarian system. Voters have two votes. With their first vote, they directly elect 400 members of parliament in single constituency elections through the first-past-the-post system). The second vote is then based on proportional representation. According to the overall share of second votes obtained, each party gets a proportion of the remaining 80 seats.

The upper house or Senate has 150 members, of which 76 are directly elected from Thailand's 75 provinces and Bangkok. The remaining senators are appointed by a Senator Selection Committee. The Committee members include the President of the Constitutional Court, the Chairperson of the Election Commission, and the Chairperson of the State Audit Commission. Senators are non-partisan and are elected for a period of six years.

In Thailand laws are introduced to the National Assembly in form of bills, typically by the Prime Minister or its ministers. Alternatively, bills can be introduced by a minimum of twenty members of the House of Representatives, a court (judiciary) or by petition (> 10,000 signatures). The legislative cycle begins in the House of Representatives where a bill is debated, possibly amended and voted on. If approved, it is passed on to the Senate. If the Senate gives its approval, the bill is passed. In the case of rejection, it is returned to the House of Representatives for reconsideration. In the case of persistent disagreement between the two houses a joint committee is formed. The committee prepares a report and the bill is resubmitted. It passes if both houses give their approval. However, before a bill is formally enacted it has to be signed into law by the King (Royal Assent).

Approach to Climate Change

Over the last decade, Thailand has experienced extreme weather phenomena and natural disasters on an unprecedented scale. In 2004, a tsunami hit its coastline, leaving large stretches of land devastated and thousands of people dead. In the 2011/2012 monsoon season, severe flooding paralysed large parts of the country, including its capital Bangkok. In combination with other factors, these events have increased awareness of climate change among Thai policy-makers. In response, they identified climate change as one of the major global challenges in the country's 11th Social and Economic Development Plan (2012-2016).

A Strategic Plan on Climate Change was approved in January 2008. Integrated in the 10th Social and Economic Development Plan (2007-2011), the Plan created a strategic framework for climate change policy-making in Thailand. The Plan

outlines six strategies to (1) build capacity to adapt and reduce vulnerabilities to climate change impacts; (2) promote GHG mitigation activities based on sustainable development; (3) support research and development to better understand climate change, its impacts and adaptation and mitigation options; (4) raise awareness and promote public participation; (5) build capacity of relevant personnel and institutions and establish a framework of co-ordination and integration; and (6) support international co-operation to achieve the common goal of climate change mitigation and sustainable development. For several years, the Office of Natural Resources and Environmental Policy Planning has been working on a replacement policy, the National Master Plan on Climate Change 2013-2050. Not yet approved, the draft document outlines strategies for climate change adaptation, mitigation, and capacity building for climate change management as well as policy recommendations in several key areas, including urban areas, coastal zones, inland freshwater ecosystems, public health, agriculture, forest ecosystems and public infrastructure.

Thailand has also taken steps to strengthen its climate change institutional infrastructure. In 2007, a royal decree created the Thailand Greenhouse Gas Management Organization (TGO). The TGO is an independent government agency charged with promoting low carbon activities and investment in GHG emission reductions. Furthermore, the TGO functions as the Designated National Authority for Clean Development Mechanism (CDM) projects in Thailand. In this role, it reviews CDM projects for approval and provides technical assistance.

Other major policy initiatives with relevance to climate change focus on the energy sector. On the supply side, the Alternative Energy Development Plan (AEDP) 2008-2021 introduced a new feed-in tariff scheme for power generated from renewable resources. It also promotes the development of ethanol and biofuel production and set a 20% renewable energy target to be reached by 2021. In 2011 and 2013, the AEDP was revised and modified, with the renewable energy target increased to 25%.

On the demand side, the central piece of legislation is the Energy Conservation Promotion Act of 1992. The act promotes energy efficiency in key energy consuming sectors and created the Energy Conservation Promotion Fund. In 2008, Thailand adopted an Energy Conservation Plan. The plan aimed to reduce total energy consumption by 10.8% by 2011. After its expiration, it was replaced by the Energy Efficiency Development Plan (EEDP) 2011-2030, which includes a target to cut the country's energy intensity (amount of energy used per unit of GDP) by 25%.

Other policy initiatives of relevance to climate change include plans of Thailand's Greenhouse Gas Management Organisation to create a National Carbon Fund. to provide technical and financial assistance to Clean Development Mechanism (CDM) projects that experience difficulties in obtaining funding. The Ministry of Transport is currently in the process of developing a Master Plan for Sustainable Transportation.

Energy demand

In 1992, the Thai government enacted the Energy Conservation Promotion Act. As a framework policy, the act defined the scope, requirements and responsibilities for key energy consuming sectors and governments agencies. Its three main objectives are (1) the promotion and support of energy conservation measures, (2) the promotion and support of energy efficient equipment, and (3) the provision of financial assistance. To this end, the Act consisted of three main components: A compulsory programme that required “designated” industrial facilities to increase energy efficiency, a voluntary programme with a focus on small- to medium-sized companies and a complementary programme covering research programmes and awareness raising activities. To support projects and research in the area of energy conservation, the Act established the Energy Conservation Promotion Fund. It has an annual budget of about THB 7 billion (USD218.5 million) which are distributed through various mechanisms and instruments, including grants, subsidies, and tax incentives.

More recently, the Ministry of Energy developed the 20-year EEDP (2011-2030). The EEDP provides a long-term framework and guidelines for Thailand’s energy conservation activities. It sets short-term (2011-2015) and long-term (2011-2030) energy conservation targets at the national and sector level (industry, transportation, commercial, and residential sectors). Most importantly, the EEDP includes a target to reduce the Thai economy’s energy intensity by 25% by 2030.

Energy supply

The Thai government has taken various measures to increase the proportion of renewables in its overall energy mix. At the centre of these efforts is the AEDP. A first version of the AEDP was adopted by the Cabinet in January 2008. Covering the period of 2008-2021, the plan aimed to “develop renewable energy as one of the country’s major energy sources” and set a national renewable energy target of 20%. Renewable energy sources to be developed under the AEDP comprise solar, wind, hydro- and bioenergy as well as biofuels. Revised in 2011 and 2013, the most recent version of the AEDP increased the renewable energy target from 20% to 25%. Among others things, the policy document lists the provision of incentives (such as direct financial support) for investments in renewable energy projects. The revised AEDP introduced a new tariff system for electricity produced from renewable sources. In fact, Thailand was one of the first Asian countries to implement such a feed-in tariff system. Also called “adder,” the programme seeks to increase the share of renewables by giving additional payment to the producers of renewable energy on top of the normal market price.

Established in 2008, the (Energy Services Company (ESCO) fund provides financial assistance to small and medium sized companies in the renewable energy sector. Equipped with an initial volume of THB 500 million (USD 15.6 million), the Fund provides assistance in various forms, including equity investments, equipment leasing, and credit guarantees.

REDD+ and LULUCF

The central pieces of legislation in the forestry sector are the Forest Act 1941 and the Forest Protection Act 1992. The National Park Act 1961, the National Forest Reserve Act 1964, and the Conservation and Protection of Wildlife Act 1992 are also relevant to forestry management and protection in Thailand. In 1985, a national committee was established to develop a strategy for forest resource development and conservation. Policies formulated by this committee required that the government should maintain 40% of the total land area under forest, divided into 25% for economic forests and 15% for conservation forests. The 7th Economic Development Plan (1992-1996) reversed the allocations to 25% of conservation forests and 15% for economic forests. This afforestation target has been repeatedly confirmed in important policy documents such as the latest Economic Development Plan (2011-2016).

Transportation

The AEDP also makes specifications for the transportation sector. To reach the 25% renewable energy target, it sets a goal to increase ethanol consumption to 9 million litres per day by 2021. For biodiesel, the target is 5.97 million litres per day. Implementation measures include provision of state subsidize for E20 gasohol, extension of the E20 service station network, compulsory biodiesel blending requirements in form of a B5 blend and government support for the manufacturing of eco-cars and E85 cars in form of tax incentives.

In December 2012, the Cabinet approved a new vehicle excise tax structure. The new tax restructures the country's vehicle excise tax away from rates based on engine size to one dependent on the quantity of CO₂ emissions. It will take effect in January 2016 but a 20% higher tax rate for luxury motorbikes and motorcycles will take immediate effect.

Adaptation

Climate change adaptation is mentioned in several key policy documents. The National Climate Change Strategy 2008-2012 included a strategy to "build adaptive capacity to cope with climate change and to reduce vulnerability of various sectors". Adaption is also an important part of the National Master Plan on Climate Change 2011-2050 and the 11th National Economic and Social Development Plan 2012-2016. The latter includes plans to support scientific and technological research and innovation in adaptation and to establish mechanisms for the evaluation and alleviation of climate change impacts. However, as of yet, Thailand has not passed any concrete adaptation legislation.

Thailand: Flagship Legislation

Name of law	Strategic Plan on Climate Change (2008-2012) (Executive)
Date of entry into force	January 2008
Categories	– Energy Supply

	<ul style="list-style-type: none"> - Energy Demand - Adaptation - Research and development
Driver for implementation	Climate change
Summary of bill	<p>Integrated in the 10th Social and Economic Development Plan (2007-2011), Thailand's Strategic Plan on Climate Change (2008-2012) created a strategic framework for climate change policy-making in Thailand. To this end, the Plan outlines six strategies to:</p> <ul style="list-style-type: none"> - Build capacity to adapt and reduce vulnerabilities to climate change impacts - Promote GHG mitigation activities based on sustainable development - Support research and development to better understand climate change, its impacts and adaptation and mitigation options - Raise awareness and promote public participation - Support international co-operation to achieve the common goal of climate change mitigation and sustainable development
Targets	None specified

Thailand: Other Relevant Legislation

Name of law	Energy Conservation Promotion Act B.E. 2535 (1992) (Legislative)
Date of entry into force	23 March 1992
Categories	<ul style="list-style-type: none"> - Energy demand - Institutional /Administrative arrangements
Driver for implementation	Climate change, energy security
Summary of bill	<p>The Energy Conservation Promotion Act has three main components: A compulsory programme that requires "designated" industrial facilities to increase energy efficiency, a voluntary programme with a focus on small- to medium-sized companies and complementary programme covering research programmes and awareness raising activities. Concrete measures under the compulsory programme include:</p> <ul style="list-style-type: none"> - Improvement in combustion efficiency of fuels - Energy recycling (waste heat recovery) - Prevention of energy loss - More efficient use of electricity <p>In addition, the act created the Energy Conservation Promotion Fund to finance projects and research related to the issue of energy conservation.</p>
Targets	None specified

Name of law	Establishment of a Greenhouse Gas Management Organization B.E. 2550 (2007) (Executive)
Date of entry into force	20 June 2007
Categories	- Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The royal decree established the Greenhouse Gas Management Organization (TGO). The TGO is an independent government agency charged with promoting low carbon activities and investment in GHG emission reductions. The TGO functions as the Designated National</p>

Authority for Clean Development Mechanism (CDM) projects in Thailand. In this role, it reviews CDM projects for approval and provides technical assistance.

Targets None specified

Name of law **Alternative Energy Development Plan (2008-2021) (Executive)**

Date of entry

into force 2008 (revised in 2011 and 2013)

Categories – Energy Supply

Driver for Energy Security

implementation Climate Change

Summary of bill The Alternative Energy Development Plan (AEDP) 2008-2021, introduced a new feed-in tariff scheme for power generated from renewable resources. This so-called “adder” programme seeks to increase the share of renewables by giving additional payment to the producers of renewable energy on top of the normal market price. The AEDP promotes the development of ethanol and biofuel production and set a 20% renewable energy target to be reached by 2021. In 2011 and 2013, the AEDP was revised and modified. Among other things, the revised plan increased the renewable energy target from 20 to 25%.

Targets – Increase the share of renewable energy to 25% by 2021

4.60 Turkey



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	379
excl. LULUCF	422
Change from base year (1990)	234%
Latest reporting year	2011
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: N/A Date of ratification: 24 February 2004 Date of entry into force: 24 May 2004
Kyoto Protocol ratification status and date	Date of signature: N/A Date of ratification: 28 May 2009 Date of entry into force: 26 August 2009
2020 pledge	No pledge made
Flagship legislation	Law No. 5346 on Utilization of Renewable Energy Sources for the Purposes of Generating Electrical Energy

Legislative Process

Turkey's legislative power is vested in the Grand National Assembly (GNAT) (Türkiye Büyük Millet Meclisi-TBMM). It is a unicameral parliament with 550 deputies elected for four-year terms. GNAT's election system is based on proportional representation determined by the "D'Hondt formula", a mathematical formula which involves the principle of highest average. A political party must have at least 10% of total votes to win seats in Parliament. The Assembly is responsible for the enactment, amendment and repeal of laws. The laws adopted by the Assembly are promulgated by the President within 15 days or referred back to the Assembly for further consideration.

The right to introduce bills belongs to the deputies and the Council of Ministers. The bills introduced by representatives are described as private members' bills, and may be introduced by one or multiple representatives. Government bills must contain the signatures of the Prime Minister and all cabinet ministers.

The Speaker of the Assembly designates the bill to be considered by a designated Standing Committee with relevant expertise. Additional legislative committees may examine relevant sections of bills and issue opinions to the main committee; which issues a formal opinion to the Assembly before it is put to vote.

Once passed by the Assembly, the bill is then transferred to the Prime Minister for consideration. If the PM signs the legislation as is, it becomes law and takes effect upon its publication in the Official Gazette. With the exception of budget bills, if the President does not deem it appropriate to publish the bill as a whole or in part, he or she may send it back to the Assembly for re-consideration with his or her justification.

If the President does not approve the publication of the bill in part, the Assembly may debate only the articles that are not approved or the bill as a whole. The Assembly may adopt the text with or without amendments after this debate. If the Assembly accepts the law without amendment, the President has to publish it in the Official Gazette. If the Assembly accepts the law with amendments, the President has the right to send the law back to the Assembly. The date of entry into force shall be clearly stated in the laws. A date for entry into force can be determined for the bill as a whole, or different dates may be determined for the different articles of the bill. The laws in which the dates of entry into force are not determined shall enter into force 45 days after their publication in the Official Gazette.

Approach to Climate Change

Despite strong economic growth during the past decade and its membership in the Organisation for Economic Co-operation and Development (OECD), Turkey is

considered a “middle income” country, a point that the country stresses in international discussions concerning climate change and mitigation of emissions.

Referencing historically low GHG emissions, Turkey has declined to make any commitment to reduce GHG based on any specific reference year. Such an act is viewed as threatening further economic expansion. Nonetheless Turkey plans to limit its GHG emissions through a set of measures that will not compromise its sustainable development and poverty reduction priorities. It has also stated that it will carry out mitigation activities in a measurable, reportable and verifiable manner, in accordance with its national programmes and strategies.

Due to disputes over Turkey’s mitigation obligations in comparison to other OECD member countries, Turkey was deleted from the list of Annex-II countries under the UNFCCC at the Seventh Conference of Parties (COP7) in Marrakesh in 2001. While Turkey became a member to the Convention on 24 May 2004, the UNFCCC was not ratified by law until 16 October 2013, after Decision 26/CP.7, which invited all member countries to recognise the special circumstances of Turkey relative to other Annex-I Countries.

Turkey’s Parliament endorsed the ratification of the Kyoto Protocol and officially became party to the Protocol in 2009.

In 2001, Turkey established the Co-ordination Board on Climate Change (CBCC). The CBCC was restructured in 2004 after Turkey became a party to the UNFCCC and in 2010 its remit was expanded with the participation of new members. In 2013 the CBCC was merged with the Co-ordination Board on Air Emissions, and renamed the Co-ordination Board on Climate Change and Air Management. The Board, composed of relevant ministries and industry representatives, determines the policies, measures and activities to be pursued by Turkey related to climate change.

Although Turkey cannot benefit from the market-based flexible mechanisms of the Kyoto Protocol, voluntary carbon projects have been developed and implemented in Turkey for a long time. By January 2013, Turkey had 218 registered projects in the voluntary carbon market, leading to annual GHG reductions of 16.2 million tons of CO₂-equivalent.

Turkey has put into effect policies and measures to tackle climate change in the energy, agriculture, forestry, transportation, industry and waste sectors.

Energy Demand and Supply

The energy sector is the major source of Turkey’s GHG emissions and so the main focus of mitigation and adaptation measures. Hydro-power, wind energy and other renewables have been incentivised since 2005 with the passing of The Renewable Energy Law. Legislative efforts then turned towards energy efficiency, and in 2007 the Energy Efficiency Law was passed with the aim of avoiding 75 million CO₂-eq tonnes of emissions by 2020. Turkey is also retrofitting power plants and using low-carbon fuels. In accordance with the By-Law on Heat

Insulation in Buildings published in 2006, buildings are insulated to reduce heating and cooling needs.

Transportation

Initiatives being launched in the transportation sector include enhancing the quality of motor vehicle fuels, increasing the use of biofuels and new engine technologies, withdrawing old vehicles from use, expanding metro and light rail networks in big cities in order to encourage mass transportation, the Marmaray Sub-sea Tunnel Project in Istanbul connecting the Asian and European sides of the city (which started operating in October 2013 and will reduce GHG emissions by 130,335 tonnes per year, as well as the expansion and improvement of the railway network, including high-speed train lines.

REDD+ and LULUCF

Agriculture occupies an important role in the economy of rural areas, and negative effects of climate change on water resources will be reflected in water scarcity and an increased need for irrigation. Adaptation actions include protection of water resources, expansion of irrigation systems to increase efficiency, and early flood warning systems.

Turkey is promoting use of biomass instead of fossil fuels and use of best available agricultural and irrigation techniques to reduce emissions and conserve natural resources in agriculture. A desired effect of the Law on Soil Conservation and The Law on Grassland and Pasture Conservation is to contribute to carbon sequestration. Additionally in 2008, Turkey adopted the “Action Plan On Drought Preparedness and Combating Drought”.

Turkey is committed to increase reforestation and regulate deforestation, striving to improve economic and social conditions of people living in forest villages and provide funds to install renewable energy sources (especially solar systems) to prevent deforestation. An ambitious reforestation campaign has started with a target of 2.3 million ha of land from 2008 to 2013 with the goal of sequestering 181.4 million tonnes of CO₂ in 20 years.

Turkey: Flagship Legislation

Name of law	Law No. 5346 on Utilization of Renewable Energy Sources for the Purposes of Generating Electrical Energy [Legislative]
Date of entry into force	18 th May 2005, amended by Law No. 6094, of 29 December, 2010
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Institutional/Administrative arrangements
Driver for implementation	Climate change, renewable energy
Summary of bill	The law (also known as the Renewable Energy Law) encourages the use of renewable energy. This law encompasses the procedures and principles of the conservation of renewable energy resource areas, certification of the energy generated from these sources, and use of these sources.

The law aims to benefit from these resources in a secure, economic and qualified manner, to increase the diversification of energy resources, to reduce GHG emissions, to assess waste products, to protect the environment and to develop the related manufacturing industries to enable the realisation of these objectives.

The law governs the principles for the conservation of renewable resource areas and introduces incentives for domestic energy projects, providing feed-in tariffs for electricity from renewable energy sources. The legal entity holding a generation licence is granted a "Renewable Energy Resource Certificate" (RES Certificate) by the Electricity Markets Regulation Authority (EMRA) to identify and monitor the resource type in purchasing and sale of the electrical energy generated from renewable energy resources in the domestic and international markets.

It creates a broad basis for an emerging domestic renewable energy market. Grid operators are obliged to provide access to the grid for renewable energy generators, and independent power producers can benefit from the feed-in tariff. Holders of energy retail licences are obliged to purchase a percentage of their total uptake from licensed generation companies holding a RES Certificate.

The price of the electricity to be purchased under the law should be the nationwide average of the electricity wholesale price of the previous year (determined by the EMRA). However a producer can sell the electrical energy generated for a higher price in the market if they are able to.

Some highlights of the law include:

- The reduction or cancellation of service fees as an incentive for those willing to build energy generation facilities to meet their own energy consumption needs.
- Further incentives are available through a Council of Minister's Decree, such as investments for energy generation facilities, procurement of electro-mechanic systems within the country, research, development and production investments concerning solar energy units, and research and development investments for biomass energy.
- Where there are sufficient geothermal energy resources, demand will be primarily met by geothermal and solar thermal energy resources.
- In the event that the forests and the lands under private ownership of the Treasury or under the control or disposal of the State are used to generate electricity from renewable energy resources, these areas are leased to or right of way is given to the relevant parties. Any fees required for using this land is reduced by 85%.

The law also stipulates that development plans that might have a negative impact on the use and efficiency of renewable energy resource areas can no longer be created on public land..

Targets	Increase the amount of electricity produced by renewable sources by 30% by 2023
----------------	---

Turkey: Other Relevant Legislation

Name of law	Energy Efficiency Strategy Paper 2012-2023 [executive]
Date of entry into force	25 February 2012
Categories	<ul style="list-style-type: none"> – Adaptation – Energy supply – Transportation – Institutional/Administrative arrangements
Driver for implementation	Climate change, energy security
Summary of bill	This 'strategy paper' is an executive policy annex to the 2007 Energy Efficiency Law. The Paper was approved by the Higher Planning Council (YPK) and aims to detail a set of federal

policies that decrease energy intensity (the amount of energy consumed per capita) by at least 20% by the year 2023.

There should be close collaboration between the public entities and NGOs to implement the measures in the strategy and measure and evaluate the results, the subjected coordination will be provided by General Directorate of Renewable Energy in the name of Ministry of Energy and Natural Resources.

Targets	Decrease energy intensity by 20% by 2023
----------------	--

Climate Change Action Plan 2011-2023 [Executive]	
Name of law	
Date of entry into force	2 May 2011
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - LULUCF - Transportation - Adaptation - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The Action Plan sets out a road map with short, medium and long-term plans for the fight against climate change encompassing all sectors of the economy.</p> <p>Overall the plan involves providing climate-friendly goals which should underpin Turkey's growth. These include: strengthening the existing information structure on low carbon progress ; and developing financing models for the transition to a low carbon economy. This is with the aim of improving the fiscal and technical infrastructure to enable the limitation of GHG emissions Specific details are set out below:</p> <p>Energy supply</p> <p>Intensity</p> <ul style="list-style-type: none"> - Reducing primary energy intensity by 10% compared to 2008 by 2015 • Increasing the amount of incentives given by MENR for energy efficiency applications by 100% until 2015 • Developing the capacity for energy efficiency by 2015 - Supporting R&D activities on energy efficiency <p>Renewables</p> <ul style="list-style-type: none"> - Developing the capacity by 2015 to increase use of renewable energy resources - Ensuring technological development by 2020 for energy production from renewable energy resources - To limit GHG emissions from coal-fired electricity production, by using cleaner technologies and taking efficiency-increasing measures by increasing the average cycle efficiencies of existing coal-fired thermal power plants until 2023 <p>Distribution</p> <ul style="list-style-type: none"> - Reducing nationwide electricity distribution losses to 8% by 2023 <p>Energy efficiency of buildings</p> <ul style="list-style-type: none"> - Establishing heat insulation and energy-efficient systems to meet standards in commercial and public buildings with usable areas larger than 10,000 square meters and in at least 1 million residential buildings by 2023 - Effective implementation of the Regulation on Energy Performance in Buildings (EPB) and other energy efficiency regulations until 2017

- Developing instruments that will provide the necessary financial support with regard to energy efficiency, renewable energy and EPB until the end of 2013
- Issuing "Energy Performance Certificates" to all buildings until 2017
- Decreasing annual energy consumption in the buildings and premises of public institutions by 10% until 2015 and by 20% until 2023

Renewable energy use in buildings:

- At least 20% of the annual energy demand of new buildings will be met via renewable energy resources as of 2017
- Reducing GHG emissions in new settlements by at least 10% in comparison with existing settlements (which are selected as pilot regions and the GHG emissions of which are identified until 2015) until 2023.

Agriculture and LULUCF

Quantification of environmental parameters

- Identifying the main potential sectoral GHG emissions reductions
- Identifying and decreasing the rate of GHG emissions originating from crop and animal production
- Determining and increasing the quantity of carbon stock captured in the soil
- Identifying and increasing topsoil and subsoil biomass
- Developing information infrastructure and capacity to meet sectoral needs in adapting to and combating climate change

Forestry

- increase forest carbon sequestration by 15% of 2007 value until 2020 (14,500 Gg by 2007, 16,700 Gg by 2020)
- Reduce deforestation and forest damage by 20% compared to 2007 values by 2020

Land use change

- Integrate climate change in land use and land use changes management strategies by 2015
- Increase the amount of sequestered carbon in agricultural forestry activities by 10% by 2020 compared to 2007 values
- Quantify the carbon stored in pastures and meadows in 2012. Increase this by 3% by 2020
- Quantify the carbon stock in wetlands in 2012, and maintaining that level through 2020

Legal and institutional aspects

- Strengthening institutional capacity of institutions involved in land use and forestry on climate change by 2014
- Making legal arrangements for combating climate change with regard to land use and forestry by the end of 2013

Industry

Intensity Decrease CO₂ equivalent intensity per GDP produced in the industrial sector until 2023 by:

- Developing the financial and technical infrastructure for limitation of GHG emissions
- Developing and using new technologies to limit GHG emissions until 2023
- Building the information infrastructure for limitation of GHG emissions in the sector until 2015

Transportation

The plan aims to ensure the balanced use of types of passenger and freight transportation, specifically:

- Increasing the share of railroads in freight transportation from 5% in 2009 to 15%, and in passenger transportation from 2% in 2009 to 10% by 2023
- Increasing by 2023, the share of seaways in freight transportation from 2.66% of tonne/km in 2009 to 10%, and in passenger transportation from 0.37% in passenger/km in 2009 to 4%,
- Decreasing by 2023 the share of highways in freight transportation from 80.63% of tonne/km in 2009 to below 60%, and in passenger transportation from 89.59%

	<p>in passenger/km in 2009 to 72%</p> <ul style="list-style-type: none"> - Preparing and implementing "Transportation Master Plan" until 2023 - Restructuring urban transportation in line with sustainable transportation principles by limiting the emission increase rate of individual vehicles in intra-city transport - Developing the necessary legislation, institutional structure and guidance documents until the end of 2023 for implementation of sustainable transportation planning in cities - Dissemination of the use of alternative fuels and clean vehicle technologies in the transportation sector by making legal arrangements and building capacity to increase use of alternative fuels and clean vehicles until 2023 - Taking local measures to encourage use of alternative fuel and clean vehicles in urban transportation until 2023 - Increasing efficiency in energy consumption of transportation sector by limiting energy consumption in transportation until 2023 <p>Developing the information infrastructure in the transportation sector by building a well-organised, reliable and sustainable information infrastructure with transportation and travel data including GHG emission data, until the end of 2016.</p>
Targets	Numerous targets are presented specific to each sector – see above

Name of law	Law No. 5686 on Geothermal Resources And Mineral Waters [Legislative]
Date of entry into force	13 June 2007
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - Research and Development
Driver for implementation	Renewable Energy, GHG reduction
Summary of bill	<p>In order to increase the production and consumption of geothermal energy 10-fold, the legislature passed a law specific to this renewable source in addition to the law on renewable energy (see flagship legislation).</p> <p>The law outlines the procedure, elements and sanctions for issuing transferring and revoking operation licences, auditing the actions of firms while safeguarding resource and the environment. The bill also regulates natural gas that is produced during the process of geothermal production.</p> <p>The law sets forth the rules and principles for rightful ownership of the resources, during the exploration and operational periods of the geothermal and natural mineral water resources that are/will be specified along with gases with geothermal origins, their turnover, abandonment, bid tendering and terminating the use of resources and protection and extraction of resources.</p>
Targets	None specified

Name of law	Law No. 5627 on Energy Efficiency Law [Legislative]
Date of entry into force	18 April 2007
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - REDD+ and LULUCF
Driver for	

implementation	Energy Efficiency, Climate Change
Summary of bill	<p>The purpose of this law is to increase energy efficiency, avoid waste, ease the burden of energy costs on the economy and protect the environment.</p> <p>It aims to do this by increasing and promoting energy efficiency in energy generation, transmission, distribution and consumption phases at industrial establishments, buildings, power generation plants, transmission and distribution networks and transportation, raising energy awareness and implementing training of citizens, and using renewable energy sources.</p> <p>One of the main aspects of the Energy Efficiency Law is the establishment of an administrative structure for efficient policy, monitoring, analysis, and projections of energy efficiency, through the creation of a General Directorate.</p> <p>The role of the General Directorate is to prepare and issue inventories and future projections for the development of energy efficiency, industrial establishments and buildings by region and sector, and annual reports containing facts and assessments for the public sector. This General Directorate also establishes and facilitates the framework for energy efficiency auditing, which is conducted on industry.</p> <p>The Energy Efficiency Law also sets out energy efficiency management legislation for industrial establishments, commercial buildings, service buildings or public sector buildings. It stipulates that these establishments are required to nominate one of their employees as an energy manager who will be responsible for compliance with energy efficiency legislation.</p> <p>An energy identity certificate is issued to building owners or managers by the Ministry of Public Works and Housing. The energy identity certificate holds information on the building's energy requirements, insulation characteristics, efficiency of heating and/or cooling systems, and energy consumption, and is an important component of the energy efficiency administrative process.</p> <p>The Energy Efficiency Law contains a regulation that lays down principles and procedures for standardized energy performance in residential, commercial and service buildings. The regulation contains norms, standards, minimum performance criteria, data collection and control procedures on architectural design, heating, cooling, heat insulation, hot water, electrical installation and lighting. For example, buildings with a central heating system are required to use systems that allow the distribution of heating costs based on the quantity of heat consumption by central or local heat or temperature control devices.</p> <p>On an industry specific level, a regulation within the law lays down the principles and procedures relating to increasing the efficiency of electric generation plants and transmission and distribution networks, demand side management, utilisation of waste heat in thermal plants, and it encourages the blending of fossil fuel distribution with fuels such as biofuel and hydrogen.</p> <p>Implementation of voluntary agreements with industry involves production efficiency targets, and is expected to increase energy efficiency by 10% over a three-year period.</p> <p>A regulation within the Energy Efficiency Law sets out stipulations on unit fuel consumption of vehicles manufactured in the country, raising efficiency standards in vehicles, rolling out mass transportation, installing advanced traffic systems for increasing energy efficiency in transportation.</p> <p>Training and awareness activities are considered under the Energy Efficiency Law, which aims to promote effectiveness of energy efficiency services and energy awareness. Activities are focused across producers, importers, and consumers, with practical and theoretical information available for all stakeholders.</p>
Targets	None specified

Name of law	Soil Conservation and Land Use Law (Law No 5403) [legislative]
Date of entry into force	19 June 2005
Categories	<ul style="list-style-type: none">- Adaptation- LULUCF- Institutional/Administrative arrangements
Driver for implementation	Land use and forestry regulation
Summary of bill	<p>This legislation has the purpose of protecting and improving soil quality, especially in areas deemed at risk of degradation due to climate change. It amends a number of existing laws and regulations by promoting sustainability and adaptation to climate change.</p> <p>The Ministry of Forest and Water Management is tasked with undertaking necessary measures by co-operating with related public agencies and institutions and non-governmental organizations on areas in which land degradation has been identified due to climate change or human settlement, agriculture or industrial activities.</p>
Targets	None specified

4.61 Ukraine



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	394
excl. LULUCF	402
Change from base year (1990)	- 528
Latest reporting year	2011
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 11 Jun 1992 Date of ratification: 13 May 1997 Date of entry into force: 11 Aug 1997
Kyoto Protocol ratification status and date	Date of signature: 15 March 1999 Date of ratification: 12 April 2004 Date of entry into force: 16 February 2005
2020 pledge	20% emission reduction from 1990 baseline
Flagship legislation	National Action Plan on Implementation of the Kyoto Protocol (2005)

Legislative Process

The principal source of Ukrainian law is the Constitution. Below the Constitution, the Ukrainian legal system is code-based. There are a number of codified laws in the main spheres of national legislation, such as the Civil Code, the Economic Code, the Criminal Code, the Land Code, the Family Code, the Customs Code, the Code of Civil Procedure, the Code of Criminal Procedure, the Labour Code, and the Air Code. The highest legislative body of Ukraine is the unicameral parliament, known as the Verkhovna Rada (Supreme Council). Its 450 members are elected by a national vote for a five-year term. The seats are allocated proportionally based on the parties that gain 3% or more in the national parliamentary elections.

The legislative process in the Verkhovna Rada has a number of stages. Initially, a legislative proposal is presented; if the proposal is accepted, a draft law is prepared by the government or a special parliamentary committee. Then, the draft law is introduced by the President, MPs, the Cabinet of Ministers, or the National Bank. The draft law is then submitted to relevant stakeholders, who present their proposals for improvement, or modification of the draft law. The law can be adopted in the first, second, and third reading. Once the law is voted and approved, it is submitted to the President. The President may exercise the right of veto and return the law to the Verkhovna Rada, but the veto can be overruled if the law is adopted at the repeated consideration by a 2/3 majority of the Verkhovna Rada (300 votes). Once the law is signed by the President, within 10 days it has to be included in the Unified State Register of Legal Acts, where it receives a registration code, and is published in the official media. The law comes into force 10 days after its official publication, if not otherwise stipulated.

The next layer of Ukrainian legislation is secondary legislation. Different normative acts are issued by the President, the Cabinet of Ministers, the National Bank, ministries and other state agencies within their specific sphere of competence in the form of decrees, resolutions, instructions and orders. These documents are mandatory.

Local state administrations and bodies of local self-government issue resolutions, orders, decisions etc. to ensure the observance of laws and freedoms of citizens, and the implementation of development programmes and regional budgets.

Approach to Climate Change

In 2009, at COP15, Ukraine made a 20% reduction pledge against 1990 and it agreed with the Copenhagen Accord under certain conditions. Specifically, Ukraine conditioned its acceptance to (i) having the agreed position of the developed countries on quantified emissions reduction targets of the Annex I countries; (ii) keeping its status as a country with an economy in transition and

relevant preferences arising from such status; (iii) keeping the existing flexible mechanisms of the Kyoto Protocol; (iv) keeping 1990 as the single base year for calculating Parties commitments; and (iv) using provisions of Article 3.13 of the Kyoto Protocol for calculation of the quantified emissions reduction of the Annex I countries of the Kyoto Protocol for the relevant commitment period.

Domestically, Ukraine has no national strategy on emission reduction of GHG. Instead, in 2005 Ukraine adopted a National Action Plan for Implementation of the Kyoto Protocol. The National Action Plan primarily focuses on the development of a GHG emissions inventory, of an absorption inventory and preparation for use of financial mechanisms. Following the National Action Plan, a whole body of other regulations were introduced to support Ukraine's climate policy. The key objective of the actions taken is to facilitate use of financial mechanisms under the Kyoto Protocol. Particularly, significant attention is given to implementing joint implementation (JI) projects and emission trading schemes (ETs).

Ukraine's climate change agenda is guided by the Ministry of Environmental Protection, and by the Ministry of Fuel and Energy. Within the Ministry of Environmental Protection, a State Environmental Investment Agency (SEIA) – previously National Environmental Investment Agency (NEIA) – was created through the Regulation 977 of June 30, 2007. Among its missions the Agency is in charge of implementing JI projects, establishing a national ETS, and establishing a green investment scheme. The Ministry of Fuel and Energy is responsible for formulating strategy and policy for the country's energy sector. The Ministry is supported by the National Energy Regulatory Commission (NERC). NERC is responsible for the national Wholesale Electricity Market, as well as markets for oil, gas and oil products. NERC also oversees the state policy implementation, and sets heat and electricity tariffs.

Energy security and support to renewable energy have been part of Ukraine's agenda since the mid-1990s. In 1996 Ukraine developed its first energy strategy, the National Energy Programme of Ukraine to 2010. This 1996 National Energy Strategy and the 1997 Cabinet of Ministers' Programme for State Support of Non-Traditional and Renewable Energy Sources set a target of 10% of domestic energy demand to be derived from non-traditional and renewable energy by 2010. In the following years several governmental programmes outlined medium-term policies in various sub-sectors: Creation of a Nuclear Fuel Cycle (1994); Development of Hydrocarbon Resources in the Ukrainian Sector of the Black and Azov Seas (1996); Energy Conservation (1997); Construction of Wind Power Stations (1997); Oil and Gas of Ukraine until 2010 (2001) and Thermal Power Plant Reconstruction (2002).

In 2003 the government adopted a Law on Alternative Energy Sources. This law defined the legislative, economic, ecological and organizational framework for the use of renewable and non-traditional energy. To help promote the share of renewable energy in the national energy mix, in 2005 the government established the National Agency for the Effective Use of Energy Resources (NAER). NAER is responsible for improving legislative frameworks to promote

energy efficiency, creating a system of national energy efficiency standards as well as implementing a system to monitor efficient use of fuel resources in the country.

Another important step in promoting energy efficiency in Ukraine was the adoption in March 2006 of Ukraine's Energy Strategy to 2030. The Energy Strategy to 2030 outlines the strategic objectives for energy sub-sectors. Its broad objectives are to create favourable conditions for meeting energy demand, increase energy security, reduce the impact of the energy sector on the environment, reduce the cost of energy production, integrate Ukraine's energy system into the European energy system, and strengthen Ukraine's position as an oil and gas transit nation. The Energy Strategy to 2030 calls for a 50% reduction in energy intensity by 2030.

Carbon pricing

Among the former Soviet Union countries Ukraine became the most successful in accessing the Kyoto Protocol market mechanisms. Ukraine is currently the largest Emissions Reduction Units (ERU) supplier, with 184 registered JI projects and a total of 130 million issued ERUs. The procedure of drafting, review, approval and implementation of JI projects was established in 2006. Following this act, the Cabinet of Ministers issued different Orders establishing the requirements for the preparation of JI projects. Ukraine is also the fourth largest Assigned Amount Unit (AAU) seller by volumes, with 47 million AAUs contracted between 2008 and 2012. The Ukrainian Green Investment Scheme (GIS) became operational in 2010, with the first batch of projects approved in November 2010.

The success of the carbon markets motivated the government to seek to introduce an ETS in Ukraine. This process received the support of the EU, the European Bank for Reconstruction & Development and the World Bank. Four draft laws on emissions trading were submitted to the Verkhovna Rada. The first, in 2009, attempted to introduce the general concept of "environmental markets". The second, in the same year, dealt more specifically with the introduction of an ETS scheme. The third, in 2010, envisaged the introduction of the first National Allocation Plan in 2017, and the launch of a domestic ETS from 2020.

These three draft laws were replaced by a fourth draft law on the regulation of energy efficiency, submitted to the Fuel and Energy Committee in October, 2010. This draft law envisaged a first pilot phase of the scheme from 2013 to 2015, and the second phase from 2016 to 2020. Under the draft law, the National Allocation Plan was to be prepared by SEIA. The draft law also proposed a Monitoring, Reporting and Verification system and a registry system, and it made clear that Ukrainian ETS would link to other trading schemes. In October 2010, the draft law was approved by the Parliament in first its reading, and recommended for further elaboration. A few months later, however, SEIA found itself struggling to remain compliant under the Kyoto Protocol as concerns were raised over its handling of the national GHG inventories. In October 2011 the Kyoto Protocol's compliance committee suspended Ukraine from carbon trading.

The fall-out from the compliance proceedings distracted SEIA from the work on the draft law.

In the meantime, the government implemented a wide-reaching administrative reform and the parliament passed new budgetary and taxation legislation, which required significant reworking of the draft law. However, the rules of procedure of the Ukrainian Parliament make the introduction of changes into a draft law for the second reading procedurally impossible. For this reason, two motions to withdraw the draft law were made to the Parliament. The motions have not yet been approved, but it is expected that the draft law will be withdrawn.

Nevertheless, the obligation to develop proposals for the introduction of an ETS remains in Government's plans. In particular, two instruments include carbon markets within the implementation of the National Action Plan for Environmental Protection for 2011-2015. With such an end, SEIA is working on a new draft law on emissions trading. Collaborating with the World Bank, through the Partnership for Market Readiness project, SEIA is focusing its efforts on developing an improved carbon tax supported by a Monitoring, Reporting, Verification (MRV) framework as a first step towards the ETS. Under the proposed approach, the discussions of the ETS on the national level would begin in 2015.

Energy demand

Ukraine's energy intensity is three times higher than the EU average and is the key driver of GHG emissions in the country. The only countries with more energy intensive economies are the oil producers of the Middle East. While Ukraine's energy efficiency has improved at a rate of 4-6 percent per year, from 1 kg of oil equivalent per unit of purchasing power parity adjusted GDP in 1999 to 0.5 kg in 2006, it remains at a level similar to that of Poland in the early 1990s. Such poor energy intensity is attributable, in part, to historically low energy prices, especially for natural gas, which biased the incentives in favour of inefficient and energy intensive technologies.

NAER, the National Agency for the Effective Use of Energy Resources, established in December 2005, is in charge of guiding the government's policy on energy efficiency. NAER is also responsible for securing an increase in the share of non-traditional and renewable energy production; establishing a state system to monitor energy production, consumption, exports, and imports; improving the system of registering and controlling energy consumption; and ensuring the functionality of the system of industrial energy consumption norms.

The most important national policy in managing the energy demand is the 2030 Energy Strategy mentioned previously, which establishes targets to reduce the energy intensity of GDP by 20% in 2016 compared to 2008; reduce energy intensity of GDP by 50% by 2030; reduce electricity consumption for transportation through power grids from 14.7% in 2005 to 8.2% by 2030.

Energy supply

Primary energy supply in Ukraine is dominated by natural gas at 41% of the total. While its consumption has been decreasing in recent years, coal and nuclear power are expected to account for a larger share. Renewable energy, mostly hydropower, accounts for about 4% of Ukraine's supply of primary energy. Trying to change this profile, in addition to the targets of reducing energy intensity, the 2030 Energy Strategy established a target of increasing the share of renewable energy sources in the overall fuel and energy balance from 3% to 10% by 2030.

To stimulate the operation and development of renewable energy sources in Ukraine, a "green" tariff, or special feed-in tariff was introduced in 2009. The feed-in tariff for green projects in Ukraine is one of the highest in the world, which makes investment into this sector attractive. In 2012, more than 90 companies generating electricity from renewable energy sources in Ukraine applied the green tariff. NERC establishes green tariffs for each company that generates electricity from renewables and for each type of renewable sources: wind, solar, biomass, small hydroelectric power plants (i.e. generating capacity not exceeding 10 MW). Green tariffs are established until 1 January 2030 and are reviewed by the NERC on a monthly basis with a guaranteed "minimum floor" set in Euros. Green tariffs are applied to new construction projects as well as existing renewable energy plants. The green tariff for 2009 is approximately EUR65-EUR113/MWh (USD88.3-153.6) for wind power, €427-€465/MWh (USD580.4-632) for solar power, €124/MWh (USD168.5) for biomass and €77.5/MWh (USD105.3) for small hydropower plants.

In 2005 Ukraine established an energy co-operation initiative with the European Commission. This co-operation was established through a Memorandum of Understanding entered between the EU and Ukraine, which establishes a joint strategy towards the integration of the Ukrainian and the EU energy markets. This consists of road maps covering nuclear safety, the integration of electricity and gas markets, security of energy supplies and the transit of hydrocarbons, and the coal sector.

Adaptation

Adaptation studies and initiatives are incipient in Ukraine. The government is starting to consider practical guidance and background information on how to undertake adaptation activities. In a 2012 OSCE Report commissioned by the government, there is a brief description of the expected climate impacts and vulnerabilities for Ukraine over the short and medium term. In 2013 the SEIA reported that a national climate change adaptation plan should be sent to the Cabinet of Ministers for consideration. According to the agency, the plan will concern all economic sectors, including agriculture, energy and healthcare.

REDD+ and LULUCF

In Ukraine, forest management is organised on the basis of the State Programme "Forests of Ukraine", approved by the Cabinet of Ministers in 2009. The Programme aims to improve forest conditions and quality, ecological and protective functions, and forest productivity. The expected outputs of the

Programme are an increase in forest covered areas of 0.5 million ha, in forest cover from 15.6% to 16.1%, and in growing stock by 16.7%. These targets imply the adoption of carbon capture using land use, land use change and forestry mechanisms.

Ukraine: Flagship Legislation

Name of law	National Action Plan on Implementation of the Kyoto Protocol, adopted through Resolution 346-p of the Cabinet of Ministers [Executive]
Date of entry into force	18 August 2005
Categories	<ul style="list-style-type: none"> - Carbon pricing - Adaptation - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	<p>The National Action Plan on the Implementation of the Kyoto Protocol is directed at addressing the following tasks:</p> <ul style="list-style-type: none"> - Improve the national GHG emission and absorption assessment system - Prepare and submit in a timely fashion to UNFCCC Secretariat of GHG emission and absorption reports - Create favourable conditions to implement the "flexible mechanisms" of the Kyoto Protocol in Ukraine - Create a national GHG emission and absorption reporting system - Develop regulatory and legislative documents for GHG emission and absorption quantity regulation - Establish a GHG emission units forecast for the period to 2012 - Maintain databases for joint execution of projects - Prepare and publish national reports on climate change issues - Develop National plans on adaptation and climate change impact mitigation - Guarantee Ukraine's participation in UNFCCC Conferences of the Parties - Evaluate GHG emission reduction potential to 2020, strategic forecast and the assessment of climate change impact on various economy sectors, on the population and ecosystems - Create a data bank on ecologically safe technologies that allow reducing emission volumes and increasing GHG absorption volumes - Implement measures on training and qualification improvement within the scope of UNFCCC and the Kyoto Protocol, for state employees, preparing personnel, and informing the public on climate change issues <p>The Resolution was amended by the Resolution 272 of the Cabinet of Ministers, , of 5 March 2009, which presented a revised time frame for the implementation of the National Plan for the Implementation of the Kyoto Protocol.</p>
Targets	None specified

Ukraine: Other Relevant Legislation

Name of law	Law No. 74/94-VR on Energy Saving [Legislative]
Date of entry into force	7 July 1994
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand

- Research and Development
- Institutional/Administrative arrangements

Driver for**implementation** Energy efficiency; energy security

Summary of bill The law on Energy Savings regulates energy relations between economic entities, and between the state and the corporations and individuals in the field of energy, associated with extraction, processing, transportation, storage, production and use of energy resources, interest of companies organisations and individuals in energy saving, energy-saving technologies, developing and producing less energy machinery and technological equipment, fixing the liability of legal entities and individuals in the field of energy efficiency (Article 1).

It sets up legal, economic, social and ecological grounds for energy saving for all enterprises, associations and organisations in Ukraine. It considers as energy saving the activities (organisational, scientific, practical, information), aimed at sustainable use and economical consumption of primary and transformed energy and natural energy resources in the national economy and is carried out through technical, economic and legal methods (Preamble).

The law establishes energy efficiency and energy saving plans and methods to lower energy demand, decrease energy costs and increase energy security. These plans and methods should be established and executed on national as well as on local levels. The law requires the creation of a legislative framework supporting energy saving (e.g. tax reliefs, grants). It also determines that the government will support scientific research on energy saving processes and technologies. In order to finance measures for efficient use and economy of fuel and energy resources, state and local authorities are obliged to create appropriate budget (energy saving funds).

This law was amended twice: Law 783-XIV, of 30 June 1999, provides more detailed mechanisms for financing energy savings from governmental budget; and Law 2509-IV, of 5 April 2005, incorporates regulations on combined heat and power (CHP) and waste energy potential (see below).

Targets None specified

Name of law Law No. 1391-XIV on Alternative Fuels [Legislative]

Date of entry into force 14 January 2000

Categories

- Energy supply
- Energy demand
- Transportation
- Research and Development
- Institutional/Administrative arrangements

Driver for**implementation** Energy efficiency; energy security

Summary of bill The law introduces the framework for financial mechanisms to stimulate biofuels and other alternative fuels in order to save energy resources and reduce Ukraine's dependence on imports. It defines alternative fuels as the solid, liquid or gaseous fuels, which are an appropriate alternative to traditional fuels and which are produced from unconventional sources and types of energy resources. It aims at reducing environmental impact by using as a raw material for the production of alternative fuels of various kinds of waste. The law foresees support to the development of scientific and technical basis of production of alternative fuels, as well as support of entrepreneurship. It aims to prevent the creation of artificial monopolies of alternative fuels.

The law was amended twice, in 2009 and 2012. Law No. 1391-VI of 21 Mai 2009 announced introduction of biofuels blending mandates in Ukraine in years to come in order

to steadily increase biofuels share in fuels consumption mix. Law 4970-VI of 19 June 2012 introduced a gradual increase in the share of an established production and use of biofuels and blended motor fuels.

Targets Stimulate the use of alternative fuels to 20% of the total amount of fuel consumption in Ukraine in 2020. Establishes the amount of ethanol content in gasoline produced and sold in Ukraine: recommended content not less than 5% (by volume) in 2013; mandatory content not less than 5 % (by volume) in 2014-2015; and mandatory content of not less than 7% (by volume) from 2016.

Name of law	Law 555 -IV on Alternative Energy Sources [Legislative]
Date of entry into force	20 February 2003
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - Transportation - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Energy efficiency; energy security
Summary of bill	<p>Defines the legal, economic, environmental and organizational principles of alternative energy sources and promoting their use in the energy sector. Its aim is to increase production and consumption of energy produced from alternative sources, in order to conserve traditional energy resources and reduce dependence on imports Ukraine by restructuring production and efficient consumption of energy by increasing the proportion of energy generated from alternative sources.</p> <p>The law was amended by the Law 601-VI of 25.09.2008, which defined <i>alternative energy</i> as "renewable energy, which includes solar energy, wind, geothermal, wave energy and tidal, hydropower, biomass, gas from organic waste, gas, sewage treatment plants, biogas and secondary energy resources, which include blast furnace and coke gas, methane gas drainage from coal deposits, converting waste energy potential of technological processes." In addition to these laws, a presidential decree of September 2003 announced measures to stimulate the production of fuel ethanol, biodiesel and biogas.</p>
Targets	Article 9 requires that the government stimulates the production and consumption of energy produced from alternative sources through economic instruments and incentives, as well as favourable economic conditions for the construction of alternative energy.

Name of law	Law 2509-IV on Combined Heat and Power (cogeneration) and Waste Energy Potential [Legislative]
Date of entry into force	5 April 2005
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - Transportation - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Energy efficiency; energy security
Summary of bill	The Law defines the legal, economic and organizational principles of business relations in energy with respect to the use of cogeneration, regulates the relations connected to the

	energy generation, transmission and supply of electricity and heat from cogeneration plants.
	It creates a legislative framework and to facilitate improvement of energy efficiency during energy production processes; development and application of combined heat and power (CHP) technologies; improvement of reliability and security of supply; investment in the creation of the CHP plants in Ukraine.
	Amended by the Law 2592-VI of 07.10.2010, Code 2755-VI of 02.12.2010, Law 2856-VI of 23.12.2010, and Law 3610-VI of 07.07.2011
Targets	None specified

Name of law	Law 601-VI on Green Tariff (Feed-in Tariff) [Legislative]
Date of entry into force	25 September 2008
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - Institutional/Administrative arrangements
Driver for implementation	Energy efficiency; energy security
Summary of bill	Amends Law 575/97-VR on Electric Power Industry. Defines green tariff as the special rate to purchase electricity produced by through alternative energy sources. A consumer's body authorized by the Cabinet of Ministers issues a document confirming the purchase of energy generated from alternative energy sources.
Targets	The wholesale electricity market must buy the green tariff electricity from alternative energy sources, and sell it directly to consumers or energy supplying companies.

Name of law	Law 1391-VI on Promotion of Biological Fuels Production and Use [Legislative]
Date of entry into force	21 May 2009
Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - Transportation - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Energy efficiency; energy security
Summary of bill	<p>The main objectives of Law 1391-V are to save fossil fuels decrease Ukraine's dependency from energy imports, increase its energy security and decrease the negative impact on the environment caused by burning fossil fuels. These four objectives will be achieved via promotion of biofuels.</p> <p>The Law introduces a definition of biofuels and its types (bioethanol, biogas, biomass, biodiesel, etc.). Companies can engage in production and sale of biofuels. Biofuel types designed for sale as market products are subject to certification (except for products for own consumption). During the sale, the producer is obliged to present to the buyer documentation confirming the quality of the fuel. Production of bioethanol can be conducted by licensed entities of which the Cabinet of Ministers keeps a registry.</p>
Targets	None specified

4.62 United Arab Emirates (UAE)



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	120
excl. LULUCF	130
Change from base year (1990)	NA
Latest reporting year	2000
Importance as an emitter	Top 50
UNFCCC accession status and date	Date of signature: NA Date of accession: 29 December 1995 Date of entry into force: 28 March 1996
Kyoto Protocol ratification/accession status and date	Date of signature: NA Date of accession: 26 January 2005 Date of entry into force: 26 April 2005 Doha Amendment ratification: 28 April 2013
2020 pledge	No pledge made
Flagship legislation	No flagship legislation

Legislative Process

The United Arab Emirates was established in 1971 as a federation of seven emirates - Dubai, Abu Dhabi, Ajman, Fujairah, Ras Al Khaimah, Sharjah and Umm Al Quwain. They are governed by a Federal Constitution. The constitution declares the Islamic law, the Shari'a, as a major source of law. The legal system is based on the Shari'a courts as well as on civil courts. In May 1996, the UAE provisional constitution was made permanent.

The Federal Government structure comprises five bodies: the Federal Supreme Council (legislative), President, Council of Ministers (executive), Federal National Council and Federal Judiciary.

The Federal Supreme Council (FSC), composed of the rulers of the seven emirates, is the highest legislative, executive, and constitutional authority in the land – it elects the President and the Vice-President, approves nomination of the Prime Minister, and ratifies federal laws and decrees. The Federal National Council (Majlis al-Ittihad al-Watani) serves in an advisory capacity only.

The President has a wide range of legislative and executive powers, including signing laws, decrees and decisions approved and sanctioned by the Supreme Council, supervising their implementation through the Council of Ministers, and ratifying treaties and international agreements approved by the Supreme Council and Council of Ministers. The ruler of each emirate also has extensive, near-sovereign regulatory powers within the emirate.

Approach to Climate Change

The UAE government was one of the first in the region to publicly recognise climate change and call for decarbonisation. On the international stage, the UAE acceded to the Kyoto Protocol in 2005 as a non-annex 1 member, and was the only Gulf Co-operation Council (GCC)¹⁴ country to associate with the Copenhagen Accord in 2010. It ratified the Doha Amendment defining the second Commitment Period of the Kyoto Protocol in April 2013, the first country to do so. Domestic GHG mitigation is principally addressed through energy efficiency and supply diversification measures, many of which are captured in the UAE's Third National Communication to the UNFCCC, submitted in August 2013.

At the federal level, the Green Growth Strategy is the primary decarbonisation framework. Led by the Ministry of Environment and Water, the Prime Minister's Office, and the Ministry of Foreign Affairs, Directorate of Energy and Climate Change (which has both the UNFCCC portfolio and a domestic policy support role), the Strategy sets out proposed policies and targets across key sectors to decouple economic growth from GHG and other emissions and will be submitted to the Cabinet in early 2014.

¹⁴ United Arab Emirates, Bahrain, Saudi Arabia, Oman, Qatar and Kuwait

As one of the earliest federal mitigation measures, the UAE was the first country in the region to ban gas flaring. In the last several years, the Emirates Standardisation and Metrology Authority also enacted federal performance standards for a growing number of appliances. Air-conditioners were targeted first as cooling can constitute up to 60% of demand, with the new standards eliminating the lowest performing 20% of units in the market.

Given the federal structure of the UAE, however, most mitigation action takes place on the emirate-level. There is very little legislation, federal or sub-national, but rather programmes and projects.

The UAE actively promotes clean energy as a form of mitigation on the international level, both in development assistance and commercial investment. Through the Ministry of Foreign Affairs, the UAE is the host of the International Renewable Energy Agency (IRENA), the principal global platform for renewable energy co-operation, with 163 member countries. It serves as the hub of the UN Sustainable Energy for All initiative, which seeks to double the global share of renewable energy by 2030. IRENA is the first major intergovernmental organisation to be headquartered in the Middle East.

The Abu Dhabi Fund for Development has committed USD 350 million for a joint soft loan facility with IRENA, which will disburse its first round of funding in January 2015 for renewable energy projects in developing countries. The facility builds on the Abu Dhabi Fund for Development's record of providing over USD 135 million in concessional finance for energy access, renewable energy, and energy efficiency projects in developing countries between 2000 and 2011.

The UAE has furthermore begun integrating mitigation into its overseas development assistance, notably through its pioneering programme in renewable energy.

Established in March 2013, the UAE-Pacific Partnership Fund also commits USD 50 million in grants for renewable energy projects in Pacific island countries, to be disbursed over three years. In December 2013, projects with Fiji, Kiribati, Samoa, Tuvalu, and Vanuatu were announced.

Adaptation

UAE climate impact studies show an extensive risk of coastal inundation, severe water supply shortages and biodiversity reduction. The Ministry of Environment and Water leads on adaptation measures federally, with Environment Agency Abu Dhabi notably involved on the emirate-level.

Sub-National Activity

In Abu Dhabi, mitigation programmes are guided variously by the Executive Affairs Authority, Abu Dhabi Water and Electricity Authority, Environment Agency Abu Dhabi, Urban Planning Council, Regulation and Service Bureau, and Municipality.

In the emirate of Dubai sustainable energy policy is set by the Dubai Supreme Council of Energy, a policymaking body comprised of the emirate's largest energy producers and consumers, which has set a regional benchmark with its co-ordinated clean energy initiative.

Energy Supply

The emirate of Abu Dhabi established the first renewable energy target in the region (7% generation capacity by 2020) and in 2013 brought on the first 100 MW of capacity in the Shams 1 project, the world's largest concentrated solar plant. Solar PV, wind, and waste-to-energy projects are currently in the development pipeline. Masdar and Environment Agency Abu Dhabi are also piloting solar desalination to address the emirate's large gas expenditure to supply water. Abu Dhabi is also presently constructing 5.4 GW of carbon-free nuclear energy, marking a USD 40 billion investment. New reactors are on schedule to be commissioned each year between 2017 and 2020.

Abu Dhabi is also undertaking decarbonisation of traditional fuel supplies. In 2013, a contract was signed for the region's first commercial-scale carbon capture and storage project, one of the few proceeding globally. A partnership between Masdar and ADNOC, the project will reinject 800,000 tonnes of industrial carbon emissions annually.

The emirate of Dubai is committed to 1,000 MW of solar power by 2030 and recently brought online the first phase of 13 MW. A tender for 100 MW will go out in the first half of 2014.

In the emirate of Sharjah, the public-private waste management company Bee'ah is planning a waste-to-energy facility, and the emirate of Ras Al Khaimah is reviewing options for solar power.

Energy Demand

Abu Dhabi in 2010 enacted Estidama, the first mandatory building performance standards and rating system in the region, administered by the Urban Planning Council. Applied to all new buildings and public landscaping in the emirate, its minimum compliance level yields savings of over 30% on water and energy consumption. Abu Dhabi Municipality has also issued the first specifications for public lighting in the Middle East, with estimated energy savings of 67% and carbon savings toward 80% compared to business as usual.

Abu Dhabi's flagship sustainability project, bringing together renewable energy and energy efficiency, is Masdar City, which provides a blueprint for decarbonisation of cities through passive design features, mixed-use zoning, solar power, smart grid features, and electric vehicles, among other technological and design innovations.

In 2013 alone, the UAE through Masdar additionally executed grant-funded projects in Mauritania (15 MW of solar), Seychelles (6 MW of wind), and Afghanistan (solar home systems for remote communities).

On the commercial side, Masdar has brought online major renewable projects in Europe, including the London Array in 2013 (the world's largest offshore wind farm) and Gemsolar in Spain (a solar plant with advanced storage technology), and is a partner in a forthcoming 117 MW wind farm in Jordan. Masdar Capital has also invested USD 540 million of venture capital in next-generation clean energy technologies. The UAE-backed sovereign wealth fund has also entered the clean energy space, with projects and bids in Morocco and India.

In Dubai, the Supreme Council of Energy has set a target of reducing energy consumption by 30% by 2030, to be realised through a series of government interventions. In 2011, tariff reform, some of the most progressive in the region, set cost-reflective prices, and in 2014, green building codes will become mandatory. The emirate in 2013 also established the first policy framework for energy service companies and began a retrofitting programme targeting 2,000 buildings per year.

As part of the Supreme Council of Energy, created with UNDP, the Dubai Carbon Centre of Excellence develops and supports decarbonisation projects under the Clean Development Mechanism.

Water Efficiency

Owing to the extremely low rainfall (<120mm /yr) and the increasing scarcity and salinity of groundwater resources, almost all water supplied into the distribution system is produced through gas-fired cogeneration power and desalination plants, with attendant repercussions for water security, cost, and carbon emissions. The UAE government has consequently set water efficiency as a leading priority.

As of 2011, the Abu Dhabi government has phased out subsidies for certain livestock feed crops that consume 60% of water used for agriculture and up to 33% of total water consumption. Pilot programmes have been running for several years to confirm climatically appropriate alternatives, and a training and subsidy programme for crop transition is in place.

Water efficiency standards are moreover inscribed in the new mandatory building codes, including Estidama. Mandatory and government-funded free installation of water-saving devices in homes, offices, and public buildings in Abu Dhabi is estimated to cut up to 20% of non-agricultural water consumption. Additionally, softscapes in building projects will be limited to 30% of surface area, and all plants must meet salinity and drought-resistance standards issued in 2011.

Recycled water will also be increasingly utilised under new policy approaches. Currently, 60% of treated waste water in Abu Dhabi is reused, but a new pipe network, to be completed by 2013, will enable 100% utilisation.

The Dubai Integrated Energy Strategy 2030 has similarly set targets for use of efficient water dispensers in households, irrigation, and commercial buildings to

reduce water demand. Re-use of grey water is being assessed to reduce reliance on desalinated water.

Transportation

The UAE has invested significantly in public transportation networks in Dubai and Abu Dhabi. A freight rail network, crossing all seven emirates and integrated into the GCC network, is planned to be in place by 2017. Investment is expected to total roughly USD 11 billion.

Collectively, Dubai recorded 367 million public transportation uses in 2012. In 2009 Dubai opened a multi-billion dollar light-rail/metro system and continues to construct new lines. In Abu Dhabi, the city bus network has expanded its scope and ridership rapidly. The city is also planning to introduce a metro system.

Research and Development

The UAE has partnered with two world-class technical universities to bring low-carbon energy and sustainability education to the UAE and region. The graduate-level Masdar Institute is a collaboration with the Massachusetts of Technology and introduced the region's first programmes in clean energy and water.

The sovereign wealth fund Ras Al Khaimah Investment Authority has similarly partnered with L'École Polytechnique Fédérale de Lausanne, to develop a clean-tech campus in the northern emirate of Ras Al Khaimah.

UAE: Flagship Legislation

The UAE currently have no flagship climate legislation.

UAE: Other Relevant Legislation

Name of law	Federal Law No. 6 Regarding the Peaceful Uses of Nuclear Energy (Legislative)
Date of entry into force	2009
Categories	<ul style="list-style-type: none"> - Energy supply - Research and Development - Institutional/Administrative arrangements
Driver for implementation	Nuclear energy; energy security
Summary of bill	<p>The law establishes the independent Federal Authority of Nuclear Regulation (FANR) to oversee the country's nuclear energy sector, and appoints the regulator's board.</p> <p>All regulated activities are prohibited except in accordance with a licence issued by FANR:</p> <ul style="list-style-type: none"> - nuclear facilities; and - regulated material (radioactive material / radiation generators) <p>The licensees' responsibilities are defined in this manner: "Each Licensee shall be</p>

responsible for taking all steps necessary to reduce the risk of an accident to a level that is as low as reasonably achievable.”

Targets None specified

Name of law UAE Energy Efficiency Standardization and Labelling Scheme (Legislative)

Date of entry into force April 2013

Categories – Energy Demand

Driver for implementation Energy efficiency

Summary of bill The regulation introduces a mandatory efficiency labelling and star rating to domestic appliances. Air conditioners were the first to enter the labelling scheme; washing machines followed after legislation in April 2013. The legislation should soon include cooling and refrigeration products, lights, water heaters, motors and water pumps.

Targets None specified

4.63 United Kingdom



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	553
excl. LULUCF	556
Change from base year (1990)	-214
Latest reporting year	2011
Importance as an emitter	Top 20
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 8 December 1993 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 29 April 1998 Date of ratification: 31 May 2002 Date of entry into force: 16 February 2005
2020 pledge	Statutory domestic target requires cuts of at least 34% in all GHGs by 2020 and at least 80% by 2050 (both from 1990 levels)
Flagship legislation	Climate Change Act

Legislative Process

Parliament is the centre of the political system in the United Kingdom. It is the supreme legislative body and the government is drawn from and answerable to Parliament. Parliament is bicameral, consisting of the House of Commons and the House of Lords.

Draft bills are issued for consultation before being formally introduced to Parliament. A bill is a proposal for a new law, or a proposal to change an existing law that is presented for debate before Parliament. Bills are introduced in either the House of Commons or House of Lords for examination, discussion and amendment. When both Houses have agreed on the content of a bill, it is then presented to the monarch for Royal Assent. Once Royal Assent is given, a bill becomes an Act of Parliament and is law. An Act of Parliament creates a new law or changes an existing law.

Government White Papers set out details of future policy on a particular subject. A White Paper will often be the basis for a bill to be put before Parliament and allows the government an opportunity to gather feedback before it formally presents the policies as a bill.

Approach to Climate Change

The UK has taken a mixed legislative and policy-based approach to climate change, with legislation setting targets and the framework for action, underpinned by policy. The UK began to introduce policies to tackle GHGs emissions in the early 2000s. In 2001, it introduced a Climate Change Levy that applies to electricity, gas, solid fuel and liquefied gases used for lighting, heating and power in the business and public sectors. Complementing the levy, under the Climate Change Agreements that took effect in 2001, energy intensive business users are allowed to receive a discount from the levy of up to 90% if they meet energy efficiency or carbon saving targets. This measure was extended in time and sectoral coverage in 2004 and 2007.

In 2006, the publication of the Climate Change Programme outlined all of the UK policies and programmes to tackle climate change, including several measures relating to energy efficiency. The 2006 Programme included a package of new and existing measures, which were projected to reduce CO₂ emissions to 15–18% below 1990 levels by 2010 and work towards the longer term goal to reduce CO₂ emissions by 60% by 2050, as set out in the Energy White Paper (2003). In 2006, the UK government approved the Climate Change and Sustainable Energy Act, which placed an obligation on the Department for Environment, Food and Rural Affairs (Defra) to report to Parliament on GHG emissions in the UK and actions taken by government to reduce these emissions. The first report was put to Parliament in 2007. The legislation also established a scheme to promote national targets for micro-generation and provided for reporting on the energy efficiency of residential accommodation.

These policies, together with the elevation of climate change as a political issue during and after the 2005 Gleneagles G8 Summit, prepared the ground for the UK's flagship legislation on climate change – the 2008 Climate Change Act. This law, passed with the support of all major political parties (just 5 MPs voted against), puts the UK's emissions reduction target into legislation (toughened by Parliament to “at least 80% below 1990 levels by 2050”), created five-yearly carbon budgets to help ensure a cost-effective trajectory towards the long-term goal, and set up the independent Committee on Climate Change to advise the government on the policies and measures needed to meet the targets. It was the first law in the world to set statutory GHG reduction targets.

The first three five-year carbon budgets (for 2008-2012, 2013-2017 and 2018-2022) were set in law in 2009 and, in 2011 in line with the requirements set out in the Climate Change Act, the government proposed, and Parliament approved, the level of the fourth carbon budget, from 2023–2027. The level was set at 1,950 Mt CO₂-equivalent, in line with the Committee on Climate Change's recommendations, putting into law a target of a 50% reduction from 1990 levels by 2027 (consistent with the target to reduce emissions by 60% from 1990 levels by 2030 and by at least 80% by 2050).

Another important backbone of climate policy in the UK is the transposition in national legislation of EU Directives. Most notable is the European Union Emission Trading Scheme, which covers installations responsible for around 50% of GHG emissions in the EU and puts a price on carbon. Other EU Directives include the Energy Performance of Buildings Directive, the Industrial Emissions Directive and the EU Eco-Design Directive.

Since the introduction of the Climate Change Act, the government has introduced a number of laws, policies and measures to support the achievement of the targets contained in the Act.

The 2009 UK Low Carbon Transition Plan outlined how the British economy will be transformed to ensure the UK meets its emission reduction targets and its first three 5-year carbon budgets.

In 2011, it was announced that a Green Investment Bank would be set up with an initial capitalisation of GBP 3 billion (USD 4.9 billion). The Bank was officially launched in 2012 and will have borrowing powers from 2015/16.

Also in 2011, Parliament passed the Energy Act, which has three principal objectives: tackling barriers to investment in energy efficiency (including via the Green Deal that provides up-front finance for investments in energy efficiency in the home; enhancing energy security; and enabling investment in low carbon energy supplies.

Additionally, the UK Government published a White Paper on Electricity Market Reform (EMR). The Energy Bill, which implements EMR, was introduced to Parliament in 2012 and received Royal Assent in December 2013.

EMR is a package of measures which will help incentivise up to GBP 110 billion (USD 180.1 billion) of further investment required over the coming decade to the UK's ageing energy infrastructure with a more diverse and low-carbon energy mix to help ensure that the UK has future security of electricity supply and meets its climate and renewables targets in a way that minimises costs to consumers. Key elements of the reform package include:

- The introduction of Contracts for Difference (CfDs), long-term contracts to provide stable and predictable incentives for companies to invest in low-carbon electricity generation, including renewables, nuclear and carbon capture and storage;
- The introduction of a Capacity Market, to ensure security of electricity supply; The Capacity Market works by providing regular payments to capacity providers (both demand and supply), in return for which they must be available and producing energy (or reducing demand) when the system is tight, or face penalties;
- A Carbon Price Floor (established in April 2013) of GBP 16 (USD 26.2) per tonne from 2013 rising to GBP 30 (USD 49.1) per tonne in 2020 to reduce investor uncertainty, providing a stronger incentive to invest in low carbon generation now;
- An Emissions Performance Standard (EPS) set at 450g CO₂/kWh to reinforce the requirement that no new coal-fired power stations are built without CCS, but also to enable short-term investment in gas.

The government has recently consulted on the detailed proposals for implementation of EMR, ahead of regulations coming into force in summer 2014. In December 2013 the EMR Delivery Plan was published, which includes details of the level of support for renewable technologies under Contracts for Difference, and an outlook to 2030 illustrating different decarbonisation trajectories and technologies scenarios.

The EMR programme is on track for delivery in 2014. The first early CfDs (in the form of investment contracts) are expected to be signed in spring, with the first CfDs under the enduring regime signed later in the year. DECC has also confirmed its intent to run the first capacity auction this year, for delivery of capacity in winter 2018-2019 (subject to state aid approval).

Carbon Pricing

The UK, as a Member State of the European Union, participates in the EU's flagship policy to reduce GHG emissions and encourage investment in low carbon energy – the EU Emissions Trading System (EU ETS), which covers around 11,000 energy-intensive industrial installations throughout Europe including power stations, refineries and large manufacturing plants.

In the UK the legal framework for the EU ETS is set out in the EU ETS Directive and UK GHG Emission Trading Scheme Regulations.

The UK has around 1,000 EU ETS participants. UK sectors covered by the ETS (the traded sector) are expected to account for around 45% of the reduction in the

economy-wide emissions cap (for traded and non-traded sectors) over 2013-2020.

The EU ETS therefore plays a key part in ensuring the UK complies with its legally binding carbon budgets, which will in turn help the UK reduce its emissions to at least 35% (below 1990 levels) in 2020 and 80% by 2050, as set out in the Climate Change Act 2008.

In April 2013, given the relatively low price of carbon in the EU ETS and the resulting lack of a strong incentive to invest in low carbon technologies, a carbon price floor (announced in the 2011 Budget) was introduced. The price was initially set at GBP 16 (USD 26.2) per tonne rising to GBP 30 (USD 49.1) per tonne in 2020. The aim is to give investors greater certainty and reduce the risk of low carbon investments.

Energy Demand

The UK has an extensive set of legislation and policies addressing energy efficiency and promoting a low carbon energy network. In 2001 the Carbon Trust, an independent, not-for-profit company was set up by government to promote energy efficiency in non-domestic sectors. A year later, the Energy Efficiency Commitment (EEC) was introduced to encourage consumers to make domestic energy efficient improvements. It includes measures to promote insulation, energy efficient boilers, appliances and light bulbs. It placed an obligation on gas and electricity suppliers to promote improvements in energy efficiency to domestic consumers. Running until 2008, it was replaced by the Carbon Emissions Reduction Target (CERT), which put an obligation on energy suppliers to achieve targets for promoting reductions in carbon emissions in the household sector. The CERT has since been replaced by the Energy Company Obligation (ECO).

In 2005, the UK government introduced a number of energy and cost-saving measures to make all buildings more efficient. The measures are being applied across all EU countries and are in line with the European Directive for the Energy Performance of Buildings (EPBD). The Community Energy Saving Programme (CESP) introduced in 2009 targets households in areas of low income, to improve energy efficiency standards and reduce fuel bills. CESP is funded by an obligation on energy suppliers and electricity generators. The programme is delivered through the development of community-based partnerships between local authorities, community groups and energy companies.

The Planning and Energy Act (2008) enables planning authorities in England and Wales to set out requirements for energy use and energy efficiency in local plans and to establish their own requirements for a proportion of energy used in development plans to come from renewable sources, to be low carbon or to comply with energy efficiency standards that exceed the requirements of existing building regulations. Several regional schemes also exist, such as the HEES Wales scheme launched in 2000; it provides grants for heating and insulation improvements not only for owner-occupiers, but also for tenants.

The CRC Energy Efficiency Scheme (formerly known as the Carbon Reduction Commitment), which started in 2010, aims to improve energy efficiency and cut emissions in large public and private sector organisations. The scheme puts a price on carbon emissions from energy use and also provides the opportunity for participants to make savings on energy bills through improved energy efficiency. In CRC, organisations buy allowances equal to their annual emissions.

The Energy Act 2011 includes several initiatives to break down barriers to energy efficiency. In January 2013 the government introduced the “Green Deal” and Energy Company Obligation (ECO) schemes, which work together to promote and support the installation of energy-saving measures. These schemes help households insulate their homes and upgrade their heating systems with low carbon alternatives. The Green Deal operates by helping householders to understand how to use energy more efficiently, and includes the option of borrowing sums to help fund the improvements, which they can pay back from savings on their energy bills.

Additionally, the government approved funding of GBP 900,000 (USD 1.47 million) in 2013-2014 to fund the creation of the Big Energy Saving Network, a programme of consumer outreach whereby energy advisers will help consumers to reduce their energy costs by taking action on tariffs, switching energy supply companies and to take advantage of energy efficiency offers.

In July 2013 the government launched a consultation on the Energy Savings Opportunity Scheme (ESOS) to help large enterprises to identify cost-effective energy efficiency measures.

The government is keen to go further to capture greater energy efficiency and published “The Energy Efficiency Opportunity in the UK” in 2012, outlining areas for further work in this area, building on the EU’s Energy Efficiency Directive and existing domestic policies.

Energy Supply

The Renewables Obligation (RO), introduced in 2002, is the main market-based mechanism for supporting large-scale generation of renewable electricity in the UK. It will be replaced by Contracts for Difference. The RO works by placing an obligation on licensed electricity suppliers to source a specified and annually increasing proportion of their electricity sales from renewable sources, or pay a penalty. New renewable generators joining the RO now receive different numbers of Renewable Obligation Certificates (ROCs), depending on their costs and potential for large-scale deployment.

The 2004 Energy Act provides the framework for the development of offshore wind and other marine renewable energy sources outside territorial waters. The Act implemented commitments relating to energy efficiency, such as raising building and product standards, and creating an Energy Efficiency Action Plan for the UK. The 2008 Energy Act strengthened the Renewables Obligation to increase the diversity of the UK’s electricity mix. The Act also created the Renewable Heat Incentive: allowing the Minister to establish a financial support

programme for renewable heat generated anywhere, from large industrial sites to individual households. The Act created regulation that enables private sector investment in carbon capture and storage (CCS) projects. The 2010 Energy Act includes provisions on introducing a new CCS Incentive to support the construction of four commercial-scale CCS demonstration projects in the UK, and the retrofit of additional CCS capacity to these projects should it be required in future. It also requires the government to prepare regular reports on progress on the decarbonisation of electricity generation in Britain.

The UK Renewable Energy Strategy 2009 outlines how the UK will meet its legally binding target to ensure 15% of energy comes from renewable energy sources by 2020. The Strategy also created an Office for Renewable Energy Deployment (ORED) within the Department of Energy & Climate Change (DECC). The Strategy comprises three primary 2020 targets, and introduces payment schemes to support the production of renewable heat and small-scale clean electricity generation by households, industry, businesses and communities. From 2010, the UK government offers feed-in tariffs (FITs) for small-scale renewable electricity installed by householders, businesses and communities, even if the electricity is consumed on-site.

Several incentives exist to promote the production of biofuels. The Bio-energy Capital Grants Scheme supports biomass-fuelled heat, and combined heat and power projects in the industrial, commercial and community sectors in England. Six rounds of funding have been provided since the Scheme was launched in 2002. Additionally, a reduced excise duty rate was introduced for biodiesel in July 2002 and bioethanol in 2005, set at GBP 0.20 (USD 0.33) lower than the rate applicable to diesel and unleaded petrol. The 2008 Renewable Transport Fuels Obligation (RTFO) is a long-term mechanism requiring transportation fuel suppliers to ensure a set percentage of their sales are from a renewable source. The Obligation also requires suppliers to publicly report on the carbon savings and sustainable production of biofuels supplied. It aligns with the EU Directive on the promotion of biofuels and renewable fuels for transportation. Regional schemes include the Energy Crop Scheme England introduced in 2000.

The UK government considers nuclear energy as a key part of the future energy mix with industry setting out plans to develop around 16GW of new nuclear capacity. In March 2013 the Minister for Energy and Climate Change gave development planning consent for a new nuclear project in Somerset, paving the way for the construction of the first new nuclear power station in the UK for 20 years.

REDD+ and LULUCF

The government has allocated GBP 2.9 billion (USD 4.74 billion) to the International Climate Fund with a further GBP 969 million (USD 1.59 billion) in 2015/2016. In November 2013, along with the US and Norway, the UK committed to direct USD 280 million of funding for REDD+ into jurisdictional efforts designed to ensure that results-based money flows to projects that reduce deforestation and promote sustainable agriculture – and in a way that encourages the involvement of major corporates.

Transportation

To meet the UK's carbon budgets under the Climate Change Act, there is expected to be mass deployment of ultra-low emission vehicles (ULEVs) in the 2020s and 2030s. By June 2013 over 5,500 charging points had been provided with another 5,000 charging points provided nationally by the private sector. The Plug-in-Car Grant Scheme offers a grant of 25% of the vehicle price, up to a value of GBP 5,000 – USD 8,185) while the Plug-in-Van Grant Scheme offers a grant of 20% of the vehicle price, up to a value of GBP 8,000 (USD 13,097).

Adaptation

Reporting to the statutory Committee on Climate Change, the Adaptation Sub-Committee, made up of experts from the fields of climate change, science and economics, sets the direction for national adaptation matters.

In July 2013 the UK launched its National Adaptation Programme (NAP). It brought together the best available evidence, using a consistent framework to identify the risks and opportunities related to climate change. The assessment distilled approximately 700 potential risks down to more than 100 for detailed review.

The NAP is divided into chapters looking at the Built Environment; Infrastructure; Healthy and Resilient Communities; Agriculture and Forestry; Natural Environment; Business and Local Government.

It looks most closely at the most urgent risks. The NAP document is supported by an economic annex. The 'Economics of the NAP' outlines the role of society in adaptation efforts, the challenges of uncertainty, the costs and benefits of climate change and the impacts of climate change on economic activity. It also provides recommendations on where future work should focus attention.

United Kingdom: Flagship Legislation

Name of law	Climate Change Act (Legislative)
Date of entry into force	26 November 2008
Categories	<ul style="list-style-type: none"> - Carbon pricing - Energy supply - Energy demand - Transportation - Adaptation - Research and Development - Institutional/Administrative arrangements
Summary of bill	The Act provides a long-term framework for improving carbon management, to help the transition to a low carbon economy, encourage investment in low carbon goods and provide an international signal. It also creates 5-yearly "carbon budgets". In March 2009, the Climate Change Act Impact Assessment was updated to reflect the final contents of the Act.

Report by Minister on the policies implemented to meet carbon budgets and an annual

report to Parliament on the status of UK emissions.

The Committee on Climate Change (CCC) – a new independent, expert body to advise the Government on the level of carbon budgets and on where cost-effective savings can be made – was created, which submits annual reports to Parliament on progress towards targets and budgets. The government must respond to the reports, ensuring transparency and accountability.

The Act sets up a carbon budgeting system that caps emissions over 5-year periods, with three budgets set at a time, to help the UK stay on track for its 2050 target. The first three carbon budgets run from 2008–2012, 2013–2017 and 2018–2022, and were set in law in May 2009. The fourth carbon budget, for 2023–2027 was approved by parliament in 2011, putting into law a target to reduce emissions by 50% from 1990 levels by 2027.

The government must report to Parliament its policies and proposals to meet the budgets and set a limit on the purchase of carbon credits for each budgetary period – for the first budgetary period, a zero limit was set in May 2009, excluding units bought by UK participants in the EU Emissions Trading System. For the second budget period, a limit of 55MtCO_{2e} was set. The Act also gives powers to introduce domestic emissions trading schemes more quickly and easily through secondary legislation – the first use has been to introduce the Carbon Reduction Commitment Energy Efficiency Scheme.

The Act introduced measures on biofuels and powers to introduce pilot financial incentive schemes in England for household waste.

The Act requires, by the end of 2012, the inclusion of international aviation and shipping emissions in the net carbon account, or an explanation to Parliament why not. The government announced in December 2012 that this decision would be deferred, recognising uncertainty over the international framework for reducing aviation emissions and particularly the treatment of aviation within the EU ETS.

The government must report at least every 5 years on the risks to the UK of climate change, and publish a programme setting out how these will be addressed. The Act also introduces powers for government to require public bodies and statutory undertakers to carry out their own risk assessment and make plans to address those risks.

The Act introduces an Adaptation Sub-Committee of the Committee on Climate Change, providing advice to, and scrutiny of, the Government's adaptation work.

Targets	A legally binding target of at least an 80% cut in GHG emissions by 2050, to be achieved through action in the UK and abroad. Also a reduction in emissions of at least 34% by 2020. Both these targets are against a 1990 baseline.
----------------	--

United Kingdom: Other Relevant Legislation

Name of Law	Energy Act 2013 (Legislative)
Date of entry into force	1 January 2014
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand
Summary of bill	The Energy Act 2013 is focused on Energy Market Reform (EMR). It is a package of measures which will help incentivise up to GBP 110 billion (USD 180.1 billion) of further investment required over the coming decade to the UK's ageing energy infrastructure with a more diverse and low-carbon energy mix to help ensure that the UK has future security of electricity supply and meets its climate and renewables targets in a way that minimises

costs to consumers. Key elements of the reform package include:

- The introduction of Contracts for Difference (CfDs), long-term contracts to provide stable and predictable incentives for companies to invest in low-carbon electricity generation, including renewables, nuclear and carbon capture and storage;
- The introduction of a Capacity Market, to ensure security of electricity supply; The Capacity Market works by providing regular payments to capacity providers (both demand and supply), in return for which they must be available and producing energy (or reducing demand) when the system is tight, or face penalties;
- A Carbon Price Floor (established in April 2013) of GBP 16 (USD 26.2) per tonne from 2013 rising to GBP 30 (USD 49.1) per tonne in 2020 to reduce investor uncertainty, providing a stronger incentive to invest in low carbon generation now;
- An Emissions Performance Standard (EPS) set at 450g CO₂/kWh to reinforce the requirement that no new coal-fired power stations are built without CCS, but also to enable short-term investment in gas.

Target	Varied
---------------	--------

Name of law	Finance Act 2011 (Legislative)
Date of entry into force	1 January 2012 (carbon price floor introduced on 1 April 2013)
Categories	- Carbon Pricing
Summary of bill	The primary legislation for the introduction of a Carbon Price Floor (CPF), which took effect on 1 April 2013. Supplies of coal, gas and liquefied petroleum gas (LPG) used in most forms of electricity generation would become liable to newly created Carbon Price Support (CPS) rates of climate change levy (CCL), which would be different from the main CCL rates levied on consumers' use of these commodities (and electricity). The amount of fuel duty reclaimable on oil used in electricity generation would be adjusted to establish new CPS rates of fuel duty.
Targets	None specified

Name of law	Energy Act 2011 (Legislative)
Date of entry into force	1 January 2012
Categories	- Energy supply - Energy demand
Summary of bill	The Act has three principal objectives: tackling barriers to energy efficiency; enhancing energy security; and enabling investment in low carbon energy supplies. Requires the government to prepare regular reports on progress on the decarbonisation of electricity generation in Britain and the development and use of CCS. Includes measures to improve energy security and to enable low carbon technologies. Removes barriers to the reuse of existing capital assets for CO ₂ storage and transportation where they are suitable; allows National Parks and Broads Authority to generate and sell renewable electricity within specific constraints; extends the Renewable Heat Incentive

primary powers in the Energy Act 2008 to cover Northern Ireland enabling them to make their own regulations to incentivise renewable heat.

Creates a new financing framework – “The Green Deal” – to enable the provision of fixed improvements to the energy efficiency of households and non-domestic properties which can be funded by a charge (offset by savings) on energy bills.

It also includes provisions to ensure that, from April 2016, private residential landlords will be unable to refuse a tenant’s reasonable request for consent to energy efficiency improvements, where a finance package, such as the Green Deal and/or Energy Company Obligation (ECO) is available. Provisions in the Act also provide for powers to ensure that, from 2018, it will be unlawful to rent out a residential or business premises that does not reach a minimum energy efficiency standard.

The law also enables the Minister to create a new Energy Company Obligation to take over from the Carbon Emissions Reduction Target [CERT] and Community Energy Saving Programme [CESP]), which expire at the end of 2012, and to work alongside the Green Deal finance offer by targeting appropriate measures at those households which are likely to need additional support, including those on low incomes and hard to treat housing.

The Act amends the smart meters powers in the Energy Act 2008 to allow government to direct the approach to the rollout of smart meters until 2018 and to enable the Minister to make changes to transmission licences to ensure the effective introduction of the new central data and communications arrangements to support all smart meters; amends the Energy Performance of Buildings Regulations 2007, to enable the removal of unnecessary restrictions on access to data; establishes powers for the Minister to require energy companies to provide information on the cheapest tariff on energy bills.

Targets	None specified
----------------	----------------

Name of law	Feed-in Tariffs for renewable electricity (Legislative)
Date of entry into force	1 April 2010 (amended 2012)
Categories	– Energy supply
Summary of bill	Offers feed-in tariffs (FITs) for small-scale low-carbon electricity installed by householders, businesses and communities, even if the electricity is but consumed on-site. Additional payment is provided for electricity fed into the grid.
	FITs vary according to technology, will last between 10 to 25 years and are adjusted for inflation. They apply to hydro, anaerobic digestion, wind and solar PV technologies under 5 MW, and a pilot scheme for micro Combined Heat and Power (CHP) has been launched.
	Generators with installations of 50kW or less must be installed and accredited by the Microgeneration Certification Scheme (MCS), an independent certification scheme.
	Installations with capacities greater than 50kW will need to contact Ofgem and seek accreditation through a process similar to the Renewables Obligation (RO).

Targets	None specified
----------------	----------------

Name of law	Carbon Reduction Commitment Energy Efficiency Scheme (Legislative)
Date of entry into force	April 2010

Categories	– Energy demand
Summary of bill	<p>The Scheme (formerly known as the Carbon Reduction Commitment) is the UK's mandatory climate change and energy saving scheme. It aims to improve energy efficiency and cut emissions in large public and private sector organisations, which are responsible for around 10% of the UK's emissions.</p> <p>The Scheme encourages organisations to develop energy management strategies that promote a better understanding of energy usage. It provides a financial incentive to reduce energy use by putting a price on carbon emissions from such use and also allows participants to make savings on energy bills through improved energy efficiency. In CRC, organisations buy allowances equal to their annual emissions.</p> <p>The scheme is administered by the Environment Agency which publishes details of all participants' emissions each year.</p>
Targets	None specified

Name of law	Energy Act 2010 (Legislative)
Date of entry into force	1 January 2011
Categories	– Energy supply – Research and Development
Summary of bill	<p>The Act includes provisions on introducing a new CCS Incentive to support the construction of four commercial-scale CCS demonstration projects in the UK, and the retrofit of additional CCS capacity to these projects should it be required at a future point.</p> <p>Requires the government to prepare regular reports on the progress of the decarbonisation of electricity generation in Britain and the development and use of CCS.</p>
Targets	None specified

Name of law	Community Energy Saving Programme (CESP) (Legislative)
Date of entry into force	2009
Categories	– Energy demand
Summary of bill	<p>CESP targets low income households across Great Britain to improve energy efficiency standards and reduce fuel bills. There are 4,500 areas eligible for CESP. CESP is funded by an obligation on energy suppliers and electricity generators. It is expected to deliver up to GBP 350 million (USD 573 million) of efficiency measures.</p> <p>Around 100 schemes are expected, benefiting around 90,000 homes and saving nearly 2.9 million tonnes of CO₂ emissions.</p>
Targets	None specified

Name of law	Renewable Energy Strategy 2009 (Executive)
Date of entry into force	2009
Categories	– Energy supply
Summary of bill	The Strategy outlines how the UK will meet its legally binding target to ensure 15% of

energy comes from renewable energy sources by 2020.

The government estimates it will provide cumulative savings of 755 MtCO₂ between now and 2030, 535 MtCO₂ of which will help the UK meet EU Emissions Trading System (EU-ETS) caps, and 220 MtCO₂ will provide additional CO₂ reductions. Of this, 73 MtCO₂ will be saved over the third carbon budget period (2018–2022) and deliver about a sixth of the abatement needed to meet this third budget.

The Strategy comprises three primary 2020 targets: over 30% of electricity to be generated from renewable energy sources, mostly from wind power, with biomass, hydro, wave and tidal power playing important roles; 12% of heat to be generated from renewable energy sources, from a large range of sources (biomass, biogas, solar, heat pumps); 10% of transportation energy to come from renewable energy sources.

Introducing payment schemes to support the production of renewable heat and small-scale clean electricity generation by households, industry, businesses and communities.

New guaranteed payments will be provided through FiT schemes from 2010 onwards, and a Renewable Heat Incentive from 2011 onwards. Before the schemes take effect, GBP 45 million (USD 73.6 million) in grants have been committed.

In addition, the Strategy sets out four areas for action. 1) Improve planning processes so that they are swifter and more strategic. 2) Strengthen the UK's renewable energy industry, including through greater investment and work with the financial sector. 3) Improvements and investments in the electricity grid, including improved grid access and more strategic investments (including in an offshore grid and a smarter grid). 4) Commitments for sustainable bioenergy development and use.

The Renewable Transport Fuel Obligation will be amended or replaced, taking into account sustainability issues, to ensure transportation fuels contain a rising amount of renewable biofuels.

The Strategy also creates an Office for Renewable Energy Deployment (ORED) within the Department of Energy & Climate Change (DECC) to take forward the commitments outlined in the Strategy.

Targets	None specified
----------------	----------------

Name of law	Carbon Emissions Reduction Target (CERT) (Legislative)
Date of entry into force	2008, amended 2009 and 2010
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand

Summary of bill CERT is an obligation on energy suppliers to achieve targets for promoting reductions in carbon emissions in the household sector. It is the principal driver of energy efficiency improvements in existing homes in Great Britain.

The primary driver is to reduce carbon emissions and meet the target set up by the Climate Change Act. CERT will also help: reduce energy demand; enhance the UK's security of supply; reduce energy bills for those receiving measures; reduce fuel poverty; and, secure jobs in energy efficiency industries.

The third supplier obligation phase was introduced in 2008. On 30 July 2010, CERT was extended from March 2011 to December 2012 with a new higher target and significantly refocused around supporting insulation.

It marks a significant strengthening of efforts to reduce household carbon emissions – with a doubling of the level of activity of its predecessor Energy Efficiency Commitment (EEC). Energy suppliers are now required to deliver measures that will provide overall lifetime savings of 293 Mt CO₂ by December 2012, superseding the target of 185 Mt CO₂ by March 2011.

CERT requires all domestic energy suppliers with a customer base in excess of 50,000 to cut the amount of CO₂ emitted by householders. Suppliers meet this target by promoting the uptake of low carbon energy solutions to household energy consumers, thereby assisting them to reduce the carbon footprint of their homes.

At least two thirds of the increase in target (68%) must be delivered through professionally installed insulation measures. In combination with the exclusion of compact fluorescent lamps, this will refocus the scheme around supporting insulation measures that can help deliver deep and long-lived carbon and energy savings.

Targets	None specified
----------------	----------------

Name of law	Low Carbon Transition Plan (Executive)
--------------------	---

Date of entry into force	2009
---------------------------------	------

Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand – REDD+ and LULUCF – Transportation – Research and Development
-------------------	--

Summary of bill	<p>The Plan outlines how the economy will be transformed to ensure the UK meets its emission reduction targets, secures its energy supplies for the future, maximises the economic opportunities for jobs, skills and investment as well as ensuring policies protect the most vulnerable in society. It sets out the government's long-term strategy to cut carbon emissions by 2020 by 18% from 2008 levels (over 1/3 from 1990 levels) and meet its first three carbon budgets. The key steps set out in the Plan cover five sectors: power and heavy industry; transportation; homes and communities workplaces and jobs; farming, land and waste.</p>
------------------------	--

The Plan aims to cut GHG emissions from power and heavy industry by 22% by 2020 from 2008 levels, and outlines how the UK will get 40% of its electricity from low carbon sources. This will be done in part through the EU-ETS, but also through complementary measures.

The Plan will reduce emissions from homes by 29% from 2008 levels by 2020.

Emissions from workplaces will be reduced by 13% from 2008 levels by 2020, in part through inclusion of carbon-intensive industries in the EU-ETS, and various financial incentive and support schemes targeting businesses (Climate Change Levy, Climate Change Agreements, Carbon Reduction Commitment).

The government will also fund up to four demonstrations of CCS from coal power plants, and facilitate the building of new nuclear power stations.

It also clarifies that climate change mitigation is part of the electricity regulator Ofgem's role. The government will endorse plans for grid expansion, and develop a plan for delivering a smart grid.

Smart meters are to be rolled out in every home by 2020, and two financing schemes launched. The first will experiment with pay-as-you-save schemes, using savings on energy

bills to pay for the upfront costs for energy efficiency improvements. The second is a cash-back scheme to pay individuals and businesses if they use low-carbon energy sources to generate heat or electricity. Vulnerable households will also be specifically targeted through an increase in the level of Warm Front grants, and a new community-based pilot approach to help deliver energy efficiency improvements to approximately 90,000 homes (the Community Energy Saving Programme).

In the transportation sector, the Plan will support a large-scale demonstration project for 340 electric vehicles, and in parallel reduce the cost of low-carbon vehicles by providing assistance of between GBP 2,000–5,000 (USD 3,274-8,185) per vehicle from 2011 onwards, and providing up to GBP 30 million (USD 49.1 million) to support the installation of electric vehicle charging stations in several cities. The government also commits to source 10% of transportation fuels from sustainable renewable sources by 2020.

Targets None specified

Name of law	Energy Act 2008 (Legislative)
Date of entry into force	2008
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand
Summary of bill	The Act enables the introduction of Feed-in tariffs (FITs), meaning that the Government will offer financial support for low-carbon electricity generation in projects up to 5 MW. The aim is for generators to receive a guaranteed payment for generating low carbon electricity.
Targets	None specified

Name of law	Low Carbon Transport Innovation Strategy (Executive)
Date of entry into force	2007
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy demand – Transportation – Research and Development
Summary of bill	The Strategy sets out a wide range of actions that the UK is taking to encourage innovation and technology development in lower carbon transportation technologies, including stimulating investment in a broad range of R&D activities. Essential to this will be the use of regulatory frameworks such as carbon pricing and energy efficiency, but also government funding aimed at accelerating the development and market penetration of new lower carbon technologies.
	One major initiative is the Low Carbon Vehicles Innovation Platform (LCVIP), a GBP 100 million (USD 163.7 million) programme over five years supported by the Technology Strategy Board, the Engineering and Physical Sciences Research Council and Department for Transport, and funded through the Technology Strategy Board.
Targets	None specified

Name of law	Climate Change and Sustainable Energy Act (Legislative)
Date of entry into force	2006
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Institutional/Administrative arrangements
Summary of bill	<p>The Act contains several measures to monitor and promote energy efficiency and establishes a scheme to promote national targets for micro-generation.</p> <p>Provides for a green certificate scheme for electricity from renewable sources.</p> <p>Provides for reporting on the energy efficiency of residential accommodation.</p> <p>The Act placed an obligation on Defra to report to parliament on GHG emissions in the UK and on action taken by the government to reduce these emissions. The first report was put to the UK parliament on 26 July 2007.</p>
Targets	None specified

Name of law	Climate Change Programme 2006 (Executive)
Date of entry into force	2006
Categories	<ul style="list-style-type: none"> – Carbon pricing – Energy supply – Energy demand – Transportation
Summary of bill	<p>First published in 2000, the Government's UK Climate Change Programme outlined all of the UK policies and programmes in place to tackle climate change, including several measures on energy efficiency. A review resulted in the Climate Change Programme 2006.</p> <p>The 2006 Programme includes measures that are projected to reduce CO₂ emissions to 15–18% below 1990 levels by 2010 and work towards the longer-term goal to reduce carbon emissions by 60% by 2050, as set out in 2003's Energy White Paper.</p> <p>Energy Efficiency Measures include:</p> <ul style="list-style-type: none"> – maintain a strong package of support, advice and information measures to help businesses improve their energy efficiency – continue to use the climate change levy and associated climate change agreements to encourage businesses to improve the efficiency with which they use energy – continue the significant improvements made and update the Building Regulations in April 2006 to raise energy standards of new build and refurbished buildings – introduce the Code for Sustainable Homes <p>On transportation, the Programme will work strongly to achieve further commitments from vehicle manufacturers to improve fuel efficiency.</p>
Targets	None specified

Name of law	Code for Sustainable Homes (Executive)
Date of entry into force	2006
Categories	– Energy demand
Summary of bill	<p>Building on the recommendations of the Sustainable Buildings Task Group, the Code was developed to support a step change in the building of sustainable new homes. The Code provides a single national standard to guide industry in the design and construction of sustainable homes, considering energy among other aspects.</p> <p>Since 2007 the developer of any new home in England can choose to be assessed against the Code. From 2008 it was mandatory for all new homes to be rated against the Code and to include a Code or nil-rated certificate within the Home Information Pack. Even though the requirement for the Home Information Pack for property sales was suspended in 2010, an Energy Performance Certificate is still required.</p> <p>There are six levels of the Code, with mandatory minimum standards for energy efficiency at each level. Code Level 1 represents a 10% improvement in energy efficiency over the 2006 Building Regulations. Code Level 6 would be a completely zero carbon home (heating, lighting, hot water and all appliances).</p> <p>Improvements in the energy efficiency of new homes of more than 25% compared to 2006 regulations (Level 3 of the code) would probably require some form of low or zero carbon energy generation, either by individual buildings (e.g. dedicated solar water heating) or by whole developments sharing a source of low carbon generation (e.g. wind turbines).</p>
Targets	None specified

Name of law	Energy Act (Legislative)
Date of entry into force	2004
Categories	– Energy supply – Energy demand
Summary of bill	<p>This Act sets up the energy framework for the UK. It provides the framework for the development of offshore wind and other marine renewable energy sources outside territorial waters. Such measures were expected to contribute to meeting the country's 10% renewable energy target by 2010.</p> <p>The Act establishes a Renewable Energy Zone (REZ), adjacent to the UK's territorial waters, within which renewable energy installations can be established. The Act enables the Crown Estate to award licences for wind farm sites in the REZ on much the same basis as it currently leases sites within territorial waters.</p> <p>The Act implemented a range of commitments made in the 2003 Energy White Paper, including those relating to energy efficiency, such as raising building and product standards, and creating an Energy Efficiency Action Plan for the UK.</p>
Targets	None specified

Name of law	Renewables Obligation (Legislative)
Date of entry into force	2002
Categories	– Energy supply
Summary of bill	<p>The Renewables Obligation (RO) is the current main mechanism for supporting large-scale generation of renewable electricity. It has been subject to various reforms and improvements. It is a market-based mechanism, designed to provide a substantial incentive for all eligible forms of renewable electricity.</p> <p>The RO places an obligation on licensed electricity suppliers to source a specified and annually increasing proportion of their electricity sales from renewable sources, or pay a penalty. The obligation for 2009/10 was 9.7%, rising to 15.4% by 2015/6.</p> <p>Previously, one Renewable Obligation Certificate (ROC) was issued for each MWh of eligible generation, regardless of technology. In 2009, reforms gave new generators joining the RO different numbers of ROCs, depending on their costs and potential for large-scale deployment. New projects in more expensive technologies like offshore wind now receive more support and those that are more economic, like landfill gas, receive less.</p> <p>Generators can sell their ROCs to electricity supply companies, which use them to demonstrate compliance with the Obligation. This enables generators to receive a premium on top of the sale of the electricity.</p> <p>In 2010, further changes included the RO being extended from its current end date of 2027 to 2037 for new projects, in order to provide greater long-term certainty for investors, and an increase in support for offshore wind projects meeting certain criteria.</p> <p>The Office of Gas and Electricity Markets (Ofgem) is responsible for monitoring and enforcing compliance with the RO. Their functions include accrediting renewable generators and the issuing of ROCs.</p>
Targets	None specified

Name of law	Preferential Tax Regimes for Biofuels (Legislative)
Date of entry into force	2002
Categories	– Transportation
Summary of bill	<p>A reduced excise duty rate was introduced for biodiesel in July 2002 and bio-ethanol in 2005, set at GBP 0.20 (USD 0.33) lower than the rate applicable to diesel and unleaded petrol.</p> <p>Producers of bio-blend and bio-ethanol blend also benefit from the reduced rate of excise duty, as the proportion of biodiesel or bio-ethanol in the blend bears the lower rate of excise duty.</p>
Targets	None specified

Name of law	Bio-energy Capital Grants Scheme (Executive)
Date of entry into force	2002
Categories	– Energy supply
Summary of bill	Supports biomass-fuelled heat, and CHP projects in the industrial, commercial and community sectors in England.

Six rounds of funding have been provided since the Scheme was launched in 2002. Earlier rounds focused support on large-scale biomass power stations. The emphasis in later rounds has been to support small- and medium-sized projects.

The Bio-energy Capital Grants Scheme promotes the efficient use of biomass for energy, and in particular the use of energy crops by stimulating the early deployment of biomass-fuelled heat and electricity generation projects. It awards capital grants towards the cost of installing equipment in complete biomass-fuelled projects in the industrial, commercial and community sectors.

The main policy aims of the Scheme are to:

- Deliver capacity to create an initial market for biomass fuel, installation equipment and services
- To stimulate the UK renewables industry

Provide learning benefits that will accelerate the industry and achieve more efficient and cost effective use of biomass for heat and electricity

Targets	None specified
----------------	----------------

Name of law	Company Car Tax Reform (Legislative)
--------------------	---

Date of entry into force	2002
---------------------------------	------

Categories	– Energy Demand – Transportation
-------------------	-------------------------------------

Summary of bill	In April 2002, the UK Company Car Tax system was revised to be carbon-based. All company cars first registered after January 1998 are taxed on a percentage of their list price according to one of 21 CO ₂ emission bands, measured in grams per kilometre (g/km).
------------------------	--

The reform was intended to remove the perverse incentive in the existing system to reduce the tax due by driving unnecessary extra business miles and to provide a significant incentive to company cars drivers to choose more fuel-efficient vehicles.

To further promote environmentally friendly vehicles, in 2006 it was announced that the threshold for the minimum percentage charge rate for calculating the company car tax benefit in kind would be reduced from 140g CO₂/km to 135g CO₂/km in 2008–2009. A new rate of 10% for cars of 120g CO₂ and below was introduced from 2008–2009.

Targets	None specified
----------------	----------------

Name of law	Climate Change Agreements (Legislative)
--------------------	--

Date of entry into force	1 April 2001
---------------------------------	--------------

Categories	– Energy demand
-------------------	-----------------

Summary of bill	Climate Change Agreements (CCAs) allow energy intensive business users to receive an 80% discount from the Climate Change Levy, in return for meeting energy efficiency or carbon saving targets.
------------------------	---

The first agreements took effect in 2001 and were to run until 31 March 2013. In 2004, the eligibility criteria for the UK's Climate Change Agreements (CCAs) were extended to cover other energy intensive sectors of industry not originally included within the arrangements for CCAs. Those sectors already eligible for CCAs were unaffected by the changes.

It was announced in 2007 that the CCA scheme would be extended by 4 years to 2017, subject to state aid approval. This is to provide industry with greater certainty for the medium term, and enable CCAs to continue to contribute significantly to the UK's Climate Change Programme.

CCAs have delivered substantial carbon savings. At the end of the third target period in 2006, operators had reduced their emissions by 4.5MtC when compared to the CCA base year. For the same period, it is estimated that businesses achieved energy savings worth around GBP 1.5 billion (USD 2.45 billion) against baselines.

Targets	None specified
----------------	----------------

Name of law	Climate Change Levy (Legislative)
--------------------	--

Date of entry into force	2001
---------------------------------	------

Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand
-------------------	--

Summary of bill	The Levy applies to electricity, gas, solid fuel and liquefied gases used for lighting, heating and power in the business and public sectors.
------------------------	---

The Levy was designed to be broadly revenue neutral in concept: at the time of introduction it formed part of a "Levy Package" where the revenue collected is recycled back to business through a 0.3% reduction in National Insurance Contributions and also a system of enhanced capital allowances for investments in energy saving technologies.

Electricity produced from qualifying renewable sources and energy used and generated in approved combined heat and power schemes are exempt from the levy.

There is also a reduced (20%) rate for energy-intensive businesses that enter into voluntary agreements to reduce their energy use and/or emissions.

Targets	None specified
----------------	----------------

4.64 United States of America (USA)



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	5797
excl. LULUCF	6702
Change from base year (1990)	519
Latest reporting year	2011
Importance as an emitter	Top 5
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 15 October 1992 Date of entry into force: 21 March 1994
Kyoto Protocol ratification status and date	Date of signature: 12 November 1998 Not ratified
2020 pledge	In the range of 17% from 2005, in conformity with existing US energy and climate legislation and executive orders
Flagship legislation	Clean Air Act

Legislative Process

The United States has a bicameral legislature or Congress composed of the Senate and the House of Representatives. Bills may be introduced by a member of either chamber. The first stage in the approval of a bill involves consideration by a committee. If approved (reported) by the committee, the bill reaches the floor of the chamber. Once a bill is approved by one chamber, it is sent to the other, which may pass, reject or amend it. In order for a proposed bill to become law, both chambers must agree on identical versions of the bill and the President must sign. If the President vetoes a bill, the veto can be overturned if a two-thirds majority of both chambers vote to do so.

Approach to Climate Change

The United States' GHG emission reduction targets are relatively modest when compared with other advanced economies, amounting to less than a 5% reduction by 2020 below 1990 levels. The country's current UNFCCC commitment of reducing emissions by 17% by 2020 in relation to 2005 levels is accompanied by the observation that the final target will be reported to the UNFCCC Secretariat in light of enacted legislation. Despite an absence of dedicated climate change legislation, the US is taking a regulatory approach to managing GHGs through a combination of existing legislation (The Clean Air Act) and executive orders. Most recently, in June 2013, the President announced a Climate Action Plan, including a series of executive actions designed to accomplish the GHG emission reduction targets and prepare the United States for the impacts of climate change.

Although the passing of energy and climate change bills through Congress amounts to a time-consuming and complex process, US legislation tends to be comprehensive, precise and with clear financial commitments and monitoring mechanisms. Energy remains an active area of legislative proposals, including on renewable energy and energy efficiency. Proposals have tended to focus on securing American leadership in renewable energy and energy efficiency technologies, as well as guaranteeing that climate provisions do not affect trade competitiveness vis-à-vis emerging markets, most notably China and India. For example, in late 2013, the Senate began floor consideration of bipartisan energy efficiency legislation, the Energy Savings and Industrial Competitiveness Act, which will see further debate in 2014.

Although there were a number of attempts to pass a comprehensive climate change bill in the 111th Congress (2009-2010) – the most significant of which was the American Clean Energy and Security Bill (ACES) referred to as the “Waxman-Markey Bill”, which passed the House of Representatives in June 2009 – all attempts for the House and the Senate to agree on climate legislation have failed.

Legislation similar to the ACES bill was passed by the Senate Environment and Public Works Committee but was never brought to the Senate floor. Attempting

to develop legislation that would succeed, the Senate drafted several bills of its own. However, all of these also failed to generate enough support and never reached the Senate floor for a vote. As a result, the Senate Majority Leader, a Democrat, proposed a limited Energy Bill with a focus on the Gulf of Mexico oil spill, the promotion of natural gas vehicles, home energy renovations and financing for the Land and Water Conservation Fund. Even this attempt failed to generate enough support and, following the mid-term elections in 2010 and the beginning of the 112th Congress, all of the draft bills expired along with the House-passed ACES bill.

Although the current Administration and the Environmental Protection Agency (EPA) have consistently said they would prefer that Congress pass legislation to address climate change, the difficulties in securing support for comprehensive climate change legislation have meant that the regulatory approach has assumed greater importance. The EPA has therefore begun to develop regulations using its existing authority under The Clean Air Act. In his June 2013 Climate Action Plan, The President set a timetable for the EPA to complete work on regulations governing existing and future fossil fuel power plants.

This work is based on the 2009 “endangerment finding” under the Clean Air Act, which requires the EPA to regulate pollutants for their effect as GHGs for the first time. Relying on this finding, the EPA finalised GHG emission standards for cars and light trucks in 2010 and, in 2012, released a draft ruling limiting carbon pollution from new power plants. It held two public hearings on the proposed rule and almost 3 million comments were sent to the agency in favour of reducing carbon pollution from both new and existing power plants – a record for an EPA rule proposal. In conjunction with the announcement of the Climate Action Plan, a Presidential Memorandum instructed the EPA to issue a proposed rule for existing plants by June 2014 and finalise the rule by June 2015. On 20 September 2013, the EPA released a new version of the proposed rule for new power plants and began developing a rule for existing fossil fuel power plants.

The beginning of work to regulate GHG emissions under The Clean Air Act has raised some opposition in Congress. During the 112th and the start of the 113th Congresses, the House of Representatives – now with Republicans in the majority – has passed numerous bills to restrict the authority of the EPA to regulate GHG emissions, to expand production of fossil fuels in the United States and approve the Keystone XL pipeline that would bring bitumen derived from tar sands in Canada to refineries in the United States. The Senate has not taken up any of this House legislation, although the Senate did pass a non-binding resolution in support of the Keystone XL pipeline in March 2013. The President has made clear that he would veto any proposals that contained a prohibition on EPA action on GHGs and, given that the Senate rejected several amendments to legislation restricting the EPA’s ability to regulate GHGs, the EPA’s ability to regulate GHGs has thus far not been affected.

As well as opposition in Congress, many of the EPA’s actions since 2009 have been challenged in court, including the endangerment finding, the tailoring rule and Title V operating permit requirements. The US Court of Appeals for the

District of Columbia, which has jurisdiction over decisions and rulemakings of federal agencies, has ruled in EPA's favour in these cases. The losing plaintiffs in these cases appealed them to the Supreme Court, which declined to hear all of them except the Title V operating permit case. This brings to an end the legal challenges on the issues that could most significantly harm the EPA's ability to regulate GHG emissions. The ongoing Title V case involves a separate section of the Act from that which the EPA is using to develop standards for new and existing power plants.

The 112th Congress and the first half of the 113th Congress were dominated by negotiations on federal spending. After wrangling that has seen the US on the brink of default and a temporary shutdown of the government, federal spending has been reduced, with climate programmes and agencies especially targeted. Although the EPA's authority to regulate GHGs was unscathed, its budget has been cut from USD 10.3 billion in Fiscal Year 2010 to USD 8.5 billion in Fiscal Year 2013. Funding for a proposed Climate Service within the National Oceanographic and Atmospheric Administration (NOAA) and the position of Assistant to the President for Energy and Climate Change were also eliminated and commitments to international climate finance were greatly reduced.

It was notable that in the 2012 campaign for the White House, which culminated in the re-election of Barack Obama for a second term, climate change was essentially absent as an issue in the debate. However, climate change was prominent in President Obama's inauguration speech and his subsequent 2013 State of the Union address in which he challenged Congress to pass climate legislation or his administration would take aggressive actions to address climate change. In June 2013, the President fulfilled this promise when he announced his Climate Action Plan.

One of the final legislative acts in the Obama Administration's first term was the signing into law of the European Union Emissions Trading Scheme Prohibition Act. This law authorises the US secretary of transportation to bar US airlines from taking part in the EU's ETS. Shortly before the law was signed, the EU suspended for a year application of the ETS to flights leaving and entering the EU in order to allow more time to broker a comprehensive international agreement to tackle emissions from aviation through the International Civil Aviation Organisation (ICAO). Until the suspension, the European Commission had been due, in April 2013, to start collecting fees from airlines that overshot their allowances.

The law says that the US administration shall prohibit US carriers from taking part in the ETS if the transportation secretary determines this is in the "public interest". In making that determination, the secretary must take into account the impact prohibition would have on US carriers, consumers, the economy, environment, energy security and foreign relations. The secretary is also required to review any prohibition if the EU amends its ETS Directive, if there is a global agreement on aviation emissions or if the US adopts its own rules in this area. As for any EU fines that carriers may face for non-compliance, the law stipulates that US airlines be "held harmless" from the ETS.

Renewable energy and energy efficiency

Efforts to include climate-related measures in the American legislative process are by no means limited to climate change legislation. Measures related to renewable energy and energy efficiency are at the core of the US legislative response to climate change. They mostly include financial incentives and tax breaks for the development of clean energy technology and promotion of behavioural change among businesses and consumers. Legislation to require that a certain percentage of national electricity comes from renewable sources (Renewable Electricity Standard or RES), like those already adopted by 30 states, has been introduced in both chambers of Congress. The Senate has passed similar legislation three times since 2002 and the House of Representatives passed RES legislation in 2007 and in 2009 as a part of the ACES bill. However, each time one chamber has passed an RES bill the other chamber has not been able to garner enough support for it to become law.

In addition, the transition to a low carbon economy is a priority in different kinds of legislation not directly concerned with climate related issues. For example, the US stimulus package, known as the American Recovery and Reinvestment Act 2009, allocates USD 94 billion to renewable energy technologies, energy efficiency, low carbon vehicles, smart grids and mass transit. There are energy provisions in the Duncan Hunter National Defense Authorisation Act for Fiscal Year 2009 and renewable energy provisions in the 2008 Farm Bill and the Senate version of the reauthorisation of the Farm Bill in final negotiations at the end of 2013.

The US is also continuously revising energy efficiency and renewable energy legislation.

Federal support for renewables development, coupled with state incentives and requirements, has led to dramatic growth in electricity generation from renewable sources of energy in the United States in recent years. In 2012, wind provided the most new electricity capacity developed in the United States. In President Obama's first term, electricity generation from solar, wind and geothermal resources more than doubled. As part of the Climate Action Plan, the President has set a goal to once again double renewable electricity generation by 2020.

Adaptation

A foundation for co-ordinated action on climate change preparedness and resilience was established by Executive Order in 2009, the Interagency Climate Change Adaptation Task Force led by the Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA). Additionally, through the US Global Change Research Programme (USGCRP), and agency programmes and activities, the Federal Government is continuing to support scientific research, observational capabilities, and assessments necessary to improve the understanding of, and response to, climate change and its impacts.

In November 2013, the President issued an executive order entitled *Preparing the United States for the Impacts of Climate Change* to strengthen the US's climate resilience. The Order promotes engaged and strong partnerships and information sharing at all levels of government, risk-informed decision-making and the tools to facilitate it, adaptive learning, in which experiences serve as opportunities to inform and adjust future actions; and preparedness planning.

The Order includes: Modernising Federal Programmes to Support Climate Resilient Investment; Managing Lands and Waters for Climate Preparedness and Resilience; Providing Information, Data, and Tools for Climate Change Preparedness and Resilience; Federal Agency Planning for Climate Change Related Risk; The creation of a Council on Climate Preparedness and Resilience involving representatives from all major government departments; and the formation of a State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience to inform Federal efforts.

Sub-National activity

A myriad of policies and legislation on climate change exist at the state level. For example, California is a leading state in this area with the Global Warming Solutions Act (AB32), the Pavley Law's stringent air quality targets for motor vehicles, and the California Environmental Quality Act with its GHG emissions provisions. California's "cap-and-trade" scheme came into effect in 2012 with an enforceable compliance obligation beginning in 2013 and aims to help deliver California's State-level target of reducing GHG emissions to 1990 levels by 2020 and to 80% below 1990 levels by 2050. Nine north-eastern states have created the Regional Greenhouse Gas Initiative (RGGI) to reduce GHG emissions. RGGI has reduced emissions below its initial targets and has decided on the lowest cap of the four considered for the next period to 2020.

USA: Flagship Legislation

Although the US does not have a comprehensive climate change law, on 15 December 2009, the Environmental Protection Agency finalised an "endangerment finding" under Section 202 of the Clean Air Act, which requires it to regulate pollutants for their effect as GHGs for the first time. This means that the Clean Air Act is the legal basis for the EPA's regulation of GHGs.

Name of law	Clean Air Act [Legislative]
Date of entry into force	17 December 1963
Categories	<ul style="list-style-type: none"> – Energy supply – Transportation – Institutional/Administrative arrangements
Driver for implementation	Air pollution
Summary of bill	The Clean Air Act is a federal law designed to control air pollution on a national level. It requires the Environmental Protection Agency (EPA) to develop and enforce regulations to

protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. The “endangerment finding” of 2009 means the EPA is required to take steps to regulate substances according to their GHG effect.

Congress passed the first Clean Air Act in 1963, creating a research and regulatory programme in the US Public Health Service. The Act authorised development of emission standards for stationary sources. In the Clean Air Act Extension of 1970, Congress greatly expanded the federal mandate by requiring comprehensive federal and state regulations for both industrial and mobile sources. The law established four new regulatory programmes:

- National Ambient Air Quality Standards (NAAQS) – EPA was required to promulgate national standards for six criteria pollutants: carbon monoxide, nitrogen dioxide, sulphur dioxide, particulate matter, hydrocarbons and photochemical oxidants (some of the criteria pollutants were revised in subsequent legislation)
- State Implementation Plans (SIPs)
- New Source Performance Standards (NSPS)
- National Emissions Standards for Hazardous Air Pollutants (NESHAPs)

The EPA was also created under the National Environmental Policy Act about the same time as these additions were passed, which was important to help implement the programmes listed above.

Since then, the Clean Air Act has been amended (in 1977 and 1990) to strengthen its effect, including adding regulations relating to acid deposition (to tackle acid rain) and stratospheric ozone protection.

The 2009 “endangerment finding” means that the EPA must take steps to regulate substances for their effect as GHGs. The EPA began regulating GHGs from mobile and stationary sources of air pollution under the Clean Air Act for the first time in 2011. Standards for mobile sources have been established, and GHGs from stationary sources are controlled.

Targets	There are no specific targets relating to GHGs. About 54% of the US’s GHG emissions are manageable under the Clean Air Act, including electricity generation, industry and large (non-agricultural) methane sources. All others are regulated independently, if at all.
----------------	---

USA: Other Relevant Legislation

Name of law	American Recovery and Reinvestment Act [Legislative]
Date of entry into force	17 February 2009
Categories	<ul style="list-style-type: none"> – Energy supply – Transportation – Research and Development
Driver for implementation	Economic stimulus, climate change, renewable energy and energy efficiency
Summary of bill	The Bill authorises a stimulus package that supports new and existing renewable energy and energy efficiency programmes. The bill supersedes the tax provisions of the Energy Improvement and Extension Act 2008 as well as part of the Emergency Economic Stabilisation Act 2008.

The Bill allocated USD 16.8 billion to energy efficiency and renewable energy programmes. It foresaw the extension of credit for electricity produced from renewable sources. The limitation on the issuance of new clean renewable energy bonds was increased by USD 1.6 billion. On completing the 2009 “National Electric Transmission Congestion Study”, the

Secretary of Energy shall include an analysis of renewable energy sources constrained by lack of adequate transmission capacity. The bill amends the Energy Policy Act of 2005 to create the “Temporary Programme for Rapid Deployment of Renewable Energy and Electric Power Transmission Projects” that includes incremental hydropower and cutting edge biofuel projects. No limitation shall be placed on funding for the purchase and installation of energy efficiency and renewable energy equipment and materials.

Under the Bill, USD 2.7 billion was destined to the Department of Energy’s “Energy Efficiency and Conservation Block Grant Programme”, created without funding by the Energy Independence and Security Act 2007, to finance energy efficiency and conservation projects and programmes through the concession of grants to states, territories, local governments and Native American tribes. An additional USD 1 billion was allocated to state energy offices to support weatherisation of low-income homes. USD 2 billion in grants was made available to US-based advanced battery manufacturing facilities.

USD 400 million was allocated to state and local grant programmes supporting advanced vehicles, and over USD 80 billion was destined for clean energy research, development and deployment, USD 50 billion of which was to be granted for direct appropriation and USD 30 billion in the form of tax-based incentives. USD 277 million was granted to Energy Frontier Research Centres to develop cost-effective alternative energy technologies and USD 6 billion was allocated to the “Innovative Technologies Loan Guarantee Programme”, established by the Energy Policy Act, to accelerate the deployment of commercial clean energy technologies. USD 2.5 billion was given for discretionary clean energy research and development managed by the Department of Energy (DOE), including USD 800 million for next generation biofuels and USD 400 million for geothermal technologies, and support for several research projects. Grants over USD 110 million were given to the US National Renewable Energy Laboratory to advance wind energy technologies, building new energy efficient facilities and upgrading the Laboratory’s Integrated Bio-refinery Research Facility.

The Bill also allocated USD 500 million to a grant programme supporting clean energy workforce training managed by the Department of Labor and USD 100 million to support more workforce training that is managed by the DOE Office of Electricity Delivery and Energy Reliability.

The DOE’s Office of Energy Efficiency and Renewable Energy will monitor performance in accordance with Risk Mitigation Plans (RMPs). For large grant programmes such as the Energy Efficiency and Conservation Block Grant (EECBG), weatherisation assistance and State Energy Programmes (SEP), the DOE will provide assistance to national labs to help measure and verify results. Grant recipients must submit a plan of how they will use funds within 18 months and disburse funds within 36 months. The DOE will perform on-site monitoring annually in each state.

Targets	None specified
----------------	----------------

Name of law	Executive Order 13514: Federal Leadership in Environmental, Energy, and Economic Performance [Executive]
Date of entry into force	5 October 2009
Categories	<ul style="list-style-type: none"> – Energy demand – Transportation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Climate change, energy efficiency
Summary of bill	The Order aims to make GHG emission management a priority for federal agencies, thus establishing reporting requirements with detailed targets and deadlines. The focus is on transportation, overall energy use and procurement policies. All federal agencies are required to develop, implement and annually update a Strategic Sustainability Performance Plan that prioritises agency actions based on life-cycle return on investment.

It also directs agencies to work on climate change adaptation. Supersedes *E.O.13423: Strengthening Federal Environmental, Energy, and Transportation Management*.

The Order requires all Federal agencies to:

- Improve electronic product/service efficiency and stewardship as well as to follow pollution prevention and waste reduction requirements
- Improve fleet and transportation management
- Enhance efforts towards sustainable buildings and communities

The Order directs government agencies to work on climate change adaptation, including:

- The appointment of an Adaptation Specialist
- Establishment of an Agency-wide Climate Change Adaptation Policy and Mandate by June 2011
- Participation in Climate Change Adaptation workshops and education of all employees throughout 2011
- Identification and analysis of climate vulnerabilities that would interfere with the Agency's mission (by March 2012)
- Implementation of the Adaptation Plan by September 2012

Each federal agency must report a percentage GHG emissions reduction target for 2020 relative to a 2008 baseline to the White House's Council on Environmental Quality (CEQ) Chair and Office of Management and Budget (OMB) Director. Additionally, each agency must produce an inventory of absolute GHG emissions on transportation, energy use and procurement for the fiscal year 2010 and then annually thereafter.

Targets	None specified
----------------	----------------

Name of law	Duncan Hunter National Defense Authorisation Act for Fiscal Year 2009 – Energy Provisions [Legislative]
--------------------	--

Date of entry into force	15 October 2008
---------------------------------	-----------------

Categories	<ul style="list-style-type: none"> - Energy supply - Energy demand - Research and Development
-------------------	--

Driver for implementation	Renewable energy, energy efficiency
----------------------------------	-------------------------------------

Summary of bill	Authorises defence spending for fiscal year 2009 and includes several provisions aimed at energy efficiency, renewable energy and use of alternative sources of energy in the armed forces.
------------------------	---

The bill requires the Department of Defense (DoD) to consider the use of wind and solar energy for expeditionary forces to reduce the need to deliver fuel to battle areas, where electricity is typically produced by engine-driven generators. A report examining the feasibility of solar and wind energy must be submitted 120 days following enactment. It requires the DoD to conduct a study on the use of alternatives to reduce the life-cycle emissions of alternative and synthetic fuels (including coal-to-liquid fuels).

Targets	None specified
----------------	----------------

Name of law	Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) – Title IX-Renewable Energy Provisions [Legislative]
--------------------	---

Date of entry into force	18 June 2008
---------------------------------	--------------

Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – REDD+ and LULUCF – Research and Development
Driver for implementation	Renewable energy
Summary of bill	<p>The Act includes provisions on agricultural subsidies, energy, conservation, nutrition and development.</p> <p>Expands the Biorefinery Assistance Programme by providing loan guarantees (2008–2010) of USD 320 million for the creation of commercial-scale biorefineries as well as grants to build demonstration-scale biorefineries. Allocates USD 55 million to support renewable biomass use in biorefineries instead of fossil fuels. Creates the Rural Energy for America Programme (REAP), which is worth USD 285 million, and promotes the use of hydroelectric source technologies. Creates the Biomass Crop Assistance Programme to support crop conversion to bioenergy. Expands the Biobased Market Programme by allocating USD 11 million to a federal procurement programme and a voluntary labelling programme. Allocates USD 345 million to the Bioenergy Programme for Advanced Fuels to support the production of advanced biofuels. Expands the Feedstock Flexibility Programme for Bioenergy Producers by subsidising the use of sugar for ethanol production through federal purchases of surplus sugar.</p> <p>Authorises the Forest Service to conduct a comprehensive research and development programme on forest biomass for energy generation.</p> <p>Allocates USD 258 million to the Biomass Research and Development Initiative to provide competitive grants, contracts and financial assistance to eligible entities to carry out research and development and demonstration of biofuels and bio-based products.</p> <p>Provides USD 1 million per year (2008–2012) to the Biodiesel Fuel Education Programme for the allocation of competitive grants to educate public and private actors operating vehicle fleets as well as the public at large about the benefits of biodiesel fuel use.</p>
Targets	None specified

Name of law	Energy Independence and Security Act of 2007 [Legislative]
Date of entry into force	19 December 2007
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Transportation – Research and Development
Driver for implementation	Climate change, renewable energy, energy efficiency, energy security
Summary of bill	<p>Introduces measures to expand the production of renewable fuels, reduce US dependence on oil, increase energy security and address climate change.</p> <p>Sets a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel by 2022, and provides incentives for the development of renewable energy technologies (solar, wind, geothermal, ocean, biomass or landfill gas).</p> <p>Includes provisions on lighting: phasing out the use of incandescent light bulbs by 2014, improving lighting efficiency by more than 70% by 2020, setting an energy efficient standard and promoting consumer education and lamp labelling. Also includes provisions for energy efficiency in appliances, buildings (i.e. ensuring that all new federal buildings are carbon neutral by 2030) and transportation. Further establishes provisions for funding of</p>

research on carbon capture and storage and hydrogen technologies.

Includes the first increase in fuel economy standards in 30 years. Automakers are required to boost fleet-wide fuel economy to 35 miles per gallon (14.8 km per litre) by 2020. This was superseded by an agreement brokered by the President to settle automakers' court cases against the State of California. The agreement established a standard of 35.5 miles per gallon by 2016.

Creates the Renewable Energy Innovation Manufacturing Partnership Programme to support research and development and deployment of renewable energy technologies (solar, wind, biomass, geothermal, energy storage and fuel cell systems).

Requires all lighting in federal buildings to use Energy Star products or products designated under the Federal Energy Management Programme (FEMP) by the end of 2013; requires all Federal agencies to purchase devices that limit standby power use; requires the Department of Housing and Urban Development (HUD) to update energy efficiency standards for all public and assisted housing by applying the International Energy Conservation Code.

Targets	None specified
----------------	----------------

Name of law	Executive Order 13423: Strengthening Federal Environmental, Energy, and Transportation Management [Executive]
--------------------	--

Date of entry into force	26 January 2007
---------------------------------	-----------------

Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Transportation
-------------------	--

Driver for implementation	Climate change, renewable energy, energy security
----------------------------------	---

Summary of bill

Demands federal agencies to conduct their transportation and energy-related activities in an environmentally, economically and fiscally sound and integrated way. Sets more demanding targets than the Energy Policy Act 2005 and supersedes E.O. 13123 and E.O. 13149.

Promotes renewable energy generation projects in federal agencies and determines that each agency should ensure that half of the statutorily required renewable energy consumed in a fiscal year comes from new renewable sources.

Determines that each federal agency should reduce energy intensity by 3% annually until the end of fiscal year 2015 or 30% by the end of fiscal year 2015, relative to energy use in 2003.

Determines that if an agency operates a fleet of at least 20 motor vehicles it must ensure a 10% annual increase in total fuel consumption that is non-petroleum based relative to 2005. Each agency must equally ensure the use of plug-in hybrid electric (PHEV) vehicles when these are commercially available at a reasonably comparable life-cycle cost to non-PHEV vehicles.

Requires each federal agency to:

- Improve energy efficiency and reduce GHG emissions
- Procure energy from new renewable sources
- Adhere to sustainable environmental practices (i.e. acquisition of bio-based, environmentally preferable, energy-efficient, water-efficient and recycled-content products)

-
- Reduce the fleet's total consumption of petroleum products
-

Targets None specified

Name of law Energy Policy Act 2005 (Energy Bill) [Legislative]

Date of entry

into force 8 August 2005

Driver for

implementation Climate change, renewable energy, energy efficiency, air pollution

Categories

- Energy supply
- Energy demand
- Transportation
- Research and Development

Summary of bill A statute that provides tax incentives and loan guarantees for energy production of various types. Supersedes the National Energy Plan and is partially superseded by the Energy Independence and Security Act 2007.

Provides USD 4.3 billion tax breaks for nuclear power; USD 2.7 billion to extend the renewable electricity production credit; and USD 1.6 billion in tax incentives for investment in clean coal facilities. Grants loan guarantees for innovative technologies such as advanced nuclear reactors and clean coal. Provides subsidies to wind energy, promotes the competitiveness of geothermal energy vis-à-vis fossil fuels and allocates USD 50 million annually to a biomass grant programme. Includes ocean energy sources as separate renewable technologies. Provides tax credits for electricity generation from wind, closed-loop biomass, open-loop biomass, geothermal energy, solar energy, small irrigation power, municipal solid waste and refined coal. Regulates renewable energy development in the Outer Continental Shelf (OCS).

Provides USD 1.3 billion tax breaks for conservation and energy efficiency.

Provides USD 1.3 billion tax breaks for alternative motor vehicles and fuels (ethanol, methane, liquefied natural gas, propane). Provides up to USD 3,400 tax credit for hybrid vehicle owners.

Requires Federal facilities to draw part of their energy from renewable sources. Provides tax breaks for those making energy conservation improvements to their homes. Requires that Federal fleet vehicles capable of operating on alternative fuels use these fuels exclusively.

Targets None specified

4.65 Venezuela



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	178
excl. LULUCF	192
Change from base year (1990)	N/A
Latest reporting year	1999
Importance as an emitter	Top 50
UNFCCC ratification status and date	Date of signature: 12 June 1992 Date of ratification: 28 December 1994 Date of entry into force: 28 March 1995
Kyoto Protocol ratification status and date	Date of signature: Date of ratification: 18 February 2005 Date of entry into force: 19 May 2005
2020 pledge	No pledge made
Flagship legislation	No flagship legislation

Legislative Process

Venezuela is a federal democratic state made up of 23 governing districts (called states) and the federal capital district of Caracas. The power to make law rests in the unicameral legislature, called the National Assembly, and is made up of 165 representatives, voted into office for five-year terms from congressional districts with no limits to the number of terms they may serve.

Law projects (bills) are proposed by members of the National Assembly and go through two readings. The first reading and debate discusses the motives and objectives of the law as well as viability. Should it pass the first reading, the bill is then sent to the corresponding legislative committee to elaborate the legal text. Should the law overlap the expertise of multiple committees, a special committee is temporarily formed with representatives from all pertinent groups. In the second reading of the law project, the bill is debated article by article. If approved outright, the bill will be proclaimed law by the Secretary of the National Assembly and sent to the executive branch for the President's sanction. Should serious objections be raised, amendments will be proposed and the bill will return to the designated committee for revision.

Venezuelan constitutional law dictates that during the drafting of proposed legislation, the National Assembly and Legislative Committees shall consult with the executive branch (represented by the Council of Ministers), the judicial branch (represented by the Chief Justice of the Supreme Court), a special organ called the Council for Republican Morals meant to protect the democratic interests of the citizens, and organised civil society. A bill becomes law once signed by the Secretary of the National Assembly, the President and two vice-presidents; and enacted on the day of its publication in the *Cúmplase*, the official gazette of the republic.

The executive branch – made up of the President, elected to six-year terms, two vice-presidents and the Cabinet of Ministers (appointed by the President) – also has the power to make executive decrees which carry legal weight similar, but not equal to, federal laws.

Approach to Climate Change

Since the ascent to the Presidency by Hugo Chavez in 1999, national politics in Venezuela have followed what is called the democratic revolutionary principles of a Bolivarian Revolution. Venezuelan leaders have looked through this lens while speaking about climate change and environmental protection. In this sense, principles should be based on the recognition that environmental degradation and effects of climate change disproportionately affect the poor and disenfranchised.

In relation to international negotiations and the geopolitics of climate change, Venezuela has maintained that a certain form of capitalism is responsible for the environmental degradation and climate change; and has advocated for a

framework that prioritises human rights and social justice in addressing climate change mitigation and adaptation. For example, Venezuelan international negotiators have sought to press on the international community that access to clean water is a human right, a reflection of the growing concerns over water scarcity as a result of climate change as well as revulsion towards some multinational corporations' strategies to privatise water resources and advocate for free market policies to manage water delivery systems.

Some international commentators have noted that the debate over climate change, particularly mitigation of global warming through decreased carbon emissions, is a double-edged sword for the Bolivarian Republic. On the one hand, the recognition of unchecked capitalist growth as the cause of global warming; yet on the other hand significant portions of both Venezuela's exports and federal budget depend on the exploitation of the country's vast petroleum reserves.

Beyond the ratification of the Kyoto Protocol and additional international treaties, and despite the promulgation of dozens of laws regulating relations between economic activities and the environment as well as the protection of natural resources; Venezuela has no piece of legislation that singularly or comprehensively confronts climate change or aspects of climate change, either from the perspective of mitigation or adaptation. The government has instead acted within existing environmental legislation and through ministerial programmes related to energy.

Chapter IX of the Venezuelan National Constitution obliges the state to guarantee citizens rights to a natural environment free of contamination and to explicitly protect air, water, national coastlines, climate, and the ozone layer. Therefore, it may be interpreted that responding to climate change, through a variety of means and ways, is a constitutional obligation of the state.

The Economic and Social Development Plan for 2007-2013, which establishes national priorities during the presidential term, also states that paying adequate attention to global warming shall be a national imperative. Such policies have seen the implementation of certain national programmes to combat desertification, preserve coastal lands as well as natural environments deemed important to biodiversity. But this priority has not resulted in the passing of significant legislation regarding climate change or the finalising of a national plan to adapt or mitigate the effects of climate change.

Energy supply

There is no national legislation to mitigate energy consumption, advance renewable energy, or increase energy efficiency on either the demand or the supply side. However national ministries and state-owned companies are charged with developing plans and implementing projects. The Ministry of Popular Power for Electric Energy was created in 2009 with the objective of increasing the amount of electricity produced nationally. It has focused largely on hydropower, which presently accounts for upwards of 70% of nationally-produced electricity despite Venezuela's status as a major petroleum producer.

The ministry or state-owned energy companies have also founded multiple wind farms (with capacities of up to 400MW) and thermoelectric power plants (capacity to produce up to 100MW).

REDD+ and LULUCF

The Ministry of Popular Power for the Environment has instituted a programme to combat desertification called Mission Tree. As of 2013 the programme had reforested nearly 35,000 ha with nearly 30 million trees. A two-year programme goal is to plant an additional 20 million trees by 2015.

National Strategic Plans

The Law of Risk Management, passed in 2009, calls for the elaboration of a National Plan for Climate Change that would comprehensively address both mitigation and adaptation. In 2010 the legislative committee of Environment, Natural Resources and Climate change announced that a bill specific to climate change was on their agenda. To date, however, the National Plan has not been promulgated nor has a bill specifically concerning climate change been passed.

Venezuela: Flagship Legislation

Venezuela currently has no federal flagship climate legislation.

Venezuela: Other Relevant Legislation

Name of law	Law of Socio-Natural and Technological Risks [Legislative]
Date of entry into force	9 January 2009
Categories	<ul style="list-style-type: none"> – Adaptation – Research and Development – Institutional/Administrative arrangements
Driver for implementation	Climate change
Summary of bill	This general law specifies various risks faced by the country and stipulates how the government is to respond. Climate change and environmental contamination are specified as national priorities. Specifically the law states that a special commission named The National Advisory Board of Sociocultural and Technological Risk Management shall dictate, within one year of promulgation, the terms for the creation of a National Plan of Adaptation to Climate Change. Such a plan is required to include the evaluation of national and regional vulnerabilities to a changing climate, potential effects that climate change will bring to Venezuela, and strategies to adapt to climate change.
Targets	None specified

Name of law	Organic Law of Environment No 5833 [Legislative]
Date of entry into force	12 December 2006
Categories	– Energy Demand
Driver for implementation	Sustainable development, Climate change
Summary of bill	<p>This law provides legal framework for the regulation and protection of Venezuela's natural environment, with a framework of 'sustainable development.' The explicit objective is to contribute to the security of the national environment and maximise the wellbeing of the population, sustaining the global ecosystem for the benefit of humanity.</p> <p>The legislation is far-reaching and comprehensive in many aspects concerning environmental protection. It mentions climate change in an article that establishes the government's legal authority to regulate industries and technologies that emit gases that affect the earth's ozone and contribute to climate change.</p>
Targets	None specified

4.66 Vietnam



Fact Box

Greenhouse Gas emissions (MtCO₂e)	
incl. LULUCF	151
excl. LULUCF	136
Change from base year (1990)	NA
Latest reporting year	2000
Importance as an emitter	Below top 20
UNFCCC ratification status and date	Date of signature: 11 June 1992 Date of ratification: 16 November 1994 Date of entry into force: 14 February 1995
Kyoto Protocol ratification status and date	Date of signature: 3 December 1998 Date of ratification: 25 September 2002 Date of entry into force: 16 February 2005
2020 pledge	No pledge made
Flagship legislation	The National Climate Change Strategy and the No: 2139/QĐ-TTg Decision on Approval of the National Climate Change Strategy

Legislative Process

Vietnam is a highly centralised state, whose constitution provides the fundamental and highest law. The majority of power resides at this central level with all laws and policies issued by the National Assembly and the government. The former produces framework legislation, while the latter provides guidance on the implementation of legislation.

The National Assembly is a unicameral body that is elected for a 5-year term, and which in turn elects a president as head of state, and a prime minister as head of government. The assembly is Vietnam's legislative body, and the highest level representative body of the Vietnamese people. It is responsible for approving and supervising the implementation of state plans. The Communist Party of Vietnam has decisive influence over the executive and exercises control through the Central Committee. Members of the party hold all senior government positions.

Approach to Climate Change

Vietnam has the highest population density in Southeast Asia after Singapore, with a national average of 232 people/km² and up to 1,000 people/km² in the Northern Delta. Since the country lies in the tropical cyclone belt, it is already vulnerable to hazards including floods, droughts, saltwater intrusion and landslides. Vietnam's National Climate Change Strategy states that between 2001 and 2010, damage caused by such disasters has led to 9,500 dead and missing people and the loss of about 1.5% of GDP each year. The areas that are projected to suffer increased frequency and intensity of these events are largely those with already high levels of poverty.

This led to the country being recognised as one of the five countries likely to be most affected by climate change at the 13th Conference of Parties to the United National Framework Convention on Climate Change in Bali (UNFCCC COP 13).

Climate Change is therefore of great importance to the government whose *Doi Moi* socialist market economic goals and policies focus on poverty relief and economic development of rural areas. The National Strategy on Climate Change states that adaptation is its priority in the initial phases of the plan. Mitigation actions are "no regrets" options that provide win-win solutions, such as REDD+ activities in areas suffering from erosion and landslides due to deforestation and land use change; energy efficiency and renewable energy.

Vietnam ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and 1994, the Kyoto Protocol in 1998 and 2002 and the Hyogo Framework for Action (2005). It also ratified the Association of Southeast Asian Nations (ASEAN) Agreement on Disaster Management and Emergency Response (AADMER) in 2009. Vietnam's recognition of the importance of climate change is demonstrated by domestic responses as well as international engagement. It has developed a series of national strategies and activities relating to natural

disasters and climate change, supported largely by Decrees from the Prime Minister. They include the National Strategy on Climate Change; Vietnam Green Growth Strategy, The National Action Plan on Climate Change; The National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020; and The National Target Programme to Respond to Climate Change.

The most important are the National Strategy on Climate Change, approved by the Prime Minister in 2011 (which sets out national programmes to address climate change) and the Green Growth Strategy, which sets out to foster sustainable development, including cutting GHG intensity (per unit of GDP initially), and in absolute terms by 2030. The National Target Programme to Respond to Climate Change (2008) sets out, *inter alia*, to: evaluate the impact of, and set up action plans to respond to climate change in the short and long term; and to ensure sustainable development and develop a low carbon economy. The programme set the target of developing a framework of 1) legal documents, 2) mechanisms and 3) policies to respond to climate change, and by 2015 to promulgate, supplement and update all three of these.

The Action Plan for Adaptation to Climate Change in the Agriculture and Rural Development Sector (for 2008–2020; APF), was launched by the Ministry of Agriculture and Rural Development (ARD) in 2008. These decisions are intended to improve adaptation capabilities and ensure the sustainable development of agriculture and rural development.

While it doesn't refer specifically to climate change, The National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020 outlines Vietnam's approach for disaster mitigation and management, particularly floods, storms and droughts. The strategy is Vietnam's main disaster risk management framework.

The Ministry of Natural Resources and Environment (MONRE) is the leading government agency in climate change response. It has mooted the creation of a national database on climate change, and regulates Clean Development Mechanism Projects. There are 56 registered CDM projects, with 6 million Certified Emissions Reductions (CERs) issued, and with a production of around 2.15 million CERs annually.

Future climate change legislation is likely to target the transportation sector, with plans to establish an Action Plan Creation Board under the Ministry of Transportation, tasked specifically with responding to climate change. There have also been efforts to mainstream climate change response in various other sector development plans, particularly in industry and the construction sector.

Energy supply

Vietnam is one of the fastest growing economies in South East Asia and electricity demand is predicted to treble by 2020. As such it is trying to rapidly diversify its energy mix, and include renewables. While it has made no formal commitments

or pledges under the Copenhagen Accord, nor implemented any measures directly aimed at reducing GHGs¹⁵, Vietnam has shown some commitment to ensuring that rising energy demand is at least in part supplied from renewable sources. Fossil fuel subsidies are due to be phased out by 2020, making renewables relatively more attractive on a cost basis.

Various consultancy and government reports highlight Vietnam's potential to expand the renewable energy sector since aside from hydropower¹⁶ it currently represents only a small proportion of the energy production. The government intends to increase renewables' contribution to the energy mix from 3% in 2010 to 5% by 2020 and 11% by 2050. Two key incentives are The Regulation of Avoided Cost Tariff and Standardised Power Purchase Agreement for Small Renewable Energy Power Plants (SPPA Regulation) and the Avoided Cost Tariff for 2009 (ACT Regulation). Biofuels (ethanol and vegetable oil) only represent a small proportion of the energy mix, but the government aims to increase their contribution to 1% of petrol and oil by 2015, rising to 5% by 2025. Energy efficiency is also being promoted, with US\$2.25 million allocated to energy efficiency projects in 2008.

The government is supporting the development of onshore wind power and local analysts expect more legal instruments in 2014 to encourage the development of power generation from biomass and biogas. The Renewable Energy Action Plan identifies hydro and solar power as the existing sources with the highest potential for development. Nuclear power is now also expected to play a role. A nuclear power development plan approved by the government in August 2007 set a target of 8000 MW of nuclear capacity by 2025.

However, despite these renewable energy ambitions, even the National Strategy for Climate Change states that *"to become a modern industrialised country by 2020, Vietnam will need to accelerate its production and consumption activities, especially in industry, transportation, and urban development, which may result in higher emissions of greenhouse gases"*. Further, the National Socio-Economic Development and National Power Development Master Plans predict big increases in carbon intensive coal-fired power generation. Domestic analysts consider that government and private investments will follow these two plans, rather than any of the climate change documents described here.

The impact of climate change strategies in Vietnam will depend on the degree to which there are changes in 2015-2016 in the National Socio-Economic Development and National Power Development Master Plans to align them with the climate change documents. Without such change, coal-fired power

¹⁵though see the Green Growth Strategy targets

¹⁶Hydro-electricity provides 35% of Vietnam's energy. However, a major concern over hydroelectric power is that it has been developed in forested areas, causing deforestation and the loss of resources to local communities, in direct conflict with goals of rural poverty alleviation, sustainable forest use and specifically with regards to climate change policy, REDD+.

generation will account for over 50% of total capacity by 2030, from less than 20% in 2010.

REDD+ and LULUCF

Vietnam is one of 13 countries chosen by the UN REDD programme, and has submitted a Readiness Preparation Proposal to the World Bank's Forest Carbon Partnership Facility.

To protect existing forest, the Law on Mining prohibits mining activities in the areas of special-use forests, protection forests or areas planned for special-use forests or protection forests. This presents an opportunity at least for the implementation of REDD+, but mineral extraction is often given priority over forest conservation. Despite Article 114 of the Law on Environmental Protection, which stipulates that miners should pay for forest restoration after cessation of mining, it is reported that this money is rarely collected.

To promote restoration, the government has issued a number of policies on developing watershed protection forest, such as the 5 Million Hectares Reforestation Programme (5MHRP), which was mandated largely to address the problems of deforestation caused by hydropower development. Other schemes to increase forest cover include Program 135 (a poverty reduction programme) and the National Forest Development Strategy (NFDS). Directive No. 38/2005/CT-TTg directs localities to re-plan forests for the requirements of forest management which include, inter alia, the objectives of conservation and protection of forests. Nonetheless, government plans to expand rubber plantations to 800,000 ha by 2020 includes expansion in areas of "natural poor forest". Without clarification of this term, continued planned clearance of natural forest may run against REDD+ principles.

Other actions in LULUCF include payments for ecosystem services (PES) in the forest sector: Vietnam piloted PES in Lam Dong and Son La from 2008–2010. This has the potential to reconcile the apparent conflicts between differing demands for land use, particularly hydropower and forest conservation. The decree formalising the national development of PES crucially includes carbon as an ecosystem service.

Vietnam: Flagship Legislation

Name of law	The National Climate Change Strategy and the No: 2139/QĐ-TTg Decision on Approval of the National Climate Change Strategy (Executive)
Date of entry into force	1 December 2011
Categories	<ul style="list-style-type: none"> – Energy supply – Energy Demand – REDD+ and LULUCF

-
- Transportation
 - Adaptation
 - Research and development
 - Institutional/Administrative arrangements
-

Driver for**implementation** Climate change

Summary of bill These two pieces of legislation establish and approve Vietnam's National Climate Change Strategy. The Minister of Natural Resources and Environment (MoNRE), other ministers, leaders of ministerial agencies, heads of governmental agencies, presidents of Provincial People's Committees are responsible for implementing this Decision

The Strategy, approved by the Prime Minister of Vietnam, is a "multi-century vision" and is broad and multi-sectoral. Within the Strategy, the following specific objectives are set out:

- Ensure food security, energy security, water security, poverty alleviation, gender equality, social security, public health; enhance living standards, conserve natural resources in the context of climate change
 - Consider low carbon economy and green growth as principles in achieving sustainable development; GHG emission reduction and removal to become a mandatory index in social and economic development
 - Raise awareness, involvement and coping capacity of stakeholders; strengthen scientific and technological potential and human resources; strengthen institutional arrangements to utilise financial assistance; enhance the economic competitiveness and status of Vietnam; take advantage of climate change opportunities for social and economic development; promote climate-friendly behaviours
 - Join forces with international communities in addressing climate change; increase international co-operation to address climate change effectively
-

Targets

Targets to be achieved by 2020 (but some also refer to 2050, 2030 and 2015):

Agriculture and husbandry

- Complete basic system for pest and disease control for crops and livestock

After every 10 years, reduce GHG emission from agriculture by 20%, while securing 20% growth and lowering the rate of poverty by 20%

LULUCF

- Basic completion of creation of management capacity, uniform planning and sustainable national development of water resources
- Establish, manage, protect, sustainably develop and use 16.24 million ha of forest, increase forest coverage to 45%; manage 8.134 million ha of production forest; 5.842 million ha of protection forest and 2.271 million hectares of special-use forest

Energy and industry

- Hydropower plants' capacity reaches 20,000–22,000 MW
 - Increase the share of new and renewable energies to 5% of the total commercial primary energies (increase to 11% by 2050)
 - 90% of industrial facilities using cleaner production and reducing consumption of energy, fuel and materials
 - Raise the total contribution of industrial production using high technologies, ensuring added value in the total industrial production value by 42–45%; promote innovation towards high technologies
 - 20% of industry using high technologies and equipment (above 80% by 2015)
 - Take step-by-step actions to complete the establishment of sustainable and industrial zones resilient to climate change by 2030
 - By 2015 establish a new price system for efficient use of energy
 - 90% of urban household solid waste to be collected and treated, of which 85% to be recycled, reused and recovered for energy generation.
-

<i>Transportation</i>	<ul style="list-style-type: none"> - The transportation system to meet societal needs (no figures provided; and by 2050 complete modernisation of domestic and international transportation network) - Accelerate the use of compressed natural gas and liquefied gas in buses and taxis, with 20% of buses and taxis by 2020 (and by 80% by 2050)
<i>Institutional</i>	<ul style="list-style-type: none"> - By 2015 issue climate change-risk adjusted sectoral and local socio-economic strategies and plans
<i>Healthcare</i>	<ul style="list-style-type: none"> - In the context of climate change challenges: by 2020 everyone has access to basic healthcare services (by 2030: full access to healthcare services)

Vietnam: Other Relevant Legislation

Name of law	Vietnam Green Growth Strategy (decision 1393/QD-TTG) (Executive)
Date of entry into force	2012
Categories	<ul style="list-style-type: none"> - REDD+ and LULUCF - Transportation - Adaptation - Research and development - Institutional/Administrative arrangements
Driver for implementation	Sustainable development
Summary of bill	<p>Green growth is a means to achieve a low carbon economy and to enrich Vietnam's natural capital through sustainable development. It notes that GHG emissions and removals are gradually becoming essential indicators in social-economic development, and attempts to normalise this within Vietnam's development framework.</p> <p>The central pillars of the programme are</p> <ul style="list-style-type: none"> - Low Carbon Growth; - Greening of Production; and - Greening of Lifestyles <p>The strategy includes the development of tax incentives for high-technology, scientific research and technology development firms in the environment sector. They will pay 10% tax, a discount against the baseline 25% tax rate, for the first 15 years of operation.</p> <p>Further incentives come from import tax exemptions to encourage the import and use of technology related to environmental monitoring, analysis and the development of clean energy.</p> <p>In addition, taxation will be increased on water exploitation, from 1% to 3% for the exploitation of surface water, and 3% to 8% for the exploitation of groundwater.</p>
Targets	<p>For 2020:</p> <ul style="list-style-type: none"> - GDP per capita doubled compared to 2010 - Reduce energy consumption per unit of GDP by 1.5-2% per year - Reduce intensity of GHG emissions per unit of GDP by 8-10% or double the target with international support <p>For 2030:</p> <ul style="list-style-type: none"> - Reduce total GHG emissions by at least 1% per year without and 2% with international support. - Environmental degradation is addressed and natural capital stocks are to be improved while access to and use of clean and green technology is significantly enhanced.

For 2050:
– Vietnam has mainstreamed Green Economic Development.

Name of law	Resolution 24/NQ-TW: Active response to climate change, improvement of natural resource management and environmental protection [Executive]
Date of entry into force	2013
Categories	– Institutional and administrative arrangements
Driver for implementation	Sustainable development
Summary of bill	<p>This resolution is intended to further enhance the mainstreaming of climate change and sustainable development in Vietnam, in response to what the government sees as an insufficiently rapid and serious response to previous action plans and legislation amongst Vietnam's ministries.</p> <p>The resolution promotes the shift towards a model of green growth (see flagship Green Growth Strategy). This involves restructuring the economy towards sustainable development.</p> <p>The resolution seeks to create favourable conditions for businesses to invest in green growth, with the government mandated to establish the legal framework and build specific policies to support business.</p>
Targets	None specified

Name of law	Decision No.799/QĐ-TTg. Approval of the national REDD+ action programme (Executive)
Date of entry into force	1 June 2012
Categories	– REDD+ and LULUCF
Driver for implementation	Climate change mitigation and co-benefits
Summary of bill	<p>Prime Minister's approval of the national REDD action programme in the 2011–2020 period. The document sets out the goals, objectives and tasks of Vietnam's REDD+ policy. Principally the legislation is designed to reduce emissions from LULUCF by setting out the legal framework for pilot REDD+ programmes and activities to be demonstrated.</p>
Targets	<ul style="list-style-type: none"> – Reduce emissions in the agricultural sector by 2020 by 20% – Increase the national forest cover rate to 44–45% by 2020

Name of law	Decree 117/2010/ND-CP on The Implementation of the Law on Forest Protection and Development (Executive)
Date of entry into force	2010
Categories	– REDD+ and LULUCF
Driver for implementation	LULUCF
Summary of bill	<p>This Decree addresses the organisation of forest management, protection, development and use in Vietnam. Specifically, it addresses forest protection and elucidates the requirements for development plans. It also addresses the related topics of land tenure, namely: forest assignment, lease and recovery, change of forest use purposes, exchange, transfer and donation; recognition, registration, sub-lease, mortgage, guarantee, capital contribution with, and bequeathal of, forest use rights or ownership rights over planted production</p>

forests. Finally it sets out requirements for the production of forestry statistics; inventory and the monitoring of changes in forest resources. It is therefore of direct relevance to REDD+ implementation.

Targets None specified

Name of law Law on Energy Efficiency No: 50/2010/QH12 (Legislative)

Date of entry

into force 17 June 2010

Categories – Energy demand

Driver for Energy efficiency

implementation

Summary of bill Vietnam's Law on Energy efficiency and conservation took effect on January 1, 2011.

The law covers all areas of the economy, and specifically:

- The industrial sector, including users and producers of energy, through to cottage industries
- The transportation sector, including amongst others the manufacturers and importers of transportation equipment and vehicles; and the national transportation infrastructure
- The agricultural sector, including the development of irrigation
- The service and domestic sectors
- Across state-funded investment projects and agencies

Further, it promotes:

- Measures to promote economical and efficient use of energy, including scientific and technological development
- The development of education and consultancy services in the energy sector

Finally it sets out the state's responsibilities for the economical and efficient use of energy.

Targets None

Name of law Decision No. 2730/QĐ-BNN-KHCN: Decision on Promulgation of the Climate Change Adaptation Framework Action (Executive)

Date of entry

into force 2008

Categories

- Adaptation
- Research and development
- Institutional/Administrative arrangements

Driver for

implementation Building capacity in rural areas to mitigate and adapt to climate change

Summary of bill Overarching goals are to :

- Maintain security and safety across the country but particularly in vulnerable mountainous and deltaic regions
- Maintain stable agricultural production
- Develop infrastructure protection (such as dykes)

The document also sets out specific goals and tasks that should be completed in order to achieve these goals including, *inter alia*:

- The development of human resources
- Improved research capacity, including climate change forecasting
- To build and strengthen policy frameworks
- To develop and accelerate the dissemination of knowledge of climate change

Targets Guarantee 3.8 million ha for cultivating two rice crops a year.

Name of law Approving the National Energy Development Strategy of Vietnam for the period up to 2020 with outlook to 2050. No. 1855/QĐ-TTg (Executive)

Date of entry into force 2007

Categories

- Energy supply
- Energy demand

Driver for implementation Energy security and autonomy

Summary of bill Approves the Strategy on National Energy Development Strategy of Vietnam for the period up to 2020, with outlook to 2050. The Strategy states that renewable energy forms are not yet sufficiently assessed in Vietnam and so provides a mandate for further research into potential for exploitation. It also specifically mentions use of propaganda on the use of renewable energy sources in remote areas of Vietnam.

The Strategy also states the goal of integrating the use of renewable energies into energy saving programmes and other national target programmes, including programmes of rural electrification, forest plantations, hunger eradication and poverty alleviation.

Furthermore the strategy gives priority to development of renewable energy, bio-energy and nuclear power.

Targets By 2050, nuclear electricity will account for about 15–20% of total commercial energy consumption.

Name of law Decision No. 147/2007/QĐ-TTg: On the Issuance of Production Forest Development Policy in the 2007–2015 Period (Executive)

Date of entry into force 2007

Categories

- REDD+ and LULUCF
- Institutional/Administrative arrangements

Driver for implementation Environmental protection; increasing incomes in the forestry sector

Summary of bill The bill refers largely to the development of the forestry sector, but includes elements on reforestation that would be relevant to the development of REDD+ in Vietnam. For instance, Article 5 sets out government support for afforestation and extension exercises, such as meeting the surveying costs in reforestation projects; and providing support for the development of seed production centres and nurseries.

Targets To plant 2 million ha of production forest with an average of 250,000 ha per year (including the reforestation area after harvesting).

Name of law Decision 177/2007/QĐ-TTg Approving the Scheme on Development of Biofuels up to 2015, with a Vision to 2025 (Executive)

Date of entry into force	1 November 2007
Category	<ul style="list-style-type: none"> – Energy supply – Energy demand – Research and development – Institutional/Administrative arrangements
Driver for implementation	Energy security and environmental protection
Summary of bill	<p>The Policy sets out to promote the production and use of biofuels in Vietnam, and to provide a legal and financial framework attractive and conducive to investment in the sector. This includes, <i>inter alia</i>, favourable tax mechanisms; concessional loans and (unspecified) land use rights to investors in biofuel production. Between 2007 and 2015, biofuels are classified as eligible for special investment incentives, including tax exemption or reduction under Decree No. 24/2007/ND-CP.</p> <p>The Decision also encourages research and development in the field and the “mastery” and development of the relevant technologies within Vietnam. Specific activities to achieve this include technology transfer and sending scientific and technological personnel to countries with a developed biofuel production industry for professional training of 6–12 months.</p> <p>The final elements of the Decision refer to the institutional issues and assigns responsibilities for specific tasks involved in implementation and organisation to Ministries.</p>
Targets	By 2010 develop various models of trial production, specifically 100,000 tonnes of E5 and 50,000 tonnes of B5. By 2015 the output of ethanol and vegetable oils will reach 250,000 tonnes. The vision to 2025 is for Vietnam to have achieved advanced level technology in the sector and for ethanol and vegetable output to reach 1.8 million tonnes, c. 5% of Vietnam’s gasoline and oil demand (unspecified whether current demand or projected level of demand).
Name of law	National Target Programme on Efficient Use and Saving Energy (EUSE), approved by Decision 79/2006/QĐ-TTg (Executive)
Date of entry into force	2006
Categories	<ul style="list-style-type: none"> – Energy supply – Energy demand – Transportation – Institutional/Administrative arrangements
Driver for implementation	Energy efficiency
Summary of bill	<ul style="list-style-type: none"> – Sets out to approve the national programme on Energy Efficiency and Conservation for 2006–2015. – The Programme itself has a series of detailed programmes. The groups are: – Intensification of the state administration of energy efficiency and conservation, and organising state control systems – Awareness raising of energy efficiency (propaganda etc.) – Developing and popularising high efficiency and energy saving products – Energy efficiency and conservation in Industry – Energy conservation and efficiency in building – Energy conservation and efficiency in transportation
Targets	<ul style="list-style-type: none"> – Saving 3–5% of the total national energy consumption in the period 2006–2010 – Saving 5–8% of the total national energy consumption in the period 2011–2015

-
- Establishing a model of efficient use and conservation of energy and applying this to 40% of enterprises in period 2006–2010, moving to 100% enterprises in 2011–2015
 - Applying compulsory control of energy efficiency and conservation in construction to 100% of buildings built from 2006
 - Popularising high-efficiency equipment and reducing energy intensity of production
 - Minimising fuel consumption in equipment (presumably industrial plant)
-

5 Information Sources

- UNFCCC, 2009. Copenhagen Accord. *Draft decision -/CP.15, Fifteenth Session of the Conference of the Parties, Copenhagen, December 2009* [URL: <http://unfccc.int/resource/docs/2009/cop15/eng/l07.pdf>]. Accessed 27 January 2014.
- United Nations Framework Convention on Climate Change (UNFCCC), 2012. *Appendix I – Quantified Economy-wide Emissions Targets for 2020* [URL: http://unfccc.int/meetings/copenhagen_dec_2009/items/5264.php]. Accessed 27 January 2014.
- United Nations Framework Convention on Climate Change (UNFCCC), 2012. *Greenhouse Gas Inventory Data – Detailed Data by Party* [<http://unfccc.int/di/DetailedByParty/Event.do?event=go>]. Accessed 27 January 2014.
- United Nations Framework Convention on Climate Change (UNFCCC), 2012. *Status of Ratification of the Convention* [URL: http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php]. Accessed 27 January 2014.
- United Nations Framework Convention on Climate Change (UNFCCC), 2012. *Status of Ratification of the Kyoto Protocol* [URL: http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php]. Accessed 27 January 2014.
- Terry Townshend, Sam Fankhauser, Rafael Aybar, Murray Collins, Michal Nachmany, Carolina Pavese, Tucker Landesman. 2013. *THE GLOBE CLIMATE LEGISLATION STUDY - A review of Climate Change Legislation in 33 Countries - 3rd Edition*. London: GLOBE International and the London school of Economics.
- World Resources Institute, 2010, *CAIT 2.0., 2010 Country GHG Emissions* [URL: <http://cait2.wri.org/>]. Accessed 27 January 2014.
- The World Bank, 2012. Countries and Lending Groups, 2012. [URL: <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>]. Accessed 27 January 2014.
- Food and Agriculture Organization (FAO,) Global Forest Resources Assessment 2010 Estimates [URL:- <http://www.fao.org/forestry/fra/fra2010/en/>]. Accessed 27 January 2014.

5.1 Argentina

- Federal Decree1070. Boletín Oficial de la República Argentina. 5 September 2005.
- Federal Decree 140/2007. Boletín Oficial de la República Argentina. 21 December 2007.
- Law 26093. Regimen of Regulation and Promotion of the Production and Sustainable Use of Biofuels (Régimen de Regulación y Promoción para la Producción y Uso Sustentables de Biocombustibles). Boletín Oficial de la República Argentina. 12 May 2006.
- Law 26123. Boletín Oficial de la República Argentina. 25 August 2006.
- Law 26.190. Regimen for the National Promotion for the Production and Use of Renewable Sources of Electric Energy. (Regimen de Fomento Nacional para el Uso de Fuentes Renovables de Energía Destinada a la Producción de Energía Eléctrica). Boletín Oficial de la República Argentina. 2 January 2007.
- Law 26473. Boletín Oficial de la República Argentina. 31 December 2010.
- National Strategy for Climate Change, n.d. (Estrategía Nacional en Cambio Climático). Comité Gubernamental Sobre Cambio Climático [URL: <http://www.ambiente.gov.ar>]. Accessed 15 December 2012.
- Second National Communication to the UNFCCC (Segunda Comunicación Nacional de la República Argentina a la Convención Marco de las Naciones Unidas sobre Cambio Climático), 2007 [URL: <http://unfccc.int/resource/docs/natc/argnc2s.pdf>]. Accessed 15

December 2012.

5.2 Australia

- Bureau of Energy Economics 2013, Australian Energy Statistics, Table O [URL: <http://www.bree.gov.au/publications/aes-2013.html>]. Accessed 3 January 2014.
- Australian Government, 2011. *ComLaw website: Commonwealth of Australia* [URL: <http://www.comlaw.gov.au/>]. Accessed 27 September 2012.
- Australian Government, 2011. *Securing a Clean Energy Future: The Australian Government's Climate Change Plan*. Available through Clean Energy Future website [URL: <http://www.cleanenergyfuture.gov.au/wp-content/uploads/2011/07/Consolidated-Final.pdf>]. Accessed 11 October 2011.
- Australian Government, Clean Energy Regulator, 2012. *Renewable Energy Targets* [URL: <http://ret.cleanenergyregulator.gov.au/For-Industry/Liable-Entities/Renewable-Power-Percentage/rpp>]. Accessed 27 September 2012.
- Australian Government Department of Climate Change and Energy Efficiency, 2011. *A-Z of Government Programs and Initiatives* [URL: <http://www.climatechange.gov.au/en/government/initiatives.aspx>]. Accessed 14 October 2011.
- Australian Government Department of Climate Change and Energy Efficiency, 2011. *Carbon Farming Initiative: Preliminary Estimates of Abatement, Discussion Paper*, April 2011 [URL: <http://www.climatechange.gov.au/~media/publications/carbon-farming-initiative/CFI-Preliminary-estimates-of-abatement.pdf>]. Accessed 17 October 2011.
- Australian Government Department of Climate Change and Energy Efficiency, 2012. *Adapting to Climate Change* [URL: <http://www.climatechange.gov.au/government/adapt.aspx>]. Accessed 12 September 2012.
- Australian Government Department of Climate Change and Energy Efficiency, 2012. *Clean Energy Legislation* [URL: <http://www.climatechange.gov.au/en/government/clean-energy-future/legislation.aspx>]. Accessed 12 September 2012.
- Australian Government Department of Climate Change and Energy Efficiency, 2012. *Energy Saving Initiative* [URL: <http://www.climatechange.gov.au/government/initiatives/energy-savings-initiative.aspx>]. Accessed 12 September 2012.
- Australian Government Department of Climate Change and Energy Efficiency, 2012. *Securing a Clean Energy Future: Implementing the Australian Government's Climate Change Plan*. Statement by the Minister for Climate Change and Energy Efficiency, 8 May 2012 [URL: http://www.budget.gov.au/2012-13/content/ministerial_statements/climate/download/climate_change.pdf]. Accessed 12 September 2012.
- Australian Government Department of the Environment, Water, Heritage and the Arts, 2010. *Annual Report 2009–10*, Commonwealth of Australia [URL: <http://www.environment.gov.au/about/publications/annual-report/09-10/index.html>]. Accessed 15 December 2012.
- Australian Government Department of Infrastructure and Transport, 2011. *Light Vehicle CO₂ Emission Standards for Australia: Key Issues – Discussion Paper – 2011*, Commonwealth of Australia [URL: http://www.infrastructure.gov.au/roads/environment/co2_emissions/files/Light_Vehicle_CO2_Standards_Discussion_Paper.pdf]. Accessed 15 December 2012.
- Australian Government Department of Resources, Energy and Tourism, 2011. *Energy in Australia 2011. Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES), Canberra* [URL: <http://www.ret.gov.au/energy/Documents/facts-stats-pubs/Energy-in-Australia-2011.pdf>]. Accessed 15 December 2012.
- Australian Government Department of Sustainability, Environment, Water, Population and Communities, 2011. *Australian Government response to the Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999*. Commonwealth of Australia, June 2011 [URL:

- <http://www.environment.gov.au/epbc/publications/pubs/epbc-review-govt-response.pdf>. Accessed 12 September 2012.
- Australia Indonesia Partnership, 2009. *Kalimantan Forests and Climate Partnership Design Document* [URL: http://www.ausaid.gov.au/Publications/Pages/7610_8464_9778_3906_689.aspx]. Accessed 15 December 2012.
- Clayton Utz, 2011. *Carbon Farming Initiative Bills Passed; Now to Get Ready for Them*. 24 August 2011 [URL: http://www.claytonutz.com/publications/news/201108/24/carbon_farming_initiative_bills_passed_now_to_get_ready_for_them.page]. Accessed 17 October 2011.
- Commonwealth of Australia, 1989. *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989. Act no. 7, 1989*.
- Commonwealth of Australia, 2000. *Renewable Energy (Electricity) Act 2000. Act no. 174, 2000*.
- Commonwealth of Australia, 2000. *Renewable Energy (Electricity) (Large-scale Generation Shortfall Charge) Act 2000. Act no. 129, 2000*.
- Commonwealth of Australia, 2006. *Offshore Petroleum and Greenhouse Gas Storage Act 2006. Act no. 14, 2006*.
- Commonwealth of Australia, 2007. *National Greenhouse and Energy Reporting Act 2007. Act no. 175, 2007*.
- Commonwealth of Australia, 2010. *Renewable Energy (Electricity) (Small-scale Technology Shortfall Charge). Act 2010. Act no. 71, 2010*.
- Commonwealth of Australia, 2011. *Australian National Registry of Emissions Units Act 2011. Act No. 99, 2011*.
- Commonwealth of Australia, 2011. *Carbon Credits (Carbon Farming Initiative) Act 2011. Act No. 101, 2011*.
- Commonwealth of Australia, 2011. *Carbon Credits (Consequential Amendments) Bill 2011. Act No. 102, 2011*.
- CSIRO, n.d. *Australia's National Carbon Accounting System Leads the World*. CSIRO website [URL - <http://www.csiro.au/partnerships/NCASpartnership.html>]. Accessed 19 October 2011.
- Garnaut, R., 2011. *The Garnaut Review 2011: Australia in the Global Response to Climate Change*. Port Melbourne: Cambridge University Press [URL: <http://www.garnautreview.org.au/update-2011/garnaut-review-2011/garnaut-review-2011.pdf>]. Accessed 15 December 2012.
- Garnaut, R., 2008. *The Garnaut Climate Change Review*. Port Melbourne: Cambridge University Press.
- Hamilton, C., and L. Vellen, 1999. Land-use Change in Australia and the Kyoto Protocol. *Environmental Science and Policy* 2:145-52.
- Hawke, A., 2009. *The Australian Environment Act: Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999*, Commonwealth of Australia, October 2009 [URL: <http://www.environment.gov.au/epbc/review/publications/pubs/final-report.pdf>]. Accessed 15 December 2012.
- House of Representatives, 2011. *Clean Energy Bill 2011*. Bill Presented to the House of Representatives for the First Reading on 13 September 2011.
- Liverman, D.M., 2008. Conventions of Climate Change: Constructions of Danger and the Dispossession of the Atmosphere. *Journal of Historical Geography* 35:279-96.
- Nielson, L., Styles, J., Talberg, A. and Tomaras, J., 2009. *Carbon Pollution Reduction Scheme Bill 2009 - Bills Digest. Bill no. 165, 2008-09*. Parliamentary Library, Parliament of Australia, 15 June 2009 [URL: http://parlinfo.aph.gov.au/parlInfo/download/legislation/billsdgs/LRUT6/upload_binary/lrut60.pdf;fileType=application%2Fpdf#search=%22r4127%22]. Accessed 15 December 2012.
- Office of the Renewable Energy Regulator, 2011. *Increasing Australia's Renewable Electricity Generation*, Commonwealth of Australia, April 2011 [URL: <http://ret.cleanenergyregulator.gov.au/ArticleDocuments/205/administrative-report-2011.pdf.aspx>]. Accessed 15 December 2012.
- The Parliament of the Commonwealth of Australia, 2011. *Clean Energy Bill 2011 – Explanatory Memorandum*. Circulated by the Authority of the Minister for Climate Change and Energy Efficiency, the Honourable Greg Combet AM MP.

- Senate of the Commonwealth of Australia, 2011. *Carbon Credits (Carbon Farming Initiative) Bill 2011 [Provisions]. Report of the Environment and Communications Legislation Committee. Commonwealth of Australia, May 2011*, Victoria State Government – Review of the Climate Change Act 2010 [URL: <http://www.climatechange.vic.gov.au/home/review-of-climate-change-act>]. Accessed 15 December 2012.
- Minister Ryan Smith, 2011. *Media Release 22 October 2011: Minister Announces Details of the Review of the Climate Change Act* [URL: http://www.climatechange.vic.gov.au/__data/assets/pdf_file/0008/126836/Climate-Change-Act-media-release.pdf]. Accessed 15 December 2012.
- Victoria State Government, 2012. *Victorian Government Response to the Climate Change Act Review, March 2012* [URL: http://www.climatechange.vic.gov.au/__data/assets/pdf_file/0010/136486/CCAREV-Report_online.pdf]. Accessed 15 December 2012.

5.3 Bangladesh

- BCCRF (2013). The Bangladesh Climate Change Resilience Fund (Online). <http://bccrf-bd.org/>.
- CIA (2013). South Asia: Bangladesh. The CIA World Factbook (Online). <https://www.cia.gov/library/publications/the-world-factbook/geos/bg.html>.
- Climate Change Cell (2013) Department of Environment, Ministry of Environment and Forests (MoEF), Government of Bangladesh (Online). : <http://www.climatechangeecell.org.bd/>
- Clemett, A. (2006). A Review of Environmental Policy and Legislation in Bangladesh. UK Department for International Development (Online). <http://r4d.dfid.gov.uk/Output/175336/>.
- Government of Bangladesh (2013). Disaster Management in Bangladesh webpage, National Web Portal of Bangladesh (Online). http://www.bangladesh.gov.bd/index.php?option=com_content&task=category&id=145&Itemid=27
- MoEF (1995) The Bangladesh Environmental Conservation Act. Act No. 1 of 1995. Ministry of Environment and Forest, Government of Bangladesh, Dhaka.
- MoEF (1997) Environmental Conservation Rules. Ministry of Environment and Forests, Government of Bangladesh, Dhaka.
- MoEF (2009). The Bangladesh Climate Change Strategy and Action Plan 2009. Ministry of the Environment and Forests, Government of Bangladesh (Online). www.moef.gov.bd/climate_change_strategy2009.pdf
- UNDP (2011) Bangladesh Green Development Programme. United Nations Development Programme (Online). <http://ext.bd.undp.org/CCED/bgdp/SitePages/bgdphome.aspx>.
- UNEP (2001) State of the Environment 2001, United Nations Environment Programme, Bangkok.

5.4 Bolivia

- Achentberg, Emily and Rebel Currents. 2012. "Earth first? Bolivia's Mother Earth Law meets the neo-extractivist economy." NACLA Blog. Last accessed 18 December 2013: <http://nacla.org/blog/2012/11/16/earth-first-bolivia%E2%80%99s-mother-earth-law-meets-neo-extractivist-economy>
- Hoffmann, Dirk. Blog–Cambio Climático Bolivia. Last accessed 16 December 2013: <http://www.cambioclimatico-bolivia.org/index-cc.php>
- Kasterine, Alexander. 2013. "Bolivian strategy on climate change". International Trade Center. 17 April 2013. Available online at: <http://www.intracen.org/news/Bolivian-strategy-on-climate-change/>

- Lang, Chris. 2012. "Indigenous Peoples Terra Livre declaration at Rio+20 rejects REDD." 22 June 2012. Red-Monitor. Last accessed 18 December 2013: <http://www.redd-monitor.org/2012/06/22/indigenous-peoples-terra-livre-declaration-at-rio-20-rejects-redd/>
- Ley Forestal, No 1700. 1996. Original text in Spanish available online at: <http://bolivia.infoleyes.com>
- Ley Marco de la Madre Tierra y Desarrollo Integral para Vivir Bien, Ley No 300. 2012. Gaceta Oficial del Estado Plurinacional de Bolivia. 15 October 2012. Available online at: <http://bolivia.infoleyes.com>
- National Programme Document – Bolivia (First Version for the UN-REDD Secretariat). 2012. UN-REDD Programme, UNDP. Available online at: <http://www.un-redd.org/UNREDDProgramme/CountryActions/Bolivia/tabid/976/language/en-US/Default.aspx>
- Raman, Meena. 2010. "Bolivia submits Cochabamba Conference outcome to UNFCCC. World's People's Conference on Climate Change and the Rights of Mother Earth. 30 April 2010. Last accessed 18 December 2013: <http://pwccc.wordpress.com/2010/04/30/bolivia-submits-cochabamba-conference-outcome-to-unfccc/>
- Second National Communication to the UNFCCC by the Plurinational State of Bolivia. 2009. Ministry of Environment and Water. Available online at: http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php
- Villamontes: primer municipio Boliviano con plan de adaptación al cambio climático. 22 November 2012. Banco de Desarrollo de América Latina. Available online at: www.caf.com/es/actualidad/noticias/2012/11/villamontes-primer-municipio-boliviano-con-plan-de-adaptacion-al-cambio-climatico

5.5 Brazil

- Brazilian National Congress (2013) Brazilian Climate Change Legislation. Available at: http://www.senado.gov.br/senado/hotsites/clima_em_debate/pdf/Livro_legislacao_ambiental_Completo_Final_17_09_2013.pdf (accessed on 24 October 2013)
- Federative Republic of Brazil (2010) Second National Communication of Brazil to the UNFCCC. Available at: http://www.mct.gov.br/upd_blob/0215/215071.pdf (accessed on 6 June 2013).
- Chamber of Deputies [Câmara dos Deputados], 2011. Legislative Activity Section of website [in Portuguese] [URL: <http://www2.camara.gov.br/atividade-legislativa>]. Accessed 15 December 2012.
- Cortez, H., 2010. Regulamentação de política nacional sobre mudança climática deve começar a sair em agosto. *Ecodebate website* [in Portuguese] [URL: <http://www.ecodebate.com.br/2010/05/06/regulamentacao-de-politica-nacional-sobre-mudanca-climatica-deve-comecar-a-sair-em-agosto/>]. Accessed 15 December 2012.
- Embassy of the Republic of Brazil, Berlin, 2010. Communication to UNFCCC on Brazil's Commitments for UNFCCC COP15 (Copenhagen). 29 January 2010 [URL: http://unfccc.int/files/meetings/cop_15/copenhagen_accord/application/pdf/brazilcphaccord_app2.pdf]. Accessed 15 December 2012.
- Enterprise for Energy Research, 2007. Plano Nacional de Energia – PNE 2030. *Ministry of Mines and Energy website* [in Portuguese] [URL: http://www.epe.gov.br/Estudos/Paginas/Plano%20Nacional%20de%20Energia%20%E2%80%93%20PNE/Estudos_12.aspx?CategoriaID=346]. Accessed 15 December 2012.
- International Energy Agency, 2011. Relation with Member Countries – Brazil. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=BR]. Accessed 15 December 2012.
- Ministry of the Environment, n.d. *Brazilian Ministry of the Environment website*, legislation page [in Portuguese] [URL: <http://www.mma.gov.br/sitio/index.php?ido=legislacao.index&tipo=4>]. Accessed 15 December 2012.

- Ministry of Mines and Energy, n.d. *Brazilian Ministry of Mines and Energy website*, legislation page [in Portuguese] [URL: <http://www.mme.gov.br/mme/menu/legislacao.html>]. Accessed 15 December 2012.
- President of the Republic of Brazil, 2010. *Law No. 12.305, Establishing the National Policy on Solid Waste, 2 August 2010* [URL: http://www.planalto.gov.br/ccivil_03/_Ato2007-2010/2010/Lei/L12305.htm]. Accessed 15 December 2012.
- Sant'Anna, L.F.H., Spitzack, M.H., Rabinovici, J., n.d. Environment – Brazil. *Latin Lawyers website* [URL: <http://www.latinlawyer.com/reference/article/40585/brazil/>]. Accessed 15 December 2012.
- Senate of Brazil, 2009. *Law No. 12.187, Establishing the National Policy on Climate Change, 29 December 2009* [URL: <http://www6.senado.gov.br/legislacao/ListaPublicacoes.action?id=260531>]. Accessed 15 December 2012.
- Senate of Brazil 2012. *Forest Code Reform (Reforma do Codigo Florestal)* [URL: <http://www12.senado.gov.br/codigoflorestal>]. Accessed 30 September 2012.
- Senate of Brazil, 2012. *Law No. 12727, modifying the law N. 12.651, 18 October 2012* [URL: <http://www6.senado.gov.br/legislacao/ListaTextosIntegral.action?id=246027&norma=265734>]. Accessed 20 October 2012.
- UNFCCC, 2011. *Greenhouse Gas Inventory Data website* [URL: <http://unfccc.int/di/DetailedByParty/Event.do?event=go>]. Accessed 15 December 2012.

5.6 Canada

- Canada Gazette*, 2012. *Canadian Environmental Protection Act, 1999 – Reduction of Carbon Dioxide Emissions from Coal-fired Generation of Electricity Regulations - P.C. 2012-1060 August 30, 2012*. Vol. 146.19, September 12 [URL: <http://www.gazette.gc.ca/rp-pr/p2/2012/2012-09-12/html/sor-dors167-eng.html>]. Accessed 15 December 2012.
- Environment Canada, 2011. *Environment Canada website* [URL: <http://www.ec.gc.ca>]. Accessed 15 December 2012.
- Environment Canada, 2012. Harper Government Moves Forward on Tough Rules for Coal-Fired Electricity Sector. *Environment Canada website* [URL: <http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=4D34AE9B-1768-415D-A546-8CCF09010A23>]. Accessed 15 December 2012.
- Footitt, A., 2007. *Climate Change Policy and Canada's Oil Sand Resources: An Update and Appraisal of Canada's New Regulatory Framework for Air Emissions*. Report by Tyndall Centre for Climate Change Research, prepared for WWF [URL: http://www.wwf.org.uk/filelibrary/pdf/oilsands_report.pdf]. Accessed 15 December 2012.
- International Energy Agency, 2011. Relation with Member Countries – Canada. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=CA].
- Library of the Canadian Parliament, 2011. *Library of the Canadian Parliament website* [URL: <http://www2.parl.gc.ca/Sites/LOP/VirtualLibrary/index-e.asp>]. Accessed 15 December 2012.
- The Office of the Hon. Bryon Wilfert MP, Member of Parliament for Richmond Hill [URL: <http://bryonwilfert.ca/>]. Accessed 15 December 2012.
- Parliament of Canada, 2011. *41st Parliament, 1st Session, Bill C-224, Climate Change Accountability Act* [URL: <http://www.parl.gc.ca/LegisInfo/BillDetails.aspx?Language=E&Mode=1&billId=5087216&View=0>]. Accessed 14 September 2012.
- Statutes of Canada, 2012. *Bill C-38* [URL: <http://parl.gc.ca/HousePublications/Publication.aspx?DocId=5697420&file=4>]. Accessed 14 September 2012.
- Stikeman, Elliot, 2012. *Canadian Energy Law News* [URL: <http://www.canadianenergylaw.com/tags/carbon-tax/>]. Accessed 14 September 2012.

5.7 Chile

Chile's second national communication to the United Nations Framework Convention on Climate Change (FCCC) by the Chilean Ministry of Environment
http://unfccc.int/essential_background/library/items/3599.php?rec=j&preref=7592#beg
Survey of Market Compliance Mechanisms for Energy Efficiency Programs in APEC economies by the APEC Energy Working Group – Expert Group on Energy-efficiency & Conservation, May 2012
<http://www.clasponline.org/en/ResourcesTools/Resources/SLHeadlines/~media/Files/SLDocuments/2012/MVEworkshop/APEC-MVEsurvey-FullReport.pdf>
<http://www.country-studies.com/chile/the-legislative-branch.html> by the Federal Research Division of the Library of Congress under the Country Studies/Area Handbook Program sponsored by the U.S. Department of Army

5.8 China

NDRC, 2013: "China's Policies And Actions To Address Climate Change". See URL:
<http://en.ndrc.gov.cn/newsrelease/P020131108611533042884.pdf> Accessed 6 January 2014
Department of Climate Change, National Development and Reform Commission, n.d. *China Climate Change Info-Net website* [in English] [URL: <http://www.ccchina.gov.cn/en/>]. Accessed 15 December 2012.
Government of China, 2007. *China's National Climate Change Program: National Development and Reform Commission, People's Republic of China* [URL: <http://en.ndrc.gov.cn/newsrelease/P020070604561191006823.pdf>]. Accessed 15 December 2012.
National Centre for Climate Change Strategy and International Cooperation (NCSC), 2012. Written Briefing Note on "Shenzhen Local Legislation", November 2012.
State Council Information Office, 2008. *China's Policies and Actions for Addressing Climate Change* [URL: http://china.org.cn/government/news/2008-10/29/content_16681689.htm]. Accessed 15 December 2012.
Xinhua News Agency, n.d. Key targets in China's 12th Five Year Plan [URL: http://news.xinhuanet.com/english2010/china/2011-03/05/c_13762230.htm]. Accessed 15 December 2012.
Xinhua News Agency. China Issues White Paper on Energy Policy [URL: http://news.xinhuanet.com/english/china/2012-10/24/c_131927587.htm]. Accessed 15 December 2012.

5.9 Colombia

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, 2004. Energy-policy Framework Conditions for Electricity Markets and Renewable Energies – 21 Country Analyses, Eschborn, June 2004, Commissioned by the German Federal Ministry for Economic Co-operation and Development [URL: <http://www.giz.de/Themen/en/SID-DBE559D0-A4041B00/dokumente/en-windenergy-colombia-study-2004.pdf>]. Accessed 15 December 2012.
Library of Congress, 2010. A Country Study: Colombia [URL: <http://cweb2.loc.gov/frd/cs/cotoc.html>]. Accessed 15 December 2012.
Second National Communication to the United Nations Framework Convention on Climate Change of the Republic of Colombia, 1 June 2010 [URL: <http://unfccc.int/resource/docs/natc/colnc2>]

- exsume.pdf]. Accessed 15 December 2012.
- Colombian National Gazette (2011) National Development Plan. Law N. 1450. 16 June. Available at: http://www.secretariasenado.gov.co/senado/basedoc/ley/2011/ley_1450_2011.html (accessed on 2 December 2013).
- Colombian National Gazette (2012) Law adopting the National Policy and Risk Management and the National System of Risk Management. Law N.1523. 24 April 2012. Available at: <http://www.alcaldiabogota.gov.co/sisjur/normas/Norma1.jsp?i=47141> (accessed on 23 December 2013).
- Ministry of the Environment and Sustainable Development (2012) Low Carbon Strategy. Available at: http://www.minambiente.gov.co/documentos/DocumentosGestion/cambio_climatico/estrategia_bajo_carbono/100713_cartilla_ecdbd.pdf (accessed on 25 November 2013).
- Department of National Planning (2012) National Adaptation Plan. Available at: www.sigpad.gov.co/.../ABC_Cambio_Climatico.pdf (accessed on 20 November 2013).
- Ministry of Mines and Energy (2006) National Energy Plan 2006-2025. Available at: http://www.upme.gov.co/Docs/PLAN_ENERGETICO_NACIONAL_2007.pdf (accessed on 18 November 2013).
- Colombian National Gazette (2002) Law adopting national and territorial tax and penal norms Law N. 788.27 December. Available at: http://www.secretariasenado.gov.co/senado/basedoc/ley/2002/ley_0788_2002.html (accessed on 18 November 2013).
- Colombian National Gazette (2001) Law Promoting the Rational and Efficient use of energy and the use of other non-conventional energy sources. Law N. 697. 5 October. Available at: http://www.secretariasenado.gov.co/senado/basedoc/ley/2001/ley_0697_2001.html (accessed on 18 November 2013).

5.10 Costa Rica

- Costa Rica Official *Gazette*, 2013. Biofuel Law, Issue 132, 10 July 2013.
- Government of Costa Rica, 2013. Voluntary Carbon Market. Executive Decree DAJ-62-2012-MINAE, 10 September 2013.
- Costa Rican Official Gazette (2013). *Biofuels Law*. N.132, 10 July.
- Ministry Of The Environment and Energy (2013) Costa Rica Market Readiness Proposal (MRP) Partnership for Market Readiness Final Report. Available at: http://www.thepmr.org/system/files/documents/Costa%20Rica_MRP_Final_19-02-2013_0.pdf (accessed on 15 June 2013).
- Ministry of The Environment and Energy (2012). Costa Rican Domestic Voluntary Carbon Market (MDVCR). Executive Decree DAJ-62. 10 September.
- Ministry of National Planning and Economic Policy (2010). National Development Plan 2011-2014. Available at: <http://documentos.mideplan.go.cr/alfresco/d/d/workspace/SpacesStore/122fcd1c-53a7-47a7-a0ad-84cac6f1d7b9/PND-2011-2014-Maria-Teresa-Obregon-Zamora.pdf> (accessed on 18 June 2013).
- Ministry of the Environment, Energy and Telecommunication, 2010. National Climate Change Strategy. San José, CR: Calderón y Alvarado S. A. 1st Edition.
- Government of Costa Rica, 2010. 2011-2014 National Development Plan. Ministry of Planning and Economic Policy. December 2010.
- President of the Republic, Ministry for Agriculture and Livestock and Ministry Of The Environment, Energy And Telecommunication (2009) Biofuels Regulation. Executive Decree 35091. 9 January.
- Ministry Of the Environment and Energy (2009). National Climate Change Strategy. Available at: www.digeca.go.cr/documentos/.../ENCCV.pdf (accessed on 16 June 2013).

- Costa Rican Official Gazette (1990) Energy Law. N.197, 18 October.
- Costa Rican National Assembly (1994). Regulations On The Rational Use Of Energy. Law N. 7447. 13 December.
- Costa Rican National Assembly (1996). Forest Law. Plenary 7575, 5 February.

5.11 Czech Republic

- Czech Republic (2006). Act of 14th March 2006 on town and country planning and building code (Building Act). 183/2006. Retrieved from http://www.cka.cz/prilohy/building_code_183_english.pdf.
- Czech Republic (2009). Fifth National Communication of the Czech Republic on the UN Framework Convention on Climate Change Including Supplementary Information Pursuant to Article 7.2 of the Kyoto Protocol. Prague: Ministry of the Environment. Retrieved from <http://unfccc.int/resource/docs/natc/czenc5.pdf>.
- Czech Republic (2012). Act No. 165 of 31 January 2012 on promoted energy sources and on amendment to some laws. Retrieved from http://www.eru.cz/user_data/files/legislativa/english/acts/165_2012_AJ.pdf.
- Czech Republic (2013). Climate. Ministry of the Environment of the Czech Republic. Retrieved from <http://www.mzp.cz/en/climate>.
- Hypindex (2012): Průkaz energetické náročnosti budov – změny od 1. 1. 2013. Available online: <http://www.hypindex.cz/prukaz-energeticke-narocnosti-budov-undefined-zmeny-od-1-1-2013/>
- Ministry of the Environment (2004). National Programme to Abate the Climate Change Impacts in the Czech Republic. Retrieved from [http://www.mzp.cz/C125750E003B698B/en/national_programme/\\$FILE/OZK-National_programme-20040303.pdf](http://www.mzp.cz/C125750E003B698B/en/national_programme/$FILE/OZK-National_programme-20040303.pdf).
- Ministry of Environment (2011). The State Environmental Policy of the Czech Republic 2012 – 2020 (Summary) Retrieved from [http://www.mzp.cz/C125750E003B698B/en/state_environmental_policy/\\$FILE/OEDN-state_environmental_policy-20130207.pdf.pdf](http://www.mzp.cz/C125750E003B698B/en/state_environmental_policy/$FILE/OEDN-state_environmental_policy-20130207.pdf.pdf).
- MŽP (2010): The Strategic Framework for Sustainable Development in the Czech Republic. Available online: http://www.mzp.cz/en/czech_republic_strategy_sd
- Prague Daily Monitor (2013): Minister rejects Austrian criticism of Temelín nuke plant. Available online: <http://praguemonitor.com/2013/01/21/minister-rejects-austrian-criticism-temel%C3%ADn-nuke-plant>.

5.12 Denmark

- Danish government (2011). Our future energy. November 2011. Retrieved on 3.7.2013 from http://www.cphcleantech.com/media/1465822/our_future_energy.pdf
- Danish Ministry of Climate, Energy and Building (2012). DK Energy Agreement, 22 March 2012. Retrieved on 3.7.2012 from <http://www.stateofgreen.com/CMSPages/GetAzureFile.aspx?path=~%5Ccache%5Cstateofgreen%5Cde%5Cde820d42-73df-4d5f-9b10-f28cac7ee68f.pdf&hash=029267c277189299f4856f41fa317791fd73875627265f8a20b243c054cca413>
- Danish Ministry of Climate, Energy and Building (2013). The Danish Climate Policy Plan. Towards a low carbon society. Copenhagen: The Danish Government. August 2013. Retrieved on 25.9.2013 from <http://www.kebmin.dk/sites/kebmin.dk/files/climate-energy-and-building-policy/denmark/Climate-policy-plan/danishclimatepolicyplan.pdf>.
- Dreblow, Eike; Duwe Matthias; Wawer, Tim; Donat, Lena; Zelljadt, Elizabeth; Ayres, Andrew;

- Poblocka, Anna (2013). Assessment of climate change policies in the context of the European Semester. Country Report: Denmark. Berlin: Ecologic Institute. February 2013. Retrieved on 3.7.2013 from http://ec.europa.eu/clima/policies/g-gas/progress/docs/dk_2013_en.pdf.
- Denmark (2009). Denmark's Fifth National Communication on Climate Change Under the United Nations Framework Convention on Climate Change and the Kyoto Protocol. UNFCCC. http://unfccc.int/resource/docs/natc/dnk_nc5rev.pdf.
- Faolex (2013a). Denmark: Environment Protection Act (No. 879 of 2010). FAOLEX – legislative database of FAO Legal Office. Retrieved from http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=082909&database=faolex&search_type=link&table=result&lang=eng&format_name=@ERALL.
- Faolex (2013b). Denmark: Act on the eco-design of energy-related products (No. 1068 of 2010). FAOLEX – legislative database of FAO Legal Office. Retrieved from http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=084461&database=faolex&search_type=link&table=result&lang=eng&format_name=@ERALL.
- Faolex (2013c). Denmark: Forest Act (No. 945 of 2009). FAOLEX – legislative database of FAO Legal Office. Retrieved from http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=082613&database=faolex&search_type=link&table=result&lang=eng&format_name=@ERALL.
- Faolex (2013d). Denmark: Planning Act (No. 937 of 2009). FAOLEX – legislative database of FAO Legal Office. Retrieved from http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=084524&database=faolex&search_type=link&table=result&lang=eng&format_name=@ERALL.
- Your Europe (2012). Environmental rules – Denmark. Europe.eu. Retrieved on 29.6.2013 from http://europa.eu/youreurope/business/doing-business-responsibly/keeping-to-environmental-rules/denmark/index_en.htm.

5.13 Dominican Republic

- National Energy Commission (2012). Status and Outlook of the Renewable Energies in The Dominican Republic. Global workshop on clean energy development. December 1-8, 2012. Washington DC.
- CIA (2013). The Dominican Republic. The CIA World Factbook.(Online). Available from: <https://www.cia.gov>.
- ECLAC (2010). Review Of The Economics Of Climate Change (RECC). In The Caribbean Project: Phase I Climate Change Profiles In Select Caribbean Countries. LC/CAR/L.250/Corr.1. Economic Commission for Latin America and the Caribbean Subregional Headquarters for the Caribbean.
- Presidency of the Dominican Republic National Position on Climate Change and Clean Development Mechanism. (No date). The Road to Copenhagen. Dominican Republic's Position on Climate Change.
- IISD (2013). Dominican Republic Launches National Climate Change Capacity Building Strategy. IISD Climate Change and Policy and Practice website. (Online). Available from: <http://climate-iisd.org/news/dominican-republic-launches-national-climate-change-capacity-building-strategy/>.
- CNCC (2011). A Journey to sustainable growth. National Council for Climate Change and the Clean Development Mechanism, Government of the Dominican Republic.
- USDOS (2012). US Relations With the Dominican Republic. US Department of State Fact Sheet. <http://www.state.gov/r/pa/ei/bgn/>.
- Dominican Republic (2010). Constitucion De La Republica Dominicana. (Online). Available from: <http://pdba.georgetown.edu/Constitutions/DomRep/vigente.html>.
- CNCC (2013). National Council for Climate Change and the Clean Development Mechanism: Climate change. <http://www.cambioclimatico.gob.do/eng/en/NationalMechanismforCDM/tabid/56/Default.a>

spx

5.14 Democratic Republic of Congo

- African Development Bank (2012). Burkina Faso, DRC and Ghana Share Innovations in REDD+ Investments (Online). <http://www.afdb.org/en/news-and-events/article/burkina-faso-drc-and-ghana-share-innovations-in-redd-investments-9104/>.
- CIA (2013). Africa: Congo, Democratic Republic Of The. The CIA World Factbook (Online). <https://www.cia.gov>.
- Climate Investment Funds (June 29 and 30, 2011). Investment Plan, Democratic Republic Of Congo. (FIP/SC.6/4). Meeting Of the FIP Sub-Committee, Cape Town, South Africa.
- CIF (No date) Democratic Republic of Congo's FIP Investment Plan. Climate Investment Funds. <https://www.climateinvestmentfunds.org/cifnet/investment-plan/democratic-republic-congos-fip-investment-plan>.
- CIF (No date). Forest Investment Program in the Democratic Republic of Congo: Status of FIP in December 2011. Presentation by the CIF/UN-REDD Programme.
- Wolfire, D.M., Brunner, J. & Sizer, N. (1998). Forests and the Democratic Republic of Congo Opportunity in a time of crisis. World Resources Institute.
- Ministère de l'Environnement (2006). Programme d'Action National d'Adaptation Au Changement Climatique de la République Démocratique du Congo. Gouvernement de la République Démocratique du Congo.
- Morton, A. (No date). Project Scoping Study - PCEA NEAP UNEP Country Programme For the Democratic Republic of Congo 2009 – 2013. United Nations Environment Programme.
- UNEP (2011). The Democratic Republic of the Congo Post-Conflict Environmental Assessment Synthesis for Policy Makers. United Nations Environment Programme.

5.15 Ecuador

- Acosta, M.J., Araujo, M.C., Pérez-Liñán, A., Saiegh, S (2006). Veto Players, Fickle Institutions and Low-quality Policies: The Policymaking Process in Ecuador (1979-2005). Inter-American Development Bank, Latin American Research Network, Research Network Working Paper #R-523.
- Aguilar, S. and Recio, E. (2013). "Climate Change Law in Latin America" In Hollo, Kulovesi & Mehling (eds.), Climate Change and the Law. Springer (Online). <http://www.springer.com/law/book/978-94-007-5439-3>.
- Cáceres, L. (2000) Republic of Ecuador National Communication to the UNFCCC. National Climate Committee. Ministry of the Environment, Republic of Ecuador.
- Cáceres, L. (2011) Segunda Comunicacion Nacional Sobre Cambio Climatico. Ministerio del Ambiente, La Republica del Ecuador.
- Carrión, D and Chiu, M (2011). National Programme Document-Ecuador. Un-REDD Programme Sixth Policy Board Meeting. UNREDD/PB6/2011/V/1.
- CIA (2013). Ecuador. The CIA World Factbook (Online). <https://www.cia.gov>.
- Gnan, J. Eraso, P. Mancheno, P. Romero, J.C. And Tamayo, Y. (No Date). National Capacity Self-Assessment in Biodiversity, Climate Change and Desertification. Ministry of the Environment Ecuador/ UNDP / GEF.
- MAE (2012) Estrategia Nacional de Cambio Climatico del Ecuador (2012-2025). Ministerio del Ambiente, República del Ecuador.
- Rosero, E and Chiliquinga, B. (2010). Ecuador: Final Report. Product 1. Renewable Technological Base Line. Product 2: State Of Art. Latin American Energy Organization (OLADE) And The United Nations Industrial Development Organization (UNIDO).
- Secretaría Nacional de Planificación y Desarrollo (2013). Plan Nacional Buen Vivir (Online). <http://www.buenvivir.gob.ec/>.

- The REDD Desk (2012). Ecuador: An Overview from the REDD countries database (Online). www.theredddesk.org.
- Viteri, A. (2010). Documento De Análisis Del Sector Forestal En El Contexto De Adaptación Y Mitigación Al Cambio Climático Del Sector Uso De Suelo, Cambio De Suelo, Y Silvicultura (FORESTAL) En El Ecuador. United Nations Development Programme.

5.16 El Salvador

- Cuellar, Nelson, et al., 2012. Informe sobre el estado y calidad de las políticas públicas sobre cambio climático y desarrollo en El Salvador. Plataforma Climática Latino Americana, June [URL: www.intercambioclimatico.com]. Accessed 5 November 2012.
- Food and Agriculture Organization of the United Nations (FAO), 2003. El Salvador frente al cambio climático [URL: <http://www.fao.org/docrep/006/AD440s/AD440s00.htm>]. Accessed 29 October 2012.
- Legislative Assembly of El Salvador (Asamblea Legislativa), 2002. Forest Law. Decree 852. Official Gazette of El Salvador, vol. 355, n. 110, 17 June 2002 [URL: <http://www.asamblea.gob.sv/eparlamento/indice-legislativo/buscador-de-documentos-legislativos/ley-forestal>]. Accessed 10 November 2012.
- Legislative Assembly of El Salvador (Asamblea Legislativa), 2005. Civil Protection, Disasters Prevention and Mitigation Law. Decree 777. Official Gazette of El Salvador, vol. 368 n. 160, 31 August 2005 [URL: <http://www.asamblea.gob.sv/eparlamento/indice-legislativo/buscador-de-documentos-legislativos/ley-de-proteccion-civil-prevencion-y-mitigacion-de-desastres>]. Accessed 10 November 2012.
- Legislative Assembly of El Salvador (Asamblea Legislativa), 2007. Fiscal Incentives for Increased Use of Renewable Energy in Electricity Generation Law. Decree 462. Official Gazette of El Salvador, vol. 377, n. 238, 20 December 2007 [URL: <http://www.asamblea.gob.sv/eparlamento/indice-legislativo/buscador-de-documentos-legislativos/ley-de-incentivos-fiscales-para-el-fomento-de-la-energia-renovable-en-la-generacion-de-electricidad/>]. Accessed 10 November 2012.
- Official Gazette of El Salvador (Diario Oficial República de El Salvador), 1998. Environment Law. Decree N. 333. Central America, vol. 339 n. 79, San Salvador, 4 May 1998.
- Ministry of the Environment and Natural Resources (2012) National Climate Change Strategy. Available at: <http://www.marn.sv/temas/cambio-climatico/estrategia-nacional-de-cambio-climatico.html> (accessed on 13 October 2013).
- Ministry of the Environment and Natural Resources (2012). National Environmental Policy. Available at: http://www.marn.gob.sv/especiales/pnma2012/Politica_Nacional_MedioAmbiente_2012.pdf (accessed on 13 October 2013).
- Ministry of the Environment and Natural Resources (2012). Second National Communication to the UNFCCC. Available at: <http://unfccc.int/resource/docs/natc/slvnc2.pdf> (accessed on 13 October 2013).

5.17 Ethiopia

- Ethiopian Environmental Protection Authority, 2013. CRGE Highlights. Volume 1, No. 1, May 2013 [<http://cdkn.org/wp-content/uploads/2013/05/CRGE-Highlights-NL-Final-May-2013.pdf>]
- Ethiopian Environmental Protection Authority, 2013. CRGE Highlights. Volume 1, No. 2, June 2013 [<http://cdkn.org/wp-content/uploads/2013/07/CRGE-Highlights-NL-Final-June-2013.pdf>]
- Ethiopian Environmental Protection Authority, 2013. CRGE Highlights. Volume 1, No. 3, July 2013 [<http://phe-ethiopia.org/admin/uploads/attachment-1655-CRGE-Highlights-NL-Final-July->

- 2013.pdf]
- The Ethiopian Herald, 2013. "New ministry and its overarching tasks ahead" [<http://www.ethpress.gov.et/herald/index.php/herald/development/4055-new-ministry-and-its-overarching-tasks-ahead#!>]
- Federal Democratic Republic of Ethiopia, The House of Peoples' Representatives, 2013. [<http://www.hopr.gov.et/HPR/faces/c/more.jsp?type=news&id=501>]
- Federal Democratic Republic of Ethiopia, 2011. Ethiopia's Climate-Resilient Green Economy: Green economy strategy. [<http://www.undp-aap.org/sites/undp-aap.org/files/Ethiopia%20CRGE%20Strategy%20Final.pdf>]
- Federal Democratic Republic of Ethiopia, Ministry of Water and Energy, 2012. Scaling-Up Renewable Energy Program Ethiopia Investment Plan. [http://www.oecd.org/env/cc/TADELE_FDRE%20Ethiopia%20Scaling%20%20Up%20Renewable%20Energy%20Program%202012.pdf]
- Ethiopia, Norway and UK joint Communiqué on strategic partnership, 2011 [http://www.regjeringen.no/upload/UD/Vedlegg/energi/Ethiopia_Norway_UK_communique.pdf]
- CNCRE mission statement: how Ethiopia is responding to climate change to build a carbon neutral climate resilient economy [http://thereddesk.org/sites/default/files/ethiopia_how_respond_to_cc_to_build_a_carbon_neutral_climate_resilient_economy_2.pdf]

5.18 EU

- Council Directive (EC) 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity. Official Journal L 283, p.0051 - 0070 Available on: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0096:en:HTML> (accessed on 21 January 2014).
- Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products OJ L 285, p. 10-35 Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0125:EN:NOT> (accessed on 21 January 2014).
- Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products. OJ153, p.1-12. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32010L0030:EN:NOT> (accessed on 21 January 2014).
- Agence de l'Environnement et de la Maîtrise de l'Energie, 2011. *Agence de l'Environnement et de la Maîtrise de l'Energie website* [in French] [URL: <http://www.ademe.fr>]. Accessed 15 December 2012.
- European Union, n.d. *European Law website portal* [URL: <http://eur-lex.europa.eu>]. Accessed 15 December 2012.
- European Union, 2011. *EUROPA – official website of the European union* [URL: <http://europa.eu/>].
- European Energy Agency, 2010. *Annual European Union Greenhouse Gas Inventory 1990–2008 and Inventory Report 2010. Submission to the UNFCCC Secretariat, European Energy Agency Technical report No. 6/2010* [URL: <http://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2010>]. Accessed 15 December 2012.
- Institute for European Environmental Policy (IEEP), 2010. *IEEP website, Climate Change and Energy section* [URL: <http://www.ieep.eu/topics/climate-change-and-energy/>]. Accessed 15 December 2012.

5.19 France

- Agence de l'Environnement et de la Maîtrise de l'Énergie, 2011. Agence de l'Environnement et de la Maîtrise de l'Énergie website [in French] [URL: <http://www.ademe.fr>]. Accessed 2 December 2013.
- Assemblée Nationale, n.d. Assemblée Nationale website [in French] [URL: <http://www.assemblee-nationale.fr/>]. Accessed 2 December 2013.
- International Energy Agency, 2011. Relation with Member Countries – France. International Energy Agency website [URL: <http://www.iea.org/>]. Accessed 2 December 2013.
- Legifrance, 2011. Legifrance website [in French] [URL: <http://www.legifrance.gouv.fr>]. Accessed 2 December 2013.
- Ministère de l'Écologie, du Développement Durable, des Transports et du Logement, 2011. Ministère de l'Écologie, du Développement Durable, des Transports et du Logement website [in French] [URL: <http://www.developpement-durable.gouv.fr>]. Accessed 2 December 2013.
- Réseau Action Climat-France, n.d. Réseau Action Climat France website [in French] [URL: <http://www.rac-f.org/>]. Accessed 2 December 2013.

5.20 Gabon

- Adaptation Partnership (2011). Gabon: Review of current and planned adaptation action (Online). Available at: <http://www.preventionweb.net>.
- African Development Bank Group (2011). Republic of Gabon Country Strategy Paper 2011-2015. Operations Department Centre Region – ORCE.
- CIA (2013). Africa: Gabon. The CIA World Factbook (Online). Available at: <https://www.cia.gov>.
- Government of Gabon (2011). Gabon Vert (Online). Available at www.gabon-vert.com.
- Karsenty, A. A. Vogel, S. Angerand, C. Castellanet (2013) Le mécanisme REDD+ et les paiements pour services environnementaux permettront-ils de s'attaquer aux causes sous-jacentes de la déforestation? CIRAD / GRET / Les Amis de la Terre.
- Government of Gabon (2012). Plan Stratégique Gabon Emergent. Vision 2025 et orientations stratégiques 2011-2016. Déclinaison en Programmes et Actions du Projet de Société de son Excellence Ali BONGO ONDIMBA, Président de la République: « l'Avenir en confiance ». République Gabonaise.
- McSweeney, M. New, and G. Lizcano (No date) UNDP Climate Change Country Profiles: Gabon (Online). Available at <http://country-profiles.geog.ox.ac.uk>.
- Africa Adaptation Programme. (No Date) Laying the Foundations for Climate Resilient Development Voices from Africa. (Online) Available at: www.undp-aap.org.

5.21 Germany

- Die Bundesregierung, 2011. *Heading Towards the Energy of the Future* [URL: http://www.bundesregierung.de/nn_6562/Content/EN/Artikel/_2011/06/2011-06-06-energiewende-text-breg_en.html]. Accessed 15 December 2012.
- Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, n.d. The Path to the Energy of the Future – Reliable, Affordable and Environmentally Sound [URL: http://www.bundesumweltministerium.de/english/energy_efficiency/doc/47609.php].

- German Bundestag, n.d. *German Bundestag website* [English version] [URL: http://www.bundestag.de/htdocs_e/bundestag/function/index.html]. Accessed 4 March 2011.
- International Energy Agency, 2011. Relation with Member Countries – Germany. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=DE].
- Koch, H.-J., 2010. Climate Change Law in Germany. *Journal for European Environmental and Planning Law* 7(4):411-26.
- OSW, Centre for Eastern Studies, 2006. *Germany's New Energy Strategy* [URL: www.osw.waw.pl/en/publikacje/cweekly/2010-10-06/germanys-new-energy-strategy]. Accessed 15 December 2012.

5.22 Ghana

- Anonymous (2013) Ghana Renewable Energy website. Available at: <http://ghanarenewableenergy.com/>.
- African Development Bank (2012). Burkina Faso, DRC and Ghana Share Innovations in REDD+ Investments. (Online). Available at: <http://www.afdb.org/en/news-and-events/article/burkina-faso-drc-and-ghana-share-innovations-in-redd-investments-9104/>.
- African Development Bank Group (2013). Climate Investment Funds (Online). Available at: <http://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/climate-investment-funds-cif/>
- Energy Commission (2006). Strategic National Energy Plan. Ghana Energy Commission (Online). Available at: <http://www.energycom.gov.gh/Strategic-National-Energy-Plan/strategic-national-energy-plan.html>.
- Electoral Commission of Ghana (2012). Electoral Commission of Ghana website: Electoral system. Available at: <http://www.ec.gov.gh/>.
- FES (2011). Law Making in Ghana. Friedrich Ebert Stiftung (Online). Available at: http://www.fesghana.org/uploads/PDF/Brochure_Lawmaking_Ghana.pdf
- Government of Ghana (1997). Energy Commission Act. Ghana legal website. Available at: <http://ghanalegal.com/?id=3&law=125&t=ghana-laws>.
- Government of Ghana (1992). The Constitution of Ghana (Online). Available at: http://www.judicial.gov.gh/constitution/chapter/chap_8.htm
- MEST (2010). Ghana Goes for Green Growth National engagement on climate change. Ministry of Environment, Science and Technology, Republic of Ghana (Online). Available at: <http://en.openei.org/w/images/2/29/GhanaGreen.pdf>.
- REDD Desk (2013). REDD in Ghana (Online). Available at: http://www.theredddesk.org/countries/ghana/readiness_overview
- Sarpong, D.B. & Anyidoho, N.A. (2012). Climate Change and Agricultural Policy Processes in Ghana. Future Agriculture (Online). Available at: <http://www.future-agricultures.org/research/climate-change/7775-climate-change-policy-in-ghana#.UguuepLSE2g>

5.23 Guatemala

- Food and Agriculture Organization - FAO (2003) Guatemala facing Climate Change. Forest and Climate Change Centro-American Series. October 2003. Available at: <http://www.fao.org/docrep/006/ad443s/ad443s00.HTM> (accessed on 20 November 2013).
- Guatemalan National Congress (2013) Framework law to regulate vulnerability reduction and obligatory adaptation to the effects of climate change and the mitigation of greenhouse gas

- effect. Decree N. 7-2013. 5 September. Available at: <http://www.conred.gob.gt/www/documentos/secretaria-ejecutiva/ley-cambio-climatico.pdf> (accessed on 28 November 2013).
- Guatemalan National Congress (1996) Ley Forestal. Decree N. 101-96. Available at: http://www.sice.oas.org/investment/NatLeg/GTM/Forestal_s.pdf (accessed on 28 November 2013).
- Presidency of the Republic (2009) Governmental Agreement establishing the Inter-institutional Climate Change Commission (temporary). N.253-2009, 21 September.
- Ministry of Mines and Energy (2003) Law of Incentives for Development Projects on Renewable Energy (Decree No 52-2003). 5 November. Available at: <http://www.oj.gob.gt/es/queesoj/estructuraoj/unidadesadministrativas/centroanalisidocumentacionjudicial/cds/CDs%20leyes/2003/Leyes%20en%20PDF/Decretos%202003/Decreto%2052-2003.pdf> (accessed on 27 November 2013).
- Ministry of the Environment and Natural Resources (2001) First National Communication to the UNFCCC. Available at: http://www.marn.gob.gt/sub/portal_cambio_climatico/docs/pcn.pdf (accessed on 26 November 2013).

5.24 Guyana

- Commonwealth Governance (2013). Guyana: Constitution of Guyana. (Online). Available from: <http://www.commonwealthgovernance.org/countries/americas/guyana/constitution/>.
- CIA (2013). Guyana. The CIA World Factbook. (Online). Available from: <https://www.cia.gov>.
- Earle, J. (2011). Warming Guyana coast risks malaria resurgence. Thomson Reuters Foundation. Online. Available from <http://www.trust.org/item/?map=warming-guyana-coast-risks-malaria-resurgence>.
- The Economist (2013). Hydropower in Guyana: Shrouded in secrecy. The Economist Newspaper. (Online). Available from: <http://www.economist.com/news/americas/21577090-small-dam-big-argument-shrouded-secrecy>.
- ECLAC (2010). Review Of The Economics Of Climate Change (RECC) In The Caribbean Project: Phase I Climate Change Profiles In Select Caribbean Countries. LC/CAR/L.250/Corr.1. Economic Commission for Latin America and the Caribbean Subregional Headquarters for the Caribbean.
- Habibullah, R. (1994). The National Energy Policy of Guyana. National Energy Policy Committee, Government of Guyana, Georgetown.
- Office of Climate Change (2013). LCDS: Guyana's Low Carbon Development Strategy. (Online). Available from: <http://www.lcds.gov.gy/guyana-redd-investment-fund-grif.html>.
- Government of Guyana (2001). Guyana Climate Change Action Plan: Actions for addressing climate change. Government of Guyana, Georgetown.
- Government of Guyana (1997). National Forest Policy Statement. Government of Guyana, Georgetown.
- Frankfurt School - UNEP Collaborating Centre for Climate & Sustainable Energy Finance (2012), Case Study: The Guyana REDD+ Investment Fund (GRIF), <http://www.fs-unesp-centre.org/>.
- Sen, A. (2009). National Institutional Arrangements for REDD Case Study – Guyana (as of November 2009). WWF.
- Robles, F.F. (2013). Legal analysis of cross-cutting issues for REDD+ implementation Lessons learned from Mexico, Viet Nam and Zambia. Food and Agriculture Organisation / UN-REDD Programme.
- Office Of The President (2013). Low Carbon Development Strategy Update: Transforming Guyana's Economy While Combating Climate Change. Republic Of Guyana. Development Policy and Management Consultants (2010). National Adaptation Strategy To Address Climate Change In The Agriculture Sector Of Guyana Strategy And Action Plan. Technical Report 5C/MACC-03-09-5. Caribbean Community Climate Change Centre, Belmopan, Belize.

5.25 India

- Bureau of Energy Efficiency, 2011. *Indian Bureau of Energy Efficiency website* [URL: <http://www.bee-india.nic.in/>]. Accessed 15 December 2012.
- Centre for Science and Environment, n.d. *India Environmental Portal website* [URL: <http://www.indiaenvironmentportal.org.in/node/255279>]. Accessed 15 December 2012.
- The Energy and Resources Institute, 2012. *Proceedings of the Workshop "Preparedness of REDD+ Project in India", Held on 23 March 2012* [URL: <http://moef.nic.in/downloads/public-information/Proceedings%20of%20the%20REDD+%20Worksho18-4-2012.pdf>]. Accessed 15 December 2012.
- Indian Renewable Energy Development Agency, n.d. Wind Energy section of website [URL: http://www.ireda.gov.in/homepage1.asp?parent_category=2&category=21]. Accessed 15 December 2012.
- International Energy Agency, 2011. Relation with Member Countries – India. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=IN].
- Library of Congress, 2004. *Country Profile: India. December 2004* [URL: <http://lcweb2.loc.gov/frd/cs/profiles/India.pdf>]. Accessed 15 December 2012.
- Ministry of Environment and Forests, 2010. *India: Taking on Climate Change: Post-Copenhagen Domestic Actions, Ministry of Environment and Forests, Government of India* [URL: <http://www.indiaenvironmentportal.org.in/files/India%20Taking%20on%20Climate%20Change.pdf>]. Accessed 15 December 2012.
- Ministry of Environment and Forests, 2011. *Indian Ministry of Environment and Forests website* [URL: <http://moef.nic.in/>]. Accessed 15 December 2012.
- Ministry of New and Renewable Energy, 2011. *Indian Ministry of New and Renewable Energy website* [URL: <http://www.mnre.gov.in/>]. Accessed 15 December 2012.
- Ministry of Power, 2011. *Indian Ministry of Power website* [URL: <http://www.powermin.nic.in/>]. Accessed 15 December 2012.
- Parliament of India, 2011. *Parliament of India website* [URL: <http://parliamentofindia.nic.in/>]. Accessed 15 December 2012.
- Pew Centre on Global Climate Change, 2011. *Pew Centre on Global Climate Change website* [URL: <http://www.pewclimate.org/>]. Now Centre for Climate and Energy Solutions [URL: <http://www.c2es.org/>]. Accessed 15 December 2012.
- Pew Centre on Global Climate Change and The Energy and Resource Institute (TERI), 2008. *Climate Change Mitigation Measures in India, International Brief 2, September 2008* [URL: <http://www.c2es.org/docUploads/India-FactSheet-09-08.pdf>]. Accessed 15 December 2012.
- Planning Commission, 2011. *Faster, Sustainable and More Inclusive Growth – An Approach to the 12th Five Year Plan* [URL: http://planningcommission.nic.in/plans/planrel/12appdrft/approach_12plan.pdf]. Accessed 15 December 2012.
- Srivastava, L., 2009. India's Integrated Energy Policy. *Mydigitalfc.com*, 13 January 2009 [URL: <http://www.mydigitalfc.com/opinion/india%E2%80%99s-integrated-energy-policy-641>]. Accessed 15 December 2012.
- World Resources Institute, n.d. Sustainable Development Policies and Measures (SD-PAMs) database: India [URL: <http://projects.wri.org/sd-pams-database/india/>]. Accessed 15 December 2012.

5.26 Indonesia

Caroko, W., Komarudin, H., Obidzinski, K., Gunarso, P. (2011) Policy and institutional frameworks

- for the development of palm oil-based biodiesel in Indonesia. CIFOR, Bogor, Indonesia. http://www.cifor.org/publications/pdf_files/WPapers/WP62Komarudin.pdf.
- CIA (2013). Indonesia. The CIA World Factbook. (Online). Available from: <https://www.cia.gov>.
- Safitri, M. (No Date). Forest Tenure And Management In Indonesia: The National Legal Framework <https://openaccess.leidenuniv.nl/bitstream/handle/1887/16242/04.pdf?sequence=10>.
- CIFOR (2013) Full Text of President Susilo Bambang Yudhoyono's Decree on Indonesia REDD+ agency. CIFOR Forest News Blog. (Online). Available from: <http://blog.cifor.org/19055/full-text-of-president-susilo-bambang-yudhoyonos-decree-on-indonesia-redd-agency#.UIKEhFDSE2g>. Accessed 6th October 2013.
- Nurrochmat, D.R. & Sulistiawati, L. (2012) Design Of A REDD+ Compliant Benefit Distribution System For Indonesia. UN-REDD, Jakarta, Indonesia.
- Ministry Of National Development Planning/National Development Planning Agency (2011). Guideline For Developing Local Action Plan For Green House Gas Emission Reduction (RAD-GRK). BAPPENAS, Republic Of Indonesia.
- Wibisana, A.G. (2013). A Critical view on Indonesia's legal responses to climate change. In Michael Faure and Andri G. Wibisana (eds.) *Regulating Disasters, Climate Change and Environmental Harm: Lessons from the Indonesian Experience*. Cheltenham, UK: Edward Elgar.
- Azimudin, T. (2008). Geothermal Energy Development In Indonesia, Country Update 2005 – 2008. United Nations University Geothermal Training Programme. 30th Anniversary Workshop Proceedings, Jakarta, Indonesia.
- Thamrin, S., Heiner von Luepke, Herman Haeruman, Saut M. Lubis, Arimbi Jinca, Ko Sakamoto, Anandita Laksmi Susanto, Mariati Abdul Kadir, Yuliana C. Wulan, Philippe Guizol, Novita Sari, Dea Rafika, Philipp Munzinger, Anja Rosenberg, Saut Sagala, Lutfi Lesilolo. (2011). Guideline for Implementing Green House Gas Emission Reduction Action Plan. Ministry Of National Development Planning/ National Development Planning Agency.
- Bratasida, L. (2010). Climate Change & Low Carbon Development in Indonesia. Presentation to the 2nd ASEM Development Conference, Yogyakarta.
- SATGAS (2012). REDD+ National Strategy. Indonesia REDD+ Task Force. (Online). Available from: www.satgasreddplus.org/.
- Winarno, D. (October 24th-26th, 2011). The Clean Energy Policy In Indonesia Action Plan Of "Utilization Of Biomass For Power Plant". Presentation, the German-Indonesian Renewable Energy Conference.

5.27 Israel

- Knesset Website - http://knesset.gov.il/description/eng/eng_work_mel2.htm [last accessed January 21, 2014]
- Israeli Ministry of National Infrastructures, Energy and Water Resources website <http://energy.gov.il/> [last accessed January 21, 2014]
- Israeli Ministry of Environmental Protection website <http://www.sviva.gov.il/> [last accessed January 21, 2014]
- Israeli Clean Air Law 5768-2008, SEFER HAHUKIM No. 2174 p. 752
- Ayalon O., Goldrath, T., Nachmany, M., Lev On Group, Palatnik R., Faitelson H., and Kivun Ltd. 2011. National priorities for the environment in Israel. Position Paper VII: Greenhouse Gases Mitigation Plan in Israel, 2011. S. Neaman Publ. 85pp
- Israeli Ministry of National Infrastructures, Energy and Water Resources, 2012. The Inter-ministerial Committee to Examine the Government's Policy Regarding Natural Gas in Israel, Main Recommendations. [URL: <http://energy.gov.il/English/Subjects/Natural%20Gas/Pages/GxmsMniNGPolicyIsrael.aspx>] [last accessed January 21, 2014]
- Israeli Prime Minister's Office, 2012. The Committee to Examine the Economic Benefits of Renewable Energies ,the Inter-ministerial Committee: Main Recommendations. [URL:

- <http://www.tashtiot.co.il/wp-content/uploads/2013/07/%D7%93%D7%95%D7%97-%D7%95%D7%A2%D7%93%D7%AA-%D7%A7%D7%A0%D7%93%D7%9C.pdf>] [last accessed January 21, 2014]
- Israeli Government, November 2010, resolution 2508 - Formulation of a national plan for the reduction of greenhouse gas emissions in [URL: <http://www.pmo.gov.il/Secretary/GovDecisions/2010/Pages/des2508.aspx>] [last accessed January 21, 2014]
- Forum 15 – The Israeli Forum of Self-Government Cities, 2013. Recommendations on adopting the Israeli standard on green building by municipalities that are members of the Forum 15 climate convention [URL: http://www.forum15.org.il/art_images/files/180/mayors%20decision%2023.6.13.pdf] [last accessed January 21, 2014]

5.28 Italy

- Italian Ministry for the Environment, Land and Sea (2009) Fifth National Communication under the UN Framework Convention on Climate Change. November. Available at: http://unfccc.int/resource/docs/natc/ita_nc5.pdf (accessed on 6 November 2013).
- Italian Ministry for the Environment, Land and Sea (2013) Elements for a National Climate Change Adaptation Strategy. Document for public consultation. 12 September. Available at: http://www.minambiente.it/sites/default/files/archivio/comunicati/Conferenza_29_10_2013/Elementi%20per%20una%20Strategia%20Nazionale%20di%20Adattamento%20ai%20Cambiamenti%20Climatici.pdf (accessed on 6 November 2013).
- Darlington, R., 2010. A Short Guide to the Italian Political System. URL: <http://www.rogerdarlington.me.uk/Italianpoliticalsystem.html>. Accessed 15 December 2012.
- European Energy Agency, 2010. Annual European Union Greenhouse Gas Inventory 1990–2008 and Inventory Report 2010. Submission to the UNFCCC Secretariat, European Energy Agency Technical report No. 6/2010 [URL: <http://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2010>]. Accessed 15 December 2012.
- International Energy Agency, 2011. Relation with Member Countries – Italy. International Energy Agency website [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=IT].
- Ladu, R., 2001. Update to Overview of the Sources of Italian Law. LLRX.com website [URL: <http://www.llrx.com/features/ladu2.htm>]. Accessed 15 December 2012.
- Lexadin website, n.d. The World Law Guide: Legislation Italy [URL: <http://www.lexadin.nl/wlg/legis/nofr/eur/lxweita.htm>]. Accessed 15 December 2012.
- Ministry of Economic Development, 2011. Italian Ministry of Economic Development website [URL: <http://www.sviluppoeconomico.gov.it/>]. Accessed 15 December 2012.
- Ministry of the Environment, 2011. Italian Ministry of the Environment website [in Italian] [URL: <http://www.minambiente.it/>]. Accessed 15 December 2012.
- Ministry of Infrastructure and Transport, 2011. Italian Ministry of Infrastructure and Transport website [URL: <http://www.mit.gov.it/mit/site.php>]. Accessed 15 December 2012.
- National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), 2011. ENEA website [URL: <http://www.enea.it/>]. Accessed 15 December 2012.

5.29 Jamaica

- Alba, A. (2008) The National Forest Programme process: Jamaica. Food and Agriculture Organisation. (Online). Available at: www.fao.org/forestry/14852-09a576752e05b67c31e7ca37398e0b05.pdf.
- Caribbean Community Secretariat (CARICOM). Caribbean Planning for Adaptation to Climate

- Change (CPACC) Project [URL: <http://www.caricom.org/jsp/projects/macc%20project/cpacc.jsp>]. Accessed 30 October 2012.
- Caribbean Community Secretariat (CARICOM). Mainstreaming Adaptation To Climate (MACC) Project [URL: <http://www.caricom.org/jsp/projects/macc%20project/macc.jsp>]. Accessed 30 October 2012.
- CEEBIP, 2012. Caribbean Environment and Energy Business Information Platform. Launch of the Energy Efficiency and Conservation Programme in Jamaica, 8 May 2012 [URL: <http://ceebip.org/launch-of-the-energy-efficiency-conservation-programme-in-jamaica/>]. Accessed 15 December 2012.
- CIA (2013). Jamaica. The CIA World Factbook. (Online). Available from: <https://www.cia.gov>.
- Davies, C. et al., 2007. The National Environment and Planning Agency: Air Quality Issues in Jamaica. Presentation/NEPA Training Module.
- ECLAC (2010). Review Of The Economics Of Climate Change (RECC). In The Caribbean Project: Phase I Climate Change Profiles In Select Caribbean Countries. LC/CAR/L.250/Corr.1. Economic Commission for Latin America and the Caribbean Subregional Headquarters for the Caribbean.
- Environmental Law Alliance Worldwide. Jamaican Environmental Laws at [URL: <http://www.elaw.org/node/1727>]. Accessed 15 December 2012.
- Environmental Management Division, Ministry of Water, Land, Environment and Climate Change, 2012. Climate Change Policies and Legislation. Unclassified Jamaican Government Document.
- Government of Jamaica, 2003. National Capacity Self-Assessment for Global Environmental Management. Annex I NCSA Project Document. UNDP [URL: <http://www.thegef.org/gef/sites/thegef.org/files/publication/NCSA-SR-web-100913.pdf>]. Accessed 15 December 2012.
- Government of Jamaica (1996). The Forest Act. (Online). Available at: faolex.fao.org/docs/pdf/jam7934.pdf.
- Government of Jamaica, 2004. Laws and Regulations of Jamaica [URL: <http://www.e-jamaica.gov.jm/laws/index.htm>]. Accessed 29 October 2012.
- Knight, P. (2010). Overview of Vision 2030 Jamaica – National Development Plan, Popular Version. Planning Institute of Jamaica.
- The Ministry of Energy and Mining (2009). Jamaica's National Energy Policy 2009-2030. Government of Jamaica.
- NEPA (2006). Jamaica's National Environmental Action Plan (JaNEAP). The National Environment and Planning Agency (NEPA). Government of Jamaica.
- Ministry of Energy, 2010. Jamaica's National Energy Policy 2009–2030, Government of Jamaica, Jamaica [URL: http://www.men.gov.jm/PDF_Files/Energy_Policy/National_Renewable_Energy_Policy_August_26_2010.pdf]. Accessed 15 December 2012.
- The National Ozone Unit. Legislation [URL: <http://www.nepa.gov.jm/ozonunit/laws.asp>]. Accessed 15 November 2012.
- NEPA (2003). A Pocket Guide to Environmental and Planning Laws of Jamaica. National Environment and Planning Agency, Government of Jamaica.
- NEPA/Government of Jamaica, 2003. A Pocket Guide to the Environmental and Planning Laws of Jamaica, Government of Jamaica, Jamaica [URL: http://www.nepa.gov.jm/symposia_03/Others/199_3300.pdf]. Accessed 15 December 2012.
- NEPA/Government of Jamaica, 2006. Jamaica's Environmental Action Plan 2006–2009, The National Environment and Planning Agency, Jamaica [URL: <http://www.thegef.org/gef/sites/thegef.org/files/documents/JANEAP-2006.pdf>]. Accessed 15 December 2012.
- PIOJ (2011). Vision 2030 Jamaica: The road to development – how do we get there? Presentation by the Planning Institute of Jamaica to the Statistics Institute. (Online). Available at: [http://statinja.gov.jm/nss/NSS_Presentation/Vision%202030%20Jamaica%20-%20Presentation%20to%20STATIN%20Workshop%20\(Febuary%2015\).pdf](http://statinja.gov.jm/nss/NSS_Presentation/Vision%202030%20Jamaica%20-%20Presentation%20to%20STATIN%20Workshop%20(Febuary%2015).pdf)
- PIOJ (2009). Vision 2030 Jamaica. Draft of the National Development Plan. Planning Institute of Jamaica, Kingston, Jamaica.

5.30 Japan

- GLOBE Japan, 2012. Summary of Legislative Developments on Climate Change in Japan in 2012. Email communication, November 2012.
- International Energy Agency, 2011. Relation with Member Countries - Japan. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=JP].
- Ministry of Justice, 2011. Japanese Ministry of Justice website [in English] [URL: <http://www.moj.go.jp/ENGLISH/>]. Accessed 15 December 2012.
- Ministry of the Environment, 2011. Japanese Ministry of the Environment website [in English] [URL: <http://www.env.go.jp/en/>]. Accessed 15 December 2012.
- Torney, D., and Kamal Gueye, M., 2009. *Climate Change Mitigation Policies in Selected OECD Countries: Trade and Development Implications for Developing Countries*. International Centre for Trade and Sustainable Development (ICTSD) Programme on Competitiveness and Sustainable Development, Series on Climate Change and Competitiveness Issue Paper No.8. ICTSD, Geneva [URL: <http://ictsd.org/downloads/2010/01/climate-change-mitigation-policies-in-selected-oecd-countries.pdf>]. Accessed 15 December 2012.
- United Nations, 1998. *Compendium of Energy Conservation Legislation in Countries of the Asia and Pacific Region: United Nations Economic and Social Commission for Asia and the Pacific, Bangkok* [URL: <http://www.unescap.org/esd/publications/energy/compend/cec.htm#top>]. Accessed 15 December 2012.
- House of Councilors, the national Diet of Japan. Legislative procedure in Japan [URL: <http://www.sangiin.go.jp/eng/guide/movie/movie-file/movie-file1/03.html> last accessed January 5th 2014]
- New Mechanisms Information platform, 2013. Japan's Action for REDD/REDD+ [URL: <http://www.mmechanisms.org/e/redd/ct-japan.html> last accessed January 5th 2014].
- Japan Aerospace Exploration Agency (JAXA), 2011. JAXA's Contributions to the Climate Change Monitoring [URL: <http://www.osa.unvienna.org/pdf/pres/copuos2011/tech-20.pdf> last accessed January 5th 2014]
- Japan Aerospace Exploration Agency (JAXA), 2013. Global Change Observation Mission: 5th Research Announcement [URL: http://suzaku.eorc.jaxa.jp/GCOM/materials/ra/GCOM_RA_5th_Guide_E.pdf last accessed January 5th 2014]
- Japan Aerospace Exploration Agency (JAXA), 2010. JAXA and INPE Signing Letter of Intention in co-operation for REDD+ using DAICHI [URL: http://www.jaxa.jp/press/2010/11/20101108_inpe_e.html last accessed January 5th 2014]

5.31 Jordan

- Dababseh, Amal. Climate change adaptation under uncertainty in developing countries-Jordan Case. 2013. Presentation at the European Climate Change Adaptation Conference, 2013. Available online at: http://eccaconf.eu/presentations/PDF/ECCA2013-4e-3_14_3-Aldababseh.pdf
- General Electricity Law No 64 of 2003. Unofficial translation. Ministry of Energy and Mineral Resources. Available online at: <http://www.memr.gov.jo/LinkClick.aspx?fileticket=Bz2vcBPH0vw%3D&tabid=247>
- "General information about the National Assembly". Jordanian Parliament homepage. Last accessed 17 December 2013: <http://www.parliament.jo/en/node/145>
- Jordan's Water Strategy & Policies. Ministry of Water and Irrigation. Available online at: <http://www.mwi.gov.jo/sites/en-us/SitePages/Water%20Policies/Water%20Policy.aspx>
- Jordan's Second National Communication to the United Nations Framework Convention on Climate Change (UNFCCC). 2009. Ministry of Environment. Available online at:

- http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php
“Launching the Climate Change Policy of the Hashemite Kingdom of Jordan. 14 May 2013. UNDP, Press Release. Available online at: <http://www.undp.org/content/jordan/en/home/presscenter/pressreleases/2013/05/14/launching-the-climate-change-policy-of-the-hashemite-kingdom-of-jordan/>
- National Strategy and Action Plan to Combat Desertification. 2006. Ministry of Environment and UNDP. Available online at: http://smap.ew.eea.europa.eu/foi112686/foi030856/copy_of_fol522871/foi721165/NAP_Jordan.pdf
- The National Climate Change Policy (2013-2020). 2013. Ministry of Environment. Available online at: http://www.undp.org/content/dam/jordan/docs/News/Climate%20change%20policy_JO.pdf
- Renewable Energy & Efficiency Law No (3) of 2010. Authorized Translation. Ministry of Energy and Mineral Resources. Available online at: <http://www.memr.gov.jo/Portals/0/Renewable%20Energy%20Law%20Translation.pdf>
- Updated Master Strategy of Energy Sector in Jordan for the period 2007-2020. Published 2007. The Ministry of Energy and Mineral Resources. Available online at: <http://www.memr.gov.jo/Portals/0/energystrategy.pdf>

5.32 Kazakhstan

- About Support of use of Renewable Sources of Energy, Law No. 165-4. Available online at: http://www.kazembassy.org.uk/legislation_of_kazakhstan.html
- Concerning Energy Saving, Law No. 210. 1997. Available online at: http://www.kazembassy.org.uk/legislation_of_kazakhstan.html
- Kazakhstan’s Second National Communication to the Conference of the Parties of the United Nations Framework Convention on Climate Change. 2009. Ministry of Environment Protection. Available online at: http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php
- Kazakhstancarbon. 2011. The position of Kazakhstan on climate change. Webpage [last accessed 16 December 2013]: <http://www.kzc.kz/en/climate-change/the-position-of-kazakhstan>
- Kerimay, Aiyngul et al. 2013. Climate change domestic mitigation policies in Kazakhstan: a technical economic evaluation. IEA-ETSAP Workshop, Paris, 18 June 2013. Available online at: http://www.iea-etsap.org/web/Workshop/Paris_Jun2013/5_3%20Ibrayeva_Climate%20change%20domestic%20mitigation%20policies%20in%20Kazakhstan%20v1.1-gc.pdf
- Parliament of the Republic of Kazakhstan. “About” homepage. [Last accessed 16 December 2013]: www.parlam.kz/en/
- Priorities of the Concept of Transition of the Republic of Kazakhstan to Sustainable Development. Presidential Decree No. 216. 2006. Available online at: http://www.rrcap.ait.asia/nsds/uploadedfiles/file/NSDS%20Publication_eng.pdf
- Saigal, Shiv. 2003. Kazakhstan: issue and approaches to combat desertification, discussion draft. The Asian Development Bank and The Global Mechanism. Available online at: <http://global-mechanism.org/>
- Sammut, François, Kertesheva Aigul and Sergei Vassilyev. 2013. The Domestic Emissions Trade Scheme in Kazakhstan. Carbon Limits and Thomson Reuters Point Carbon. Available online at: <http://www.ebrdpeter.info/Reports/20130424%20EBRD%20PETER%20Project%20-%20Kazakhstan%20ETS.pdf>
- The Ecological Code of the Republic of Kazakhstan; code No. 212. 9 January 2007. Translated by speedy translation, 2010. Available online at: <http://invest.gov.kz/upload/docs/en/323a08584fc35cf34230a6139a54d974.pdf>
- On Power Industry. Law No 588-II. 2004. Available online at: http://www.kazembassy.org.uk/legislation_of_kazakhstan.html

- Orazkeldykyzy, Dana. Country Report: Kazakhstan. 2011. Workshop on Climate Change and its Impact on Agriculture; Souel, Republic of Korea, 13-16 December 2011. Available online at: <http://www.adbi.org/files/2011.12.14.cpp.day2.sess2.15.country.paper.kazakhstan.pdf>
- Umirbekov, Atabek. State policies and climate change mitigation planning in Kazakhstan. 2010. United State Agency for International Development. Available online at: https://www.academia.edu/3748342/State_policies_and_climate_change_mitigation_planning_in_Kazakhstan

5.33 Kenya

- Energy Regulatory Commission, 2006. Energy Act 2006 [URL: www.erc.go.ke/energy.pdf]. Accessed 25 September 2012.
- Energy Regulatory Commission, 2006. Energy Act 2006 [URL: www.erc.go.ke/energy.pdf]. Accessed 25 September 2012.
- FAOLEX, 2009. Kenya: Agriculture (Farm Forestry) Rules, 2009. Law N. 166 of 2009 [URL: http://faolex.fao.org/cgi-bin/faolex.exe?database=faolex&search_type=query&table=result&query=ID:LEX-FAOC101360&format_name=ERALL&lang=eng]. Accessed 10 October 2012.
- Cabinet of the President, 2013. Cabinet Brief 8 February. [URL:<http://www.statehousekenya.go.ke/news/feb2013/2013070201.htm>]. Accessed 24 October 2013.
- Government of Kenya, 2013. National Climate Change Action Plan. [URL: <http://cdkn.org/wp-content/uploads/2013/03/Kenya-National-Climate-Change-Action-Plan.pdf>] Accessed 12 October 2013.
- Government of Kenya (2013) National Climate Change Action Plan 2013-2017. Available at: cdkn.org/wp-content/uploads/2013/03/Kenya-National-Climate-Change-Action-Plan.pdf (accessed on 21 October 2013).
- Kenya Gazette Supplement, 2002. The Water Act, vol. CIV (n. 76). 8 November 2002.
- Kenya Gazette Supplement, 2005. The Forests Act, Special issue N. 88 (Acts n. 7). 29 November 2005.
- Kenya Gazette Supplement, 2012. The Climate Change Authority Bill, Special issue N. 61 (Bills n. 29). 18 June 2012.
- Ministry of Environment and Mineral Resources, 2012. National Environment Policy, 2012: Revised draft N.5, July 2012 [URL: <http://www.environment.go.ke/wp-content/uploads/2012/07/National-Environment-Policy-06-07-12-Clean.pdf>]. Accessed 30 October 2012.
- National Council for Law Reporting, 2012. Environmental Management and Co-ordination Act [URL: <http://www.kenyalaw.org/environment/content/legislation.php>]. Accessed 20 September 2012.
- The REDD Desk, 2012. The Forest Act 2005 [URL: http://www.theredddesk.org/countries/kenya/info/law/the_forests_act_2005_kenya]. Accessed 15 December 2012.
- Stiftung, H.B., 2010. Climate Change Vulnerability and Adaptation Preparedness in Kenya. In: Heinrich Böll Stiftung, East and Horn of Africa. Berlin: Heinrich Böll Stiftung.

5.34 Malaysia

- Chin, Melissa, 2011. Biofuels in Malaysia: An Analysis of the Legal and Institutional Framework. Working Paper 64. CIFOR, Bogor Indonesia [URL: <http://www.cifor.org/online-library/browse/view-publication/publication/3470.html> <http://www.parliament.nz/en-NZ/AboutParl/HowPWorks/OurSystem/1/8/e/00CLOOCHowPWorks111-Our-system-of-government.htm>]. Accessed 9 December 2013.

NZ/AboutParl/HowPWorks/OurSystem/1/8/e/00CLOOCHowPWorks111-Our-system-of-government.htm]. Accessed 9 December 2013.

United Nations Development Programme, website. Malaysian Industrial Energy Efficiency Project [URL:

<http://www.undp.org.my/page.php?pid=144&menu=main&title=Malaysian%20Industrial%20Energy%20Efficiency%20Improvement%20Project%20%5BCompleted%20Project%5Dhttp://www.parliament.nz/en->

NZ/AboutParl/HowPWorks/OurSystem/1/8/e/00CLOOCHowPWorks111-Our-system-of-government.htm]. Accessed 9 December 2013.

5.35 Maldives

First National Communication of Maldives to the UNFCCC. 2001. Ministry of Home Affairs, Housing and Environment.

Human rights council resolution 7/23 "Human Rights and Climate Change." 25 September 2008. Maldives country submission to the Office of the High Commissioner for Human Rights.

National Adaptation Program of Action. 2007. Ministry of Environment, Energy and Water.

O'Hehir, Andres. "The Maldives' ousted president on climate change and tyranny. Salon.com. 30 March 2012.

Samath, Feizal. "Climate Change: Maldives inches closer to HCFC phase-out. Inter Press Service News Agency. 14 June 2010.

5.36 Mexico

Secretary of Environment and Natural Resources(2013). National Climate Change Strategy. Vision 10-20-40. Available at: <http://www.encc.gob.mx/> (accessed on 15 November 2013).

Secretary of Environment and Natural Resources(2012). Mexico's Third National Communication to the UNFCCC. Available at: <http://unfccc.int/resource/docs/natc/mexnc5s.pdf> (accessed on 17 November 2013). National Congress (2012) General Law on Climate Change. 6 June. Available at: <http://www.diputados.gob.mx/LeyesBiblio/pdf/LGCC.pdf> (accessed on 15 October 2013).

GLOBE Mexico, 2012. Legislative Developments on Climate Change in Mexico. Email communication, October 2012.

Bionero, 2008. *Qué quiere Alberto Cárdenas Jiménez con su propuesta de Ley sobre cambio climático?* [What does Alberto Cárdenas Jiménez want with his proposed law on climate change law] [in Spanish]. *Bionero website*, 29 April 2010 [URL: <http://www.bionero.org/cambio-climatico/bfque-quiere-alberto-cardenas-jimenez-con-su-propuesta-de-ley-sobre-cambio-climatico>]. Accessed 15 December 2012.

Government of Mexico. 2003. *General Law on Sustainable Forest Development* [URL: <http://www.diputados.gob.mx/LeyesBiblio/pdf/259.pdf>]. Accessed 15 December 2012.

Government of Mexico, 2008. *Law for the Promotion and Development of Bioenergy* [URL: <http://www.diputados.gob.mx/LeyesBiblio/pdf/LPDB.pdf>]. Accessed 15 December 2012.

Government of Mexico, 2008. *Law for the Sustainable Use of Energy (LASE)* [URL: <http://www.diputados.gob.mx/LeyesBiblio/pdf/LASE.pdf>]. Accessed 15 December 2012.

Government of Mexico, 2008. *Law for the Use of Renewable Energies and for Financing the Energy Transition (LAERFTE)* [URL: <http://www.diputados.gob.mx/LeyesBiblio/pdf/LAERFTE.pdf>]. Accessed 15 December 2012.

Instituto Nacional de Ecología, 2011. *Instituto Nacional de Ecología website* [in Spanish] [URL: <http://www.ine.gob.mx/index.php>]. Accessed 15 December 2012.

Instituto Nacional de Ecología, 2011. *Climate Change Portal for Mexico website* [in Spanish] [URL: http://cambio_climatico.ine.gob.mx/]. Accessed 15 December 2012.

International Energy Agency, 2011. Relation with Member Countries – Mexico. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=MX].

Krishnamurthy, K., 2010. Mexico Proposes Ambitious Law on Climate Change. *Climatico website*, 23 July 2010 [URL: <http://www.climaticoanalysis.org/post/mexico-proposes-ambitious-law-on-climate-change-2/>]. Accessed 15 December 2012.

5.37 Federated States of Micronesia

<http://www.fsmcongress.fm/>

Federated States of Micronesia Department of Resources and Development Division of Energy (2010) Energy Policy, Volume I. <http://www.slideshare.net/fsmrd/fsm-energy-policy-vol-i-draft> [Accessed 12th September 2013]

Federated States of Micronesia [FSM] (1999). Micronesia (Federated States, of) Climate Change National Communication. <http://unfccc.int/resource/docs/natc/micnc1.pdf>

Federated States of Micronesia [FSM] (2009). Nationwide Climate Change Policy 2009. http://www.fsmpio.fm/Nationwide_Climate_Change_policy.pdf

Federated States of Micronesia National Government [FSM] and U.S. Forest Service. (2010). Federated States of Micronesia State-Wide Assessment and Resource Strategy 2010 - 2015+. Retrieved from <http://www.islandforestry.org/pdf/2010/federated-states-ofmicronesia.pdf>

Federated States of Micronesia [FSM] Department of Resources and Development, 2011. Summary of FSM Energy Policy <http://www.slideshare.net/fsmrd/summary-fsm-energy-policy>

Federated States of Micronesia Office of the President (2009) Nationwide Climate Change Policy 2009. http://www.fsmpio.fm/Nationwide_Climate_Change_policy.pdf [Accessed 12th September 2013]

Federated States of Micronesia Public Information Office (2011) North Pacific ACP Renewable Energy and Energy Efficiency Project, Press Release #0111-03, 4 January 2011. http://www.fsmpio.fm/RELEASES/2011/january/01_03_11.html [Accessed 12th September 2013]

PREEN (2010) PREEN Newsletter – Pacific Resource and Environmental Economics Network. [URL <http://www.sopac.org/sopac/docs/nre/PREEN%20Newsletter%20June%202011.pdf>] [Accessed 12th September 2013]

Asian Development Bank, 2010. ADB Country Operations Business Plan - Federated States of Micronesia [URL: <http://www.adb.org/sites/default/files/pub/2010/cobp-fsm-2011-2013.pdf>] last accessed 21 October 2013.

European Commission, 2007. Federated States of Micronesia – European Commission 2007 Joint Annual Report [URL: http://ec.europa.eu/development/icenter/repository/jar07_fm_en.pdf] last accessed 21 January 2014.

European Commission, 2008. Federated States of Micronesia – EUROPEAN COMMUNITY 10th EDF - Country Strategy Paper & National Indicative Programme for the period 2008 – 2013 [URL: http://ec.europa.eu/development/icenter/repository/summary_fm_csp10_en.pdf] last accessed 21 January 2014.

5.38 Mongolia

Asian Development Bank, 2013. Westphal, Michael I.; Hughes, Gordon A.; Brömmelhörster, Jörn (Eds). Economics of climate change in East Asia. Mandaluyong City, Philippines: Asian Development Bank, 2013 [URL: <http://www.adb.org/sites/default/files/pub/2013/economics-climate-change-east-asia.pdf>] Accessed 18 October 2013

- CDM National Bureau in Mongolia, 2013. Approved projects from CDM/DNA [URL: <http://www.cdm-mongolia.com>] Accessed 18 October 2013.
- Law of Mongolia on Reducing Air Pollution. [URL: http://air.president.mn/en/index.php?option=com_content&view=article&id=132:law-on-reducing-air-pollution-in-the-capital-&catid=4:laws-act&Itemid=5] Accessed 18 October 2013
- Law of Mongolia on Renewable Energy [URL: <http://www.erc.mn/en/download/206>] Accessed 18 October 2013
- Ministry of Environment and Green Development, 2013. Technology Needs Assessment. Vol2-Climate Change Mitigation in Mongolia [URL: http://tech-action.org/Mongolia/TechnologyNeedsAssessmentMitigation_Mongolia.pdf] Accessed 18 October 2013
- Ministry of Environment and Green Development, 2013. Technology Needs Assessment. Vol1-Climate Change Adaptation in Mongolia [URL: http://unfccc.int/ttclear/sunsetcms/storage/contents/stored-file-20130820162919645/TechnologyNeedsAssessmentAdaptation_Mongolia.pdf] Accessed 18 October 2013
- Ministry of Environment, Nature and Tourism, 2009. Mongolia: Assessment Report on Climate Change. [URL: http://www.unep.org/pdf/MARCC2009_BOOK.pdf] Accessed 18 October 2013
- Ministry of Nature, Environment and Tourism, 2010. Mongolia Second National Communication [URL: <http://unfccc.int/resource/docs/natc/mongnc2.pdf>] Accessed 18 October 2013
- Ministry of Nature, Environment and Tourism, 2011. Carbon Finance in Mongolia. [URL: http://www.cdm-mongolia.com/files/Final_Carbon%20Finance%20in%20Mongolia_2011.pdf] Accessed 18 October 2013
- National Renewable Energy Programme (2005-2020) [URL: <http://www.nrec.mn/en/index.php?pid=49&nid=19>] Accessed 18 October 2013
- State Great Hural. About the State Great Hural [URL: <http://www.parliament.mn/en/state-great-hural/categories/2602/pages/4402>] Accessed 18 October 2013
- UNDP, 2011. Mongolia Human Development Report 2011. Vulnerability to Sustainability: Environment and Human Development, Ulaanbaatar 2011 [URL: http://hdr.undp.org/en/reports/national/asiathepacific/mongolia/NHDR_Mongolia_EN_2011_2.pdf] Accessed 18 October 2013
- UN-REDD in Mongolia [http://www.un-redd.org/Newsletter38/MongoliasForestSector/tabid/106341/Default.aspx] Accessed 18 October 2013
- International Energy Agency, 2013. Mongolia's policies and measures on climate change and renewable energy [http://www.iea.org/] Accessed 18 October 2013

5.39 Morocco

- Adriani, B., Lignieres, P., Bennis, A. and Mokhtari, G., 2013. Lighting up the Kingdom of Morocco: Energy strategy and recent developments in power projects. Linklaters. [http://www.linklaters.com/Publications/Lighting-Kingdom-Morocco/Pages/Index.aspx]
- Energy Development and Energy Investment Company (Société d'Investissements Energétiques - SIE), 2013 [http://www.siem.ma]
- Fritzsche, K., Zejli, D. and Tänzler, D., 2011. The relevance of global energy governance for Arab countries: The case of Morocco. Energy Policy 39(8):4497-4506. [http://www.sgg.gov.ma/Projet_loi_99-12_Fr.pdf]
- Law 16-09, creating the Moroccan Agency for Development of Renewable Energy and Energy Efficiency (ADEREE). [http://www.mem.gov.ma/Documentation/pdf/Loi%20ADEREE/Loi%20ADEREE.pdf]
- Law 47-09, 2011. [http://www.mem.gov.ma/Documentation/pdf/Loi%2047-09-VF-BAT%209%20mai%202012.pdf]
- Law 57-09, creating the Moroccan Agency for Solar Energy (MASEN)

- [<http://www.mem.gov.ma/Documentation/pdf/loiMASEN/Loi%20MASEN.pdf>
Moroccan Constitution, 2011. [http://www.sgg.gov.ma/constitution_2011_Fr.pdf]
- Moroccan environmental law compilation, 2010. [<http://www.minenv.gov.ma/index.php/fr/cadre-juridique/controle-env>].
- Moroccan environmental law compilation, 2012. [http://www.minenv.gov.ma/PDFs/Lois_Environnement_&_DD,_VF_2012_remplace_5_lois_environnement.pdf]
- Moroccan Government, Ministry of Energy, Mines, Water and the Environment (Ministere de l'Energie, des Mines, de l'Eau et de l'Environnement), 2013. [<http://www.mem.gov.ma/Default.htm>]
- Moroccan Government, Ministry of Energy, Mines, Water and the Environment (Ministere de l'Energie, des Mines, de l'Eau et de l'Environnement), Department of Water (Département de l'Eau), 2013. [<http://www.water.gov.ma/>]
- Moroccan Government, Ministry of Energy, Mines, Water and the Environment (Ministere de l'Energie, des Mines, de l'Eau et de l'Environnement), Department of Water (Département de l'Eau), 2013. [<http://www.water.gov.ma/>]
- Moroccan Government, Ministry of Energy, Mines, Water and the Environment (Ministere de l'Energie, des Mines, de l'Eau et de l'Environnement), Department of the Environment (Département de l'Environnement), 2013. [<http://www.environnement.gov.ma/index.php/fr/>]
- Moroccan Government, Ministry of Energy, Mines, Water and the Environment (Ministere de l'Energie, des Mines, de l'Eau et de l'Environnement), Department of Mines and Energy (Département de Mines et Energie), 2013. [<http://www.mem.gov.ma/>]
- Moroccan Government, Ministry of Energy, Mines, Water and the Environment (Ministere de l'Energie, des Mines, de l'Eau et de l'Environnement), Department of the Environment (Département de l'Environnement). Adaptation au changement climatique au Maroc: Pour des Oasis résilientes (PACC-Oasis), 2013 [<http://www.oasisadaptation.com>]
- Moroccan Government, The National Charter for the Environment and Sustainable Development, 2011. [<http://www.chartenvironnement.ma/>]
- National Plan Against Global Warming (Plan National contre le Réchauffement Climatique), 2009 [<http://www.ccmorocco.ma/maroc/pnrc.pdf>].
- Research Institute on Renewable Energy (Institut de Recherche en Energie Solaire et Energies Nouvelles – IRESEN), 2013 [<http://www.iresen.org>]
- Second National Communication to the UNFCCC (Seconde Communication Nationale), 2010 [[http://www.cdmmorocco.ma/PDFs/Seconde_Communication_Nationale_\(SCN\).pdf](http://www.cdmmorocco.ma/PDFs/Seconde_Communication_Nationale_(SCN).pdf)].
- Sustainable Development in Morocco (Développement Durable au Maroc: Bilan et perspectives - De Rio à Rio +20), 2012. [<http://www.cdmmorocco.ma/PDFs/Developpement%20Durable%20au%20Maroc.pdf>]

5.40 Mozambique

- International Monetary Fund, 2011. *Republic of Mozambique: Poverty Reduction Strategy Paper*. IMF Country Report n. 11/132, June 2011 [URL: <http://www.imf.org/external/pubs/ft/scr/2011/cr11132.pdf>]. Accessed 15 December 2012.
- Ministry for Co-ordination of Environmental Affairs (2013) 2013-2025 National Climate Change Strategy. Available at: http://www.convambientais.gov.mz/index.php?option=com_docman&task=doc_view&gid=62 (accessed on 5 October 2013).
- Ministry for the Co-ordination of Environmental Affairs (2003) Initial National Communication under the UNFCCC. Available at: <http://unfccc.int/resource/docs/natc/moznc1.pdf> (accessed on 5 October 2013).
- Ministry for the Co-ordination of Environmental Affairs, 2012. 2013-2025 National Strategy for Climate Change (*Estrategia Nacional de Mudancas Climáticas- ENMC*), November 2012.

- Ministry for the Co-ordination of Environmental Affairs, 2007. *National Adaptation Programme of Action (Programa de Acção Nacional para a Adaptação Às Mudanças Climáticas)*, December 2007.
- National Assembly (Assembleia da Republica), 1997. *Law N. 20/97 (Environmental Act)*, 1 October 1997.
- Official Gazette of Mozambique (Boletim da Republica), 1995. *National Environmental Policy (Regulamento da lei de florestas e fauna bravia)*. Resolution 5/95. Serie I, n. 49, 5 December 1995.
- Official Gazette of Mozambique (Boletim da Republica), 2002. *National Environmental Policy (Politica Nacional do Ambiente)*. Decree 12/02. Serie I, n. 22, 6 June 2002.
- Official Gazette of Mozambique (Boletim da Republica), 2009. *Biofuels Policy and Strategy (Politica e estrategia de biocombustiveis)*. Resolution 22/2009. Serie I, n. 20, 21 May 2009.
- Rede Ambiente e Territorio, CPLP, 2012. *Mocambique* [URL: <http://www.ambiente-territorio-cplp.org/pages/mocambique/>]. Accessed 28 September 2012.

5.41 Nepal

- Climate Change Network Nepal website*, n.d. [URL: <http://www.ccn.org.np/resources/3>]. Accessed 24 September 2012.
- Government of Nepal, 2005. *The National Water Plan* [URL: http://www.moen.gov.np/pdf_files/national_water_plan.pdf]. Accessed 24 October 2012.
- Government of Nepal, 2010. *National Adaptation Programmes of Action (NAPA)* [URL: http://www.ccn.org.np/resources_details/17]. Accessed 24 September 2012.
- Government of Nepal, 2011. *Climate Change Policy 2011* [URL: http://www.ccn.org.np/resources_details/19]. Accessed 24 September 2012.
- Government of Nepal, 2011. *Climate Resilient Planning: National Planning Commission* [URL: http://www.npc.gov.np/new/uploadedFiles/allFiles/climate_resilient_planning.pdf]. Accessed 15 December 2012.
- Government of Nepal, Ministry of Environment, 2012 [URL: <http://www.moenv.gov.np/snc/>]. Accessed 24 September 2012.
- HELVETAS Swiss Interco-operation Nepal, 2011. *Nepal's Climate Change Policies and Plans: Local Communities' Perspective*. Environment and Climate Series 2011/1 [URL: http://www.google.fr/url?sa=t&rct=j&q=nepal%E2%80%99s%20climate%20change%20policies%20and%20plans%3A%20local%20communities%E2%80%99%20perspective%20environment%20and%20climate&source=web&cd=1&ved=0CDcQFjAA&url=http%3A%2F%2Fwww.swiss-cooperation.admin.ch%2Fnepal%2F%2Fresources%2Fresource_en_208677.pdf&ei=qSTsUMjkDYrMhAeqlcGbg&usg=AFQjCNGEXB4lo2hYXANlnt7XzglCo7HGQ&bvm=bv.1357316858,d.d2k]. Accessed 15 December 2012.
- International Constitutional Law: Nepal Index, n.d. Universität Bern Institut für Öffentliches Recht [URL: http://www.servat.unibe.ch/icl/np__indx.html]. Accessed 15 December 2012.

5.42 Netherlands

- Netherlands (2004). *Environmental Management Act*. Ministry of Housing, Spatial Planning and the Environment: The Hague. Retrieved on 5.5.2013 from <http://www.eui.eu/Projects/InternationalArtHeritageLaw/Documents/NationalLegislation/Netherlands/environmentalmanagement2004.pdf>.
- Netherlands (2007a). 'New Energy for Climate Policy: The Clean and Efficient Programme (Nieuwe energie voor het klimaat: Werkprogramma Schoon en Zuinig)'. Ministry of Housing, Spatial Planning and the Environment VROM: The Hague. Retrieved on 5.5.2013 from <http://www.rijksoverheid.nl/bestanden/documenten-en-publicaties/brochures/2010/11/25/>

- new-energy-for-climate-policy/11br2007g486-2008122-154154.pdf.
- Netherlands (2007b). Stimulating Renewable Energy Production (SDE: Stimuleringsregeling Duurzame Energieproductie); number 410, Staatsblad van het Koninkrijk der Nederlanden: The Hague. Retrieved on 3.6.2013 from <https://zoek.officielebekendmakingen.nl/stb-2007-410.pdf>.
- Netherlands (2007c). National Programme for Spatial Adaptation to Climate Change. Ministry of Housing, Spatial Planning and the Environment VROM: The Hague. VROM 7222. Retrieved on 4.6.2013 from http://www.climate-research-netherlands.nl/gfx_content/documents/documentation/National_Adaptation_Strategy_The_Netherlands.pdf.
- Netherlands (2007d). National Programme for Spatial Adaptation to Climate Change (ARK). Ministry of Housing, Spatial Planning and the Environment, Ministry of Transport, Public Works and Water Management, Ministry of Agriculture, Nature and Food Quality, Ministry of Economic Affairs: The Hague. Retrieved on 4.6.2013 from http://www.climate-research-netherlands.nl/gfx_content/documents/documentation/National_Adaptation_Strategy_The_Netherlands.pdf.
- Netherlands (2010). Fifth Netherland's National Communication under the United Nations Framework Convention on Climate Change. Ministry of Housing, Spatial Planning and the Environment VROM: The Hague. Retrieved on 5.5.2013 from http://unfccc.int/resource/docs/natc/nld_nc5.pdf.
- Peeters, M. (2010). Climate Law in the Netherlands: The Search towards a National Legislative Framework for a Global Problem. *Electronic Journal of Comparative Law* 14(3): 1-17. Retrieved on 5.6.2013 from www.ejcl.org.
- UNFCCC (2012). National greenhouse gas inventory data for the period 1990-2010. Subsidiary Body for Implementation. FCCC/SBI/201/31. 16. November 2012, UNFCCC: Bonn. Retrieved on 5.7.2013 from <http://unfccc.int/resource/docs/2012/sbi/eng/31.pdf>.
- Van der Weijden, C., Reintjes, S., Feld, J. (31.5.2011). Dutch implementation of the Renewable Energy Directive on biofuels. Retrieved on 20.7.2013 from <http://www.cms-dsb.com/Dutch-implementation-of-the-Renewable-Energy-Directive-for-biofuels-05-31-2011>.

5.43 New Zealand

- Department of Inland Revenue, website, Climate Change Response (Emissions Trading) Amendment Act 2008 [URL: <http://www.ird.govt.nz/technical-tax/legislation/2008/2008-85/>]. Accessed 9 December 2013.
- Energy Efficiency and Conservation Authority, 2008, New Zealand Efficient Lighting Strategy 2008-2010.
- Energy Efficiency and Conservation Authority, 2001. New Zealand Energy Efficiency and Conservation Strategy 2007.
- Energy Efficiency and Conservation Authority, 2007. New Zealand Energy Efficiency and Conservation Strategy 2007.
- Energy Efficiency and Conservation Authority, 2011. New Zealand Energy Strategy and 2011-2016 and the New Zealand Energy Efficiency and Conservation Strategy 2011-2016.
- Energy Efficiency and Conservation Authority, website. Biodiesel Grant Scheme [URL: <http://www.eeca.govt.nz/http://www.eeca.govt.nz/node/3056>]. Accessed 9 December 2013.
- Ministry of the Environment, website, Climate Information New Zealand: Legislative changes to the New Zealand Emissions Trading Scheme (NZ ETS) [URL: <http://www.climatechange.govt.nz/emissions-trading-scheme/ets-amendments/>]. Accessed 9 December 2013.
- Ministry of the Environment, website. Climate Change Information New Zealand: Questions and Answers about the Emissions Trading Scheme [URL:

- <http://www.climatechange.govt.nz/emissions-trading-scheme/about/questions-and-answers.html#reducingemissions>]. Accessed 9 December 2013.
- Ministry of the Environment, website. Climate Change Information: Other Government Policies and Measures [URL: <http://www.climatechange.govt.nz/reducing-our-emissions/government-policies.html#energy>]. Accessed 9 December 2013.
- Ministry of the Environment, website, What is currently being done to manage flood risk? [URL: <http://www.mfe.govt.nz/issues/land/natural-hazard-mgmt/manage-flood-risk.html>]. Accessed 9 December 2013.
- Ministry of the Environment, website, Climate Change Response Act 2002 [URL: <http://www.mfe.govt.nz/laws/climate.html>]. Accessed 9 December 2013.
- Ministry of the Environment, website, Policy and Measures [URL: <http://www.mfe.govt.nz/publications/climate/nz-fifth-national-communication/page5.html#fuellabelling>]. Accessed 9 December 2013.
- Ministry of the Environment, website, New Zealand's Emissions Reduction Targets [URL: <http://www.mfe.govt.nz/issues/climate/emissions-target-2020/http://www.mpi.govt.nz/environment-natural-resources/funding-programmes/primary-sector-recovery>]. Accessed 9 December 2013.
- Ministry of the Environment, 2009. New Zealand's Fifth National Communication under the UNFCCC.
- Ministry of Primary Industries, website. Primary Sector Recovery [URL: <http://www.mpi.govt.nz/environment-natural-resources/funding-programmes/primary-sector-recovery>]. Accessed 9 December 2013.
- Ministry of Transport, website, Biofuels [URL: <http://www.transport.govt.nz/ourwork/climatechange/Biofuels>]. Accessed 9 December 2013.
- Natural Hazards Research Platform, website. About Us [URL: <http://www.naturalhazards.org.nz/NHRP/About-Us>]. Accessed 9 December 2013.
- New Zealand Government, 1949. Forests Act 1949, Public Act 1949, Public Act 1949, No. 19.
- New Zealand Government 1993. Forest Amendment Act 1993, Public Act 1993, No. 7.
- New Zealand Government, 2002. Energy Efficiency and Conservation Act 2000, Public Act 2000, No. 14.
- New Zealand Government, 2002. Climate Change Response Act 2002, Public Act 2002, No. 40.
- New Zealand Government, 2006. Climate Change Response Amendment Act 2006, Public Act 2006, No. 59.
- New Zealand Government, 2007. Sustainable Land Management and Climate Change: Plan of Action [URL: [http://www.mpi.govt.nz/news-resources/publications.aspx?title=Sustainable land management and climate change Plan of Action](http://www.mpi.govt.nz/news-resources/publications.aspx?title=Sustainable+land+management+and+climate+change+Plan+of+Action)]. Accessed 9 December 2013.
- New Zealand Government, 2008. The New Zealand Transport Strategy 2008 [URL: <http://www.transport.govt.nz/ourwork/Documents/NZTS2008.pdf>]. Accessed 9 December 2013.
- New Zealand Government, 2008. Climate Change Response (Emissions Trading) Amendment Act 2008, Public Act 2008, No. 85.
- New Zealand Government, 2009. Climate Change Response (Moderated Emissions Trading) Amendment Act 2009, Public Act 2009, No. 57.
- New Zealand Government, 2012. Climate Change Response (Emissions Trading and Other Matters) Amendment Act 2012, Public Act 2012, No. 89.
- New Zealand Parliament, website. Our System of Government [URL: <http://www.parliament.nz/en-NZ/AboutParl/HowPWorks/OurSystem/1/8/e/00CLOOCHowPWorks111-Our-system-of-government.htm>]. Accessed 9 December 2013.
- Victoria University of Wellington, website. ANDRILL (Antarctic Drilling Project) [URL: <http://www.victoria.ac.nz/antarctic/research/research-prog/andrill>]. Accessed 9 December 2013.

5.44 Nigeria

- German Development Institute, 2012, African Developments: Competing Institutional Arrangements for Climate Policy: The Case of Nigeria, Briefing Paper 7/2012.
- Federal Republic of Nigeria, 2007, Official Gazette of the Nigerian Biofuel Policy and Incentives.
- Heinrich-Böll Foundation, 2010, Towards Enhancing the Adaptive Capacity of Nigeria: A Review of the Country's State of Preparedness for Climate Change Adaptation [URL: <http://www.ng.boell.org/web/ecology-and-sustainability-227.html>http://www.illegal-logging.info/item_single.php?it_id=2958]. Accessed 26 May 2013.
- Illegal-Logging.Info, website, Nigeria has worst deforestation rate, FAO revises figures [URL: http://www.illegal-logging.info/item_single.php?it_id=2958]. Accessed 26 May 2013.
- Ministry of National Planning, 2010, Nigeria 20: 2020 – Abridged Version.
- Ministry of National Planning, 2010, Nigeria 20: 2020 - The First National Implementation Plan (2010-2013) - Volume II: Sectoral Plans and Programmes.
- Ministry of National Planning, 2010, Nigeria 20: 2020 - The First National Implementation Plan (2010-2013) - Volume III: Sectoral Plans and Programmes.
- Ministry of the Environment, 2003, Nigeria's First Communication under the United Nations Framework Convention on Climate Change.
- Ministry of the Environment, 2010, National Environmental, Economic and Development Study (Needs) for Climate Change in Nigeria [URL: <http://unfccc.int/files/adaptation/application/pdf/nigerineeds.pdf>]. Accessed 26 May 2013.
- Ministry of the Environment, 2011, National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CNN).
- Ministry of the Environment, website, Renewable Energy [URL: <http://environment.gov.ng/special-units/renewable-energy/>]. Accessed 26 May 2013.
- National Assembly, website, The National Assembly Federal Republic of Nigeria [URL: <http://www.nassnig.org/>]. Accessed 26 May 2013.
- National Assembly, 2008, National Climate Change Commission Bill, C34, 2008.
- Norton Rose, 2012, Scaling-up Renewable Energy in Africa: Nigeria, [URL: <http://www.nortonrose.com/knowledge/publications/59010/scaling-up-renewable-energy-in-africa-nigeria>]. Accessed 26 May 2013.
- United Nations Development Programme, website, UNDP GEF Nigeria Energy Efficiency Project: Promoting Energy Efficiency in Residential and Public Sector in Nigeria [URL: <http://www.ng.undp.org/energy/>]. Accessed 26 May 2013.
- UN-REDD Programme, website, Nigeria [URL: <http://www.un-redd.org/AboutUNREDDProgramme/NationalProgrammes/Nigeria/tabid/992/Default.aspx><http://www.undp.org/energy/>]. Accessed 26 May 2013.

5.45 Norway

- Climate Funds Update website, 2013. Norway's International Climate and Forest Initiative. [URL: <http://www.climatefundsupdate.org/listing/norway-s-international-climate-and-forest-initiative>]. Accessed 28 October 2013.
- Enova website, 2013. Our history and our mission.[URL: <http://www.enova.no/about-enova/about-enova/our-history-and-our-mission/259/378/>]. Accessed 28 October 2013.
- Institute for Energy Technology, 2012. ODYSSEE-MURE 2010, - Energy Efficiency Policies and Measures in Norway. October 2012. [URL: http://www.odyssee-indicators.org/publications/PDF/norway_nr.pdf]. Accessed 28 October 2013.
- International Energy Agency, 2006. Energy Conservation in Buildings and Community Systems Programme. October 2006. [URL: http://www.ecbcs.org/newsletters/ECBCS_0610_webversion.pdf]. Accessed 28 October 2013.
- Kingdom of Norway, 1983. Act of 3 June 1983 No. 40 relating to sea-water fisheries etc. [URL: <http://www.ub.uio.no/ujur/ulovdata/lov-19830603-040-eng.pdf>]. Accessed 28 October 2013.

- Kingdom of Norway, 1990. Act no. 50 of 29 June 1990: Act relating to the generation, conversion, transmission, trading, distribution and use of energy etc. (The Energy Act). [URL: <http://www.ub.uio.no/ujur/ulovdata/lov-19900629-050-eng.pdf>]. Accessed 28 October 2013.
- Kingdom of Norway, 1993. Act no. 0101 of 11 June 1993 relating to Aviation (Aviation Act). [URL: <http://www.ub.uio.no/ujur/ulovdata/lov-19930611-101-eng.pdf>]. Accessed 28 October 2013.
- Kingdom of Norway, 1994. Act no. 7 of 25 March 1994 relating to protection against and compensation for natural damage (Act on Natural Damage). [URL: <http://www.ub.uio.no/ujur/ulovdata/lov-19940325-007-eng.pdf>]. Accessed 28 October 2013.
- Kingdom of Norway, 1995. Act No. 23 of 12 May 1995 relating to Land (Land Act). [URL: <http://www.ub.uio.no/ujur/ulovdata/lov-19950512-023-eng.html>]. Accessed 28 October 2013.
- Kingdom of Norway, 2000, Act No. 118 of 21 December 2000 relating to sea-ranching. [URL: <http://www.ub.uio.no/ujur/ulovdata/lov-20001221-118-eng.pdf>]. Accessed 28 October 2013.
- Kingdom of Norway, 2000. Act No. 36 on Radiation Protection and Use of Radiation. [URL: <http://www.ub.uio.no/ujur/ulovdata/lov-20000512-036-eng.pdf>]. Accessed 28 October 2013.
- Kingdom of Norway, 2000. Act No. 82 of 24 November 2000 relating to river systems and groundwater (Water Resources Act). [URL: <http://www.ub.uio.no/ujur/ulovdata/lov-19900629-050-eng.pdf>]. Accessed 28 October 2013.
- Kingdom of Norway, 2003. Act of 9 May 2003 No.31 Relating to the Right to Environmental Information and Public Participation in Decision-making Processes Relating to the Environment. [URL: <http://www.regjeringen.no/en/doc/Laws/Acts/Environmental-Information-Act.html?id=173247>]. Accessed 28 October 2013.
- Kingdom of Norway, 2004. Act of 17 December 2004 No. 99 Relating to Greenhouse Gas Emission Allowance Trading and the Duty to Surrender Emission Allowances. [URL: <http://www.regjeringen.no/en/doc/Laws/Acts/Greenhouse-Gas-Emission-Trading-Act.html?id=172242>]. Accessed 28 October 2013.
- Kingdom of Norway, 2005. Act of 17 June 2005 no. 79 relating to aquaculture (Aquaculture Act). [URL: <http://www.fiskeridir.no/english/aquaculture/aquaculture-act>]. Accessed 28 October 2013.
- Kingdom of Norway, 2005. Act relating to forestry (Forestry Act). April 2005. [URL: <http://www.ub.uio.no/ujur/ulovdata/lov-20050527-031-eng.pdf>]. Accessed 28 October 2013.
- Kingdom of Norway, 2009. Act of 19 June 2009 No. 100 Relating to the Management of Biological, Geological and Landscape Diversity (Nature Diversity Act). [URL: <http://www.regjeringen.no/en/doc/Laws/Acts/nature-diversity-act.html?id=570549>]. Accessed 28 October 2013.
- Norwegian Government, 2012. Norway steps up efforts on climate change. 22 June 2012. [URL: <http://www.regjeringen.no/nb/dokumentarkiv/stoltenberg-ii/md/Nyheter-og-pressemeldinger/nyheter/2012/norway-steps-up-efforts-on-climate-chang.html?id=686815#>]. Accessed 28 October 2013.
- Norwegian Ministry of Climate and Environment website, 2013. Climate. [URL: <http://www.regjeringen.no/en/dep/kld/Selected-topics/climate.html?id=1307>]. Accessed 28 October 2013.
- Norwegian Ministry of Foreign Affairs, 2011. Meld. St. 14 (2010–2011) Report to the Storting (white paper) - Towards greener development: A coherent environmental and development policy. September 2011. [URL: http://www.regjeringen.no/pages/35110414/PDFS/STM201020110014000EN_PDFS.pdf]. Accessed 28 October 2013.
- Norwegian Ministry of Petroleum and Energy, 2012. National Renewable Energy Action Plan under Directive 2009/28/EC – Norway. September 2012. [URL: http://ec.europa.eu/energy/renewables/transparency_platform/doc/dir_2009_0028_action_plan_norway__nreap.pdf]. Accessed 28 October 2013.

- Norwegian Ministry of the Environment, 2007. Norwegian National Allocation Plan for emissions trading
- Norwegian Ministry of the Environment, 2008. Report No. 34 (2006–2007) to the Storting (white paper) Summary – Norwegian Climate Policy, April 2008. [URL: http://www.regjeringen.no/pages/2065909/PDFS/STM200620070034000EN_PDFS.pdf]. Accessed 28 October 2013.
- Norwegian Ministry of the Environment, 2012. Report No. 21 (2011–2012) to the Storting (white paper) Summary – Norwegian Climate Policy, November 2012. [URL: http://www.regjeringen.no/pages/38117723/PDFS/STM201120120021000EN_PDFS.pdf]. Accessed 28 October 2013.
- Norwegian Ministry of Transport and Communications, 2009. National Transport Plan 2010-2019. September 2009. [URL: http://www.regjeringen.no/upload/SD/Vedlegg/NTP/Binder1ntp_engNY.pdf]. Accessed 28 October 2013.
- Norwegian Stortinget website, 2013. About the Storting - Elections. [URL:<http://www.stortinget.no/en/In-English/About-the-Storting/Elections/>]. Accessed 16 October 2013.
- Norwegian Stortinget website, 2013. About the Storting – Legislation. [URL:<http://www.stortinget.no/en/In-English/About-the-Storting/Legislation/>]. Accessed 16 October 2013.
- Norwegian Stortinget website, 2013. About the Storting – Parliamentary procedure. [URL: <http://www.stortinget.no/en/In-English/About-the-Storting/Parliamentary-procedure/>]. Accessed 16 October 2013.
- Norwegian National Allocation Plan for the emissions trading system in 2008 2012. [URL: http://www.regjeringen.no/Upload/MD/Vedlegg/Horinger/Allokeringsplan/Norwegian_National_Allocation_Plan_for_the_emissions_trading_system_in_2008_2012.pdf]. Accessed 28 October 2013.
- The Research Council of Norway, 2013. Renergi (RENERGI) – Clean Energy for the Future (ENERGIX). [URL: http://www.forskingsradet.no/prognett-renergi/Programme_description/1226993846927]. Accessed 28 October 2013.
- The Research Council of Norway, 2013. The Norwegian RD&D CCS programme (CLIMIT). [URL: http://www.forskingsradet.no/prognett-climit/About_the_program/1253988288679]. Accessed 28 October 2013.

5.46 Pakistan

- CIA World Factbook, (2012). Pakistan. (Online). Available from: <https://www.cia.gov/library/publications/the-world-factbook/geos/pk.html>.
- Ministry of Climate Change n.d. Government of Pakistan, (Online). Available from: URL: <http://www.mocc.gov.pk/>.
- National Assembly of Pakistan, n.d. (Online). Available from <http://www.na.gov.pk/en/index.php>.
- MoE (2001). National Environmental Policy. Ministry of Environment, Local Government and Rural Development. Government of Pakistan.
- MoE (2001). National Forest Policy 2001. Ministry of Environment, Local Government and Rural Development. Government of Pakistan.
- Ministry of Climate Change (2010). National Forest Policy, Government of Pakistan. (Online). Available from: <http://202.83.164.28/moclc/frmDetails.aspx?id=4&opt=policies>.
- UNEP (10-12 September 2009). National Sustainable Development Strategy of Pakistan. Presentation to the UNEP Regional Workshop, Bangkok.
- Khan, M.A.A and Pervaiz, A. (2012). National Sustainable Development Strategy Pakistan's pathway to a sustainable & resilient future. UNDP/Government of Pakistan.
- Ministry Of Environment (2006). Clean Development Mechanism (CDM) National Operational

Strategy. Government Of Pakistan.

5.47 Peru

Approval of the General Law of Environment, Law No. 28611 (*Aprueban la Ley General del Ambiente Ley No. 28611*). *El Peruano*. 15 October 2005 [URL: <http://www.osinerg.gob.pe/newweb/uploads/GFGN/L28611.pdf>]. Accessed 15 December 2012.

Approval of the National Strategy for Climate Change, Federal Decree No. 086-2003-PCM (*Decreto Supremo No. 086-2003-PCM: Aprueban la Estrategia nacional sobre Cambio Climático*). *El Peruano*. 27 October 2003 [URL: <http://sinia.minam.gob.pe/index.php?accion=verElemento&idElementoInformacion=95&idformula=>]. Accessed 15 December 2012.

Approval of Organic Law of Regional Governments, Law No. 27867 (*Aprueban la Ley Orgánica de Gobiernos Regionales*). *El Peruano*. 18 November 2002 [URL: http://biblioteca.unmsm.edu.pe/redlieds/Recursos/archivos/goblocales/ley_27867_ley_org_gob_reg.pdf]. Accessed 15 December 2012.

Approval of Law to Promote Efficient Use of Energy, Law No. 27345 (*Aprueban la Ley para la Promoción del Uso Eficiente de la Energía*). *El Peruano*. 8 September 2000 [URL: <http://www2.osinerg.gob.pe/MarcoLegal/docrev/LEY-27345-CONCORDADO.pdf>]. Accessed 15 December 2012.

Approval of Legislative Decree for the Promotion of Investment for the Generation of Electricity from Renewable Energies, Legislative Decree No. 1002 (*Decreto Legislativo de promoción de la inversión para la generación de electricidad con el uso de energías renovables*). *El Peruano*. 1 May 2008 [URL: http://www2.osinerg.gob.pe/EnergiasRenovables/contenido/Normas/DL_No_1002.pdf]. Accessed 15 December 2012.

Creation of the National Plan for the Conservation of Forests to Mitigate Climate Change, Federal Decree No. 008-2010-MINAN (*Decreto Supremo No. 008-2010-MINAN: Crean el Programa Nacional de Conservación de Bosques para la Mitigación del Cambio Climático*). *El Peruano*. 15 Julio 2010 [URL: <http://sinia.minam.gob.pe/index.php?accion=verElemento&idElementoInformacion=378&idformula=>]. Accessed 15 December 2012.

Executive Decree No. 053-2007-EM to Regulate Corresponding Law No. 27345 (*Aprueban Reglamento de la Ley para la Promoción del Uso Eficiente de la Energía*). *El Peruano*. 23 October 2007 [URL: <http://www2.osinerg.gob.pe/MarcoLegal/docrev/DS-053-2007-EM.pdf>]. Accessed 15 December 2012.

Felandro, Isabel, and Jean Pierre Araujo. 2012. Report about the state and quality of public policy regarding climate change and development in Peru: agricultural and forestry sector (*Informe sobre el estado y calidad de las políticas públicas sobre cambio climático y desarrollo en Perú: sector agropecuario y forestal*). La Plataforma Climática Latinoamericana [URL: <http://www.intercambioclimatico.com/2012/11/05/la-plataforma-lanza-informes-sobre-politicas-de-cambio-climatico-en-10-paises/>]. Accessed 15 December 2012.

Law to Promote a Market of Biofuels, Law No. 28054 (*Aprueban la Ley de Promoción del Mercado de Biocombustibles*). *El Peruano*. 15 July 2003.

Modifications to the Law to Promote a Market for Biofuels, Federal Decree No. 013-2005-EM (*Modifican la Ley de Promoción del Mercado de Biocombustibles*). *El Peruano*. 31 March 2005.

Second National Communication from Peru to the UNFCCC (*Segunda Comunicación Nacional del Perú a la Convención Marco de las Naciones Unidas Sobre Cambio Climático*). 2010. Ministry of Environment.

Zegarra, Joanna Kámiche. 2010. *Summary of the National Environment (Resumen Ambiental Nacional, Perú 2010)*. United National Environment Programme [URL: <http://sinia.minam.gob.pe/index.php?accion=verElemento&idElementoInformacion=1221>]. Accessed 15 December 2012.

5.48 Philippines

- Congress of the Philippines, n.d. *Executive Order No. 232, Amending Executive Order No. 462* [URL: <http://www.doe.gov.ph/ER/pdf/EO232.pdf>]. Accessed 15 December 2012.
- Congress of the Philippines, n.d. *Executive Order No. 462* [URL: <http://www.doe.gov.ph/ER/pdf/EO462.pdf>]. Accessed 15 December 2012.
- Congress of the Philippines, n.d. *Republic Act No. 7156* [URL: <http://www.doe.gov.ph/ER/pdf/RA7156.pdf>]. Accessed 15 December 2012.
- Congress of the Philippines, House of Representatives, n.d. How a Bill Becomes a Law [URL: <http://www.congress.gov.ph/legisinfo/index.php?l=process>]. Accessed 15 December 2012.
- Congress of the Philippines, House of Representatives, n.d. Students [URL: <http://www.congress.gov.ph/audience/index.php?users=students>]. Accessed 15 December 2012.
- Congress of the Philippines, 13th Congress, 2006. *An Act to Direct the Use of Biofuels, Republic Act No. 9367, 24 July 2006* [URL: <http://www.doe.gov.ph/Laws%20and%20Issuances/RA%209367.pdf>]. Accessed 15 December 2012.
- East Asia & Pacific Region World Bank, Sustainable Development Department, 2010. *A Strategic Approach to Climate Change in the Philippines. April 16, 2010* [URL: http://siteresources.worldbank.org/INTPHILIPPINES/Resources/PH_CC_Strategy_April_19_2010.pdf]. Accessed 15 December 2012.
- Office of the President of the Philippines, 2010. National Framework Strategy on Climate Change, 2010–2022 [URL: http://www.neda.gov.ph/references/Guidelines/DRR/nfscs_sgd.pdf]. Accessed 15 December 2012.
- Office of the President of the Philippines, Climate Change Commission, 2010. *National Climate Change Action Plan* [URL: http://www.dilg.gov.ph/PDF_File/resources/DILG-Resources-2012116-d7b64f9faf.pdf]. Accessed 15 December 2012.
- Philippine Climate Change Awareness Raising Initiatives* [URL: http://unfccc.int/files/cooperation_and_support/education_and_outreach/application/pdf/bali2010e.pdf]. Accessed 15 December 2012.
- Philippine Department of Energy. *Official website, DOE Portal* [URL: <http://www.doe.gov.ph>]. Accessed 15 December 2012.
- The Philippines Initial Communication on Climate Change to the UNFCCC, December 1999* [URL: <http://unfccc.int/resource/docs/natc/phinc1.pdf>]. Accessed 18 October 2012.
- Philippines Presidential Task Force on Climate Change website* [URL: <http://www.doe.gov.ph/cc/ptfcc.htm>]. Accessed 18 October 12.
- Republic of the Philippines, Dept. of Agriculture, 1997. *Agriculture and Fisheries Modernization Act (No. 8435), 1997* [URL: <http://www.da.gov.ph/index.php/laws-issuances/republic-act-and-proclamations/2782-republic-act-no-8435-agriculture-and-fisheries-modernization-act-afma>]; amended by Republic Act No. 9281 amending Republic Act No. 8435 on Agriculture and Fisheries Modernization, 30 March 2004. Accessed 15 December 2012.
- Senate of the Philippines, n.d. *14th Congress Senate Bill No. 2583 Climate Change Act of 2008* [URL: http://www.senate.gov.ph/lis/bill_res.aspx?congress=14&q=SBN-2583]. Accessed 15 December 2012.
- Senate of the Philippines, n.d. *Composition of the Senate* [URL: <http://www.senate.gov.ph/senators/composition.asp>]. Accessed 15 December 2012.
- Senate of the Philippines, n.d. Legislative Process [URL: <http://www.senate.gov.ph/about/legpro.asp>]. Accessed 15 December 2012.
- UN Habitat document, 2001. *Philippines: National Climate Change Legislation and National–Local Action. Resilient Cities 2011, 2nd World Congress on Cities and Adaptation to Climate Change, Bonn, Germany, 4 June 2011* [URL: http://resilient-cities.iclei.org/fileadmin/sites/resilient-cities/files/Resilient_Cities_2011/Presentations/C/C3_Gotis.pdf]. Accessed 15 December 2012.

5.49 Poland

- Égert, B., 2012. Climate Change Policies in Poland: Minimising Abatement Costs. OECD Economics Department Working Papers, No. 953, 24 April 2012. OECD Publishing [URL: <http://dx.doi.org/10.1787/5k9b7bz18m0x-en>]. Accessed 15 December 2012.
- European Climate Adaptation Platform (Climate-ADAPT), 2013. [www.climate-adapt.eea.europa.eu/countries/poland]
- European Commission, 2013. Assessment of the 2013 national reform programme and convergence programme for Poland. Brussels, May, 2013 [http://ec.europa.eu/europe2020/pdf/nd/swd2013_poland_en.pdf]
- International Energy Agency, 2013. Energy Efficiency Policies and Measures database: Poland [http://www.iea.org/policiesandmeasures/energyefficiency/?country=Poland]
- Kassenberg, Andrzej, 2011. Expert Evaluation Network Delivering Policy Analysis on the Performance of Cohesion Policy 2007–2013. Task 1: Policy Paper on Renewable Energy and Energy Efficiency in Residential Housing, Institute for Sustainable Development [URL: http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/eval2007/expert_innovation/2011_synt_rep_pl.pdf].
- KOBiZE, A success story of effective decoupling – Costs and benefits of the Polish transformation, November 2013
- Ministry of Economy, 2012. 2nd National Energy Efficiency Action Plan of Poland 2011 [http://www.mg.gov.pl/files/upload/8134/Polityka%20energetyczna%20ost_en.pdf]
- Ministry of Environment, n.d. [URL: <http://www.mos.gov.pl>]. Accessed 15 December 2012.
- United Nations, Climate Change Secretariat, n.d.. Summary of GHG Emissions for Poland [URL: http://unfccc.int/files/ghg_emissions_data/application/pdf/pol_ghg_profile.pdf]. Accessed 15 December 2012.

5.50 Russia

- Kokorin, Alexey., Korppo, Anna (2013) Russia's Post-Kyoto Climate Policy. Real Action or Merely Window-Dressing? Fridtjof Nansen Institute. Climate Perspective 10. May. Available at: <http://www.fni.no/doc%26pdf/FNI-Climate-Policy-Perspectives-10.pdf> (accessed on 10 October 2013).
- Russian Federation (2013) Presidential Decree on Greenhouse Gas Emission Reduction. Decree N. 861. 30 September. CMS Legal, 2009. *New Energy Efficiency Legislation in Russia. CMS Russia Newsletter, December 2009, CMS Russia, Moscow* [URL: <http://www.cmslegal.ru/New-Energy-Efficiency-Legislation-in-Russia-12-07-2009>]. Accessed 15 December 2012.
- CMS Legal, n.d. *CMS Legal Russia website* [URL: <http://www.cmslegal.ru/>]. Accessed 15 December 2012.
- Government of Russia, 2009. *Press Conference Following the 24th EU-Russia Summit* [in Russian]. Transcript of press conference on Kremlin website, 18 November 2009 [URL: <http://www.kremlin.ru/transcripts/6034>]. Accessed 15 December 2012.
- Gutbrod, M.B., Sitnikov, S.L. and Kalinin, M.V., 2010. New Developments in Russian Legislation on Saving energy and Increasing Energy Efficiency. *Baker & McKenzie Legal Alert. Baker & McKenzie, Moscow* [URL: <http://www.bakermckenzie.com/ALRussiaLegislationSavingEnergyIncreasingEfficiencyJan10/>].
- International Energy Agency, 2011. Relation with Member Countries – Russian Federation. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=RU].

- Jurist, n.d. *Russia. Jurist – The Legal Education Network website* [URL: <http://jurist.law.pitt.edu/world/russia.htm>].
- Korppoo, A., 2009. The Russian Debate on Climate Doctrine: Emerging Issues on the Road to Copenhagen. *UPI Briefing Paper 33, 5 June 2009* [URL: <http://www.upi-fiia.fi/fi/publication/79/>]. Accessed 15 December 2012.
- Korppoo, A. and Moe, A., 2007. Russian JI Procedures: More Problems Than Solutions? *Climate Strategies (policy brief), Fridtjof Nansen Institute, Norway* [URL: <http://www.ncsf.ru/resources/materials/70.pdf>]. Accessed 15 December 2012.
- Larsen, A.H., 2009. *Russian Climate Policy*. Fact Sheet Published Online by Norges Naturvernforbund [URL: <http://naturvernforbundet.no/getfile.php/Dokumenter/rapporter/2009/Fact-Sheet-Russia.pdf>].
- Law Library of Congress, 2010. *Legal Research Guide: Russia* [URL: <http://www.loc.gov/law/help/russia.php#sources>].
- Lexadin website, n.d. *The World Law Guide: Legislation Russia* [URL: <http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwerus.htm>]. Accessed 15 December 2012.
- PFC Energy, 2007. *Using Russia's Associated Gas*. Report by PFC Energy prepared for the Global Gas Flaring Reduction Partnership and the World Bank. PFC Energy, Washington DC [URL: http://siteresources.worldbank.org/INTGGFR/Resources/pfc_energy_report.pdf].
- Smith Herbert, LLP, 2009. *Focus on Russia*. Herbert Smith in Association with Gleiss Lutz and Stibbe, October 2009 [URL: http://www.herbertsmith.com/NR/rdonlyres/026117AE-497D-4C19-9F0F-7C5CBB21A7CA/12931/7685_FocusonRussiaD3.pdf].
- Tissot, D., 2010. New Opportunities for Participation in Joint Implementation Projects. *Brief prepared by CMS Legal, Moscow* [URL: <http://www.cmslegal.ru/New-opportunities-for-participation-in-Joint-Implementation-projects-01-28-2010>]. Accessed 15 December 2012.

5.51 Rwanda

- CDKN, 2010. National Strategy on Climate Change and Low Carbon Development for Rwanda: Baseline Report [URL: <http://cdkn.org/wp-content/uploads/2010/12/FINAL-Baseline-Report-Rwanda-CCLCD-Strategy-super-low-res.pdf>]. Accessed 15 December 2012.
- CDKN, 2013. Climate and Development Outlook: Rwanda special edition, September 2013 [http://cdkn.org/resource/climate-and-development-outlook-edition-eight-september-2013/]
- Global Environment Facility, n.d. LDCF – Rwanda: Reducing Vulnerability to Climate Change by Establishing Early Warning and Disaster Preparedness Systems and Support for Integrated Watershed Management in Flood Prone Areas [URL: <http://www.thegef.org/gef/node/3340>]. Accessed 15 December 2012.
- Government of Rwanda, 2013. Economic development and poverty reduction strategy 2013 – 2018: Shaping our development [http://www.edprs.rw/]
- Minirena, n.d. [URL: <http://www.minirena.gov.rw/IMG/pdf/Rwanda-Green-Growth-Strategy-FINAL.pdf>].
- Operationalisation of National Fund for Environment (FONERWA) in Rwanda, Final Report, 2010 [URL: http://rema.gov.rw/index.php?option=com_content&view=article&id=341&Itemid=195&lang=en]. Accessed 15 December 2012.
- Rwanda Environment Management Authority (REMA), n.d. Environment Policy [URL: http://www.rema.gov.rw/rema_doc/Policies/Environment_policy_English_version_.pdf]. Accessed 15 December 2012.
- Rwanda Environment Management Authority (REMA), n.d. Laws and Regulations [URL: http://www.rema.gov.rw/index.php?option=com_content&view=category&layout=blog&id=179&Itemid=146&lang=en]. Accessed 15 December 2012.
- Rwanda Environment Management Authority (REMA), n.d. National Climate Change and Low Carbon Development Strategy (NCCLCDS) Documents [URL:

- http://www.rema.gov.rw/index.php?option=com_content&view=category&layout=blog&id=194&Itemid=174&lang=en. Accessed 15 December 2012.
- Rwanda Environment Management Authority (REMA), n.d. Rwanda: National Climate and Environment Fund (FONERWA) [URL: http://rema.gov.rw/index.php?option=com_content&view=article&id=341&Itemid=195&lang=en]. Accessed 15 December 2012.
- Rwanda Environment Management Authority (REMA), 2011. Mainstreaming Resource Efficient and Cleaner Production in Rwanda's Policies and Strategies: Final Draft Report [URL: http://www.rema.gov.rw/rema_doc/RGG&CRS%202011/Final_Draft_RECIP_Mainstreaming_Strategy_Rwanda.pdf]. Accessed 15 December 2012.
- SNC, 2012. Republic of Rwanda: Second National Communication on the United Nations Framework Convention on Climate Change [URL: <http://unfccc.int/resource/docs/natc/rwanc2.pdf>]. Accessed 15 December 2012.
- UNDP, n.d. Legislative Policy Advocacy [URL: <http://www.irex.org/sites/default/files/Rwanda%20CSSP%20-%20Legislative%20Advocacy%20Module.pdf>]. Accessed 15 December 2012.
- UNDP, n.d. United Nations Development Programme in Rwanda [URL: <http://www.undp.org/rw/Rwanda-climate-change-adaptation-programmes.pdf>]. Accessed 15 December 2012.

5.52 Saudi Arabia

- Alyousef, Y and Abu-ebid, M., 2012. Energy Efficiency Initiatives for Saudi Arabia on Supply and Demand Sides, in: Zoran Morvaj (Ed.) Energy Efficiency: A Bridge to Low Carbon Economy, pp. 279-308.
- Center for Strategic and International Studies, 2012. Saudi Arabia's Energy Policy [URL: <http://csis.org/publication/saudi-arabias-energy-policy>]. Accessed 9 December 2013.
- Chadbourne and Park, 2012. Saudi Arabia: The Future Solar Leader [URL: http://www.chadbourne.com/files/Publication/ff11568b-5854-4f7d-b7dc-ab04252784ee/Presentation/PublicationAttachment/3a257684-4205-4bd4-ada2-b1e64a76ca09/SaudiArabiaSolarLeader_Steyn-Norman_Nov12_2.pdf]. Accessed 9 December 2013.
- Chatham House, 2011. Burning Oil to Keep Cool: The Hidden Energy Crisis in Saudi Arabia [URL: http://www.chathamhouse.org/sites/default/files/public/Research/Energy,%20Environment%20and%20Development/1211pr_lahn_stevens.pdf]. Accessed 9 December 2013.
- King Abdullah City for Atomic and Renewable Energy [KACARE], 2013. Proposed Competitive Procurement Process for the Renewable Energy Program [URL: <http://www.kacare.gov.sa>]. Accessed 9 December 2013.
- Kingdom of Saudi Arabia, 2011. Saudi Arabia's Second National Communication under the United Nations Framework Convention on Climate Change [URL: http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php]. Accessed 9 December 2013.
- King of the Kingdom of Saudi Arabia, 2010. Royal Decree establishing King Abdullah City for Atomic and Renewable Energy, No. A/35.
- Ministry of Economy and Planning, 2010, Brief Report on the Ninth Development Plan (2010-2014) [URL: http://fanack.com/fileadmin/user_upload/Documenten/Links/Saudi_Arabia/Report_Ninth_Development_Plan.pdf]. Accessed 9 December 2013.
- National Industrial Clusters Program, 2013. Solar Energy Cluster [URL: <http://www.ic.gov.sa/en/industrial-clusters/solar-energy-cluster/>]. Accessed 9 December 2013.
- Norton Rose, 2012. Renewable Energy in Saudi Arabia [URL: <http://www.nortonrosefulbright.com/knowledge/publications/61454/renewable-energy-in-saudi-arabia>]. Accessed 9 December 2013.

5.53 Senegal

- Ministry of Environment and Nature Protection (2010) Second National Communication to the UNFCCC. Available at: <http://unfccc.int/resource/docs/natc/sennc2exsum.pdf> (accessed on 3 October 2013).
- Ministry of Environment and Nature Protection (1998) Forest Code. Law. 98/03. 8 January.
- Ministry of Environment and Nature Protection (1999) Initial National Strategy for the Implementation of the UNFCCC. Available at: <http://unfccc.int/resource/docs/natc/sennc1add1.pdf> (accessed on 4 October 2013).
- Republic of Senegal (2001) Environment code. Law N.2001-1. 15 January 2001. Available at: www.environment.gouv.sn/IMG/pdf/code_env.pdf (accessed on 4 October 2013).
- Senegalese Official Journal (2003) Ministerial Decree 1220 establishing the National Climate Change Committee. & March 2003. Available at: <http://www.jo.gouv.sn> (accessed on 6 October 2013).
- Senegalese (2003) Association of technical norms. Air Pollution. Norm 05-062. 28 October 2003. Available at: www.saed.sn/pollution-ns05062_aw.pdf (accessed on 4 October 2013).
- Food and Agriculture Organization (2006) The national forest programme in Senegal: developing decentralized planning and management capacities. Available at: <http://www.fao.org/docrep/009/a0970e/a0970e12.htm> (accessed on 4 October 2013).

5.54 South Africa

- Alternative Energy Africa, 2011. *SA's IRP2010 Altered After Released Draft, 3 April 2011* [URL: http://www.ae-africa.com/read_article.php?NID=2859]. Accessed 15 December 2012.
- Department of Environmental Affairs, 2008. *Long-term Mitigation Scenarios: Strategic Options for South Africa* [URL: <http://www.environment.gov.za/HotIssues/2008/LTMS/LTMS.html>].
- The International Comparative Legal Guide to Environment & Climate Change Law 2012* [URL: <http://www.bowman.co.za/FileBrowser/ArticleDocuments/Environment-Climate-Change-Law-2012.pdf>]. Accessed 15 December 2012.
- International Energy Agency, 2011. Relation with Member Countries – South Africa. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=ZA].
- Muir, A., 2009. Climate Change Law and Policy from a South African Conservation Perspective. *Presentation at the Climate Action Partnership Workshop 'The Policy Project, Research Interface and the Road to Adaptation, 12–13 October 2009, Cape Town, South Africa* [URL: http://www.cap.org.za/workshop_02/day_1_session_1/Climate%20Change%20Law%20and%20Policy_Andrew%20Muir.pdf]. Accessed 15 December 2012.
- National Climate Change Response, Government of the Republic of South Africa, n.d. [URL: <http://www.climateresponse.co.za/home>]. Accessed 15 December 2012.
- National Energy Regulator of South Africa (NERSA), 2009. *NERSA website* [URL: <http://www.nersa.org.za/default.aspx>]. Accessed 15 December 2012.
- National Treasury of the Republic of South Africa, 2009. *Taxation Laws Amendment Bills* [URL: http://www.treasury.gov.za/comm_media/press/2009/2009060101.pdf]. Accessed 15 December 2012.
- Republic of South Africa, 2008. National Energy Act 2008. *Government Gazette*, 24 November 2008 [URL: <http://www.info.gov.za/view/DownloadFileAction?id=92826>]. Accessed 15 December 2012.
- Republic of South Africa, 2009. *Taxation Laws Amendment Bill (B10 – 2009)* [URL: <http://www.pmg.org.za/files/bills/090901b10-09.pdf>]. Accessed 15 December 2012.
- Stein, R., Levetan, S., Christie, L. and Fritelli, C., 2009. Environment: South Africa – Climate Change, Renewables and Energy. *Practical Law Company (PLC) Cross-border Environment Handbook*

- 2009/10. *Practical Law Company* [URL: <http://www.ens.co.za/newsletter/briefs/South-Africa-climate-change.pdf>]. Accessed 15 December 2012.
- van der Merwe, C., 2009. South Africa Starts Coming to Grips with Economic Impacts of Climate Change. *Engineering News*, 4 September 2009 [URL: <http://www.engineeringnews.co.za/article/south-africas-climate-change-policy-2009-08-25>]. Accessed 15 December 2012.
- van der Merwe, C., 2010. Climate Policy to Go Before Cabinet This Month. *Engineering News*, 3 August 2010 [URL: <http://www.engineeringnews.co.za/article/climate-policy-to-go-before-cabinet-this-month-2010-08-03>]. Accessed 15 December 2012.
- van der Merwe, C., 2010. South Africa to Complete Green Paper by Year End. *Engineering News*, 21 January 2010 [URL: <http://www.engineeringnews.co.za/article/sa-aims-to-complete-climate-change-policy-by-year-end-2010-01-21>]. Accessed 15 December 2012.
- Parliament of the Republic of South Africa, n.d. *Core Objectives of Parliament* [URL: http://www.parliament.gov.za/live/content.php?Category_ID=18]. Accessed 15 December 2012.
- South Africa Department of National Treasury, 2010. *Discussion Paper for Public Comment – Reducing Greenhouse Gas Emissions: The Carbon Tax Option, December 2010* [URL: <http://www.treasury.gov.za/public%20comments/Discussion%20Paper%20Carbon%20Taxes%2081210.pdf>]. Accessed 15 December 2012.
- South African Revenue Service, 2012. *Tax Proposals Budget 2012*, February 2012 [URL: <http://www.sars.gov.za/Tools/Documents/DocumentDownload.asp?FileID=75357>]. Accessed 15 December 2012.
- South Africa National Treasury, 2013. Environmental Fiscal Reform, Carbon Tax & Climate Finance in South Africa [URL: http://unfccc.int/files/cooperation_support/financial_mechanism/long-term_finance/application/pdf/environmental_fiscal_reform_carbon_tax_and_climate_finance_in_south_africa.pdf], accessed 15 November 2013].

5.55 South Korea

- Ahn, M.-C., 1998. The Energy Conservation Programme of the Republic of Korea. In *Compendium of Energy Conservation Legislation in Countries of the Asia and Pacific Region: United Nations Economic and Social Commission for Asia and the Pacific, Bangkok* [URL: <http://www.unescap.org/esd/energy/publications/compend/ceccpart2chapter3.htm>].
- International Energy Agency, 2011. Relation with Member Countries – Republic of Korea. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=KR].
- Korea Forst Service. Forest Policy: National Forest Plans [URL: http://english.forest.go.kr/newkfsweb/html/EngHtmlPage.do?pg=/english/policy/policy_010_050.html&mn=ENG_03_01_05]. Accessed 18 December 2013.
- Korean Source [URL: http://likms.assembly.go.kr/bill/jsp/BillDetail.jsp?bill_id=PRC_X1M2V0M2V0G7X0Y9B4O8Z1O6N0D2G8]. Accessed 15 December 2012.
- Lee Tae-hoon, 2012. Korea to Lead Global Green Growth Endeavor. *Korea Times*, 10 May 2012.
- Meeyoung Cho, 2012. South Korea Approves Carbon Trading Scheme. *Reuters*, 2 May 2012 [URL: <http://www.reuters.com/article/2012/05/02/us-carbon-korea-idUSBRE8410TN20120502>]. Accessed 15 December 2012.
- Ministry of Government Legislation, n.d. *Korean Laws in English* [URL: <http://www.moleg.go.kr/english/korLawEng>]. Accessed 15 December 2012.
- Ministry of Government Legislation, n.d. *Statutory Examination* [URL: <http://www.moleg.go.kr/english/majorDuties>]. Accessed 15 December 2012.
- Ministry of Government Legislation, 2010. *Ministry of Government Legislation website* [in English] [URL: <http://www.moleg.go.kr/english/korLawEng>]. Accessed 15 December 2012.
- International Emissions Trading Association (IETA), 2013. South Korea: a case study for emissions trading. [URL:]

- http://www.ieta.org/assets/Reports/EmissionsTradingAroundTheWorld/edf_ieta_korea_cas_e_study_may_2013.pdf. Accessed 20 November 2013.
- O'Donnell, Jill Kosch, 2012. Three Hurdles for Emissions Trading Scheme, ROK Green Growth Quarterly Update I – 2012. *Council on Foreign Relations website* [URL: <http://www.cfr.org/south-korea/three-hurdles-emissions-trading-scheme/p28570>]. Accessed 15 December 2012.
- The Presidential Committee on Green Growth, n.d. *Green Growth Korea website* [in English] [URL: <http://www.greengrowth.go.kr/english/>]. Accessed 15 December 2012.
- RCP database*, n.d. [URL: <http://www.iiasa.ac.at/web-apps/tnt/RcpDb/dsd?Action=htmlpage&page=welcome>]. Accessed 15 December 2012.
- Reuters*, 2011. UPDATE 2 – Reuters Summit-S.Korea's CO2 Trade Bill Receives Bipartisan Backing. [URL: <http://www.reuters.com/article/2011/06/15/energy-summit-korea-idUSL3E7HF0VV20110615>]. Accessed 15 December 2012.
- Reuters*, 2011. S. Korea Sets 2012 CO2 Cut Volume for Industry, Power [URL: <http://www.reuters.com/article/2011/10/10/emission-korea-idUSL3E7LA02X20111010?feedType=RSS&feedName=industrialsSector>]. Accessed 15 December 2012.

5.56 Sweden

- Dreblow E, Duwe M, Wawer T, Donat L, Zelljadt E, Ayres A, Poblocka A (2013). Assessment of climate change policies in the context of the European Semester. Country Report: Sweden. Brussels: Ecologic Institute and Eclaron. Retrieved from http://www.ecologic.eu/files/publications/2013/Country-report-Sweden-Assessment-of-climate-change-policies-in-the-context-of-the-European-semester_2013_en.pdf.
- Ekopolitan (2013). Nuclear subsidies. Swedish state-owned utility Vattenfall wants state-owned Swedish pension funds to co-invest in new reactors. Retrieved from <http://www.ekopolitan.com/news/nuclear-subsidies-swedish-state-owned-utility-vattenfall-wants-state-owned>.
- Poblocka A (2013). RES Legal. Electricity Promotion in Sweden. Updated 10 April 2013. Brussels: European Commission. Retrieved from <http://www.google.co.uk/url?sa=t&rct=j&q=act%20no.%201994%3A1776&source=web&cd=4&cad=rja&ved=0CEQQFjAD&url=http%3A%2F%2Fwww.res-legal.eu%2Fsearch-by-country%2Fsweden%2Ftools-list%2Fc%2Fsweden%2Fs%2Fres-e%2F%2Fpromotion%2Fsum%2F200%2Fpid%2F199%2Fpage.pdf%3Fout%3Dpdf&ei=bGBEUtzPBmMv0QXUzIcGaw&usg=AFQjCNGZkbiGk9thT7WahbhdJi6AJ0f4wA&sig2=tVMgtC2M2UNnajmV7-53tw&bvm=bv.54176721,d.d2k>.
- Regeringskansliet (2009). Memorandum. Climate and energy policy for a sustainable future. 11.9.2011. Stockholm: Ministry of Enterprise, Energy and Communications and Ministry of the Environment. Retrieved from <http://www.government.se/content/1/c6/12/32/52/b03e9aa8.pdf>.
- Sweden (1999). The Environmental Code. DS 2000: 61. Retrieved from <http://www.government.se/content/1/c6/02/28/47/385ef12a.pdf>.
- Sweden (2009). Sweden's Fifth National Communication on Climate Change under the United Nations Framework Convention on Climate Change. DS2009: 63. Stockholm: Ministry of the Environment.
- Sweden (2010a). Energy in Sweden 2010. ET2010: 47. Stockholm: Statens Energimyndighet. Retrieved from http://webshop.cm.se/System/DownloadResource.ashx?p=energimyndigheten&rl=default:/Resources/Permanent/Static/b4cea7b00212456b9bdbbe47a009474/ET2010_47w.pdf
- Sweden (2010b). The Swedish National Action Plan for the promotion of the use of renewable energy in accordance with Directive 2009/28/EC and the Commission Decision of 30.06.2009. Decision 2010/6/23/127 No. 2010/742/E (in part) 2009/7789/E. Stockholm, Regeringskansliet.

- Retrieved from http://ec.europa.eu/energy/renewables/action_plan_en.htm.
- Sweden (2011). Sweden's Second National Energy Efficiency Action Plan. Adopted at the Cabinet meeting of 30 June 2011. Retrieved from <http://www.buildup.eu/sites/default/files/content/SE%20-%20Energy%20Efficiency%20Action%20Plan%20EN.pdf>.
- Sweden (2012). Sweden's national reform programme 2012. Europe 2020 – EU's strategy for smart, sustainable and inclusive growth. Retrieved from http://ec.europa.eu/europe2020/pdf/nd/nrp2012_sweden_en.pdf.

5.57 Switzerland

- IEA (2013). Addressing Climate Change. Policies and Measures Database. International Energy Agency. Retrieved from <http://www.iea.org/policiesandmeasures/climatechange/index.php>.
- Switzerland (2008a). Federal, Cantonal and Communal Taxes. An Outline of the Swiss System of Taxation. Berne: Federal Department of Finance. Retrieved from http://www.google.co.uk/url?sa=t&rct=j&q=switzerland%20mineral%20oil%20tax%20reduction&source=web&cd=1&cad=rja&ved=0CCsQFjAA&url=http%3A%2F%2Fwww.estv.admin.ch%2Fdokumentation%2F00079%2F00080%2F00660%2F%3Flang%3Den%26download%3DNHzLpZeg7t%2Clnp6lONTU042l2Z6ln1ad1lZn4Z2qZpnO2Yuq2Z6gpJCDeHx5e2ym162epYbg2c_JjKbNoKSn6A--&ei=aR9fUoDVHlrP0QW6qoHgAg&usg=AFQjCNF3g9PhuJL3PKmacl-L0vDLMk8TMQ&sig2=eboHyeU9Zl7ArCkdEa-rQQ&bvm=bv.54176721,d.d2k.
- Switzerland (2008b). Feed-in tariff for renewable energy sources/ Federal Electricity Supply Act of 14 March 2008 (Stromversorgungsverordnung) StromVV 730.01. Retrieved from <http://www.admin.ch/opc/de/classified-compilation/20071266/index.html>
- Switzerland (2008c). Federal Electricity Supply Act of 14 March 2008
- Switzerland (2009). Switzerland's Fifth National Communication under the UNFCCC. Second National Communication under the Kyoto Protocol to the UNFCCC. Bern, Swiss Confederation. Retrieved from http://unfccc.int/resource/docs/natc/che_nc5.pdf.
- Switzerland (2010). Building refurbishment programme. Retrieved from <http://www.dasgebaeudeprogramm.ch/index.php/de/das-gebaeudeprogramm/>.
- Switzerland (2012). Adaptation to climate change in Switzerland. Goals, challenges and fields of action. First part of the Federal Council's strategy. Adopted on 2 March 2012. Bern: Federal Office for the Environment. Retrieved from http://www.bafu.admin.ch/publikationen/publikation/01673/index.html?lang=en&show_kat=/publikationen/00033.
- Switzerland (2013a). Energy Strategy. Retrieved from <http://www.bfe.admin.ch/themen/00526/00527/index.html?lang=en>.
- Switzerland (2013b). Topic Emission Trading. Retrieved from <http://www.bafu.admin.ch/emissionshandel/index.html?lang=en>, <http://www.bafu.admin.ch/co2-abgabe/index.html?lang=en>, <http://www.bafu.admin.ch/klima/12325/12348/index.html?lang=en>.

5.58 Tanzania

- The Revolutionary Government of Zanzibar, Ministry of Agriculture, Livestock and Environment, 2008. Zanzibar National Forest Resources Management Plan 2008-2020.
- The United Republic of Tanzania, Ministry of Agriculture and Co-operatives, 1997. Agricultural and Livestock Policy. January 1997.
- The United Republic of Tanzania, Ministry of Finance and Economic Affairs, 2010. National Strategy for Growth and Reduction of Poverty II NSGRIP II. July 2010.

- The United Republic of Tanzania, Ministry Of Natural Resources and Tourism, 2001. National Forest Programme in Tanzania 2001-2010. November 2001.
- The United Republic of Tanzania, The Tanzania Development Vision 2025.
- The United Republic of Tanzania, Vice-President's Office, 1990. The Disaster Relief Co-ordination Act. 7 April 1990.
- The United Republic of Tanzania, Vice-President's Office, 1996. Forest Resources Conservation and Management Act No. 10 OF 1996. 18 December 1996.
- The United Republic of Tanzania, Vice-President's Office, 1997. National Environmental Policy. December 1997.
- The United Republic of Tanzania, Vice-President's Office, 1998. Land Act. 7 September 1998.
- The United Republic of Tanzania, Vice-President's Office, 1999. The Village Land Act. 11 February 1999.
- The United Republic of Tanzania, Vice-President's Office, 2002. The Forest Act. 23 April 2002.
- The United Republic of Tanzania, Vice-President's Office, 2005. The Environmental Management Act No. 20 of 2004 & The Environmental Impact Assessment and Audit Regulations, 2005.
- The United Republic of Tanzania, Vice-President's Office, 2007. National Capacity Self Assessment Report and Action Plan for the Implementation of Post Rio Conventions. September 2007.
- The United Republic of Tanzania, Vice-President's Office, 2012. National Climate Change Strategy, The United Republic of Tanzania, Vice-President's Office, 2012. National Environmental Action Plan (NEAP) 2012-2017. July 2012.
- The United Republic of Tanzania, Vice-President's Office, 2013. Action plan for implementation of the national strategy for reduced emissions from deforestation and forest degradation (REDD+). March 2013.

5.59 Thailand

- Adaptation Knowledge Platform, 2013. Mainstreaming Climate Change into Community Development Strategies and Plans: A Case Study in Thailand [URL: <http://www.eldis.org/go/display&type=Document&id=64970>]. Accessed 9 December 2013
- Barney, Keith, 2005. At the Supply Edge: Thailand's Forest Policies, Plantation Sector, and Commodity Export Links with China [URL: http://www.forest-trends.org/documents/files/doc_141.pdf]. Accessed 9 December 2013.
- Department of Alternative Energy Development and Efficiency, website. The Renewable and Alternative Energy Development Plan 2012-2021 [URL: http://www.dede.go.th/dede/images/stories/dede_aedp_2012_2021.pdf]. Accessed 9 December 2013.
- Ministry of Energy, 2010. Thailand 20-Year Energy Efficiency Development Plan (2011-2030). [URL: http://www.eppo.go.th/encon/ee-20yrs/EEDP_Eng.pdf]. Accessed 9 December 2013.
- Ministry of Natural Resources and the Environment, 2009. Thailand Strategic Plan on Climate Change (Power Point) [URL: http://www.goes.msu.edu/apn_arcp_2009_09/pdf/Keynote_Nuntapotidech.pdf]. Accessed 9 December 2013.
- Ministry of Natural Resources and the Environment, 2011. Thailand's Second National Communication under the United Nations Framework Convention on Climate Change [URL: http://unfccc.int/files/national_reports/non-annex_i_natcom/submitted_natcom/application/pdf/snc_thailand.pdf]. Accessed 9 December 2013.
- National Assembly, 1992. Energy Conservation Promotion Act, B.E. 2535 (1992).
- National Assembly, 2007. Royal Decree: Establishment of a Greenhouse Gas Management Organization (Public Organization), B.E. 2550 (2007).
- National Assembly, website. The National Assembly [URL: http://www.parliament.go.th/ewtadmin/ewt/parliament_parcy/ewt_w3c/main.php?filename=index01__EN]. Accessed 9 December 2013.

- Norton Rose, 2011. Asia Pacific Climate Change Policy Series: Thailand [URL: <http://www.nortonrosefulbright.com/files/asia-pacific-climate-change-policy-series-thailand-52313.pdf>]. Accessed 9 December 2013.
- Norton Rose, 2010. Renewable Energy in Asia [URL: <http://www.nortonrosefulbright.com/files/renewable-energy-in-asia-pacific-pdf-3mb-29339.pdf>]. Accessed 9 December 2013.
- Office of the Prime Minister, website. The Eleventh National Economic and Social Development Plan (2012-2016) [URL: <http://www.nesdb.go.th/Default.aspx?tabid=402>]. Accessed 9 December 2013.
- Office of the Prime Minister, website. The Eleventh National Economic and Social Development Plan (2012-2016) [URL: http://www.nesdb.go.th/Portals/0/news/plan/p11/Plan11_eng.pdf]. Accessed 9 December 2013.
- Secretariat of the House of Representatives, website. Constitution of the Kingdom of Thailand, B.E. 2050 (2007). [URL: http://www.senate.go.th/th_senate/English/constitution2007.pdf]. Accessed 9 December 2013.
- Tongsopit, Sopitsuda and Greacen Chris, 2013. An Assessment of Thailand's Feed-in Tariff Programme, in. Renewable Energy 60, 439-445.
- United Nations Development Programme, 2012. Case Study Report: Thailand's Energy Conservation Fund [URL: <http://www.snap-undp.org/elibrary/Publications/EE-2012-NCF-CaseStudy-Thailand.pdf>]. Accessed 9 December 2013.

5.60 Turkey

- "Turkey approaching the Kyoto Protocol?" Joint Implementation Quarterly. July 2007. Available online:
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CC4QFjAA&url=http%3A%2F%2Fwww.traee.org%2Ftraee%2FBasin%2FPanel_1.pdf&ei=CVfAUvbmOOqosAS81oDYDA&usg=AFQjCNHRHfnyt2h9qSRJRmHh4TyW57-YCA&sig2=5GA-WR9cMb_TEEqz0hE5Sg&bvm=bv.58187178,d.cWc
- Türkmenoglu, Evren. 2012 "Climate change policies in Turkey." Ministry of Environment and Forestry: Climate Change Department. Available online:
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CEYQFjAA&url=http%3A%2F%2Fwww.cgseurope.net%2FUserFiles%2Ffile%2FAnkara%2520workshop_june%25202012%2Fpresentations%2FEvren%2520Turkmenoglu.pdf&ei=CVnAUrT5H-_NsQSOvICgDw&usg=AFQjCNENBLkf9YlBcG4t3SjB_7PP3-Alw&sig2=jTQJ5TEmygH6Bl0kOggU4Q&bvm=bv.58187178,d.cWc
- National Activities of Turkey on Climate Change. 2010. Ministry of Environment and Forestry. Available online:
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CC8QFjAA&url=http%3A%2F%2Fwww.dsi.gov.tr%2Fdocs%2Fiklim-degisikligi%2Fnational_activities_of_turkey_on_climate_change.pdf%3Fsvrsn%3D2&ei=cVrAUuffF8zfsAS_kYGoDA&usg=AFQjCNGqvceybOtZFZ1T-Ba8gB_l7Wq1qw&sig2=xsR_TU1cYHQ26givEmSKGQ&bvm=bv.58187178,d.cWc
- Republic of Turkey Climate Change Action Plan 2011-2013. 2012 Ministry of Environment and Urbanization. Ankara. Available online:
http://iklim.cob.gov.tr/iklim/Files/IDEP/%C4%B0DEP_ENG.pdf

5.61 UAE

- UAE Ministry of Foreign Affairs website <http://www.mofa.gov.ae/>
 The United Arab Emirates - Second National Communication to the Conference of the Parties of

- United Nations Framework Convention on Climate Change [http://unfccc.int/resource/docs/natc/arenc2.pdf - last accessed September 17th 2013]
- UAE Ministry of Foreign Affairs, Directorate of Energy and Climate Change, 2012. UAE energy outlook - Factors for global renewable energy roadmaps. [URL: http://www.irena.org/DocumentDownloads/events/MaltaSeptember2012/6_Rouda_Al-Otaiba.pdf] last accessed January 21, 2014.
- Federal Law No. 24 for the protection and development of the environment [URL: https://www.ead.ae/Tacsoft/FileManager/Laws/FEDERAL%20LAW%20NO%20(24).pdf] last accessed 24.10.13]
- Masdar City Website http://www.masdarcity.ae/en/86/about-masdar/ last accessed 24.10.13]
- Wall Street Journal, 2009. U.A.E. Passes Nuclear Energy Law. [URL: http://online.wsj.com/news/articles/SB125473014380463945] last accessed January 21, 2014.
- Global CCS Institute website. CCS in the United Arab Emirates [URL: http://www.globalccsinstitute.com/location/united-arab-emirates last accessed January 21, 2014.
- Environmental Agency – Abu Dhabi - Environ Laws/ Conventions [URL: https://www.ead.ae/en/portal/environmental.laws.aspx] last accessed January 21, 2014.
- Gulf News, 2013. New UAE lighting law to save half a billion dirhams annually [URL: http://gulfnews.com/news/gulf/uae/environment/new-uae-lighting-law-to-save-half-a-billion-dirhams-annually-1.1247043] last accessed January 21, 2014.
- Dubai Chronicle, 2012. Dubai to reduce carbon dioxide and greenhouse gas emissions [URL: http://www.dubaichronicle.com/2012/02/26/dubai-carbon-dioxide-greenhouse-gas-emissions/

5.62 Ukraine

- European Bank for Reconstruction and Development, 2011. An analysis of Ukraine's JI participation by the European Bank of Reconstruction and Development [http://www.ebrd.com/downloads/sector/eccc/Guidelines_for_the_development_of_JI_projects_20111021.pdf]
- EU-Ukraine Memorandum of Understanding on Energy Co-operation, 2013. [http://ec.europa.eu/energy/international/bilateral_cooperation/ukraine_en.htm]
- International Energy Agency. Renewable energy legislation in Ukraine, 2013 [http://www.iea.org/publications/freepublications/publication/ukraine2006-1.pdf]
- Law 1391-VI on Promotion of Biological Fuels Production and Use [http://zakon1.rada.gov.ua/laws/show/1391-17]
- Law 2509-IV on Combined Heat and Power (cogeneration) and Waste Energy Potential [http://zakon1.rada.gov.ua/laws/show/2509-15]
- Law 555 -IV on Alternative Energy Sources [http://zakon1.rada.gov.ua/laws/show/555-15]
- Law 601-VI on Green Tariff [http://zakon2.rada.gov.ua/laws/show/601-17]
- Law 74/94-VR on Energy Savings [http://www.munee.org/files/Ukraine_energy_saving_law.pdf]
- Ministry of Environmental Protection of Ukraine, 2006. Ukraine's Report on demonstrable progress under the Kyoto Protocol. [http://unfccc.int/resource/docs/dpr/ukr1.pdf]
- State Environmental Investment Agency of Ukraine, 2013. [http://www.seia.gov.ua/nature/control/en/index]
- State Environmental Investment Agency of Ukraine, Investment Plan for the Clean Technology Fund, January, 2010 [http://www.seia.gov.ua/nature/control/en/publish/article?art_id=115112&cat_id=115111]
- Thomson Reuters Point Carbon, 2013. Report on Status of the Domestic Emissions Trading Scheme in Ukraine [http://www.ebrdpeter.info/Reports/20130308%20EBRD%20PETER%20Project%20-%20Ukraine%20ETS%20status.pdf]

Carbon Units Registry, 2013. Ukraine's National project registry of projects that receive carbon credits under the UNFCCC's Joint Implementation [http://www.carbonunitsregistry.gov.ua/en/258.htm]
 Ukrainian Parliament Verkhovna Rada, 2013. [http://rada.gov.ua/en]

5.63 United Kingdom

Anon., n.d. *Political System in the UK* [URL: <http://www.nriol.com/welcome2uk/politics-in-uk.asp>]. Accessed 4 March 2010.
 Department of Energy and Climate Change (DECC), 2012. *DECC website* [URL: www.decc.gov.uk/]. Accessed 15 December 2012.
 Department for Energy and Climate Change (DECC), 2012. Energy Bill. *DECC website* [URL: <http://www.decc.gov.uk/en/content/cms/legislation/energybill2012/energybill2012.aspx>]. Accessed 15 December 2012.
 Department of Energy and Climate Change (DECC), 2013. Annual Energy Statement 2013
 Department of Environment, Food and Rural Affairs (Defra), 2011. *Defra website* [URL: www.defra.gov.uk/]. Accessed 15 December 2012.
 International Energy Agency, 2011. Relation with Member Countries – United Kingdom. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=UK].
 Parliament of the United Kingdom, 2011. *UK Parliament website* [URL: <http://www.parliament.uk>]. Accessed 15 December 2012.
 UK Legislation website [URL: <http://www.legislation.gov.uk>]. Accessed 30 November 2012.

5.64 USA

Anon., 2009. Bingaman: Clean-energy Bill Clears First Hurdle. *Post on US Senator (New Mexico) Jeff Bingaman's website*, 17 June 2009 [URL: <http://bingaman.senate.gov/news/20090617-01.cfm>].
 Baker, L., 2010. Levin Publishes Clean Energy Tax Bill. *Tax-News.com*, New York, 29 July 2010 [URL: http://www.tax-news.com/news/Levin_Publishes_Clean_Energy_Tax_Bill_44559.html]. Accessed 15 December 2012.
 Crook, C., 2010. Action on Carbon Is Down the Drain. *Financial Times* [online edition], 25 July 2010 [URL: <http://www.ft.com/cms/s/0/19abeff6-981c-11df-b218-00144feab49a.html>]. Accessed 15 December 2012.
 Environment Protection Agency, 2012. National Greenhouse Gas Emissions Data [URL: <http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>]. Accessed 3 January 2014
 Gerrard, M.B., 2009. Comment on Developing a Comprehensive Approach to Climate Change Mitigation Policy in the United States: Integrating Levels of Government and Economic Sectors. *Environmental Law and Policy Annual Review*, August 2009 [URL: http://www.law.columbia.edu/null/download?&exclusive=filemgr.download&file_id=162333]. Accessed 15 December 2012.
 Gonzalez, G., 2010. Renewables Sector Fights to Resuscitate RES in Senate. *Environmental Finance website*, 29 July 2010 [URL: <http://www.environmental-finance.com/news/view/1257>]. Accessed 15 December 2012.
 govtrack.us, 2009. H.R. 2454: American Clean Energy and Security Act of 2009. *govtrack.us website* [URL: <http://www.govtrack.us/congress/bill.xpd?bill=h111-2454>]. Accessed 15 December 2012.

- International Energy Agency, 2011. Relation with Member Countries – United States. *International Energy Agency website* [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=US].
- Mintzer, I., Leonard, A.J. and Valencia, I.D., 2010. Counting the Gigatonnes: Building Trust in Greenhouse Gas Inventories from the United States and China. *World Wildlife Fund, Washington DC* [URL: <http://www.worldwildlife.org/climate/Publications/WWFBinaryitem16605.pdf>].
- Politico.com, 2013. [URL: <http://www.politico.com/story/2013/10/scotus-to-take-narrow-look-at-epa-climate-rules-98364.html>. Accessed 3 January 2014.
- Senate Committee on Energy and Natural Resources, n.d. *Legislative Calendar* [URL: http://energy.senate.gov/public/index.cfm?FuseAction=Legislation.ViewBySubcommittee&Congress_ID=111&Subcommittee_ID=ce189d44-42c8-4565-b062-b72410945a6b]. Accessed 15 December 2012.
- United States Library of Congress, 2009. *Summary and status of the American Clean Energy Leadership Act of 2009* [URL: [United States Library of Congress, 2011. *Library of Congress website* \[URL: <http://thomas.loc.gov>\]. Accessed 15 December 2012.

Washington Post, 2013. \[URL: <http://www.washingtonpost.com/blogs/post-politics/wp/2013/10/15/supreme-court-affirms-epas-climate-authority-but-will-review-permitting-question/>. Accessed 21 December 2013

White House, The, 2013. \[URL: <http://www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards>. Accessed 21 December 2013.

White House, The, 2013: \[URL: <http://www.whitehouse.gov/the-press-office/2013/06/25/fact-sheet-president-obama-s-climate-action-plan>. Accessed 3 January 2014.](http://thomas.loc.gov/cgi-bin/bdquery/z?d111:SN01462:@@D&summ2=m&)

5.65 Venezuela

- Venezuelan National Constitution. Available in Spanish online at: http://www.cne.gob.ve/web/normativa_electoral/constitucion/indice.php
- Gobierno Bolivariano de Venezuela: Gobierno en Línea. Official website of national government. Last accessed 16 December 2013: <http://gobiernoenlinea.gob.ve/home/poder.dot>
- Gutiérrez, Alba Marina. "Venezuela: proyecto de ley sobre cambio climático presente en la agenda legislativa." 3 February 2012. Desde Mérida... Available online at: <http://jalex1.wordpress.com/2012/02/03/venezuela-proyecto-de-ley-sobre-cambio-climatico-presente-en-la-agenda-legislativa/>
- Ley de Gestión Integral de Riesgos Socionaturales y Tecnológicos. Gaceta Oficial. 9 January 2009. Available online at: http://redesastre.inia.gob.ve/index2.php?option=com_docman&task=doc_view&gid=158&Itemid=28
- Ley Orgánica del Ambiente, No 5833. Gaceta Oficial. 22 December 2006. Available online at: <http://www.minamb.gob.ve/files/Ley%20Organica%20del%20Ambiente/Ley-Organica-del-Ambiente-2007.pdf>
- Primera Comunicación Nacional en Cambio Climático. 2005. Ministerio del Ambiente y de los Recursos Naturales. Available online at: http://unfccc.int/essential_background/library/items/3599.php?such=j&author=%22Ministerio+del+Ambiente+y+de+los+Recursos+Naturales%22#beg

5.66 Vietnam

- Adetef, Asia, n.d. *Forum 8 Legal Documents* [URL: http://www.adetef.org.vn/website/index.php?option=com_content&task=blogcategory&id=32&Itemid=60]. Accessed 29 October 2012.
- Asian Management and Development Institute, and The Pressure Group Consultancy, UK, 30 June 2011. *Climate Change and Disaster Management Policy in Vietnam* [URL: http://southernvoices.net/files/RC_-_Assessment_Reports/Vietnam_CAR_CCWG_and_DMWG.pdf]. Accessed 15 December 2012.
- Hanh, D., 2006. Assessment of CDM Capacity-Building Activities in Cambodia, Lao PDR and Vietnam –Lessons Learned. *HWWA Discussion Paper 351* [URL: <http://www.econstor.eu/dspace/bitstream/10419/19380/1/351.pdf>]. Accessed 15 December 2012.
- Huxtable, J. and Yen, N.T. (2009) *Mainstreaming Climate Change Adaptation: A Practitioner's Handbook*. CARE International in Vietnam [URL: http://www.careclimatechange.org/files/adaptation/CARE_VN_Mainstreaming_Handbook.pdf]. Accessed 15 December 2012.
- International Development Law Organization (IDLO), 2011. *Legal Preparedness for REDD+ in Vietnam Country Study* November 2011 [URL: <http://www.idlo.int/Publications/LegalPreparednessREDDVietNam.pdf>]. Accessed 15 December 2012.
- Isponre, 2009. *Viet Nam Assessment Report On Climate Change (VARCC)*. Isponre, Vietnam [URL: http://www.unep.org/pdf/dtie/VTN_ASS_REP_CC.pdf]. Accessed 15 December 2012.
- King, P., 2008. *Review of the Legal Framework and Policy Tools for Addressing Climate Change*. Presentation to the 2008 AECEN Regional Forum.
- Norton Rose, 2011. *Climate Change Commitments in Asia Pacific: A Green Revolution? Asia Pacific Climate Change Policy Series*, Vietnam, Issue 9 [URL: <http://www.nortonrose.com/knowledge/publications/30206/asia-pacific-climate-change-policy-series>]. Accessed 15 December 2012.
- Thang, N.T., 2011. *Policy on Climate Change in Vietnam*. Presentation in Han Noi, Institute of Strategy and Policy on Natural Resources and Environment (Isponre), Vietnam.
- UN REDD, n.d. *Vietnamese Laws and Regulations* [URL: <http://www.vietnam-redd.org/Web/Default.aspx?ab=newsdetail&zoneid=152&subzone=156&child=177&itemid=520&lang=en-US>]. Accessed 29 October 2012.
- US AID (2007). *Vietnam Country Report – From Ideas To Action: Clean Energy Solutions For Asia To Address Climate Change* [URL: http://usaid.eco-asia.org/programs/cdcp/reports/Ideas-to-Action/annexes/Annex%206_Vietnam.pdf]. Accessed 15 December 2012.
- World Bank, 2010. *The Economics of Adaptation to Climate Change in Vietnam* [URL: <http://climatechange.worldbank.org/content/economics-adaptation-climate-change-study-homepage>]. Accessed 15 December 2012.
- World Nuclear Association, 2012. *Nuclear Power in Vietnam* [URL: http://www.world-nuclear.org/info/vietnam_inf131.html]. Accessed 29 October 2012.



About The Global Legislators Organization

The Global Legislators Organisation (GLOBE International) is an international organisation comprising national parliamentarians from over 70 countries committed to finding legislative solutions to the challenges posed by climate change and sustainable development. GLOBE supports legislators through national chapters which provide economic, political and policy capacity to develop and advance legislation as well as monitor its implementation. With headquarters in London, offices in Beijing, Bogota, Brussels, Manila, Mexico City, New Delhi, Tokyo and through chapters established in over 40 legislatures, GLOBE is developing a unique international network of cross-party legislators committed to practical action. For more information please visit www.globeinternational.org

GLOBE and World Summit of Legislators International Secretariat Office

9 Dartmouth Street, Westminster
London SW1AH 9BL, United Kingdom

Tel: +44 (0)20 7222 6960 Fax: +44 (0)20 7222 6959
Email: info@globeinternational.org

About the Grantham Research Institute

The Grantham Research Institute on Climate Change and the Environment was established in 2008 at the London School of Economics and Political Science. The Institute brings together international expertise on economics, as well as finance, geography, the environment, international development and political economy to establish a world-leading centre for policy-relevant research, teaching and training in climate change and the environment. It is funded by the Grantham Foundation for the Protection of the Environment, which also funds the Grantham Institute at Imperial College, and by the UK Economic and Social Research Council through the *Centre for Climate Change Economics and Policy (CCCEP)*. CCCEP is hosted jointly by the Institute and the University of Leeds. More information about the Grantham Research Institute can be found at: <http://www.lse.ac.uk/grantham/>

GLOBE and the Grantham Research Institute would like to acknowledge the support of the following organisations that have made this study possible:

