

# Waukesha® Power. connection plus

December 2001  
volume 2 | issue 4

## Dairy Farm's 'Cowlowatts' Power 250 Homes

(WRIGHTSTOWN, Wisconsin) – A state-of-the-art renewable energy plan is turning cow manure into electrical energy at a Wisconsin dairy farm. Tinedale Farms, located just south of Green Bay, has a productive herd of 2500 Holsteins. The large fifth-generation, family-owned operation was honored as Wisconsin's Dairy Farm of the Year in 1996.

Since June, the cows have been producing more than milk – they're also a source of methane that's used as a fuel for two engines that drive generators to make electricity. Instead of being spread on Tinedale's 4000 acres of cropland, their manure goes into a Temperature Phased Anaerobic Digester (the first in the US to be used by the dairy industry), a patented process that offers significant odor reduction, increased methane gas production and enhanced fertilizer value.

The result is 300,000 cubic feet of methane gas on tap as fuel for two Waukesha Engine Engineator® units. The engine/generator packages produce a constant flow of 750 kilowatts, more than enough to satisfy the farm's needs. The "waste" heat from the engines' exhaust is captured and used to warm water that's essential to the operation of the anaerobic digester. The process is part of co-generation, the production of heat and power, which makes the engines extremely efficient.

The gensets also generate profits because the excess electric energy is sold to Wisconsin Electric Power Company (WEPCO), the local electric utility. The utility, in turn, can charge willing customers more for this electricity because it's "green power" – energy produced from a renewable source.

For farm owner Carl Theunis, the energy plan does more than provide extra income and a reliable supply of power for his dairy operation. "It removes pathogens and pollutants from the manure, it controls odors that bothered my neighbors, but more importantly it provides a way to keep my four sons on the farm," he says. "The energy producing operation will help the farm survive price fluctuations and narrow profit margins. It's another business we're just entering into, but one that has separate responsibilities and can allow for time off and vacations, which are rare commodities on traditional dairy farms."

The energy and manure management solution was provided by Ag Environmental Solutions (AES), a local company that helped plan and construct the anaerobic digestion system. The Waukesha Engine Engineator units



*Cows at the Tinedale farm are a source of methane that's used as a fuel for two engines that drive generators to make electricity.*

***"The energy producing operation will help the farm survive price fluctuations and narrow profit margins."***

– Carl Theunis,

Owner, Tinedale Farm

*Tinedale Farms, located just south of Green Bay, WI, has a productive herd of 2500 Holsteins and was honored as Wisconsin Dairy Farm of the Year in 1996.*



These two Waukesha Engine units use methane gas for fuel and provide more electricity than the farm uses and also provide hot water for the anaerobic sludge digestion which produces the methane. The extra energy is sold to the local utility at a profit.



Above: Lloyd Botschamp, Vice-President, Sales, (left) welcomes Wisconsin Governor Scott McCallum to the engine room where the two Waukesha Engine Engines are located. On the Governor's left are Wisconsin Secretary of Agriculture Jim Harstad and Bob Conway of Charles Equipment Co.



were installed and serviced by Charles Equipment Co., which has a branch office in Wisconsin.

Using on-site power, or distributed generation, can free dependency on the local electric grid. Waukesha Engine Engine units use clean-burning natural gas, propane or bio-fuels (such as methane) to produce electricity and are easily permitted in nearly all parts of the US. As a pre-packaged engine/generator set, they can handle power needs from 100 kW to 10 megawatts. Engine units provide reliable electrical energy for prime or peak-shaving use, as well as emergency stand-by power. They are backed by 95 years of experience in the design and manufacture of reciprocating engines and are now available for lease as well as purchase. Contact your

nearest Waukesha Engine distributor or call 262/547-3311. The company's web site can be accessed at [www.waukeshaengine.dresser.com](http://www.waukeshaengine.dresser.com). ■

Left: The Tinodale Farm/Waukesha Engine project was awarded top honors by the Midwest Cogeneration Association at its annual conference in September. From left, Bud Whiff and Gary Ephraim, MCA board members, present the award to Jim Going from Charles Equipment's Wisconsin office.

## Waukesha Power connection plus

The Waukesha Power connection plus is intended to enhance and promote communications to all areas of the Waukesha Engine Family.

Waukesha Power connection plus  
Waukesha Engine  
Dresser, Inc.

1800 West St. Paul Ave.  
Waukesha, WI 53188-4999  
Phone: 262-650-5002  
Fax: 262-650-5670  
E-mail:  
[dan.smak@waukeshaengine.dresser.com](mailto:dan.smak@waukeshaengine.dresser.com)

Editor: Daniel R. Vrank  
Design/Layout: Amy Kuhnke

Copyright 2001 Dresser, Inc.

Waukesha and Engine are trademarks/  
registered trademarks of Waukesha Engine,  
Dresser, Inc.