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BY JOHN HARTZELL



## CASE STUDY

### 'Clean' energy: Manure creates electricity

MILWAUKEE -- When dairy farmer Gary Boyke looks out at the manure from his herd, he sees the prospect of profits rather than waste, odors and water pollution.

Boyke is one of a growing number of farmers turning animal waste into energy, and he's spreading the word to others. He will be among those giving presentations at a



Parker T300L Natural Gas Fired/Digester Fired

conference Jan. 31 in Madison on ways farmers can turn manure into a cash cow of sorts.

A major topic will be anaerobic digesters, which use bacteria on manure to produce a gas primarily containing methane to power generators and produce electricity.

## Enough power for 330 homes

Boyke, who has 1,300 cows on his Vir-Clar Farm near Fond du Lac, said he gets two to three times the energy he needs with a digester, selling it all to Madison-based utility Alliant Energy and then buying back what he needs. He said the device produces enough power to serve 330 homes.

"I think we're just on the verge of something that is going to be big in the future," he said.

A dozen such digesters are in operation in Wisconsin, three or four others have been started up and are nearly at full capacity, five are under construction and 15 others are planned, said Larry Krom, business sector

manager of the state Focus on Energy's renewable energy program.

About 110 digesters are in operation around the country, and another 70 are planned, said Kurt Roos, manager of the U.S. Environmental Protection Agency's AgSTAR program. Most of them are at dairy farms in the Midwest, California, New York and Pennsylvania.

The average cost of a digester is nearly \$1.5 million, and it takes about six years to earn back that original investment without any grants, said Krom, whose organization is one of the sponsors of the Madison conference.

"But once it pays for itself, it becomes sort of a cash cow," Krom said, especially as energy costs continue upward.

Timm Johnson, executive director of the Wisconsin Agricultural Stewardship Initiative, which is holding the conference, said the gathering was prompted in large part by an increasing number of bigger dairy farms. He said their owners find it more expensive to dispose of the smelly waste in the traditional way -- as fertilizer to help grow crops used to feed the animals.

## Bigger farms on the rise

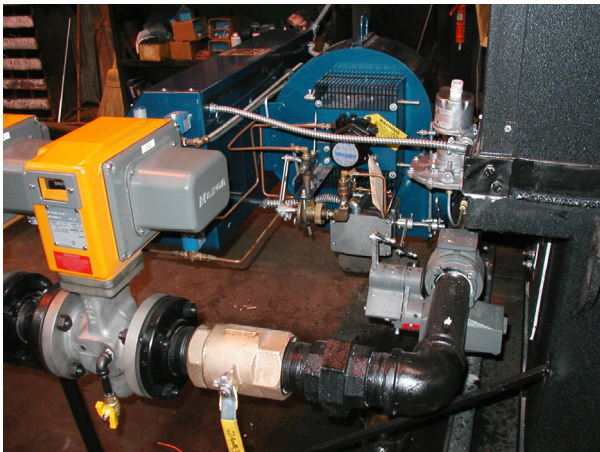
The manure from larger operations must be spread over a wider area, and the cost of transporting the moisture-laden material goes up the farther it has to be moved, he said.

There were 200 Wisconsin dairy herds with more than 500 cows in 2004, the latest year for which figures are available, compared with 140 in 2000, said Laura Mason of the Wisconsin Agricultural Statistics Service.

A group of smaller dairy

farms could bring manure to one central community digester to make it financially feasible for them, Krom said, or they could use a less expensive process in which methane is burned to produce heat rather than electricity.

Below Parker GO-4032 Combination Bio gas & #2 Oil

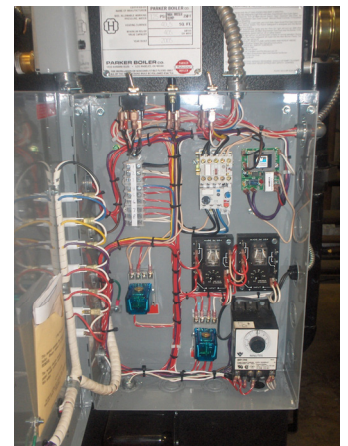


## Story Credit

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Parker Boilers were furnished on eight (8) of the last projects in the Midwest.

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delivery is not sufficient, units automatically switch to standby fuel which can be natural gas, propane or #2 oil



Right- Parker T-300L Natural Gas Fired/Digester Fired Control Panel

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