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of rural communities.

AgStar National Conference

A Utility Case Study

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Rural Development
Business Programs

Introduction

- Dairyland Power Cooperative serves rural customers through member cooperatives and municipals. Growing interest in renewable energy is putting pressure on Dairyland to add renewable energy generating facilities to its portfolio. Dairyland views this as good for its business and its members and is taking a proactive approach to meeting needs. Dairyland has announce a program to add up to 25 MW of methane digester derived generation to its system over the next five years.

Dairyland Power Cooperative

- Dairyland's service area encompasses 62 counties in five states (Wisconsin, Minnesota, Iowa, Illinois and Michigan). Dairyland has provided low-cost, reliable electrical energy and related services to its customers in the upper Midwest for over 61 years.

Dairy, Hog & Cattle Confined Operations

- The Farmer's Problem

The disposal of manure from confined animal operations raises issues relative to both clean air and clean water. Concentrated Animal Feeding Operation (CAFO) Rules.

- The solution

Animal waste management

Good for Business

- Animal operations are a significant part of the the Dairyland system.
- Economic viability of farms is important to Dairyland's economic viability.
- Methane digesters bring multiple benefits to farmers:
 - Waste management – odor reduction
 - Pathogen reduction
 - Weed seed reduction
 - Reduced runoff issues due to mineralized NPK

Dairyland Approach

- Turning a farm cost into an economic benefit, while providing a nutrient management tool which controls pathogens and removes odor from processed manure, while helping to address both water and air quality concerns.

Methane Digester Energy Plan

- Target levelized busbar price of 4.5 cents / kWh
- Thermophilic, complete mix system operates at about 135F
- Major portion of DPC distributed generation plan
- It will also reduce system losses offsetting new coal generation
- Organization:
 - Farmer/co-op owns digester
 - DPC contracts for the gas
 - DPC owns generation side of project

Methane Digester Issues

with this business model

- High installed capital costs
- Permitting issues due to unfamiliarity with technology
- Farm/digester stability (fuel supply) critical to success
- Control area's need for base load generation. i.e. is there a willing purchaser?
- Location of the facility on the distribution/transmission system (farm to market)

Methane Digester Benefits

with this business model

- No interconnection arrangements.
- No purchase power arrangements.
- No farm to market arrangements
- No disruption of distribution utility's retail sales.
- Utility owns motor generator set and interconnection facilities.
- Farmer owns waste management system and digester.
- Gas price set at a higher price than the equivalent avoided cost per kWh.