

Dairy Farmers Could Benefit from Anaerobic Digesters

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With about 625,00 cows in New York state, dairy farmers could use anaerobic digesters to convert manure to methane gas. Photo by Paul Post.

SARATOGA SPRINGS, N.Y. — New York's 4,300 dairy farms could easily support a tenfold increase in anaerobic digesters, yielding a variety of environmental benefits through the production of renewable natural gas.

The challenge is establishing a business model that makes such efforts attractive to farmers, investors and the consumers that would use such fuel.

More than 100 stakeholders from these sectors, plus state officials, discussed such issues during a Nov. 19 workshop, “The Power of Organic Waste: Opportunities for Renewable Natural Gas in New York,” at Skidmore College.

“New York is a virtual goldmine for organics,” said Joanna D. Underwood, founder of New York City-based Energy Vision, an environmental research organization, which organized the event. “It’s the perfect place to produce not just milk, but biogas.”

Anaerobic digesters convert manure to methane gas. Currently, the systems are found at 28 upstate New York farms. Most farms use the electricity generated by digesters to power their operations, which reduces utility costs. Or, they can obtain energy credits by putting electricity back on the grid.

But to date, the Public Service Commission, which regulates utilities, hasn’t recognized the environmental benefits of methane-produced electricity the same as it has wind and solar power, said Carrie Woerner, D-Round Lake, a state Assembly Agriculture Committee member. So there isn’t as much financial incentive to invest in this type of renewable energy, she said.

Woerner, Underwood and other panelists including Peter Wright, of Cornell University’s Dairy Environmental Systems Program, say using digesters to produce renewable natural gas, instead of electricity, could yield much greater profits, especially if complemented by other organics such as food waste.

At present, much of the methane generated at landfills is flared off, when it could be used to fuel vehicles.

Manure from farms combined with organic waste from urban areas provide an almost unlimited supply of material to produce renewable natural gas.

“New York is the fourth largest waste producing state in the country,” Underwood said. “You get a tremendous bang for your buck when you convert a fleet of trucks or buses to renewable natural gas. Then you create a market for the guy who wants to buy an anaerobic digester.”

Renewable natural gas could displace millions of gallons of dirty, potentially harmful diesel.

“It’s clean burning,” Underwood said. “When you refine biogas it’s almost zero emissions in terms of health threatening emissions such as nitrogen oxide, which damage the lungs, and particulates. It’s a very clean fuel.”

Joseph Darling, of Niskayuna, is a partner in the Utah-based firm Rudarpa. “We have an idea in which we would accumulate waste from dairy farms, dairy food processing plants and food waste to one large central digester, create gas and put it into the pipeline,” he said. “There would be multiple sources around New York state. We’re working to get funding so we can carry it forward.”

However, he said farmers in Cayuga County balked at plans to collect methane from their farms with a natural gas pipeline. Farmers would rather use methane to generate electricity, to reduce their power bills, he said.

So the main obstacle is developing a financial model that makes renewable natural gas more feasible for everyone involved.

“Resources and technology are not the constraint,” Wright said. “The key is to monetize the environmental benefits and do it in a way that keeps the cost of verification low.”

“Farmers aren’t power plant operators,” Woerner said. “We need to look for outside investors to operate digesters. What are the economics behind this, that make all that work? We need to build a financial model that allows farms and investors to make money at a price point that works for consumers, too.”

Woerner said she hopes to advance such plans when the state Legislature reconvenes in early January.

David Miller of the Attica-based firm, Sustainable Dairy Technologies, called on state officials to host a “Digester Summit” to discuss such issues, similar to other meetings that have benefited the craft beverage and yogurt industries.

“We’re at a tipping point right now with the anaerobic digester issue, with the promise or demise of it,” he said. “There have been a lot of good suggestions, but nothing is really coming together in New York state to make this viable.”