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Fiscalini plan to turn methane into energy runs into air problems

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John Fiscalini has spent about \$3 million on a system that can turn cow manure into electricity for his cheese plant west of Modesto.

Now he wonders if he will get to use it.

Air quality officials say these systems, although worthwhile for the environmental benefits they bring, can be polluters themselves if not designed right.

At issue is nitrogen oxide, a smog component emitted when methane gas is extracted from the manure and burned in an engine to generate electricity.

The San Joaquin Valley Air Pollution Control District has set a strict limit of 9 parts per million for new engines.

Fiscalini, whose system is close to completion, said none of the available engines can meet the standard. He said the one he ordered has advanced emission controls, but it still could violate the rule during the 60-day testing period.

"There's certainly a likelihood that two months after I start up, I have to shut down because I don't meet the number they have given me," he said.

The system at Fiscalini Cheese Co., a 3,000-cow operation, will be the first in Stanislaus County. There are 13 others in the state.

Dave Warner, director of permit services for the district, said it is studying why new engines are having trouble meeting the 9 ppm standard. But that limit has to stay in place, he said, as part of the effort to clean up the valley's air, which is hazardous to people with asthma and other ailments.

"Nitrogen oxides in the San Joaquin Valley do affect the health of the residents," he said.

Dairy industry people say the tough standard is slowing the spread of an energy source that has environmental virtues far outweighing the nitrogen oxide issue.

One involves climate change. Methane usually wafts from manure pits into the atmosphere, where it is believed to contribute to the buildup of gases causing global warming. If it is captured and burned to make power, it breaks down into components much less damaging.

Advocates say the systems also reduce reliance on fossil fuels, which are linked to climate change and valley air pollution. And by consuming much of the cattle waste, they help dairy



New digesters at Fiscalini Farms are expected to eliminate about 80 percent of the methane produced at the 3,000-cow dairy. - Modesto Bee - Brian Ramsay

farmers protect streams and groundwater.

California has the potential for perhaps 250 megawatts of power from dairy manure, said Allen Dusault, a program director with Sustainable Conservation, a San Francisco group working on the issue.

That is a tiny part of the state's demand -- close to 50,000 megawatts at the peak of this week's heat wave -- but it's worthwhile because of the side benefits, he said.

The California Energy Commission has provided grants for the projects, including \$720,000 to Fiscalini, as part of the push for climate-friendly energy sources.

"These dairies are doing things right," Dusault said. "They are doing what the state is asking them to do."

At just under 1 megawatt, Fiscalini's system will supply electricity for the cheese plant and surplus power for sale to the Modesto Irrigation District, at a price still being negotiated. The engine also will produce waste heat, which will heat water for cleaning the barns.

Warner, with the air district, agreed that preventing climate change is worthwhile, but he said that can be done via a range of projects around the world.

Nitrogen oxide, on the other hand, is a direct threat to the people living where the methane burners operate, he said.

Under pressure from the state and federal government, the district is requiring the "best available control technology" on new emitters.

An engine believed capable of meeting the 9 ppm standard was installed in 2006 at Joseph Gallo Farms, an Atwater-area cheese producer that built the first manure-to-energy system in the north valley two years earlier.

The engine has fallen short of the standard, Warner said, but it has permission to continue operating while the district checks the problem. One possibility is that impurities in the methane are interfering with the emission controls, he said. The study is expected to take a few months.

"We think that in the end they will be able to fix the issues that keep them from operating at 9 ppm all the time," Warner said.

Carl Morris, general manager at Joseph Gallo, said he has no problem with the district putting tough rules on this pollutant, as long as there are engines capable of complying.

"You look at a day like this, and you can't blame them," he said Thursday, when heat and smoke aggravated the usual smog. "They're very concerned about air quality in the valley."

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