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Dairy digester dispute

Dairy farmer wants to convert manure to electricity, but regional air quality district is hesitant over smog concerns

Sacramento Business Journal - by [Celia Lamb](#) Staff writer

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Smog versus greenhouse gas: Which is worse?

Cow manure has provoked a debate over the benefits of reducing fossil fuel consumption and cutting greenhouse gas emissions versus controlling smog in the Sacramento region.

Jon Tollenaar wants to install a “methane digester” that would use manure from the 1,900 cows on his farm near Elk Grove to produce electricity for the **Sacramento Municipal Utility District**. SMUD has agreed to buy the electricity, the **California Energy Commission** has funded the project with a \$500,000 loan, and the **U.S. Department of Agriculture** provided a \$198,000 grant.

But Tollenaar might need an additional \$60,000 or more of smog-control equipment before the **Sacramento Metropolitan Air Quality Management District** will give him a permit to run the generator.

Tollenaar Holstein Inc.'s project would produce up to 250 kilowatts of power, enough for about 188 homes.

“This is going to set the precedent,” said Marco Lemes, manager of SMUD’s Dairy Digester Incentive Program. “If Tollenaar doesn’t get built, forget other dairies in Sacramento.”

Last month, SMUD flipped the switch on a manure digester at **Cal-Denier Dairy** in Galt,

the first farm in Sacramento County to begin using a manure digester. But that project, capable of producing 65 kilowatts, does not pollute enough to run up against the air district's limits for emissions of oxides of nitrogen and oxides of sulfur, better known as NOx and SOx. But Tollenaar's dairy would.

The air district is charged with bringing the Sacramento region into compliance with federal and state smog limits. NOx and SOx react in sunlight to form ozone, a component of smog. Any electricity generator in the county that will produce more than 10 pounds per day of NOx or SOx needs a permit from the air district.

Decomposing manure emits methane, a potent greenhouse gas. It has about 21 times more warming potential than carbon dioxide. Methane digesters capture the methane that would be emitted.

California dairies produce about 450,000 tons of methane a year, the equivalent in greenhouse gas emissions of 2 million vehicles, according to the nonprofit **Sustainable Conservation** in San Francisco. That much methane could produce enough electricity for about 120,000 homes.

"Digesters provide water quality improvements (and) air quality improvements, and they reduce greenhouse gases and odors," said Allen Dusault, sustainable agriculture program director for Sustainable Conservation. Dusault has been working with dairy farm owners in the San Joaquin Valley who have run into similar problems obtaining air permits.

Dusault claims dairies can't meet the NOx requirements set by the San Joaquin and Sacramento air districts, and he thinks the districts should allow the dairy digesters to operate for a year or two until they can make the needed improvements.

"Tollenaar is one of those dairymen that did the right thing to reduce greenhouse gases and produce renewable energy, and now he's being penalized for it," Dusault said.

"This has been a long process," Tollenaar said. "I understand there are regulations, but we need to work together to get a solution. Just putting things off isn't helping anything. It's been frustrating."

But the air district believes the technology is available now to clean up NOx down to the same standards required for other electric generators.

"We want to see a better effort to show that it is not available," said Jorge DeGuzman, supervisor for the air quality district's permitting section.

"The problem with the digester is, even though it is controlling greenhouse gases, it's polluting about 30 times more (smog-forming pollutants) than what a modern (natural gas-fired) power plant would pollute," DeGuzman said. "It really comes down to economics. Projects like this, on a small scale, don't make sense because they pollute quite a bit, the controls are very expensive, and the output is not that great for energy production."

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