

## **Visalia dairy getting \$3 million to convert manure into power**

By David Castellon

Visalia Times-Delta, Monday, July 13, 2015

The California Department of Food and Agriculture will award nearly \$11.1 million to help pay to build five anaerobic digesters in the Central Valley, including one west of Visalia.

AgPower Visalia, LLC, a partnership that includes the Moonlight Dairy near Visalia, will receive \$3 million to put toward the digester that will be built on the dairy. CDFA officials said the partnership will have to put up \$4.7 million in matching funds for the project.

The grant is coming from Greenhouse Gas Reduction Fund, which is being funded by the CDFA and other state agencies that are investing money from California's Cap-and-Trade Program auctions, in which businesses bid to buy allowances for greenhouse gas emissions.

"These projects demonstrate a commitment by California to support efforts by dairy farmers to fight climate change by reducing greenhouse gases from the agriculture sector," CDFA Secretary Karen Ross said in a written statement. "This is definitely a win-win for agriculture: cutting methane emissions and improving the environment while also generating revenue from renewable bioenergy."

"The numbers are hard to make it work without grant money available," John Moon, owner of Moonlight Dairy, said, explaining that he and his partners might not be able to afford to build the digester without financial assistance.

"It's all about reducing greenhouse gasses and capture the methane in the air," he said.

A dairy anaerobic digester works by pushing manure through a series of chambers over several days, during which a combination of heat and the actions of bacteria break it down.

This produces methane that can be captured — rather than wafting into the air — and in this case it would be used to fuel a generator. The electricity from it would be sold to an electric utility and put back on the grid, Moon explained.

Some solid waste that isn't fully broken down can be used on the dairy as cow bedding and for other purposes, while the liquid waste remaining will be used to water and fertilize the dairy's corn and wheat crops, he said.

Moon said his partners include Washington-based Andgar Corp., which has built several anaerobic digesters, including one at the Calgren Renewable Fuels plant in Pixley.

The Moonlight Dairy plant will be able to process about 100,000 gallons of cow manure a day, said Mike Apol, regional manager for Regenis, a division of Andgar.

The other recipients of the CDFA grants each will receive between \$973,430 to \$3 million.

Those others are Philip Verwey Farms in Kings County; Open Sky Ranch, Inc. in Riverdale; Philip Verwey Farms in Madera; and West-Star North Dairy Biogas in Buttonwillow.

They and Moonlight Dairy will have to provide a total of \$18.9 million in matching funds to put toward their projects.

Methane is a powerful greenhouse gas, trapping more than 80 times as much heat in the atmosphere as carbon dioxide over a short-term — 20-year — period, the CDFA reports.

"These dairy digester projects support California's efforts to reduce methane and other short-lived climate pollutants, helping meet the state's goal of reducing greenhouse gases to 40 percent below 1990 levels by 2030, as recently called for by Governor Edmund G. Brown Jr.," the agency states in a press release.

## **State funds 5 Central Valley "dairy digester" projects**

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Five projects to implement digester technology on California dairy operations will share a total of about \$11.1 million in grants, the California Department of Food and Agriculture says.

The money for the installation of dairy digesters comes from the state's cap-and-trade program for combating climate change.

Recipients of the CDFA grants will provide an estimated \$18.9 million in matching funds for the development of the digester facilities.

Getting the grants are:

- Philip Verwey Farms, in Hanford -- \$3 million for a new covered lagoon digester that will be used to produce approx. 7.6 million kWh of renewable electricity per year
- Open Sky Ranch Inc. in Riverdale -- \$973,430 for a covered lagoon digester to produce approx. 6.4 million kWh of renewable electricity per year
- Philip Verwey Farms in Madera -- \$2,261,091 for a new covered lagoon digester to produce approx. 4.8 million kWh renewable electricity per year
- AgPower Visalia LLC in Visalia -- \$3 million for a mixed-plug flow digester to be used to produce approx. 6 million kWh renewable electricity per year
- ABEC #2 LLC dba West-Star North Dairy Biogas in Buttonwillow -- \$1,837,005 for a covered lagoon digester project. This project will capture biogas from two covered lagoons at the dairy. Biogas from the digester will produce 7.6 million kWh of renewable electricity per year. Additional biogas will be stored under flexible covers installed on the lagoons.

"These projects demonstrate a commitment by California to support efforts by dairy farmers to fight climate change by reducing greenhouse gases from the agriculture sector," says CDFA Secretary Karen Ross. "This is definitely a win-win for agriculture: cutting methane emissions and improving the environment while also generating revenue from renewable bioenergy."

Dairy manure produces methane when it decomposes. Dairy digesters collect manure in tanks or lagoons for decomposition in an oxygen-free environment and then capture the methane produced so none escapes into the atmosphere. That methane can then be used as a biofuel to power generators that produce electricity or fuel natural gas vehicles.

Methane is a powerful greenhouse gas, trapping more than 80 times as much heat in the atmosphere as carbon dioxide over a short-term (20-year) period.

CDFA conducted a multi-stage review of all applications, including administrative, financial and technical reviews, to verify applicants' GHG reduction calculations and assess the feasibility of digester technologies. Final scoring and review was conducted by the multi-agency Dairy Digester Research and Development Program's Technical Advisory Committee, a subset of the California Federal Dairy Digester Working Group.

The projects also fulfill the requirements of SB 535 (De Leon, 2014) that at least 25 percent of Greenhouse Gas Reduction Fund grants benefit disadvantaged communities, as identified by the California Environmental Protection Agency. Disadvantaged communities in the Central Valley will benefit from improved air and water quality protections, as well as job creation. Additionally, Central Valley dairy farmers will have revenue-generation potential by converting agricultural waste into renewable bioenergy.