

# Unlocking methane digester systems' dairy farm potential

Progressive Dairyman Editor Karen Lee

According to the U.S. EPA's AgSTAR program, anaerobic digesters are technically feasible at more than 2,600 U.S. dairy operations, but many early adopters of methane digester systems find they are not supported by the current

market conditions and energy policies. During a seminar at World Ag Expo, three speakers explained why dairy farms are uniquely positioned to benefit from the growing anaerobic digester industry.

Chris Voell, program manager

for EPA's AgSTAR, said there are currently 176 manure-based digester systems on farms. That number has been growing over time, but it still makes up less than 1 percent of opportunity that exists.

Wisconsin, New York, Vermont and Pennsylvania top the states that have adopted this technology. A year ago, California had 15 digesters in service; today it is down to 11.

The dairy industry continues to be the leader in employing digesters,

followed by the swine industry. Thus far, digesters used to generate electricity dominate the field.

"I'm in favor of seeing many more of these types of projects," Voell said. He wants to assist U.S. livestock producers in generating renewable energy, expanding rural development and conserving natural resources. The use of digesters can enhance baseload generation and provide added security to our nation's energy and food supply.

Voell has witnessed a number of trends in the digester industry. More farms are looking at complete mix tank systems versus the common complete mix plug-flow in use today. Thirty percent of operating digesters are using co-digestion to garner additional income through tipping fees. Projects are also growing in size, which generates more energy. More third-party investments are entering today's marketplace, as well.

"This may be as much of the future of this industry as anything else," Voell said. However, major barriers still exist, including obtaining financing and low natural gas and electricity prices that do not foster these types of projects.

Jerry Bingold, director of renewable energy for the Innovation Center for U.S. Dairy, said the dairy industry must work towards its common goal to reduce greenhouse gas production 25 percent by 2020. Placing digester systems on 1,300 farms by that year would help achieve this goal.

"Right now if you are going to put in a digester, it is primarily go at it alone," Bingold said, noting manure is about the only input available, some technologies are still unproven and there is limited external funding to help with the project.

Therefore, the Innovation Center for U.S. Dairy is working to develop quality partnerships, manure plus substrate systems, a technology performance guarantee, ample private funding and a high value for byproducts.

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“Wind and solar projects, in many cases, can actually stand on their own. We want dairy industry digesters to stand on their own and be self-sufficient.” Photo by **PD** staff.

The center is working with the USDA to set up a digester business case. This would include feedstock agreements through contracts for the term of debt service, technology performance agreements and off-take agreements with a contract for the term of debt service.

“Wind and solar projects, in many cases, can actually stand on their own,” Bingold said. “We want dairy industry digesters to stand on their own and be self-sufficient.”

Paul Martin, director of environmental services for Western United Dairyman, said, “Digesters are very definitely in the future for California dairymen. If not because you want them to be, but because our governor wants them to be.”

An initiative is under way in the state to make the permitting of digesters more efficient to reduce the cost for anyone wanting to implement one.

A task force has been formed and is chaired by the undersecretaries of the California Department of Food and Agriculture (CDFA) and California EPA. The task force is working on a unified permitting process for dairies that will eliminate the varied interpretation that occurs within staff review. It is also looking to pre-certify the equipment and feedstocks so a producer can know upfront that there won't be any problem with what they select for their digester system.

The task force would like to remove the duplication in permitting between CalRecycle and the Regional Water Board, as well as find a way to address salt and nutrient removal.

It is currently looking for a digester project to take through this new process. One requirement is that is has not yet started with any of the existing permitting.

“If we can't get it done now with the interest this administration has, we're probably not going to get it done,” Martin said. **PD**

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