

Turning Environmental Challenges into Opportunities



By Megan Pierce

With new environmental regulations seemingly introduced every month, higher fuel costs and skyrocketing feed prices it's no wonder the cost to produce milk has risen. Dairy producers everywhere are looking for alternative sources of income and ways to capitalize on the unfolding renewable fuels market.

Vintage Dairy located in Riverdale, CA has looked to their manure management system for this income. Starting this month they will begin the process of turning their lagoon into a revenue stream. This 3,000-cow dairy is working with BioEnergy Solutions in Bakersfield, CA to install a methane digester on their lagoon, capturing methane gas.

BioEnergy Solutions has spent the last seven months negotiating contracts to sell gas from dairy cattle to Pacific Gas & Electric (PG&E). In February an agreement was announced. BioEnergy Solutions will now deliver up to three billion cubic feet of renewable natural gas every year over the next ten years to PG&E. This is enough to meet the electricity needs of approximately 50,000 California homes.

When the digester is completed, Vintage Dairy's cows will be providing power to over 1,200 California homes.

Construction should be completed by the end of this summer.

BioEnergy Solutions has a unique outlook on the dairy industry and manure digesters. A company built by dairymen for dairymen, definitely speaks to the truth. The owner of BioEnergy Solutions, David Albers, is also the owner and operator of Vintage Dairy.

"As a third generation dairymen and a businessman, I was looking for a way to get ahead of the environmental curve, provide a revenue stream for our dairy operation and do it with some security," explains Albers. "That's why I formed BioEnergy Solutions." Albers notes that gas markets are spiky, but long-term contracts are bankable.

The renewable fuels industry is in its infancy, but as it takes shape, every dairy producer may be required, in the future, to have a manure digester. "I wanted to be on the front end of this industry and provide an opportunity for other dairy producers to take advantage of the potential for added income now, not later," explains Albers.

BioEnergy Solutions designs, owns, installs, operates and maintains the digesters needed to create renewable natural gas from manure. Revenues created from the sale of gas and carbon credits are shared with the dairy producer. Currently

gas trades around \$5.50 per decatherm and carbon credits are trading around \$4.00. Albers' 3,000 cows are expected to produce 73,000 decatherms per year and 18,000 carbon credits per year.

Digesters are living breathing things, notes Albers. They even "burp." "This is why we handle the operation and maintenance of the digester."

One of the biggest challenges that BioEnergy Solutions faces is getting the gas pipeline ready. "We have to meet the utilities quality specifications," explains Albers. Cleaning the gas is the biggest investment. In order for gas to be made pipeline ready it has to be scrubbed and pressurized. BioEnergy Solutions owns the equipment needed to "scrub" and make the gas pipeline ready. Albers notes that the machine that does this is smaller than a manure separator.

"We are hoping to offer our services to everyone, but there are certain economies of scale that will come into play," explains Albers. Things that we have to consider are, how many cows, location of the dairy in regards to a pipeline and

BioEnergy Solutions is also funding research to run automobiles from the gas produced on dairies.



David Albers is a third generation dairy producer who hopes to keep ahead of the environmental curve and keep dairying profitable.

the cost to get to the pipeline. The type of manure management system a dairy currently has is also important. "For each dairy we work with, a feasibility study is run that looks at every angle of the operation. This report helps us decide which digester is the most efficient for that individual dairy," says Albers. Being technology neutral, gives BioEnergy Solutions the ability to use whatever technology makes sense for



David Albers points to where they will be breaking ground this month on their methane digester.

each particular dairy.

After a digester is installed a reduction in methane emissions, by as much as 70%, is expected or an estimated 1,500 tons per year on a 5,000-cow dairy.

It's a win-win-win situation, adds Albers. The digester helps dairies comply with air regulations, provides a source of regular income to the dairyman and also helps PG&E meet the states requirement to produce 20% of it's energy from renewable sources by 2010.

Albers hopes to stay ahead of the environmental curve, with BioEnergy Solutions, and keep dairying profitable. "I have to, my son wants to be the fourth generation to run Vintage Dairy and my daughter plans on running BioEnergy Solutions," says Albers.

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