

Website to offer neighborhood-level air data

By Steven Mayer

The Bakersfield Californian, Sunday, Feb 22, 2015

Many residents of the San Joaquin Valley are pretty savvy about the quality of the air they breathe.

They know when summer ozone levels are spiking in Arvin or wintertime particulate pollution is off the charts in Bakersfield.

And vice versa.

But they've never had a tool to help understand whether the air in their neighborhood is cleaner or dirtier -- at any given time, day or night -- than the air quality in other parts of town. Or even a few blocks away.

But all that may be about to change.

By the end of this year, residents of the valley, from Mettler to Manteca, Taft to Turlock, will be able to check real-time air quality levels for their neighborhoods just by entering an address online.

"We're trying to put together something for valley residents that has never been tried or done by anyone else in the nation," said Seyed Sadredin, the executive director of the eight-county San Joaquin Valley Air Pollution Control District.

The air district is developing a website called the Web-Based Archived Air Quality System, or WAAQS, which initially will allow residents to examine historical air quality information for their neighborhood, and compare different years and different parts of a city, county or region.

Once launched, the website will allow residents access to a variety of statistics, including the number of days with good air quality, the number of days with unhealthy air quality, days over federal standards for ozone and particulate pollution -- known as PM2.5 -- and neighborhood air quality compared to trends for the county and the San Joaquin Valley.

A beta version of the website containing historical data is expected to be made available to the public on March 1, Sadredin said. Comments and recommendations will be collected to better help the air district improve the information provided on this site.

The real-time data, which is more difficult and complex, is expected to be online by the end of the year.

But how, with a limited number of air monitors dotted up and down the valley, can the district provide air quality information in specific neighborhoods?

Last year, the air district developed a computer modeling technique to quantify neighborhood ozone and PM2.5 concentrations. The data generated from the new model will serve as a foundation for the project.

"We're trying to use science and technology to simulate having an air monitor in every neighborhood," Sadredin said.

A single air monitor costs between \$200,000 and \$500,000 to install, and about \$65,000 per year to operate and maintain, Sadredin said. The valley has 37 monitors operated by various agencies, with nine in the valley portion of Kern County. Installing hundreds or even thousands of monitors would be cost-prohibitive and logistically impossible.

Instead, air district engineers and technologists divided the valley's 25,000 square miles into 3,600 grids, each one 4 kilometers by 4 kilometers. Four kilometers is about 2 1/2 miles.

By doing an "emissions inventory" in each grid, the developers of the algorithm and modeling techniques can take into consideration topography, weather conditions, including temperature, air movement, height of the inversion layer, and other data to establish a strong estimate of pollutant levels in any given grid.

When residents see a colored flag flying over a school in Bakersfield, the air district errs on the side of caution by using the worst reading in the area. But in reality, Sadredin said, one part of town might have slightly better air quality than another.

The air district covers a vast geographical area, Sadredin said, and its governing board felt providing the worst-case air quality measurements may not accurately reflect the actual conditions of certain neighborhoods.

This effort is an attempt to provide residents with more accurate information about the air they breathe.

Vouchers for free car repairs available

Stockton Record, Friday, Feb 20, 2015

STOCKTON — Drivers whose vehicles fail to pass an unofficial smog check can receive vouchers for up to \$500 in free repairs at an event on Saturday.

The latest Tune In & Tune Up is planned for 9 a.m. to 3 p.m. at the San Joaquin County Fairgrounds, though it's recommended that drivers arrive much earlier. Gates open at 6:30 a.m.; expect at least a two-hour wait.

The first 525 drivers whose vehicles fail will receive vouchers, which are intended to help people fix their cars, reduce emissions and comply with the law.

The event is not a formal smog check; no certificates will be issued.

For more details email info@valley-can.org or call (800) 806-2004.

Pixley biogas project 'a nice little fit' for ethanol plant, nearby dairy

By John Cox

The Bakersfield Californian, Monday, Feb 23, 2015

It may have sounded impossibly idealistic at one time, but there's no longer any debate about whether dairy waste can be converted into low-carbon energy, even on an industrial scale.

The question these days is, under what conditions does it make financial sense?

A new operation just north of the Kern County border provides a fresh example of what it may take, in terms of logistics, volume requirements and government subsidies, to expand energy production from cow manure.

Calgren Renewable Fuels's \$9.5 million "biodigester" project in Pixley, first fired up last fall, takes in liquid waste by pipeline from an 1,800-cow dairy a mile away.

It stores the material in a large tank underground for three weeks at 101 degrees, much the way a cow's digestive system would. This maximizes the amount of methane it puts off and kills most bacteria and other pathogens.

Leftover liquids are then returned to the dairy as fertilizer, while any solids are sent back as cow bedding. Similar recycling processes have been employed at more than 80 biodigesters across the country.

What's left is a gas mixture consisting mostly of methane, the powerful greenhouse gas commonly used to cook food, power vehicles and generate electricity.

The next step is part of what distinguishes the Pixley project from most other "biogas" plants. Calgren uses the gas to help power the company's adjacent ethanol plant.

Other biogas facilities running on dairy waste use the methane to power tractors and other vehicles on site, or they burn it to produce steam to create electricity for sale to the grid. Some plants process the gas and ship it by pipeline to utilities for use as regular natural gas.

Besides dairy waste, other materials such as spoiled eggs and waste from meat packing plants can be used as feedstock for the Pixley biodigester.

The biogas produced by Calgren's digester provides a relatively small amount of the plant's fuel needs -- less than 10 percent. But it's enough to earn the state's moral and financial support.

"By reusing dairy waste and converting it to a useful fuel product, we avoid more costly and environmentally risky disposal methods," Jim McKinney, program manager of the California Energy Commission's Alternative and Renewable Fuel and Vehicle Technology Program, said in remarks prepared for the plant's recent opening.

The commission awarded the project a \$4.6 million grant funded by a surcharge on California vehicle registration fees that produces about \$100 million year for promoting low-carbon fuels.

Calgren has produced ethanol at the plant since 2008. It makes about 58 million gallons a year from corn and sorghum. That's about 4.5 percent of the state's ethanol supply.

The company's new biodigester was designed by Wisconsin-based DVO Inc. and built by Regenis, headquartered in Washington state. Both are privately held.

Regenis principal Todd Kunzman said Calgren's biogas operation is feasible partly because the dairy that supplies the waste, Four J Farms, is so close by.

The alternative to piping waste from a nearby dairy is to truck it in from further away. That not only complicates the permitting process, Kunzman said, but increases the amount of carbon emissions involved.

McKinney, the energy commission program manager, said the dairy's size and proximity were key to earning the project a state grant. He said biogas plants typically struggle to collect enough manure from enough dairies to meet the "sweet spot" that makes such projects economically viable.

Calgren President Lyle Schlyer said other companies looking to emulate the project may need to consider hauling in dairy waste from other places. Otherwise, he said, they may have to locate their digesters on or next to a large dairy, and burn the methane on site.

He said circumstances happen to be nearly ideal in Pixley.

"It's a nice little fit," he said.

Others in the dairy and biogas industries endorse what goes on at the Pixley plant. But they point out that what works at one project may not necessarily be copied elsewhere.

"What we have learned as an industry in the last 10, 15 years, as these digester projects have been tested and implemented ... is that there is not a one-size-fits-all model," said Rob Vandenheuvel, general manager of the Milk Producers Council, which represents more than 100 dairies in California.

Paul Martin, interim CEO of Western United Dairyman, said the Pixley project benefits greatly from what he called "co-location." That's where an industrial user of methane is built next to or nearby a dairy.

The problem with copying that model, he said, is that government planners don't always support putting a dairy in an urban zone or locating an industrial plant in an agricultural area.

"It takes some forward-looking thinking to plan these things out," Martin said.

With about 1,500 dairies and fewer than 20 active biodigesters in the Central Valley, Calgren's work stands as "very interesting" approach, said Neil Black, president of Bakersfield-based California Bioenergy LLC.

"We think all these initiatives are terrific," he said. "They're really trying to figure things out to advance this early industry."

Arvin-area dairyman Rich Tillema said he supports the idea of turning manure into energy, but that attaining government approval can be difficult because emissions are often involved, requiring special permits.

While he was unaware of Calgren's project, Tillema said he may be interested in turning waste from his 2,000 cows into biogas, assuming the conditions are right.

"I'd have to see (a biogas project) work and proven, you know?" he said.