

Valley schools to get hourly air updates

Air board will give targeted, real-time data to help keep kids safe, active.

By Mark Grossi, staff writer

The Fresno Bee, Merced Sun-Star and other papers, Monday, Sept. 13, 2010

When lung-scorching soot hangs in the Valley fog this fall, school officials will get hourly updates on bad air as part of the nation's first real-time pollution alert network.

Using automated e-mail, text messages and updates online, the regional air district will help schools decide hour-by-hour if students will be allowed outside for athletic events, recess and other outdoor activities.

Teachers, coaches, administrators and parents can sign up through the local air district in late October to get the alerts on their computers and their cell phones.

The innovation is a step forward. Conventional air-quality forecasts are often 24 hours old by the time schools make important decisions on athletic activities affecting thousands of people.

And, in contrast to conventional countywide forecasts, the hourly notifications will provide information just from the air monitors nearest to the schools. There are about two dozen of the monitors scattered mostly through major urban areas.

The innovation is timely, said Seyed Sadredin, executive director of the San Joaquin Valley Air Pollution Control District. Tougher federal standards for particle pollution this year will require officials to declare even moderately polluted days unhealthy.

"There are still times during even a red-flag day when it's OK to have activities outside," Sadredin said. "People need to understand that there are pollution peaks during the day, and not every place in the county will have the same problem."

The fine-tuned approach works for ozone, too. The district already had a successful, impromptu test of the network for ozone pollution in late August.

A Clovis water polo coach called the district to find out if he should call off a match with a Visalia school in the early evening hours, air officials said. The network already had been configured to match Clovis schools with the Clovis monitor, so officials helped the coach use it.

Clovis had reached dangerous ozone levels that afternoon. But the network showed the air quality improved after 4 p.m., and the match could be played.

"It worked," said district spokeswoman Jaime Holt. "The hourly updates give you data points to see if it's getting better or worse."

Officials added that the network would warn school officials if there has been an unexpected spike in pollution from a fire or chemical spill in the area.

Officials will continue testing the system for the next several weeks with schools in various cities, including Clovis, Visalia, Hanford and Bakersfield. In October, officials will invite all schools to the network.

Participants must register online at www.valleyair.org. The network is intended for school systems and parents, though officials want to eventually make it available to the general public.

The new approach was prompted by a smoky fire season in 2008, the stringent federal standards and school officials who wanted a more immediate reading of pollution in their area.

For more than a year, officials discussed guidelines for protecting students from different levels of air pollution. Health experts at the American Lung Association of California and the UCSF Fresno Medical Education Program joined the discussion, and so did school and county health officials.

Meanwhile, district staffers designed new features for the air district's Web page to connect readings from the nearest air monitors with various school districts.

The idea was to more quickly move air quality information than the district's current air-quality alert system, which for years has used colored flags to reflect a forecast made the day before. The colored flags will continue, because they give the community an idea of what to expect each day, officials said.

Green means the air is healthy, yellow is moderate air quality, orange is unhealthy for people with sensitive lungs, red is unhealthy for all and purple is very unhealthy.

But on red-flag days, indoor recess is advised as well as reduced outdoor time for physical education classes and limited conditioning time for athletes.

Educators are caught in a difficult position because they are trying to encourage an active lifestyle to combat obesity. To complicate things, the forecasts are sometimes wrong, said spokeswoman Kelly Avants of the Clovis Unified School District.

Parents and others complained when the air was healthier than the forecast indicated.

"We were having credibility issues on some days," she said. "This network would empower individual employees to have good information to take appropriate steps to protect our students."

Fuel-cell digesters burn cash

The permit process makes digesters worth the expense, company says

By Wes Sander, staff writer

Capital Press, Thurs., Sept. 9, 2010

While a pair of companies promote fuel cells as the answer to air-quality problems associated with California methane digesters, observers say the expense of building and maintaining the technology puts it beyond reach for most dairies.

Wisconsin-based developer GHD Inc. wants to build digesters equipped with fuel cells in the state, said Melissa VanOrnum, GHD's marketing manager.

In the San Joaquin Valley, home to most of California's dairies, the state is trying to conquer abysmal air quality with stringent rules on emissions. That includes the nitrogen oxides and particulate matter emitted by the generators of conventional dairy digesters, which burn methane from cow waste to produce electricity.

In a digester design, a fuel cell first extracts hydrogen from methane, then combines it with oxygen to trigger a reaction that creates electricity.

Because it emits only small amounts of carbon dioxide and water, permitting a fuel cell-equipped digester would virtually be automatic. That means California could be where the technology finally gains momentum, VanOrnum said.

"We're hoping we can make some inroads," VanOrnum said. "The fuel cell is the ultimate solution because we're still destroying the methane, but not emitting the (nitrogen oxide)."

But fuel cells have yet to become feasible for the vast majority of the state's dairies, despite showing promise, said Allen Dusault, program director with Sustainable Conservation, a nonprofit that seeks to balance farm economics with environmentally friendly practices.

A fuel cell digester costs between \$21 million and \$30 million, compared to around \$2 million for a conventional model. The fuel cell is difficult to maintain.

"It's been making progress, it's just been very slow, and it's been overpromised," Dusault said.

But fuel cell supporters say the permitting process for a conventional digester can take as long as 18 months, and dairies must often hire consultants to help them through the process. Scrubbing emissions from conventional generators is also expensive.

"It gets so cost-prohibitive that it essentially stops the process," VanOrnum said.

GHD says the lack of those permitting expenses alone makes fuel cells attractive. Combine that with federal subsidies, including economic-stimulus funding for green technology, and the picture improves

further, said Ray Brewer, president of G3 Power Systems, a California company that designs power-generating systems around fuel cells. G3 has partnered with GHD to push the technology in California.

Current federal assistance programs can cut the system's high cost roughly in half, Brewer said. Furthermore, G3 plans to offer a range of financing options, including partial-ownership and lease-to-own models.

And the cost could continue dropping. A recent generational advance reduced the capital cost by about 15 percent, and the next few years could bring another 30-percent drop, Brewer said.

But Marlin Statema, co-owner of Ag Power Group, a developer consortium, points out that even with assistance factored in, capital costs run three to four times those of conventional digesters.

The expense could be offset by the technology's high efficiency if fuel cells were not expensive to operate and maintain, Statema said.

It all means a fuel cell remains impractical for most dairy operators, although the concept will likely become more viable in the future, Statema said. For dairies smaller than 5,000 cows, a fuel-cell digester is likely not an option, he said.

No fuel-cell dairy digesters are in operation yet, so there's no model to demonstrate the expense over several years, Statema said.

"I want to see somebody run (a fuel cell) on a digester," he said. "The concern I have is that I don't want to be the guinea pig."