



## CLIMATE CHANGE

# California Emissions Plan to Explore Use of Offsets

Energy giant Pacific Gas and Electric Co. (PG&E) found a unique source of green energy last year: 5000 dairy cows on a farm near Riverdale in central California. By collecting methane from manure and turning it into natural gas for home use or electricity, officials hope to prevent the yearly emission of 1200 tons of methane, a greenhouse gas 21 times more potent than carbon dioxide (CO<sub>2</sub>).

Scientists and activists applaud the company's creative effort to combat global warming. But the utility wants more than accolades. It would like bankable credit—and just might get it under rules California began drafting last week.

The plan, the most aggressive in the country, is to achieve a 10% cut in the state's current greenhouse gas emissions by 2020. A key mechanism is a system that caps the amount of emissions allowed and then permits trading in emissions credits. The system, which would begin next year, would cover everything from automobiles to power plants to factories. PG&E thinks its biogas project should offset part of the anticipated reductions that it would be required to make in emissions from its natural gas and coal facilities.

But calculating the impact of such offset projects is one of the thorniest problems facing California officials. "It's a hard question for [them]," says offsets critic Michael Wara, a former geochemist who teaches law at Stanford University in Palo Alto, California. The goal is to make sure that every dollar spent under the cap has the greatest benefit. So the challenge, he says, is to prevent companies from getting credit for "what would've happened without the incentive created by the carbon market." And how state officials deal with offsets could set a national precedent.

Offset projects are intended to encourage big emitters to reduce expected emissions cheaply and in a way that spreads the wealth. Under the Kyoto Protocol's offset program, called the Clean Development Mechanism (CDM), emitters in developed countries

have purchased roughly \$19 billion in credits for efforts such as forestry, agriculture, or green power projects in developing countries. Whether a company cuts emissions at

ford's David Victor estimates that up to two-thirds of emissions cuts under CDM represent cuts that would have happened anyway.

Offsets may have another flaw: They divert to inefficient projects money that could be used to cut emissions directly, critics say. For example, Chinese developers have received \$7.4 billion worth of CDM credits in return for preventing the release into the atmosphere of roughly 6600 tons of a gas called trifluoromethane, a greenhouse gas 11,700 times more potent than CO<sub>2</sub> created during the manufacture of refrigerants. But Victor and Wara found that destroying the same amount of the gas

would have cost only \$157 million. This "perverse incentive," they wrote in an April paper, has fostered an industry devoted to creating the waste gas so that it can then be eliminated for cash. Worse, the extra \$7.2 billion diverted to the effort could have been spent by big

emitters to make real emissions cuts.

California officials, whose proposed system would cover 85% of the state's greenhouse gas emissions, say offsets could "spur innovation in unregulated sectors" such as agriculture and imported cement. They say their regulations and oversight will be stricter than CDM's, although a detailed plan won't be issued until October. In the meantime, Wara notes that California has already agreed to allow its industries to trade in emission certificates from its neighbors—some of whom are bound to accept CDM credits, tainted or not—under the 10-state Western Climate Initiative launched last year. "We are really excited about [PG&E] doing this project," says attorney Kristin Grenfell of the Natural Resources Defense Council's San Francisco office. "We just don't think that offsets are the best way of encouraging it."

—ELI KINTISCH



**Early moo-vers.** A California utility wants credit under a new emissions cap to collect and process methane from cow manure.



a German power plant or a Chinese forest is immaterial, the thinking goes. "A ton is a ton is a ton," says PG&E official Robert Parkhurst, who emphasizes the need for a well-regulated system. "The endgame in this is reducing tons of greenhouse gas."

But experts wonder if emissions cuts claimed under CDM are really offsets or if the reductions would have happened anyway. Government incentives due to energy shortages, for example, have led to a building spree in China of low-carbon energy sources, including dams, wind power, and natural gas plants. Yet in their CDM applications, Chinese developers have claimed that Kyoto credits are the driving force behind the projects rather than pressure from the government and the expected economic payoff. Likewise, Axel Michaelowa of Germany's Hamburg Institute of International Economics has found that proposals for wind farms in India systematically left out generous government tax incentives. Stan-