



Can California's Cap-and-Trade Program Turn Manure into Gold?

By Allison A. Davis

California's Cap-and-Trade Program is the only cross-industry, market-based climate change regulatory program in the United States. This program may provide a good investment opportunity for dairy farmers, livestock owners, and others if the program's Livestock Project protocol for offsets can get off the ground and maintain a viable price for greenhouse gas (GHG) allowances.

California's Cap-and-Trade Program is one of the strategies the California Air Resources Board (CARB) identified to reduce GHG emissions to 1990 levels by 2020. The program took effect January 1, 2012. Its first phase includes as "covered entities" electric utilities and large industrial facilities that emit 25,000 or more metric tons of carbon dioxide or other GHGs (metric tons of CO₂ equivalents, MTCO₂e) annually. The covered entities' compliance obligations for obtaining allowances and reducing emissions go into effect in 2013.

Generally, a cap-and-trade program limits or "caps" a covered entity's GHG emissions, and the cap declines over a scheduled period to gradually reduce emissions. A covered entity will need emission allowances, an allowance being one MTCO₂e, equal to its GHG emissions under the cap. A market is made by distributing and selling emission allowances that emitters may buy, sell, and trade to provide allowances equal to their GHG emissions over a set period of time. This cost-shifting allows companies to pursue the most cost-effective emission reduction options: purchase allowances or reduce emissions.

Offsets under the Cap-and-Trade Program

An offset is different from an allowance. An offset-producing activity reduces GHG emissions in one location that compensates for GHG emissions somewhere else. Instead of purchasing allowances, or reducing its own emissions, a covered entity may reduce emissions somewhere else and use those credits to offset its own emissions. Or, anyone can produce offsets to provide additional allowances for covered entities to purchase. Covered entities will be allowed to "offset" up to 8% of emissions, where, like allowances, each offset credit equals one MTCO₂e.

Generally, offset protocols provide that a GHG emission reduction must be "real, additional, quantifiable, permanent, verifiable and enforceable" and that the project takes place in North America. One of the four offset protocols CARB has approved is the Livestock Projects.

New Opportunity for Dairy Farmers and Livestock Owners

A Livestock Project quantifies and reports GHG emission reductions associated with manure management or digester systems. Livestock manure is typically treated and stored under anaerobic (non-oxygen) conditions—such as in lagoons, tanks, or pits—and decomposes to produce methane, which is emitted to the

atmosphere in the absence of controls. For this protocol, a facility must install a biogas control system to capture and destroy (or use) methane gas created in an anaerobic storage facility. The captured biogas may be destroyed on site, transported for off-site use (through a pipeline), or used to power vehicles.

One important requirement is that the offset must be "additional"; state or local regulations cannot currently require the dairy farmer or livestock owner to contain the methane from its operations. Another requirement is that without the incentive of the offsets, the owner would not install a biogas digester in a "conservative business-as-usual scenario." Thus, facilities located outside of California may benefit more from the offset program, as certain California animal facilities may already be subject to emission mitigation rules and may lack the incentive to "go green."

The Livestock Project provides a monetary incentive to install manure digesters, turning a liability into an asset (the offset) that can be sold, as well as providing methane gas as a fuel. With 192 million pounds per day of manure created in California alone, converting it to a revenue-generator is a no-brainer.

Some livestock owners use gas from digesters to power their own facilities. For example, Royal Farms No. 1 in Tulare, Calif., meets monthly electric and heat energy demand by using biogas to fuel a 70-kW and a 100-kW engine generator. Although there is some regulatory tension as air quality control regulators weigh the pollution generated by the digesters against the pollution created by the manure, this offset protocol will hopefully result in the development of better technology to meet the demand.

Getting the Price Right

CARB's first auction is scheduled for November 2012. CARB has provided for an "auction reserve price" of \$10 per MTCO₂e, which, compared with other auction prices, seems high. The most recent auction price at the Regional Greenhouse Gas Initiative, limited to allowances for power plants in the Northeast, was \$1.93. The global carbon market dropped nearly 20% in price in early 2012. The price at the start of 2011 was €6.6 (about \$8.60) per ton and in the first quarter of 2012 dipped to €6.14 (about \$8.06) per ton.

Dairy farmers and livestock owners need to determine if the sale price of the offset credits (with potential energy savings) supports the installation of a biogas digester that meets current air quality regulations. Dairy farmers, livestock owners, and others should measure their methane emissions, estimate the cost of a biogas digester, and then conduct a back-of-the-envelope analysis to see if qualifying for the offset would work for them—and do good at the same time.

It may not be gold, but it's better than a pile of manure. ■

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