

Q & A Session: Landfill Gas to Energy Webcast, February 5, 2009

U.S. EPA Landfill Methane Outreach Program, Victoria Ludwig

1. Question from the County of Sonoma, CA: Are there specific resources available for small scale landfill projects (potential 1/2 Mw)?

Answer:

LMOP provides technical assistance and develops tools for use by all landfill gas energy projects, regardless of size. However, LMOP recognizes the unique challenges experienced by small projects and on occasion has produced tools and resources geared specifically to that sector. For example, LMOP has written a fact sheet for small landfills, available at <http://epa.gov/lmop/res/pdf/landfills.pdf>. Also, a profile of a successful small project can be found at <http://epa.gov/lmop/proj/prof/profile/antiochcommunityhighschool.htm>.

2. Can I get a list of the landfills that were determined to be candidate landfills in a specific state (NJ)?

Answer:

Any state can visit our list of energy projects and candidate landfills on our website at: www.epa.gov/lmop/proj/index.htm

3. Are the clean renewable bonds renewed for 2009-2010? The slide in LMOP presentation went through 2008.

Answer:

Yes. As part of the American Recovery and Reinvestment Act of 2009, an additional \$1.6 billion was allocated for CREBs. See the LMOP fact sheet on federal incentives for more details: http://epa.gov/lmop/docs/lmop_federal_incentive.pdf

4. You note landfills are eligible if they are not required to have a collection system (e.g., NSPS). If a landfill is a Title V facility are they eligible even if not an NSPS facility?

Answer:

Title V of the Clean Air Act requires an operating permit for landfill gas energy projects that are determined to be a major source of a criteria air pollutant. As such, Title V does not prohibit a landfill from claiming carbon credits for its energy project (Title V does not require that a gas collection and control system be installed, or that an energy project be implemented). See Chapter 5.3 of LMOP's "Landfill Gas Energy Project Development Handbook," available at: <http://epa.gov/lmop/res/handbook.htm>.

Greeneville County Solid Waste Division, South Carolina, Susan Harrison

1. How was minimal soil cover a key to success? I would have expected that a minimal soil cover would allow gas to escape or lead to air infiltration during the LF gas extraction activities.

Answer:

Minimal cover allows leachate to travel freely throughout the waste. Overuse of soil cover can create impermeable lenses which trap the leachate in pockets preventing uniform moisture distribution. Minimal soil cover was useful to allow passive venting over the site prior to the installation of the extraction system. The landfill gas extraction system was installed immediately prior to beginning the final geosynthetic cover construction.

2. What is the inflow of waste to your facility?

Answer:

The average tonnage for the site was 200,000 tons per year.

3. Who made the carbon credits available and how were they sold or traded? Was it a state REC program?

Answer:

Enerdyne Power Systems obtained rights to sell the carbon credits in their contract with Greenville County. They provided all the necessary testing and documentation to validate the credits for sale.

4. Does this landfill in Enoree utilize leachate recirculation? Or is the leachate hauled away?

Answer:

Leachate recirculation is not allowed in South Carolina. The leachate was hauled to a wastewater treatment plant for disposal.

Enerdyne Power Systems, Inc. (Landfill Gas Project Developer), Bill Brinker

1. Please explain any Title V common control issues in relation to the three alternatives for projects that produce energy using landfill gas and co-gen projects using landfill gas.

Answer:

Common control is very sticky, and takes a lot of time and consideration of each circumstance and sometimes general rules do not seem to carryover from state to state. I would be happy to try to answer any specific issues. What we have seen generally is: 1) that if the developer or owner / owns adjacent land that does not fall under what is referred to as the "keyway rule" and has separate land, the energy unit built there does not come under common control; 2) if the power plant can and does operate on other fuels like natural gas or waste oil, etc., they do not fall under common control; and 3) the 'treated gas' rule for offsite medium BTU pipelines and high BTU pipelines breaks the chain of liability and makes the product a "recycled" product, it keeps a plant 5 miles away, outside the common control issues.

2. What is the percentage of carbon credit tracking system in the total capital cost?

Answer:

There are many systems available in the \$40K to \$60K range. They are specific to the carbon exchange and the PDD (Product Design Document) that is written and whether or not there is an end-use because both need to be measured. A system is needed to not allow the materials being recorded to become too cumbersome and unwieldy. The time that it takes to actually get to the true tonnage number can make the capital costs pale over time unless it is done efficiently.

3. What technology and manufacturer was used for the 3 Flow Meters in slide 13 (Carbon Credits).

Answer:

They were 2 venturi meters made by Omnipak with Rosemount controllers and 1 annubar by Veres Veribar with a Yokogawa controller.

4. What is the estimated cost to evaluate a small site?

Answer:

We have seen the range in the \$2K to \$15K area, most developers do not charge for this service.

5. Have you analyzed the leachate in a laboratory? Do you analyze for VFA, volatile fatty acids? What other parameters are important for laboratory sample monitoring?

Answer:

No. We rarely analyze leachate beyond initial cursory reviews unless there are unusual constituents. We are usually looking for pH, toxics, metals, and chlorinated compounds.

6. Caterpillar Engines: What is the NO_x g/BHP-hr - from the manufacturer? Has the stack test been performed? And if so, what is the actual NO_x g/BHP-hr?

Answer:

The Cat we used was a 0.5 gram/BPH unit. With a process we employed we were able to get the unit, for a duration, down to 0.2 to 0.22 grams and with little change we are consistently under 0.4 grams.

7. What price per mmbtu or scfm are you paying for LFG?

Answer:

This varies from site to site and is very specific with price per/mmBTU + carbon + tax credit monetization when those options are available.

8. Greenville Project- Caterpillar Engines: What is the engine's methane destruction efficiency (%)?

Answer:

This is a question for your particular model and should be directed to a local CAT Dealer. We have seen greater than 96% to 98% efficiency. Remember, you are trading NO_x for destruction efficiency.