

A Protocol for Quantifying and Reporting the Performance of Anaerobic Digestion Systems for Livestock Producers

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Support

- The Association of State Energy Research and Technology Transfer Institutions (ASERTTI)
- The U.S. Environmental Agency's AgSTAR Program
- The U.S. Department of Agriculture Rural Development Program

Purpose

To provide:

1. System developers with a standard approach to quantify performance and support claims that will receive general acceptance as credible, and
2. Third parties with the same approach for independent performance evaluations.

Structure of the Protocol

- Prerequisites for performance evaluations
- Specification of required background information
- Requirements for characterizing performance with respect to:
 - Waste stabilization
 - Biogas production and utilization
 - Greenhouse gas emissions reductions
- Standards for economic analysis

Greenhouse Gas Emissions Reductions—Methane

Baseline emissions are functions of: 1) the previous method of manure management (*e.g.* daily spreading vs. anaerobic lagoons vs storage tanks and ponds *etc.*) and 2) climate.

Methodology Guidance— Methane

- Methodology for Estimating CH₄ & N₂O Emissions for Manure Management (Annex 3.10 in the Inventory of U.S. Greenhouse Gas Emissions: 1990-2004, USEPA, 2006) (<http://www.epa.gov/climatechange/emissions/usinventoryreport.html>)
- The USEPA Climate Leaders Draft Manure Offset Protocol (www.epa.gov/climateleaders/docs/ClimateLeaders_DraftManureOffsetProtocol.pdf)

Methodology Guidance—CO₂

- EPA's Power Profiler (www.epa.gov/cleanenergy/powerprofiler.htm) based on EPA's Emissions & Generation Database (www.epa.gov/cleanenergy/egrid.htm)
- Estimates greenhouse gas emissions per MWh of electricity generated by geographic location based on fuel mix.

EPA's Power Profiler

- For zip code 19947 (Georgetown, DE), an estimated 1,098 lb CO₂ are emitted per MWh of electricity generated
- For zip code 14867 (Newfield, NY), an estimated 843 lb CO₂ are emitted per MWh of electricity generated

Next Steps

- Selecting a gatekeeper
- Establishing a review process
- Establishing and maintaining a distribution process (probably a website)
- Considering a certification program

The Protocol is available at:

- www.aserti.org/partenerships/digester/default.htm
- www.epa.gov/agstar/resources.html

Thank-you

Questions?