

Issues Summary from Methane Recovery Workshop (February 2009)

More than 120 people attended the *Methane Recovery from Livestock Operations Workshop: The Economic and Environmental Benefits of Anaerobic Digestion* held on February 19, 2009, in York, Nebraska. Co-sponsoring the workshop were the Nebraska Department of Environmental Quality (NDEQ), Nebraska Public Power District (NPPD), USDA Rural Development, and AgSTAR, in support of the Nebraska Methane Working Group. As part of the workshop, a facilitated discussion was held at the end of the event to address attendee concerns. This document is a summary of this discussion.

Does anaerobic digester technology work?

The technology associated with anaerobic digestion is well proven. While there have been failures over the years, typically technology has not been at the core of those failures. Although the number of anaerobic digesters associated with concentrated animal feeding operations (CAFOs) is relatively small, those owners and operators that are committed to the systems' operation have proven the technology is viable. Danny Kluthe's Olean Energy operation at his 8,000 head hog facility in Northeast Nebraska is entering its fourth year of almost constant operation. More profiles of operating projects can be found on AgSTAR's Web site at www.epa.gov/agstar/operational.html.

Is it difficult to connect a generator to the grid?

Typically, anaerobic digesters at animal confinements are relatively small and can provide fuel for small electrical generators, which can be connected directly to the local distribution system. Danny Kluthe's Olean Energy 80 kilowatt generation system is a good example. Transmitting electricity from the point of generation to a distant point of consumption on the local utility's distribution lines must be addressed by the utility. A key to any distributed energy facility is contacting the local utility early in the process and developing a relationship that allows effective communication so that any barriers can be overcome.

Do the high capital costs and the long pay back periods prevent these operations from being economically feasible?

Capital expenditures coupled with the low cost of electricity in Nebraska, do present significant challenges. Those interested in initiating operations are encouraged to conduct comprehensive feasibility analyses. The low rates of electricity in Nebraska contribute to an extended pay back period, but increasing electricity prices and revenue from carbon credits and other byproducts can provide a favorable impact to the economics of a project. Alternatives to the production of electricity should also be considered. For example, cleaning the methane and substituting it for other gaseous fuels is a technically viable option.

There are indications that over the next few years, many more states, if not the nation, will adopt Renewable Portfolio Standards (RPS) which will further increase the need for viable distributed energy systems that generate "green" electricity. In addition, carbon regulations appear likely in the near future which will create a market value for the conversion of methane to electricity through generating carbon offsets that can be sold. There is already a voluntary market for entities wishing to reduce their carbon footprint.

Where can one go to get technical or financial assistance?

The Nebraska Methane Working group has compiled a list of possible locations to go for technical and financial assistance (attached at the back of this document). The list is not considered final and changes frequently. Keeping the list current is especially difficult in that provisions of the Farm Bill and Energy Act are being implemented and a “steady state” is not likely to occur anytime soon.

In terms of technical assistance, the AgSTAR Program (www.epa.gov/agstar) has many resources and can direct interested folks to state, federal, and other experts that can assist. Requesting information from vendors on successful projects is strongly recommended.

A wide variety of materials can be introduced into anaerobic digesters, but don't state regulations often prevent commingling?

There is a great deal of variety in state regulatory programs. In Nebraska, if only livestock waste is the digester feedstock, the operation is covered by those regulations pertaining to AFOs and CAFOs. However, if other types of waste, lawn clippings, food processing waste, packing plant waste, restaurant waste, etc. are to be added, the operation would be covered by Title 119 which pertains to the broader sectors covered by NPDES regulations. The key is knowing what type of waste will be fed to the digester during your permitting stage.

If a facility is permitted with the understanding that only livestock waste will be introduced, and the owners or operators discover an opportunity to increase gas production or an economic benefit from accepting other waste, they would need a permit modification approved before the other waste is accepted.

How difficult is the environmental permitting process?

Environmental permitting is a significant aspect of a project and will require a well managed effort. Most state regulatory programs have some type of permit assistance programs established. In Nebraska, there is a One-Stop Permit Assistance Program in existence. The program will work with applicants and those within the regulatory agency to make permitting an efficient process. Any applicant is urged to contact either the One-Stop Permit Assistance Program (Phone: (402) 471-8697) or the Air or Water Quality Division with any permitting questions. NDEQ urges prospective sources to “contact us early, and contact us often.”

The activities of the Methane Working Group are coordinated by the Nebraska Department of Environmental Quality and Nebraska Public Power District-Environmental Partnership Team. Members of the Working Group include USDA-Rural Development, EPA AgSTAR, Nebraska Department of Economic Development, Nebraska Department of Natural Resources, Nebraska Pork Producers, Omaha Public Power District, Nebraska Energy Office, University of Nebraska, U.S. EPA Region VII, Nebraska Association of County Officials, Nebraska Department of Agriculture, USDA-NRCS, Nebraska Association of Resource Districts, Nebraska Farm Bureau, Farmer's Union, Senator Ben Nelson's Office, and Nebraska Cattlemen. For more information, contact Peggy Berlowitz, NDEQ, (402) 471-6974.

Financial and Technical Assistance for Anaerobic Digestion Associated with Concentrated Animal Feeding Operations

This document was prepared by various members of the “Methane Workgroup” a *very informal* group of organizations and individuals interested in capitalizing on the benefits of the capture and use of methane generated by Nebraska’s livestock operations. This document is a “work in progress” and should only be considered a starting point for examining where assistance for anaerobic digesters may be obtained.

For information on the activities of the Working Group contact Joe Francis, Nebraska Department of Environmental Quality (402-471-6087) or Frank Thompson, Nebraska Public Power District (402-563-5696).

Financial Assistance

Nebraska Environmental Trust

Grants may be available for anaerobic digestion systems – all grants are awarded on a competitive basis.

For more information contact: Lisa Beethe, Grants Administrator – (402) 471-5490

USDA – Rural Development—Rural Energy for America Program (REAP) Section 9007

Funding available to farmers, ranchers and rural small businesses to install renewable energy systems (such as methane digesters) and make energy efficiency improvements. Grant funding of 25% of total project costs and guaranteed loan funding up to 75% of total project costs available. Combination grant/loan applications may also be submitted for up to 75% of total project costs.

For more information contact: Deb Yocum, Renewable Energy Coordinator, USDA Rural Development, (402) 437-5554 or debra.yocum@ne.usda.gov

USDA – Rural Development – Value-Added Producer Grants (VAPG)

Grants may be used for planning activities and for working capital for marketing value-added agricultural products and for farm-based renewable energy. Eligible applicants are independent producers, farmer and rancher cooperatives, agricultural producer groups, and majority-controlled producer-based business ventures.

Applications accepted on an annual basis. Contact Rural Development NOW for an eligibility determination and to begin working on an application. Application templates available at <http://www.fpc.unl.edu/business/grant.shtml>

For more information contact: Deb Yocum, Renewable Energy Coordinator, USDA Rural Development, (402) 437-5554 or debra.yocum@ne.usda.gov or Joan Scheel, USDA Rural Development, (402) 437-5594

<http://www.rurdev.usda.gov/rbs/coops/vadg.htm>

Nebraska Energy Office

Under the agency's Dollar and Energy Savings Loan program, methane digestive projects may qualify for a low interest loan of up to \$150,000 if the program's eligibility requirements are met.

For more information contact: Bruce Hauschild, Technical Advisor, (402) 471-3351
bruce.hauschild@nebraska.gov.

USDA NRCS – Conservation Innovation Grants (CIG)

Conservation Innovation Grants (CIG) is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging Federal investment in environmental enhancement and protection, in conjunction with agricultural production. Under CIG, Environmental Quality Incentives Program funds are used to award competitive grants to non-Federal governmental or non-governmental organizations, Tribes, or individuals. CIG enables NRCS to work with other public and private entities to accelerate technology transfer and adoption of promising technologies and approaches to address some of the Nation's most pressing natural resource concerns. CIG will benefit agricultural producers by providing more options for environmental enhancement and compliance with Federal, State, and local regulations. NRCS administers CIG.

<http://www.nrcs.usda.gov/programs/cig/>

For more information on CIG contact Margaret Styles (402) 437-4045

Sustainable Agriculture Research and Education (SARE) Funding Opportunities

SARE is a competitive grants program providing grants to researchers, agricultural educators, farmers and ranchers, and students in the United States.

Research and Education Grants: Ranging from \$30,000 to \$150,000 or more, these grants fund projects that usually involve scientists, producers, and others in an interdisciplinary approach.
Professional Development Grants: To spread the knowledge about sustainable concepts and practices, these projects educate Cooperative Extension Service staff and other ag professionals.
Producer Grants: Producers apply for grants that typically run between \$1,000 and \$15,000 to conduct research, marketing and demonstration projects and share the results with other farmers and ranchers.
On Farm Research/Partnership: Supports on-farm research by Extension, NRCS, and/or nonprofit organizations. Northeast, Southern and Western regions.

Sustainable Community Innovation: Forges connections between sustainable agriculture and rural community development. Northeast and Southern regions.

<http://sare.org/grants/index.htm>

Farm Pilot Project Coordination, Inc.

Farm Pilot Project Coordination, Inc. (FPPC), a non-profit organization, was designated by Congress (Public Law 107-76) to assist in implementing innovative treatment technologies to address the growing waste issues associated with animal feeding operations (AFOs). FPPC's

objective is to foster the conservation, development and wise use of land, water, and related resources, while providing AFOs with opportunities for profitable operation.

Significant progress has been made with the FPPC Program. To date, thirty-one (31) Pilot Projects have been selected covering innovative technologies for poultry, dairy, swine and composting operations in seventeen (17) states including: North Carolina, Florida, Alabama, Texas, Colorado, Utah, Iowa, Illinois, Wisconsin, Virginia, Pennsylvania, New York, California, Ohio, Michigan, Kansas and Vermont.

These Pilot Projects are in various stages of negotiation, development, implementation and operation while six (6) project demonstrations are nearing completion.

FPPC's specific mandate is to oversee the implementation and administration of a Pilot Project Program to demonstrate economically viable innovative treatment technology systems that reduce the nutrient

content of the waste stream from AFOs by 75 percent or greater. Funding for approved Pilot Projects comes from monies appropriated by Congress and overseen by the Natural Resource Conservation Service (NRCS), a division of the United States Department of Agriculture.

For more information contact: Lauren Seigel, Farm Pilot Project Coordination, Inc., (813) 222-8811, lseigel@fppcinc.org

Technical Assistance

AgSTAR Program

For information contact: Chris Voell, US EPA – AgStar Program Manager, (202) 343-9406, voell.christopher@epa.gov

Carbon Credits

This is an emerging area that could have significant impact on anaerobic digester operations. The following web sites are included as possible places to start to look for relevant information.

AgraGate – <http://www.agragate.com/about/default.aspx>

Chicago Climate Exchange – <http://www.chicagoclimatex.com>

Environmental Credit Corp. – <http://www.envcc.com>

National Farmers Union - Carbon Credit Program – <http://nfu.org/issues/environment/carbon-credits>

Farmers Union's Carbon Credit Program allows ag producers and landowners to earn income by storing carbon in their soil through no-till crop production, conversion of cropland to grass, sustainable management of native rangelands and tree plantings on previously non-forested or degraded land. In addition, the capture of methane from anaerobic manure digester systems can also earn carbon credits.