



Considering an Anaerobic Digester? Steps to Take and Contacts to Make

G-86

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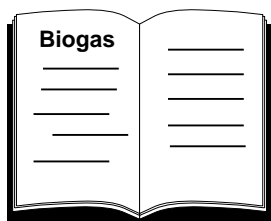
Anaerobic digestion of animal manure results in biogas and a liquefied, low-odor effluent (processed manure). In certain situations, it can be a cost effective, environment- and neighborhood-friendly treatment for manure and liquid waste. However, an anaerobic digestion system requires a rather large financial investment as well as a large management responsibility. Anaerobic digesters are custom designed and built for your farm needs. They should be designed by an experienced designer who has already worked through the common problems associated with anaerobic digestion. Currently, biogas production is best suited for farms that handle large amounts of slurry manure with little or no bedding. A common rule of thumb for economical operation of an anaerobic digester is manure from a minimum of 200 dairy cows or an equivalent amount of swine or poultry manure.

b. *On-Farm Biogas production—NRAES-20 and Anaerobic Digesters for Dairy Farms—*Extension Bulletin 458 are available from the Northeast Regional Agricultural Engineering Service, 154 Riley-Robb Hall, Cornell University, Ithaca, NY 14853, phone (607) 255-7654 or email nraes@cornell.edu.

c. *Methane from Animal Manures: A Current Opportunities Casebook* can be obtained by writing or calling:

Phil Lusk, Consultant
 National Renewable Energy Laboratory
 409 12th Street, SW, Suite 710
 Washington, DC 20024-2125
 phone (202) 651-7538
 fax (202) 651-7501

1. Do your homework—read background information on biogas



a. *Anaerobic Digestion: Biogas Production and Odor Reduction From Manure—G77*, fact sheet available from Penn State Agricultural and Biological Engineering Extension Office, 246 Ag Engineering Building, University Park, PA 16802, phone (814) 865-7685.

2. Seek preliminary technical assistance

Several organizations can help determine if anaerobic digestion is suitable and economically feasible for your farm.

AgSTAR Program

AgSTAR is a federally-funded program to promote the economical use of anaerobic digestion systems to reduce farm methane emissions. AgSTAR provides digestion system vendor information, helps farmers identify loans and financing for biogas systems, and can analyze the economics of a farm biogas system. They can be reached by calling 1-800-95AgSTAR.

Natural Resource Conservation Service (NRCS)

Contact NRCS to perform an initial digestion system analysis for your operation. They should be able to estimate the size of a digester and engine generator as well as the expected costs and benefits of an anaerobic digestion system on your farm.

3. Talk to digester owners



Remember, however, that digester owners are busy people with businesses to run. Please be considerate of their time and be prepared with questions for your conversation.

Mason Dixon Farms
Mr. Dick Waybright
1800 Mason Dixon Road
Gettysburg, PA 17325
(717) 334-4056

Rocky Knoll Farms
Mr. Harlan Keener
1266 Gypsy Hill Road
Lancaster, PA 17602
(717) 464-2669

Oregon Dairy Farms
Mr. George Hurst
2870 Oregon Pike
Lititz, PA 17543
(717) 656-7305

Mr. Mike Brendle
Brendle's Egg Farm
RD 2
Somerset, PA
(814) 443-3141
(814) 445-7242

4. Find out what safety equipment your electric company requires

Call to find out:

- ◆ Their *Safety and Interconnection Requirements for Qualifying Facilities* (the qualifying facility is basically your engine generator set) and their *Policy for Cogeneration and Small Power Production*.
- ◆ What price they will pay per kilowatt hour of electricity (their "buyback" rate).
- ◆ The cost for interconnection. This will depend upon your geographic location, distance from a transmission line, and the size of your generator. You should know the generator size before you call the utility.

Contact information for utilities and rural cooperatives

Be aware that the names may change—in most cases, you can call the main number and ask to speak with the Cogeneration Contact or the Engineering Department.

Power Company	Contact Name/phone	Address
Allegheny Power	Jim Murphy (412) 830-5925	800 Cabin Hill Dr. Greensburg, PA 15601
Duquesne Light Company	send letter of request to: R. A. Irwin	Systems Operations Dept., N2—SO 2839 New Beaver Avenue Pittsburgh, PA 15233
Metropolitan Edison Company	Hal Webber (610) 921-6755 Anthony J. Nigrelli (610) 921-6944	2800 Pottsville Pike Reading, PA 19640
Pennsylvania Electric Co. (Pennelec)	Dave Rezac (814) 533-8756	1001 Broad St. Johnstown, PA 15907
Pennsylvania Power Co.	James Haas (412) 656-5377	1 East Washington St. New Castle, PA 16103
Pennsylvania Power & Light Co.	Marketing Representative 1-800-DIAL-PPL Non-Utility Generation Dept. (610)774-4368 Charles Solomon (610) 774-5151	Customer Contact Center P.O. Box 3500 Allentown, PA 18106
PECO Energy Co.	Call the account manager listed on your electric bill or Vince Catania (215) 841-5431 or 1-800-494-4000	Correspondence Dept. 830 S. Schuylkill Avenue Philadelphia, PA 19146
UGI Utilities, Inc.	Ron Kammer (717) 283-4212	247 Wyoming Avenue Kingston, PA 18704
Wellsboro Electric Co.	(717) 724-3516	P.O. Box 138 33 Austin St. Wellsboro, PA 16901

If you are experiencing difficulty in dealing with your local utility, call John Miller at the Pennsylvania Public Utility Commission at (717) 783-1546.

If your area is serviced by a rural electric cooperative, call your local cooperative or, for a listing of all the cooperatives, contact the Pennsylvania Rural Electric Association, 212 Locust Street, P.O. Box 1266, Harrisburg, PA 17108, phone (717) 233-5704.

5. Investigate potential financial incentives such as tax credits and loans

Currently, there are no tax breaks for biogas applications.

Contact the IRS tax credit information service (phone 1-800-829-8815) or the Pennsylvania state biomass contact, Mike Palko, at (717)

787-2105, for up to date tax credit information.

Agricultural loan information can be obtained from Carl Mueller, Assistant Director of the Pennsylvania Department of Agriculture, Bureau of Economic Development, 2301 North Cameron Street, Harrisburg, PA 17110-9408, phone (717) 783-8460.



6. Talk to digester system designers and installers

Engineers will probably charge a fee for preliminary design work prior to construction. Therefore, you should be serious about installing a digester before contacting a designer. It is recommended that you choose a local designer who will oversee system construction and start-up and make changes if necessary. Inclusion in this list does not imply endorsement by Penn State Cooperative Extension.

Digester System Designers and Installers

Agway Farm Research Center
Dr. Stan Weeks
6978 State Route 80
Tully, NY 13159
(315) 683-5700

A.O. Smith Harvestore Products, Inc.
Dr. Rich Vetter
345 Harvestore Drive
DeKalb, IL 60115
(815) 756-1551

Enviroenergy Systems, Inc.
Richard Reeser
VP Sales and Marketing
12030 Sunrise Valley Drive
Reston, VA 22091
(703) 391-6025

Environmental Treatment
Systems
Chuck Ross
430 10th Street, Suite N-107
Atlanta, GA
(404) 875-8591

Resource Conservation
Management, Inc.
Mark Moser
166 Capricorn Ave
Oakland, CA 94611
(510) 658-4466

For covered lagoon systems:
Sharp Energy, Inc.
Roy Sharp
20174 Road 140
Tulare, CA 93274
(209) 688-2051

AgriWaste Technology, Inc.
Dr. L.M. Safley, Jr. P.E.
3504 Sloan Court
Raleigh, NC 27606
(919) 851-8528

Tom Abeles
Sagacity, Inc.
3704 11th Avenue South
Minneapolis, MN 55407
(612) 823-3154

For very larger or centralized
digestion systems only:
Richard P. Mattocks
1115 Pacific Avenue
P.O. Box 433
Tillamook OR 97141
(503) 842-2535

Equipment Suppliers

Perennial Energy Corporation
Ted Landers
Route 1, Box 645
West Plains, MO 65775
(417) 256-2002

Martin Machinery
Engine generator sets with full utility hook-up
equipment
HCR 61
Box 168
Latham, MO 65050
phone (816) 458-6558
FAX (816) 458-6205

Caterpillar Engine
Heavy duty engines for biogas applications
Cleveland Brothers Engineering Division
4491 Chambers Hill Road
P.O. Box 2535
Harrisburg, PA 17105-2535
(717) 564-3763

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Cooperative Extension is implied.

This fact sheet will be updated periodically. If you notice an omission or outdated information, please inform us using the following form.

Agricultural and Biological Engineering Extension
246 Agricultural Engineering Extension
University Park, PA 16802
agbioeng@psu.edu

I request that the following name/company be added, deleted, or changed on fact sheet G-86,
Considering an Anaerobic Digester? Steps to Take and Contacts to Make.

add delete change

Name _____

Address _____

Phone _____

Fax _____

This company provides the following service:

PSU/96

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