



Resources for Energy Educators

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**National Center for Appropriate
Technology**

Goldsboro, NC

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National Center
for Appropriate
Technology



ATTRA

National Sustainable Agriculture Information Service

www.attra.ncat.org



NCAT is pleased to work with our partners from CEFS and Southern SARE to develop ENTAP; a comprehensive set of Resources for Energy Educators. The **National Center for Appropriate Technology (www.ncat.org)**, is a nonprofit organization with programs in sustainable agriculture, renewable energy, and sustainable communities.

For a large collection of additional articles, links, tools, and other resources, please visit NCAT's Farm Energy website: www.attra.ncat.org/energy.



The Energy Training for Agricultural Professionals (ENTAP) program is managed in cooperation with the Center for Environmental Farming Systems (CEFS). CEFS is a national model for partnership, innovation, and interdisciplinary cooperation.

Please visit CEFS website at www.cefs.ncsu.edu.



Major funding for this program was provided by the USDA Southern Region Sustainable Agriculture Research and Education (SARE) grant, through a cooperative partnership with NCAT and CEFS titled “Energy Training for Agriculture Professionals.”

For more information about Southern SARE, please visit <http://www.southernsare.uga.edu/>.



If you have specific questions about energy, you are welcome to use the resources of NCAT's ATTRA Project: the National Sustainable Agriculture Information Service. We offer no-cost technical assistance (in Spanish or English) and customized research.

Please visit NCAT's ATTRA website, www.attra.ncat.org, or call 1-800-346-9140.





ENTAP Energy Resources


- Websites
 - ENTAP
 - ATTRA
 - Directory of Energy Alternatives
- Other Resources for Energy Educators
- What to expect from the ENTAP team
- What do we expect from you




Website – for educators

Two core websites on biopower, biofuels, wind, solar, and efficiency resources...


Energy Training for Agriculture Professionals



Home
Agenda
Participants
Biopower
Biofuels
Wind
Solar
Energy Efficient Farming Systems



Directory of Energy Alternatives



Farm Energy Alternatives

Resources for Biopower Educators


[Reports](#) | [Fact Sheets/Case Studies](#) | [Presentations](#)
[Videos/Webinars](#) | [Image Library](#) | [Glossary](#)

Biopower, or biomass power, is the use of biomass to generate electricity. Biopower technologies include [direct-firing](#), [co-firing](#), [gasification](#), [pyrolysis](#), and [anaerobic digestion](#). There are hundreds of ways to turn biological materials into energy, although at the present time only a few of these represent legitimate short-term opportunities for the average farm or rural landowner.

Submitted Files ([Links open in new window.](#))

Fact Sheets/Case Studies

Submitted Files ([Links open in new window.](#))

	Manure Digester to Generate On-Farm Heat	
Added By:	Leif Kindberg	2009-09-23
This case study looks at one example of a on-farm digester and how it is		



National Sustainable Agriculture Information Service

800-346-9140 (English)
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Home > Farm Energy Alternatives

Farm Energy Alternatives

The publications, success stories, and links within these pages explain how to make farm buildings more energy efficient, use the sun's energy to heat greenhouses and pump water, choose and put up wind turbines, make and use biofuels, and much more.

View a comprehensive list of all [ATTRA Energy Publications](#). Or explore the topic areas below.

RENEWABLE ENERGY	ENERGY EFFICIENCY
» Biodiesel	» Conserving Fuel and Electricity
» Ethanol	» Farm Energy Calculators
» Wind Energy	» Reducing Nitrogen Fertilizer and Indirect Energy Usage
» Solar Energy	» Reducing Food Miles
» Anaerobic Digesters and Other Biomass Options	» Dairy Energy Efficiency
» Energy Co-ops and Local Ownership	» Irrigation Efficiency
» Funding Opportunities	» Carbon Opportunities

Publications & Resources

[What is Sustainable Agriculture?](#)

[Horticultural Crops](#)

[Field Crops](#)

[Soils & Compost](#)

[Energy Alternatives](#)

[Water Management](#)

[Pest Management](#)

[Organic Farming](#)

[Livestock](#)

[Marketing, Business & Risk Management](#)

[Education](#)

[Other Resources](#)

[Master Publication List](#)



Contribute to NCAT

BUSINESS DIRECTORY

Find Equipment, Funding, and Technical Assistance in Your State

NEW PUBLICATIONS

Comparing Energy Use in Conventional and Organic Cropping Systems

Agriculture, Climate Change and Carbon Sequestration

Draft Animal Power for Farming

Food Miles: Background and Marketing

SAVE ENERGY!

New SARE Publication Helps Farmers Reduce Energy Costs



NEWS, FUNDING & EVENTS



ENTAP – for educators

Covering
biopower,
biofuels,
wind, solar
and energy
efficient
farming
systems...

- Depository
- Source
- Networking



Energy Training for Agriculture Professionals



[Home](#) | [Agenda](#) | [Participants](#) | [Biopower](#) | [Biofuels](#) | [Wind](#) | [Solar](#) | [Energy Efficient Farming Systems](#)



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- The [Midwest Rural Energy Council](#) provides a comprehensive resource list on anaerobic digester planning.

Reports

Submitted Files ([Links open in new window.](#))

Fact Sheets/Case Studies

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Notice to energy educators

- Use of any materials requires permission from the author without exception. Our intention is to make resources available but you are responsible for requesting permission to use materials where not expressly granted.

Please respect copyright laws and the intellectual property of others.



ATTRA – national energy resource

NCAT provides free energy assistance to extension through ATTRA...

- Free publications on farm energy alternatives
- Customized technical assistance and research on your energy questions
- ‘Widgets’ for your website (a clearinghouse for energy education)

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» Funding Opportunities	» Carbon Opportunities

Links

[A Farmer's Handbook for Energy Self-Reliance](#)
The following guide created by the Institute for Energy and the Environment at Vermont Law School is a tool to help farmers increase energy self-reliance and profitability.

[A Farm Energy Field Guide from Maine Rural Partners](#)
A diverse collection of publications, templates, sample audit reports, and other training materials. Includes many energy efficiency and renewable energy topics: lighting, dairies, buildings, cooling, fuel usage, greenhouses, irrigation, motors, storage, ventilation, water heating, biofuels, biomass, solar, wind, and funding opportunities.

BUSINESS DIRECTORY
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Draft Animal Power for Farming
Food Miles: Background and Marketing

SAVE ENERGY!
New SARE Publication Helps Farmers Reduce Energy Costs

NEWS, FUNDING & EVENTS

Contribute to NCAT



What kind of questions?

Sample ATTRA Questions...

- “Are the economics in place to produce enough biodiesel to run my farming operation which consumes about 4,000 gals. of diesel fuel/yr?”
- “I used 229,500 kWh (mostly in lighting and ventilation) last year and it cost me \$20,655 – how much will it cost me to meet 1/3 of this with grid-tied PV here in Mississippi?”
- “How many acres of corn at 148 bu/acre will be required to fully supply a 20,000 gallon/year ethanol plant?”





What happens when you call ATTRA?

1. Call us:

1-800-346-9140 (English) 7 a.m.- 7 p.m. Central

1-800-411-3222 (Spanish) 8 a.m. - 5 p.m. Pacific or
you can write us online at <http://attra.ncat.org/ask.php>

2. An ATTRA specialist is assigned your case and may ask you questions right then or call you back to learn the details of your energy project.

3. An energy specialist will send you a technical case letter within 2-3 weeks or respond on the spot in some cases.

Did you know? ATTRA does not sell any energy product; specialists provide impartial technical assistance from experience and proven





ATTRA energy assistance.



Did you know? ATTRA specialists have technical training and experience in most types of renewable energy and energy efficiency projects.



Directory – for educators

- The [Directory of Energy Alternatives](#) serves as your starting point for professional energy consultants.

The screenshot shows the ATTRA website home page. The header includes the ATTRA logo and the text "National Sustainable Agriculture Information Service". Below the header is a search bar and navigation links: Home, Site Map, Who We Are, Contact Us, Calendar, Español, Text Only. A sidebar on the left lists various resources such as "Publications & Resources", "What is Sustainable Agriculture?", "Horticultural Crops", "Field Crops", "Soils & Compost", "Energy Alternatives", "Water Management", "Pest Management", "Organic Farming", "Livestock", "Marketing, Business & Risk Management", "Education", and "Other Resources". The main content area features a "Directory of Energy Alternatives" section with a map of the United States and a list of state abbreviations (VT, NH, MA, RI, CT, NJ, DE, DC, MD, WV, AK, HI) for searching by state. Below the map is a section titled "Add your listing to our directory" with a small image of a person and text explaining the submission process. At the bottom, there is a disclaimer and a logo for "Contribute to NCAT".

The screenshot shows the ATTRA website search results page. The header includes the ATTRA logo and the text "National Sustainable Agriculture Information Service". Below the header is a search bar and navigation links: Home, Site Map, Who We Are, Contact Us, Calendar, Español, Text Only. The main content area features a "Search Results" section with a map of the United States showing various energy alternatives locations. Below the map is a section titled "Biofuels" with a list of "All Things Biodiesel" and a small image of a sunflower. At the bottom, there is a section titled "Contribute to NCAT" with a small image of a tree.



Other useful energy websites

Click on the following links for more resources...

- [Sun Grant BioWeb](#)
- [Farm Energy Options: Alternative Farming Systems Information Center](#)
- [eXtension](#)
- [National Agriculture Law Center](#)
- [Environmental Law and Policy Center](#)
- [Database of State Incentives for Renewables & Efficiency](#)



What to Expect from Your ENTAP Team

- Handouts on energy topics
 - Fueling the Farm CD
- A flash drive with energy training resources
 - State-specific resources
 - Presentations from this training
 - Larger selection of technical resources for learning
- Additional webinars on relevant energy topics
- Ongoing support on energy questions through the ATTRA project



Our expectations of you

- Submit yourself to the [Directory of Energy Alternatives](#)
- Be part of the energy network - share your reports, presentations, images and other energy resources
- Let Mike or Steve know when you put on your first training event
- Participate in post-training teleconferences – November and January
- Give us feedback!





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