Plans for Sustainable Farm Energy Resources on eXtension
Mission:
To provide timely and practical energy information for agricultural producers and service providers that enhances profitability, conserves natural resources, and promotes vibrant local communities.
eXtension Farm Energy Goals

• Focused on the energy needs of farmers.
• Research based and peer reviewed.
• Collaboration among energy specialists.
• Link users to local and national experts and resources.
Community of Practice Content Categories

• **Farm Energy Miscellaneous**
  – **About**, Funding, Trends and Emerging Technologies, **Legal**, Net Metering, Carbon Trading
  – **Sustainability Dimensions***

• **Farm Energy Conservation and Efficiency***
  – Building, Equipment, Farm Systems (Inputs + Practices), Food Systems, Greenhouse, Irrigation

• **Feedstocks for Biofuel Production**
  – Algae, Animal Waste, Corn, Crop Residues, Grasses and Small Grains, Oilseed Crops, Starch Crops, Sugar Crops, Wood and Woody Biomass

• **Processing Feedstocks into Biofuel***
  – Pre-Processing, Thermochemical, Biochemical, Chemical, Combustion, Thermodynamic

• **Biogas Energy** and **Anaerobic Digestion***

• **Biomass Energy**

• **Ethanol**

• **Biodiesel***

• **Animal Power**

• **On-Farm Geothermal Energy**

• **On-Farm Hydropower**

• **On-Farm Solar Energy**

• **On-Farm Wind Energy***
Sustainable Energy

Profitability
short and long
term

Stewardship
of natural
resources

Community
Support for and
connection to
agriculture
Legal, Regulation, Economics
Feedstock Processing Utilization

Anaerobic Digestion

BIOGAS

Complex Substrates & CH₄ + CO₂

Digester Cover

Digestor Inlet

Manure Inlet

Bubbles and Bouyant Mixing

Active Solids

Effluent Outlet

Biogas Outlet

Biogas Meter

To: Flare or Co-Generation

To: Secondary Lagoon or Fertilization

Digester are designed by optimizing the retention time (typically between 22-28 days) to maximize CH₄ capture.
Active Content Teams
Conservation and Efficiency
Feedstocks / Energy Crops
Utilization
Biodiesel
Anaerobic Digestion
Combustion
What are the next Farm Energy CoP priorities?
On-Farm Wind Power
Master Energy Educator Training

Curriculum Materials
On-farm solar power
Ethanol
On-Farm Hydropower
Farm Energy

Farm Energy is an information source for farmers and agricultural educators interested in all aspects of farm energy—from conservation and efficiency to renewable energy production.

More...

Here are some of our featured articles and activities...

About eXtension

eXtension is an educational partnership of more than 70 universities to help you improve your life every day with access to objective, research-based...

More...

In This Resource Area

Introduction to Farm Energy
Anaerobic Digestion
Biodiesel
Biomass Combustion
Efficiency and Conservation
Solar Energy
Wind Power

Answers from our Experts

June 27, 2009
How can I capture the value of energy in manure?

June 10, 2009
What is the energy potential from manure produced by livestock?

More ...

In The News...

June 25, 2009
Bio-acoustic Recorders Could Answer Question: Do Wind Farms Pose Risks to Migratory Birds?

June 19, 2009
University of Georgia Engineer Answers Questions on Biofuel Research

June 16, 2009
Renewable Energy and Efficiency Improvement Loans and Grants Available from USDA

More ...

Resource Area Feeds

• Track all new content
Why Farm Energy?

In the last few years, interest in alternative energy and energy conservation has skyrocketed due to unstable fuel prices and desire to move toward renewable and sustainable energy sources. At the same time, technologies to conserve energy as well as convert feedstocks to biodiesel and ethanol have improved significantly.

Across America farms are generating their own energy using wind turbines, solar panels, or anaerobic digesters, with some selling the excess electricity back to the grid. Other producers are experimenting with on-farm biodiesel and ethanol production, or researching new energy-related crops and business opportunities in anticipation of developing cellulosic biofuel technology and markets.

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Farm energy can generally be divided into:

1. Energy Conservation and Efficiency
2. Renewable Energy

Energy Conservation and Efficiency

Conserving energy and improving energy efficiency is not only good for the environment—it reduces dependence on fossil fuels and curbs greenhouse gas emissions—but also for the pocketbook, saving farmers money. Fifteen percent of agricultural production costs are energy related, according to the U.S. Department of Agriculture (USDA)—and as energy prices rise, these costs claim an ever-bigger portion of farm budgets. The quickest, cheapest and cleanest way to lower these costs, as well as cut non-renewable energy consumption, is by improving energy efficiency.
Many Hands Make Light Work
Ways to be Involved

The *Wanted* List

*(co)Leaders & Team participants*

• Collaborate with other specialists!

**Individuals**

• Images

• **Peer Review**

• Links to Resources
• FAQs
• Case Studies
• Research Summaries
• Decision Tools
We need you too!

https://people.eXtension.org/account/signup