



CONNECTICUT
FARM ENERGY PROGRAM

Connecticut Farm Energy Program

2014 FARM ENERGY SURVEY

ctfarmenergy.org



CONNECTICUT FARM ENERGY SURVEY

From fall 2013 through spring 2014, the Connecticut Farm Energy Program (CFEP) conducted a survey of Connecticut farm owners to create baseline data about current energy use on the state's farms and identify future farm energy needs.

CFEP administered the survey online through SurveyMonkey, with follow-up phone calls and e-mails as needed. A total of 141 farm owners participated in the project. Due to technical data requested in the survey, only 105 farms fully completed the survey; the other 36 were incomplete. Attempts were made to provide farms with assistance to complete the survey questions.

Ultimately, the survey helped to identify farm owners' interest in becoming

more energy efficient and in using renewable energy sources by:

- » determining the existing energy use and costs in relation to overall farm expenses,
- » identifying how many Connecticut farms have already implemented energy related cost saving measures and the kinds of measures selected, and
- » identifying any challenges that may prevent these cost saving measures from being implemented.

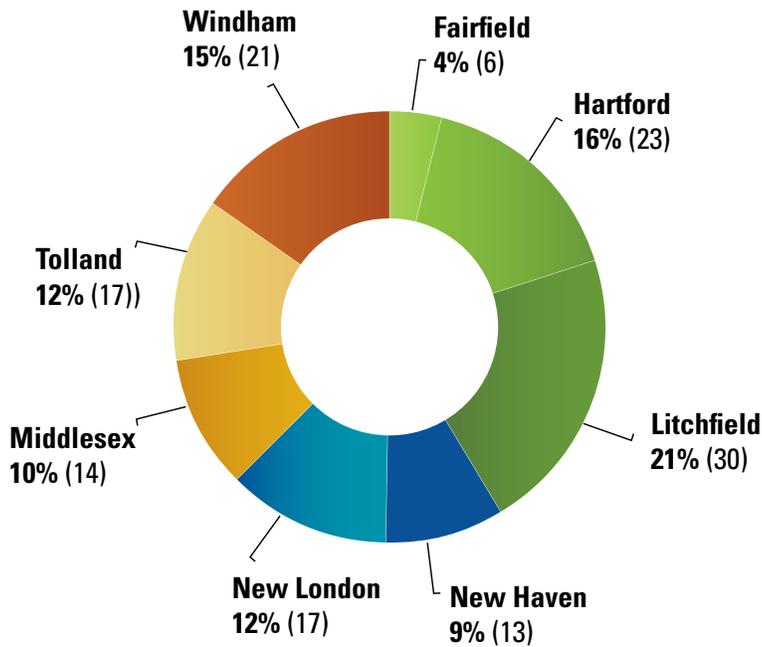
This project was funded in part by matching funds from the Connecticut Department of Agriculture through the Community Investment Act, 05-228.

Connecticut Farm Energy Program

The Connecticut Farm Energy Program (CFEP) is supported in collaboration with Eastern Connecticut Resource Conservation & Development Area, Inc. (RC&D) and USDA–Rural Development (RD). The Connecticut Farm Energy Program serves as a clearinghouse of information and technical assistance on energy as it relates to agricultural producers and agricultural-based small business in Connecticut. CFEP provides REAP grant writing assistance to eligible agricultural producers and agricultural based small businesses located in Connecticut. To date, the Connecticut Farm Energy Program has secured \$643,971 in grants and loans for Connecticut farms and rural small businesses through the REAP Program.

In what county is your farm located?

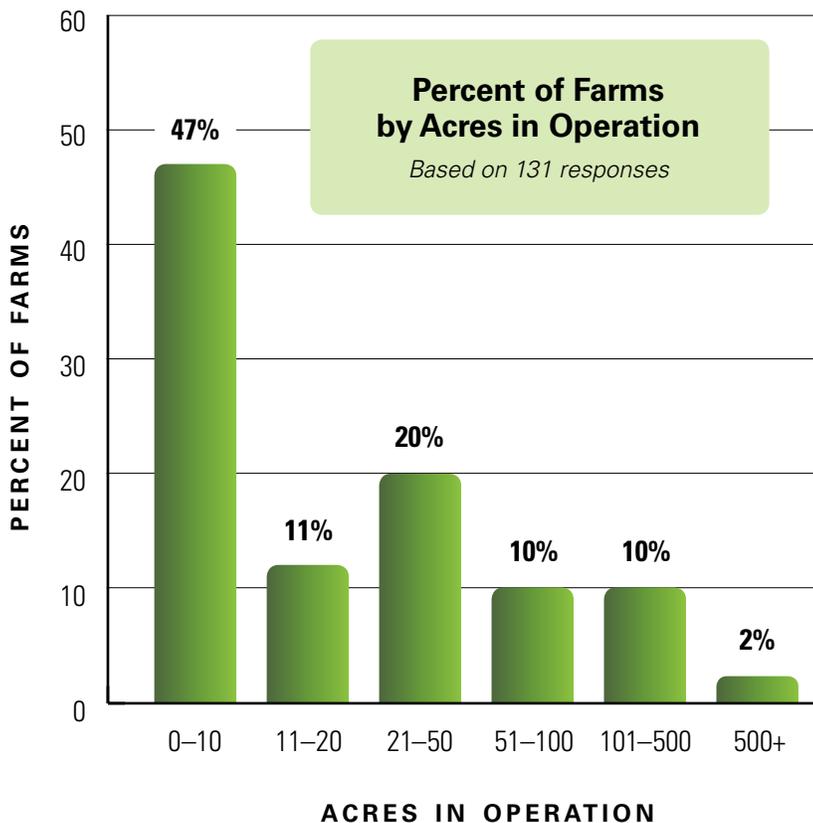
Based on 141 responses



What does your farm produce?

Based on 141 responses

PRODUCT	% FARMS
Vegetables	39%
Fruit	19%
Hay / Corn for Silage	19%
Nursery Plants & Flowers	17%
Sheep, Goat, Pigs	14%
Horses	11%
Beef Cattle	11%
Eggs	9%
Dairy	8%
Maple Syrup	6%
Christmas Trees	5%
Poultry	7%
Aquatic Plants & Fish	3%
Honey Bee Products	3%
Wood / Timber	2%
Wine Grapes	3%
Educational farm	1%
Jams, Jellies, Pickles, Relishes	1%



How many years has your farm been in business?

Based on 140 responses

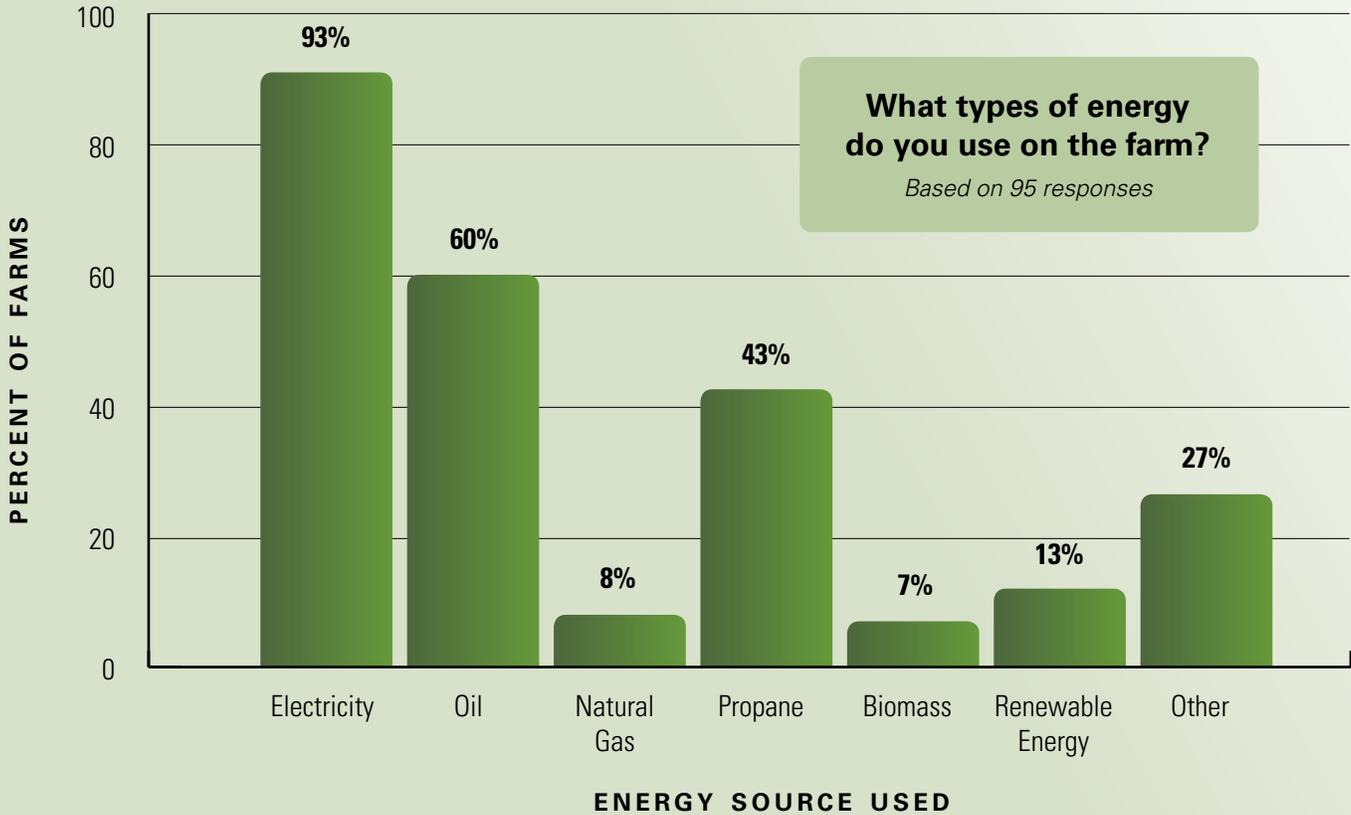
YEARS IN BUSINESS	% FARMS
0 to 5 years	19%
6 to 10 years	15%
11 to 20 years	14%
21 to 50 years	30%
51 to 100 years	11%
Over 100 years	11%

Your farm's gross sales in 2012?

Based on 67 responses

GROSS SALES IN 2012	% FARMS
Less than \$10,000	28%
\$10,000 to 20,000	15%
\$20,001 to \$50,000	19%
\$50,001 to \$100,000	3%
\$100,001 to \$500,000	21%
Over \$500,000	13%

ENERGY USE ON CONNECTICUT FARMS



Annual Use of Electricity

Based on 95 responses

KILOWATT HRS OF ELECTRICITY	% FARMS
1 to 5,000	21%
5,001 to 10,000	1%
10,001 to 25,000	12%
25,001 to 50,000	6%
50,001 to 100,000	3%
100,001 to 200,000	3%
Over 200,000	1%

Annual Use of Oil

Based on 95 responses

GALLONS OF OIL	% FARMS
1 to 1,000	24%
1,001 to 5,000	21%
5,001 to 10,000	2%
10,001 to 25,000	1%
25,001 to 50,000	2%
50,001 to 100,000	1%

Annual Use of Propane

Based on 95 responses

GALLONS OF PROPANE	% FARMS
1 to 250	13%
251 to 500	21%
501 to 1,000	7%
1,001 to 5,000	5%
Over 5,000	2%

Annual Use of Wood

Based on 95 responses

CORDS OF WOOD	% FARMS
1 to 5	4%
6 to 10	3%
11 to 20	3%
Over 20	1%
Not specified	3%



Additionally, a few farms noted the use of natural gas, diesel, biodiesel, and coal.

Total Annual Cost of Energy Measures, by Number of Farms

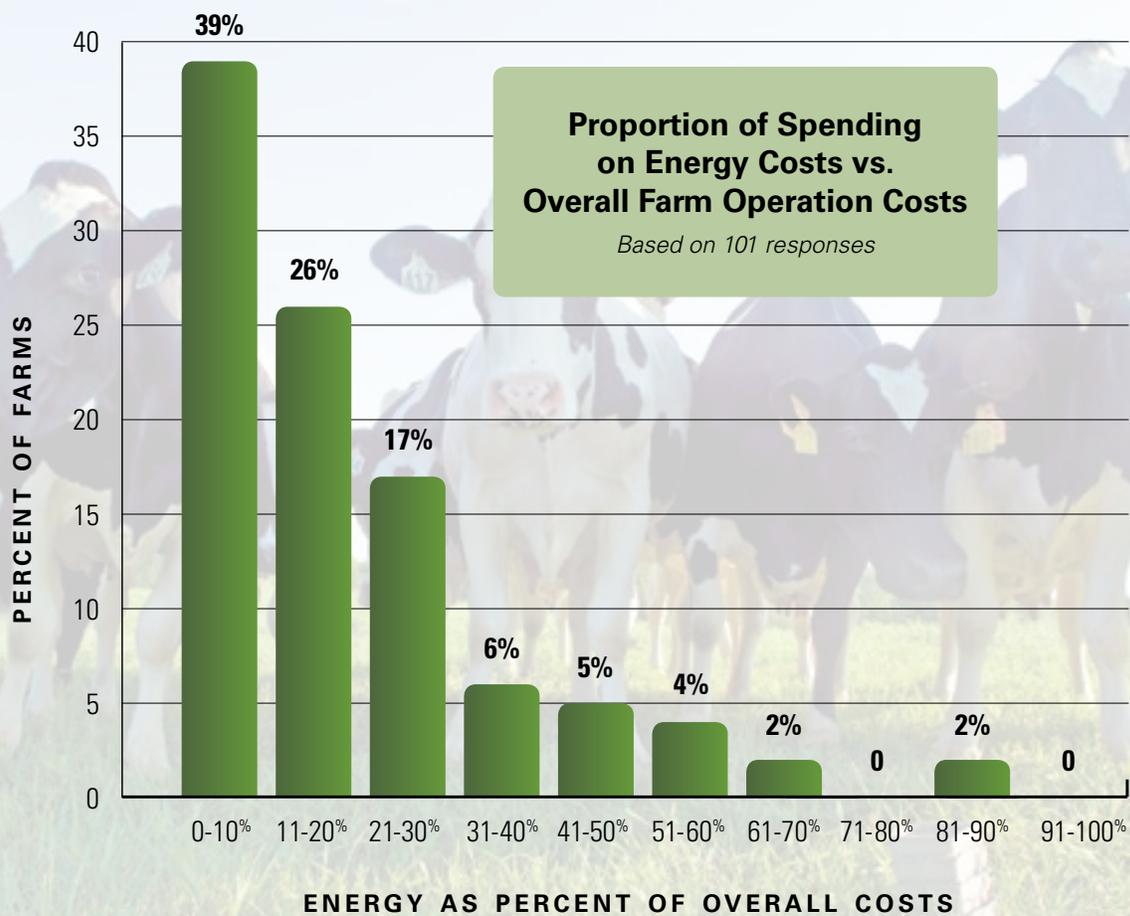
Based on 97 responses

Measure	\$0 to \$999	\$1,000 to \$4,999	\$5,000 to \$9,999	\$10,000 to \$24,999	\$25,000 & over
Electricity	16	26	6	3	3
Oil	4	18	12	3	6
Natural Gas	6	12	0	0	1
Propane	20	5	1	1	1
Biomass	2	3	1	0	0

FARMER FEEDBACK

“I think smaller farms are at a disadvantage in the whole grant process. We have the least amount of cash flow and would benefit the most from the help of grants, especially with high feed prices and low milk prices.”

“Time and cost are huge deterrents. We have to work outside of the farm to make a living.”



RENEWABLE ENERGY ON CONNECTICUT FARMS

If you currently use renewable energy on the farm, which types of technology are you using?

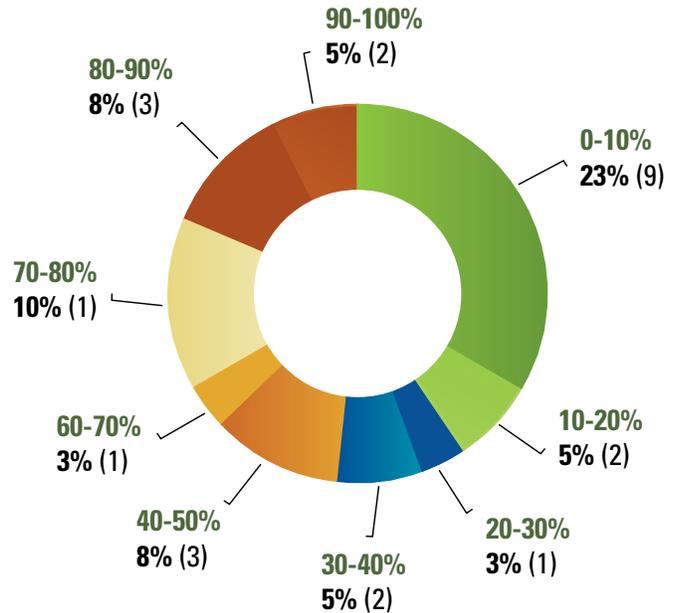
Based on 19 responses

TECHNOLOGY	# FARMS
Solar	14
Wood	10
Biomass	5
Geothermal	2
Wind	1



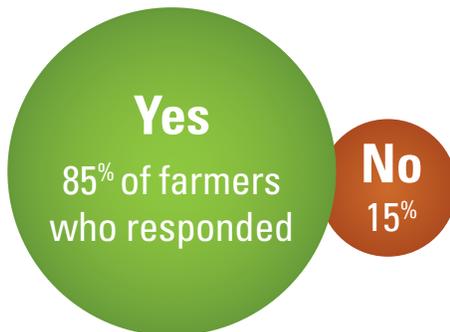
If you use renewable energy, how much does it contribute to your overall annual energy usage?

Based on 27 responses



If you don't currently use renewable energy on the farm, would you like to in the future?

Based on 87 responses



FARMER FEEDBACK

“Let’s bring Connecticut up to par with its neighbors to develop renewable energy programs.”

If yes, what renewable measures would you like to use on the farm?

Based on 58 responses

- Solar 73%
- Wind 24%
- Geothermal 11%
- Biomass 11%
- Other 8%
- Hydroelectricity 7%
- Methane 3%
- All 1%

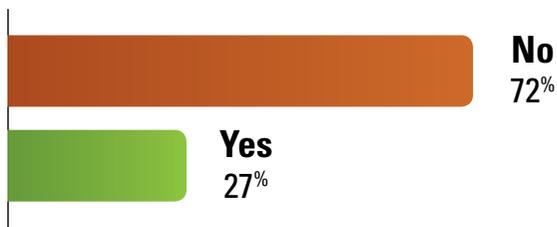
If you would like to use renewable energy, what has hindered you from implementing it?

Based on 80 responses

- Cost 73%
- Approval process 10%
- Time involved 6%
- Not worth it 4%
- Age 4%
- Lack of state programs 2%
- Knowledge 2%

Has your farm ever had an energy audit?

Based on 99 responses



If you haven't had an energy audit, why not?

Based on 58 responses

- Don't need24%
- Not a priority / not enough time..... 19%
- Wasn't aware of energy audits 17%
- Cost10%
- Small operation.....9%
- Don't know how to get one9%
- Just started the business7%
- Already try to conserve energy5%
- Local regulations.....3%

If yes, did you implement recommended measures from the audit?

Based on 37 responses

- All.....24%
- Some49%
- None27%

If you implemented the recommendations, what were the measures?

Based on 24 responses

- ✓ Upgraded thermostats
- ✓ Insulating pipes, tanks, structure
- ✓ Use fluorescent lights
- ✓ Use efficient light bulbs
- ✓ Installed geothermal
- ✓ Installed solar
- ✓ Replaced windows
- ✓ Cleaned fans
- ✓ Repaired/replaced heat retention curtains
- ✓ Vacuum pump
- ✓ Cool down plates
- ✓ Switched oil to gas
- ✓ Tightened attic inner space and structure

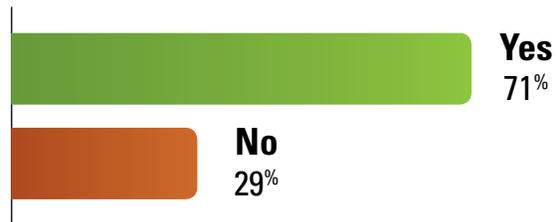
If you did not implement all the measures, which did you decide not to implement, and why?

Based on 14 responses

- ✓ Shade curtains: too expensive
- ✓ Switching to propane: payback time is 10+ years
- ✓ Attic insulation: time involved in change
- ✓ Changing motors: cost
- ✓ Anything that would damage my antique house
- ✓ Solar: laws in Connecticut restrict our solar use
- ✓ No financial assistance, cost

Even if you have not had an energy audit, have you implemented any energy efficiency measures on your farm?

Based on 79 responses



If yes, what measures did you implement?

Based on 55 responses

- ✓ Energy Efficient Lighting and Light Bulbs
- ✓ Insulation
- ✓ Upgraded Thermostats
- ✓ Switched Oil to Gas
- ✓ Switched from Electric to Propane
- ✓ Integrated Solar Energy
- ✓ Low/efficient Water Line Heating Protection
- ✓ Replaced Windows
- ✓ Dual layer Plastic on Greenhouses
- ✓ Automated Lighting, Heating, Watering
- ✓ Energy Efficient Appliances
- ✓ Used Marsh Gas
- ✓ Geothermal Conversion
- ✓ Extensive Mulching to Avoid Irrigation
- ✓ Plate Cooler
- ✓ Variable Speed Drives
- ✓ Capture Rainwater for Watering Operations
- ✓ Recycling
- ✓ Installed Power Save Unit to Stabilize Electric Motor Surges
- ✓ Solar Energy Panels and Fencing
- ✓ Drip Tape
- ✓ Gravity feed water supply

If no, what measures would you like to implement in the future?

Based on 20 responses

- Solar.....45%
- Wind20%
- Energy eff. bulbs.... 10%
- Lower diesel use ... 10%
- Insulation5%
- Recycled burned oil ... 5%
- Attic Insulation5%
- Heat pump.....5%
- As many as possible ... 5%
- Fuel cell.....5%
- Hoop houses5%
- Wood furnace5%
- Update equipment...5%
- Thermal.....5%

What has hindered you from implementing any or all energy-efficiency measures on your farm?

Based on 47 responses

- Cost66%
- Not necessary / appropriate 17%
- Lack of time 11%
- Regulations6%
- Other priorities..... 4%
- Lack of information 4%
- Injuries2%

Are you aware of currently available local, state or federal assistance to farms in Connecticut for energy efficiency and renewable energy projects? Have you used any of these programs? Would you like to learn more about them? *Based on 60 responses*

PROGRAM	% FARMS AWARE OF PROGRAM	% FARMS HAVE USED PROGRAM	% FARMS WANT TO LEARN MORE
Connecticut Farm Energy Program	49%	5%	85%
Connecticut Dept. of Agriculture—AG Viability Grant	59%	16%	69%
USDA Rural Development—REAP Grant	37%	5%	64%
USDA Natural Resource Conservation Service—EQIP	66%	34%	61%
Connecticut Energy Efficiency Fund	29%	6%	69%
Connecticut Energy Finance & Investment Authority	20%	2%	61%
Energize Connecticut	14%	2%	66%

Do you think more needs to be done to increase energy efficiency and/or renewable energy on Connecticut farms to make them more sustainable?

Based on 99 responses

✓ Yes: 92%

No: 7%

If yes, what would you like to see done to increase energy efficiency on farms?

- ✓ Provide guidance to farms about implementing renewable energy
- ✓ Get the word out more to farmers
- ✓ Send farms booklets on available opportunities
- ✓ Allow more development to help farms stay viable
- ✓ Have fewer regulations, so it's easier to implement
- ✓ Offer grants, tax credits, and other financial incentives
- ✓ Make renewable energy more affordable for farmers
- ✓ Encourage farms to host solar and wind farms
- ✓ Have solar and wind power programs similar to Massachusetts and Rhode Island
- ✓ Extend natural gas pipelines to rural areas
- ✓ Use manure to create energy
- ✓ Help small farms participate, too

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