



**Massachusetts
Farm Energy Program**
Conservation → Efficiency → Renewables

Live Wire

**A Newsletter of the
Massachusetts Farm Energy Program**

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Energy audits and incentives offered to Massachusetts farmers

Farmers across Massachusetts who are interested in becoming more energy efficient are invited to apply for a new Audits & Incentives Program offered by the Massachusetts Farm Energy Program (MFEP). The program will provide energy audits, renewable energy assessments, and financial incentives for implementation of audit recommendations, including those recommended by public utilities.

The MFEP has negotiated with energy consultants to provide audits and assessments to farmers at a lower cost than they would pay on their own, and to provide cost-share funding so farmers will only be responsible for 25 percent of the cost. In addition, the MFEP will pay incentives of up to \$7,500 for implementation of recommended measures.

Although emphasis is on energy conservation and efficiency, there will be some funding opportunities for renewable energy projects, especially those projects that are not eligible for other programs. The intent of the audits and incentives program is to encourage farmers to implement at least 50 percent of the recommended measures.

Higher priority will be given to farmers with less access to other audit and incentives programs.

The MFEP will:

- refer farmers to existing audit and incentive programs
- assist with locating other energy funding sources to “leverage” additional funds
- provide “targeted” energy audits and/or renewable energy assessments by MFEP contractors
- provide financial incentives for implementation of audit recommendations, based on energy savings of:
 - \$0.15 incentive per kWh electricity
 - \$2.50 incentive per therm natural gas
 - \$2.75 incentive per gallon propane
 - \$3.00 incentive per gallon fuel oil

For more information and to apply to the MFEP Audits & Incentives Program, go to berkshirepioneer.org/mfep/energy.php.

More details about the Audits & Incentives Program on page 2.

Seven USDA-RD Energy Grants Awarded with MFEP Help

One of the objectives of the Mass Farm Energy Program is to increase farmer applications to the USDA-Rural Development’s Renewable Energy and Energy Efficiency Improvements grant program, which is part of the Farm Bill.

Successful applicants receive 25% cost share up to \$500,000 for renewable energy projects and up to \$250,000 for energy efficiency improvements.

Collectively, the seven 2008 awards represent energy savings of more than one million kWh per year and \$287,807 in USDA cost share.

This is a nationally competitive program that annually funds hundreds of projects in the Midwestern states. Massachusetts and New England typically do not have many applicants.

As a pilot effort, the MFEP partners decided to provide technical and grant writing assistance to farmers

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Berkshire-Pioneer Resource Conservation and Development (BPRC&D) Area, Inc. and Patriot RC&D Council, Inc. have partnered with the Mass Department of Agricultural Resources and the USDA Natural Resources Conservation Service to develop and implement the MFEP. BPRC&D provides program development, technical assistance, and administration for the program.

**MA Farm Energy Info on
the BPRC&D website:**

**[www.
berkshirepioneer
rcd.org/mfep](http://www.berkshirepioneerrcd.org/mfep)**

Examples of Funding for Agricultural Energy Audits & Projects using MFEP's Audits & Incentives Program

The MFEP Audits & Incentives Program will give higher priority to farmers with less access to other audit and incentives programs — primarily farmers who are served by municipal utility companies, or who are not eligible to apply for USDA-Rural Development grants.

AUDITS

The MFEP will pay 75% of an audit or renewable energy assessment for farmers who are municipal customers and not eligible for USDA: if an energy efficiency audit costs \$1000, the farmer's share will be \$250. If a renewable energy assessment costs \$3000, the MFEP will contribute \$2250 and the farmer will pay \$750.

INCENTIVES

The following example of an energy efficiency project shows funding available from various sources, including the MFEP:

A greenhouse grower gets power from a municipal utility company, and is not eligible to receive funding from public utility energy efficiency programs. The grower applies to the MFEP Audits & Incentives program to install a thermal blanket for a greenhouse recommended by her audit. **The system will cost \$40,000.**

If the farmer is also eligible for and is awarded a 25% grant from the USDA-Rural Development, and also receives a Mass Farm

Energy Program incentive of \$7,500, the cost to the farmer will be \$22,500.

Further details about the Audits & Incentives Program of the MA Farm Energy Program can be found on the BPRC&D website: www.berkshirepioneerrcd.org/mfep/energy.php

MFEP PARTNERS

- Massachusetts Dept. of Agricultural Resources (MDAR)
- USDA-Natural Resources Conservation Service (NRCS)
- Berkshire-Pioneer Resource Conservation & Development Area, Inc. (Berkshire-Pioneer RC&D)
- Patriot Resource Conservation & Development Council, Inc. (Patriot RC&D)
- Massachusetts Woodlands Institute (MWI)
- Massachusetts Farm Bureau Massachusetts Technology Collaborative (MTC)
- EOEAA-MA Division of Energy Resources (MDER)
- USDA-Rural Development
- NSTAR
- National Grid / Keyspan
- Western Massachusetts Electric Company (WMECO)
- Cape Light Compact
- Fitchburg Gas & Electric
- Massachusetts Municipal Wholesale Electric Company (MMWEC)
- Berkshire Gas
- Baystate Gas

Grants Awarded with MFEP Help *continued...*

and agricultural rural small businesses interested in applying to this grant program. Through the MFEP, Berkshire Pioneer RC&D, MDAR, NRCS, and RD worked collaboratively to provide assistance and screening for more than 20 farmers statewide for this initiative. Seven farmers and agricultural rural small businesses in Worcester, Franklin, and Berkshire Counties received ongoing technical assistance, were assigned a grant writer, and applied to the program in June, 2008. RD announced in late summer that all seven were funded and that the technical

scores were excellent for all. Collectively, the seven 2008 awards represent energy savings of more than one million kWh per year and \$287,807 in cost share from USDA

With funding from RD, the Massachusetts Woodlands Institute (MWI) and Berkshire Pioneer RC&D have formed a partnership to provide this service for the next funding cycle in the spring.

Assistance will expand to serve more Massachusetts farmers and the forest products industry, and will explore how to increase the number of applicants from Connecticut and Rhode Island.

Molly DuBois and Philip Stevens

of Carter & Stevens Farm said of the grant writing service, "We could not have finished writing the grant without the help of the MA Farm Energy Program, and Berkshire-Pioneer RC&D. It took an enormous amount of organization, and we really appreciate their skills and assistance in that area!" Bonnie L'Etoile of Four Star Farm agreed: "We had never applied for a grant before and the process was overwhelming at times. The staff methodically walked us through the process with great success! The support we received from all the staff involved at all levels in the grant writing process was one of collaboration and encouragement."

2008 USDA-RD Energy Grant Awardees

The following seven farms received free technical and grant writing assistance from the MA Farm Energy Program, received very high scores from the USDA, and were awarded grants in August totaling 25% of the project cost. The farms with renewable energy projects will also receive funding from the Mass Technology Collaborative (MTC) which will further reduce the cost of the project. Congratulations to all!

Farm	Farm Type	Project	Project Cost	Self Score	Energy Savings per year	USDA-RD Award
Whitneys Farm Market <i>Cheshire</i>	Retail Greenhouse	Efficiency: Thermal Blanket	\$26,355	95	315 Btu	\$6,589
Pioneer Gardens <i>Deerfield</i>	Wholesale Nursery	Efficiency: Thermal Blanket & Lighting	\$134,150	105	2,658 Btu	\$33,538
Red Apple Farm <i>Phillipston</i>	Commercial Orchard	Renewable: 15kW wind turbine	\$79,940	105	19,096 kWh	\$19,985
Foppema Farm <i>Northbridge</i>	Fruit & Vegetable Farmstand	Renewable: 9.75 kW Photovoltaic	\$79,274	100	11,470 kWh	\$19,819
Berkshire Sweet Gold Maple Farm <i>Heath</i>	Retail Maple Syrup Producer	Renewable: 9.24 kW Photovoltaic	\$74,564	100	11,000 kWh	\$18,641
Carter & Stevens Farm <i>Barre</i>	Dairy Farm & Farmstand	Renewable: 15kW wind turbine	\$115,310	100	27,200 kWh	\$28,828
Four Star Farms <i>Northfield</i>	Sod & Aquaculture Farm	Renewable: 82 kW Photovoltaic	\$641,637	100	92,196 kWh	\$160,409

Pioneer Gardens installs thermal screens with grant assistance from USDA

This past spring, the MFEP successfully assisted a greenhouse grower in receiving an energy efficiency grant from USDA's Renewable Energy and Energy Efficiency Improvements Program. Jaap Molenaar of Pioneer Gardens in South Deerfield MA was one of 14 Massachusetts Agricultural Producers to be awarded this grant, and one of seven who got grant writing assistance from the MFEP.

Jaap Molenaar is a producer of wholesale ornamental plants. His business is comprised of a greenhouse complex constructed in the 1980s, an office and warehouse building, and a large cooler building with an attached workshop. Before applying for the USDA energy grant, Jaap installed a sophisticated monitoring and control system for his complex and thermal screens in four greenhouse bays.

He was convinced that additional screens would greatly reduce his heating costs so he contacted the MFEP for help seeking funding for his project. The MFEP referred him to Bob Dvorchik of Western Massachusetts Electric Company for an energy audit and he contracted with Lynn DiTullio of Field to Table, Inc. to provide an audit on the non-electric side. The audits supported his assertions. MFEP provided technical support and grant writing assistance for his project — installing additional thermal screens and lighting improvements. In August, he was awarded \$33,538 from the USDA which will defray 25% of Pioneer Gardens' cost to build the project.

The greenhouse complex consists of thirteen bays of gutter-connected "Westbrook" greenhouse structures with two layers of 6-mil inflated poly, and two gutter-connected glass "Venlo" greenhouse bays at the eastern end. Each bay is 21 feet wide and 228 feet long. The floor to eave height is 14 feet. Every bay has the ability to automatically open part of the roof for ventilation. Each bay is heated by either forced hot air furnaces (11 bays) or boilers connected to unit heaters (two bays). The greenhouses are divided into zones for heating and horticultural conditions. There are seven zones, each consisting of two 21-foot wide bays.



Thermal screens partially open to allow solar gain on a cool, cloudy day in December

Six bays comprise the "cool" section held at 40°F, and eight bays (including an emergency backup) make up the "warm" section held at 65°F, depending upon time of year and specific plants placed therein. Desired zone temperature is automatically maintained by heating at night and by a combination of heat-

ing and venting during the day. Two bays are equipped with Luiten XLS-15 thermal/radiation screens, which help to maintain temperature in that area. This screen is oriented horizontally and is opened or closed via a motor in 12 foot sections, depending upon both temperature and solar radiation. These screens provide both reflective and insulative properties. The insulative attributes are enhanced by a meticulous sealing system.

Heating constitutes 85-90% of all energy costs, primarily for the greenhouses. Pioneer Gardens used 44,000 gallons of #2 heating oil during the 2007-2008 heating season. Jaap has been very happy with the savings from last year's installation of the Luiten XLS-15 thermal screens. The potential savings due to installing the XLS-18 screen over the remainder of the greenhouse area, as well as adding the XLS-18 to the existing XLS-15 area, is a 56% annual energy savings with a simple payback of 1.7 years. In addition, lighting retrofits (thirty T-8 and two T-5 fixtures) in the cooler, warehouse, and workshop will save an additional \$1500 annually with a simple payback of 2.7 years. See table below.

Jaap has begun installing the energy screens, which will be done incrementally over the next two years. And Jaap could apply as well for incentives from the MFEP Audits & Incentives Program. Congratulations to Pioneer Gardens, especially when the price of oil again rises.

Simple payback for Energy Efficiency Improvements for Pioneer Gardens

Energy Conservation Method	Energy Savings Potential (MMBtu)	Estimated Annual Savings	Installed Cost	Simple Payback
Greenhouse Thermal Screens	2,627	\$76,535	\$127,140	1.7
More Efficient Lighting	31	\$1,514	\$4,160	2.7
All Proposed Measures	2,658	\$78,049	\$131,300	1.7