



# Efficiency Vermont Energy Efficiency Opportunities in Dairy

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# Agenda

- Goal of Presentation
- 2014 Ag Rebate Form
- Equipment Chart
- Equipment Specifics
- Other Rebate Forms
- Ag Custom Projects
- Ag Loan Assistance
- EVT resources



# Goal of Presentation

- Quick snap shot of Efficiency Vermont's Ag program rebates and services.
- Basic information for service providers to relay to interested farmers.
- Basic information for farmers to start considering a project to reduce energy use (and therefore save money) on their farm.
- Provide contact info for further questions/follow-up.

# Efficiency Vermont's Ag Program

- Created in 2000 due to VT legislation.
- Provide technical assistance and financial rebates for energy efficiency (mostly electrical) improvements for homes, farms, and commercial businesses.
- Efficiency Vermont will work with all VT farms, though the majority of our rebates are for dairy related equipment.
- Rebates available for existing buildings, additions, and new construction.

# 2014 Ag Rebate Form

Approx. 80% of all Ag energy efficiency projects can be processed via the rebate form.

- Purchase and install equipment.
- Send in completed rebate form with invoice.
- Rebate check within 60 days.

Ag Ventilation is NOT on rebate form and requires pre-approval.

- See Ag Ventilation Questionnaire.

Rebate bonuses available for most Ag equipment through 11/30/14 (ventilation) or 12/31/14 (all other).

<b>Ag Equipment</b>	<b>Typical Cost</b>	<b>Avg. Energy Savings</b>	<b>Current Rebate With Bonus</b>
Plate Cooler	\$2,800 - \$5,000+	11,600 kWh	\$1,750 – \$4,000
Variable Frequency Drive on MILK Vacuum Pump Motor	\$4,000 - \$5,000	7,700 kWh	\$2,500
Heat Recovery Unit	\$2,400 - \$4,000	6,300 kWh 52 MMBtu	\$2,500
Variable Speed Milk Transfer System	\$2,500 - \$3,500	7,600 kWh	\$1,750
Variable Frequency Drive on MAPLE Sap Vacuum Pump Motor	\$1,250 - \$2,500	1,800 kWh	\$550
Bulk Tank Compressor	\$700 - \$3,000+	Varies	\$200
HPT8 and T5HO Light Fixture	\$100 - \$300	Varies	\$90 - \$180 / fixture
LED Exterior Wallpack	\$150 - \$300+	Varies	\$100 - \$200 / fixture
Ventilation	\$300 - \$1,000+	Varies	\$125 - \$375 / fan

# Plate Cooler



Use ground water to “pre-cool” milk.

Typically reduces milk cooling energy use by 50%.

Feed “waste” warm water to cows.

Farm must milk at least 75 cows.



# VFD on Milk Pump Motor



Match vacuum pump work output to vacuum need.

Typically reduces vacuum pump energy use by 50%.

Farm must milk at least 50 cows.

More reliable vacuum levels = Less mastitis.

Reduced noise level.



# Heat Recovery Unit

Recovery and use of waste heat from refrigeration system.

Typically reduces hot water energy use by 50%.

Every dairy farm (with 35 cows or more) should have one.



# Variable Speed Milk Transfer System

Regulate milk flow to improve plate cooler effectiveness.

Improved/faster milk cooling =  
Better milk quality.

Farm must milk at least 75  
cows.



# Efficient Lighting

- Save energy.
- Improve light levels - for farm workers, breeders, and vets.
- Long Day Lighting systems – improve milk output.
- Safety improvements – interior and exterior.



# Bulk Tank Compressors

- Not worth replacing a working compressor.
- Replace with an efficient model at time of failure.
- Properly sized and working compressors can dramatically reduce cooling time and therefore improve milk quality.

# Barn Ventilation

Proper air flow typically lessens milk output reduction during heat waves.

Improved cow and worker health.

Reduced heat stress and animal death.

Fly and odor reduction.



# Other Rebate Forms of Interest

## Commercial Refrigeration

- Great for greenhouses, fruits/veggies/berries, orchards, wineries, and livestock farms storing meat or other products.

## Commercial Lighting

- Great for farms that do not need vapor proof lighting – equine, orchards, wineries, etc.

## Commercial Heating, Ventilation, and A/C

- Great for a farm interested in a pellet heating system or new boiler.

## Commercial Compressed Air Systems

- Great for a dairy farmer replacing a compressed air system in a parlor.



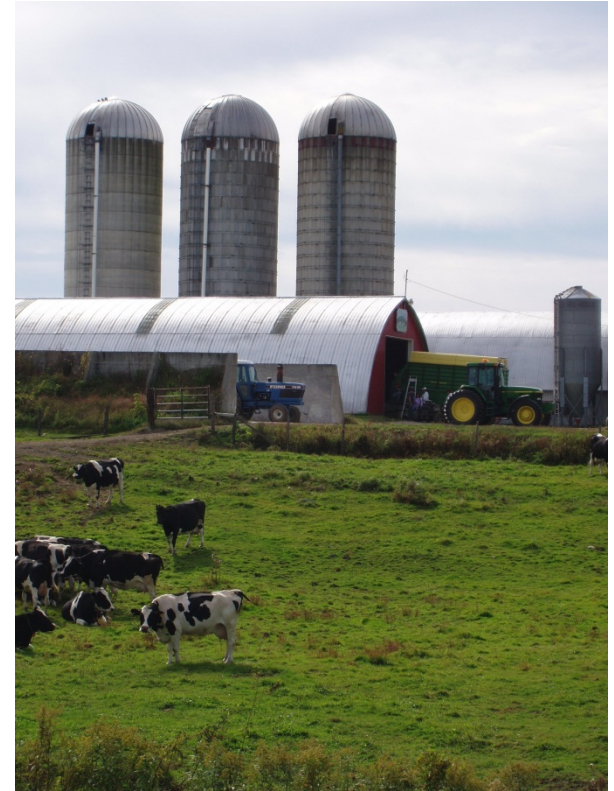
# Custom Ag Projects

## Possible custom Ag equipment:

- Any lighting over 250 fixtures
- LED light fixtures for barn interior
- VFD not on rebate form
- Goat farms
- Chillers
- Other...

Vendor/Farmer should call

Customer Support and submit quote.





# Ag Loan Assistance

- Partnership with Opportunities Credit Union
- First come, first serve
- ONE page loan application for farmer
- 4 year loan term
- Current market rate interest = as of today 6.49%
- Maximum loan amount = \$30,000
- Efficiency Vermont pays loan activation/membership fee
- No penalty for paying loan off early

# EVT Resources



Farmers should start with Efficiency Vermont Customer Support to discuss project and process. Phone consultations about energy use are also available.

Partners who have PROGRAM questions or feedback please contact Jenn Osgood.

Equipment/Lighting Vendors contact your Efficiency Vermont Account Manager or Customer Support.

# Contact Info

## Efficiency Vermont Customer Support:

- 888-921-5990
- [info@efficiencyvermont.com](mailto:info@efficiencyvermont.com)

## Ag Program Information:

### Jennifer Osgood, Program Manager

- 802-540-7814
- [josgood@veic.org](mailto:josgood@veic.org)