

# Efficiency Vermont

ACEEE Forum  
On Energy Efficiency in Agriculture

Exemplary Agricultural  
Energy Efficiency Programs

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## Efficiency Vermont

Nation's first energy efficiency utility

Established by Vermont Legislature and Vermont Public Service Board  
in 2000

Full set of services to address all market segments

Same services available statewide

Funded by Vermont electric ratepayers through a system benefits  
charge on all electric bills

## **Serving Vermont's Dairy Farm Market**

View of the Market

Primary Obstacles

Results

Technical Services

Financial Services

Cost-Effective Improvements

Non-Energy Benefits

Why are we successful?

### **View of the Market**

In 2005, there were roughly 1,300 dairy farms in Vermont

The number of farms is declining approximately 5% per year

Electricity consumption in the Vermont agriculture sector is estimated at  
67,000 MWh per year

## Primary Obstacles

Cost/lack of capital to make improvements  
Insufficient time to complete improvements on his/her own  
Lack of information  
Hesitation to try unfamiliar approaches/technology  
Uncertain view of farming's economic future

## Results

<b>HISTORICAL DATA</b>	<b>2000 thru 2004</b>
<b>Project Participants</b>	<b>404</b>
<b>Project Costs for Improvements</b>	<b>\$ 1,756,323</b>
<b>MWh Saved</b>	<b>4,182</b>
<b>Customer Savings</b>	<b>\$ 409,267</b>
<b>Efficiency Vermont Financial Incentives</b>	<b>\$ 923,844</b>

## **Technical Services**

One dairy farm project manager

Site visits to farms

Preliminary analysis, cost-effectiveness screening

Equipment recommendations

Contract management

- Conduit for information
- Cost quote
- Final screening
- Incentive agreement
- Inspection and payment

## **Financial Services**

Incentives

- Rebate form
- Custom, typically 50 - 60% of cost

Loan program

Fossil fuel grant from VT Dept. of Public Service

## Cost-Effective Improvements

EQUIPMENT	COST	ENERGY SAVINGS	INCENTIVES
Milk Pre-Cooling	\$2,800 - \$5,000	50%	50 - 60%
Variable Frequency Drive on Vacuum Pump Motor	\$4,000 - \$5,000	50%	\$2,500
Heat Recovery for Hot Water	\$2,400 - \$3,200	50%	50 - 60%
Variable Speed Milk Transfer Systems	\$2,500 - \$3,500	Varies	\$1,250
Hot Water Heater Fuel Switch	\$2,000 - \$3,000	Varies	50 - 60%
Lighting	Varies	Varies	\$25 - \$70 / fixture

## Non-Energy Benefits

Improved milk quality and quantity  
Adequately lit work areas  
Decreased noise level  
Reduced milking time

## **Why are we successful?**

Approach to the market  
Strong customer service/contract management  
Education and communication  
Comprehensive analysis  
Financial incentives  
Marketing  
Repeat business