

VERMONT GREENHOUSE BIOMASS HEATING

INCENTIVE
QUESTIONNAIRE

Efficiency Vermont, in partnership with the Vermont Agency of Agriculture and University of Vermont, are launching a targeted program that supports the installation of between five and ten automatic-feed, biomass heating systems for greenhouses, significantly reducing propane consumption.

Eligible farms must be located in the former electric service territory of Central Vermont Public Service (CVPS). A map of towns in that territory can be found **here***. If you have questions about whether the greenhouse is in legacy CVPS service territory, based on the address, please call Efficiency Vermont at 888-921-5990.

Farms will be chosen for the program using the answers on this questionnaire, based on the following criteria:

- Proven record as successful greenhouse operator;
- Existing propane-heated greenhouses with overall heating efficiency of 85% at most;
- Equipment owner willing to pay at least half the cost of the equipment;
- Equipment operator able and willing to actively participate in collecting baseline and post-installation energy and equipment data;
- Greenhouse operator willing to consider additional energy-saving opportunities.

Farms chosen to participate in the program will receive reimbursement for 50% of the project cost up to \$7,000. The greenhouse operator will be paid the incentive within 30 days of submitting proof that the equipment was paid for and is operable.

A typical 250,000-BTU-per-hour input system will cost \$13,000 (installed) and can result in annual net fuel cost savings of \$900 in a March-June greenhouse operation. The above savings assume fuel prices of \$3.00 per gallon for propane and \$250 per ton for wood pellets. A biomass heating system can also result in a net reduction of carbon emissions roughly equivalent to 5,000 miles of car travel. When considering the incentive provided by this program a payback period of seven years is possible.



PLEASE RETURN COMPLETED QUESTIONNAIRE TO:

CEED Greenhouse Biomass Heating Program
Efficiency Vermont
128 Lakeside Avenue, Suite 401
Burlington, VT 05401

Fax: 802-658-1643 • Email: cweston@efficiencyvermont.com

* http://www.greenmountainpower.com/upload/photos/371CVPS_and_GMP_Service_Territory_Map.pdf

Contact Name: _____

Farm Name: _____

Address: _____

City/Town: _____, State: VT ZIP: _____

Phone: _____ Email: _____

I certify that I am in good standing with the State of Vermont.

Please tell us why you are interested in installing a biomass heating system for your greenhouse(s) and how the new equipment will benefit your operation:

Please describe the greenhouse you wish to heat with biomass:

Width: _____ feet x Height: _____ feet x Length: _____ feet

Primary skin material (e.g., inflated double poly, twin wall polycarbonate, etc.):

End wall construction and insulation: _____

Ventilation (e.g., roll-up sides, ridge vent, end wall fans, HAF): _____

Describe any other insulation (e.g., perimeter, underground, etc.):

When do you typically start heating this greenhouse? _____

When do you typically stop heating this greenhouse? _____

What are the typical crops grown in this greenhouse? _____

Continued on next page.

What is your typical target inside temperature in this greenhouse: _____ degF

What fuel is currently used to heat this greenhouse: _____

What is the make and model of the current heating appliance: _____

What is the measured efficiency of the current heating appliance: _____ %

Fuel use per year for the past two years: **2013:** _____ gal **2012:** _____ gal

For this greenhouse only For this greenhouse and others*

** If others, please describe the remainder of your greenhouses on a separate sheet of paper (including size, skin type, insulation, period of use, and heating equipment).*

Average price paid for fuel over the past two years: **2013:** _____ \$/gal **2012:** _____ \$/gal

A standard system design includes an automated biomass boiler (250,000 BTU/hr input, 212,453 BTU/hr output), a fuel bin, feed auger, circulation pump, insulated PEX, and a hot water coil with fan for heat distribution using hot air. Do you have any plans to distribute heat any other way (e.g., bench heating, in-ground heating, etc.)? If so, please describe:

Please describe wired Ethernet, wireless internet and cell service available at the greenhouse, or the feasibility of installing it:

Please describe your history in operating greenhouses, including the number seasons, number of greenhouses during those years, and please estimate the quantity of produce/plants/flowers you've produced in a given year:

Thank you.