



April 15, 2006

VERMONT SOLAR & SMALL WIND INCENTIVE PROGRAM Round II - Progress Report

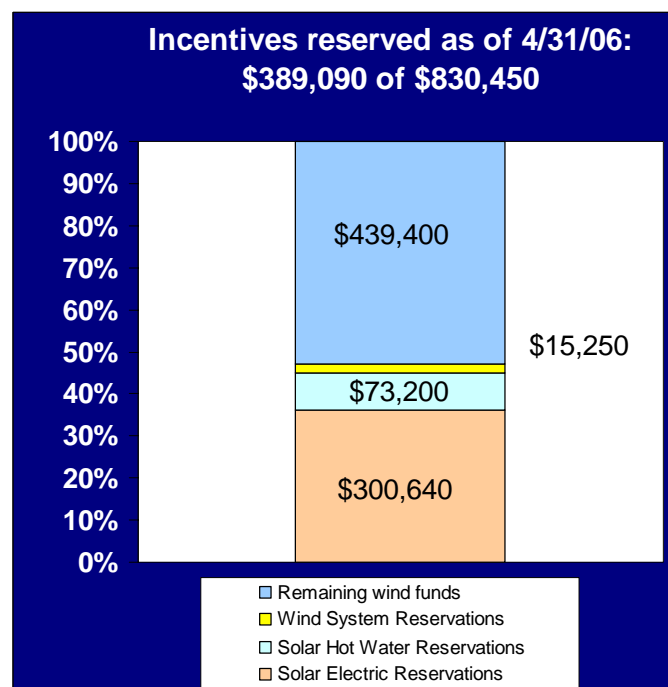
Reporting Period September 1, 2005 – March 31, 2006

The Vermont Solar and Small Wind Incentive Program was originally established by Act 69 of the State Legislature and launched on October 24, 2003. The program offers direct incentives to residential, commercial, and local government projects to reduce the initial costs of solar electric, small wind, and solar hot water systems. The incentive program is overseen by the Vermont Department of Public Service and administered under contract by the Renewable Energy Resource Center, a project of the Vermont Energy Investment Corporation. This report summarizes program activity related to Round II of the Incentive program, which started on September 1, 2005, through March 31, 2006. This report highlights some unique features of Vermont’s program and the anticipated results from the second round of incentive funding. Additional details including program rules, incentive design, participation steps can be found at www.nerc-vt.org.

The second round of the incentive program started on September 1, 2005 with a total of \$830,450 of new incentive funding. Funding for Round II comes from four different sources. The largest share is from a U.S. Department of Energy (DOE) FY 2004 Congressional Appropriation through the support of Vermont Senator James Jeffords. These DOE funds are routed through the Vermont Department of Public Service to support the development of small wind energy production in Vermont. Approximately \$454,600 in incentives will be available for qualifying small wind systems for individuals, businesses, schools, and municipalities. Additionally, a combined total of \$301,550 in incentive program financial support specifically for solar electric and solar hot water systems is being provided by Central Vermont Public Service and Green Mountain Power for customers in their service territories. These incentive dollars are part of the monies that the two utilities received through the Nuclear Electric Insurance Limited (NEIL) and the American Nuclear Insurers (ANI) from the sale of their interests in the Vermont Yankee Nuclear power plant. Approximately \$74,300 remaining from projects not completed in Round I is also available for solar electric and solar hot water installations in other parts of the state.

By Oct. 24, 2005, only 6 weeks after the start of the program, all of the incentives available to support investments in solar hot water and solar electric systems had been reserved. As of March 31, 2006, there were 4 wind system reservations, leaving approximately 97% of the wind incentive funds available.

Since the start of Round II of the program, 99 incentive reservations, which will support the installation of 123 renewable energy systems (solar electric, solar hot water, and wind systems) have been approved. Incentive reservations to date total \$389,090 of the incentive pool of \$830,450, with \$89,900 paid out to date for completed systems. The distribution of incentive dollars reserved by project type is illustrated in the graph to the right.



As of March 31, 2006, 19 solar electric (photovoltaic or PV) systems have been installed, with an average rated capacity of 2.7 kW (for a total peak rated output of approximately 51 kW). The expected annual output from these PV systems is 56.5 MWh, which will displace almost 34 tons of CO₂ emissions each year. The average incentive received was \$4,278, or 18% of the overall average total installed cost of \$24,037. The private investment leveraged by these incentives is roughly \$19,760 per system. To date, 32% of the installed PV systems are off grid, while 68% are grid connected.

Incentive payments also supported the installation of 5 solar hot water systems to date. These systems are estimated to replace more than 64 million Btu per year of hot water heating energy, and reduce greenhouse gas emissions by roughly 5 tons per year. The hot water systems received an average incentive of \$1,722, which is 19% of the overall average installed cost of \$8,970. The average rated heating capacity is 86 kBtu/day. The anticipated private investment leveraged by these incentives is roughly \$7,248 per system.

Incentive reservations have been approved for 5 wind systems (for a total of \$15,250 in reserved funds) with \$439,400 of incentive funding remaining. Three Certificate of Public Good documents have been submitted to the program and the process for applying and receiving NEPA approval has been proceeding very well. As of March 31, 2006, no wind systems have yet to be installed. Specific details on the installation size and projected savings for small wind systems will be reported once the systems are fully installed.

Incentive reservations are still outstanding for 56 solar PV systems (for a total of \$219,350 in reserved funds), 38 solar hot water systems (for a total of \$64,590 in reserved funds), and 5 wind systems (for a total of \$15,250 in reserved funds).

Round II includes some changes in system eligibility from the first incentive round. Off-grid solar electric systems were only eligible to receive incentive reservations until October 31, 2005. For small wind, only grid-tied systems are eligible for incentives in this round of funding. Also, in the second round, only systems installed by qualified Solar and Small Wind Installers are eligible for incentive support. All systems have a 9-month reservation period for the installation and completion of projects.

The timing and the total number of systems finally installed in Round II will depend upon the size of installations and market reaction to the program. The program incentives are designed to cover approximately 25% of the total installed cost for eligible systems. The incentives are expected to leverage over \$3 million in private investment. As installations are completed, we will continue to report total system costs, estimated energy savings, avoided environmental emissions, and projected job activity within the solar and small wind delivery sector of Vermont's economy.

There are several notable features of Vermont's Solar and Small Wind Incentive Program. First, the participation rate and results achieved particularly for solar remain impressive. Second, the program has achieved these results with incentive levels that are significantly lower than similar programs nationwide. The robust activity with the lower incentive level indicates that current market conditions in Vermont continue to provide a comparatively high return for the public incentive dollars invested in the program.

Vermont's program has a tiered incentive offer capped at a total of \$10,000 per solar participant and \$12,500 for wind participants. Solar electric systems are eligible for incentive support at \$2.00/W, and solar hot water systems are eligible for an incentive of \$2.00 per hundred Btu/day. The \$2.00 base incentive level for solar electric and solar hot water systems represents a 20% reduction in the incentive level from Round I.

Vermont Solar and Small Wind Incentive
Program: Round II Reservations
(9/30/05 to 3/31/06)

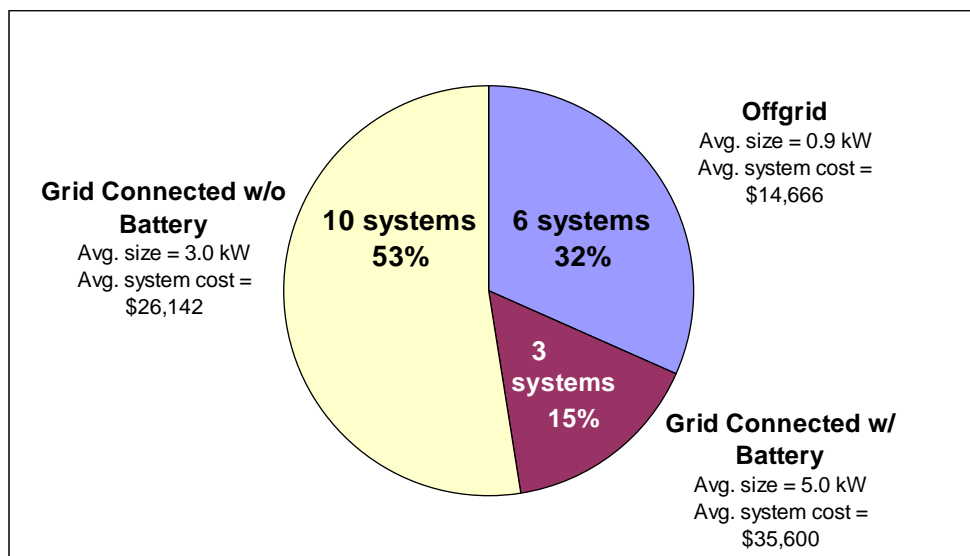
- ❖ **Incentives reserved for 123 renewable energy systems as of 4/31/06**
 - **75 Solar electric systems**
 - **43 Solar hot water systems**
 - **4 Small wind systems**
- ❖ **Estimate \$3 million in private investment for Round II**
- ❖ **Expected Annual Impacts**
 - **~182 MWh electricity production**
 - **~150 tons avoided CO₂ emissions**
 - **~500 million Btus fossil fuel savings**

For wind systems, incentive amounts for residential and commercial customers are \$2.50/W. There are additional incentives available for wind systems that use components manufactured in Vermont by a Vermont-based company. Incentives increase to \$3.00/W for installations using a Vermont-manufactured tower, increased to \$3.50/W for installations using a Vermont-manufactured turbine, and increased to \$4.00/W if both are used; the maximum total incentive will still be \$12,500. Schools and municipalities qualify for higher incentives on wind systems: \$4.50/W with a limit of \$20,000 or 50% of installed cost. The additional incentives for Vermont-made wind system components will not be available to schools and municipalities.

Unlike many other programs, particularly in the Northeast, Vermont is offering incentives for solar hot water heating. Of the three technologies supported by the program, solar hot water often has the most attractive economic customer benefits. Programs that focus strictly on the development of solar electric technologies are missing the potential benefits associated with the revitalization of solar hot water markets. Solar hot water is expected to continue as an important component of the program with new availability of federal tax credits.

The Department of Public Service and the Renewable Energy Resource Center are working with the legislature and other parties to develop and examine other options to provide continued program funding.

Installed Solar Electric Systems
(Total: 19 Systems; Avg. Size 2.7 kW; Avg. Cost \$24,037)



Vermont Solar and Small Wind Program Incentive funding provided by:



Vermont Dept. of Public Service



U.S. Department of Energy with the support of Vermont Senator James Jeffords

Notes:

- 1) 1 kW of installed solar electric is projected to provide annually 1 MWh of production.
- 2) 1 MWh of solar electric or wind power is estimated to off-set 1,179 lbs of CO₂ or 0.586 tons of CO₂. (NEPOOL Marginal Emission Rate, December 2004)
- 3) 1 kW of installed small wind is projected to provide approximately 1.6 MWh of electric production based on an average 18% capacity factor.
- 4) Solar hot water annual output estimates are based on average solar annual radiation of 1363 Btu/sq.ft./day from NREL Solar Radiation Data Manual, and estimated average total system conversion efficiency of 30%.