Wind Powering America

Clean Energy for the 21st Century

Since earliest recorded history, wind power has been used to move ships, grind grain, and pump water. Today, wind power is also being used to provide electricity to homes, schools, businesses, and entire communities. More than half the United States have wind resources that could support the development of utility-scale wind power plants.

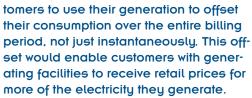
As anyone that has hiked the Green Mountains can attest, there is often a strong wind blowing across Vermont. This wind is a great resource for the state and has the potential for generating a significant amount of electricity. The Department of Public Service together with Green Mountain Power Corporation, NRG Systems, and Vermont **Environmental Research Associates** conducted a wind resource assessment for Vermont. The goal of this project was to gather wind resource data that would further the development of wind energy projects in the state. This project measured wind speeds at four sites throughout the state—Mt. Mansfield, Burke Mountain, Grandpa's Knob, and Searsburg. The National Renewable Energy Laboratory (NREL) created a wind resource map from the wind data collected. This map can be viewed on the World Wide Web at: http://www.cit. state.vt.us/psd/ee/wind/ee-wind.htm

Throughout the state homeowners have installed wind turbines to power their homes and businesses. The state is also home to the Searsburg Wind Facility a 6-megawatt commercial wind project operated by Green Mountain Power.

Vermont has two different incentives to encourage the installation of small-scale wind turbines; net metering and a sales tax exemption.

Net Metering

The concept of netmetering programs is to allow the electric meters of customers with generating facilities to turn backwards when their generators are producing more energy than the customers' demand. Net metering allows cus-



Any electrical utility customer in Vermont can net meter once they have obtained a Certificate of Public Good from the Public Service Board. Vermont's netmetering law caps the size of netmetering wind generators at 15 kW of generation.

Utilities must allow net-metered systems on a first-come, first-serve basis to all customers until the cumulative generating capacity of all the net-metering systems on its lines equals 1% of the company's peak demand during 1996.

You can download a net metering application from the web at: http://www.state.

vt.us/psd/ee/wind/ee_wind.htm, or you can contact the Public Service Board at (802) 828-2358.

State Financial Incentives

As of July 1, 1999, all equipment purchased to construct and install a net-metered renewable energy system, including wind turbines, is exempt from the state's 5% sales tax. This 5% savings in the cost of a net-metered system provides



What is the installed wind energy capacity in the United States?

By January 2000, the total U.S. installed wind energy capacity was 2500 MW. (See http://www.awea.org/faq/instcap.html) That's enough electricity to meet the needs of 600,000 to 800,000 typical U.S. homes.



Vermont

Additional Resources

National Renewable Energy Laboratory National Wind Technology Center 1617 Cole Boulevard Golden, Colorado 80401 (303) 384-6979 www.nrel.gov/wind

U.S. Department of Energy Boston Regional Office JFK Federal Building, Room 675 Boston, Massachusetts 02203 (617) 565-9712 fax: (617) 565-9723

U.S. Department of Energy Wind Energy Program Forrestal Building 1000 Independence Ave., S.W. Washington, D.C. 20585 (202) 586-5348 www.eren.doe.gov/wind

American Wind Energy Association 122 C Street, NW, 4th Floor Washington, D.C. 20001 phone (202) 383-2500 fax (202) 383-2505 www.awea.org Vermonters with an extra incentive to produce their own green power.

The Vermont Department of Public Service has compiled a directory of Vermont businesses that sell and install wind turbines. You can access the directory at: http://www.state.vt.us/ psd/ee/wind.htm

Another good resource is the Department of Public Service's Energy Efficiency and Renewable Energy web site: http://www.state.vt.us/psd/ee/ee.htm

Green Power

"Green power" is power produced by renewable or environmentally friendly energy sources, as distinct from power produced by fossil fuel, nuclear, and other types of generators. Customers can arrange to purchase a certain amount of green power (actually energy, in kilowatt-hours [kWh]) per month, for which they commonly pay a small premium to completely or partly offset any higher cost of renewable power sources. The policy of transferring these costs to green power customers is called "green pricing."

In Vermont, the Green Mountain Power project at Searsburg will provide green power to more than 2,000 homes. The project consists of eleven 550-kW Z-40FS (full-span) turbines that are expected to generate about 14 gigawatthours (GWh) of electricity a year in normal wind conditions, thereby reducing greenhouse gas emissions by 22 million pounds a year.



Installed—6 megawatts (MW)

Planned—5 MW

In-StateWind Energy Potential:
2,877 MW capacity after land use and environmental exclusions
5 billion kWh per year electric energy

Installed Projects

Searsburg—6-MW installed capacity, 13.3 million kWh annual energy output (1998), power purchased by Green Mountain Power, Zond turbines.

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