Massachusetts

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. Wind power has been the fastest growing source of electricity generation in the world in the 1990s. More than half the United States have wind resources that could support the development of utility-scale wind power plants.

Because wind power requires strong winds, the best locations for wind power plant sites in Massachusetts are on the exposed mountain ridges and hilltops in the central and western parts of the state, as well as along the immediate coast.

The state's oldest wind power plant is operated by Princeton Light Department. Princeton installed eight 40-kilowatt (kW) Enertech wind turbines in 1984 on a hilltop near Mt. Wachusett in central Massachusetts. Princeton's wind power plant produces 250,000 kilowatt-hours (kWh) a year, enough to supply the annual energy needs of over 40 households. In 15 years of operation, the plant has displaced the use of thousands of gallons of fuel oil and has avoided the emissions of hundreds of tons of carbon dioxide (the main greenhouse gas).

In 1997, the city of Beverly installed a 10-kW wind turbine at Beverly High School. The turbine, which is run by Solar Now, Inc., enhances the educational value of the site, which already contained a solar array. The wind turbine/solar array combination saves Beverly an average of $10,500 per year on its electric bill.

State Financial Incentives

Massachusetts offers renewable energy tax incentives for both individual homeowners and businesses that install renewable energy systems. These incentives include a state income tax credit, a local property tax exemption, a state sales tax exemption, and a corporate income tax deduction.

The state income tax credit applies to individuals that install renewable energy systems (solar- or wind-powered) in their residences. The credit is 15% of the net expenditure (including installation) for the system, or $1,000, whichever is less. The credit does not apply to commercial users (M.G.L. Ch. 62, sec. 6(d)).

A taxpayer who installs a solar or wind-powered system to supply the energy needs of his/her residence or business is eligible for an exemption from local property tax. The exemption is good for 20 years from the date of installation. (M.G.L. Ch. 59, sec. 5, cl. 45).

The state sales tax exemption exempts from the state sales tax, the sale of equipment directly relating to any solar, wind, or heat pump system to be used as a primary or auxiliary power system for heating or otherwise supplying the energy needs of a person's principal residence in the state. [The exemption does not apply to commercial users (M.G.L. c. 64H, sec. 6(dd)).

A business that purchases a qualifying solar- or wind-powered "climatic control unit" or "water-heating unit" is allowed to deduct from its net income, for state tax purposes, any costs incurred from installing the unit, provided the installation is located in Massachusetts and is used exclusively in the trade or business of the corporation (M.G.L. c.63, sec. 38H.).

Green Power

"Green power" is power produced by renewable ("green") 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) per month, for which they commonly pay a small premium to completely or partly offset any higher cost of renewable

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.

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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

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power sources. The policy of transferring these costs to green power customers is called "green pricing."

Beginning in 2003, electricity suppliers in Massachusetts will be required to obtain some of their power from new renewable energy sources. This requirement, called the renewables portfolio standard, will create a market for new windpower facilities in Massachusetts and the region. In addition, most Massachusetts consumers can choose their supplier of electricity "generation services." In the near future, these suppliers may offer green power products.

Net Metering

The concept of net metering 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 customers to use their generation to offset their consumption over the entire billing period, not just instantaneously. This offset would enable customers with generating facilities to receive retail prices for more of the electricity they generate.

A customer of a distribution company with an on-site generation facility of 60 kW or less in size has the option to run the meter backward. The customer may also choose to receive a credit from the distribution company equal to the average monthly market price of generation per kilowatt-hour, as determined by the department, in any month during which there was a positive net difference between the kilowatt-hours generated and consumed. Such credit shall appear on the following month's bill. Distribution companies are prohibited from imposing special fees on net metering customers, such as backup and demand charges, or additional controls, or liability insurance, as long as the generation facility meets the interconnection standards and all relevant safety and power quality standards. Net metering customers must still pay the minimum charge for distribution service (as shown in an appropriate rate schedule on file with the department), and all other charges for each net kilowatt-hour delivered by the distribution company in each billing period. (220 CMR 11.04 (7) (c), adopted by Massachusetts DTE in Docket 96-100, February 20, 1997)

State Summary

Total—0.37 MW

Planned—10.5 MW

In-State Wind Energy Potential:
4921 MW capacity after land use and environmental exclusions
10 billion kWh per year electric eneregy

Installed Projects

Princeton
Installed MW– 0.32
Annual Output – 179,253 kWh (1998)
Power Purchaser/User – Princeton and Municipal Light
Type of turbine – Enertech

Planned Projects

Utility/Developer – ReGen/AllEnergy/DisGen
Location – Hancock
Status – Negotiations
MW Capacity – 7.5
On line by – November 2000

Key Contacts

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