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.

The Midwest, including Iowa, has been described as the "Saudi Arabia of wind energy" because of its strong winds. Iowa is the eleventh windiest state in the nation, with nearly 40% of its land area offering wind generation capabilities. The state has the potential to produce 4.8 times its own annual electrical consumption through wind power. Because of decreasing capital costs, new technological advances, and favorable legislation, wind power is Iowa's—and the world's—fastest growing renewable resource.

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."

State Financial Incentives

Iowa offers a state sales tax exemption for the total cost of wind energy equipment and all materials used to manufacture, install, or construct wind energy systems. This sales tax exemption applies to both commercial and residential systems. The exemption does not cover the sales taxes paid by a company in purchasing equipment to construct a plant to manufacture wind systems.

Iowa also offers a state loan program for commercial, industrial, and residential alternative energy projects. This loan program is administered by the Iowa Energy Center at Iowa State University and is funded by the state's investor-owned utilities. Between 1997 and 1999, $1.8 million was appropriated. The program offers zero (0%) interest loans for as much as half of the project cost up to a maximum of $250,000. Funds are available for various technologies in the following percentages: solar: 5%, methane: 30%, biomass 20%, small wind (<10 kW): 10%, big wind (>10 kW): 20% and hydropower: 15%.

State Summary

Installed — 243 megawatts (MW)

Planned — 0.6

In-State Wind Energy Potential:
104,300 MW capacity after land use and environmental exclusions
172 billion kWh per year electric energy

Installed Projects

Adair, 0.225 MW, annual output 490,000 kWh, power purchased by Alliant/IES Utilities, Vestas turbines

Akron-Westfield, annual output 0.6 MW, power purchased by Akron-Westfield Community Schools, Vestas turbines

Algona, 2.25 MW, annual output 5M kWh, power purchased by Cedar Falls Utilities, Zond Systems, Inc., turbines

Allendorf, 1.2 MW, annual output 2.3 M kWh, power purchased by Alliant/IES Utilities, NEG Micon turbines

Forest City, 0.6 MW, annual output 1.3 M kWh, power purchased by Forest City Municipality, Nordex turbines

Joice, 0.25 MW, power purchased by Alliant/IES Utilities, Nordex turbines

Nevada, 0.45 MW, annual output 349,661 kWh, power purchased by Alliant/IES Utilities, WindWorld turbines

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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Iowa

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
Chicago Regional Office
One South Wacker Drive, Suite 2380
Chicago, Illinois 60606
(312) 353-6749

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

Nevada, 0.225 MW, power purchased by Alliant/IES Utilities, Vestas turbines

Spirit Lake, 0.25 MW, annual output 242,136 kWh, Alliant/IES Utilities, WindWorld turbines

Waverly, 0.085 MW, annual output 86,990 kWh, power purchased by Waverly Light & Power, Vestas turbines

Buena Vista City Storm Lake I, 112.50 MW, power purchased by MidAmerican, Zond Systems, Inc., turbines

Storm Lake, 80.25 MW, power purchased by Alliant/IES Utilities, Zond Systems, Inc., turbines

Clear Lake, 42 MW, power purchased by Alliant/FORAS/FPL Energy, NEG Micon turbines

Buena Vista City Storm Lake II, 1.5 MW, power purchased by Waverly Light & Power, Zond Systems, Inc., turbines.

Key Contacts

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www.state.ia.us/dnr/energy/programs/ren/wind.htm

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