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.

Wyoming is recognized as one of the premium wind sites in the United States and is home to one of the oldest developed wind sites in the region. The focus of the first site, built in Medicine Bow in 1982 with support from the U.S. Department of Energy (DOE), was toward research of wind energy production, particularly from large turbines.

Today, Wyoming has wind power plants at Cheyenne, Foote Creek, and Medicine Bow, with a total output capacity of 73 megawatts (MW). Wyoming's largest wind site, constructed at Foote Creek Rim near Arlington, Wyoming, in 1999, is a 69-turbine wind plant with an output capacity of 68 MW. It can generate enough electricity to serve the needs of 15,000 to 25,000 homes. Although this wind plant occupies 2,156 acres, only 1% of that land will be used for the plant's operation. The balance will remain free for ranching use.

"This wind project is the largest in the northwestern United States," said Tom Gray, director of communications for the American Wind Energy Association (AWEA), "and it is a major milestone on the road to tapping the region's wind resources in a significant way. Wyoming and Montana each have the potential to generate hundreds of billions of kilowatt-hours (kWh) annually from the wind, and to create tens of thousands of jobs in the process."

Nearly all of the wind energy produced by Wyoming's wind plants is sold out of state, and as the need and the demand for wind power in the northwest continues to grow, Wyoming officials plan to meet a major portion of those needs through expansion of existing sites and installation of new sites.

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 (energy in kilowatt-hours) 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."

Five turbines recently installed at Medicine Bow, Wyoming, by the Platte River Power Authority will help support green power programs. Four of the turbines installed will serve green-pricing customers and renewable energy programs in Aspen, Fort Collins, Longmont, and Loveland, Colorado. Output from a fifth turbine will be sold to Tri-State Generation and Transmission Association to support its green-pricing program.

State Summary

Installed—73 MW

Planned—30.1 MW

In-State Wind Energy Potential:
277,200 MW capacity after land use and environmental exclusions
545 billion kWh per year in electric energy

Installed Projects

Cheyenne
Installed—0.4 MW
Power Purchaser/User—Cheyenne Light/Fuel & Power
Type of Turbine—TMA

Foote Creek Rim
Installed—68 MW
Power Purchasers/Users—Pacificorp/Eugene Water Electric Board/Bonneville Power Administration, Public Service Company of Colorado
Type of Turbine—NEG Micon, Mitsubishi

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.

WIND POWERING AMERICA

Wyoming

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
Denver Regional Support Offices
1617 Cole Boulevard
Golden, Colorado 80401
(303) 275-4826
http://www.eren.doe.gov/dro/

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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Medicine Bow
Installed—4.6 MW
Power Purchaser/User—Platte River Power Authority, Fort Collins Light & Power
Type of Turbine—Vestas V-47

Planned Installations

Foote Creek Rim, 1.8 MW, Bonneville Power Authority

Foote Creek Rim, 25 MW, Public Service Company of Colorado

Harris Cattle Ranch, 20 MW, Zywind, Inc.

Medicine Bow, 3.3 MW, Fort Collins Light & Power/Platte River Power Authority

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