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 electric utility members of the Kansas Electric Utilities Research Program (KEURP), partially supported by the Utility Wind Interest Group (UWIG) and the U.S. Department of Energy (DOE), began investigating wind resources in Kansas in 1996. Researchers collected wind data for almost two years at six sites in Kansas identified as having the potential to be developed as wind farms.

Wind speeds measured hourly over a 12-month period at the six sites showed monthly average wind speeds ranging from 15.8 to 17 mph. A review of the data shows that spring is the windiest part of the year and summer is the least windy. The maximum monthly wind speed occurred in March at two locations that had average hourly wind speeds of around 20 mph.

KEURP, in partnership with the Kansas Corporation Commission's Energy Programs, plans to develop a Web site displaying the wind data collected in Kansas and other wind resource and education information.

Kansas Wind Kiosk

KEURP, the Kansas Corporation Commission's Energy Programs, and Wichita State University (WSU) are also designing a wind information kiosk to help educate people interested in wind energy about the issues related to electricity generation sources, costs, and impacts. The kiosk will house a computer terminal that will provide information about:

1) Wind as a potential source of electric generation

2) Wind data taken from various sites in Kansas

3) Other Web sites and sources for further information.

The kiosk will be located at the new Overland Park Arboretum near Kansas City and will be powered through electricity generated by a small wind turbine.

Kansas Green Power Programs

"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."

Western Resources utility began selling green power blocks through its Westar Wind program in August 1999 for $5 per 100-kWh block. The average Kansas household uses approximately 300 to 500 kWh of electricity monthly. The green power will be supplied by two 750-kW Zond Systems, Inc., wind turbines installed by Western Resources near Saint Marys, Kansas. These turbines are projected to produce approximately 3.6 megawatts (MW) annually, enough to meet the annual power needs of approximately 400 households. Western Resources, through its KGE & KPL utilities, owns and maintains the project.

The State of Kansas will purchase 50% of the 3,000 green energy blocks offered through the Westar Wind Program for state government buildings.

State Financial Incentives

The Renewable Energy Grants Program, administered by the Kansas Corporation Commission, provides $400,000–$500,000 per year in awards of $10,000–$50,000 for renewable energy technologies. Projects with commercial

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

Kansas

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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applications are favored. Federal guidelines prohibit grants made through this program to go toward research and development. Applications are accepted on an ongoing basis; however, decisions on program awards are made once a year.

State Summary

Installed—2.86 MW

In-State Wind Energy Potential:
235,200 MW capacity after land use and environmental exclusions
391 billion kWh per year electric energy

Installed Projects

Saint Mary's, 1.5 MW, on-line June 1999, 3.6-MW project, Western Resources, two Zond Systems, Inc., Z-50 750-kW turbines.

There are currently 77 utility-integrated wind turbines owned by private individuals and businesses.

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