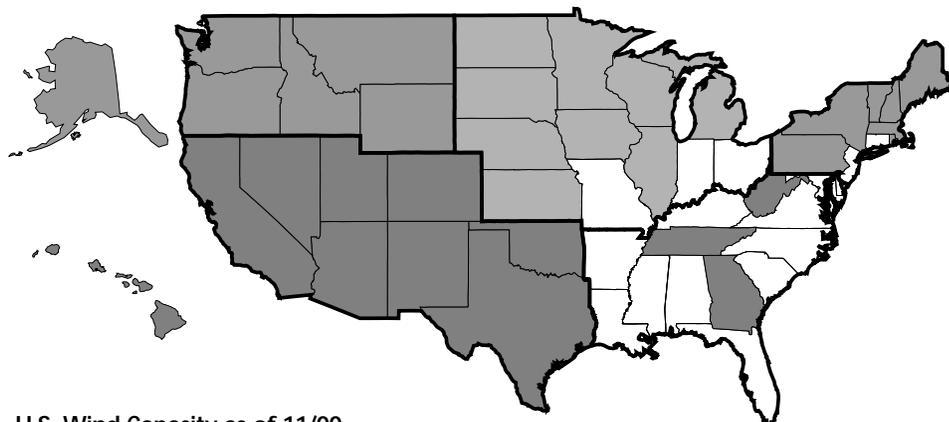


Cultivating a U.S. Wind Energy Vision

THIS YEAR, MORE THAN EVER, THE TOPIC OF WIND energy has surfaced in an extensive array of new venues. Broad wind energy forums have been held in many states including Kansas, South Dakota, North Dakota and Nebraska. Regional meetings with wind as the central theme were held this year in Wisconsin and West Virginia, and one is planned for Washington State in January 2001. Windustry has participated in and learned about numerous local town meetings in Minnesota, North Dakota, South Dakota, Wisconsin, and Iowa. A major new initiative called Wind Powering America has been sponsoring many of these meetings by working collaboratively with local partners and reaching out to new audiences — farmers and ranchers, rural community leaders, elected officials, Native American tribal leaders, clean energy advocates, large and small utilities, state, regional and national administrators and anyone else interested.

Wind has also made its way into the mainstream media. Substantial articles have featured wind power in publications ranging from the *New York Times* and the *Smithsonian* magazine to local rural dailies. The articles relate a variety of perspectives including wind as a new resource competing with traditional fossil fuels and other new generation; wind as the fastest growing energy industry in the world; wind as a compatible land use with ranching; and wind turned from curse to blessing as farmers reap benefits.

All of the gatherings and press coverage have helped those who live with the wind to envision new wind power projects and have empowered new participants in wind energy development. As a result, a wide range of new wind energy has been installed and planned in various regions throughout the U.S. While some projects are baby steps, others are major wind power plants. Some wind projects are rate-based with their cost spread evenly to all utility customers. Others depend on volunteers to subscribe to higher premiums to pay for investments in wind energy. Much of the new capacity has been spurred by state legislative requirements such as Renewable Portfolio Standards in Texas and



U.S. Wind Capacity as of 11/00

| Northwest/ Northern Rockies | West/Southwest | Midwest | Southeast/Atlantic | Northeast |
|---|---|---|--|---|
| Distributed: 32 MW Large-Scale: 85 MW 31,000 Households | Distributed: 30 MW Large-Scale: 1,786 MW 690,000 Households | Distributed: 74 MW Large-Scale: 471 MW 150,000 Households | Distributed: 11 MW 3,000 Households | Distributed: 25 MW 10,000 Households |

More than 170 MW of "distributed" wind generation capacity (single wind turbines and small clusters, both residential and utility-scale) are installed in the 35 states denoted above. Five states with the largest arrays of turbines — California, Minnesota, Iowa, Texas, and Wyoming — are hosting another 2,340 MW in large-scale wind farms. Together approximately 14,000 wind turbines across the U.S. are currently generating enough power to serve the annual electric needs of nearly 900,000 households. This figure was calculated based on each state's 1999 residential customer usage rate and assuming an average 30% turbine capacity factor, which represents an average hub height wind speed of 16 mph.

Systems Benefits Charge in California and mandates in Minnesota and Iowa.

The wind blowing across the U.S. has the potential to generate six times as much electricity as the entire country currently uses. However, there are a few barriers to overcome. The electricity produced from the large modern machines is too great to store with today's technology so it must go direct onto the electrical grid. Transmission lines with unused capacity are scarce and building new ones is difficult and expensive. Also, wind energy is an intermittent resource. Even though experts predict that up to 20% of our electricity mix can be supplied by wind without compromising reliability, utilities are not embracing it. Modern wind turbines regulate power well, and thousands of installations worldwide have demonstrated that utility systems are capable of accommodating the changing wind power just as they modify their output to follow changing demand. "Wind is now a serious player in the energy marketplace," says national wind advisor Ed DeMeo of Renewable Energy Consulting Services.

Utility survey after survey has shown that wind energy is a preferred source of electricity. As traditional fuel sources fluctuate in price or become limited in supply, and as the global warming debate heats up, the U.S. will harvest its wind resource at an ever increasing

pace. While less than 1% of the electricity used by American households is currently produced by wind, the existing U.S. wind capacity may well double to 5,000 MW by the end of 2001. As shown on the map above, states in the West/Southwest and Midwest regions are the nation's wind industry leaders, and distributed installations are gaining significant footholds even in regions without large-scale projects.

People across the country are exploring the potential for wind energy development as they work through the challenges. They are carefully and thoughtfully negotiating land leases with wind developers, they are pooling their capital and putting up their own utility scale machines, they are putting up residential or farm/small business sized wind turbines, and they are pledging contributions to wind programs. New partnerships and alliances to foster wind energy are emerging. Rural community members in particular have begun asking their utilities to install wind turbines and are contacting their elected officials in support of wind incentives and statutes to help build wind power markets. Everyone is wrestling the transmission issues which are the vital farm-to-market roads for this new crop.

For more information on wind energy opportunities see www.windustry.org.

Wind Energy Updates

Washington's first large-scale project approved!

AFTER SUCCESSFUL NEGOTIATIONS between FPL Energy and Blue Mountain Audubon Society, Walla Walla County in Washington State issued a conditional use permit last month for approximately half of the planned 300 MW "Stateline Wind Project". In a state with a history of wind facility siting challenges, FPL gained support from local environmentalists by agreeing to withdraw a few groups of turbines and to continue monitoring the sites for avian activity before applying for a second permit for the additional turbines next spring.

Construction will begin in January; the full project is expected to be online by the end of 2001. For more information: www.rnp.org.

Moorhead Wants More Wind Power

IN THE NO-NONSENSE BRISK PACE of four weeks, Moorhead Public Service (MPS), a municipal utility in North-west Minnesota, signed up enough

customers to buy a second community-owned 750 kW wind turbine. Due to the popularity and enormous success of its initial one turbine offering in their *Capture the Wind* program, MPS announced plans for Phase II in October. For just a half-penny more per kilowatt hour (kWh), MPS residential or business customers can choose to purchase either all or part of their electricity from the project. With 13,000 customers, MPS' total of nearly 900 *Capture the Wind* members represent a 7% participation rate, one of the highest among all green power programs across the nation.

Each *Capture the Wind* customer who uses 1,000 kWh of electricity per month will prevent 8,800 pounds of carbon dioxide from being emitted into the air, which has the same effect on the environment as planting 1.2 acres of trees or removing one car from the road each year.

For more information: *Capture the Wind* hotline at (218) 299-5199 or www.mpsutility.com.

Many other exciting new wind projects are in the planning stages. We will update you in future issues.

Wind Workshops/Events

January 10, 2001, Bismarck, North Dakota *Wind Energy and Rural Development in North Dakota II Workshop with Senator Byron L. Dorgan.*
Contact: Deb Haley, 701-777-3120

January 29-30, 2001, Spokane, Washington *Harvesting Clean Energy for Rural Development Conference.*
Contact: Rys Roth tel: 360-352-1763; rhys@climatesolutions.org

January 31, 2001, Spokane, Washington *Northwest Tribal Governments Workshop.* Contact: Bob Gough at Rpwgough@aol.com or Curtis Framel, tel: 206-553-7841

May 3 (date unconfirmed) Oklahoma City, Oklahoma *Oklahoma Wind Power: Emerging Opportunities.* Contact: Tim Hughes tel: 405-447-8412; thughes@ou.edu

June 3-7, 2001, Washington, D.C *Windpower 2001, American Wind Energy Association's annual wind conference.* Contact: Laura Keelan tel: 202-383-2500; laura_keelan@awea.org



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ABOUT WINDUSTRY Windustry works to create an understanding of wind energy opportunities by providing technical support, creating tools for analysis, and building collaborations with rural landowners, local communities and utilities, as well as state, regional, and non-profit organizations. Windustry's areas of special focus include: economic development from wind energy; landowner rights, risks, and benefits; and community-based generation.

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