

WIND POWER: THE SKY IS THE LIMIT



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Questions and Answers

Wind power is entering its second heyday in the United States. The first was from 1870 to 1930, when thousands of farmers used the wind to pump water and generate power. Wind energy's second rise began in 1979, when several Danish companies pioneered serial production of wind turbines. Today, wind power is the fastest growing new electricity resource in the United States and the world and, if we keep the right policies in place, there's no reason for this second heyday to end.

At the end of 2007, worldwide wind power capacity was 94.1 gigawatts, or about 1% of worldwide electricity use. Although 60% of this production is in Europe, the U.S. is now the world's second largest wind generating country, behind Germany. Wind power growth is skyrocketing in the U.S., expanding by 45% in just one year, 2007.¹ If these rates of growth continue, the U.S. will soon surpass Germany.

The U.S. is not even close to reaching its full wind potential, however. In 2007, the U.S. produced 16,818 MW (megawatts) of power from wind, or just over 1% of the U.S. electricity supply.² The U.S. Department of Energy projects that the U.S. could produce 20% of its electricity needs from wind by 2030, however.³ And, the American Wind Energy Association projects that the U.S. has the potential to generate 10,777 billion MW from wind—more than twice the amount of electricity currently generated in the U.S. each year from all sources.⁴

Is wind energy more expensive than conventional resources?

The cost for wind energy has dropped by more than 80% over the past 20 years.

Wind power facilities at the best sites are producing electricity at less than five cents per kilowatt hour. These sites are already competitive with other electricity sources, and costs are continuing to decline.⁵

Will using more wind energy result in higher costs to consumers?

Studies have shown that state laws requiring expanded use of renewable energy, 93% of which has been met through increased wind resources, have increased electricity rates by just 1% or less. In several states, electric generation from wind and other renewables appears to be competitive with fossil fuel generation.⁶

What's more, a study by the Union of Concerned Scientists found that increased use of renewables would reduce both the demand for natural gas and the projected growth in natural gas prices, compensating for any increased costs.⁷

Is renewable energy reliable?

Several countries in Europe use wind power to meet significant portions of their energy needs, including Denmark (20%), Spain (9%) and Portugal (9%) with no adverse effects on the reliability of the system.⁸ In fact, wind energy can actually increase the reliability of the overall distribution system by diversifying our resource base and using supplies that are not vulnerable to periodic shortages or other supply disruptions.

Does wind have to be “backed up” with conventional power?

The electric grid is designed to have

more generation sources than are needed at any one time because no power plant is 100% reliable. The grid is designed to absorb many variables in both supply and demand. Wind is naturally variable, but this does not mean that it is unreliable. Seasonal and daily wind generation patterns can be anticipated. And, in contrast to conventional power plants, wind farms need not shut down altogether for maintenance and repairs.⁹

For these reasons, although some wind projects may require back up power from other sources, these needs are minimal. For example, a Minnesota study found that adding 1,500 MW of wind (enough to meet the needs of more than 400,000 homes) to the system of a major utility would require only an additional 8 MW of conventional generation—less than 1% of the wind generation added—to deal with added variability.¹⁰

We've spent billions subsidizing wind and it still isn't competitive. Isn't it time to look elsewhere?

Federal subsidies for renewable energy have been and continue to be much less than government subsidies for the fossil fuel and nuclear power industries. According to the U.S. Department of Energy, federal subsidies for renewable electricity production in fiscal year 2007 totaled \$1 billion (with wind receiving \$724 million of that) while subsidies for electricity production from fossil fuels totaled \$3.2 billion.¹¹

What's the best way to encourage renewable energy: setting minimum standards or providing incentives?

Setting minimum standards for renewable energy creates a market. Providing tax credits and other incentives levels the playing field with conventional technologies. Although both methods can be effective in promoting renewable energy production on their own, the states with the greatest wind production have both standards and tax credits, as well as a strong wind resource, of course.

In 1999 the Texas state government created a statewide renewable energy standard that requires the installation of 2,000 megawatts of new renewable energy by the year 2009. At the same time, a federal production tax credit for wind power of 1.7 cents per kilowatt hour was available. With these two complementary policies, Texas has emerged as the leading wind power market in the United States, generating 4,356 MW of energy from wind in 2007.

Footnotes

- 1 Global Wind 2007 Report, Global Wind Energy Council, 2008.
- 2 2008 Market Update, American Wind Energy Association, 2008.
- 3 20% Wind Energy By 2030 Increasing Wind Energy's Contribution to the U.S. Electricity Supply, U.S. Department of Energy, 2008.
- 4 2008 Market Update, American Wind Energy Association, 2008.
- 5 Wind Web Tutorial, American Wind Energy Association
- 6 Renewables Portfolio Standards in the United States — A Status Report with Data Through 2007, Ryan Wisser and Galen Barbose, Lawrence Berkeley National Laboratory, 2008.
- 7 A Powerful Opportunity: Making Renewable Electricity the Standard, Steven Clemmer, Alan Noguee and Michael C. Brower, Union of Concerned Scientists, November 1998.
- 8 Global Wind 2007 Report, Global Wind Energy Council, 2008.
- 9 Wind Energy Myths vs. Facts, American Wind Energy Association.
- 10 Wind Integration Study - Final Report, Xcel Energy and the Minnesota Department of Commerce, 2004.
- 11 Federal Financial Interventions and Subsidies in Energy Markets 2007, Energy Information Administration, U.S. Department of Energy, 2008.



WORC is a regional network of seven grassroots community organizations, which includes 10,000 members and 44 local chapters. WORC helps its member groups succeed by providing trainings and coordinating regional issue campaigns.

Billings Office

220 S. 27th Street, Suite B
Billings, MT 59101
billings@worc.org
www.worc.org
(406)252-9672

Lemmon, SD Office

2307 5th Ave NE
Lemmon, SD 57638
jerilynn@worc.org
(701) 376-7077

Washington, D.C. Office

110 Maryland Ave., NE, #306
Washington, DC 20002
dc@worc.org
(202)547-7040

Montrose, CO Office

60584 Horizon Road
Montrose, CO 81401
montrose@worc.org
(970)323-6849

WORC Member Groups

Dakota Resource Council

PO Box 1095
Dickinson, ND 58601
drc@drcinfo.com
www.drcinfo.com
(701)483-2851

Northern Plains Resource Council

220 S. 27th St., Suite A
Billings, MT 59101
info@northernplains.org
www.northernplains.org
(406)248-1154

Dakota Rural Action

PO Box 549
Brookings, SD 57006
action@dakotarural.org
www.draction.org
(605)697-5204

Oregon Rural Action

PO Box 1231
La Grande, OR 97850
info@oregonrural.org
www.oregonrural.org

Idaho Rural Council

PO Box 118
Bliss, ID 83314
irc@idahoruralcouncil.org
www.idahoruralcouncil.org
(208)352-4477

Powder River Basin Resource Council

934 N. Main St.
Sheridan, WY 82801
resources@powderriverbasin.org
www.powderriverbasin.org
(307)672-5809

Western Colorado Congress

P.O. Box 1931
Grand Junction, CO 81501
info@wccongress.org
www.wccongress.org
(970)256-7650