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Wind Energy Could Produce 20 Percent of U.S. Electricity By 2030

DOE Report Analyzes U.S. Wind Resources, Technology Requirements, and Manufacturing, Siting and Transmission Hurdles to Increasing the Use of Clean and Sustainable Wind Power

WASHINGTON, DC – The U.S. Department of Energy (DOE) today released a first-of-its kind report that examines the technical feasibility of harnessing wind power to provide up to 20 percent of the nation’s total electricity needs by 2030. Entitled “20 Percent Wind Energy by 2030”, the report identifies requirements to achieve this goal including reducing the cost of wind technologies, citing new transmission infrastructure, and enhancing domestic manufacturing capability. Most notably, the report identifies opportunities for 7.6 cumulative gigatons of CO₂ to be avoided by 2030, saving 825 million metric tons in 2030 and every year thereafter if wind energy achieves 20 percent of the nation’s electricity mix. As part of President Bush’s Advanced Energy Initiative announced in 2006, clean, secure and sustainable wind energy has the potential to play an increasingly important role in the Bush Administration’s long-term energy strategy to make investments today to fundamentally change the way we power U.S. homes and businesses and to help reduce greenhouse gas emissions growth by 2025.

“DOE’s wind report is a thorough look at America’s wind resource, its industrial capabilities, and future energy prices, and confirms the viability and commercial maturity of wind as a major contributor to America’s energy needs, now and in the future,” DOE Assistant Secretary of Energy Efficiency and Renewable Energy for the U.S. Department of Energy Andy Karsner, said. “To dramatically reduce greenhouse gas emissions and enhance our energy security, clean power generation at the gigawatt-scale will be necessary, and will require us to take a comprehensive approach to scaling renewable wind power, streamlining siting and permitting processes, and expanding the domestic wind manufacturing base.”

Prepared by the U.S. Department of Energy and a broad cross section of stakeholders across industry, government, and three of DOE’s national laboratories - the National Renewable Energy Laboratory in Golden, CO; Lawrence Berkeley National Laboratory in Berkeley, CA; and Sandia National Laboratory in Albuquerque, NM, the report presents an in-depth analysis of the potential for wind in the U.S. and outlines a potential scenario to boost wind electric generation from its current production of 16.8 gigawatts (GW) to 304 GW by 2030. For its technical report, DOE also drew on the expertise of the American Wind Energy Association and Black and Veatch engineering consultants and the report reflects input from more than fifty energy organizations and corporations.

The analysis concludes that reaching 20 percent wind energy will require enhanced transmission infrastructure, streamlined siting and permitting regimes, improved reliability and operability of wind systems, and increased U.S. wind manufacturing capacity. Highlights of the report include:

1. **Annual installations need to increase more than threefold.** Achieving 20 percent wind will require the number of annual turbine installations to increase from approximately 2000 in 2006 to almost 7000 in 2017.
2. **Costs of integrating intermittent wind power into the grid are modest.** 20 percent wind can be reliably integrated into the grid for less than 0.5 cents per kWh.
3. **No material constraints currently exist.** Although demand for copper, fiberglass and other raw materials will increase, achieving 20 percent wind is not limited by the availability of raw materials.
4. **Transmission challenges need to be addressed.** Issues related to siting and cost allocation of new transmission lines to access the Nation's best wind resources will need to be resolved in order to achieve 20 percent wind.

“The report correctly highlights that greater penetration of renewable sources of energy - such as wind - into our electric grid will have to be paired with not only advanced integration technologies but also new transmission,” DOE’s Assistant Secretary for Electricity Delivery and Energy Reliability Kevin Kolevar said. “In many cases, the most robust sources of renewable resources are located in remote areas, and if we want to be able to deliver these new clean and abundant sources of energy to population centers, we will need additional transmission.”

With the U.S. leading the world in new wind installations and having the potential to be the world leader in total wind capacity by 2010, DOE’s report comes at an important time in wind development. Last year, U.S. cumulative wind energy capacity reached 16,818 megawatts (MW) – with more than 5,000 MW of wind installed in 2007. Wind contributed to more than 30 percent of the new U.S. generation capacity in 2007, making it the second largest source of new power generation in the nation --- surpassed only by natural gas. The U.S. wind energy industry invested approximately \$9 billion in new generating capacity in 2007, and has experienced a 30 percent annual growth rate in the last 5 years.

Read more information about on DOE's [Wind Program](#).

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