DIRECTION

Policy • Advocacy • Business • Finance • Legal • Environment • International

American wind energy rebounded in 2014; "wind rush" underway in Texas

Record construction, job growth show success of Production Tax Credit

American wind industry jobs and turbine deployment regained momentum heading into 2015, the American Wind Energy Association reported recently in releasing its 2014 results in the U.S. Wind Industry Annual Market Report.

The U.S. wind industry added 23,000 jobs in 2014, boosting the sector's total to 73,000 jobs. 2015 began with 12,700 MW of wind projects under construction, a record for the start of any year.

"These results show that extending the Production Tax Credit for wind power in 2013 was good for business in America," said Tom Kiernan, CEO of AWEA. "We've got a mainstream, Made-in-the-USA product that supports jobs in every state and is gaining momentum. With a more predictable policy we can add more jobs and keep this American success story going."

Four times more new wind generating capacity came online last year than in 2013. 2013 wind deployment was down 92 percent from 2012 levels because of policy uncertainty caused by the brief lapse of the Production Tax Credit (PTC) at the end of 2012. That lapse resulted in the loss of 30,000 wind industry jobs in America.

In the U.S. wind manufacturing sector specifically, wind now employs nearly 20,000 workers in more than 500 facilities across 43 states, in addition to 53,000 other jobs in project development, construction, operations, and other parts of the industry. The U.S. wind industry drove $12 billion in private investment last year, for a total of more than $100 billion since 2008.

The success of the PTC is on full display in states like Iowa, where wind energy has attracted $10 billion in cumulative investment and supports 6,000 jobs. In 2014, Iowa Republican Rep. Steve King led a bipartisan letter calling for an extension of the PTC that was signed by 118 members of Congress and sent it to House Speaker John Boehner.

"Iowa gets nearly 30 percent of its electricity from homegrown wind power, more than any other state," said Representative King. "Thanks to technological improvements and scaling up domestic manufacturing, the U.S. wind industry has reduced the cost of wind energy by more than half over the last five years. It was the intent of Congress to create an alternative production source of American electricity. Wind will never be an energy source we have to import and now, we have American homegrown supplies of turbines, towers, and blades. The wind industry has done what Congress asked them to do. Congress needs to hold up their part of the bargain."

By holding up their end of the bargain, Congress can allow this effective policy to successfully complete the job it was designed to do.

"The PTC enabled the private sector to make critical investments in domestic manufacturing and the American workforce, driving significant cost reductions. That has driven technology improvements and cost reductions that are creating a modern-day 'wind rush' by opening up new areas for development," said AWEA Deputy Director of Industry Data and Analysis Emily Williams. "We have utility-scale turbines operating in 39 states today, and if these trends continue and stable policy is in place, we can see wind deployment in even more states."

A U.S. Department of Energy report released in March shows that wind energy can double within the next five years to supply 10 percent of U.S. electricity by 2020, 20 percent by 2030, and 35 percent by 2050.

STATE BENEFITS AND RANKINGS

The U.S. "wind rush" is at its height in Texas, with 7,500 MW of wind projects currently under construction, more than all other states combined. The wind industry invested $3 billion in Texas last year, bringing total cumulative investment to over $26 billion.

"The strong activity we're seeing in Texas right now can be traced back to a strong, successful policy — namely the PTC," said Steve Irvin, Executive Vice President of EDP Renewables North America, whose company has operating wind farms in Texas, and is slated to begin construction on more in the state. EDP Renewables ranks amongst the top five owners of wind farms in the U.S. "Extending the tax credit is critical for us to have the stability we need to plan our business and do our part to help grow this homegrown industry."

The completion of the Competitive Renewable Energy Zone (CREZ) transmission lines a year ago has played a critical role in opening up Texas's world-class wind resources to development. That success will soon be replicated in other parts of the Plains and the Midwest, which are following suit with major new transmission upgrades.

The Texas wind boom resulted in the addition of 9,000 jobs in 2014, bringing Texas to a U.S.-leading 17,000 wind industry jobs. Rounding out the top five states with the most wind industry jobs are Iowa and Colorado with over 6,000 jobs each, Oklahoma with nearly 5,000 jobs, and Michigan with over 3,000 jobs.

Ohio again ranks number one in wind manufacturing facilities, while Colorado and then Iowa lead with the most manufacturing jobs.

U.S. LEADS WORLD IN WIND PRODUCTION

Thanks to performance-based incentives like the PTC, the U.S. leads the world in wind energy production. In 2014, U.S. wind farms produced over 181 billion kWh of wind energy, enough to power the equivalent of 16.7 million American homes.

Wind generation has more than tripled since 2008, providing 4.4 percent of the nation's electricity in 2014. Wind energy provided the largest increase in generation for any energy source in 2014.

Iowa led the nation by producing 28.5 percent of its electricity from wind power, followed by South Dakota at 25.3 percent and Kansas at 21.7 percent in 2014. Wind energy provided more than 15 percent of the total electricity generated in seven states, more than 10 percent in a total of nine states, and more than five percent in a total of 19 states.

Wind energy was the primary choice for new generating capacity in the wind-rich Midwest, Pacific Northwest, and Plains regions, providing 60 percent or more of all new electric generation capacity in those areas between 2011 and 2014.

CONSUMERS ATTRACTED BY STABLY-PRICED WIND ENERGY

Consumers are increasingly attracted by wind energy's unique lack of fuel cost, which builds a more balanced energy portfolio that protects against increases in the price of other fuels. A record of 11,000 MW of long-term wind power purchase agreements (PPAs) were signed in 2013-2014.

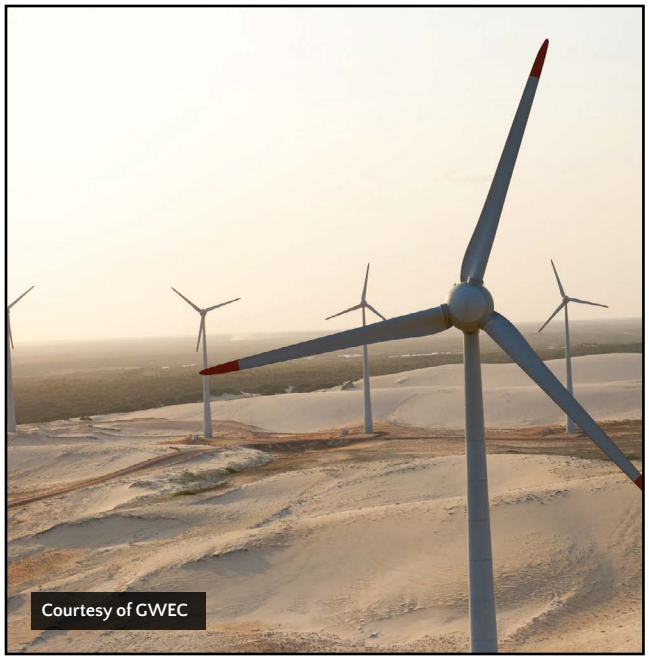
Utilities aren't the only companies buying wind power. At least 60 non-utility entities have made long-term wind energy purchases, including Microsoft, Dow Chemical, Google, Ikea, Walmart, and other household names. Over 23 percent of the wind capacity contracted through 2014 power purchase agreements was with non-utility purchasers.

Outside of the corporate sector, the U.S. General Services Administration and Cornell University added their names to the growing list of agencies and universities purchasing wind power, which already includes Oklahoma State University, the Ohio State University, and the U.S. Air Force.

— Source: The American Wind Energy Association

GWEC PROJECTS CONTINUED GROWTH FOR GLOBAL WIND

Report predicts additional 50 GW globally in 2015, 60 GW annually by 2018



Courtesy of GWEC

The Global Wind Energy Council launched its flagship publication the Global Wind Report: Annual Market update today in Istanbul. The report details wind power's remarkable growth in 2014, as well as updating GWEC's rolling 5 year market projections, which show continued growth for the rest of the decade.

"Wind power's growth is increasingly driven by its competitive pricing, as well as because it enhances energy security, price stability and (especially in China) through the need to address the choking smog that is increasingly making major urban areas in the developing world unlivable," said Steve Sawyer, GWEC Secretary General.

"The need for clean, sustainable indigenous power sources to fuel economic growth throughout Africa, Asia and Latin America is increasingly being met through wind power, and this will continue for the foreseeable future."

Looking ahead, GWEC expects the 2015 market to top 50 GW again in 2015, and reach 60 GW per year by 2018. Growth will continue to be led by China, which seems on track to meet its 200 GW well ahead of the government's target of 2020; and the Indian market is expected to grow substantially in the years ahead. Latin America is becoming a strong regional market, led by Brazil, but with Mexico catching up quickly.

Africa installed nearly 1 GW in 2014 for the first time, and we expect it to pass that mark in 2015 and not look back. Led by South Africa, Egypt and Morocco, we look for a number of new markets to emerge in the coming years which will make Africa the fastest growing regional market, at least in percentage terms, in the coming years.

Europe is expected to remain relatively stable, and North America is the most difficult market to predict as policy vacuums loom in both the US and Canada in 2016 or thereafter.

"Looking ahead to the UN climate summit in Paris at the end of the year, we call on governments to wake up to the renewable energy revolution in the power sector, and set ambitious targets to reduce greenhouse gas emissions," concluded Sawyer.

— Source: Global Wind Energy Council

XCEL ENERGY AGAIN NAMED TOP WIND UTILITY

Company extends streak as No. 1 wind provider to 11 years


Courtesy of Xcel

For the 11th consecutive year, Xcel Energy has been named the country's top utility wind energy provider by the American Wind Energy Association, a national trade association. For more than a decade, Xcel Energy has led the nation in providing wind energy to its customers.

"Xcel Energy is proud to have grown the use of clean, emissions-free wind energy at a reasonable cost for customers. Our wind portfolio is second to none," said Ben Fowke, chairman, president and CEO of Xcel Energy.

In 2014, wind energy made up about 16 percent of the company's energy supply. Currently, Xcel Energy has 5,794 megawatts of wind power in its portfolio, enough to meet the energy needs of nearly 2.9 million homes. According to a new AWEA report, Xcel Energy is the first U.S. utility to exceed 5,000 megawatts of wind. Only nine countries in the world, in addition to the states of Texas, Iowa and California, have more than 5,000 megawatts of wind capacity.

"Today we have enough confidence in our wind operations and forecasts that we are able to back down less efficient fossil fuel plants during times when high winds are predicted," said Frank Prager, vice president for policy and federal affairs at Xcel Energy. "It's a practice that is reducing fuel costs for customers and saving about 233,000 tons of carbon dioxide emissions annually."

Xcel Energy's commitment to wind energy is clear. The top 10 states for wind capacity include three in the company's service territory: Texas ranks No. 1, Minnesota is No. 8 and Colorado is No. 10.

In 2013, Xcel Energy announced plans to expand its use of wind power by another 40 percent by 2016. The company is adding nine projects throughout its service territory, representing 1,900 megawatts of new wind energy resources, enough to serve about 900,000 homes. The projects were all acquired at prices competitive with new natural gas-fueled generation and are estimated to save customers more than $900 million over the length of the contracts. At the end of 2014, one-third of this commitment was fulfilled as three of the contracted wind projects came online in Colorado, Texas and Oklahoma, totaling about 650 megawatts. The remaining six projects are on schedule to be completed later this year.

— Source: Xcel Energy

DOE FUNDS PROGRAMS FOR WIND FARM WILDLIFE PROTECTION

The Energy Department recently announced more than $1.75 million for five projects that will develop and demonstrate technologies to reduce the potential impacts of wind farms on sensitive bat species. A current challenge facing wind energy developers in the United States is how to protect wildlife while responsibly deploying and operating this reliable source of clean energy. As wind energy continues to grow as a major supplier of renewable electricity in communities throughout America, new mitigation techniques and technologies could help minimize its environmental impacts to bats and other sensitive wildlife.

This funding will support projects in two research categories. Projects in the first category will focus on innovative early-stage technology development — advancing proof-of-concept designs, and developing and testing technology prototypes.

- Texas Christian University, Fort Worth, Texas — Texas Christian University will develop and test

coatings that alter the surface texture of wind turbine towers to potentially deter bats from approaching them.

- Frontier Wind, Rocklin, California — Frontier Wind will develop and test an ultrasonic acoustic deterrent system comprised of an array of electric ultrasonic transmitters mounted along the length of turbine blades. High-frequency sounds from these transmitters will cover the entire turbine rotor.
- University of Massachusetts, Amherst, Massachusetts — The University of Massachusetts, Amherst, will develop a blade-mounted ultrasonic whistle. As air flows over the wind turbine blade, the device will produce a deterrence signal. The project will address the challenge of deterring bats across the entire wind turbine rotor and test whether a pulsed-noise, similar to a bat call, can act as an effective deterrent.

Projects in the second research category will focus on technology demonstration and validation by testing the effectiveness of existing near-commercial technologies at operational wind facilities. This work will serve as a critical step toward deploying commercially-viable, proven tools for protecting bats.

- Bat Conservation International, Austin, Texas — Bat Conservation International will conduct reliability tests for an electronic deterrent device and carry out a full-scale validation of its effectiveness at a wind plant. The project will also compare the electronic deterrent's ability to reduce impacts to bats versus turbine curtailment — or turning turbines off when bats are most active—the primary mitigation measure currently in use.
- GE Power & Water, Greenville, South Carolina — GE will advance the development of a turbine-integrated, air-powered deterrent device by refining its design based on lab testing and field tests at an operating wind plant.

This important research builds on the Wind Program's work to remove barriers to wind power deployment and increase the acceptance of wind power technologies by addressing siting and environmental issues. These technologies, if successful, will protect wildlife and also provide the wind industry with new tools to minimize regulatory and financial risks.

— Source: U.S. Department of Energy

DONG Energy takes over Mass. offshore project

Deal marks developer's first offshore endeavor outside of Europe

Courtesy of Josh Austin

DONG Energy has agreed to take over RES Americas Developments Inc.'s more than 1000MW newly assigned development project rights off the coast of Massachusetts.

At the offshore wind auction held by the Bureau of Ocean Energy Management on January 29, RES secured the rights to develop one of the two leases that were awarded. The lease comprises an area that could potentially accommodate more than 1000MW. Following approval from BOEM, the lease will be taken over by DONG Energy, the global market leader in developing, building, and operating offshore wind farms. RES Americas will continue to support development of the lease area as agreed with DONG Energy.

Entering the US offshore wind market earmarks DONG Energy's entry into the first project outside Europe.

Samuel Leupold, Executive Vice President of Wind Power, said: "The US is an interesting market for offshore wind with the potential to become a significant area for future development. We already have a number of post 2020 projects in our pipeline in North-Western Europe that we will continue to develop. With the takeover of the offshore wind development project in the US, we will broaden our geographical scope and follow the market potential outside of our current footprint."

A draft policy bill to support the regulatory conditions for offshore wind has been introduced with the Massachusetts government aiming to provide a stable framework that will enable the build-out of projects and the creation of new jobs.

The Massachusetts lease has a total size of 760 square kilometers and is located approximately 90 kilometers from shore. Water depth is between 40-50 meters.

Leupold continued: "The site conditions are quite similar to those we currently work with in North-Western Europe which means that the project could be developed using well-known technology and logistics."

— Source: DONG Energy