GLOBAL WIND INDUSTRY CELEBRATES 1 MILLION JOBS

Record wind industry growth was reflected in a 5-percent increase in employment in the sector, which now employs 1.1 million people, according to the International Renewable Energy Agency's (IRENA) Renewable Energy and Jobs Annual Review 2016. On Global Wind Day last month, the Global Wind Energy Council (GWEC) highlighted the socio-economic benefits generated by the global wind industry. Global Wind Day is a worldwide event that occurs annually on June 15. It is a day for discovering wind energy, its power, and the possibilities it holds to reshape energy systems, decarbonize economies, build new industries, and create new jobs.

The increase in employment figures is mainly due to strong installation rates in China, the United States, and Germany. New job creation is being driven by declining renewable energy technology costs and enabling policy frameworks. As governments continue to struggle with high unemployment rates in many parts of the world, both the current reality and future potential for employment in the wind industry has become increasingly significant.

"We are getting bigger, better, and cheaper," said Steve Sawyer, GWEC secretary general. "The wind industry has witnessed record growth in recent years, which not only helps the world to meet the climate goals agreed in Paris but also generates much-needed new jobs and boosts local economies, to the tune of about $110 billion last year."

In the meantime, corporations are increasingly investing in wind energy. Clean energy procurement is standard practice for some of the largest and most profitable companies in the world, including Apple, Facebook, Microsoft, Google, Lego, AT&T, Du-

Pont, General Motors, HP, Sprint, and Walmart.

"We are thrilled to see the rapidly growing number of companies opting to source their power from wind," Sawyer said. "These globally leading companies show that wind makes economic sense, protects the environment, and is what their customers want to see. While government action is needed, the real change happens when investors make economic decisions, which lead us in the right direction."

Wind power was the largest source of new power generation in 2015. Led by wind, renewables are transforming the power sector bringing along a host of other environmental, social, and economic benefits across the globe. The macroeconomic effects are increasingly a factor in political decision-making about future energy choices.

Source: Global Wind Energy Council

For more information, go to www.gwec.org.

DTE ENERGY BRINGS 25 ENERGY JOBS TO HURON COUNTY, MICHIGAN

DTE Energy recently celebrated the grand opening of the new Huron Renewable Energy Center in Bad Axe, Michigan, bringing 25 renewable energy operations and maintenance jobs to Huron County. The facility, which has been vacant since 2013, has a long-standing history in Huron County as the former Normans Warehouse and the site of the M-53 drive-in theater that opened in 1952. DTE's renovations of the building transformed the space into a fully functioning renewable energy operations headquarters.

"We are excited to breathe new life into a building located on a site that has been a landmark in Bad Axe for years and to provide yet another example of how renewable energy provides economic benefits to the local community," said David Harwood, director of renewable energy for DTE Energy.

The newly renovated Huron Renewable Energy Center includes new offices, garage facilities, warehousing, and a maintenance shop area. The facility also has an unfinished 3,000-square-foot space that DTE plans to develop into a community space to serve as an area for renewable energy education and hosting wind park tours, meetings, and other community activities. Plans are expected to be finalized this year with completion of the space in 2017.

The center's proximity to DTE's wind parks and solar arrays in the Thumb region of the state enables the operations team to respond more quickly to maintenance needs. The new location also increases accessibility of the operations team to the community and landowners, especially during the construction of the Pinnebog Wind Project, an expansion of DTE's Echo Wind Park that is underway and expected to be complete by the end of the year.

"DTE has served Huron County residents as its energy provider since 1936 and as a renewable energy developer in the county since 2011," Harwood said. "The opening of the Huron Renewable Energy Center deepens our commitment of service to this region as both an energy provider and corporate citizen for many years to come."

DTE is Michigan's largest investor in clean energy, including wind and solar, having driven investments of more than $2 billion since 2008. DTE currently owns and operates four wind parks and three solar arrays in Huron County and owns two wind parks and 23 solar arrays in other areas of the state.

DTE's entire renewable energy portfolio is capable of providing enough clean energy to power more than 400,000 homes. The portfolio includes facilities owned and operated by DTE, along with contracts to purchase power from third-party developers in Michigan. All of the power generated by these facilities is fed into the energy grid and distributed to those who need it.

Source: DTE Energy

For more information, go to www.dteenergy.com.

CLIMATE RESILIENCE IS CENTRAL TO STABILIZING U.S. WIND CASH FLOWS

Vaisala, a global leader in environmental and industrial measurement, recently announced that it has outlined findings that underscore the increasing importance of intelligent project selection for U.S. wind investors and ways to more realistically set future revenue expectations. Building a genuinely diverse, climate resilient portfolio could reduce the variability and financial impact created by short and long-term weather anomalies.

The findings, which were shared with delegates at the 2016 AWEA Windpower Conference and Exhibition in New Orleans, reflect a continued desire among investors and owner-operators to develop balanced project portfolios that yield stable returns. Vaisala's research also serves as an important reminder of the ever-present risk associated with investing in regional power portfolios, following recent extreme low wind speed events and their subsequent impact on local power output.

While operators of wind energy projects throughout North America have demonstrated an awareness of the significance of geographical portfolio diversification by deploying assets in a range of different regions in order to mitigate the financial impact of below average wind resource in any single area, widespread underperformance in the U.S. throughout much of 2015 has brought the strategy into question.

In particular, project owners with assets in both Texas and California felt the performance impact of unprecedented low wind speeds across their entire portfolios, creating cash flow problems and questions about the viability of further investment decisions. With the majority of U.S. operational wind capacity concentrated in a handful of regions, building a portfolio resilient enough to manage the impact of another extreme weather event on this scale poses a considerable challenge.

"Climate resilience continues to be a talking point for the U.S. energy sector, particularly given the impact of recent low wind conditions on investors," said Matthew Hendrickson, global manager of energy assessment at Vaisala. "However, there are still questions about how the concept can be implemented and applied to operational and planned asset portfolios. Looking in-depth at the performance of a number of high-profile YieldCos along with a hypothetical portfolio optimized for climate resilience, we've been able to start answering some of the key questions for U.S. project owners. Namely, how much portfolio diversification is possible, given the number of regions usually targeted for wind development, and what is the range of variability achieved by these existing portfolios?"

Vaisala's climate resilience analysis and approaches to portfolio diversification and revenue forecasting was discussed during presentations held at the Windpower 2016 event. The company's research forms part of an ongoing drive to help the U.S. wind industry meet the challenge of maintaining shareholder confidence with steady returns.

"There has been much debate amongst climate scientists about what caused some of the lowest wind speeds on record in California and Texas last year," said Pascal Storck, global manager of energy services at Vaisala. "Experts have looked to signals from indices like El Niño and the North Pacific Mode for answers. While useful, these patterns only explain some of the variability. A trusted expert is really necessary to understand climate impacts across a portfolio."

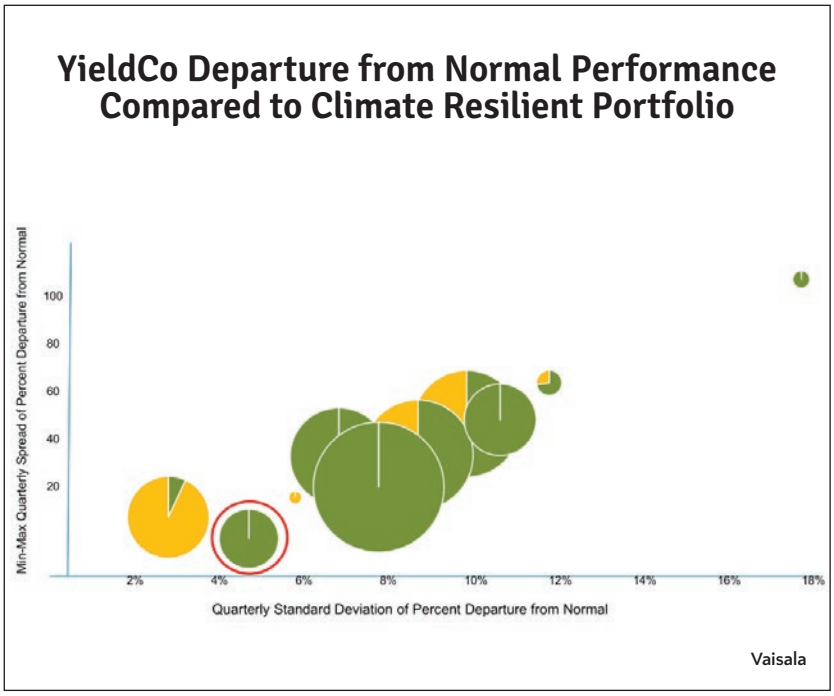
Critically, based on detailed performance analysis of existing U.S. wind portfolios, Vaisala's research team has estimated that more effective modeling of weather impacts on production could reduce associated cash flow volatility. A more sophisticated view of portfolio management, considering climate

variability as well as other sources of risk, such as turbine technology and measurement campaign design, will ultimately help U.S. investors address the commercial challenge of stabilizing revenues, even in light of highly anomalous weather conditions.

"By looking at historical production variability at all existing and potential sites within an investment portfolio, asset managers can correlate the data and assess proposed investment scenarios against internal benchmarks," Hendrickson said. "With this approach it is possible to set a diversification strategy both at a regional and national level in order to balance risk appetites and drive future financial returns."

Source: Vaisala

For more information, go to www.vaisala.com/energy.



Each YieldCo is scaled to the size of its portfolio with the mix of solar capacity (yellow) and wind capacity (green) depicted. The "climate resilient" portfolio optimized by Vaisala is encircled in red.

BEOTHUK ENERGY INC. ANNOUNCES OFFSHORE WIND PROJECT ENGINEERING CONTRACTS

Beothuk Energy Inc. (BEI) recently announced that it has awarded contracts for its St. George's Bay offshore wind energy project off the coast of western Newfoundland and Labrador, or NL, in Canada through its engineering firm, Maderra Engineering, to DNV GL and Fugro GeoSurveys. The St. George's Bay project is planned to have a capacity of 180 MW.

The work program includes geological and bathymetric compilation, constraints analysis, wind resource and energy assessment, and levelized cost of energy (LCOE) cost modeling. The consultants and BEI have access to established data sets and 67 years of wind data for analysis and will be assessing an extensive collection of seismic, hydrographic, and bathymetric data.

DNV GL has been awarded a contract to provide the constraints analysis, wind resource and energy assessment, LCOE modeling, and a preliminary wind farm layout. DNV GL's long history and extensive experience in the offshore sector lead to an incomparable quality of its offered services. For more than 25 years, DNV GL has provided a range of services to the offshore wind industry including feasibility, development, engineering, construction, and operations services. By integrating 150 years of experience in shipping, 85 years of the power sector, 45 years of offshore oil and gas, and 30 years in wind power technology, DNV GL strives to be the leading service provider for all offshore wind-related services. Having participated in the majority of the worldwide commercial scale offshore wind farms currently operating, DNV GL brings an unparalleled level of experience and expertise across the offshore wind project life cycle.

Fugro GeoSurveys has been contracted to provide bathymetric/geologic compilation, hydrographic data reprocessing, assessment of stability and seismicity, GIS analyses of seabed morphology, and routing options. Fugro GeoSurveys is a division of Fugro Canada Corp. with offices in St John's, NL, Canada. Fugro GeoSurveys is a professional service company that specializes in seafloor mapping, geotechnical, geological/seismic surveys, integrated navigation/positioning, and industrial surveys on land, in the air, or in the oceans.

Maderra Engineering will provide owner's engineering services including planning, technical documentation review and integration, and interface management. Located in St. John's, NL, Maderra Engineering Inc. focuses on the delivery of engineering, project management, and personnel services to the energy, industrial, and commercial sectors. Maderra is acknowledged for providing a wealth of expertise, a diverse range of services from

a highly talented team, a commitment to quality, and a safe working culture. Maderra's home office team offers multi-discipline engineering and design, project management, construction management, commissioning, quality assurance, and project services.

"This work program will provide key information for moving forward with the project's design, providing a foundation for engineering, planning, and development of Canada's first offshore wind farm," said Kirby Mercer, chairman and CEO of BEI.

BEI is currently working on other sites in the Atlantic region of Canada and is looking forward to advancing these projects concurrently. BEI is working to answer the call for clean renewable energy in Canada and in the United States. BEI has projects in NL, Nova Scotia, Prince Edward Island, and New Brunswick.

"Offshore Wind in Atlantic Canada is of national significance in the energy mix creating a new sector, reducing the nations carbon footprint, building on synergies with Atlantic Canada's offshore oil and gas industry, and putting many highly skilled displaced workers to work in the fast-growing clean energy sector," Mercer said.

BEI is an international green energy company, based in Atlantic Canada and headquartered in St. John's, NL, with a strategic focus on offshore wind power.

Source: DNV GL

For more information, go to www.dnvgl.com.

BOEM INITIATES PLANNING FOR CALIFORNIA OFFSHORE RENEWABLE ENERGY TASK FORCE

The Bureau of Ocean Energy Management (BOEM) announced that it will initiate planning with the State of California to establish an intergovernmental renewable energy task force to examine opportunities for offshore renewable energy development off the coast of the Golden State.

California Governor Jerry Brown requested formation of the task force in a letter to Interior Secretary Sally Jewell. The announcement was made during a BOEM-sponsored offshore wind roundtable that brought together representatives from foreign governments, state policymakers, experts in offshore wind, and members of the industry to share information on offshore wind development. The roundtable was convened in advance of the 7th Clean Energy Ministerial meeting held in San Francisco, California.

"In response to Governor Brown's request, Interior Secretary Jewell has directed the BOEM to work with the State of California to establish a task force to coordinate and consult on potential renewable energy activities on the OCS offshore California," said Janice Schneider, interior assistant secretary for land and minerals management.

The task force, a non-decisional entity, will facilitate coordination and communication in a partnership between BOEM and state, local, and tribal governments and federal agencies concerning potential renewable energy leasing for research activities and commercial development on federal submerged lands on the outer continental shelf (OCS) offshore of California.

"While offshore renewable energy resources have not yet played a significant role in California's energy system, they present important potential future opportunities," Governor Brown said in his letter to Secretary Jewell. "There are significant offshore resources along most of California's coast that complement the profile of onshore solar resources and new developments in offshore wind technology — such as larger facilities that are not visible from land and present little to no adverse avian impacts — that will likely make projects more viable."

According to BOEM Director Abigail Ross Hopper, working closely with stakeholders will allow the BOEM to identify and address issues relating to future offshore renewable energy leasing and development in a way that supports California's clean energy goals.

In April 2009, the Obama Administration announced the final framework for renewable energy development on the OCS. This framework establishes the process the BOEM uses for granting leases, easements and rights-of-way for offshore renewable energy development activities, such as the siting and construction of facilities on the OCS. The framework also allows for BOEM to use task forces in carrying out its responsibilities for authorizing OCS renewable energy activities.

The BOEM has established intergovernmental renewable energy task forces for 13 other coastal states, which will provide critical information for the decision-making process, including how to resolve potential conflicts between development and environmental concerns and other uses. The offshore wind roundtable also offered participants an unique opportunity for multilateral engagement and sharing experiences in marine-based wind research and development.

According to the National Renewable Energy Laboratory (NREL), areas of the west coast of the United States (including Hawaii) hold great renewable energy potential. In particular, these areas have the potential to generate over 1.5 TW of offshore wind energy. This potential presents a compelling market opportunity that would assist states in meeting many of their ambitious and critically important renewable energy goals.

Source: BOEM

For more information, go to www.boem.gov.


BOEM