DIRECTION

THE FUTURE OF WIND

The PexaConnect platform is free to use and allows users to view and add to a directory of businesses involved in PPAs and renewable assets, including renewable energy buyers and sellers, legal and commercial advisers, and lenders. (Courtesy: Pexapark)

Pexapark launches new networking platform to drive future PPA deals

Pexapark, a provider of software and advisory services for clean energy Power Purchase Agreements (PPAs), recently launched PexaConnect, a new community platform for businesses involved in renewable energy to virtually meet and communicate their activity. PexaConnect is free to use and allows users to view and add to a directory of businesses involved in PPAs and renewable assets, including renewable energy buyers and sellers, legal and commercial advisers, and lenders.

While a number of high-volume deals have been signed over the past few years, the renewable energy PPA market is still in its early stages. There can be a lack of transparency around which companies are involved in closing deals, beyond the vendor and buyer, which places limitations on companies looking to enter the market without initial connections. As such, Pexapark has developed this platform to give users the opportunity to not only connect with other professionals in the PPA market, but also advertise their own experience buying, selling, or advising on deals.

"Knowing who to contact, and who has worked on specific deals, can be crucial for businesses who have just entered the market to begin setting up these agreements," said Michael Waldner, CEO of Pexapark. "We're confident that this platform will help keep up the momentum of the PPA market beyond face-to-face meetings and conferences. This will be particularly critical in the coming weeks given current global disruption."

"Over the years, we have developed a number of digital tools to give companies the insight necessary across the whole PPA lifecycle to sign better deals, faster, and thereby create investor certainty when transitioning to a more open market," he said. "PexaConnect takes a step back, and gives users broad, initial visibility into the market, allowing them to set deals into motion. This new platform will become the leading destination for renewable company insights from developers to investors to offtakers — a LinkedIn for renewables."

More than 60 executives from renewable energy buyers, sellers, and consultancies, including Innogy, VSB Group, and Vestas, trialed the platform's beta version, anticipating that PexaConnect will soon become a comprehensive tool for companies involved at all stages of renewable energy PPAs.

Beta users commented that the platform would enable them to get in touch and keep in touch, even with travel restrictions in place, with potential partners for future deals. Beyond the networking element, many beta users new to the PPA market noted the platform's potential as an educational resource, as other users can collaborate and contribute the information and expertise to bring the total knowledge of the industry forward.

MORE INFO www.pexapark.com

Analysis: Wind-energy expansion would have $27B economic impact

Wind, which generates less greenhouse gas emission than burning fossil fuels, is making up an increasing share of the energy production portfolio in the United States. But wind is not as efficient as coal or natural gas, causing some concern about its economic impact.

A Purdue University study that models increased wind production in 10 states shows significant economic impact in those states, as well as billions of dollars spread over the rest of the country. Led by Shweta Singh, an assistant professor in the Department of Agricultural and Biological Engineering and in Environmental and Ecological Engineering, a standalone academic unit in the College of Engineering, with colleagues at the University of Sydney, the results were published in the March issue of the journal *Applied Energy*.

"While the impacts are directly felt in the state experiencing the increase in economic activities due to installation of new wind-energy generation capacity, the positive economic effects also spill over as shown by the MRIO calculations," the authors wrote.

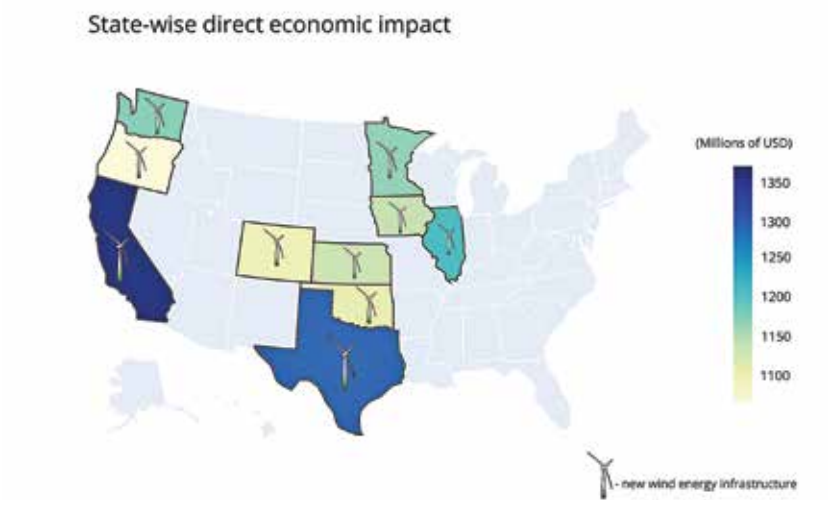
The analysis considers the effects of adding 500 MW each in 10 different states that produce the most wind energy in the U.S. — Texas, Iowa, Oklahoma, California, Kansas, Illinois, Minnesota, Oregon, Washington, and Colorado. The result would be almost $24 billion in economic impact in those states, as well as an additional $3 billion throughout the rest of the United States.

"In states that get new wind-energy capacity, we see significant economic impact, but there is also $3 billion that spills over into the other states because there is so much interdependency on products being manufactured there," Singh said.

The U.S. has more than 100,000 MW of operating wind capacity, according to the American Wind Energy Association. Adding 500 MW in 10 states would be only a 5 percent increase but would have significant economic benefits.

Graduate student Gargyea Vunnava's analysis was developed using a new USA multi-region input output (MRIO) model that considers how a shock affects not just one segment of the economy, but many interconnected parts and regions. A U.S. MRIO lab has been developed in Singh's lab using the Industrial Ecology Virtual Lab infrastructure created at the University of Sydney. This is the first MRIO lab created for the United States.

The sectors that would see the most economic benefit would be manufacturing, construction, finance and insurance, transportation and warehous-



Expansion of wind power in the top 10 wind-producing states would create billions of dollars of economic impact. States that add wind power would see about $24 billion in activity, while other states would see $3 billion in spillover economic activity. (Courtesy: Shweta Singh)

Virginia Gov. Ralph Northam. (Courtesy: virginia.gov)

ing, and public administration.

"We are so dependent on coal energy because the infrastructure has been built, and it's so cheap," Singh said. "But this study shows that there is significant economic opportunity from increasing wind-energy production, as well as spillover that touches every state and many employment sectors along with long-term impact on reducing greenhouse gas emissions."

The Purdue Research Foundation funded this research.

MORE INFO purdue.edu

Passage of VCEA clears path for offshore wind

Virginia Gov. Ralph Northam recently signed the Virginia Clean Economy Act (VCEA), which passed in the state Senate and the House of Delegates in March. This historic legislation paves the way for an enormous expansion of offshore wind, solar, onshore wind, and energy storage.

The VCEA calls for 73 percent or more of the state's electricity coming from clean energy by 2035, achieving the 100 percent goal by 2050. According to the U.S. Energy Information Administration, Virginia generated only 7 percent of its electricity from renewable sources as of 2018. To drastically boost Virginia's renewable energy production, initial milestones in the governor's plan include generating 2,500 MW of offshore wind energy by 2026, part of the overall 5.2 GW by 2034, as well as 3,000 MW of solar and land-based wind by 2022.

In fulfillment of the offshore wind portion, Dominion Energy is developing what could be the largest offshore wind project in the country. The $7.8 billion project would place 220 turbines 27 miles off Virginia Beach, producing enough electricity to power 650,000 homes. Dominion aims to bring the project online by 2026.

The following statement can be attributed to Liz Burdock, president & CEO, Business Network for Offshore Wind:

"Gov. Northam is boldly boosting offshore wind as a new source of clean energy and well-paying jobs for Virginia. Offshore wind is a key part of meeting the state's goal of 100 percent carbon-free electricity by 2050 — that is something to be applauded, and I hope replicated in other states.

"Dominion Energy's 2,640-MW utility-scale offshore wind project presents a uniquely vertically integrated framework not replicated anywhere else within the U.S. offshore wind market. Virginia and Dominion's bold, utility-owned strategy to support and develop offshore wind positions the Commonwealth as a Mid-Atlantic hub for offshore wind.

"This is coupled with Virginia's December 2019 announcement to include the state's first Office of Offshore Wind, and up to $40 million to upgrade the Portsmouth Marine Terminal, in its 2020 budget to secure new investments in the offshore wind supply chain.

"While the world economy is frustratingly slowed down, U.S. offshore wind keeps moving. To date, states have now codified 29 GW of offshore wind in legislation, firmly establishing a U.S. market. The country will need these clean energy infrastructure projects to get our economy moving after the COVID-19 epidemic dissipates."

MORE INFO offshorewindus.org

ABB partners with China's State Grid to integrate renewables

ABB's Power Grids business has won several major orders to supply advanced HVDC converter transformers and high-voltage equipment for three

800 kilovolt (kV), ultrahigh-voltage direct current (UHVDC) transmission links, owned by the State Grid Corporation of China (SGCC), in China. The links will help in integrating hydro, wind, and solar power generation, while reducing CO2 emissions. Financial details were not disclosed.

"We are glad to see a recovery in demand for reliable and clean energy, as the Chinese economy gradually returns to normality following the COVID-19 outbreak," said Claudio Facchin, president of ABB's Power Grids business. "Ultrahigh-voltage electricity transmission, enabled by pioneering technologies from ABB, is a critical element of China's vision of stronger and greener grids. We have full confidence in the resilience of China's economy."

The transmission links will be among the world's most powerful. Each link will transport up to 8,000 MW of electricity — individually enough power to meet the needs of about 8 million people in China.

The 1,700-kilometer Yazhong-Nanchang link is part of China's West-East Electricity Transmission initiative. It helps the hydro-resource-rich Sichuan Province, Southwest China, to transmit green energy to the load center of Jiangxi Province in East China. Once complete, the project is expected to reduce approximately 16 million metric tons of coal consumption and 40 million metric tons of CO2 every year.

The 1,100-kilometer Shaanbei-Wuhan link marks an important step for SGCC in developing global UHVDC systems standards. And the 1,500-kilometer Qinghai-Henan project is a UHV channel specially designed for the transmission of clean energy, including solar and wind power.

As part of the solution, ABB Power Grids will provide key technologies to ensure and safeguard the reliable, efficient, and smooth transmission and distribution of electricity over these long-distance links — resulting in minimal losses and optimal power quality. Key technologies include HVDC converter transformers, components such as wall bushings, capacitor banks, dead tank breakers and HVDC switches.

The 1,700-kilometer Yazhong-Nanchang link is part of China's West-East Electricity Transmission initiative. (Courtesy: ABB)

ABB's Power Grids business was a key technology provider to SGCC's first UHVDC transmission link. The 6,400 MW, 2,000 kilometer-long Xiangjiaba-Shanghai link, provides hydroelectric power from South West China to the bustling city of Shanghai. Since then, ABB Power Grids has been constantly pushing the boundaries of long-distance transmission technology, partnering with SGCC in several key projects, thus contributing to energy security, as well as economic support and social development in China.

UHVDC technology is key to interconnect the electrical grids of regions, countries and continents to efficiently transport clean power in large volumes over long distances. UHVDC uses direct current (DC) electricity at extremely high voltages that can have as much as 40 percent lower losses than an equivalent conventional AC (alternating current) system. This means far less energy is wasted, more power reaches end users, and carbon dioxide (CO2) emissions are reduced overall.

Once operational, the Qinghai-Henan project is estimated to reduce CO2 emissions by approximately 30 million metric tons per year — equivalent to more than 6 million passenger cars being taken off the road.

MORE INFO new.abb.com