

DIRECTION

THE FUTURE OF WIND



EGPNA, part of Enel Green Power, is a leading owner and operator of renewable energy plants in North America with projects operating and under development in 24 states and two Canadian provinces. (Courtesy: Enel Green Power)

620 MW of new wind from Enel Green Power now online in U.S.

Enel, through its U.S. renewable company Enel Green Power North America, Inc., has started operations of the 320 MW Rattlesnake Creek wind farm, its first wind facility in the state of Nebraska, and the Diamond Vista wind farm of about 300 MW in Kansas. Combined, the two new wind farms will generate about 2,600 GWh annually. With these two wind farms, the total renewable capacity that Enel Green Power has connected to grids around the world this year amounts to approximately 2.6 GW, of which more than 830 MW is in North America.

“With the completion of Rattlesnake Creek and Diamond Vista, we have now added more than 800 MW of new wind capacity in 2018 in the U.S., strengthening our growth in the country and confirming our position as partner of choice for commercial and industrial customers,” said Antonio Cammisecra, head of Enel Green Power. “These projects further demonstrate our ability to develop customized solutions that best meet the renewable energy needs of our customers.”

The Rattlesnake Creek wind farm in Dixon County, Nebraska, is fully contracted with long-term power purchase agreements, under which Adobe will purchase the energy from a 10 MW portion through 2028, and Facebook will gradually buy the wind farm’s full output by 2029. The agreement enables Facebook to power its data center in Papillion, Nebraska, with 100 percent renewable energy. The investment in the construction of Rattlesnake Creek, which is expected to generate about 1,300 GWh annually, amounts to approximately \$430 million.

The Diamond Vista wind farm in Marion and Dickinson counties, Kansas, is supported by three separate long-term power purchase agreements. The electricity and renewable energy credits from a 100 MW portion of the wind farm will be sold to global manufacturing company Kohler Co. to supply 100 percent of the annual electricity need-

ed to power the company’s U.S. and Canadian operations, including its 85 manufacturing facilities, offices, and warehouses, while reducing Kohler’s global greenhouse gas emissions by more than 25 percent. Additionally, the output and renewable energy credits from another 100 MW portion of the facility will be sold to City Utilities of Springfield, and those from an 84 MW portion to Tri-County Electric Cooperative of Oklahoma. The investment in the construction of Diamond Vista, which is also expected to generate about 1,300 GWh annually, amounts to about \$400 million.

In addition, EGPNA signed tax equity agreements with Bank of America Merrill Lynch and J.P. Morgan for the Rattlesnake Creek and Diamond Vista wind farms. The two investment banks will purchase 100 percent of the “Class B” equity interests of the 320 MW Rattlesnake Creek wind project in Nebraska for about \$334 million. Under a separate agreement, Bank of America Merrill Lynch and J.P. Morgan will also purchase 100 percent of the “Class B” equity interests of the 300 MW Diamond Vista wind project in Kansas for about \$317 million. Enel retains 100 percent ownership of the “Class A” interests, as well as control over the management and operation of both wind farms.

Over the past year, Enel signed about 570 MW of commercial and industrial (C&I) PPAs in the U.S. To date, Enel has signed, directly or indirectly, more than 1.2 GW of power supply contracts in the U.S. with C&I customers. Through these agreements, Enel is able to create tailor-made solutions for its corporate customers, with the aim to provide them with long-term access to an affordable, sustainable and reliable source of power.

EGPNA, part of Enel Green Power, is a leading owner and operator of renewable energy plants in North America with projects operating and under development in 24 states and two Cana-

dian provinces. EGPNA operates about 100 plants with a managed capacity of about 5 GW powered by renewable hydropower, wind, geothermal, and solar energy. In 2017, the company was the fastest-growing renewable energy company in the U.S., bringing approximately 1.2 GW of capacity online. The company is the largest wind operator in Kansas and Oklahoma.

Enel Green Power is the Enel Group’s business line dedicated to the development and operation of renewables across the world, with a presence in Europe, the Americas, Asia, Africa, and Oceania. Enel Green Power is a global leader in the green energy sector with a managed capacity of about 43 GW across a generation mix that includes wind, solar, geothermal, and hydropower, and is at the forefront of integrating innovative technologies into renewable power plants.

MORE INFO www.enel.com

Aerox strengthens its global presence in the U.S.

Aerox, a Spanish start-up specialized in the design of polymers for the wind-power industry, closed 2018 taking a step further in its ambitious business plan: the opening of its North American branch, Aerox North America LLC.

“The North American wind-power sector is a very dynamic market, highly demanding in terms of quality and service level. It is therefore virtually essential to have a local presence in order to be competitive,” said Raúl Cortés, the company’s CEO. The operation was coordinated by Aktion Legal Partners, a regular adviser to Aerox, and Garrigues through its office in New York.

Aerox’s technology solves some of the greatest challenges faced by the industry today, such as the protection

of the leading edge of blades, due to the progressive increase in the size of wind turbines. Aerox has been marketing its products in the U.S. since 2018, and, following the recent opening of its branch, it plans to carry out the strategic implementation of a production unit in the U.S. in 2019. The company has undergone rapid international expansion, with a presence in Europe, Asia (where it already has a logistics center in China) and, finally, North America.

“Our business plan was to strengthen our supply chain in North America to ensure sustainable growth in this major strategic area for the sector in the coming years,” Cortés said.

The company has raised more than 1.7 million euros between public and private financing since 2017. After an initial capital increase in 2015, investors from Tech Transfer UPV, a fund promoted by the Social Council of the Universitat Politècnica de València and the asset manager Clave Mayor, completed the second financing round of the company between 2017 and 2018, with the aim of meeting the needs arising from international expansion.

In addition to the exponential growth in its turnover, 2018 was a successful year for Aerox’s new developments. Aerox received 1 million euros of financing in the first half of the year by the European Union’s SME Instrument H2020 for its LEP4BLADES project, which focuses on the industrial scaling of Aerox’s most disruptive innovation: A patented technology to protect the leading edge of wind tur-



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bine blades working under extreme operating conditions. This helps extend the wind turbine blade service life up to three times, compared to other solutions on the market.

MORE INFO www.aerox.es

Apex Clean Energy sells Sugar Creek Wind farm in Illinois

Apex Clean Energy recently announced the sale of Sugar Creek Wind to a wholly owned subsidiary of Algonquin Power & Utilities Corp.

The advanced-stage 202 MW project is in Logan County in central Illinois. In fall 2018, Apex secured a long-term con-

tract with the Illinois Power Agency to provide renewable energy certificates to utilities in the state.

“Sugar Creek Wind demonstrates the Apex team’s proven ability to identify and advance projects with strong fundamentals, including access to transmission, exceptional resources, strong community support, and financeable offtake,” said Mark Goodwin, president and CEO of Apex.

MORE INFO www.apexcleanenergy.com

APAC to lead gearbox, direct-drive markets, says GlobalData

Asia-Pacific (APAC) is expected to lead the global wind gearbox and direct drive equipment markets with a share of 46 percent and 53.5 percent, respectively over the forecast period of 2018 to 2022, said GlobalData, a leading data and analytics company.

The company’s latest report, *Wind Gearbox and Direct Drive, Update 2018*, reveals the global trends of wind power are creating business opportunities for new and refurbishment markets. It states that prominent markets such as China, the U.S., and E.U., which had made significant strides in the wind



Sugar Creek Wind is an advanced-stage 202 MW project. (Courtesy: Apex Clean Energy)

market, are creating a significant market for gearbox refurbishments.

Installation of wind gearboxes and direct drive equipment are estimated to aggregate 209.6 GW and 81.3 GW, respectively, over the forecast period.

The total installation of wind gearboxes stood at 37.8 GW in 2017 as compared to 14.4 GW for direct drive, and will continue leading the market over the forecast period. However, due to their improved mechanical design, superior operation, and maintenance aspects, direct drives are likely to experience a higher growth rate over the forecast period. The direct drives market is expected to witness 17.6 GW of installations, i.e., 29.9 percent of the total installation in 2022.

“Within APAC, major countries such as China, India, Australia, and South Korea are likely to boost the growth of the drive-train markets,” said Nirushan Rajasekaram, power analyst at GlobalData. “The market for wind gearboxes in APAC is expected to reach to \$1.58 billion in 2022.”

China accounted for 27.3 percent of the global gearbox market value in 2017. The country is committed toward developing its renewable portfolio to sustain development activities and growing electricity demand from the transport sector industries and rural regions to improve standards of living, while reducing power sector emissions. However, the market is projected to decline till 2022, due to change in awarding wind projects from a feed-in tariff model to auctioning model.

“The historical installations of wind turbines in China will see the gearbox refurbishment market value grow significantly over the forecast period,” Rajasekaram said. “India is estimated to be the fastest growing market for gearbox, growing at a CAGR of 15.9 percent over the forecast period. Similar to China, the government proposed ambitious renewable energy targets, which are expected to drive the wind-equipment market. It is likely that direct drives will also see higher rates of deployment in India, during the forecast period.”

However, despite strong projec-

tions for wind gearbox and direct drive markets, certain market uncertainties exist. Major countries such as China, the U.S., and Germany are experiencing slowdown in wind-turbine installations, which would directly impact the drive-train market, although opportunities for refurbishment are plenty, owing to their legacy wind turbine installations.

“Evolving power and smart tech-

nologies could result in wind power becoming uncompetitive and thereby impact its growth in the future,” Rajasekaram said. “Emerging markets will require the construction of sufficient grid infrastructure to support new generation capacity addition, which could slow market deployment of wind power.”

MORE INFO GlobalData.com



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