



Skyline Renewables is bringing together significant expertise in renewables project acquisition, development, and operation. (Courtesy: Greenbyte)

▀ INNOVATION

Greenbyte Energy Cloud supports Skyline Renewables

U.S. independent renewable energy company Skyline Renewables has selected Greenbyte's Energy Cloud to monitor and maximize the performance of its growing portfolio.

With its ability to pull data from technologically and geographically diverse sources, the cloud-based asset management and monitoring platform will effectively support Skyline's growth ambitions as the business tar-

gets 3 GW of wind and solar assets across North America.

The North American renewable energy market offers attractive investment opportunities for Independent Power Producers (IPPs) that are able to take a sophisticated approach to improving asset management of large wind and solar portfolios.

Skyline Renewables, backed by Ardian Infrastructure Partners and Transatlantic Power Holdings, is bringing together significant expertise in renewables project acquisition, development, and operation. Since its inception in 2018, Skyline has rapidly expanded its portfolio of assets under management from zero to more than 800 MW.

Greenbyte's innovative asset management software will enable Skyline to ensure productivity across this growing portfolio, adding value for its investors. Greenbyte Energy Cloud's user-friendly dashboards will give Skyline full visibility of asset performance, enabling swift identification of emerging issues and boosting transparency and trust with third-party operations and maintenance (O&M) teams.

With Skyline's current portfolio containing technologies from three different wind-turbine manufacturers, the company is seeking to further diversify its asset base by expanding into the solar market. Greenbyte Energy Cloud's ability to gather data from multiple technology sources will of-

fer Skyline flexibility when acquiring, developing, and optimizing future renewable energy assets.

Furthermore, the platform will continue to evolve over time to incorporate the latest asset management and monitoring technology, keeping Skyline ahead of the curve and giving the company the freedom to maintain best practices as they continue to expand.

“Greenbyte’s Energy Cloud not only enables Skyline to work more openly and effectively with the third-party asset operators currently looking after the portfolio, but also to continue building its own understanding of operational performance trends across its asset base,” said Patrick Strom, senior sales manager at Greenbyte. “After opening our Chicago office earlier this year, Greenbyte is well-equipped to support Skyline and other sophisticated IPPs as they continue to develop their renewable energy portfolios in North America, while delivering consistent returns to their stakeholders and enabling continuous growth.”

“Greenbyte’s Energy Cloud is the platform that best aligns with our need to centrally view, analyze, and report on data from a variety of renewable assets with a user-friendly interface that is both intuitive and powerful,” said Brad Kallenberger, vice president at Skyline Renewables. “We’ve been able to quickly familiarize ourselves with many of the capabilities and immediately identify opportunities to optimize the performance of our fleet.”

Greenbyte Energy Cloud is used as a renewable energy datahub by asset owners and IPPs in North America and worldwide, covering more than 20 GW of wind, solar, and hydro assets globally. As owner-operators continue to expand their portfolios and become more data-driven, by 2022, Greenbyte expects to have more than 100 GW of assets monitored in Greenbyte Energy Cloud.

MORE INFO www.greenbyte.com

INNOVATION

VpCI technology helps sustain wind farms

Wind and solar power are fast becoming the renewable energies of choice in countries across the globe. Offshore and onshore wind energy is emerging in and around the seas of the world. Now engineers are battling the question of how to make renewable infrastructure last. Corrosion is a general problem for these infrastructures, and corrosion protection systems are crucial to maintaining structural integrity. Stopping corrosion on solar and wind farms has become a major goal for energy providers.

Newly engineered systems are designed for up to 30 years of service, but exposure to environmental corrosion, UV rays, extreme temperatures, and salt corrosion are challenging to component durability and quickly result in corrosion at vulnerable points. Excessive component failures can lead to high maintenance costs and under-performance of overall energy output. Fittings, solar cell support structures,

wind generators, and heat exchangers are exposed to pollution-related corrosion and extreme environmental conditions. Additionally, systems in coastal environments are exposed to high salt levels, which can lead to component corrosion and failure.

Corrosion of bolts that hold wind-turbine towers to their concrete bases is a common problem at wind farms, especially those in marine environments. This was the case at a new wind farm in Brazil, where the base bolts were corroding due to constant exposure to the extremely corrosive environment of strong wind and blowing sand near the ocean. Clamps inside individual transformer boxes next to the tower bases were also experiencing corrosion.

To protect against future corrosion, the base bolts were cleaned with Cortec’s VpCI®-418 and coated with VpCI®-368 prior to capping them off with a rubber gasket. Any severe rust on the base bolts or base flange faces was passivated with CorrVerter® Rust Converter Primer.

The flange faces will also be top-coated with VpCI®-396 and VpCI®-384 as the customer works through its corrosion maintenance plan one wind



Due to an extremely corrosive environment, a wind farm in Brazil was having significant corrosion issues which were successfully overcome by applying VpCI® Technology. (Courtesy: Cortec)

tower at a time. The corroded clamps inside the transformer box were unbolted and cleaned with VpCI®-415 and dried. ElectriCorr® VpCI®-239 was applied before they were bolted back into place. VpCI®-386 was used to protect external clamp surfaces.

The same system was used inside transformer boxes across the wind farm. VpCI®-396 and EcoShield® 386 will also provide protection to components inside transformer boxes. The use of VpCI® products in severe environments will greatly extend the service life of the base bolts and flange faces used to keep wind towers safely standing.

The maintenance of cooling systems in wind turbines is also challenging due to inaccessibility and tight spaces. Cleaning and filling of systems and the recovery of aged coolants are difficult and demanding procedures. Fortunately, VpCI®-649 BD additive is successfully used in small dosages to address these issues and enable long term corrosion protection.

MORE INFO www.cortecvci.com

INNOVATION

Vestas develops wind solution for 50-MW intertidal project

Using onshore wind technologies to harvest wind resources from the sea, Vestas has developed a customized solution for a 50-MW intertidal project in Bac Liêu Province, Vietnam, for the local EPC construction company Bac Phuong JSC. The intertidal project site is covered in water at high tide and some of the turbines will be uncovered at low tide.

Working closely with the customer to overcome the complex operation of planning and executing an intertidal project, Vestas will supervise the installation of the turbines in shallow waters close to shore in the Mekong Delta region to exploit the full potential of the region's favorable wind



The contract includes the supply and supervision of the installation of 13 V150-4.2 MW wind turbines. (Courtesy: Vestas)

conditions. The project includes a combination of V150-4.2 MW turbines in different power ratings with site-specific towers placed on reinforced onshore foundations that are raised above sea level.

The contract includes the supply and supervision of the installation of 13 V150-4.2 MW wind turbines with 10 turbines delivered in 3.8 MW, and three turbines delivered in 4.0 MW operating modes to boost energy production for the site's specific wind conditions. Each turbine will be equipped with a full-scale converter, enhancing the wind park's compliance with grid requirements.

"This project demonstrates Vestas' ability to develop wind-energy solutions that unlock high wind sites in complex and challenging environments," said Tommaso Rovatti Studhrad, sales director of Vestas Asia Pacific. "We are very proud to partner with Bac Phuong JSC, and we look forward to taking part in the region's large potential for intertidal wind projects."

"Using locally produced towers and local contractors, this project will create jobs and support the Vietnamese government's ambition to promote renewable energy and a more sustainable energy mix, for the benefit of the population," said William Gailard, sales vice president of Vestas Asia Pacific.

"We would like to thank Vestas for their engineering and technical support," said Mai Trong Thinh, chairman of Bac Phuong JSC. "We have been working closely together to ensure the foundation design is suitable for the marine environment and allows for building the project using local labor and equipment. With the FIT deadline in November 2021, it was critical for us to find a partner that would ensure a successful and timely project completion. We believe that with the technical support and supervision from Vestas during installation of the wind turbines, Dong Hai 1 will catch the finish line ahead of time."

The project also includes a 10-year Active Output Management 5000 (AOM 5000) service agreement, designed to maximize energy production for the project. With a yield-based availability guarantee, Vestas will provide the customer with long-term business case certainty. Turbine installation is expected to be completed in the first quarter of 2021.

MORE INFO www.vestas.com

INNOVATION

Vestas to produce zero-waste wind turbines by 2040

At Vestas, enabling a more sustainable future has always been at the core of what the company does. Now, Vestas is expanding its sustainability focus beyond the positive contribution of its products to also address waste generated in the value chain. Vestas is excited to announce its intention to produce zero-waste wind turbines by 2040, further underlining our commitment to make sustainability part of everything we do.

Vestas is the first turbine manufacturer to commit to zero-waste wind turbines, meaning running a value chain that generates no waste materials. This will be achieved by developing and implementing a new waste-man-

agement strategy, introducing a circular economy approach in the different phases of the value chain: design, production, service, and end-of-life. The strategy will be presented within the next two years.

“Establishing such an ambitious goal for waste reduction is paramount to ensuring a better world for future generations,” said Anders Vedel, executive vice president of Vestas Power Solutions. “Leading the wind industry is not enough to combat the global challenges we face today. If we are to spearhead the energy transition, we must be an example for doing so in the most sustainable way, and this involves making sustainability part of everything we do.”

“As the world’s largest supplier of wind energy, Vestas has a responsibility to eliminate waste across its value chain,” said Tommy Rahbek Nielsen, Vestas interim Chief Operations Officer. “Wind energy will continue to grow rapidly, therefore the time for a conservative approach is behind us. I am proud to be part of an organization that is making sustainability an integral component in all business operations”.

Industrial waste is a growing threat to environmental ecosystems and to global health. An estimated 11.2 billion metric tons of solid waste is collected every year, posing a serious risk to resource depletion, air pollution, and water and soil contamination. Furthermore, solid waste is estimated to contribute to 5 percent of global greenhouse gas emissions. Waste generated from turbine blades alone is estimated to be around 43 million metric tons accumulated by 2050.

With the global wind energy market set to grow by an average of 3 percent per year in the coming decade, Vestas is mitigating its environmental impact as the market leader by committing to eliminate waste across its value chain. Today, Vestas wind turbines are, on average, 85 percent recyclable; however, wind turbine blades are currently comprised of non-recyclable composite materials.

Vestas will consider all aspects of

the turbine lifecycle, aimed at improving the recyclability rate of blades and nacelles. As a first step, Vestas will be focusing on improving the recyclability of all wind turbine blades. Incremental targets will be introduced to increase the recyclability rate of blades from 44 percent today to 50 percent by 2025 and to 55 percent by 2030. Several initiatives designed to address the handling of existing blades after decommissioning will be set in motion. These will cover new recycling technologies optimal for composite waste, such as glass fiber recycling and plastic parts recovery. Vestas also will be implementing a new process around blade decommissioning, providing support to customers on how to decrease the amount of waste material being sent to landfill.

MORE INFO www.vestas.com

CONSTRUCTION

Acciona puts its ninth U.S. wind farm into service in Texas

Acciona recently put the Palmas Altas Wind Farm into service. Its second Texas project and ninth U.S. wind farm, the project represents a total investment of about \$200 million and increases Acciona’s generating capacity in ERCOT to 238 MW.

The wind farm features 46 Nordex technology wind turbines totaling 145 MW capacity.

Palmas Altas is in Cameron County, about 20 miles north of the San Roman wind farm that Acciona started up in December 2016. The new facility will produce about 524 GWh of clean energy per year, equivalent to the consumption of 43,000 U.S. households. It will offset the emission of 503,000 metric tons of CO₂ — the equivalent of taking more than 100,000 cars and trucks off the road.

The Palmas Altas project employed about 170 people at the peak of construction. Now completed, a 10-person

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Palmas Altas wind farm features 46 Nordex technology wind turbines totaling 145 MW capacity. (Courtesy: Acciona)

operations team will staff the wind farm over its 25-year lifespan.

The wind turbines installed in Palmas Altas are Nordex's AW125/3150 model with a rotor diameter of 125 meters, mounted on an 87.5-meter steel tower (hub height). The energy produced by the wind farm will be sold in the ERCOT-South Texas wholesale market.

Acciona has 1,047 MW of wind power capacity in the U.S. and Canada.

MORE INFO www.acciona.com

CONSTRUCTION

Pattern Energy starts repowering project on Gulf Wind facility

Pattern Energy Group Inc. recently announced it has closed financing and started construction on the repowering of its Gulf Wind facility in Kenedy County, Texas.

Repowering the Gulf Wind facility will consist of removing the current wind turbines and replacing them with 118 new Siemens Gamesa SWT-2.3-108 turbines, which will generate 271 MW of capacity, the equivalent to the annual energy usage of approximately 80,000 Texas homes. Construc-

tion began on December 3, 2019.

"Repowering Gulf Wind with brand new turbines made strong economic sense due to its unique location on the Gulf Coast, where the winds blow strongest at the times of Texas' peak energy demand and pricing," said Mike Garland, president and CEO of Pattern Energy. "Gulf Wind was our first wind-power facility, and technology has improved rapidly since it first began operating over a decade ago. By installing the latest technology turbines, we expect the repowered facility to have more efficient production, lower operating costs, renewed production tax credits (PTCs), and longer life, which combine to increase the long-term value of our fleet."

"Repowering provides an opportunity to increase the efficiency, reliability, and longevity of existing wind farms," said José Antonio Miranda, Siemens Gamesa Renewable Energy, CEO Onshore Americas. "We have a long-standing partnership with Pattern Energy and are excited to bring new life to the Gulf Wind facility."

The repowering consists of replacing nacelles, towers, and blades for the 118 turbines at Gulf Wind with new Siemens Gamesa 2.3 MW turbines, each with 108-meter blades on 80-meter towers.

The Gulf Wind facility has entered into a new 20-year power purchase

agreement with Austin Energy for the majority of the facility's energy production. The remaining output will be sold at merchant power prices. Gulf Wind is strategically located on the Gulf Coast in Kenedy County, Texas, where favorable wind conditions allow the facility to maximize energy production during times of peak demand and peak pricing.

For more than 25 years, Gulf Wind is expected to contribute approximately \$90 million to the local economy through tax and landowner payments. The Gulf Wind facility sits on 9,600 acres leased from the Kenedy Memorial Foundation. All money received by the Foundation supports its charitable causes to fight poverty, boost education, and build stronger communities.

Gulf Wind began operation in 2009. In late August 2017, the facility withstood Hurricane Harvey, one of the strongest hurricanes to hit the area in recent history. Following the storm, when the facility was deemed undamaged and safe to resume operations, Gulf Wind returned to supplying much-needed energy to the Texas grid.

MORE INFO www.patternenergy.com

MAINTENANCE

Study: Fall protection equipment market size worth \$2.9 B by 2026

The global fall protection equipment market size is expected to reach \$2.9 billion by 2026, according to a new study by Polaris Market Research.

The report "Fall Protection Equipment Market Share, Size, Trends, Industry Analysis Report By Product (Hard Goods, Soft Goods, Rescue Kits, Full Body Harness and Body Belts); By Application (Oil & Gas, Construction, Transportation, Mining, Telecom, Energy & Utilities, General Industry); By Regions, Segment Forecast, 2019 - 2026" gives a detailed insight into current market dynamics and provides analysis on future market growth.

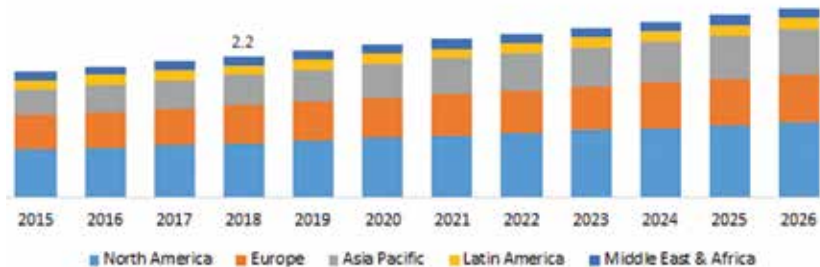
The global demand for fall protection equipment is escalating, with increasing focus on workers safety in construction, mining, energy, and oil and gas industries. They include the use of controls that are preferably designed to protect staff from death and injury. Incident and occupational risk, including falling off overhead platforms or elevated workstations, is expected to contribute to the protection of industry demand.

Market growth is driven by a growing awareness of industrial security and stringent government safety regulations in various industries. One of the main drivers is increasing demand for fall protection equipment from the construction industry. However, increasing automation is expected to limit market growth in the end-use industries. In addition to this, the lack of awareness is expected to hamper the growth of this market over the forecast period. Increasing stringent regulations pertaining to safety of employees is also expected to bring in new opportunities for the key players in this market.

It is estimated that the body belts segment may surpass consumption of 53 million units by 2026 in the overall market. These are used primarily together with a full body harness for injury protection. OSHA also recommends the use of body belts from elevated platforms. Construction market segment is anticipated to hold major share in the global market till the end of forecast period. In addition to this, the mining industry is also expected to witness significant growth in the global market over the forecast period.

During the forecast period, North America will be followed closely by Europe. The market is expected to grow enormously due to rapid industrialization in both of these regions. The high demand for fall-protection equipment in the ever-growing energy and utility industry of Latin America market is expected to register a significant CAGR during the forecast period. In Asia Pacific, due to anticipated growth in the construction industry during the forecast period, will be

Fall Protection Equipment Market, By Region, 2015-2026
(USD Billion)



(Courtesy: Polaris Market Research)

seen to increase the demand for fall protection equipment. This market growth can be mainly attributed to the rapid development of infrastructure, high investment in new industries, and the rise in construction in residential and commercial buildings in countries such as India, Indonesia, Thailand, and China.

Some of the key players in the market include 3M, MSA Safety Company, SKYLOTEC, Capital Safety, Honeywell Miller, Eurosafe Solutions, ABS Safety, Gravitec System, French Creek Production, FallTech, and DBI-SALA. The key players in this market have adopted the strategy of mergers and acquisitions as a part of their strategy in order to gain competitive share in the global market.

MORE INFO www.polarismarketresearch.com

MANUFACTURING

Semco, Bladt ink substation contract with Mayflower Wind

Mayflower Wind Energy LLC has awarded a contract for the fabrication and delivery of the Mayflower Wind project's offshore substation approximately 40 kilometers south of Nantucket, Massachusetts, to a joint venture comprised of long-standing business partners Bladt Industries and Semco Maritime. The offshore substation project was

initiated in January 2020.

Bladt Industries and Semco Maritime have formed a joint venture for the design and construction of the 1,200-MW offshore substation. The offshore substation will consist of a topside of 4,700 tons and a 3,000-ton jacket foundation. The project scope comprises engineering, procurement, and construction works, including steel structure and jacket foundation by Bladt Industries, as well as design, procurement, and installation of electrical equipment, auxiliary systems, and inter-array cables by Semco Maritime. The offshore substation is scheduled for delivery from Bladt Industries' site in Denmark in 2024.

"We are proud that Mayflower Wind has selected Bladt and Semco for this comprehensive offshore substation project on the U.S. East Coast," said Nils Overgaard, chief sales officer with Bladt Industries. "We consider it an important recognition of our joint competencies and our strong focus on HSE during the construction phase. We are very much looking forward to the close cooperation with the strong team behind Mayflower Wind, and we do hope this will be the first of several projects."

"Semco and Bladt's strong track record of providing competitive turnkey offshore wind electrical infrastructure is a door opener in the market," said Carsten Nielsen, senior vice president, Renewables, Semco Maritime. "The Mayflower Wind project provides a unique opportunity to firmly estab-



The Mayflower Wind project has been chosen by the Commonwealth of Massachusetts to supply 804 MW of clean, renewable energy from offshore wind with expected start-up in 2025. (Courtesy: Semco Maritime)

lish our companies as highly experienced pioneers in the nascent and promising U.S. offshore wind industry. We will build strong relationships with Mayflower Wind's parent companies – Shell and EDP Renewables – as well as other involved parties. We will draw on the experience gained, as well as the resources and capabilities, that we have built up over the years to put further focus on our offerings to bring offshore energy to shore.”

The Mayflower Wind project has been chosen by the Commonwealth of Massachusetts to supply 804 MW of clean, renewable energy from offshore wind with expected start-up in 2025. Once in operation, the project will provide enough electricity to power approximately half a million homes in the state and eliminate 1.7 metric tons of CO₂ emissions annually.

“Mayflower Wind is focused on

launching a safe and reliable offshore wind project to help meet Massachusetts's greenhouse gas reduction goals,” said Michael Brown, chief financial officer, Mayflower Wind Energy LLC. “We look forward to working with Bladt Industries and Semco Maritime – companies with a proven track-record in the industry. Recent changes to U.S. tax law now allow projects that meet qualification standards in 2020 to secure Federal Investment Tax Credits at the 18 percent level. This contract is a key step for us to meet these standards and secure tax credits that would ultimately result in a lower rate for electricity customers in Massachusetts.”

Bladt Industries and Semco Maritime will act as equal partners in the new joint venture.

MORE INFO www.bladt.dk
www.semcomaritime.com

► MANUFACTURING

Vestas receives multiple orders from around the globe

► **U.S.:** Vestas has received a 162 MW order for a project in the U.S. Demonstrating Vestas' product flexibility optimizing all site needs, and including previously purchased PTC components, the full project consists of a mix of V110-2.0 MW and V136-4.2 MW wind turbines delivered in various operating modes. The order includes supply and commissioning of the turbines as well as a 10-year service agreement, designed to ensure optimized performance for the lifetime of the project. Turbine delivery will begin in the second quarter of 2020 with commissioning scheduled for the third quarter of

2020. The project and customer are undisclosed.

► **U.S.:** Vestas has received an order for 149 MW of turbines, consisting of 12 V110-2.0 MW turbines and 57 V120-2.2 MW turbines for a wind project in the U.S. The order includes supply and commissioning of the turbines as well as a multi-year service agreement, designed to ensure optimized performance for the lifetime of the project. Turbine delivery will begin in the first quarter of 2020 with commissioning scheduled for the fourth quarter of 2020. The project and customer are undisclosed.

► **China:** Vestas has received a 55 MW order in China that includes supply of 25 V120-2.2 MW as well as a 2-year Active Output Management 4000 (AOM 4000) service agreement. Deliveries are expected to begin in the second quarter of 2020, while commissioning is planned for the third quarter in the same year. Customer and project names are undisclosed at the customer's request.

► **Italy:** PLT Engineering has placed a 37 MW order for two projects in Italy that showcase the versatility of Vestas' 2 MW and 4 MW platforms. Both projects, located in Calabria and Basilicata, will feature a mixed site configuration of both V110-2.0 MW and V136-4.2 MW wind turbines to optimize energy production. The order includes supply and installation of the turbines as well as an Active Output Management 5000 (AOM 5000) service agreement for the next 15 years. The energy produced by both wind parks will be commercialized through a PPA contract with PLT Puregreen for the next 12 years. Since installing its first turbine in Italy in 1991, Vestas has led the country's wind industry with more than 4.3 GW capacity installed, being the main contributor to the country's expansion of wind energy with a 40 percent market share. Turbine delivery is planned for the second half of 2020, while commissioning is expected by the fourth quarter 2020.

► **Russia:** Vestas has been awarded an order for 252 MW for three wind energy projects in Russia from WEDF (Wind Energy Development Fund), a

joint investment fund created on a parity basis by PJSC Fortum and JSC RUSNANO. Located in the Kalmykiya and the Rostov region, the projects will comprise 60 V126-4.2 MW wind turbines. With this fourth order from its framework agreement with RUSNANO and Fortum to supply wind-energy solutions in Russia, Vestas marks another key milestone in further strengthening the country's renewable energy sector. The projects will increase Vestas' footprint in the country to a total capacity of almost 600 MW, underlining the company's leading position in the market. The contract includes supply, installation and commissioning of the wind turbines, as well as a 15-year Active Output Management (AOM 5000) service agreement. The projects will feature a VestasOnline® Business SCADA solution to lower turbine downtime and optimize the energy output. Turbine delivery is scheduled for the third quarter of 2020, while energy production is expected to start during the fourth quarter of 2020.

► **Denmark:** Vestas has secured a 36 MW repowering order for the final phase of the 94 MW Overgaard 1 wind park in Randers Municipality in Denmark. The order is derived from the energy-neutral auction in November 2019 in Denmark, and it is placed by SE Blue Renewables, a joint venture between the Danish energy company Norlys and Denmark's largest pension company, PFA Pension. The firm order includes supply, installation, and commissioning of 10 V126-3.45 MW turbines delivered in 3.6 MW Power Optimized Mode as well as a 20-year Active Output Management 5000 (AOM 5000) service agreement. The order comes six months after Vestas announced the first phase of the project. Once completed, the repowered wind park will almost quadruple the current site's energy production, underlining the strong business case in replacing older turbines with newer and more efficient variants. Deliveries are expected to begin in the second quarter of 2021, while commissioning is planned for the fourth quarter of 2021.

► **South Korea:** Vestas has secured

its first V136-4.2 MW order in South Korea for the Cheongsong Myeonbong Mt Wind Power project with EPC contractor Kumho Industrial Co., Ltd. The 42-MW order consists of 10 V136-4.2 MW wind turbines at a hub height of 112 meters as well as a 20-year Active Output Management 4000 (AOM 4000) service agreement, designed to maximize uptime and ensure optimized performance of the project. To optimize operation in the site's specific wind conditions, the turbines will feature Vestas' High Wind Operation (HWO), an intelligent control option that allows the turbines to continue operating beyond standard cut-out wind speeds. The result is improved output stability, energy production, and reliability, helping the project to deliver the maximum return on investment for the customer. Each turbine will be equipped with a full-scale converter, enhancing the wind park's compliance with grid requirements. The Cheongsong Myeonbong Mt Wind Power project is in Cheongsong county, North Gyeongsang Province. Turbine installation is expected to be completed in the third quarter of 2021.

MORE INFO www.vestas.com

► MANUFACTURING

Siemens Gamesa is preferred supplier for large U.S. wind project

Siemens Gamesa Renewable Energy was recently named as the preferred turbine supplier for the massive 2,640-MW Dominion Energy Virginia Offshore Wind project in the U.S. This is the largest offshore wind power project in the rapidly increasing U.S. market to date. A long-term service and maintenance agreement is included for the site off the coast of Virginia. The agreement furthermore foresees using turbines from Siemens Gamesa's Direct Drive offshore wind turbine platform.

The final number of units and tur-

Siemens Gamesa named preferred supplier for largest U.S. offshore wind power project to date

2.64-GW
Dominion Energy Virginia Offshore Wind project, once online, can provide clean energy to power **650,000** homes

Avoids **3.7 million tons** per year of carbon emissions compared to fossil fuel-based power generation

Expected to be completed by end of **2026** and includes long-term service and maintenance agreement

Once online, the Dominion Energy Virginia Offshore Wind project is expected to provide enough clean energy to power 650,000 homes at rated wind speed, avoiding 3.7 million tons per year of carbon emissions compared to fossil fuel-based power generation. (Courtesy: Siemens Gamesa)

bine model remain to be determined. All installations are expected to complete by 2026. The agreement is subject to certain conditions including Dominion Energy's final investment decision, governmental permitting, and other required approvals.

"Signing this preferred supplier agreement with Dominion Energy attests to the enormously exciting growth taking place in the U.S. offshore wind industry and across the globe," said Markus Tacke, Siemens Gamesa CEO. "We're thrilled to have been chosen to support them in their commitment to reduce greenhouse gas emissions and to once again do our part in combatting climate change on a global level."

The agreement comes on the heels of Siemens Gamesa's recent commitment to the "Business Ambition for 1.5°C – Our Only Future" pledge, contributing toward the fight for a zero-emissions future.

"Internationally, every Siemens Gamesa Direct Drive offshore wind turbine we install increases the impact made by the renewable energy industry in avoiding CO₂ emissions from power generation," said Andreas Nauen, CEO of the Siemens Gamesa

Offshore Business Unit. "Locally, we help our customers provide cost-efficient clean energy as well as additional economic benefits."

Once online, the project is expected to provide enough clean energy to power 650,000 homes at rated wind speed, avoiding 3.7 million tons per year of carbon emissions compared to fossil fuel-based power generation.

This is another milestone agreement for the United States as it aims to add 25 GW of renewable energy by 2030, enough to provide clean, renewable energy to approximately 12 million average homes, or 10 percent of total U.S. households.

"We're confident that offshore wind power is already one of the fastest-growing, most important contributors on which Virginia state agencies can draw to reach their ambitious renewable energy goals," said Steve Dayney, head of Offshore North America at Siemens Gamesa Renewable Energy. "Receiving 30 percent of its electricity from renewable sources by 2030 is fully feasible, and we are eager to lead the way for the citizens of the Commonwealth. We have always believed that the Coastal Virginia demonstra-

tion project currently underway with Dominion Energy is a gateway to something bigger, and now Virginia is poised to benefit from the wide-ranging economic benefits the Dominion Energy Virginia Offshore Wind project will bring."

Dominion Energy Virginia Offshore Wind expands on knowledge gained through the current two-turbine, 12-MW Coastal Virginia Offshore Wind (CVOW) project.

It is the first offshore wind project to be built in U.S. federal waters and will use Siemens Gamesa's 6-MW SWT-6.0-154 wind turbines. CVOW is set to be online in 2020 within a research lease area adjacent to site of the 2,640-MW project will be located.

The agreement for Dominion Energy Virginia Offshore Wind also provides for certain early works to support project development, including turbine layouts that will be used in the Construction and Operations Plan (COP) submittal to the United States Department of the Interior's Bureau of Ocean Energy Management in late 2020. ↵

MORE INFO www.siemensgamesa.com