



The B108 blades take advantage of the IntegralBlade® technology, as well as the superior Siemens Gamesa PowerEdge™ solution and lightning protection system. (Courtesy: Siemens Gamesa)

► CONSTRUCTION

Siemens Gamesa to deliver 100 turbines to Sofia project

Siemens Gamesa Renewable Energy has been awarded the firm order from RWE for the 1.4 GW Sofia offshore wind power project. Sofia represents a giant leap for the company; located 195 kilometers off the U.K.'s north eastern coast on Dogger Bank in the North Sea, the project will be the first to install the company's flagship 14-MW Direct Drive offshore wind turbine.

At 593 square kilometers, the Sofia project will also cover an area greater than that of the Isle of Man and will

utilize the evolutionary technology of the SG 14-222 DD offshore wind turbine commercially for the first time anywhere in the world. The development brings other milestones; the 100 turbines will be installed furthest from shore of any project yet undertaken by the company and will feature the world's largest single-cast turbine blade at 108-meters long.

The B108 blades being used at Sofia are more than six times longer than the first offshore wind turbine blades ever installed, namely the 16-meter long blades used at Vindeby in Denmark in 1991. The 35-meter water depth, the distance from the U.K.'s coastline and the sheer scale of the turbine and its components make the stable, proven technology of Siemens Gamesa's Direct Drive technology — where no gearbox is involved — an ob-

vious choice for the Sofia wind-power project. The strong, reliable winds far from shore will enable the completed wind-power project to power the equivalent of 1.2 million U.K. households. Offshore construction work for the Sofia project will start in 2023 with turbine installation set for 2025.

"The U.K. is the world's largest offshore wind market, so it is appropriate that it should be the first to install the world's largest turbine in production, the SG 14-222 DD," said Marc Becker, CEO of the Siemens Gamesa Offshore Business Unit. "We are proud to be partnering with RWE on another highly significant project and to bring our industry-leading machine to this huge development. A wind-power project of this scale is possible due to the cutting-edge use of technology in the turbines, in their manufacturing, and

in installation. Rapid innovation of proven technology has made this leap in generating capacity possible — and with it a leap forward toward the goals of decarbonizing energy and achieving Net Zero.”

“As a leading player in offshore wind, we are delighted to be the first company to sign a firm order with SGRE for these state-of-the-art offshore wind turbines, and that Sofia will be the first project to install them,” said Sven Utermöhlen, chief operating officer of Wind Offshore Global for RWE Renewables. “The fact that our largest offshore wind project will utilize the most innovative and technologically advanced turbines demonstrates RWE’s continued ambition to be a trailblazer at the forefront of the offshore wind sector. We have previously partnered with SGRE on a number of our offshore wind projects, and we look forward to constructing a flag-

ship project that will make a significant contribution both to expanding our renewables portfolio and to the U.K.’s ambition of growing offshore wind capacity to 40 GW by 2030.”

The giant leap forward in generating capacity is a critical tool in building a greener power infrastructure and a step forward to achieving Net Zero. Although the Sofia development will cover an area equivalent to the Isle of Man, the generating capacity would power households the equivalent of 14 times the Isle of Man, or four times a city the size of Hull — the center of the U.K.’s offshore wind power industry.

Siemens Gamesa’s long association with the U.K. sees Sofia as the latest step in offshore wind developments that began in 2011. Since then, the company has installed about 1,700 offshore wind turbines totaling more than 8 GW of capacity. Included in these achievements are three suc-

cessive “world’s largest” wind-power projects and the creation of a hub for U.K. offshore wind expertise with the company’s manufacturing, port, and training facility in Hull. The firm order for Sofia is accompanied by a contract to undertake the service and maintenance of the 100 turbines.

MORE INFO www.siemensgamesa.com

► CONSTRUCTION

Vineyard Wind selects DEME for turbine installation

Vineyard Wind, a joint venture between Avangrid Renewables and Copenhagen Infrastructure Partners (CIP), recently announced DEME Offshore US LLC will serve as its con-



ANCHOR BOLT PROTECTION

Denso ColorTape provides anchor bolt protection with one easy step. The petrolatum tape has over a 92 year history of providing corrosion protection in severe environments. It will provide the protection that anchor bolts need to keep the wind turbines operating.

Since 1883
138
Years Service to Industry



**DENSO
COLORTAPE™**

Primer Integrated
Petrolatum Tapes



**EASY TO
APPLY BY HAND**

Easily Conforms to
All Shapes and Sizes

www.densona.com
Call: 281-821-3355
E-mail: info@densona.com



Located 15 miles off the coast of Martha's Vineyard, Vineyard Wind 1 is slated to become the first large-scale offshore wind farm in the United States. (Courtesy: Vineyard Wind)

tractor for the offshore transport and installation of the wind-turbine generators for its Vineyard Wind 1 project, the first large scale offshore wind installation in the United States.

DEME Offshore US LLC is teaming up with FOSS Maritime Company LLC, a US maritime service contractor that provides union jobs for its employees. FOSS will provide the Jones Act compliant feeder vessels, a concept by which the wind turbines will be transported from the port of New Bedford to the specialized DEME Offshore US LLC installation jack-up vessel. The DEME Offshore US LLC office in Massachusetts will be the base of operations for activities for the Vineyard Wind project.

"We're very excited to make this announcement ... not only because it's an important step in the development of our first project but also because of the impact it will have on the U.S. workforce," said Vineyard Wind CEO Lars T. Pedersen. "The offshore wind indus-

try has tremendous potential to create good paying jobs and investment opportunities while also reducing carbon pollution. By working with companies like DEME Offshore US LLC and FOSS Maritime, we can ensure that US labor is gaining from the experience of well-established operators, so that the industry can take proper root and grow a fully American workforce."

"DEME Offshore US LLC is proud to work together with Vineyard Wind on the start of a new era in the U.S. offshore wind market," said Jan Klaassen, Director DEME Offshore US LLC. "The partnership of DEME Offshore US and FOSS Maritime brings our expertise about offshore wind and U.S.-related activities together, which is the cornerstone of a successful solution. Our method is Jones Act compliant, driven by high-tech engineering, patented solutions, and special adaptations to both companies' vessels for this project. The deployment of the U.S.

feeder concept by the DEME Offshore US/FOSS Maritime Team will create a great opportunity for U.S. mariners to get familiar with the offshore wind industry."

"Beginning in 1889, we have provided our fleet of highly capable tugs, deck cargo barges, marine engineering staff, experienced project managers, and highly trained mariners to work on complex marine projects in harsh environments," said Will Roberts, president of Foss Maritime. "We appreciate the opportunity to work closely with DEME Offshore US LLC in support of the Vineyard Wind project."

"This announcement is great news for our region and, in particular, for the hard-working men and women in the maritime trades," said Gerard Dhooge of the Seafarers International Union and president of the Boston & New England Maritime Trades Council, AFL-CIO. "We have a once-in-a-generation opportunity to create a new industry that will help middle-class families and those trying to make it to the middle class. With partners like Vineyard Wind, DEME Offshore US, and FOSS Maritime partnering with organized labor, we can and will create a more prosperous future for people in the New Bedford region and throughout Massachusetts."

MORE INFO www.vineyardwind.com

CONSTRUCTION

Nexans to be preferred supplier on Empire Wind project

Nexans has signed a preferred supplier agreement (PSA) with Empire Offshore Wind LLC to electrify the future of New York State by connecting the Empire Wind offshore projects to the onshore grid.

The turnkey projects cover the full design and manufacturing, as well as the laying and protection of more than 300 kilometers of export cables that will deliver renewable energy to



The shift to an increasingly decarbonized energy landscape poses tremendous challenges to grid operators that require a new way of managing the energy system. (Courtesy: Siemens Gamesa)

more than 1 million homes.

Empire Wind is being developed by Equinor and BP through their 50/50 strategic partnership in the U.S. Empire Wind is planned for an area of 80,000 acres, in federal waters, an average of 33 kilometers south of Long Island, east of the Rockaways.

Two cable systems will connect the offshore substation for Empire Wind 1 to landfall and substation in Brooklyn, New York. In contrast, Empire Wind 2 will link to Long Island by three parallel cables.

“We are excited to be a trusted, long-term supplier on the development of the Empire Wind projects and to participate in placing New York State on the way toward reaching 70 percent of its electricity needs from renewable sources by 2030,” said Christopher Guérin, CEO of Nexans.

“This partnership demonstrates the value of our unique end-to-end model and supports our investments in U.S. offshore wind and the new state of the art Aurora cable-laying vessel. Nexans is engaged in ‘Electrifying the Future’ and supporting all our stakeholders on the path to greener energy.”

MORE INFO www.nexans.com

INNOVATION

Siemens Energy edge transmission products

Siemens Energy extends its switchgear and transformer portfolio with Edgeformer™ and Edgegear™, thus presenting the world’s first high-voltage devices with edge computing at Hannover Fair 2021. The new generation of digitally enabled transmission products and systems opens new possibilities for grid operators to benefit from data-driven applications by deploying them within the local substation network.

The shift to an increasingly decarbonized energy landscape poses tremendous challenges to grid operators that require a new way of managing the energy system. The digitalization of power transmission assets in the substation, the heart of any electrical power distribution system, plays an important role to manage the increased feed-ins of renewable energy and the exponential increase of complexity.

While most digital solutions for



DON'T BE LET DOWN BY A LIFT.

Installation and preventative maintenance by IUEC elevator mechanics will keep your elevators moving SAFELY and more EFFICIENTLY.

We have more than 450 elevator companies ready to serve your elevator lift needs.

Contact us today.

CARISA BARRETT
CBARRETT@EIWPFF.ORG
253-561-4902



substation assets rely solely on equipment with cloud connectivity, edge-enabled transmission products such as Edgegear and Edgeformer offer new possibilities to connect equipment directly within the substation without having to forego the benefits of cloud-based solutions such as app-based data analytics. Edge computing technology enables faster computing capabilities for quicker decision-making as well as data storage and processing onsite.

With edge computing the data is kept offline in the substation without compromising a seamless, secure, and easy integration into the existing customer IT-landscape. The result is a highly cyber secure system. Siemens Energy's edge-enabled transformers and switchgear will come with app-based data analytics and asset management..

MORE INFO www.siemens-energy.com

INNOVATION

Ardian deploys digital systems for post-subsidy market

Ardian, a world leading investor in renewable energy, has partnered with leading software-as-a-service firms Greenbyte and Pexapark on a major upgrade to its digital asset management systems for its 3.5-GW-plus renewable energy portfolio.

Working directly with the teams at Greenbyte — a software platform designed to optimize renewable energy production across global portfolios — and Pexapark — a business that sets out to evolve the “operating system” for post-subsidy renewable energy management — Ardian Infrastructure has set out to implement a future-proof end-to-end renewable energy monitoring online platform that will help it and the management teams of its renewable platforms to create additional value and monitor technical and market risks in tandem.

These risk management goals are

growing in significance and urgency for investors and operators as the renewables sector worldwide transitions into a new phase of operation; 10 years ago, most projects benefited from long-term subsidies. Today, the removal of subsidies across many markets means asset revenues and price risk must be actively managed through power purchase agreements (PPAs) and other revenue hedging mechanisms.

“Increasing exposure to the volatility of the ‘merchant’ power market is driving a fundamental shift in the way we look at and manage our portfolio for our investors,” said Mathias Burghardt, Head of Ardian Infrastructure. “On the one hand, we need to place greater emphasis on optimizing production to extract as many megawatt hours of clean power as possible from our assets. On the other, we must build our energy sales and risk management best-in-class expertise to control and hedge our financial exposure and stay on top of market dynamics to capture the best windows of opportunity.”

As Ardian continues to expand its renewables portfolio across Europe, the U.S., and Latin America, seeking further investment opportunities in its core markets while considering their transition out of subsidies, Ardian Infrastructure with its digital and data science team has taken a pioneering approach to digitizing its operating models.

By integrating Greenbyte's asset monitoring and management platform, the Ardian Infrastructure team aims at being able to oversee and benchmark technical performance across its portfolio, covering three markets in Europe, five markets in the U.S., and two in Latin America.

“Full transparency on asset performance is a hugely powerful tool, and Greenbyte gives Ardian and its management teams a means of creating accountability, not only with its own investors, but also with regional operations & maintenance (O&M) teams and original equipment manufacturers (OEMs),” said Jonas Corné, CEO, Greenbyte. “This data will help Ardian incen-

tivize performance and value creation activities across the portfolio, as well as hold other parties to account during contractual negotiations.”

MORE INFO www.ardian.com

MAINTENANCE

VARD wins North Star Renewables contract for three SOVs

VARD, one of the world's major designers and shipbuilders of specialized vessels, recently announced it has secured contracts for the design and construction of three service operation vessels (SOVs) for North Star Renewables in Scotland. The state-of-the-art hybrid trio will operate on the Dogger Bank Wind Farm in the North Sea.

The SOVs were developed by VARD in close cooperation with Aberdeen-based North Star, which has secured 10-year charter contracts for the trio from Dogger Bank Wind Farm in a broad international competition. The charters include options for three one-year extensions. Dogger Bank is currently under construction by joint-venture partners SSE Renewables, Equinor, and Eni and, when completed, will be the world's largest offshore wind farm.

“We've worked closely with the team at VARD for over two years on the development of our SOVs for Dogger Bank,” said North Star Renewables CEO Matthew Gordon. “I'm delighted to be able to say that the work, which went into designing the vessels to meet the optimal standards of workability, comfort, safety, and sustainability, has resulted in us securing the award of three vessels on long term charters, which is a huge step for North Star on our journey to becoming a leading player within the SOV market. It's exciting that these designs will now move into the construction phase, and continuing that journey with VARD is a natural extension of our strong relationship. We're confident that we have a high-quality design and build



VARD 4 19 and VARD 4 12 — Service Operation Vessels (SOVs) for North Star Renewables. (Courtesy: VARD)

partner that will support us in bringing these advanced new vessels to the market.”

Two of Vard Design concept designers, Thomas Brathaug and Stian Ona, have intimate knowledge of the vessels having spent many man-hours turning specifications into reality. Brathaug said one will be of the VARD 4 19 design and the other two of its VARD 4 12 design.

“The VARD 4 19 design has been developed specifically to handle planned maintenance on the Dogger Bank A and B wind arrays,” Brathaug said. “It is tailored for operations in the harsh North Sea environment more than 130 kilometers off the north-east coast of England. Crew well-being is vital to ensure safe and efficient operations, so safety and comfort have been a strong focus throughout the process.”

MORE INFO www.vard.com

MAINTENANCE

GEV Wind Power, Wind Power Lab to offer blade services

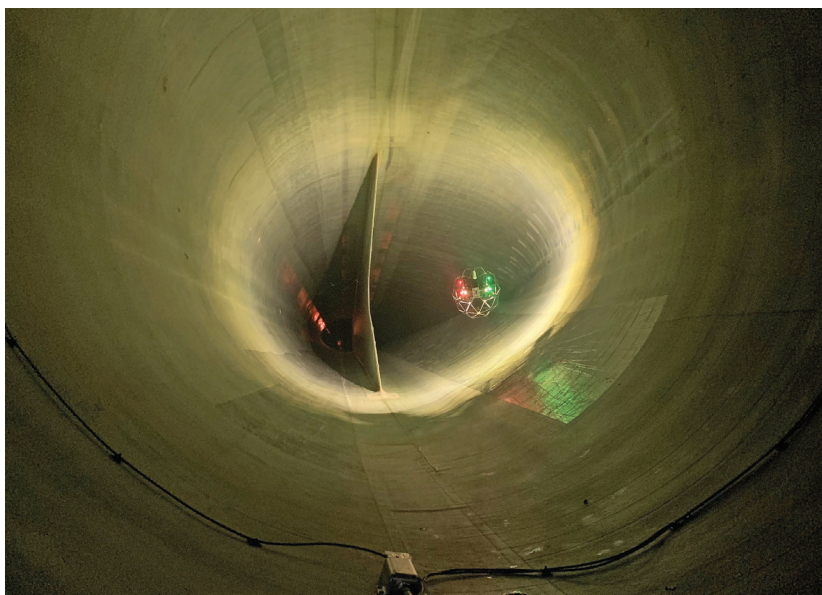
GEV Wind Power, one of the world’s leading wind-turbine blade repair and maintenance providers, has merged with Danish-based Wind Power Lab, a leader in providing intelligent technology-based blade solutions to wind-park operators. The existing management teams, led by CEOs David Fletcher and Anders Røpke, will continue to lead their respective businesses in this growth market.

There remains a continued focus on producing more energy from renewable sources to drive down global carbon emissions in the coming years. This, together with the cost of wind-energy production being comparable to the cost of producing energy

from fossil fuels, means wind energy is becoming an increasingly attractive option.

GEV provides field blade repair and maintenance services to wind-farm manufacturers and operators in the U.K., Europe, and the U.S., operating both onshore and in challenging offshore environments. Wind-turbine blades are susceptible to erosion and weather damage, which affects aerodynamic efficiency and reduces their energy production (and can sometimes stop the turbine operating altogether).

GEV specializes in providing highly qualified technicians to repair blades, reducing downtime, and maximizing production. It has repaired more than 5,000 turbines to date and, with turbines increasing in size and rotating faster, making them more prone to damage, GEV has a vital role to play in supporting the growth and ensuring wind turbines keep spinning.



The world's first internal blade inspection using a drone, developed by Wind Power Lab. (Courtesy: Wind Power Lab)

Based in Denmark, the home of wind-turbine technology, WPL provides world-class blade expertise and machine-learning-enabled services for all wind-farm park owners, irrespective of the number of turbines they operate.

Asset managers worldwide can utilize WPL services for identification of blade defects and data-driven blade-repair recommendations. By accessing WPL services, clients are able to optimize their blade-maintenance strategies and ultimately reduce costs and maximize production.

As a combined force, the organization will operate with a global footprint and be able to provide a comprehensive range of cost-effective predictive blade maintenance services. The merger will also create the only independent service provider able to provide services to the whole rotor blade value chain and introduce to a wider client base new technologies such as blade internal drone inspections.

The combined group is backed by Bridges Fund Management, a specialist private equity investor focused on the transition to a more sustainable and inclusive economy.

MORE INFO www.gevwindpower.com

MAINTENANCE

Snap-on Industrial's WV1700 vises perfect for most applications

With four different jaw-size widths, the new WV1700 series vises from Snap-on Industrial are a perfect addition to any work bench in the aviation, wind power, natural resources, or manufacturing industries.

The WV1700 series vises come with features that make them durable for demanding applications, including an oversized anvil that provides a larger surface designed to take a beating in forming and shaping materials.

Built from 60,000 PSI ductile iron castings, the vise is virtually indestructible and is also backed by a lifetime warranty. It comes with a fully sealed 1-piece spindle-nut assembly that keeps lubricants in and contaminants out for smooth operation. The precision-machined slide bar eliminates "side-play" movement, regardless of the opened distance. The vise's serrated pipe jaws are made from machined steel and come with black phosphate coating for extended life.

The 360-degree swivel base has double lockdowns for easy and secure access while in use.

The WV1700 series vises comes in four sizes:

▀ 4 1/2" jaw width (WV1745A); 3 1/2" maximum opening; 2 1/2" pipe capacity.

▀ 5 1/2" jaw width (WV1755A); 5" maximum opening; 3" pipe capacity.

▀ 6 1/2" jaw width (WV1765A); 6" maximum opening; 3 1/2" pipe capacity.

▀ 8" jaw width (WV1708B); 8" maximum opening; 3 1/2" pipe capacity.

MORE INFO b2b.snapon.com

MANUFACTURING

Southwire to supply onshore cables for Vineyard Wind project

Vineyard Wind, a joint venture between Avangrid Renewables, a subsidiary of AVANGRID, Inc., and Copenhagen Infrastructure Partners (CIP), recently announced Southwire, a U.S.-based company, will be a key supplier for the design, manufacturing, and installation of the onshore cables for Vineyard Wind 1, a project that's slated to be the first commercial scale wind farm in the United States.

"We're proud to partner with Southwire, a leading U.S. company that clearly sees the tremendous potential of offshore wind," said Vineyard Wind CEO Lars T. Pedersen.

"Partnerships with U.S. companies at all levels of the supply chain and in different regions of the country will be essential to maximizing the potential of this industry here in the U.S.

Vineyard Wind 1 has already teamed up with some strong local partners, and we look forward to many more partnerships like this as we take the next step to construct the project."

In celebration of the partnership, the two companies met via video con-

ference for a virtual contract signing. Leadership representatives from both organizations, including each CEO and others involved in the project, were in attendance.

Southwire's facility in Huntersville, North Carolina, will manufacture the high-voltage cable for the onshore portion of Vineyard Wind 1.

Built in 2012, the plant consists of a 250,000-square-foot facility, featuring state-of-the-art technology for producing high-voltage and extra high-voltage underground transmission cables, ranging from 69kV to 500kV.

Helping to strengthen North America's power transmission infrastructure, these cables transfer massive amounts of electricity and renewable energy — including wind and solar — in support of the nation's smart grid initiative.

For the Vineyard 1 project, the plant will manufacture more than 32 miles of high voltage cable. Southwire's high-voltage field services team, working with local laborers, will install the cable with a projected onshore site completion by the first quarter of 2023.

The cable will be part of the grid system that will be ready to provide power to 400,000 households from the 62 GE turbines.

The turbines themselves are planned to start being installed in the summer of 2023.

"Although we were not able to meet in person due to the pandemic, it was important to both of our organizations to meet virtually and officially sign the paperwork for this project," said Norman Adkins, Southwire's EVP chief commercial officer.

"Southwire is very excited to work with Vineyard Wind and provide a comprehensive solution for their business needs.

Our company prides itself on delivering success and evolving our organization in a sustainable manner that provides unparalleled products and services, and this opportunity reflects that commitment."

MORE INFO www.vineyardwind.com

MANUFACTURING

The Crosby Group lifts wind energy with chain accessories

The Crosby Group is established as a global lifting, rigging, material handling, and mooring hardware partner to the renewable energy sector, and has one of the most extensive, global engineering teams in the industry. Its product range combines to cover the entire wind-energy supply chain, including the plate clamps, pipe hooks, and shackles used during monopile fabrication, shackles for topside and subsea lifts, and load cells used for inspection of installed equipment. One example of how The Crosby Group supports the offshore wind industry was recently demonstrated by an order for chain accessories from Crosby|Feubo. These were used for a floating offshore wind-turbine (FOWT) project from a European client.

The scope of work included the design, manufacturing, and testing of long-term mooring shackles. Driven by a project timeframe restriction from the client and given a three-month window of opportunity, the package was successfully delivered on-time and within initial budget. The Crosby Group's experienced and skilled engineering team with more than three decades of experience with this application delivered the chain accessories, complete with extensive in-house machining and testing.

Also of note, The Crosby Group recently launched into the wind-energy market the HFL Kenter, a new high fatigue life shackle, under the Crosby|Feubo brand. The shackle showcases design improvements on the popular Crosby|Feubo NDur Link, an accessory used for temporary and mobile mooring applications such as rigging and anchoring offshore platforms or vessels. The product can connect to a variety of stud link anchor chain or other mooring accessories. ✈

MORE INFO www.thecrosbygroup.com



HEICO FASTENING SYSTEMS



HEICO-LOCK® COMBI-WASHERS

The improved version of the standard HEICO-LOCK® wedge lock washers

- Quick and easy assembly
- Combine with all commercially available bolts
- Can be supplied as a pre-assembled part - ready made SEMS fastener
- Permanent connection thanks to the inset tabs
- Re-usable

MADE IN GERMANY!



HEICO-TEC® TENSIONING SYSTEMS

The simple, fast and reliable way to tighten large bolted joints!

NEW:
HEICO-TEC®
MULTI-TOOL



HEICO-LOCK

888-822-5661
Hickory, NC
WWW.HEICO-GROUP.COM