



Liftboat Jill is a self-propelled DP2 vessel that can operate in the geotechnical, offshore wind, offshore construction, oil and gas, and cable-repair markets. (Courtesy: Fred. Olsen Windcarrier)

► CONSTRUCTION

Fred. Olsen gets contract for Thor wind farm

Fred. Olsen Windcarrier has been contracted by the Danish company Geo to supply a vessel for the preliminary geotechnical investigations for the Thor offshore wind project in the Danish North Sea. Fred. Olsen Windcarrier will use the Liftboat Jill to support Geo with the offshore borehole campaign. Jill will provide a stable and robust platform for the campaign, which is scheduled to start June 2020. The purpose of the assignment is to acquire geotechnical and geological information about the subsurface to be used as

a basis for developers to assess the soil conditions for the Thor project.

“We are very excited to be working with Geo on this project,” said Thomas Lund, sales manager at Fred. Olsen Windcarrier. “The two companies combine the best of maritime and offshore wind experience with the most extensive expertise within the fields of soil and seabed investigations.”

“We are looking forward to do the first geotechnical work on Thor for Energinet.dk this summer,” said Jens Brink Clausen, department director at Geo. “Our new cooperation with Fred. Olsen Windcarrier will ensure a very safe and robust solution for the drilling operations.”

Liftboat Jill is a self-propelled DP2 vessel that can operate in the geotechnical, offshore wind, offshore con-

struction, oil and gas, and cable-repair markets. It is outfitted to support customers’ construction, maintenance, production enhancement, and decommissioning projects. Jill is equipped with 102-meter-long legs, a rack-and-pinion hydraulic jacking system, a large cargo deck, and in addition to her main crane, crane coverage by three auxiliary cranes.

Fred. Olsen Windcarrier provides innovative and tailored services for the transport, installation, and maintenance of offshore wind farms.

Building on more than 170 years of offshore and marine experience, Fred. Olsen Windcarrier was established in 2008 to service the growing offshore wind sector. The company now operates three class-leading purpose-built jack-up vessels; Bold Tern, Brave Tern,

and Blue Tern. Recently, a long-term time charter for the O&M jack-up vessel Jill was signed, and she is now under commercial management of Fred. Olsen Windcarrier.

The Fred. Olsen Windcarrier vessels have installed 600 wind turbines offshore and gained extensive experience installing the latest generation offshore wind turbines on some of the world's largest wind farms.

MORE INFO www.windcarrier.com

CONSTRUCTION

Pemamek offers new flange fitting welding station

The new PEMA Flange Fitting Station enables fast, safe, and accurate fitting and welding of flanges to wind-tower and tower-foundation sections. Flange fitting is possible without flipping shells to a horizontal fitting table for flange fitting and then back to the original position for welding, which can be challenging for crane operators when lifting these heavy pieces. The PEMA FF station either minimizes or eliminates the need for a crane depending on part size.

As wind turbines continue to grow larger, the tower sections and flanges that comprise them are also growing in weight and diameter, making handling with an overhead crane more challenging and requiring special skills and tools from the crane operator. The FF station is flexible enough to handle many different variations of flange designs and can be integrated with PEMA column and boom, which enables welding to be done in the same place, reducing weld time and increasing welding efficiency. Additionally, repairs are minimal as there is no need for lifting clamps.

“Our FF Station can handle tubular and conical shells with different diameters and lengths and has changeable



Pemamek's PEMA Flange Fitting Station. (Courtesy: Pemamek)

tools to help to adjust the fit-up tool for different L- and T-type flanges,” said Teemu Tolonen, Pemamek’s application manager of Wind Energy. “Pemamek is also further developing the station with measuring tools, helping operators to perform perfect fittings.”

Pemamek tested the FF welding process using an offshore transition-piece flange fitting. Fitting time was reduced from eight hours to two hours, keeping flatness and tolerances without the need for a milling operation.

Pemamek provides welding automation technology and integrated manufacturing solutions to a wide range of industries including shipbuilding, alternative energies, heavy fabrication, oil and gas, wind energy, and boiler manufacturing. The company offers welding positioners, column and boom units, roller beds, and robotic solutions as well as the proprietary PEMA WeldControl programming and control software, among other technologies.

MORE INFO www.pemamek.com



ALL Family of Companies' Shared Equipment Program (SEP) is a new approach to equipment rental that can shave millions of dollars and many months off construction projects. (Courtesy: ALL Crane)

► CONSTRUCTION

ALL Crane announces Shared Equipment Program (SEP)

Today's construction jobsites are evolving, and project owners demand partner companies that embrace new

methods to drive down costs without negatively affecting quality. It is with this in mind that the ALL Family of Companies recently announced its Shared Equipment Program (SEP), a new approach to equipment rental that can shave millions of dollars and many months off construction projects.

Here's how it works: A project's general contractor acts as the primary

renter of all lift equipment for the job and then rents it to the subcontractors — a method that helps to eliminate waste, cuts costs, improves productivity, and creates positive outcomes. More than just equipment, the project also gets support from the ALL team, including mechanics who conduct regular maintenance to keep machines in “rent-ready” condition as they change hands between subcontractors.

When multiple subcontractors arrange for their own equipment, depending on the job site, the ALL Family of Companies' SEP Program can eliminate redundancy and waste, which can be as much as one-third of total project cost. And equipment redundancy does more than add costs — it adds a level of congestion to job sites where space is a premium, which can affect everything from traffic to safety. The SEP addresses all these concerns, as ALL works with the general contractor to maximize efficient usage of lift equipment.

ALL developed the program to reinforce its unique blend of resources afforded general contractors, including a broad continental footprint, and an extensive and varied fleet. The program works best when all subcontractors have ready access to equipment that meets their needs, from steelworkers who may require hefty all-terrain equipment to painting and electrical contractors whose finishing work requires access equipment such as scissor lifts. ALL's equipment lineup includes crane types as small and versatile as mini/spider cranes or as large as 900-ton ATs and 1,000-ton crawlers, plus tower cranes, boom lifts/aerials/MEWPs, and boom trucks.

Beyond these extensive equipment resources, the company has the experience and willingness to collaborate both initially and then ongoing, which help make the equipment-sharing process successful. ALL has already executed projects using SEP, saving project owners tens of millions of dollars and helping to complete projects months ahead of schedule.

MORE INFO www.allcrane.com



Biome Renewables' PowerCone® is a passive retrofit that bolts to the hub of a wind turbine as an effective turn-key solution that incorporates the aerodynamic elegance of a falling maple seed. (Courtesy: Biome Renewables)

► INNOVATION

Biome presents PowerCone® tech to potential investors

Biome Renewables recently presented its PowerCone® Wind Turbine Technology to investors and industry representatives at the Virtual Industry Growth Forum (IGF) 2020 in April. The IGF, celebrating its 25th anniversary, was presented online this year. It was hosted by the U.S. Department of Energy's National Renewable Energy Laboratory and is one of the nation's premier events for cleantech entrepreneurs and other industry experts. Biome Renewables was selected from a field of more than 150 entrepreneurs following an extensive selection process.

Biome Renewables is a Toronto-based design and engineering firm that employs the power of nature to create a sustainable future. By using biomimicry in its design and engineering process, the company is able

to create world-leading technologies in the cleantech space. The PowerCone® is a passive retrofit that bolts to the hub of a wind turbine as an effective turn-key solution that incorporates the aerodynamic elegance of a falling maple seed. The result is not just more power, but power from a place where no bigger blade or smarter software can find it.

"We're thrilled to be presenting at this year's NREL Industry Growth Forum," said Ryan Church, founder and CEO of Biome Renewables. "We can't wait to show investors where we're at in the maturation of the PowerCone® technology, and what this will mean for the wind industry as a whole. The potential is enormous."

Several hundred cleantech investors, entrepreneurs, and industry representatives were expected to attend this year's Virtual IGF 2020. The online event included the pitch competition and one-on-one networking meetings, the heart of the IGF, over the course of two days. Among them were 40 of the nation's most promising start-up companies, including Biome Renew-

ables, that presented their cleantech innovations to potential investors and industry experts. In addition, the companies competed for the 2020 Clean Energy Venture Awards.

"It's our 25th anniversary and the IGF has become more crucial than ever," said Richard Adams, director of NREL's Innovation & Entrepreneurship Center that manages the IGF. "We are excited to see the clean technologies the IGF presenters deliver this year. These technologies not only address market needs but offer viable solutions to the world's energy challenges."

MORE INFO www.biome-renewables.com

► INNOVATION

Chartwell: Workboat sector must consider operational profile

Instead of waiting for breakthrough technological innovations to deliver low emission vessels, workboat oper-

ators have the opportunity to use the latest advances in hull design and alternative propulsion systems to achieve efficiency gains while tackling pollution problems in ports and other workboat sectors — and helping offshore wind to work toward emissions targets. This is the latest insight from Chartwell Marine, a pioneer in next generation vessel design.

The broader trend for workboats — which includes OESVS, tugs, pilot vessels, and survey vessels — in many key markets globally shows a clear and increasingly assertive move toward emissions reduction. The Clean Maritime Plan for net-zero emissions in domestic U.K. waters by 2050 is one example, while the EPA Tier 4 air quality regulations offers practical guidance at present for vessel operators in the U.S.

Hybrid designs are being trialed and successfully adopted across the industry and will continue to play a critical role in current and future decarbonization strategies. Chartwell Marine's own vessel portfolio includes the Chasewell pilot and patrol boat and Scanwell survey vessel range — both with hybrid propulsion options.

But with all workboat types, the financial factor may well prove decisive. Reducing fuel burn and finding more efficient ways to work leads to increased profitability across vessel operations. Chartwell Marine warns that, although hybrid and electric solutions are ideally suited for some contexts, the operational profile of the vessel must be carefully considered. Designing vessels with end-user requirements in mind is a vital part of ensuring they act effectively.

The port sector has struggled with NOx pollution, produced in large part by vessel operations. There are many areas where hybrid propulsion offers clear benefits outside of the obvious emissions reduction. Hybrid propulsion systems are especially effective for vessels operating at reduced speeds, such as those working in and around ports. Reducing fuel burn in port dramatically, while using increased torque from a hybrid system, will improve operational efficiency for tug-

boats, for example.

Hybrid technology is ideally suited for the survey sector as well due to dramatic reductions in acoustic interference. Quieter operations mean more accurate surveying, whether that is for scientific purposes, installation and maintenance of subsea infrastructure, or port dredging.

In offshore wind, there are clear incentives for the decarbonization of crew transfer vessels as the industry looks to bolster its green credentials. However, high-speed offshore wind CTVs are often less suitable for alternative propulsion because the power densities of energy sources such as batteries and hydrogen are not as efficient as diesel. In this case, smart and holistic vessel design is the most effective way forward. When a focus on the high-speed operational element prevails, Chartwell Marine looks toward the potential of using a combination of increased dynamic lift, active motion damping, and AI to increase operational efficiency.

“Alternative propulsion systems and energy sources are an exciting proposition, and in many operational contexts, already offer the best solution in terms of efficiency,” said Andy Page, managing director of Chartwell Marine. “But as global operators increasingly look to enhance the efficiency of their fleets, it’s worth considering that existing innovations in hull forms and other vessel technologies often have the greatest capacity to deliver savings.”

“A strategic element is in play here as a diverse set of markets look to reduce their emissions,” he said. “While it’s certainly encouraging that stimulus from above is spurring research and development in the workboat sector, it is ultimately up to naval architects, engineers, and vessel operators to enable the necessary efficiency savings to be made.”

Chartwell Marine was awarded a prize by the Carbon Trust last year for their part in designing an innovative new hull form for the Offshore Wind Accelerator competition and is working on the development and testing of

technologies to aid the ongoing decarbonization of vessels.

MORE INFO www.chartwellmarine.com

INNOVATION

4Subsea installs IoT sensors on floating turbine Zephyros

4Subsea has installed advanced, retrofit sensors on floating turbine Zephyros (previously Hywind Demo) to prove cost reduction potential with a Digital Twin. A few hours after mobilization on April 20th, the autonomous sensors started streaming motion and load data to 4insight.io from Unitech's wind turbine off the west coast of Norway. The project aims to prove significant cost reduction potential in offshore wind by using a Digital Twin of the substructure to measure actual loads and fatigue on the turbine.

4Subsea has delivered digital decision support with Digital Twins to the oil and gas industry for years, and because of the many similar challenges with soil support, scouring, corrosion, and fatigue, it can use modified versions of its algorithms, AI agents, and trained models to extend the lifetime of substructures, predict cable repair/replacement, reduce production downtime with anomaly detection, and more.

4Subsea has developed a new generation of sensors for structural integrity and performance monitoring of offshore wind turbines. The sensors have a proven track record from offshore oil and gas where they are used to monitor both vessel motions and the behavior of fixed platforms. Different technology components from fish telemetry, micro drones, and telecom have been combined in order to make a solution dedicated for subsea assets in oil and gas and now for offshore wind turbines.

The sensor package combines a 6-axis IMU and four strain sensors for monitoring wind-turbine towers and



The Scanwell survey vessel. (Courtesy: Diverse Marine)



4Subsea has developed a new generation of sensors for structural integrity and performance monitoring of offshore wind turbines. (Courtesy: 4Subsea)

substructures. Sensor data will be combined with weather information and other data sources. The interpretation of the data will be available on 4insight.io, which is a digital service on Microsoft Azure. This enables the combination of many large data sets and cloud computing as a platform for machine learning and artificial intelligence.

The main goal of the project is to analyze the potential for reducing LCOE in the offshore wind industry. 4Subsea's operating philosophy is founded on continuous research and technology development to improve

the understanding of how underwater assets age over time when exposed to hydrodynamic, aerodynamic, and operational loading.

Within offshore wind, 4Subsea specializes in coupled analysis including aerodynamics and hydrodynamics as well as modeling of the turbine controller and modeling of soil interaction with the substructure.

4Subsea is a leading provider of technology and services that help operators optimize energy production from subsea oil and gas fields and offshore wind farms. They combine domain expertise with data analytics

and digital services to maximize the lifetime of assets, reduce operational cost, and optimize future projects through data-driven design.

MORE INFO www.4subsea.com

MAINTENANCE

Siemens Gamesa sets foundations for service growth

Siemens Gamesa Renewable Energy has secured a long-term, 20-year contract to provide full-scope operation and maintenance services for a 135-MW Senvion wind farm in Victoria, Australia, ensuring support continuity and stable operations to maximize the customer's business case.

Under the agreement, the company will provide remote monitoring, supply chain access, and specialty tooling, design, and engineering support, as well as software updates. In addition, existing hardware and infrastructure on the site will be used to ensure the performance and reliability of the turbines throughout its extended lifetime of 25 years.

In order to provide better service to Senvion turbines in Australia, Siemens Gamesa has also invested in a substantial, immediately available stock of Senvion parts in the country, which will help to optimize the time needed to service projects as well as maximize the project economics for customers.

"Leveraging its 10-year expertise of servicing turbines of other manufacturers and our recent successful acquisition of Senvion's European Services assets and Intellectual Property, Siemens Gamesa is uniquely positioned to serve our customers in all markets," said Joris Mazille, service CEO of Siemens Gamesa for the APAC region. "This strong position in Asia Pacific is further strengthened by our growing investment in technical capability, a local service team, and competitive parts stock in Australia, demonstrat-



MAINTENANCE

Windsourcing.com launches B2B online shop

During the Coronavirus crisis, digital business models have emerged as reliable pillars for the procurement of products and services. The operation of wind turbines must be guaranteed around the clock, which is why there is a strong demand for comprehensive and directly accessible online offers for spare parts and repair materials. Windsourcing.com has been a competent distributor for years in after-sales market of the wind industry and now also offers its product range in a B2B online shop throughout Europe.

In 2019, wind energy supplied about 24.4 percent of German electricity production and is a supporting pillar of the energy revolution. Wind turbines have undergone rapid technical development. The complex systems that are exposed to changing loads require regular maintenance and repairs.

As a specialized dealer for the wind industry, Windsourcing.com has already delivered spare parts and repair materials for wind turbines to customers in Europe and increasingly worldwide. Now the company has reacted to the increased demands of the market and — in the spirit of the digital age — offers customers from EU countries many articles for direct purchase via a new B2B online shop. Associated with this are further service advantages, such as the display of the stock availability of all products, in order to guarantee the buyer planning security for necessary orders.

Once a customer account has been created, the uncomplicated ordering process ensures direct access to the online shop assortment with just a few clicks. The products offered include corrosion protection coating systems for wind turbines (onshore and offshore), adhesives and sealants, rotor blade repair materials, and hydraulic and electrotechnical products. If prod-

Siemens Gamesa expanded its multi-brand service portfolio in Asia Pacific with the addition of a 135-MW Senvion wind project in Victoria, Australia. (Courtesy: Siemens Gamesa)

ing our long-term commitment to enable customer success.”

Siemens Gamesa completed the acquisition of selected assets from Senvion in January. The purchase increased the company’s multi-brand footprint to about 10 GW. The addition of these service assets helps to diversify Siemens Gamesa’s business mix and geographical exposure with contracts that offer long-term visibility and renewal rates that have been historically very high.

With nearly 72 GW under service globally, Siemens Gamesa is a leading service provider in the industry. The company has been expanding in the

Asia Pacific markets since the 1980s and has installed more than 8.4 GW of onshore turbines in China, Pakistan, Japan, South Korea, Indonesia, the Philippines, Vietnam, Thailand, Australia, and New Zealand.

In the offshore segment, the company successfully completed the installation of Taiwan’s first offshore wind power project in 2019 (128 MW) and reached close to 2 GW of firm orders. The company also signed preferred supplier agreements for an additional 755 MW combined volume in Japan and Taiwan.

MORE INFO www.siemensgamesa.com



Windsourcing.com has been a competent distributor for years in after-sales market of the wind industry and now also offers its product range in a B2B online shop throughout Europe. (Courtesy: Windsourcing.com)

ucts are not yet available for purchase in the shop, customers can request them directly from the shop to receive an offer.

MORE INFO www.windsourcing.com/en

► MANUFACTURING

Port of Vancouver receives shipment of longest wind blades

The Port of Vancouver USA recently received a shipment of nine wind turbines including the longest wind turbine blades it has handled to date. The delivery is a joint effort between the turbine manufacturer Goldwind and the wind project owner Potentia Renewables.

“During the COVID-19 pandemic, the port continues to operate to keep the supply chain and commodities moving,” said CEO Julianna Marler. “The port has proven our unique ability to handle these types of large projects. Customers know our heavy lift mobile cranes, acres of laydown space, highly-skilled workforce, and dedication to renewable energy make the Port of Vancouver the perfect port for receiving wind energy components.”

“During an extremely trying time

globally, we are grateful for our partners including ILWU Local 4, Local 40, Local 92, river and bar pilots who are still at work making it possible for us to handle this cargo,” said Chief Commercial Officer Alex Strogon. “We also thank Jones Stevedoring, Totran Transportation Services and the ship MV Star Kilimanjaro operated by G2 Ocean. Their talented staff and crews, expertise, and hard work are integral to the port’s continued commercial success.”

The blades for Goldwind’s GW136/4.2 MW turbines, each 67 meters in length (220 feet), were manufactured in and shipped from China. Goldwind Americas, the company’s North American subsidiary headquartered in Chicago, Illinois, specializes in the sales, supply, operations, and maintenance of Goldwind’s Permanent Magnet Direct Drive (PMDD) wind-turbine generators. Globally Goldwind has 60 GW, approximately 35,000 wind-turbine units, operating in 24 countries on six continents.

“Goldwind Americas is pleased to be working with the Port of Vancouver USA with their expertise in the receiving and movement of large-scale wind-turbine components, which now includes our 4S MW model blades,” said David Sale, CEO of Goldwind Americas. “Goldwind’s expanding

portfolio of turbines continues to push the technology envelope and define what is possible in the wind industry. This allows our customers to maximize project economics with larger turbine nameplate designs and rotor diameters.”

The wind-turbine blades and components will travel to Assiniboia, Saskatchewan, Canada, to Potentia’s Golden South Wind Energy Project on 34,000 acres of leased-agricultural land. Potentia is a Toronto-based developer, owner and operator of solar and wind energy assets. The Golden South Wind Project will use Goldwind’s latest PMDD turbines and will generate approximately 900,000 MW/h of electricity and will significantly reduce CO₂ emissions compared to a coal-fired plant. The carbon reduction is equivalent to eliminating the pollution from half the vehicles in Regina or Saskatoon, Saskatchewan. The project broke ground in 2019 and is expected to open in 2021.

“We are very excited to see the project progress from the current preparatory construction efforts to the arrival of the wind turbine equipment at the site this summer,” said Jeff Jenner, chief executive officer of Potentia Renewables Inc. “We thank everyone at the port and others involved in the transportation and handling of this equipment for their efforts during



The MV Star Kilimanjaro delivers 27 wind turbine blades and other components for a wind project in Canada. (Courtesy: Port of Vancouver USA)

these unusual times.”

Once unloaded from the ship, the wind turbine blades (27 in total) and components will be moved to laydown space at the port’s Terminal 2 and Terminal 5. From there, they will be transported by Totran Transportation Services over the span of 21 weeks to Saskatchewan, Canada.

The port will eventually handle 50 full turbines, a combination of the GW 136/4.2 and GW 155/4.2 MW models, moving through the port bound for the Golden South Wind Project. A complete turbine includes three blades, nacelle, generator, hub, five to six tower

sections, and other sub-components. Additional ships carrying turbines will arrive later this summer including blades measuring 76.2 meters (250 feet)— which will be the longest blades ever imported into any port in North America.

The Port of Vancouver USA has long been a leader in the port industry in supporting renewable energy projects and is one of the West Coast leaders in the movement of wind energy components to support new and existing wind energy projects.

MORE INFO www.portvanusa.com

► MANUFACTURING

Vestas wins order with customized solution

E-Connection, a Dutch wind project developer with more than 30 years of experience in developing, realizing, and managing complex wind-energy projects, has placed an order for 11 turbines totaling 46 MW for the first phase of the wind project Oosterscheldekering Wind Optimization

that consists of the four wind parks Binnenhaven, Roggeplaat-West, Noordland Buiten and Vluchthaven.

Located directly on the waterfront on a storm surge barrier in the Zeeland province in the southwest of the Netherlands, Vestas has developed a wind-energy solution customized to the sites' high wind conditions with average windspeeds of more than 9 m/s at hub height. The project is a mix of new turbines and turbines that replace older turbine types and in total it features nine V136-4.2 MW turbines and two V117-4.2 MW turbines with site-specific towers, combined with a 15-year Active Output Management (AOM 4000) service contract to optimize annual energy production and offer competitive leveled cost of energy.

At Noordland Buiten and Vluchthaven wind parks, the current five V90-3.0 MW turbines will be replaced by five V136-4.2 MW turbines, which will significantly improve the sites' annual energy production due to the more efficient turbines. The Binnenhaven and Roggeplaat-West wind parks will feature four V136-4.2 MW turbines and two V117-4.2 MW turbines respectively.

"We appreciate partnering with a supportive partner like Vestas and collaborating with the province, municipalities, Rijkswaterstaat and environmental organizations," said Rick Wasser, director of E-Connection. "We are looking forward to commissioning phase one of this complex project in summer 2021, signifying a great step for the renewable power supply of the region. Collectively, from spring 2022, the turbines will generate as much wind power as 60,000 households in the Netherlands use annually."

"This order comes from our valued customer E-Connection, with whom we have had a productive partnership for about 15 years in the Netherlands," said Nils de Baar, president of Vestas Northern & Central Europe. "This project re-enforces the success of the V136-4.2 MW turbine for the Dutch market being installed at the sea defense walls at the North Sea in one of the country's

best wind locations. It emphasizes our capability to provide customized wind energy solutions for complex projects that significantly contribute to achieving the sustainable energy goals of the Netherlands, while at the same time, create maximum value for our customer's business case."

The four wind parks will feature a VestasOnline® Business SCADA solution, lowering turbine downtime and thus optimizing the energy output. The contract further includes supply, installation and commissioning of the wind turbines, as well as 15-year Active Output Management 4000 (AOM 4000) service agreement.

Deliveries are expected to begin in the third quarter of 2021 and commissioning is planned for the same quarter.

MORE INFO www.vestas.com

MANUFACTURING

GlobalData: Spanish turbine manufacturers get back to business

Vestas Wind Systems, LM Wind Power, Siemens Gamesa Renewable Energy, and Nordex recently reopened factories in Spain after the government relaxed lockdown measures. It was previously predicted that the COVID-19 pandemic would have negative effects on wind supply chains, with developers expected to undergo delays due to lockdown-related restrictions. Thus, these major companies getting back to business is a sign of a desperate attempt to protect matters from worsening further, says GlobalData, a leading data and analytics company.

"The annual installed capacity for wind in Spain, at the end of 2019, stood at 2.3GW, by the end of 2020, it is expected to be 1.7 GW," said Somik Das, power analyst at GlobalData. "The total cumulative wind installed capacity in 2019 was 25.9 GW, which is expected to accumulate to 27.6GW by the end of 2020."



The Oosterscheldekering Wind Optimization project is a mix of new turbines and turbines that replace older turbine types and in total it features nine V136-4.2 MW turbines and two V117-4.2 MW turbines with site-specific towers. (Courtesy: Vestas)

Danish company Vestas Wind Systems restarted full production at its Viveiro site in mid-April, while its factory at Daimiel also resumed operations at near full capacity. Meanwhile, blade maker LM Wind Power also restarted operations at its sites in Ponferrada and Castellon, and Siemens Gamesa Renewable Energy resumed operations after the Easter holidays in Lerma, Burgos, San Fernando, Somozas, Ágreda and Sigüeiro, Asteasu, Mungia, Valencia, Cuenca, Aoiz, and Reinosa. Germany's Nordex SE also reopened its Spanish sites at the start of April after temporarily closing them March 30. The company restarted operations at its production facility in Chennai, India, as well, with limited capacity on April 6.

"These manufacturers have resumed operations adhering to the government guidelines and have undertaken strict measures such as social distancing, frequent spraying of disinfectant to clean surroundings, compulsory protective gear for workforce and allocation of shifts, Das said.

"These events indicate that the primary efforts of the major players in the sector are to limit the damage that has been caused by the pandemic. Also, if the performance of the sector needs to be improved in the second half of the year, then these major players would need to get back in business at the earliest." ↵

MORE INFO www.globaldata.com