Thirty-five Vestas V150-4.2 MW wind turbines will make up the Lanfine Wind Project. (Courtesy: Pattern Energy)

CONSTRUCTION

Lanfine Wind Project to generate energy for 25,000+ homes

The Lanfine Wind Project in Oyen's Special Area 3 in Alberta has entered its final construction phase with the wind turbines being lifted and installed in their final locations, as well as the blades being attached to the rotors. This new facility is expected to be operational by the end of this year, after an investment of close to C$350 million.

Borea, the company in charge of the construction and installation of the 35 Vestas V150-4.2 MW wind turbines that will make up the wind farm, has required the collaboration of Sarens, a specialist in heavy lifting, engineered transport, and crane rental, for the lifting of each of the structures, as well as the lifting of the blades for their installation.

For these tasks, Sarens has used a Liebherr LR1600 Crawler Crane, part of its fleet of cranes in Canada, thanks to its maximum lifting capacity of 660 U.S. tons with a main boom maximum length of 420 feet, and its great capacity to move over uneven and soft terrain, always guaranteeing the safety and viability of the operation.

The new Lanfine Wind Project, which will be operated by Pattern Energy, is considered strategic for the Alberta region's energy grid, to which it will be able to provide 150 MW, enough to supply renewable energy to more than 25,000 homes in the region. In addition, since the project began at the end of 2020, this wind farm has created 200 construction jobs, to which must be added those corresponding to maintenance and operation work that will be created once it is operational.

This new park will also provide a boost to the local economy in the region, as it will generate landowner revenue and provide tax revenue to the local community, which will directly contribute to education, community services, roads, and first responders. As a part of this project, a community benefits program that will support local initiatives and community-based organizations, has also been created.

Sarens has a long history of developing wind projects in Canada. These include the Whitlaw Wind project,

Two of six CTVs are expected to be delivered in summer 2023 and January 2024, respectively. (Courtesy: Atlantic Wind Transfers)

the Golden South Wind Project in Assiniboia, and the Blue Hill Project in Saskatchewan, where Sarens contributed to the transport and erection of 50 wind turbines at their final destination. This facility will be responsible for generating up to 200 MW of renewable energy, enough to power up to 100,000 homes, and will bring an economic impact of more than $45 million to its community.

MORE INFO patternenergy.com/projects/lanfine-wind

CONSTRUCTION

Atlantic Wind orders six Chartwell transfer vessels

Atlantic Wind Transfers (AWT), the first U.S. offshore wind farm support company, has ordered six Chartwell Ambitious-class Crew Transfer Vessels (CTV) designed by U.K.-based pioneers of vessel design, Chartwell Marine.

AWT's order comprises six CTVs, and will be constructed by St. John's Ship Building Inc. at its shipyard in Palatka, Florida. The first two vessels are expected to be delivered in Summer 2023 and January 2024 respectively, with four further builds in the pipeline. The vessels will be the first U.S.-built CTVs to be compliant with the U.S. Environmental Protection Agency's Tier 4 regulations, which rank among the most stringent emissions rules for marine engines in the world.

Through its continued partnership with Chartwell Marine, AWT demonstrates its commitment to the growth of the U.S. offshore wind market. Building U.S. Jones-Act Compliant vessels certified under U.S. Coast Guard Subchapter L, these CTVs will be able to operate on any wind farm in the United States up to 150 miles offshore, under the Safety and Inspection standards of the U.S. Coast Guard. AWT operates the only two crew transfer vessels in the U.S. under long-term contracts, servicing the Block Island Wind Farm and Coastal Virginia Offshore Wind Farm. AWT's seven years of operating experience in U.S. offshore wind brings an impeccable safety track record while logging more than 6,600 TP connections and 25,000 personnel transfers.

"We're pleased to strengthen our pioneering status in delivering another first for the U.S. offshore wind sector

with these new Tier IV vessel orders," said Charles A. Donadio Jr., founder of Atlantic Wind Transfers. "Our goal is to build the most reliable, multi-purpose Jones-Act CTV fleet in the U.S. and provide our clients with cutting edge technology while lowering our carbon footprint and meeting all Jones Act and USCG Regulations. This investment will enable us to have crew transfer vessels available for charter to support the demand over the next several years."

"Our experience has proven our vessel model works for both the shipyard construction phase with on-time deliveries, and in-service uptime reliability for installation support and long-term O&M," he said. "Chartwell is our go-to when it comes to CTV designs which are operating in multiple international markets. We see our partnership with both Chartwell and St. John's Ship Building as a key cornerstone in our strategy to build the capability and capacity of AWT to support the future growth of the offshore wind industry."

The Ambitious is Chartwell's flagship CTV design; a 25.2-meter aluminum catamaran with capacity to transport 24 personnel to and from turbines with speed, safety, and stability.

"The U.S. offshore wind market is expanding rapidly, and AWT's pioneering vision to support this growth aligns well with our own ambition to bring versatile, high-performance crew transfer vessels to the markets that need them most," said Andy Page, director and naval architect at Chartwell. "With its performance and versatility, the Ambitious delivers on the needs of the growing U.S. market."

"St. Johns Ship Building is excited to be working with Charlie Donadio and to be part of Atlantic Wind Transfers' successful CTV operation and their extensive planned new vessel construction program," said Jeff Bukoski, president of the shipyard. "This effort further solidifies our position as a leading supplier of Jones Act compliant CTVs for the offshore wind industry and working with highly experienced European naval architects such as Chartwell Marine. We know that our skilled workers also appreciate the additional opportunity to showcase their high quality craftmanship and will allow continued growth and opportunity."

MORE INFO www.atlanticwindtransfers.com

As part of the launch, the vessel was named Seacat Columbia by Ian Baylis, founder of Seacat Services, and Martin Whitmarsh. (Courtesy: BAR Technologies UK)

CONSTRUCTION

BAR Technologies launches offshore transfer vessel

BAR Technologies, a simulation-driven marine engineering consultancy, held the official launch of its first BARTech 30-crew transfer vessel (CTV) from its premises on The Camber, Portsmouth. BAR Technologies Chair Martin Whitmarsh, also chair of the Offshore Wind Growth Partnership, led his BAR Technologies colleagues to hand over the first vessel of its type to class leading OESV operator, Seacat Services.

As part of the launch, the vessel was named Seacat Columbia by Ian Baylis, founder of Seacat Services, and Martin Whitmarsh. Guests attending the ceremony were given an in-depth tour of the vessel and shown some of the key features that provide the new craft's efficiency and handling.

The BARTech 30 was designed to address the two most pressing challenges of the offshore wind industry: vessel efficiency, and therefore emissions reduction, and the comfort in transfer, and subsequent effectiveness, of offshore wind engineers.

In the first instance, many of the major offshore wind developers and owners are beginning to look in earnest at the rates of fossil fuel consumption in wind-farm service vessels. Secondly, any offshore engineering personnel beset by sea-sickness in travel to a project must be returned to port, meaning that a vessel transporting up to 24 engineers must cease its transit to a project site, resulting in expensive downtime for the project owner.

With its 30-meter ProA design, and active foiling systems to correct for pitch and roll, the BARTech 30 is able to minimize vessel motion and fuel burn, leading to an average increase in stability across all sea states of up to 70 percent and a reduction in total emissions of 30 percent over a typical operational profile, making the vessel one of the first Low Emission Vehicles (LEVs) serving the U.K.'s growing fleet of offshore wind farms.

Additionally, with the vessel able to operate in more challenging con-

Clir Renewables, the market intelligence platform for wind and solar, has been retained as the data analysis and optimization service for the Okanagan Wind portfolio. (Courtesy: Okanagan Wind)

ditions than the current catamaran designs, offshore wind turbines may be serviced over a greater number of sea states, ensuring wind-farm owners have more opportunities to better and more cost effectively provide turbine maintenance.

"BAR Technologies was established to leverage the highest level of engineering expertise and understanding of hydrodynamics from the fields of Formula 1 racing and the Americas Cup respectively, to take on some of the biggest challenges in vessel efficiency and maritime decarbonization," said Martin Whitmarsh, BAR Technologies chair. "Alongside our pioneering wind propulsion technology for the shipping industry, our latest developments in crew transfer vessel design, demonstrated by the BARTech 30, are helping to significantly mitigate the 'last mile' of carbon emissions in offshore wind development and construction."

"We know that the offshore wind industry has led several innovations in cost reduction since its inception," he said. "We're now able to take this efficiency drive one step further with a vessel design not only able to operate in wider offshore parameters and presenting new savings in servicing and maintenance, but, also combined with a significant reduction in fuel consumption."

"Following our preview of the vessel at the Seawork maritime event in June, we're thrilled to officially launch the BARTech 30 here at our home in The Camber in Portsmouth," said BAR Technologies CEO John Cooper. "Having our first customer delivery is a key milestone in our development of the BARTech 30 program, and we look forward to seeing further customer orders for the vessel fulfilled in the near future."

"In taking this pioneering design to market, we've been able to bring in elements of collaboration from other South Coast marine designers and consultancies, and the Isle of Wight based vessel manufacturer, helping to secure a domestic supply chain for a key part of the U.K. offshore wind industry," he said.

MORE INFO www.bartechnologies.uk

ONYX Insight works with eight of the top 10 wind asset owners. (Courtesy: ONYX Insight

INNOVATION

Clir retained for Okanagan Wind portfolio

Clir Renewables, the market intelligence platform for wind and solar, has been retained as the data analysis and optimization service for the Okanagan Wind portfolio following Canadian Power's purchase of the sites from Toronto-based InstarAGF Asset Management.

Comprised of Pennask Wind Farm and Shinish Creek Wind Farm, Okanagan Wind represents the only wind-power facilities in the Okanagan region, with a combined capacity of 30 MW – enough to power roughly 9,000 Canadian homes.

Prior to the 2021 sale to Canadian Power, the sites became operational in 2017. Making up two of only seven grid-scale wind farms in the province, the farms were developed in partnership with a local indigenous group who continue to benefit through community funding and access to jobs.

Clir Renewables developed its data management, software-as-a-service platform alongside the original owner as a foundational client. Work-to-date on the Okanagan Wind portfolio includes upgrade validations, met-mast configuration, and icing studies, accounting for challenging meteorological conditions attributable to the sites' mountainous geography.

Following the sale in 2021, Clir was retained by the new owner, Canadian Power, to provide continued support with analytics, reporting, and upgrade validation. Clir software empowers owners and asset managers to analyze and optimize their assets using a suite of tools based on proprietary AI and machine learning algorithms.

These tools have been trained using the company's extensive dataset from more than 200 GW of assets from different OEMs, technologies, regions, and ages. This allows users to quickly detect site-specific issues and understand performance in relation to the wider industry.

"Collaborating with Canadian Power from the start of their tenure at Okanagan Wind has been brilliant. After inheriting our services in the sale, we worked to help them understand the power of our offering and its benefit to the business," said Oscar Radevsky, Clir project engineer. "It has been satisfying to see a client get increasing value from the tools we offer here at Clir. I am confident that this momentum will continue and we look forward to continuing this mutually beneficial relationship."

"I have been consistently impressed by the value Clir Portfolio is able to add to our projects," said Steven Gwatkin, Okanagan wind operations manager. "It gives us a crystal-clear picture of all our data in one place, allows us to dig into performance issues and makes it easy to do monthly and quarterly reporting. We look forward to working with Clir as Canadian Power continues to expand its presence in the renewable energy sector."

MORE INFO www.clir.eco

INNOVATION

ONYX Insight reports exponential wind growth

ONYX Insight, provider of data analytics and engineering expertise to the global wind industry, has reported exponential international growth as it surpasses a plethora of milestones including 10,000 turbines monitored worldwide, completion of 70 GW of due-diligence projects, and the shipping of 7,000 of its award-winning advanced sensing technology, ecoCMS, to wind-turbine operators across the globe.

The business partners with more

than 200 customers across 30 countries including eight of the top 10 wind asset owners. This increased market share sees the benefits of ONYX Insight's combination of data analytics and engineering expertise brought to win- energy assets, supporting owner-operators as it helps to reduce operational expenditure.

2021 saw the opening of three offices in Brisbane, Australia; Shanghai, China; and Madrid, Spain. In 2022, ONYX Insight opened an advanced sensing laboratory at its headquarters in Nottingham, UK.

ONYX Insight was the first company to introduce micro electro-mechanical systems (MEMS) technology for condition monitoring in the wind industry. This innovation has changed the return-on-investment model for wind-turbine monitoring and data analytics, allowing owners and operators to put in place predictive maintenance strategies.

The advanced sensing laboratory will be used for research and development into new technologies and products, enabling ONYX Insight to continue delivering solutions to support wind sector growth and facilitate the energy transition.

ONYX Insight has increased headcount by 40 percent, having built a team of 160 across its seven offices. This growth is set to continue with an immediate focus on software and data science expertise.

"ONYX Insight has seen significant global expansion in the last few years, with evidential increases in our customer-base, the volume of assets we support, and in our team and its global reach," said Bruce Hall, ONYX Insight CEO. "By meeting these milestones, we are increasing our valuable impact on the wind industry, which the ONYX team has been dedicated to for nearly 15 years. To date, we have enabled an additional 228 GWh of energy production and saved over 11,000 (metric) tons of CO2 per year."

"As part of our future vision, we are excited to announce an expansion to our headquarters in the U.K., increased investment into research and development, as well as the continued growth of our team and offices worldwide," he said. "There is much more we can and will do to support the success of global wind power, and we're excited to welcome the next phase of that journey."

MORE INFO onyxinsight.com

INNOVATION

Röchling launches Pulcap to enhance rotor-blade stability

International plastics processor Röchling Industrial has launched Pulcap, a product made of composites, that enhances the stability of wind-turbine rotor blades. Owing to their extremely high mechanical strength and low weight, the pultruded profiles enable an efficient and safe operation of wind turbines.

By 2030, Germany intends to generate 65 percent of its gross electricity consumption from renewable energy sources. To achieve the intended energy transition, more wind, water, and sun will be used to generate electricity. New, more powerful offshore and onshore wind turbines are being developed or existing turbines are upgraded. Within the scope of repowering, turbine parts are replaced by, for example, larger parts that generate more power. Optimized, longer and more powerful rotor blades are very important in that context.

"With our Pulcap pultruded profiles we are contributing to improving the efficiency and performance of wind turbines," said Franz Lübbers, CEO of Röchling Industrial. "We are very happy to launch this high-quality product to the market."

The profiles for rotor spar caps are used as reinforcement of rotor blades in wind turbines. In conjunction with the bars, they form the skeleton of a

Röchling has supplied the wind-power industry with glass fiber-reinforced materials for more than 20 years. (Courtesy: Röchling Industrial)

blade and are largely responsible for stability.

Röchling has supplied the wind-power industry with glass fiber-reinforced materials for more than 20 years. The company also offers insulation materials for choke coils, transformers and generators, and inverters.

Röchling Industrial manufactures Pulcaps using the pultrusion process. As part of the continuous process, a composite of glass and carbon fibers is produced with a special resin system that ensures the superior quality of the products.

"The tensile forces during pultrusion straighten the fibres greatly reducing any material defects compared to conventional manufacturing processes," said Uwe Kasses, who is responsible for the composite business at Röchling Industrial, which also includes the pultrusion process. This reduces any imperfections and considerably decreases the risk of errors during bonding and processing.

At the same time, Pulcaps withstand the highest loads due to their high mechanical properties, so that the profiles reliably reinforce the rotor blade chords.

"Our pultruded profiles for wind turbines comply with the highest requirements. The material is tested in advance according to specified criteria resulting in only approved materials being used," said Michael Janssen, responsible for Composite developments at Röchling Industrial.

In particular for larger and high-performance wind turbines, aspects such as high strengths play a decisive role due to loads and long service life.

"Our product significantly increases the efficiency of modern systems," Janssen said. "Using Pulcaps increases service life and improves performance. At the same time, error rates and maintenance times can be reduced, rendering the generation of electricity more economical and sustainable overall."

MORE INFO www.roechling.com/us

MAINTENANCE

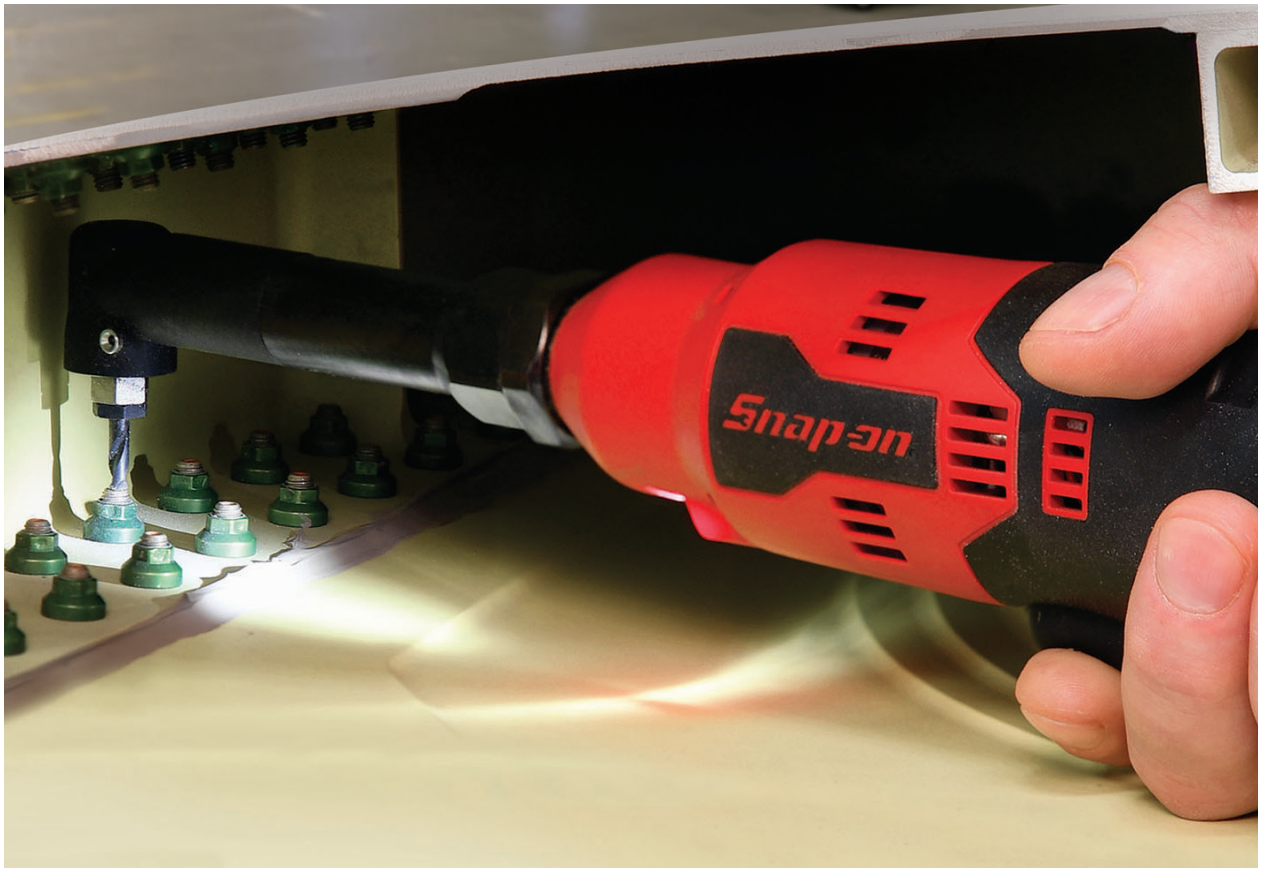
New Snap-on mini drills aim for precision

The new angled-head 14.4 V MicroLithium Mini Drills from Snap-on Industrial provide precise drilling without the need for tethering to an air source.

The 14.4 V MicroLithium Mini Drills are ideal for applications within public transportation manufacturing, fleet maintenance, repair and overhaul, public safety vehicles, electronic component manufacturing and installation, HVAC and others where small holes are needed, often in hard-to-reach locations.

Using a cordless drill with small compact recessed heads gives technicians unhindered access, while also removing tripping hazards caused by air hoses in the shop or plant floor.

For added flexibility, the 14.4 V MicroLithium Mini Drills come in three



The 14.4 V MicroLithium Mini Drills are ideal for applications within public transportation manufacturing, fleet maintenance, repair and overhaul, and more. (Courtesy: Snap-on Industrial)

different models: 45° angle head (CDRR200545DB), 90° angle head (CDRR2005DB), and 360° fully rotating head (CDRR2005360DB).

Features and benefits of the new 14.4 V MicroLithium Mini Drills include a compact head for great access, a variable speed trigger, low runout for precise drilling, quarter-inch threaded bits and accessories accepted, ability to run items such as reams and sealant removal cutters.

More features include a double ball bearing-supported spindle shaft for durability, spiral beveled gears for durability and smooth operations, multiple configurations, LED light to illuminate the work area, soft grip handle for positive tool control, and a battery life gauge.

MORE INFO b2b.snapon.com/microlithium-cordless-mini-drills

MAINTENANCE

Russelectric offers switchgear simulators

Russelectric, a manufacturer of power control systems and automatic transfer switches, has announced the availability of Switchgear Simulators designed to train personnel on automatic and manual operation of Russelectric switchgear for renewable energy facilities and microgrids.

Customized to mimic the operation of the customer's Russelectric® switchgear/system, Russelectric simulators familiarize workers on the system and its operation and diagnose a wide range of utility, generator, and breaker problems. The simulators can also assess the impact of changes to PLC setpoints such as kW values and time delays. Using the simulators enables operators to evaluate responses to failure scenarios and use the information to develop and validate site operating and emergency procedures.

Russelectric switchgear simulators are available in two versions: The Training Simulator allows personnel to train on the automatic operation of Russelectric Switchgear, while the Advanced Training Simulator allows personnel to train on both manual and automatic operations. With the addition of hard-wired controls and interlock circuits, the simulator PLC mimics full manual controls, enabling personnel to train in the comfort and safety of an office environment.

Russelectric provides high-integrity power control solutions for mission critical applications in the healthcare, information technology, telecommu-

The simulators familiarize workers on the system and its operation and diagnose utility, generator, and breaker problems. (Courtesy: Russelectric)

nication, water treatment, and renewable energy markets. The company maintains manufacturing facilities in Massachusetts and Oklahoma, where it designs and builds automatic transfer switches, switchgear, and controls.

MORE INFO www.russelectric.com/products/simulators

MANUFACTURING

Siemens Energy wins its largest offshore grid connection order

Amprion Offshore GmbH has commissioned Siemens Energy to supply the necessary technology for the converter stations of its first grid connection projects. The order value is in the high three-digit million-euro range, making it the largest offshore grid connection order Siemens Energy has received to date.

Two new power links set the course for more wind energy in the German power grid: DolWin4 and BorWin4 will transport up to 1.8 GW of green wind power from several wind farms in the German North Sea to land with low losses. As a result, the stations will be able to meet the demand of a major city like Hamburg with 1.8 million inhabitants.

"The share of renewable energies in Germany's power supply is set to rise to 80 percent by 2030," said Tim Holt, Siemens Energy managing board member. "Therefore, building new wind-power plants is important but ultimately pointless if the energy does not reach consumers. We also need to invest in our power grid to supply the country with sustainable energy reliably."

Siemens Energy's scope of supply consists of two converter platforms at sea and two associated stations on land. The platforms convert alternating current, as produced by wind turbines, into direct current. The direct current is then transferred to a high-voltage direct current transmission cable for transport. A second converter station on land then converts the electricity back into alternating current. Only in this way can the large amounts of energy cover the distance of around 215 km (DolWin4) and 280 kilometers (BorWin4) without significant losses (low-loss). The two connections will be installed in parallel and are scheduled to begin operating in 2028. BorWin4 would be connected to the grid one year earlier than originally planned.

MORE INFO press.siemens-energy.com

MANUFACTURING

Siemens Gamesa secures first wind order in India

Siemens Gamesa has secured its first order in India with Azure Power India Private Limited to supply 96 SG 3.6-145 wind turbines for a 346 MW project in the state of Karnataka.

The project opens a new partnership in India with Azure Power, an independent sustainable energy solutions provider and power producer in India. Azure has a pan-India portfolio of more than 7.4 GW of renewable energy assets either operational or under construction in the country, primarily in solar.

The wind-turbine supply agreement, a first for Azure, will cater to its projects under the SECI Hybrid IV, SECI XI tenders and its other energy pipelines.

When fully deployed, these wind turbines will produce enough clean energy to meet the power needs of more than 1 million Indian homes.

"We are delighted to begin this new partnership with Azure Power on this large-scale project using our latest India focused technology," said Navin Dewaji, India CEO of Siemens Gamesa. "The contract provides new impetus to the wind industry at a key juncture in the country's energy transition. Teams from both companies have worked relentlessly over the last few months to

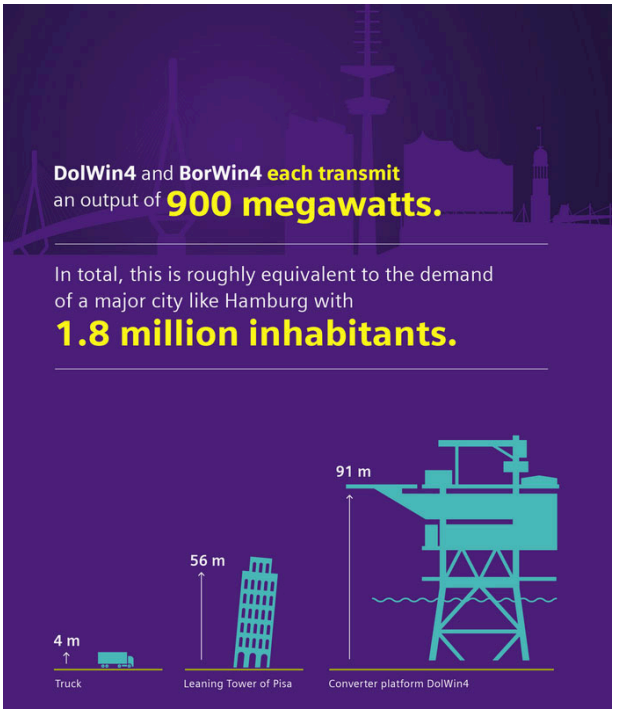
secure maximum value for the project. With this new joint approach, alongside our technological innovation, we are confident of delivering the right renewable energy solutions to the market."

"We are pleased to partner with Siemens Gamesa in our first wind project," said Harsh Shah, CEO, Azure Power. "Wind energy is going to be an imperative element for delivering firm, reliable and clean energy to achieve the energy transition vision of the country. This partnership will create long-term supply visibility while securing sustainable value for our stakeholders."

Siemens Gamesa launched this new platform in 2020 during an ongoing pandemic and with this new deal takes order entry for the Siemens Gamesa 3.X platform in India past the 1.4-GW mark, helping to confirm its competitiveness in the Indian market.

Siemens Gamesa has operated in India since 2009, and the base installed by the company recently surpassed the 8-GW mark. The company has blade factories in Nellore (Andhra Pradesh), a nacelle factory in Mamandur (Chennai, Tamil Nadu), and an operations and maintenance center in Red Hills (Chennai, Tamil Nadu). The company is market leader with a 40 percent market share, according to consultancy Wood Mackenzie.

MORE INFO www.siemensgamesa.com/en-int



More wind energy is set for the German power grid. (Courtesy: Siemens Energy)