



Mammoet's first Liebherr LR12500 crane has a 200m hook height. (Courtesy: Mammoet)

► CONSTRUCTION

Mammoet takes delivery of LR12500 crawler crane

Mammoet has received its first Liebherr LR12500 crane. With a capacity of 2,500t and a 200m hook height, it will help to ensure the constructability of future energy and infrastructure developments.

Seeking greater build efficiencies, projects across a range of sectors are increasing the size and scope of prefabricated construction methodologies. As a result, assurance is needed that today's project planning will match tomorrow's equipment. Energy projects in both the nuclear and oil & gas sec-

tors will rely heavily on high capacity lifting equipment to bring forward the date of first power, while increasing the cost-effectiveness of the build phase in the case of new construction, and reducing downtime in the case of turnaround projects.

Offshore wind turbine components are growing at a fast rate, with nacelles of 1,000t, tower sections of 2,000t, and jackets and monopiles of 3,000t in production. Companies across the sector need peace of mind that components planned can be transported and assembled by future equipment – as lead times increase, doubly so. Similarly, civil megaprojects will depend on high-capacity lifting equipment that allow more construction to take place away from the project site, with both cost and environmental benefits.

In all cases, the new LR12500 unit will support these construction methodologies, building in larger pieces to cut down integration and transport schedules. The LR12500 features a wide high-performance boom, which offers increased stability at reduced (self) weight.

Despite its large size, it folds into dimensions small enough to remain in-gauge. Both features increase the cost-effectiveness and sustainability of its mobilization. A 100-meter main boom and 108-meter luffing jib help the LR12500 to reach 200m maximum hook height. Dual engines with redundancy ensure high levels of reliability, as the crane can continue operation using just one power unit.

MORE INFO www.mammoet.com

CONSTRUCTION

Offshore wind construction up 28 percent

The U.S. offshore wind market ramped up construction activities and saw several new vessels launched in the second quarter of 2024. In total, the U.S. reached 310 MW of installed offshore wind capacity, up 28 percent from last quarter. These and other key industry findings are detailed in Oceanic Network's U.S. Offshore Wind Quarterly Market Report, which highlights new vessel launches, regulatory advancements for several projects, and state-level developments that drove the U.S. market forward between April and June of 2024.

The Coastal Virginia Offshore Wind Project, Revolution Wind, and Vine-

yard Wind 1 are undergoing installation activities on the East Coast, with South Fork Wind already complete and delivering power to the grid. Once installation on the three projects is complete, they will provide more than 4 GW of energy to the grid, powering about 1.4 million homes. Also, in Q2, Equinor broke ground on its South Brooklyn Marine Terminal, projected to create more than 1,000 jobs in the construction of staging, pre-assembly, and operations and maintenance facilities for offshore wind. The New Jersey Wind Port, an offshore wind marshaling port, is also nearing completion.

"The U.S. offshore wind industry entered its second summer construction season, even bigger than last year, drawing on dozens of vessels across ports from Virginia to Massachusetts," said Sam Salustro, vice president of strategic communications at Oceanic Network. "These projects will multiply

installed capacity more than 13-fold. The next wave of supply chain and infrastructure development is well underway with new ports breaking ground and shipyards churning out vessels. Americans are at work out on the water, inside U.S. ports, and in factories and shipyards far from project areas."

Further market strength was showcased in the second quarter with the launch of the first U.S.-built service operations vessel (SOV) for offshore wind, along with the launch of two new crew transfer vessels that mark the fifth and sixth to be delivered in 2024.

"We're heading for a summer filled with monumental achievement brought by new vessels purpose-built to serve our industry," Salustro said.

The report identified several further industry advancements, including:

The Department of Interior announced a five-year plan for offshore

the power to control

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DNV, the independent energy expert and assurance provider, examined how digital twins can support the U.K.'s net-zero objectives in a new report. (Courtesy: DNV)



Russelectric's system control upgrades are a cost-effective alternative to equipment replacement. (Courtesy: Russelectric)

wind leasing, which includes up to 12 potential lease area sales through 2028.

The domestic supply chain notched advancements with \$300 million in new investments in shipbuilding and manufacturing across Louisiana, Maryland, New York, Ohio, and Texas.

More than 4 GW of projects are now undergoing installation activities.

New federal approvals increased ready to install capacity to more than 13 GW.

MORE INFO oceanic.org/2024-q2-u-s-offshore-wind-quarterly-market-report/

INNOVATION

DNV emphasizes critical role of digital twins

DNV, the independent energy expert and assurance provider, examined how digital twins can support the

U.K.'s net-zero objectives in a report, emphasizing the critical role of industry collaboration and trust in ensuring the substantial contribution of digital twins to the energy transition.

This report includes interviews with regulators, asset owners, consultancies, and government innovation agencies, revealing crucial insights into the U.K.'s path to net zero. The report, *Connected Digital Twin Insights*, explores the opportunities, benefits, barriers, and risks of connected digital twins in the U.K. energy sector and looks for the answer to a fundamental question: "How can I trust my digital twin?"

The UK's first Energy Digitalization Strategy outlined the necessity of a digitized energy system, as intelligent data-based systems can accommodate the influx of millions of new energy flows per second from emerging low-carbon technologies that will be connected to the grid in coming years.

With the country's energy CAPEX expected to rise (as projected in DNV's

Energy Transition Outlook U.K. 2024, digitalization offers cost-saving opportunities through smarter energy management, against a backdrop of volatility, unpredictability, and complexity. However, trust in the technology and data integrity is vital for the successful adoption of digital twins, with cyber security being a significant concern.

The report recommends creating a National Digital Twin to simulate and interconnect assets, processes, and systems – underscoring the need for trust and collaboration across the sector, essential for effective data sharing and integration.

"The U.K. energy sector stands on the brink of a remarkable transformation, leading us to an unprecedented level of interactivity and interconnectivity. Technologies like connected digital twins will underpin this transformation; the question becomes one of how the sector can harness their potential and add new impetus into the U.K.'s stalling energy transition," said Hari Vamadevan, senior vice president and regional director, U.K. & Ireland, Energy Systems.

"Collaborations in data sharing will play a pivotal role in realizing the benefits of connected digital twins, therefore enabling the role they can play in transforming the future energy system," said Justin Anderson, Digital Twin Hub director at Connected Places Catapult.

MORE INFO www.dnv.com

INNOVATION

Russelectric highlights system control upgrades

Russelectric, manufacturer of power control systems and automatic transfer switches, is highlighting its system control upgrades for critical power equipment for enhanced reliability, operational control, and ease of maintenance. These upgrades are a cost-effective alternative to equipment



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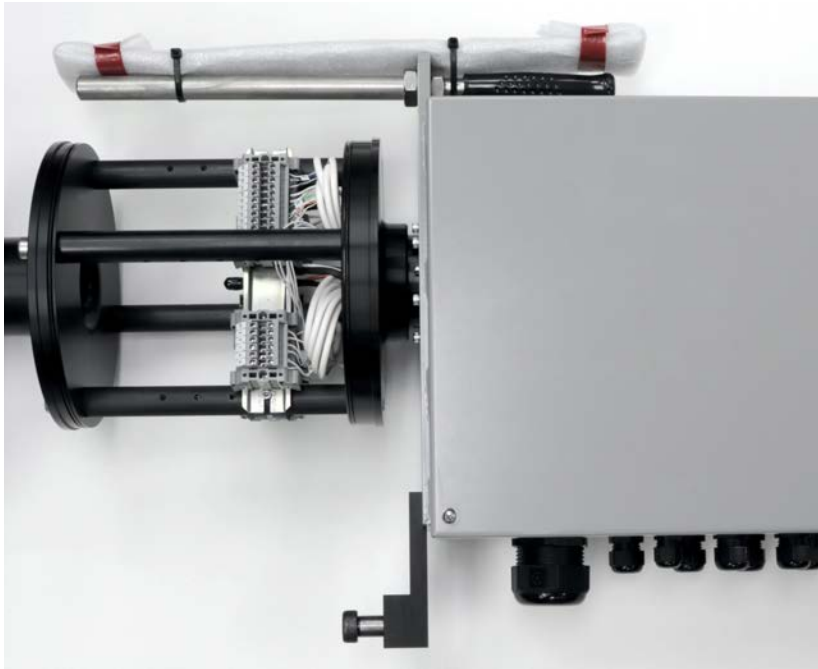


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To improve reliability and reduce maintenance costs for wind-farm managers, Moog has integrated its next-generation slip ring with a fiber optic rotary joint. (Courtesy: Moog)

replacement. By upgrading, customers can experience improved performance and capabilities, updated systems with the latest technology, and a prolonged lifespan for their mission-critical equipment.

Additionally, maintenance requirements are decreased, and serviceability is improved. Russelectric field engineers conduct the upgrades. All work is backed by warranty. These upgrades are completed in a fraction of the time compared to full equipment replacement, offering customers swift improvements without prolonged downtime.

Russelectric offers upgrades to automatic transfer switch/bypass isolation switch control systems during a scheduled shutdown to enhance switch operating accuracy and functionality. Control, monitoring, and communication protocols are upgraded to eliminate concerns about legacy component availability.

Russelectric will provide detailed information on the current system status through a dynamic one-line graphical interface, along with com-

plete alarm and event history for a quick problem response. In addition, optional TJC (The Joint Commission) reporting and optional remote system access are offered by Russelectric.

Many existing systems use legacy or soon-to-be obsolete PLC architecture. Russelectric will upgrade control systems to the latest technology with minimal program changes to improve performance and accommodate advanced communications. Most upgrades can be completed without interrupting critical loads or operational changes, with drop-in replacements available.

MORE INFO www.russelectric.com

MAINTENANCE

**Moog slip ring
increases turbine
reliability**

To improve reliability and reduce maintenance costs for wind-farm managers, Moog has integrated its



Technicians Warren Mills (left) and Jean Pieree Alcantara (right) complete GEV's new blade repair training course at Port of Blyth's Port Training Services turbine facility. (Courtesy: GEV Wind Power)

next-generation slip ring with a fiber optic rotary joint, or FORJ, as a direct replacement for the carbon-brush slip rings that control the blade pitch on 2.5-MW GE turbines and above.

"Moog's new offering for 2.5-MW and higher GE turbines leverages our success providing more than 10,000 high-reliability pitch slip rings for GE turbines as well as thousands of FORJs into the wind energy market," said Larry Bryant, business development manager for wind-energy solutions at Moog. "We have a long track record of supplying rotary interfaces, and this new

slip ring-FORJ integration represents an enhanced iteration of our proven offering. Moog's experts designed our FORJ based on years of testing and delivering similar systems for the global wind market."

Carbon brushes need lubrication to maintain their contacts and signals; without it, they harden and require replacement.

Moog has designed its new slip ring as a "set it and forget it" product from the outset due to its fiber brush technology.

Pitch systems, which include slip

rings, control motion in wind-turbine generator systems, ensure efficient use of wind energy, and protect the wind turbine by adjusting the blades' angle of inclination.

Moog fiber brushes consist of a proprietary blend of high-end metals to ensure reliable transmission of power and data. According to Bryant, Moog's maintenance-free technology can easily achieve 100 million revolutions. Customers testing Moog's integrated slip ring and FORJ in the field have reported consistent, maintenance-free operation with no communication failures. Existing carbon-brush slip rings in many GE wind turbines create dust that disrupts power and communications, leading to downtime and unplanned maintenance.

For over a decade, the industry has recognized Moog's wind-energy slip rings for their high quality and performance. The latest integrated version, model WP7286-5N, incorporates a smaller footprint and weigh less than competing designs. Additionally, the integrated FORJ, model FO286, transfers data at higher rates via fiber optic output vs. Ethernet. This addition to the WP7286 product family allows Moog to support a larger number of wind-farm sites.

MORE INFO www.moog.com

MAINTENANCE

GEV launches U.S. training center in Texas

GEV is further investing in its network of training facilities to help bridge the global skills gap for technicians.

The group has established the North American Wind Academy at its U.S. headquarters in Texas. One of the first of its kind, the facility sees GEV become the first independent service provider of in-house accredited Global Wind Organisation (GWO) blade repair courses and trade testing programs to assess technician competence.



Vestas will be supplying 53 V236-15.0 MW wind turbines to OranjeWind in the Netherlands. (Courtesy: OranjeWind)

GEV has also built on the success of its U.K. training academy in Hull by introducing a new turbine training initiative that will allow technicians to conduct rope access procedures and technology applications at the Port of Blyth's Wind Turbine Training Facility.

With almost 600,000 technicians needed by 2027 to support the growth of the global wind industry, and wind-turbine technicians predicted to be one of the fastest-growing occupations in the U.S., GEV's new training facilities underline how it is working to meet the demand.

The company, which also has a training academy in Australia, has more than 1,000 technicians worldwide and has trained more than 300 people globally.

"The launch of these facilities is another significant development for GEV," said David Fletcher, CEO at GEV. "It is part of our wider global mission to further invest in and up-skill our dedicated technician pool while also building confidence for both technicians and clients on future projects. Offering certified training for newly qualified tech-

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nicians and ensuring technicians possess the specific in-field skills to excel on client projects globally is pivotal to enhancing technical competence and offering the best possible readiness for technicians.

The ability to offer in-house GWO courses has also been highly anticipated and is playing a crucial role in accelerating efforts to meet 2050 net zero targets."

The North American Wind Academy in Fort Worth was created in direct response to the rapid industry growth taking place across North America. Having recently installed a new platform structure and dedicated training equipment, GEV has successfully completed its first blade repair training, which involves assessing competence through dedicated blade repair scenarios. The training at the Wind Turbine Training Facility, which is run by Port of Byth's training division, helps address one of the biggest challenges voiced by technicians wanting to join

the industry — gaining relevant turbine experience, including rope access training.

GEV intends training technicians at its U.K. academy before using the 33 meter high turbine at Blyth to put their skills into practice in a real-world environment. The training reflects the practices and techniques expected for upcoming projects.

MORE INFO www.gevwindpower.com

► MANUFACTURING

Vestas receives 795-MW order for Netherlands wind farm

Vestas has received a firm wind turbine order for the OranjeWind offshore wind farm, formerly known as Hollandse Kust West VII, in the Netherlands.

Vestas will be supplying 53 V236-15.0 MW wind turbines and is responsible for the supply, delivery, and commissioning of the turbines.

Upon completion, Vestas will service the assets under a comprehensive five-year service agreement followed by a long-term operational support agreement.

"OranjeWind sets a high bar for technological innovations and sustainability, and we are delighted to deliver our solutions, including our offshore flagship wind turbine, for this project in the Netherlands," said Nils de Baar, Vestas Northern and Central Europe president.

"Our entire team is looking forward to working together with the OranjeWind project team on this exciting and ambitious wind farm in the North Sea."

RWE and TotalEnergies are entering a 50/50 partnership to deliver the OranjeWind offshore wind project. The project has an installed capacity of 795 MW, a grid connection capacity



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of 760 MW, and an excess capacity of 35 MW to use the connection capacity as efficiently as possible, even when production is lower.

The project site is about 53 kilometers off the Dutch coast in the North Sea. Wind turbine installation is expected to start in 2027.

MORE INFO www.vestas.com

▼ **MANUFACTURING**

Vestas receives 136-MW repower order in U.S.

Vestas has received a 136-MW order to repower an undisclosed wind project in the U.S. The order consists of 62 V120-2.2 MW wind turbines.

The order includes supply, delivery, and commissioning of the turbines, as well as a multi-year Operational



A U.S. Vestas repowering order consists of 62 wind turbines. (Courtesy: Vestas)

Support Agreement, designed to ensure optimized performance of the asset.

Turbine delivery begins in the third quarter of 2025 with commissioning scheduled for the fourth quarter of 2025.

MORE INFO www.vestas.com

▼ **MANUFACTURING**

BGB introduces wind aftermarket 'one stop shop'

BGB, a U.K.-based global engineering firm, recently announced the intro-

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LS Greenlink is at work on Virginia's first offshore wind manufacturing facility. (Courtesy: LS Greenlink)



BGB specializes in providing durable wind aftermarket parts. (Courtesy: BGB)

duction of a one-stop shop offering following the launch of its aftermarket wind brushes.

The engineering enterprise, which develops, designs and manufactures engineering applications for service companies, distributors and OEMs, including Danish manufacturer Vestas, has extensive experience in the wind market.

"We've been in the wind sector for over five decades – experience and customer intimacy has given us unique insight into the requirements and demands shaping our sector," said Tony Morgan, BGB's applications engineering manager.

"One of those demands is the growing need for repairs and the recycling of consumables. On some platforms, which previously used silver graphite

brushes, we have witnessed an increasing transition toward copper brushes as part of a broader move across the sector to more cost-effective alternatives."

The unveiling of its own brand of carbon aftermarket brushes, supplied by European wind partners, aims to fulfill the market need for providing replacement systems within the OE sector and adds to BGB's complete suite of in-house manufactured solutions which includes slip rings, brush holders and rotary unions.

The expanding range of carbon brush products offered covers many of the main patterns for Turbine OEMs and comprises generator phase brushes, ground brushes, lightning protection brushes, and those used on pitch control, yaw motors, anti-icer, deicer, and signal applications.

Tapping into the growing wind-power aftermarket, driven by the need for more sustainable solutions, as well as efficient maintenance and operation, BGB aims to use its expanding Spares and Repairs service, coupled with its on-site test facilities, to evaluate, test, replace, or repair worn and damaged brushes as well as offer a range of brush products for the aftermarket.

"We're proud to be playing a role in creating a more sustainable future," Morgan said.

MORE INFO www.bgbinnovation.com

MANUFACTURING

LS Greenlink at work on Virginia's first offshore wind facility

Oceantic Network, an organization working to advance offshore wind and other ocean renewable industries and their supply chains, applauded recent announcement from member company LS Greenlink of a new cable facility in Chesapeake, Virginia, representing the state's first offshore wind manufacturing facility.

Virginia Gov. Glenn Youngkin made the announcement to hail the step forward for the state's clean-energy industry, with the facility expected to cost \$681 million to construct and generate 330 permanent full-time jobs. The facility will produce next generation high-voltage direct current (HVDC) cables that are in high-demand globally.

The announcement follows another milestone for cable production when Network member company Hellenic Cables reached a final investment decision to purchase land for its new cable facility in Baltimore announced in April.

"Another day, another offshore wind announcement," said Liz Burdock, founder and CEO of Oceantic Network. "Hundreds of millions of dollars and hundreds of long-term jobs are being made possible by the strength of the U.S. offshore wind industry's momentum and potential. This year we've already seen \$2.2 billion in new manufacturing supply chain investments announced to produce steel, foundations, towers, and cables that will supply the U.S. industry for years and create good-paying jobs in places like Hampton, Houston, and the Ohio River valley. With the continued strong support from public officials, like Governor Youngkin, and industry leaders like Dominion Energy and LS Greenlink, we are seeing the Hampton Roads area transform into a hub of the U.S. offshore wind industry." 🌬️

MORE INFO www.oceantic.org
www.lsgreenlinkcareersvirginia.com