

Ampelmann's A-type motion-compensated gangway will be the first of its kind in China. (Courtesy: Ampelmann)

## ► CONSTRUCTION

### Ampelmann to provide gangway to Chinese renewables market

Ampelmann has signed its first contract in offshore China and will provide the A-type gangway, one of its flagship systems, to Guangdong Safety New Energy for the offshore wind works off Guangdong province.

The company will provide by the end of October the A-type on the client's new 60m Service Operation Vessel (SOV) named MV Guang An Yun Wei 88. It will be first SOV equipped with a motion-compensated gangway

in China. The system will enable the safe and efficient transfer of personnel at Guangdong Yangjiang offshore wind farm, the largest wind farm in Guangdong.

The farm is 40 nautical miles offshore where turbines will be installed at a depth of about 40 meters.

"We are very excited about this opportunity," said Vincent Chua, business developer at Ampelmann. "With it, we can show the value of our systems and raise the standard of both safety and efficiency of offshore access operations in the area."

China, like many governments, has set ambitious targets for green energy generation. In the Guangdong area, where the project with Ampelmann is located, China plans to install 10 GW

by 2030, part of the plan to achieve 40 GW nationwide by that same year.

Guangdong Safety New Energy's venture with Ampelmann will be for a minimum period of six months and could be extended for another six. The project will be the first time a proven full motion-compensated gangway is used in a Chinese offshore access operation.

Ampelmann's greatest value is provided by its operators.

"They are the ones who ensure the efficiency and safety of our operations," Chua said.

The company is looking at training local operators to support future projects in the area.

**MORE INFO** [www.ampelmann.nl](http://www.ampelmann.nl)



Pemamek's wind tower welding platform. (Courtesy: Pemamek)

## CONSTRUCTION

### Pemamek offers custom welding for offshore platforms

Pemamek LLC specializes in modular customized automated welding systems for large offshore wind-energy platforms. Difficult-to-weld components comprising monopile and floating platform bases can be joined by combining a customized selection of fit-up and adaptive robotic welding technologies, rollerbeds, column and booms, and other systems, all controlled by one operator and one software system.

The thick heavy plates found in most monopile and floating platforms must be welded together perfectly to avoid loss of strength to hold towers that weigh thousands of tons. Pemamek's 100- to 1,200-ton rollerbeds are designed to reduce seam volume and decrease the amount of needed filler material, featuring a hydraulic

anti-creep function to prevent axial movement during welding. Multiple rollerbeds can be included in the overall welding system, communicating weight shifts via positioners for optimal alignment when joining the top and bottom sections of the monopile. One person controls the entire system using the WeldControl 100 and 500 weld management systems, creating a safer work environment, eliminating the need for cranes and multiple welders.

"Welders can preset all welding parameters based on data collected via scanning," said Michael Bell, sales director for Pemamek North America. "Several welds can be performed at the same time by one operator, working from digital measurements taken from the actual workpiece. The guesswork is eliminated and there will be virtually no mistakes with the weld with our adaptive fill technology. This is crucial when joining large plates that will be placed in harsh marine conditions."

The PEMA Flange Fitting Station

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can be added to the workshop configuration, enabling fast, safe, and accurate fitting and welding of flanges to wind tower and monopile foundation sections.

The FF station is flexible enough to handle variations of flange designs and can be integrated with PEMA Column & Boom, which enables welding to be done in the same place, reducing weld time and increasing welding efficiency.

Pemamek provides welding automation technology and integrated manufacturing solutions to a wide range of industries including ship-building, 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 its PEMA WeldControl operating and control software.

**MORE INFO** [pemamek.com](http://pemamek.com)

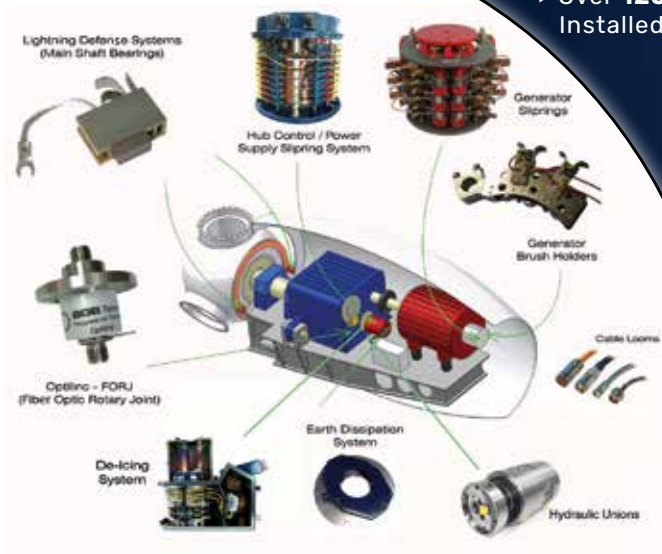


The Liebherr LR 11000 lattice boom crawler will arrive in spring 2022 and boasts a 1,200-ton capacity and 551 feet of main boom. (Courtesy: ALL Family of Companies.)

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## CONSTRUCTION

### ALL Family's new crane to be largest in fleet

The ALL Family of Companies is a few months away from receiving the largest crane in its fleet.

The Liebherr LR 11000 lattice boom crawler will arrive in spring 2022 and boasts a 1,200-ton capacity and 551 feet of main boom. It's suitable for all types of work including infrastructure, wind power, and industrial construction, and maintains strength in constricted working conditions.

The company expects the crane will be in high demand. With transport weights that can be reduced to 45 tons and a transport width of 11 and a half feet, it will easily deploy across ALL's North American footprint.

"As wind towers have gotten taller and plants have become more sprawl-

ing, the need for a big crane with high capacities and extended reach has become clear," said Rick Mikut, ALL's crawler crane division manager. "The Liebherr LR 11000 offers exactly what these and other customers have been looking for. Even at 50 percent to 70 percent of load, the LR 11000 offers plenty of capacity to make the big lifts."

The crane includes features such as infinite adjustment of the suspended ballast using V-frame, the hydraulically adjustable folding frame, and VarioTray detachable ballast system



Schematic representation of the production of green hydrogen within the flagship project H2Mare. (Courtesy: Fraunhofer Institute for Wind Energy)

that saves the need for stacking and unstacking on a job.

Another available option for ALL customers is Liebherr's P-boom system, which further increases lift capacity. A second lattice boom is mounted parallel to the other at the bottom and merged together at the top to form one single boom.

The ALL Family of Companies is the largest privately held crane rental and sales operation in North America.

**MORE INFO** [www.allcrane.com](http://www.allcrane.com)

## INNOVATION

### H2Mare project to produce green H2 on industrial scale

The H2Mare project aims to establish a new type of offshore wind turbine, one that integrates an electrolyzer for

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direct conversion of electricity to produce green hydrogen on an industrial scale.

This way, the self-sufficient units can save costs of connection to the grid and contribute to the reduction of greenhouse gas emissions. In a second phase, the green hydrogen can be converted into synthetic fuels and energy carriers.

The German Federal Ministry of Education and Research is funding the project. "We are bringing in our offshore wind and electrification capabilities as well as our expertise in electrolysis," said Christian Bruch, Chief Executive Officer of Siemens Energy AG.

"H2Mare unites the strengths of research and industry – for sustainable decarbonization of the economy and to the benefit of the environment."

The project comprises four joint projects that are promoted independently of each other, with a total of 35 partners. Those projects include:

► **OffgridWind:** A turbine concept that realizes electrolysis directly in the offshore wind turbine.

► **H2Wind:** Aims to improve the maximum yield of wind energy, consisting of the development of a proton exchange membrane electrolysis system.

► **PtX-Wind:** Focuses on converting to more easily transportable, synthetic energy carriers and fuels, such as methane, methanol, and ammonia. Direct saltwater electrolysis is also being tested.

► **TransferWind:** Addresses transfer of knowledge to the public and exchange of expertise across multiple projects.

This will involve consideration of the entire value creation chain: from wind-energy generation and hydrogen production to the conversion of hydrogen into methane, liquid hydrocarbons, methanol, or ammonia right up to use in industry or the energy sector. The goal is a significant cost advantage in the production of large volumes of hydrogen.

**MORE INFO** [www.iwes.fraunhofer.de](http://www.iwes.fraunhofer.de)



The Paralleling System is ideal for ensuring that critical loads experience no interruption when transferring between all power source assets in renewable energy installations. (Courtesy: Russelectric)

## INNOVATION

### Russelectric offers system for renewable energy installation

Russelectric, a manufacturer of automatic transfer switches and power control systems, has introduced the Paralleling System for ensuring no interruption of critical loads when transferring between power source assets.

The system can be configured for peak shaving and utility-sponsored load curtailment programs and offers high resiliency, power continuity and security for critical renewable energy installations.

Paralleling Systems incorporate dual, redundant, hot synchronized programmable logic controllers (PLCs) for system control. Discrete switches, meters, and control devices are standard to allow manual control capability in the event that both system PLCs fail. The system provides soft loading transfer and phase lock synchronizing when paralleling with the utility, which reduces transients and controls the loading to the engine generators.

Russelectric provides basic or custom SCADA for local or remote monitoring of all power system functions. Custom SCADA systems allow users to monitor system operation, acknowledge alarms and review PLC setpoints.

The Paralleling System offers a choice of either momentary paralleling

with the utility or sustained paralleling for soft loading. Also available is paralleling of generator sets with the utility upon return of the utility source after power interruption. Selector switches are provided for open/closed transition, automatic/manual paralleling of generators and utility sources, and automatic/manual retransfer between both sources of power.

System operation begins with testing in closed-transition mode with no interruption of the load. Generators are then paralleled with the utility and the load is transferred to them. Upon completion of testing, the load is retransferred through closed-transition to the utility source without disturbance.

Utility Paralleling Systems can also be used in financial institutions, data centers, telecommunications, airports, healthcare facilities, and water and wastewater treatment plants.

**MORE INFO** [www.russelectric.com](http://www.russelectric.com)

## INNOVATION

### ONYX Insight launches pitch bearing monitor

ONYX Insight has launched ecoPITCH, a hardware solution that predicts where and when pitch bearing failures occur in wind turbines.

Pitch bearing faults are difficult to predict and expensive to fix when left undetected, especially in offshore turbines. This failure mode is a significant problem for wind farm owners. Pitch bearings connect the rotor hub to the blades, and the costs associated with fixing the faults are high, particularly if the turbine is offshore. A pitch bearing failure can even lead to the catastrophic loss of a blade.

"This is a really exciting and forward-thinking addition to ONYX Insight's suite of tools and services, which are all geared towards improving turbine efficiency and reducing maintenance costs," said John Coultate, ONYX Insight's head of product development.



“Pitch bearings are particularly difficult to monitor in real time, and our customers want absolute confirmation as to which bearings to change and when,” he said. “We now have a revolutionary offering for assessing and comparing damage on any turbine or wind farm, which has the potential to save operators and owners significant capital in unscheduled maintenance.”

Pitch bearing failure is a significant problem in the wind industry. Pitch bearings connect the rotor hub to the blades and experience high loading during the life of a turbine. In the most extreme cases, a pitch bearing failure can lead to the catastrophic loss of a blade — obviously an event that must be avoided.

ONYX Insight provides software, services, advanced sensing, and data analytics for gearboxes, drivetrains, bearings, and rotating machinery within the wind sector.

**MORE INFO** [onyxinsight.com](http://onyxinsight.com)



Pitch bearing faults are difficult to predict and expensive to fix when left undetected, especially in offshore turbines. (Courtesy: ONYX Insight)

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The upgrades to SG's 5.X platform deliver more competitive power output. (Courtesy: Siemens Gamesa)

## INNOVATION

### Siemens Gamesa upgrades onshore wind platform

Siemens Gamesa has upgraded the rating of its 5.X onshore platform, increasing its power output to 6.6 MW. The new 6.6-155 and 6.6-170 turbines will offer increased unitary power, delivering a lower levelized cost of energy (LCOE) for customers.

"Technology like this helps Siemens Gamesa to unlock the full potential of wind by increasing the power output of our turbines and deliver more pioneering solutions in the onshore sector," said Lars Bondo Krogsgaard, Siemens Gamesa's onshore CEO.

The increase will optimize performance in high-, medium-, and low-wind conditions for SG's 5.X platform. Both turbines can now provide greater annual energy production and optimized project. The modular, flexible design eases logistics, construction, operation, and maintenance costs, as well as reducing the OPEX, which results in a lower energy cost for projects.

Both turbines combine a flexible power rating from 5.6 MW to 6.6 MW with two of the largest rotor diameters in the market, 155 and 170 meters. The new rating configures the SG 5.X as

the highest-yielding onshore turbine in the industry.

The first prototypes are connected and in the testing phase — the 6.6-155 in Alaiz, Spain, and the 6.6-170 in Hovsore, Denmark.

"Technology like this helps Siemens Gamesa to unlock the full potential of wind by increasing the power output of our turbines and deliver more pioneering solutions," Krogsgaard said.

**MORE INFO** [www.siemensgamesa.com](http://www.siemensgamesa.com)



Forecasts for offshore wind installation on the East Coast of the U.S. point to an immediate need for investment in standardized safety and technical training. (Courtesy: Global Wind Organisation)

## MAINTENANCE

### GWO forecasts need for safety training

Global Wind Organisation figures point to an urgent need for investment in standardized safety and technical training. The industry-owned non-profit predicts more than 25,000 people will need entry-level training to work on offshore wind turbines over the next five years.

"Many training providers have already responded to demand by certifying to GWO standards, but investment must pre-empt development and be ready to deliver as soon as foundations begin to be placed in our waters," said Dan Ortega, GWO North America representative.

The training is essential for jobs in construction, installation, operations, and maintenance segments of the wind-power value chain and does not cover jobs in procurement, manufacturing (the most labor-intensive segment), or transport.

A pipeline of almost 100 community colleges, maritime academies, and

universities from across North America are seeking certification to provide the wind-industry-recognized GWO standards.

"Together, these institutions will help deliver safety on the job, reduce duplication in training, and improve the productivity of tens of thousands of people working on wind turbines offshore in the U.S.," Ortega said.

"Manufacturers and owner operators have created GWO standards to work safely according to the known risks and hazards they face every day," said Wesley Witt, Siemens Gamesa Renewable Energy head of quality management and HSE in SG's Americas region.

GWO is a non-profit group of wind-turbine owners and wind-turbine manufacturers committed to the creation and adoption of standardized safety training and emergency procedures.

**MORE INFO** [www.globalwindsafety.org](http://www.globalwindsafety.org)



Vestas is using its EnVentus platform for what will be New South Wales, Australia's largest wind farm. (Courtesy: Vestas)

## MANUFACTURING

### Vestas secures 396-MW order for Australia project

Vestas has secured a 396-MW contract for the Rye Park Wind Farm in New

South Wales, Australia. It will be the second project in Asia Pacific to feature Vestas' EnVentus platform.

Vestas will supply and install 66 V162-6.2 MW wind turbines in 6.0 MW operating mode.

Rye Park Wind Farm will be Vestas' second-largest Australian project, and it will be the largest wind farm

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Goldwind's PMDD onshore GW 5S smart wind turbine features a 165-meter rotor diameter and hub heights that can range from 100 to 130 meters. (Courtesy: Goldwind)

in New South Wales.

In addition to providing clean energy for the equivalent of approximately 215,000 homes annually, Rye Park Wind Farm will create about 250 jobs during the peak of its construction and up to 10 ongoing regional jobs during its operational life.

The project is a partnership with Tilt Renewables, which is now part of the leading Australian renewable energy generator Powering Australian Renewables (PowAR),

"Vestas values our partnership with Tilt Renewables and PowAR as we build on our existing footprint of nearly 400 MW of wind energy in Australia," said Peter Cowling, head of Vestas Australia and New Zealand.

Delivery of Vestas' wind turbines is expected to occur in the third quarter of 2022, with commissioning to commence in the second quarter of 2023.

**MORE INFO** [www.vestas.com](http://www.vestas.com)

## MANUFACTURING

### Goldwind reaches 5-MW milestone


Goldwind Science and Technology has completed the installation and grid connection of its GW 5S Smart Wind Turbine test unit, marking a milestone in Goldwind's evolution of high-performance and large-megawatt (MW) permanent magnet direct-drive (PMDD) onshore wind turbines.

"Goldwind has a methodical and calculated method to its development and release of wind turbines and other clean energy technologies," said Goldwind president Cao Zhigang. "The GW 5S wind turbine is our most powerful onshore turbine to-date that takes into account global wind market requirements, customer direction, and extensive research and development – further marking it as a top-rated

turbine among Goldwind's already impressive suite of mature PMDD turbine platforms."

The GW 5S platform has a structured design rooted in Goldwind's PMDD turbine technology and incorporates attributes from its predecessors, the GW 3S and 4S, including expandable capacity, high power generation, high reliability, intelligent control systems, and grid-friendliness.

"Goldwind's 5-MW turbine underscores our technological depth and ability to bring trusted products and services to our customers and their projects," said Wu Kai, vice president of Goldwind and general manager of Goldwind International Holdings.

The GW 5S made its initial debut at the 2020 China Wind Power (CWP) conference. The test unit was installed in China in late July 2021 and was grid connected in mid-August. It will now undergo a series of testings. 

**MORE INFO** [www.goldwind.com](http://www.goldwind.com)