



The wood technology company Modvion is building a 105-meter wind-turbine tower made of wood, the tallest of its kind, in Sweden. (Courtesy: Modvion)

► CONSTRUCTION

Modvion building wind-turbine tower made of wood

The wood technology company Modvion is building a 105-meter wind-turbine tower made of wood, the tallest of its kind, in Sweden. The tower will be the company's first commercial installation and is being built for the energy company Varberg Energi, in the municipality of Skara in Sweden.

"This is the start of a new green industry; by using Nordic raw materials and Swedish technology, we can enable climate-neutral wind power for a growing global market," said Otto Lundman, Modvion CEO.

A 2-MW turbine will be mounted on the tower, produced by Vestas, the Danish wind turbine manufacturer, a shareholder in Modvion since 2021. Including the blades, the total height of the wind turbine will be 150 meters. This is the first time that Modvion's tower technology will be paired with a turbine from Vestas. The wind-turbine tower is planned to be in operation before the end of 2023.

The last wooden modules — made from laminated veneer lumber (LVL) — are being manufactured in Modvion's factory in Gothenburg, which was inaugurated last year. The modules are assembled four-by-four at the construction site into seven sections that will make up the finished tower. Work on site began earlier this year with the laying of the foundation and now modules

are transported to site where section assembly has begun.

"We're excited to see this project become a reality," said Todd O'Neill, CEO at Vestas Ventures. "We will support Modvion's strategy to scale up and work with them to deliver wooden towers as an offering to the growing wind turbine market."

The tower is the component that usually emits the most carbon. By switching to a wooden tower, carbon emissions are reduced dramatically during manufacturing while the material itself stores carbon. The result is a carbon negative component, storing more CO₂ than is emitted during production.

The laminated wood the modules are made from has a better strength-to-weight ratio than the types of steel



When complete in 2026, the Dogger Bank Wind Farm will be the world's largest offshore wind farm. (Courtesy: North Star Shipping)

used for wind-turbine towers, enabling lighter towers. The patented modular design allows for simple transportation on standard roads, without the need for lengthy permit procedures. The technology enables cost-effective and tall towers compared to traditional steel towers. "Wood enables building higher towers at a lower cost, which makes wind power more efficient since winds are stronger and more stable higher up," Lundman said. "That gives you more electricity from each permit to build wind turbines."

MORE INFO modvion.com

CONSTRUCTION

North Star to deliver vessels 3 months early

North Star's second hybrid-propulsion service operation vessels (SOVs) are set to be mobilized three months earlier than planned to support SSE Renewables with a new scope of work at the Dogger Bank Wind Farm.

The firm's first of its new offshore wind fleet, the Grampian Tyne, was blessed in June at an event held at the Dogger Bank O&M base in Port of

Tyne. The second SOV, the Grampian Derwent, a larger ship with increased accommodation capacity and helideck, has recently been delivered to North Star in Vietnam.

The new award with SSE Renewables will see the U.K.'s leading infrastructure vessel support firm aiding the construction and commissioning stage at the initial phase of the wind farm's development, located 130 kilometers off the east Yorkshire coast. This will allow the ships to then dovetail straight into their scheduled long-term charters to carry out operations and maintenance (O&M) related in field vessel activities for the development partners. The wind farm is a joint venture between SSE Renewables (40%), Equinor (40%) and Vårgrønn (20%),

North Star has a proven track record of successfully building multiple vessels simultaneously on time and on budget. The 135-year-old business also has a robust 127 million pound finance package in place to fund its Dogger Bank SOV fleet newbuild program, which will result in four of its hybrid-electric ships being operational

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New Jersey has reached an agreement for Ocean Wind to deliver 1.1 GW of offshore wind generation. (Courtesy: Business Network for Offshore Wind)

in field by 2026, each on a 10-year minimum term charter agreement.

“Winning this new scope of work at Dogger Bank — our first in construction and commissioning — is part of our focus to be a true value add service partner,” said Michael Gordon, North Star commercial director. “We are extremely proud to be recognized as a dependable operator delivering these vessels to the project ahead of schedule during a market, which is finding significant supply chain issues cascading throughout the SOV sector. Achieving this is testament to the hard work and dedication of our 130-strong shoreside team and carefully selected shipyard.”

“We believe we are leading the way in delivering ships without any delays to add further operational excellence and efficiencies to our clients,” he said. “We have a tried and tested newbuild strategy in place through which we are delivering not only a leading vessel design, but a fully qualified complement of experienced crew to deliver the service we pride ourselves in.”

North Star employs about 1,300 people out of its facilities in Aberdeen, Newcastle, and Lowestoft, and has unrivaled marine expertise in the North Sea. Its high performance, sustainable SOV design supports net-zero goals.

These ships provide hotel-quality accommodation to offshore wind-turbine technicians and a centralized logistics hub in field. It is also configured to handle cargo and act as a warehouse.

The Grampian Derwent is a larger iteration of the three other VARD designed newbuilds secured as part of the biggest SOV contract ever awarded in the U.K. This second ship boasts an increased warehouse capacity and ability to accommodate 50 client technicians compared to 40 personnel on the other fleet tonnage. The vessel is also equipped with a 17 meter helideck and larger 5Te capacity 3D crane for offshore lifting. The digital suite of tools and North Star’s Decision Support Software will also be used to provide feedback and learnings to the project with regards to operational tracking, KPI’s and improving emissions.

North Star has also begun work on the construction of its first two commissioning SOVs, after awarding the contract to VARD in Norway in May. This will see the two firms collaborate on up to four of its uniquely designed ships specifically tailored for this growth market.

MORE INFO www.northstarshipping.co.uk
www.doggerbank.com

CONSTRUCTION

Offshore wind to be deployed off New Jersey coast

The Business Network for Offshore Wind, the organization working to accelerate offshore wind energy deployment and build a dedicated domestic supply chain, recently celebrated the decision that clears the way for construction of the Ocean Wind 1 Project off New Jersey’s coast.

The Bureau of Ocean Energy Management issued a record of decision that finalizes the environmental review process. New Jersey has already reached an agreement for Ocean Wind to deliver 1.1 GW of offshore wind generation, and the project is expected to begin operation in late 2024 or early 2025.

Only two other projects — Vineyard Wind and South Fork Wind — have received RODs for their projects, and both recently achieved steel in the water with the installation of their first monopile business. Behind the Ocean Wind 1 project is pipeline of seven more offshore wind projects, representing approximately 14 GW of off-

shore wind generation, awaiting final environmental review.

“Momentum is building in the U.S. offshore wind industry with two wind farms in the water and the next projects receiving approval to begin construction,” said Liz Burdock, Business Network for Offshore Wind’s CEO and founder. “Alongside this progress, the U.S. supply chain is coming to life as factory workers in Paulsboro, New Jersey, fabricators in Baltimore, Maryland, and construction workers at New Jersey’s wind port are manufacturing Ocean Wind 1’s turbine components and ports.

The Department of Interior and BOEM are ensuring environmentally-responsible advancement of offshore wind projects that create jobs and enable New Jersey as well as the nation to remain energy independent with clean, reliable, and affordable electricity.”

MORE INFO www.offshorewindus.org

CONSTRUCTION

SCADA to join Thor offshore wind project

Denmark’s SCADA International is to deliver its OneView® Energy Control Unit (ECU) as a master power plant controller to play a crucial role in achieving the goals of the Thor Offshore Wind Farm project. Thor, set to become Denmark’s largest offshore wind farm, is a key component of the country’s 2018 Energy Agreement, aiming to boost renewable energy production and reduce carbon emissions.

The Danish software and hardware provider will provide a control concept that will reduce the complexity and ensure efficient power delivery at Thor’s onshore point of interconnection.

Thomas Bagger, CEO at SCADA International, has expressed enthusiasm about joining the new project 22 kilo-

meters off the coast of Thorsminde on the west coast of Jutland.

“We are proud to be part of this ambitious Thor project as a sub-supplier,” he said. “By using our in-depth engineering knowledge and experience within advanced power management and control capabilities, we are enabling the efficient delivery of clean energy to Danish households. Together, we are driving the transition toward a more sustainable future.”

SCADA International’s master power plant controller will integrate with the existing complex plant infrastructure, both on- and offshore substations, SCADA systems, and grid meters.

The seamless integration and compatibility of the OneView ECU will allow end-user RWE to have granular control over voltage stability, which is a critical aspect of any large-scale wind farm. The control system’s advanced algorithms continuously analyze voltage levels, giving operators valuable tools to make data-driven decisions in main-

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SCADA International joins the Thor offshore project as power plant control supplier. (Courtesy: SCADA)

taining optimal voltage conditions and protecting the integrity of the grid. At the same time, the real-time monitoring and control functionalities enable operators to manage power fluctuations accurately, ensuring a stable and reliable electricity supply to consumers.

Leveraging these capabilities to maximize the efficiency and productivity of the Thor Offshore Wind Farm will ultimately contribute to Denmark's renewable energy targets.

The wind farm will be fully established and connected to the grid by no later than the end of 2027, and the authorization is for 30 years, with an option for a five-year extension.

MORE INFO scada-international.com

INNOVATION

Emerson integrates analytics with asset management software

Emerson, a global software and engineering leader, is helping process manufacturers improve performance and sustainability by breaking down the data silos that make it difficult to

digitally transform their reliability and maintenance strategies.

AMS Device Manager Data Server securely extends intelligent field device data to outside systems to make it easier for reliability and maintenance teams to further capitalize on modern advanced analytics software, providing a step change in operational efficiency and smart manufacturing.

For decades, process manufacturers have relied on asset management software to carefully deploy and monitor plant production assets — such as measurement and analytical instrumentation, digital valve controllers, wireless gateways, and others — both within a single plant and across the enterprise. As plants have evolved, they've grown their technology stack to adopt a wide range of analytics, historians, machine learning, and advanced modeling to exploit and benefit from historically underused or inaccessible datasets from around the plant. AMS Device Manager Data Server publishes intelligent field device data nearly instantaneously to industrial software analytics solutions already in use by customers, eliminating the need for complex custom data integration and manual workarounds that often cause delayed results and siloed data. This data is relayed via secure industry protocols.



AMS Device Manager Data Server makes it easy to import critical instrument and valve data into common dashboarding tools and applications. (Courtesy: Emerson)

“To accelerate sustainability and profitability, today’s manufacturers are transforming via analytics — seeking to aggregate disparate, underused data, and further exploit it for positive business impact around the organization,” said Erik Lindhjem, vice president of Emerson’s reliability solutions business.

“AMS Device Manager Data Server makes intelligent field device information such as configuration parameters, alerts, calibration data, and others available in near real-time for advanced use in other software and applications our customers already use.”

AMS Device Manager Data Server makes it easy to import critical instrument and valve data into common dashboarding tools and applications such as Microsoft PowerBI and Emerson software tools such as the Plantweb Optics platform, Plantweb Insight, Aspen MTell® and AspenTech Inmation™, plant historians, and others.

MORE INFO emerson.com

INNOVATION

Emerson software conference set for October

Global technology and software leader Emerson will bring together custom-

ers, experts, and automation industry leaders for a three-day, process automation experience as part of the first Emerson Exchange Immerse.

The conference will be October 3-5 at the Anaheim Convention Center in Anaheim, California. As an extension of the comprehensive Emerson Exchange events held globally, Emerson Exchange Immerse will enable users to more directly focus on process automation systems, solutions, and software including technologies from DeltaV™, Ovation™, AMS, Guardian™ and AspenTech. Registration is now open for Emerson customers. Early bird registration ends August 31.

Emerson Exchange Immerse attendees will engage with their peers, broaden their knowledge base, and gain insight from industry leaders. Users will learn the latest technology advancements, implementation successes, and proven project solutions being used throughout process automation. Topics will span a wide range

of industries including energy, life sciences, chemical, refining, food and beverage, power generation, renewables, hydrogen, biomass, water and mining industries.

“One of the best ways our users, and even our own Emerson experts, learn about new process automation strategies and technologies is from hearing each other’s stories,” said Nathan Petrus, president of Emerson’s process systems and solutions business. “At Emerson Exchange Immerse, attendees will not only hear those stories in user presentations but will be able to dig deeper with our hands-on technology exhibits and in our many networking events.”

Emerson Exchange Immerse will feature more than 200 sessions — more than half of which will be presented by users — as well as technology exhibits and educational courses. In addition, forums led by industry experts and Emerson executives will explore how advanced automation software from Emerson is helping companies make

measurable progress toward operational excellence and sustainability goals.

Emerson will also host an Exchange user conference for customers in Europe, the Middle East, and Africa in Dusseldorf, Germany, February 27-29, 2024.

MORE INFO www.emerson.com/en-us/automation/events/emerson-exchange/immerse/about

▀ INNOVATION

Dansk Gummi Industri develops turbine blade tip protector

Denmark’s Dansk Gummi Industri has developed a tip protector to protect wind-turbine blade tips during transport and storage.

PRO-PAD® TIP 1™ will provide for a high friction to the blade interface.

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PRO-PAD TIP 1 will meet safety requirements for people near the blade, as well as transporting the blade. (Courtesy: Dansk Gummi Industri)

Dansk Gummi supplies the product with straps for fastening. The protector is a flexible solution with a high wear resistance and it fits all blade sizes, both on- and offshore.

“With PRO-PAD TIP 1 we have developed a very flexible solution that will meet the requirements of our customers in terms of increased visibility and protection,” said Design Manager Carsten Sommer. “It fits all blade sizes, which is a great advantage as the blades become larger and larger.”

PRO-PAD TIP 1 is patent pending.

MORE INFO danskgummi.com

MAINTENANCE

Semco Maritime receives support service contract

Semco Maritime has been awarded a five-year contract for the provisioning of field support personnel for core crew and campaign positions from TotalEnergies Denmark on behalf of the Danish Underground Consortium. The contract covers offshore positions for production operators, permit coordinator assistants, HSE supervisors and laboratory technicians.

Semco Maritime has a track record of efficiently mobilizing and providing complex projects and personnel for offshore energy projects with an uncompromising focus on safety. The group has established a deep understanding of the Danish rules and regulations as well as the specific needs of TotalEnergies through a long-term partnership, and Semco Maritime’s resource pool consists of a large number of hand-picked skilled workers with first-hand experience working offshore on rigs and platforms. The unparalleled understanding of local conditions and the long-term working relations between the parties provide significant added value and ensure tangible synergies in this contract.

“We greatly appreciate the vote of confidence from TotalEnergies in Sem-



Semco Maritime has a track record of efficiently mobilizing and providing complex projects and personnel for offshore energy projects with an uncompromising focus on safety (Courtesy: Semco Maritime)

co Maritime with this order for the provisioning of production personnel to take part in the continued operations of Danish Underground Consortium's offshore installations for the coming five years," said Anders Benfeldt, Senior Vice President, Oil & Gas, Semco Maritime. "It is a key order for Semco Maritime, and we look forward to continuing and expanding the cooperation with TotalEnergies."

The contract builds on years of constructive cooperation with TotalEnergies including another five-year manpower and construction service contract entered into in November 2022 and the ongoing redevelopment of the Tyra field.

MORE INFO www.semcomaritime.com

MANUFACTURING

Pemamek launches milling machinery line

Pemamek Ltd., a leading provider of welding and production automation solutions, recently launched a line of milling machinery. Designed to meet the needs of the wind-energy sector, this family of milling equipment offers advanced solutions for longitudinal, circumferential, and edge beveling processes.

Furthermore, these milling solutions are also suitable for the process industry, including pressure vessel manufacturing.

One of the main advancements is the high-tech Direct Drive spindle technology that Pemamek has incorporated into the system together with the German KESSLER. The servo-driven and backlash-free technology offers less vibration and more lifetime for milling inserts. Furthermore, as in each PEMA welding and production automation solution, the efficient control system and real-time process feedback become standard features.


"Several years ago, the advantages of direct drive machining technology

were already demonstrated through initial machining operations using KESSLER's torque motor technology," said Esko Lätti, Product Manager at Pemamek.

"I am proud to have been involved in this journey, and I am thrilled to introduce the machinery featuring a torque motor, spindle shaft, bearings, and sensors, all integrated within the same compact and modular spindle



unit, developed in collaboration with Pemamek and Kessler." With the new milling technology, Pemamek continues to lead the industry in providing solutions for heavy-duty applications. By combining precision, efficiency, and providing reliability, Pemamek remains committed to driving progress in the heavy manufacturing industry.

MORE INFO pemamek.com




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Pemamek Ltd., founded in 1970, is a global welding and production automation leader. (Courtesy: Pemamek)

► MANUFACTURING

Vestas gets 423-MW turbine order

Vestas has received a 423 MW order featuring 4-MW platform wind turbines to power an undisclosed wind farm in the U.S.

The order includes supply, delivery, and commissioning of the turbines, as well as a 20-year Active Output Management 5000 (AOM 5000) service agreement, designed to ensure optimized performance of the asset.

Turbine delivery begins in 2024 with commissioning set for 2025.

MORE INFO www.vestas.com/en



Vestas designs, manufactures, installs, and services onshore and offshore wind turbines. (Courtesy: Vestas)



A recognized manufacturer of wind-power plants has chosen a vertical vacuum furnace from SECO/Warwick. (Courtesy: SECO/Warwick)

MANUFACTURING

Plant manufacturer purchases SECO/Warwick furnace

A recognized manufacturer of wind-power plants has chosen a vertical vacuum from SECO/Warwick designed to perform low-pressure carburizing for the large structural elements (gearboxes) used in wind-power plants.

The order combines the advantages of two technologies: atmospheric and vacuum processing. The furnace is designed for low-pressure carburizing oversized parts, made possible due to a very large, vertical heating chamber, while the furnace pit structure saves space in the production facility.

“The Pit-LPC technology is a modern alternative to atmosphere carburizing,” said Maciej Korecki, SECO/Warwick vice president. “Its main advantage is the ability to carry out efficient and effective carburizing in a

much shorter time than in atmospheric furnaces. The vacuum processing solution provides more than twice the productivity, and consequently lower process costs and a quick investment return.

This technology increases the safety for users, because it does not involve explosive and flammable gases. LPC eliminates direct CO₂ emissions from the carburizing atmosphere, and makes the solution ‘green.’ There is no doubt that the world is experiencing a climate crisis that requires decisive action. Renewable energy plays an important role in mitigating climate change. That is why it is important for us that we can support a partner who focuses on sustainable, renewable, and unlimited green energy.”

Maintaining the current pace of wind energy development will not be enough to meet the EU climate goals by 2030, a WindEurope report said. Despite this, wind energy is one of the fastest growing branches of renewable energy.

The wind energy sector is under pressure to reduce the cost of generating energy per megawatt hour. These expectations can be met by improving the turbine design to increase their operating parameters and reliability, while reducing maintenance costs.

“Wind turbine operators face the challenge of ensuring the reliability and full readiness of their equipment,” Korecki said. “Turbines experience difficult working conditions — at sea, in cold climates, or in isolated places — that can adversely affect their efficiency and reliability.

Therefore, it is extremely important that the parts used in their production are of the highest quality. Such quality is guaranteed by our vertical vacuum furnace. At the same time, we can reduce production costs while increasing quality. An additional advantage is the furnace’s energy savings, with this unique design provided by SECO/Warwick.”

MORE INFO www.secowarwick.com