

# Ports call on next-generation lifting gear for heaviest cargoes

With loads such as offshore wind turbine components getting bigger, port equipment is evolving accordingly. *Daniel Searle reports*

As offshore wind turbines increase in size, Cees van Veluw, product director for cranes at Huisman, noted that the lifting gear used to handle turbine components has to offer increasingly high capacities – an area in which Huisman has plenty of experience.

Around a decade ago, the Netherlands-based company constructed what was the largest permanently installed crane in the world. The 2,600-tonne lift capacity quayside crane was built by Huisman for its own facility in China to assist with unloading, after a reliable local service could not be found.

Heavy lifting and transportation specialist Mammoet purchased a 1,600-tonne capacity PTC35 ringer crane from Huisman, which is now being used at New Bedford port in Massachusetts. The company had previously bought the same model around 15 years ago, which was originally used for the petrochemical and nuclear power industries and is now deployed in the offshore wind sector.

Lifting and handling equipment used in the offshore wind sector, including for the pre-assembly of wind turbines, has to offer specific capabilities, said van Veluw. “The assembly speed has to suit the industry, and wind turbines are installed quickly. The cranes also need a large radius. He said that Huisman “knows a bit about



A TCC 78000 travelling cargo crane traverses 420 m on a gantry between manufacturer Liebherr-MCCtec Rostock's facility and the adjacent port of Rostock.

future turbines”, and is developing cranes with those larger turbines in mind.

The PTC70 offers increased capacity over the PTC35, but has the same footprint, enabling existing users of the PTC35 to upgrade more easily. The PTC70, which Huisman is currently discussing with clients, also provides 200 m of lifting height but has a lifting capacity of 600 tonnes.

Huisman recently worked with BMS Heavy Cranes to build a larger ringer crane for the Østerild wind turbine test field in the north of Denmark. The crane, which has an open ring

with fixed-position ballast, was delivered last year, and after tests will be used for high and heavy lifts, particularly on floating wind farms.

While typical capacities for such cranes are currently up to 3,000 tonnes, Huisman has received enquiries for 5,000-tonne capacity models.

## Widening client base

That flexibility is one advantage Huisman can offer to its client base, which now extends beyond crane companies, said van Veluw. “You don’t need to be a crane company to own your own crane. Companies such as port owners and wind power developers will commission us to build one rather than renting from someone else.

“We try to standardise our cranes somewhat so we don’t have to develop a new crane every time. But we are very well-suited to customising cranes to the needs of the customers. If

someone asked us to develop an 8,000-tonne crane, we wouldn’t say no – we would just try to work it out.”

Liebherr Maritime Cranes, a prominent division within the Liebherr Group, has seen its equipment put to similar use with Port Esbjerg in Denmark ordering multiple mobile harbour cranes to handle the increasing size and weight of wind turbine components.

The investment has enabled the port to consolidate its status as a leading hub for the wind energy sector in Europe, said Liebherr Maritime Cranes, which also produces offshore cranes, ship cranes and transshipment equipment. Port Esbjerg has six LHM mobile harbour cranes in service, including two of the larger LHM 800 units that have a lift capacity of 308 tonnes.

The same model of crane operates at the port of Odense, where wind turbine manufacturer Vestas has a

**The assembly speed has to suit the industry, and wind turbines are installed quickly.**

– Cees van Veluw, Huisman

of 100 percent of the lifting capacity of the LHM cranes working in tandem, ensuring the highest safety performance. Two LHMs working in tandem can complete up to four cycles per hour, unloading the latest generation of wind blades from specialised vessels," he explained.

Across the Baltic Sea from Esbjerg, in northern Germany, is the Liebherr-MCCtec Rostock factory site, where the company offers use of its TCC 78000 travelling cargo crane for handling large-sized and heavy loads at the nearby port.

The crane traverses more than 420 m on a gantry between the Liebherr site and the quayside of the port of Rostock; it provides a maximum load capacity of 1,600 tonnes. The TCC's portal features a 17 m clearance and a 30 m track gauge to enable optimal positioning of each piece of cargo.

"The TCC loads ever-larger maritime cranes from its own production for Liebherr and offers other companies the opportunity to handle heavy loads in the Rostock international port, for example monopiles," said Haugner.

### Wind focus

The company has also seen growing demand from transport engineering and heavy lift companies for its LR 12500-1.0 crawler cranes. Belgium-based Sarens has two of the models in its fleet, and a further one on order.

Kleopatra Kyrimi, group head of marketing at Sarens, said that its 2,500-tonne lift capacity, wide boom and T-shaped turntable, "makes it ideal for handling large monopiles and other significant components of wind turbines... The first LR 12500-1.0 was deployed initially at the port of Rostock to lift monopiles for the Baltic Eagle offshore wind farm, showcasing its exceptional capabilities in real-world applications."

Sarens said that handling offshore wind turbines and their foundations at ports is becoming an important



BMS Heavy Cranes' 3,000-tonne Huisman ringer crane.

factory. "Tower segments and wind blades are usually very long and massive, requiring handling in tandem lifts," said Mathias Haugner, Liebherr product marketing manager.

"Liebherr has accumulated extensive experience in tandem handling of breakbulk using

LHMs, working with their customers in ports such as Esbjerg, Odense, Nantes Saint-Nazaire, Raahe and Cuxhaven."

The manufacturer highlights its Sycratronic crane synchronising system for such jobs. "Sycratronic allows the use

**Tower segments and wind blades are usually very long and massive, requiring handling in tandem lifts.**

– Mathias Haugner, Liebherr



**SKYLIFT  
MARINE**

# SKYLIFT 3



**Year Built** : 2023  
**Crane Type** : Sheer leg, turning ability of 360°  
**Main Hoist** : 500 tons (2x 250 tons)  
**Auxiliary Hoist** : 1 x 40 tons  
IMO Tier 3



**[www.skyliftmarine.com](http://www.skyliftmarine.com)**  
sales@ravestein.nl | +31 487 512 034

Huisman Skyhook installing a 3,000-tonne offshore mast crane onto Boskalis' Bokalift 1.



business segment as the weights of components continue to rise. "The LR 12500-1.0 is perfectly suited for these tasks, along with lifting large components for the petrochemical industry and general port handling work."

One of its LR 12500-1.0 cranes, Strong Steve, is serving on an offshore wind-related project in Norway. Another, Straffe Hendrik, is presently on its way to the USA from Eemshaven, the Netherlands, where it had been loading and unloading transition pieces and monopiles.

Sarens also highlighted that it operates two types of transition piece handlers designed specifically for the efficient transport of transition pieces. This is complemented by jacket handlers, using Kamag SPMTs.

### Electric trend

Many industries are currently aiming to reduce their carbon footprint and the port lifting and handling equipment sector is no different. Liebherr noted a growing trend towards electrically powered equipment, something that it has responded to with its all-electric drive concept seen in the LS 800 E, and the electrically powered LHM 800.

"This not only reduces emissions but also leads to lower operating costs. Additionally, automation and alternative drives are becoming increasingly

Sarens deployed a Liebherr LR 12500-1.0 crawler crane, designed for the offshore wind industry, to the port of Rostock to lift monopiles for the Baltic Eagle offshore wind farm.



important, with Liebherr setting new standards in these areas," said Haugner.

The company's LPS 420 E portal slewing crane and the CBG 500 E transshipment model

are now also available in emission-free configurations.

However, it is not always possible to embrace electric options at locations such as ports, as Svend Videbaek,

product marketing specialist at Konecranes explained:

"Port operators are entirely pragmatic with regard to fully electric operations; everything depends on the capabilities of the local electrical grid and the availability and reliability of electrical supply. Different countries in different parts of the world have widely varying levels of reliability with regards to the supply of electricity. There are large practical and political dimensions around this question at every level.

### Power options

"Our job at Konecranes is to provide our port customers with the full range of power options for our products, from diesel to fully electric (battery) operation, depending on their local needs and business plans. This applies mainly to mobile equipment running on rubber tyres, including lift trucks.

Material handling equipment running on rails will be fully electric as a default, supplied from the local mains."

Nevertheless, there is a growing trend towards electric lifting and handling equipment. He added: "We are having more and deeper conversations with port customers about moving away from diesel-driven material handling operations to zero CO<sub>2</sub> tailpipe operations.

"Moving to fully electric material handling operation is becoming an almost general

**Port operators are entirely pragmatic with regard to fully electric operations; everything depends on the capabilities of the local electrical grid and the availability and reliability of electrical supply.**

– Svend Videbaek, Konecranes

# Konecranes expands partner network in USA

Finnish crane manufacturer Konecranes is building a network of partners, including steel structure providers and subcontractors, in order to build port cranes in the USA in the coming years.

Konecranes said that it has received initial interest from several customers for 'Build America Buy America' (BABA) cranes, including ship-to-shore (STS) units.

Given how long STS cranes take to produce and deliver, the company is not expecting any short-term impact on its financials from this initiative.

Konecranes is also able to modernise existing port cranes with the latest technology and cybersecurity standards, improving the safety, productivity and sustainability of operations.

Across the southern border, the port of Veracruz in Mexico is located around 230 miles (270 km) east of the nation's capital, Mexico City, on the south-west of the Gulf of Mexico. To handle project cargo, as well as general cargo and containers, terminal operator *Corporación Integral de Comercio Exterior* (Grupo CICE) recently installed a Konecranes Gottwald ESP.9 mobile harbour crane, which was followed by an order for a second of the same model.

The crane provides a working radius of up to 61 m and maximum lifting capacity of 125 tonnes.

Leoncio Perez, chief executive of Grupo CICE, said it now has 10 Liebherr mobile cranes in service at the port, as well as several lift trucks and two RTGs from Konecranes. "We recently ordered three more lift trucks and one RTG to increase our handling capacity from the quayside to the yard," he said.

The ESP.9 features an electric drive, with lithium-ion technology in the battery-powered drives used to move the crane and for the extension and retraction of the propping system stabilisers. For terminals without an external power supply, the cranes can be fitted with engines that meet EPA Tier 4f and EU Stage V exhaust regulations.

In April 2024, Konecranes confirmed that it had acquired German crane and service supplier Kocks Kranbau, strengthening its port services offering.

Kocks Kranbau was established in early 2023



Mexican terminal operator Grupo CICE commissioned a Konecranes Gottwald ESP.9 in 2022, and ordered a second shortly after.

following the insolvency of parent company Kocks Ardelt Kranbau, a port and shipyard crane manufacturer. Konecranes said that the acquisition gives it access to new European and global customers.

The company's main operations are based in Bremen, Hamburg and Oberhausen, with the deal adding close to 60 employees to Konecranes.

"I am confident Kocks Kranbau's expertise and customer proximity, when combined with Konecranes Port Services' widespread presence, industry knowledge and technology, will strengthen our position and offering as global services provider in the port sector," said Paolo Dazi, senior vice president, Port Services, Konecranes.

goal in Europe and North America due to national environmental regulations that are tightening with regard to CO<sub>2</sub> emissions and government investment incentives.

## 'Ecolifting' approach

"We at Konecranes (Ports) have developed an 'Ecolifting' approach over the years that helps our customers reach zero CO<sub>2</sub> tailpipe operation in practical steps, depending on

the product line."

Sarens said it has witnessed a similar trend, driven by the push towards sustainability and reducing carbon footprints. It has responded accordingly, for instance with its SGC-90.

Launched in 2020, the fully electric ring crane operates near-silently and returns electricity to the grid when in use.

"We plan to make our other SGC cranes also electric in the near future," it said. Sarens

currently owns four SGC cranes which are often seen stationed at ports for various offshore projects.

"These cranes, with their robust engineering and high lifting capacities, ensure precision and safety in handling oversized loads in port environments," added the company. "One of them was recently contracted to perform the handling of 15 MW wind turbine components."

## Moving to fully electric material handling operation is becoming an almost general goal in Europe and North America...

– Svend Videbaek, Konecranes



**COMBILIFT**  
LIFTING INNOVATION

# UNLOCK EVERY INCH OF YOUR STORAGE SPACE!

## ENHANCE THE SAFETY, STORAGE & EFFICIENCY OF YOUR LOGISTICS WITH COMBILIFT

Combilift's range of multidirectional forklifts, pedestrian reach trucks, straddle carriers and container loaders will allow you to maximize the capacity, improve efficiency and enhance the safety of your facility.

### Contact Us Today

To find out how Combilift can help you unlock every inch of your storage space.

**BREAKBULK**  
AMERICAS OCT 15-17 2024

VISIT US AT  
**STAND: P47**

**PROUD PARTNERS OF THE THE HEAVY LIFT AWARDS**

[combilift.com](http://combilift.com)

**PROJECTS IN MOTION – YOUR OPERATIONAL SUPPORT** **ROLLIT CARGO**  
[www.rollitcargo.com](http://www.rollitcargo.com)

[projects@rollitcargo.com](mailto:projects@rollitcargo.com)  
T +32 (0)3 800 55 59  
BELGIUM

Heavy lifting  
Lashing & Securing  
Storage  
Engineering  
Rigging

Transport  
Transshipment  
Port labour  
Stevedoring  
Packing

PROJECTS IN MOTION

Please visit us at  
**ANTWERP XL**  
08-10 Oct  
**Booth A90**

