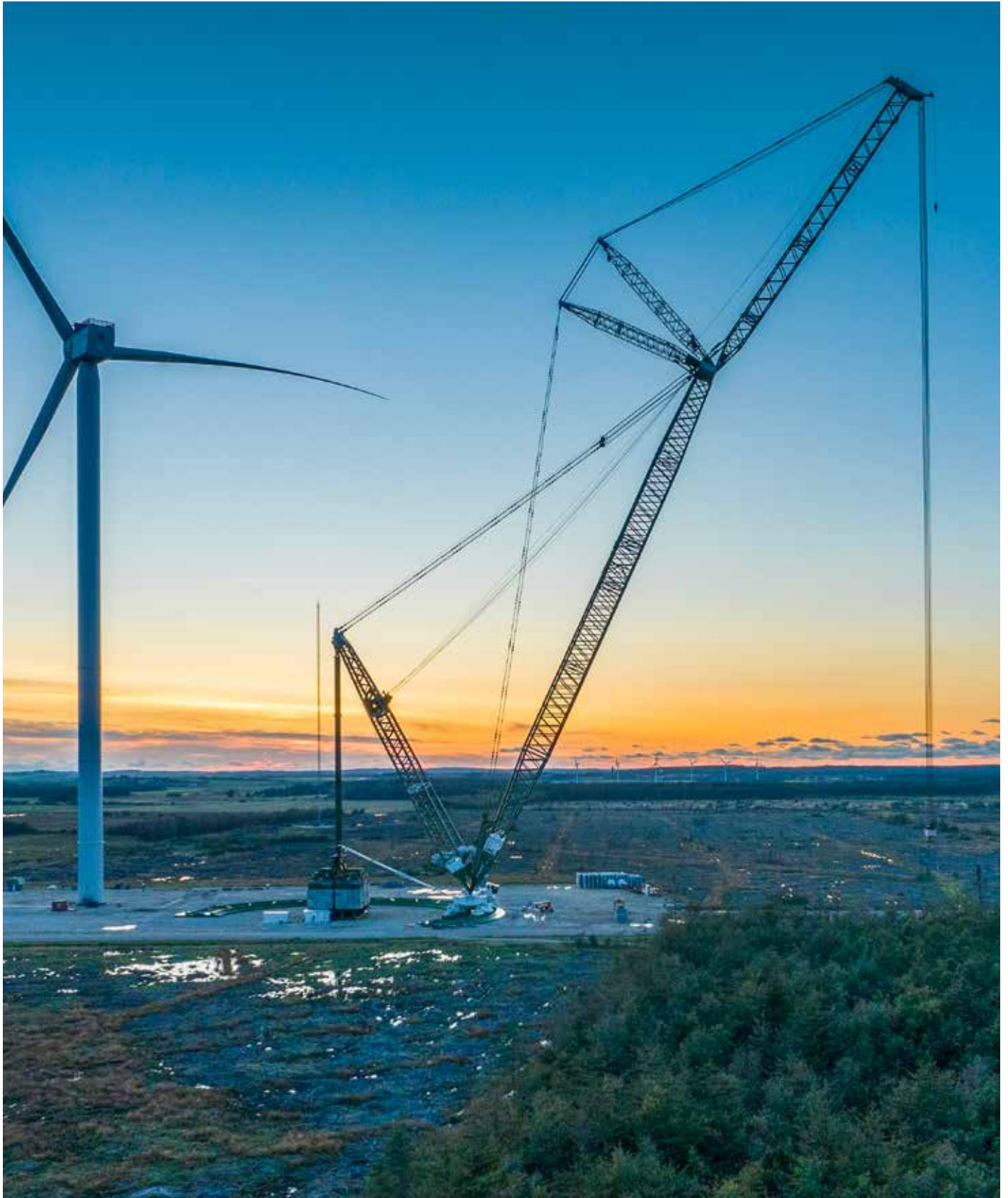


# BMS 2024

YOUR CONNECTION TO CRANES, LIFTS AND MORE

EXCITING NEWS  
FROM BMS GROUP  
OPERATIONS  
AROUND THE WORLD



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The Huisman HC100 3,000mt Ringer Crane – located at the Østerild Wind Turbine Test Field in north-western Denmark – is the world’s largest electric crane with a lifting capacity of up to 3,000t, of which 1,000t up to 225m working height. The new BMS Heavy Cranes A/S crane has a total height of 245m, and its 16 electric motors can pull with the equivalent of 3,000 horse-power.

Circulation: 2,550



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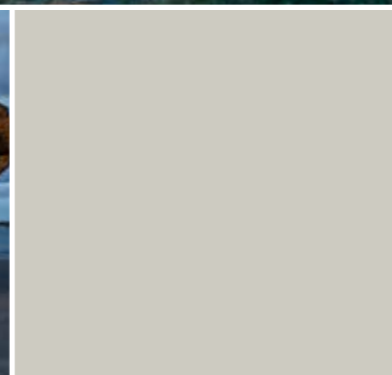
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# SECURITY AND STRENGTH IN TALENTED EMPLOYEES WITH A UNIQUE ABILITY FOR TEAMWORK

**I AM PLEASED TO WELCOME YOU TO YET ANOTHER ISSUE OF THE ANNUAL BMS MAGAZINE HIGHLIGHTING SOME OF THE PROJECTS OUR COMPANIES HAVE BEEN INVOLVED IN DURING THE LAST YEAR.**

As anticipated, 2023 was a year with a somewhat fluctuating activity level in most of our markets. However, we have also seen hectic times – often with the need to mobilise resources across borders. In this regard, it is great to see that there is both the ability and willingness to carry out projects together, and it is a pleasure to get a lot of positive feedback from our customers.

On the material side, the highlight of 2023 was the delivery of our new ring crane, HCR-300, from Huisman, with a capacity of up to 3,000t and a hook height of up to 225m. We have also invested heavily in 300 new self-propelled modular transporter (SPMT) axles and 50,000 new iron plates for vehicular roads.

The fully electrically driven crane helps reduce CO2 emissions and improves operational accuracy and energy efficiency, ensuring its suitability for use in the renewable energy industry. The acquisition of the new crane is an excellent example of the procurement policy the BMS Group is increasingly pursuing. With a clear desire to be a frontrunner in still more climate-friendly equipment, we buy, as far as possible, either fully electric or hybrid cranes that are transported by diesel engines but hoists by electric power.

Recently, we have invested in a Spierings SK487-AT3 eDrive crane – also known as City Boy – that excels at

being able to run on either diesel, hybrid or 100 per cent electric power. New purchases of this type will continue in 2024.

Among the past year's news, there is also good reason to mention that the BMS Group has significantly strengthened its position in the market of large truck-mounted lifts. This has been achieved by establishing an internationally oriented joint venture company named JaloBMS in collaboration with the Finnish lift expert Jalo & Jalo Oy.

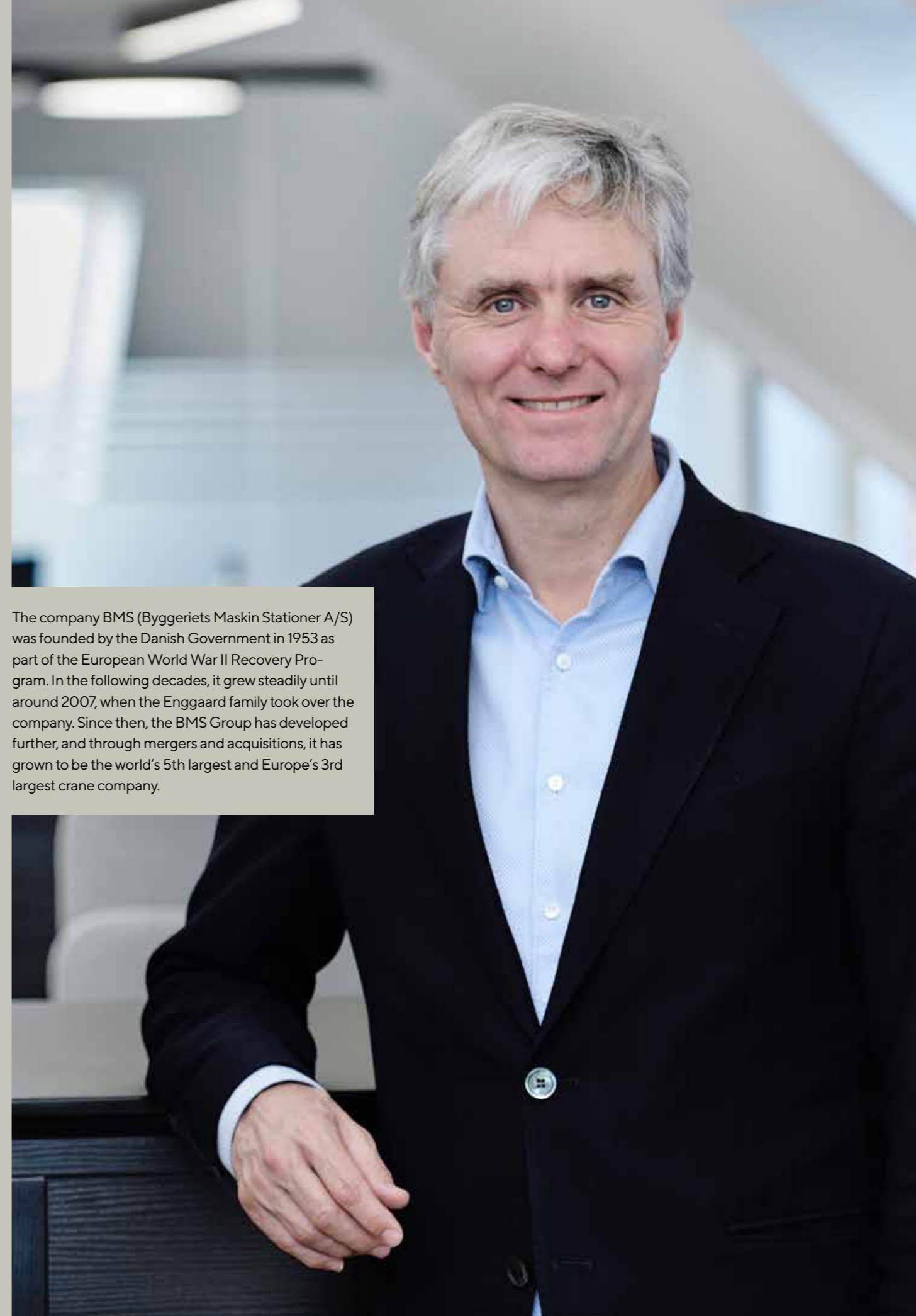
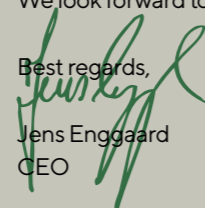
With the ongoing major international crises, 2024 will also likely present many challenges. All the more so, there is a sense of security and strength in knowing that the BMS Group contains so many talented employees with a unique ability for teamwork in all areas.

I hope you will enjoy reading about some of the projects that the BMS Group has carried out and get a sense of the variety of tasks we do, but also what we stand for.

We look forward to doing business with you.

Best regards,

Jens Enggaard  
CEO



The company BMS (Byggeriets Maskin Stationer A/S) was founded by the Danish Government in 1953 as part of the European World War II Recovery Program. In the following decades, it grew steadily until around 2007, when the Enggaard family took over the company. Since then, the BMS Group has developed further, and through mergers and acquisitions, it has grown to be the world's 5th largest and Europe's 3rd largest crane company.



The Østerild Wind Turbine Test Field is located in Europe's best wind field. A mean wind speed of at least 8m/s at 100m altitude is needed to test the giants. In Østerild – only 7km from the North Sea – the average is significantly higher, and the wind is very stable. Another advantage of the Danish test centre is that it is far from residential and outside bird protection areas.



# IN THE REALM OF GIANTS

WHEN THE ØSTERILD WIND TURBINE TEST FIELD CELEBRATED ITS TENTH ANNIVERSARY IN 2022, THERE WAS ALSO REASON TO MARK THE DAY AT THE BMS HEAVY CRANES GROUP. SINCE THE VERY BEGINNING, SEVERAL COMPANIES IN THE BMS HEAVY CRANES FAMILY HAVE ERECTED AND REPLACED THE GIANT WIND TURBINES IN THE NORTH-WESTERN CORNER OF THE DANISH MAINLAND.

// DENMARK  
// ONSHORE WIND

In 2023, there was another opportunity to hoist the Danish colours, namely when BMS Heavy Cranes A/S inaugurated its Huisman HC100 3,000mt Ringer Crane.

It is the world's largest electric crane that can lift up to 3,000t, of which 1,000t up

to 225m working height. The crane's total height is 245m, and its 16 electric motors can pull with the equivalent of 3,000 horsepower.

The Czech-produced crane is the BMS Heavy Cranes Group's largest single investment ever and cements the already solid position of BMS Heavy Cranes A/S as a flexible partner for the international wind turbine industry. Presently, the crane is carrying out lifting work on some of the world's largest test wind turbines. Later, it can solve tasks by installing offshore wind turbines from the quayside, just as it can be instrumental when international power plants need to have the largest boilers lifted in place.

Due to its design, the new acquisition can be installed in many ports without the need to invest in additional infrastructure. Another advantage is that it can work quickly compared to existing cranes, so that it can install more wind turbines in less time.

The fully electrically driven crane helps reduce CO2 emissions and improves operational accuracy and energy efficiency, ensuring its suitability for use in the renewable energy industry.





# “GREEN BLOOD” RUNNING THROUGH THE VEINS

// AUSTRALIA  
// PEOPLE

**The expression “blue blood” is frequently used to describe people of high status, especially those of noble, aristocratic, or otherwise socially prominent backgrounds. The differently coloured blood is, so to speak, perceived as the common denominator that binds certain people together.**

In the case of the employees of BMS Heavy Cranes Australia Ptd. Ltd., the blood is not blue, but if we use the same imagery, one could, with some justification, speak of “green blood”.



When the Australian part of the BMS Heavy Cranes Group was established five years ago, there were only a handful of people. Today, there are over 100 – and the overwhelming majority have been with the company for several years. And this is where it makes sense to talk about “green blood”.

When BMS Heavy Cranes Australia Ptd. Ltd. started in the basement

of a private house, it was intended to be a genuine Australian company with a strong representation of local labour. However, to ensure the necessary expertise for the first assignments in the new market, the company initially had to have assistance from experienced European colleagues. Yet, within a relatively short period, a solid Australian core was built up in the company, and today, most employees are indeed Australians.

Due to the low unemployment rate in Australia, attracting staff is generally challenging. Still, a rather unusual approach has ensured BMS Heavy Cranes Australia Ptd. Ltd. the desired staff: Blue-collar workers are used to being employed – often on a short-term basis – to solve a specific task, after which they are back in the labour market. In the Australian part of the BMS Heavy Cranes Group, on the other hand, they would be offered permanent contracts. Therefore, over the five years, the company has managed to maintain most of its white and blue-collar workers.

BMS Heavy Cranes Australia Ptd. Ltd. has been fortunate to attract very good people and grow a dedicated and competent team where everybody helps above and beyond. This is mainly because the company spends a lot of effort

ensuring that the individual employee’s skills and culture fit into the whole.

Initially, BMS Heavy Cranes Australia Ptd. Ltd. had strong support from engineers in Denmark. Today, the company has its own engineering department, which ensures clients the shortest possible response time. In addition, the Australian company is now supporting other parts of the organisation regarding engineering.

Overall, there is excellent support between companies across the BMS Group. There may be a considerable physical distance between Australia and Europe, but assistance from a helpful colleague is never further away than a phone call.

Despite its size, the BMS Heavy Cranes Group was largely unknown in Australia just five years ago. That picture has completely changed, with BMS Heavy Cranes Australia Ptd. Ltd. being one of the market’s significant players, especially regarding wind turbines. The company is currently establishing 162 Nordex wind turbines in the MacIntyre Wind Farm in Queensland – and the robust pipeline includes projects such as the Golden Plains Wind Farm in Victoria with 122 Vestas wind turbines.







Copenhagen City Hall was designed by the architect Martin Nyrop with inspiration from the Siena City Hall in Italy. Jens Olsen's World Clock, an advanced astronomical clock, is displayed in the City Hall. The clock consists of 12 movements with 15,448 parts. The mechanical clock must be wound once a week. Its displays include lunar and solar eclipses, positions of the stellar bodies, and a perpetual calendar, in addition to the time.



# COME LIFT US UP

## // DENMARK // TELECOM & CONSTRUCTION

In 2023, the Danish capital Copenhagen was named the UNESCO World Capital of Architecture. As part of the appointment, the International Union of Architects decided to hold its world congress at the city hall – and to mark the event by mounting a 14m wide and 30m high banner on the city hall tower.

Copenhagen City Hall, which is the headquarters of the Copenhagen City Council and the Lord Mayor of the Copenhagen Municipality, is located in an area of central Copenhagen which is quite busy in terms of traffic. For example, the street Vester Voldgade is widely used as a thoroughfare for cyclists going to and from the city centre. This placed special demands on both barriers and traffic regulation in the area where the job was to take place.

The BMS Lift Division used a 90m truck-mounted lift set up on 2x3m, 25mm thick iron plates to carry out the actual lifting task. This surface was laid out on the cycle path to protect the pavement and ensure that the lift was standing steadily on its legs.

Another example of a task performed by the BMS Lift Division is the upgrade of a Hi3G antenna to 5G.

First, the entire old installation was taken down in one piece. The new antenna – assembled at the company KM Telecom – specialised in analysing, designing, installing, updating and maintaining virtually all kinds of communication infrastructure – was then transported to its new location where it was lifted into place using a 60m Spiering crane. Typically, a truck-mounted lift might have been used, but this was not possible in this particular case, as there were tennis courts, trees and slopes to consider. The entire operation was completed in just five hours.



Hi3G, which offers mobile and data plans over 3G, 4G, 4G+ and 5G mobile networks, is part of the 3 Group with operations in Austria, Denmark, England, Hong Kong, Ireland, Indonesia, Italy, and Sweden. In Denmark alone, there are 1.54 million customers on the 3 networks.



# INCREASINGLY GREENER

EVERYWHERE IN SOCIETY, THERE IS A TRANSITION TO A HIGHER DEGREE OF SUSTAINABILITY. THIS ALSO APPLIES TO THE BMS GROUP, WHICH NOT ONLY OPERATES A GREEN BUSINESS DUE TO THE LOGO AND THE COLOUR OF THE MACHINERY. FOR THE BMS GROUP, THIS CAN ALSO BE SEEN IN PURCHASES OF THE GREENEST CRANES, INCLUDING PLUG-IN HYBRIDS AND FULLY ELECTRIC CRANES.

## // DENMARK // GREEN TRANSITION

The BMS Group sees it as an obligation to minimise emissions of CO<sub>2</sub> and other hazardous particles continuously. Therefore, the development of the crane market is being followed very closely so that equipment with the most environmentally friendly engines can be purchased at all times. Depending on the specific needs, the BMS Group chooses either fully electric or hybrid cranes that are transported by diesel engines but hoists by electric power.

Electric or hybrid cranes can save more than 100kg of CO<sub>2</sub> in an eight-hour working day compared to diesel cranes.

Regarding the large mobile cranes, the development towards electric operation is not yet as far as one would wish. This is because manufacturers depend on, among other things, battery technology and, not least, the large volume. The larger the cranes,

the heavier they become, and it is a great challenge to get enough power out into the crane if it also must be transported over a longer distance.

However, it is possible to take quite far-reaching environmental considerations into account by using alternatives to traditional diesel. This applies, for example, to HVO diesel, a hydrotreated vegetable oil with virtually the same properties as fossil diesel. HVO diesel can reduce CO<sub>2</sub> emissions by up to 90%.

As part of the green transition of the BMS Group, a new type of mobile tower crane will soon be added to the machine park. It is a Spierings SK487-AT3 eDrive, also known as City Boy. The compact design with a width of 2.55m and a total length of 13.08m means that the truck is easy to manoeuvre and has a smaller footprint than 10m.

As part of its efforts to minimise the impact on the surroundings, the BMS Group has in 2023 been certified according to the standard ISO14001:2015. This internationally recognised environmental management standard sets the framework for what a company must do to achieve environmental improvements systematically.

### Spierings SK487-AT3 eDrive – City Boy

Maximal load	7,000kg
Tip load	1,700kg
Maximum radius	40m
Lifting height	30m
Maximum lifting height (45° luffed jib)	55.45m



# JOINT VENTURE SECURES STRONGHOLD IN WESTERN AFRICA

// AFRICA  
// OIL & GAS

Although BMS Africa Cranes SL was established as a joint venture between BMS Heavy Cranes A/S and Eurogrues Afrique only a couple of years ago, the company now has more than 15 machines such as mobile cranes up to 500t, forklifts and man-lifts – and it employs 60+ local people trained in oil and gas standards and skills.

As BMS Africa Cranes SL is the main lifting partner of two large oil and gas projects in Senegal and Mauritania, the company has chosen the Senegalese capital Dakar as the central hub for operations and support activities.

BMS Africa Cranes SL provides more than cranes. Through its expertise and engineering offices in Africa and Denmark, the company provides lifting solutions for complicated operations, also supplying customers with lifting engineers permanently on the operation sites.

Over a short period, BMS Africa Cranes SL has positioned itself as a lifting partner of oil and gas operators by taking charge through long-term contracts of all lifting and handling operations at the Logistic Supply Base intended to store and manufacture pipes and structures. These elements are sent to platforms, floating storage and offloading units, and floating liquefied natural gas facilities.

Presently, BMS Africa Cranes SL operates in countries such as Congo, Equatorial Guinea, Gabon, the Ivory Coast, Mauritania, and Senegal.

One of the significant BMS Africa Cranes SL projects is the Greater Tortue Ahmeyim Project, an offshore liquefied natural gas project on the maritime border of Mauritania and Senegal. The project – involving one of the deepest subsea developments in Africa – is being jointly developed by the global energy company BP, Société des Pétroles du Sénégal (Petrosen), Société Mauritanienne des Hydrocarbures, and Kosmos Energy, with BP as the operator.

Phase one of the project will include an ultra-deep-water subsea system with four gas production wells, a mid-water floating production, a storage and offloading vessel, and a nearshore floating liquefied natural gas facility.

Another large project that BMS Africa Cranes SL is presently working on is the Sangomar Field Development Phase 1. This conventional oil development is located in deep water in Senegal and is operated by the global energy company Woodside Energy.



Eurogrues Afrique is a regional lifting company with a strong presence, particularly in the western part of the African continent.



**MOST CAPITALS AROUND THE WORLD HAVE NUMEROUS BRIDGES. FOR EXAMPLE, THERE ARE MORE THAN 80 IN COPENHAGEN. IN FACT, THE DANISH CAPITAL HAS RECENTLY BEEN ADDING ONE MORE BRIDGE – AND THE BMS GROUP HAS BEEN INVOLVED IN ITS REALISATION.**

# SHIFTING GRIP IN MID-AIR

// DENMARK  
// INFRASTRUCTURE

Usually, the work on a given bridge does not necessarily attract much attention, but it is somewhat different in this case. This is because the BMS Group's work on the bridge has received the ESTA Award of Excellence 2023 for "Crane Job of the Year – Telescopic cranes lifting capacity > 120t."

The uniqueness of this task was that during the lift of a 95t moveable steel bridge, the crane setup had to be changed from a single to a tandem lift. This is, in short, what happened:

The bridge was shipped to a nearby harbour and transported to the crane on a flabed truck. At the harbourside, a Liebherr LTM1750-9.1 (800t version) was set up with a Y-guided boom. To have enough lifting capacity, the bridge was picked up over the rear end of the crane. However, the capacity was insufficient to place the bridge at its final position, a 7.5m wide road on a dam. An additional crane was needed to have enough capacity, so a Liebherr LTM1450-8.1 was placed at an opposite dam to assist the main crane in lifting the bridge for the last 10m.

The bridge was delivered by truck at the rear end of the LTM1750-9.1. Between the crane hook and rigging gear, an equaliser beam was added. After picking up the bridge, the LTM1750-9.1 turned 180 degrees, and the LTM1450-8.1's crane hook was attached to the equaliser beam, assisting the last 10m. The rigging was done from a man basket lifted by a third crane, a Liebherr LTM1130-5.1.

Prior to the lift, a concrete pile foundation was made under all outriggers to ensure ground-bearing capacity.

The solution, that was carried out for DANPRO Steel Construction A/S, reduced the size of the crane significantly and also meant less preparation on-site with a far lower cost compared to using a one-crane solution.



The bridge was established in connection with the construction of Lynetteholm, which is a new peninsula in the Danish capital. Lynetteholm is part of an overall storm surge protection plan for the central part of Copenhagen and will contribute to containing future flooding of coastal urban areas. The peninsula is established using surplus soil from construction projects in and around Copenhagen and thus contributes to reducing CO2 emissions associated with the transport of soil.





# PUT THE LEGS UP

ODENSE PORT A/S - DENMARK'S LARGEST OFFSHORE WIND PRODUCTION PORT - HAS BECOME AN EPICENTRE FOR OFFSHORE WIND AND THEREBY A HUB OF THE GREEN TRANSITION. EVERY DAY, AROUND 3,200 PEOPLE CLOCK IN AT THE PORT WHERE ONCE THE LINDØ SHIPYARD WAS LOCATED.



## // DENMARK // OFFSHORE WIND

Lindø Shipyard was founded in 1957 when the Danish industrial giant A.P. Møller - Maersk decided to build a shipyard with two dry docks. Over the following decades, the shipyard developed into one of the world leaders in terms of construction speed and the size of the vessels.

After failing orders, the shipyard closed in 2012, but already in 2009, A.P. Møller - Maersk had founded a new company for leasing the old shipyard areas. Lindø Offshore Renewables Centre was quickly established in collaboration between the industry's leading compa-

nies. This helped attract wind turbine manufacturers and their subcontractors - and now, the former shipyard contains more than 120 companies centred around the offshore sector. Today, it is owned by Odense Port A/S.

Several of the companies in the BMS Group have a long-standing cooperation with customers within offshore wind turbines and have thus, for a long time, handled tasks at Lindø. For example, BMS Krangården A/S, Torben Rafn A/S and BMS Heavy Cranes A/S have recently worked on each their part of large projects.

In 2023, BMS Krangården A/S purchased a substantial number of self-propelled modular transporter (SPMT) axles from the heavy-duty vehicle manufacturer TII Scheuerle. A total of 24 axle lines were soon sent to Lindø to transport four massive jack-up legs to the ship 'Wind Energy'. The transport of the legs, which weighed 606t apiece and were almost 80m long, was carried out for the company Ziton A/S.

The task also included designing and establishing storage conditions at the port. Later, the legs were transported back to the quay, where BMS Heavy Cranes A/S

with two crawler cranes - including a Liebherr LR11350, which is currently the company's largest - took the legs to 'Wind Energy'. The solution also included a truck-mounted lift so the crew could get up safely and hook off the lifting gear after the legs were installed.





Shortly before Christmas 2023, BMS Krangaarden A/S and Torben Rafn A/S transported a huge structure the last mile to recycling after having been removed from a vessel. In this case, the contractor was Fayard A/S, a privately owned shipyard.



'Wind Energy' is the largest vessel in the Ziton A/S fleet, capable of servicing turbines up to 10MW. 'Wind Energy' is equipped with a Liebherr BOS 35000 crane with a boom length of 102m and a lifting capacity of 800t at 116m high above deck.



# GROWING BUSINESS IN THE US

After spending several years with its U.S. headquarters in Houston, Texas, BMS Heavy Cranes Inc. recently relocated to Addison just north of Dallas, Texas. From this new location, the company's activities on the North American continent are managed by a small organisation led by the Managing Director, who oversees the company's daily activities.

The Addison office serves as the hub for integrating new employees into the BMS Heavy Cranes family, as well as managing the diverse requirements inherent in operating within the geographically expansive United States.

## // UNITED STATES & CANADA // OFFSHORE AND ONSHORE WIND

In order to support the growing business in the U.S., BMS Heavy Cranes Inc. has been expanding its fleet of cranes, which are primarily intended for the erection of new wind farms and service projects in several of the southern states. Although it differs from the norm, BMS Heavy Cranes Inc. has focused on a fleet of Liebherr LTM cranes to enter into the busy maintenance work market in the U.S. The Liebherr LTM1750 is the crane of choice for service sites, capable of handling most lifts because the average hub height in the U.S. is lower than what is typically found in Europe.

Recently, BMS Heavy Cranes Inc. has been working together with one of its long-term partners in the industry on a project in Connecticut, which is to be finished in 2025.

The company also has other activities on the North American continent. For example, BMS Heavy Cranes Inc. has assisted in erecting wind farms in the Canadian state of Alberta. One of the projects was executed during the winter of 2022-23, where most days of work had to be carried out while the temperature was between -20 and -30 degrees Celsius, which makes the performance of personnel and cranes on site even more impressive.



The land occupied by present-day Addison was settled in 1846. The community was originally known as Noell Junction, but in 1902, it named itself Addison, after Addison Robertson, who served as postmaster (1908-16). Though Addison has only around 16,000 residents, the daytime population is estimated to exceed 100,000, mainly because Addison is a popular location for numerous Dallas-area restaurants.



# BMS HELPS LIFT THE CULTURE

**DURING THE SUMMER MONTHS, THE BMS GROUP'S HOME COUNTRY OF DENMARK IS FILLED WITH MUSIC FESTIVALS. ONE OF THE OLDEST AND BEST KNOWN IS THE SKANDERBORG FESTIVAL HELD IN AUGUST EVERY YEAR. DUE TO ITS LOCATION IN A SCENIC BEECH FOREST AREA CLOSE TO A LAKE, THE EVENT IS ALSO KNOWN AS "SMUKFEST" (BEAUTIFUL FESTIVAL).**

**// DENMARK  
// CULTURE**

BMS Aarhus has been involved in Smukfest for a number of years, as staff and equipment help with the construction of stages over a few days leading up to the festival. And when the music event in the forest at Skanderborg south of Aarhus is well over, BMS Aarhus helps to take down the scenes again. In addition, BMS Aarhus is helping to clean up the forest after days packed with music and people.

Smukfest first took place in 1980, when there were a modest 1,000 spectators. Today, it is an event of completely different dimensions, as Smukfest gathers around 60,000 daily visitors and lasts the better part of a week.

Smukfest is a good example of Denmark being a country of associations, as the festival is owned by a democratically elected gathering with over 16,500 members, many of whom help plan and implement the event. The festival has a turnover of tickets and accommodation of approximately EUR 15 million, of which more than half is used for the acquisition of music.



Smukfest covers many styles of music, such as rock, pop, folk, heavy metal, hip-hop and electronic. There is a strong focus on Danish music, but the festival has also presented international names such as Eric Clapton, Prince, Britney Spears, Pet Shop Boys, Ozzy Osbourne, Tom Jones, Fat Boy Slim, Blood Hound Gang, and Rihanna.





# OPERATE AND RELOCATE AT THE SAME TIME



**HOW LONG DOES A TYPICAL WIND TURBINE JOB TAKE? NATURALLY, THIS DEPENDS ENTIRELY ON CONDITIONS SUCH AS THE WIND FARM'S LOCATION, THE NUMBER OF TURBINES AND THEIR DIMENSIONS.**

**// FINLAND  
// ONSHORE WIND**

However, BMS Heavy Cranes Oy's work at Pjela-Böle and Kristinestad Norr wind parks in Finland can serve as a good example: Here, offloading was started in February, and the last turbine was erected in early October 2023.

A total of 56 wind turbines of the Nordex N163 type have been erected in the two Finnish wind farms. They are located in Närpes and Kristinestad, two smaller towns on the west coast of Finland, about 190km northwest of the country's third-largest city Tampere.

BMS Heavy Cranes Oy used three main cranes, specifically two Liebherr LR1750 and one Liebherr LR1800, assist cranes, truck/trailers and wheel loaders. The set-up also included two self-propelled modular transporters (SPMTs) of 12 lines to reach the relocation times for the main cranes.

The challenge was to operate and relocate three main cranes at the same time. The key to this was the synergy between the teams, as they all were helping each other, sharing people and equipment.



Construction of the Pjela-Böle and Kristinestad Norr wind parks began in January 2022, and they are expected to be fully operational in the second quarter of 2024. The annual power generation will be approximately 1.1TWh.



# MUCH MORE THAN JUST THE LARGEST CRANES

// DENMARK  
// CONSTRUCTION

MANY PEOPLE ASSOCIATE THE BMS GROUP WITH THE LARGEST CRANES, SUCH AS CRAWLER CRANES WITH LATTICE BOOMS. HOWEVER, THIS IS FAR FROM THE WHOLE STORY BECAUSE A SUBSTANTIAL NUMBER OF DIVERSE TASKS ARE CARRIED OUT WITH TRUCK-MOUNTED CRANES AND MOBILE TOWER CRANES. HERE ARE SOME EXAMPLES OF ASSIGNMENTS HANDLED BY BMS COPENHAGEN.



A tractor unit without a crane is used to transport high ventilation systems on a bed trailer.



Placement of a pavilion on top of a similar structure at the City Hall Square in Copenhagen. The task was solved with a 165tm truck-mounted crane.

Here, it is also a 165tm truck-mounted crane in the process of hoisting building materials into the other side of a patrician villa in a suburb of Copenhagen.



Hoisting balconies for one of BMS Copenhagen's good customers in connection with a construction project in Roskilde.



Hoist of a 1,800kg pool for the company Berle Pool in a Danish holiday home area. Iron plates were laid out in the driveway, and a 44m Spiering crane backed at an angle into the driveway to make enough room for it. The truck with the pool was parked on the road, from where the pool was lifted up between the trees. The outlay with the pool was 38m into the other side of the house.



For Arwos, a 13t lid was lifted 49m to get into place on a wastewater tank at a treatment plant. This required relatively calm wind conditions.



Skaks A/S often takes care of large machine transports – here, for example, a crane from Tadano Ltd., Japan’s largest manufacturer of cranes and lifts.



Alision is South Jutland’s new knowledge and culture centre and the first building in Denmark whose unique idea is to gather education, research, and culture under one roof. When jacking and skidding machines, extra attention had to be paid to the beautiful floors – which is why the small C10 Hoeflon was used.



## VERY DIVERSE TASKS

THE COMPANY SKAKS A/S, WHICH IS PART OF THE BMS GROUP, IS ONE OF DENMARK’S MOST PROMINENT PLAYERS IN SPECIAL TRANSPORT AND CRANES. SINCE ITS ESTABLISHMENT 50 YEARS AGO, EXTENSIVE EXPERTISE AND ONE OF EUROPE’S MOST EFFICIENT, SPECIALISED, AND MODERN FLEETS HAVE BEEN BUILT UP. THESE ARE JUST A FEW EXAMPLES OF THE VERY DIVERSE TASKS PERFORMED BY PERSONNEL AND EQUIPMENT FROM SKAKS A/S.



Bigadan has more than 30 years of international experience in the practical application of biogas technology, including renewable energy production, treatment of animal manure and organic waste, as well as recycling of nutrients. The world’s largest truck-mounted crane was commissioned to replace an engine at the top of one of the 12 degassing tanks at the world’s largest biogas plant. 27m up and 13m in – no problem.



Arwos is a utility company in Aabenraa Municipality and handles all tasks related to waste, recycling, water, wastewater, and landfills. When a pump/slucice station was built at the

port of Aabenraa, the 450kg pumps had to be hoisted into place. Space was tight, so the choice fell on a small, strong machine on tracks.



For a customer in Flensburg, Germany, Skaks A/S lifted and transported a ship worthy of preservation from 1923. The ship, which weighs 125t and has dimensions of 38 x 6.5 x 6m and a 6t mast of 50m, was lifted with a 650t mobile crane, driven into a restoration hall on self-propelled modular transporters (SPMT) and put in place with jacking and skidding equipment.





# MASSIVE JOB SOLVED WORKING SIDE BY SIDE

// SWEDEN  
// ENERGY

AS THINGS STAND NOW, THE PRIMARY ENERGY SOURCES ARE OIL, GAS, COAL, HYDRO AND NUCLEAR POWER. IN DUE COURSE, SOLAR ENERGY, WIND POWER AND OTHER ALTERNATIVES CAN BECOME VALUABLE COMPLEMENTARY ENERGY SOURCES. HOWEVER, OIL WILL ACCOUNT FOR MOST ENERGY SUPPLIED FOR YEARS TO COME. THEREFORE, THE MAIN TASK OF PREEM REFINERY IS TO SUPPLY THE SWEDISH MARKET WITH EFFICIENT, ENVIRONMENTALLY FRIENDLY OIL PRODUCTS. THE PLANT REFINES FIVE MILLION M<sup>3</sup> OF CRUDE OIL ANNUALLY, CORRESPONDING TO AROUND 30 PER CENT OF THE COUNTRY'S TOTAL REQUIREMENTS.

Now and then, even one of Europe's most efficient refineries needs a total shutdown for cleaning, maintenance, and modifications. The last time this happened, it was a massive task for which Preem Refinery had hired a total of about 2,500 people from many companies.

Based in the Gothenburg branch, BMS Kranar AB was awarded the crane contract, but the job was so enormous that it was necessary to involve several subcontractors. Among these were the companies BMS A/S, Skaks A/S and Crane Norway Group AS, all of which are part of the BMS Group. Due to the many subcontractors, the crane team consisted of Croats, Danes,

Finns, Germans, Icelanders, Norwegians, and Swedes.

Even though there was very little time for the preparatory work, all parties were optimally involved in the project. It was thus a great success for everyone – and not least for Preem Refinery, who praised both commitment and effort.

During the project, BMS Kranar AB used a 300t crawler crane, a 200t crawler crane, two mobile tower cranes, 17 mobile cranes, 15 truck-mounted cranes and two tractors/trailers – and the operation involved 96 crane operators, shippers, and lift managers as well as six project people.

Preem Refinery was formed in 1996 by merging Texaco stations throughout Sweden and OK Petroleum stations in southern and western Sweden. Today, Preem Refinery is the largest fuel company in Sweden, with a refining capacity of more than 18 million m<sup>3</sup> of crude oil every year. Preem Refinery refines and sells gasoline, diesel, heating oil and renewable fuels to companies and consumers in Sweden and abroad.



# ONCE AN AIR FORCE BASE, NOW AN IMPORTANT MINE

## // GREENLAND // INDUSTRY

Only a few cities in the world can present a specific founding date. One of them is Kangerlussuaq, a settlement with some 500 inhabitants in western Greenland, situated about 50km north of the Arctic Circle. Kangerlussuaq was founded as Blue West-8 on 7 October 1941, under the supervision of the Norwegian-born pioneer polar aviator, navigator, aircraft mechanical engineer, and military leader, Colonel Bernt Balchen of the United States Army Air Forces. Following the fall of Denmark to Germany in the Second World War, US forces assumed security for Greenland, building several bases.

Over the years, Kangerlussuaq – now known as Sondrestrom Air Base –

developed into Greenland's main air transport hub and the site of Greenland's largest commercial airport.

The area around Kangerlussuaq remains of great importance. This is partly because, over the next 50 years, the Greenlandic mining company Lumina Sustainable Materials A/S has an exclusive license to extract the mineral anorthosite from a mine at Qaqortorsuaq (White Mountain), on the north side of Kangerlussuaq fjord, approximately 80km southwest of the airfield.

One of BMS Group's crawler cranes – a Liebherr LR1130 – is involved in the Greenlandic mining project, as crane

and crew help with the renovation of factory and quay facilities at the mine. The task is a bit unusual, as the drawings for the practical execution were produced without a physical meeting on site – and also because all lifting equipment was planned before start-up and sailed in from Denmark.

Lumina Sustainable Materials A/S, previously known as Hudson Greenland, began its exploration in Greenland a decade ago and construction at Qaqortorsuaq started in 2017 with the first shipments in 2019. The company ships anorthosite to customers on three continents.



Anorthosite is a granular plutonic igneous rock composed almost exclusively of a soda-lime feldspar. The mineral is used in many places in the industry, including fibreglass, alumina, paint, and white cement. The primary economic value of anorthosite is the titanium-bearing oxide ilmenite. However, in some cases, anorthosite has large amounts of labradorite, which is quarried for its value as both a gemstone and a building material.



# EXPANDING ACTIVITY IN TAIWAN

// TAIWAN  
// OFFSHORE WIND

Loyal readers of this magazine will know that the BMS Group has already been involved in significant projects in Taiwan for some years.

Among other things, we have written about the establishment of the company BMS Heavy Cranes Taiwan Ltd., which happened in connection with the transport of towers, nacelles and blades to storage, transportation to the pre-assembly site, assembly of towers and preparation of wind turbine components for offshore installation – all for Formosa 1, the first offshore wind park in Taiwan.

Subsequently, BMS Heavy Cranes Taiwan Ltd. has been working on the Yunlin project, a 640MW offshore wind farm consisting of 80 Siemens Gamesa 8MW wind turbines capable of producing enough energy to meet the demands of more than 600,000 households.

Indeed, for the last couple of years, the Taiwanese part of the BMS Heavy Cranes Group has been working for both the Danish company Vestas Wind Systems A/S and the German-Spanish Siemens Gamesa Renewable Energy – and will do so for the coming two years.

As demand has increased steadily, BMS Heavy Cranes Taiwan Ltd. will have significant activity. The tasks include preassembling offshore wind turbines, ground transport of towers, blades and nacelles, barge transport of wind turbine components, and support at blade factories.

BMS Heavy Cranes Taiwan Ltd. currently has Liebherr LR11350 main cranes, auxiliary cranes and self-propelled modular transporter (SPMT) axle lines. The company has local employees at the office in Taichung, its own Health, Safety, Environment and Quality (HSEQ) department and more than 100 people in the field.

**BMS Heavy Cranes Taiwan Ltd. has its headquarters in Taichung, home to many industries. Located in central Taiwan, Taichung has approximately 2.8 million residents and is the second-largest city in the country.**







# INTO THE NIGHT

HVIDE SANDE IS A TOWN LOCATED AROUND AN ARTIFICIAL CANAL CONNECTING RINGKØBING FJORD AND THE NORTH SEA ON THE DANISH WEST COAST. DESPITE ITS SIZE AND LOCATION ON THE ABSOLUTE OUTSKIRTS OF DENMARK, HVIDE SANDE IS AN ATTRACTIVE CENTRE FOR VARIOUS BUSINESSES. TOURISM IS A MAJOR CONTRIBUTOR TO THE LOCAL ECONOMY, WITH MAINLY GERMAN, DANISH, SCANDINAVIAN AND DUTCH TOURISTS VISITING THE AREA.

// DENMARK // CONSTRUCTION & INDUSTRY

Every year, personnel and machinery from Torben Rafn A/S transport hundreds of house modules across Denmark so that other companies in the BMS Group can unload them and set them up. Torben Rafn A/S also has units that transport construction machinery in Denmark almost exclusively.

Although Torben Rafn A/S is a company based in Denmark, it has transports around Europe every week.

An excellent example of one of the many widely varied major transports that Torben Rafn A/S takes care of is a task carried out for Nikon Industries. This company, specialised in the manufacturing of aluminium and steel structures, had ordered the relocation of a couple of pretty bulky compo-

the size of the freight. Torben Rafn A/S, in collaboration with other members of the BMS Group, therefore chose to put together a solution with a combination of

**TORBEN RAFN A/S IS A MODERN HAULAGE COMPANY WITHIN THE BMS GROUP. IT HAS MORE THAN 20 TRACTOR UNITS, BLOCK SEMI-TRAILERS AND AXLES FOR MODULAR HEAVY HAULIERS, INCLUDING EQUIPMENT SUCH AS BEDS, TOWER MODULES, BOILER DECKS, SPACERS, TURNTABLES, ROAD TRAIN EQUIPMENT, AND BOGIE EQUIPMENT.**

ship charter, cranes and land transport in both Hvide Sande and Esbjerg. After thoroughly reviewing the route, the necessary preparations were made in places where problems would present.



nents between the cities of Hvide Sande and Esbjerg on the Danish west coast.

Initially, an attempt was made to find a route by road between the two locations, but this had to be abandoned due to

In Hvide Sande, the transports were completed in a matter of hours on a late summer evening. There were quite a few spectators in the town, but everything went as planned and to the least possible inconvenience to traffic.



# A STORM NAMED HANS CAME BY

The Norwegian river system forms a complex network of rivers, lakes and fjords stretching through the country. They play an important role in hydrology, transport, and natural resource utilisation through, among other things, hydropower.

## // NORWAY // INFRASTRUCTURE

A storm named Hans may sound quite friendly, but that wasn't exactly the case when it swept over part of Scandinavia in August 2023. Norway's southern regions were hit the hardest by 100-120mm of rain falling in one day. It saturated the soil with water – and because Norway is characterised by mountains with steep, hard sides, the water gathered in a funnel and was led with great force further down into the rivers. In many places, they burst their banks, and in the case of the river Lågen, this led, among other things, to the collapse of the Randklev railway bridge.

As the 172.5m long steel bridge is a central part of the Dovre Railway, which connects Oslo with Norway's fourth largest city Trondheim, action had to be taken quickly. The state-owned company Bane NOR, responsible for the operation, maintenance, and construction of railways throughout Norway, contacted several companies to solve the task. Some suggested using a number of smaller cranes, while BMS Heavy Cranes AS and Crane Norway Group AS recommended a Liebherr LR 11350. This solution was ultimately chosen as, in Bane NOR's opinion, it was the best in terms of both personnel safety and environmental considerations.

The starting point for the crane crew was that the large volumes of water had destroyed the middle of the bridge foundation, so two bridge elements of some 270t each lay in the water and had to be lifted ashore for inspection and, if possible, reuse.

As there were no cranes as large as a Liebherr LR 11350 in Norway, Bane NOR rented a Danish crane through BMS Heavy Cranes AS, while Crane Norway Group AS mounted the crane and lifted the bridge elements.

In connection with the execution of the task, a filling was established approximately 25m out into the river on which the crane was to stand. From here, it could lift the elements safely ashore with a lifting capacity of 329t and a crane boom of 84m.

As if the storm Hans were not enough, the lift itself had to be carried out in snowy weather and minus 8-10 degrees Celsius.





# AT WORK ALL YEAR ROUND



## // DENMARK // CONSTRUCTION

Equipment and personnel from the BMS A/S department in Aalborg, Denmark, are in action almost every day of the year. This also applies when the darkness of winter descends over the part of Denmark where the company belongs, and there are only a few hours of daylight to work with.

An excellent example of this is a task carried out shortly before Christmas in 2023 when the owner of a private villa wanted to replace some old windows with new bigger and more energy efficient ones. The contractor hired to install the new windows called upon BMS A/S to assist in the handling of the new windows which with three layers of glass was much heavier than the old ones.

The four new windows had to be installed under the gable roof 2.5 meters in from the end of the house. Not an easy task because normally the suction yoke hangs directly from the crane hook but because of the circumstances in this job that was not possible. In addition, the crane needed to have a long enough outreach but also be able to lift enough at the distance.

Therefore, a Palfinger 200tm truck-mounted crane fitted with a balancing yoke and a vacuum yoke for mounting windows was selected for the task. The crane's reach was approximately 30m, which was sufficient to cover the distance from the curb to the back of the villa with 1.8 ton total in the hook.



Because of Denmark's northern location, there are significant seasonal variations in daylight: short days during the winter with sunrise coming around 8:45 am and sunset at 3:45 pm (standard time), as well as long summer days with sunrise at 4:30 am and sunset around 10 pm (daylight saving time).



# MASSIVE AUSTRALIAN JOB AT THE HALFWAY MARK

ALL THROUGH 2023, BMS HEAVY CRANES AUSTRALIA PTD. LTD. WORKED ON THE MACINTYRE WIND FARM IN QUEENSLAND, A MASSIVE PROJECT CONSISTING OF 162 NORDEX DELTA 4000-N163/5.7 WIND TURBINES WITH A TIP HEIGHT OF UP TO 230M.

## // AUSTRALIA // ONSHORE WIND

By 1 December 2023, 81 turbines were installed, achieving the halfway mark on the project. This equates to 73,900mt lifted, 109,300 bolts installed, and 3,300 plant compliance checks.

The MacIntyre Wind Farm is developed and owned under a joint venture arrangement by ACCIONA Energía and Ark Energy, the renewable energy arm of Korea Zinc.

Over the last 12 months, BMS Heavy Cranes Australia Ptd. Ltd. has built a strong working partnership with the ACCIONA Energía team both on-site and off-site, with an honest, pragmatic, and best-for-project approach.

BMS Heavy Cranes Australia Ptd. Ltd. and ACCIONA Energía have worked closely in setting targets for the project. This has meant early mobilisation, accelerated schedule, nightshift crews, and increased simultaneous operations with other contractors. In this context, it is highly positive that everyone involved has worked as a project team to find solutions in a challenging environment. This applies not only to BMS Heavy Cranes Australia Ptd. Ltd. but also to the project partner Professional Wind Services and to ACCIONA

Energía. Indeed, this is the situation across the board from operators, installation technicians, quality, safety, and management.

Another positive is that ACCIONA Energía has been very agile in taking decisive action, changing things that have not worked and trying new ideas. This is very welcome for a solutions-driven company like BMS Heavy Cranes Australia Ptd. Ltd.

At any time, BMS Heavy Cranes Australia Ptd. Ltd. and Professional Wind Services have around 135 people working at the MacIntyre Wind Farm, a number of them on two nightshift crews.

The MacIntyre site is vast, covering over 300sq.km, so the longest relocation between hardstands has been over 20km. By the time the project is finished, BMS Heavy Cranes Australia Ptd. Ltd. will have relocated the main cranes over 460km. The terrain is often hilly, with gradients over 18 per cent, impacting relocations and component deliveries.

The characteristic hot weather in Queensland has presented an additional layer of difficulty by raising road temperatures and occasionally hindering deliveries.

Other wildlife and weather challenges on site have included dealing with bee swarms, bull ants, camels on hardstands, a bushfire evacuation and snakes.

As eastern Australia encountered severe flooding during the mobilisation of the cranes, normal inland transport routes were blocked. Therefore, BMS Heavy Cranes Australia Ptd. Ltd. engaged a third-party transport expert to assist with specialised route planning in real-time and expedite the necessary permits. At one point, it was even considered putting a Liebherr LG1750 on board an Antonov cargo aircraft to get across the flooding to meet the commitments to the client.

Looking back from the halfway mark, there have indeed been many challenges. However, there is also good reason to celebrate the successes and enormous effort of everyone involved so far. BMS Heavy Cranes Australia Ptd. Ltd. continues working towards finishing the project strongly and hopes to build a long partnership with ACCIONA Energía as a preferred supplier for heavy cranes in Australia for future projects.

BMS Heavy Cranes Australia Ptd. Ltd. is currently running three Liebherr LG1750 SX main cranes, a Liebherr LTM1750 pre-assembly crane, and Liebherr LTM1250 offloading cranes at the MacIntyre Wind Farm.







// DENMARK  
// PEOPLE



# PRACTICAL WORK GIVES THE NECESSARY BALLAST

As the world's 5th largest and Europe's 3rd largest crane company with operations on five continents so far, it is evident that the BMS Group has a great need for well-trained employees. In many cases, personnel with experience from other companies and industries are employed, but the BMS Group is also itself responsible for training crane operators.

An example of this can be found at BMS Odense, which is one of the BMS Group's branches in Denmark. Christian Claudi Thomsen

(33) was recently trained as a crane operator after being responsible for a 48m mobile tower crane during his apprenticeship.

Christian Claudi Thomsen studied at the local vocational training centre, but it is at least as much the practical work in the company that has given him the necessary ballast:

"My colleagues have been really good at instructing and helping me along the way. Of course, you learn a lot at school, but it is completely different when the old foxes in

the profession help you. It's just a matter of absorbing it all, and it's not difficult when you're trained in a good workplace with good colleagues."

Before joining BMS Odense, Christian Claudi Thomsen worked as a carpenter and floor layer. He is confident that this prior insight into the fields of work of other craftsmen has been an excellent help to him in his new employment. Regional Manager Kenneth Christensen from BMS Odense explains that the BMS Group's companies

with approximately 20 trainees per year are, by Danish standards, a significant player in the apprenticeship area – and very involved in the training of the new employees:

"We help fill the school schedule with things we think are important in a crane operator education so that the student is equipped to work independently. Truck-mounted cranes, mobile cranes, mobile tower cranes, ballast transport, steel plates, jacking and skidding – the education covers all these topics before the exam."

The local vocational training centre is one of the very few places in Denmark that trains crane operators. Among other things, the school has a crane simulator donated by the BMS Group, and the company often supplies a mobile crane for the exam period.

"In all the BMS departments in Denmark, we have several student mentors whom the students follow regularly for three to six months at the beginning of their education. These mentors have completed a course where they, among other

things, have been instructed in how to talk to young people because no one is the same and the learning curve is different from student to student", says Kenneth Christensen:

"I think it's super cool that we at the BMS Group can 'educate' our students in the way we do – especially when we get to the exam and proudly see that a student gets top marks."



# YOUR CONNECTION TO CRANES, LIFTS AND MORE

// **BMS A/S**  
Denmark  
Group HQ: Aalborg

// **BMS Krane GmbH**  
Germany  
HQ: Harrislee

// **BMS Heavy Cranes  
UK Ltd.**  
United Kingdom  
HQ: Huntingdon

// **BMS Lifting Ltd**  
United Kingdom  
HQ: Brough

// **BMS Heavy Cranes  
Australia Ptd. Ltd.**  
Australia  
HQ: Melbourne

// **BMS Heavy Cranes A/S**  
Denmark  
HQ: Nørresundby

// **BMS Heavy Cranes Inc.**  
USA  
HQ: Dallas

// **BMS Heavy Cranes  
Iberica S.L.**  
Spain  
HQ: Madrid

// **BMS Heavy Cranes  
Sp. Z.o.o**  
Poland  
HQ: Gorzów Wielkopolski

// **BMS Heavy Cranes  
Vietnam Co. Ltd.**  
Vietnam  
HQ: Hanoi City

// **Crane Norway Group AS**  
Norway  
HQ: Stavanger  
[www.cranenorway.com](http://www.cranenorway.com)

// **BMS Heavy Cranes Oy**  
Finland  
HQ: Ulvila

// **BMS Heavy Cranes B.V.**  
Netherlands  
HQ: Eindhoven

// **BMS Heavy  
Cranes South Africa**  
South Africa  
HQ: Johannesburg

// **BMS Heavy Cranes  
Taiwan Ltd.**  
Taiwan  
HQ: Taichung

// **BMS Kranar AB**  
Sweden  
HQ: Arlöv

// **BMS Heavy Cranes LLC**  
Ukraine  
HQ: Kyiv

// **BMS Heavy  
Cranes Ltd.**  
Ireland  
HQ: Dublin

// **BMS Africa  
Cranes SL**  
Africa  
HQ: Malaga

# BMS

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