BULK TERMINALS *international*

SPRING 2022

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

END OF THE ROAD
UK puts a stop to Konecranes and Cargotec merger

NEW HORIZONS
Green initiatives that put safety at the forefront

CROP IN CRISIS
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CHALLENGING TIMES

BY SANDRA SPEARES

With the war in Ukraine and resulting sanctions on Russia, port operators have many new issues to grapple with

Port operators certainly have some challenging times ahead as the industry seeks to face up the Ukraine crisis. This sees many companies not only having to adjust to potential sanctions affecting business with Russia, but also the practicalities of dealing with Russian ships visiting their port facilities. This comes on top of existing difficulties posed by the pandemic, as well as deciding on how to deal with crewing issues on board ships. There is, of course, the ongoing move to green energy and how quickly the industry puts the necessary infrastructure in place.

One issue raised recently by surveyors Van Ameyde McAuslands was that seized maritime assets could pose a "significant risk" to ports, harbours and marinas if there is no requirement to ensure mega yachts detained under sanction rules are properly maintained, made safe or deactivated.

The issue of collective bans on the entry of Russian ships into ports around the EU has been on the agenda in recent weeks, as have discussions on which products might be excluded from sanctions – a key area being oil and gas supplies, medicines and humanitarian aid. Insurance and other services sanctions applied to ships affected by the bans have also been announced. It remains to be seen which bulk cargoes are most affected.

Such logistical difficulties come on top of the fact that ports in the south of Ukraine have been under concentrated bombardment by Russian forces aiming to secure the Black Sea coastline of the country.

As the shipping industry seeks to handle the shifting pattern of trade resulting from the Ukraine situation, ports will need to adjust to a whole new raft of logistical difficulties, added to those already been felt by the ongoing effects of the pandemic and the difficulties of crew transfers and other issues.

Lockdowns in ports such as Shanghai resulting from a further surge in pandemic levels will also have an effect on key trading areas for bulk cargoes.

It is also hard to assess what the effect will be on energy transition in the shorter term as, while countries will be key to secure supplies of energy that are unaffected by any sanctions at present, the speed at which a shift to new greener fuels can be made will not necessarily pick up the slack in time.

That said, the industry is committed to coming up with green solutions and the pressure is on to meet and hopefully exceed targets laid down by new regulations. Operators have also been adjusting their practices following the introduction of new rules in areas such as ballast water to ensure that these will meet practical, as well as regulatory requirements.

Those operating in ports in the bulk sector are continuing to come up with new ways of doing business, to improve efficiency, cut costs and ensure practices meet safety requirements for port workers and crew members.

Despite the challenges businesses face, there continue to be plenty of innovative new practices and procedures at the centre of port activities to make them safer and help operators meet targets more effectively.

We hope you enjoy reading about some of these new innovations in the bulk arena in this edition of *Bulk Terminals International*.

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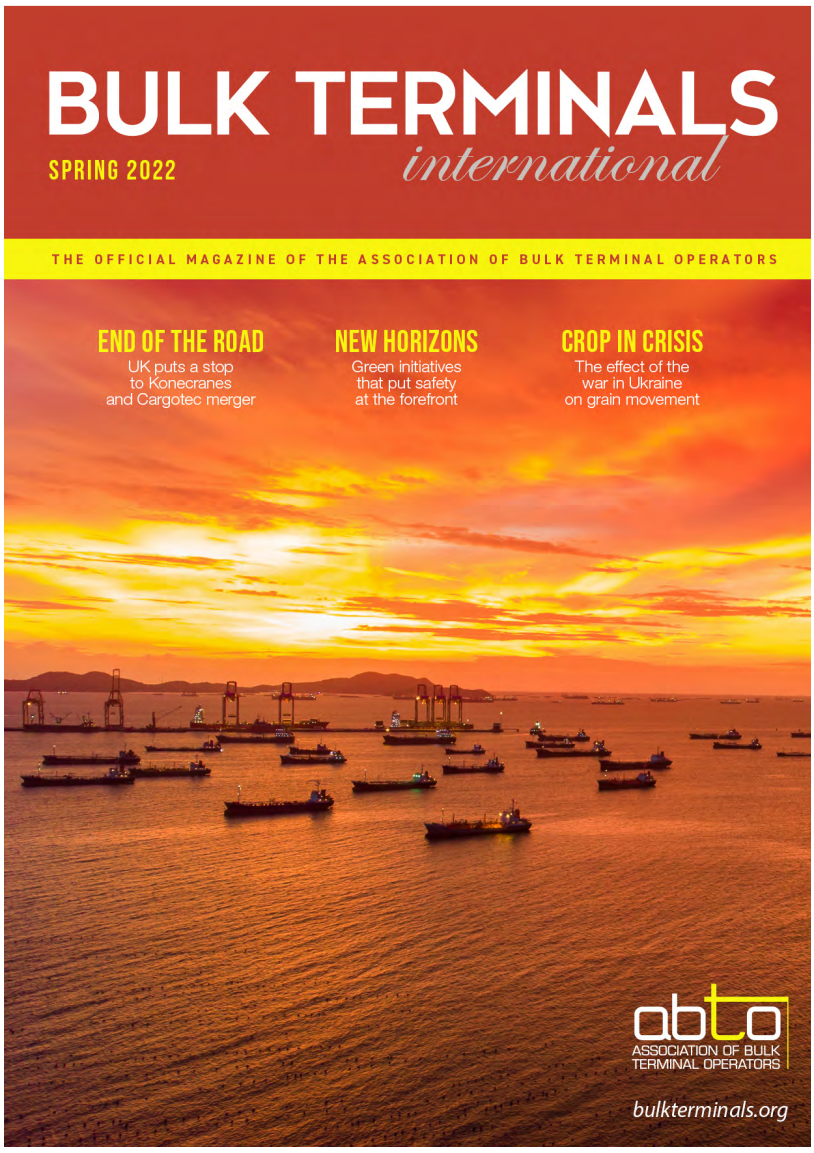

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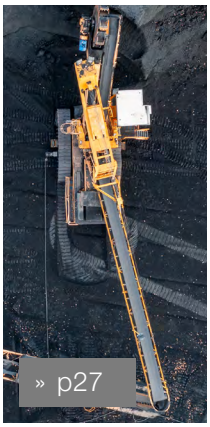
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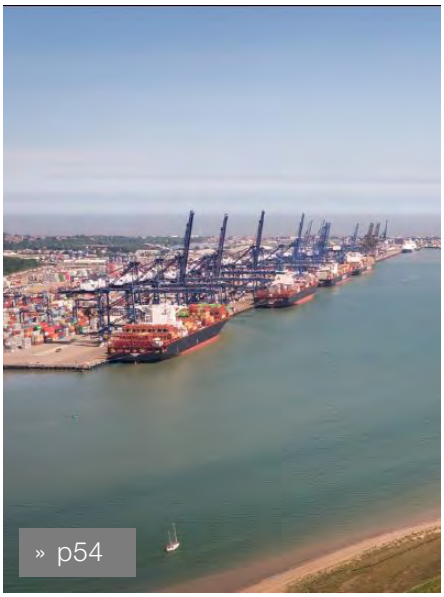
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ALL EYES ON UKRAINE

SIMON GUTTERIDGE, CHIEF EXECUTIVE ABTO

The appalling images from Ukraine and the suffering of its people, together with the heroic defence its armed forces are putting up, have dominated all our thoughts since Russia's invasion

Against the background of what the people of Ukraine are going through it seems trite to focus on the impact that war is having – and will have in the future – on trade flows of bulk products, particularly grain and also coal.

The world grain trade is worth roughly $120bn. Some 15m tons of corn from the Ukraine's harvest should be reaching the markets now. Ukraine and Russia account for more than 30% of global wheat supplies.

"Zero [grain] is currently being exported from the ports of Ukraine — nothing is leaving the country at all," Jörg-Simon Immerz, head of the grain trading at BayWa, told the Deutsche Presse-Agentur GmbH (dpa) news agency.

Although it has been reported that Ukraine has banned the export of wheat to ensure it has enough to feed its own people during the war, Kateryna Rybachenko, deputy chair of the Ukrainian Agribusiness Club has said that a very small quantity is being exported by rail via Poland and Romania.

This is an expensive and laborious process since Ukraine's railway gauge is wider than the rest of Europe. These exports should be going through the Black Sea ports of Odessa and Mykolaiv. Sanctions mean that paying for Russian grain is all but impossible. Added to which the Russian Navy is blocking ships, including those carrying grain exports, from leaving the Black Sea. The sea of Azov is similarly blockaded.

For those ships brave enough to venture into these waters there is now the risk of floating mines. Quite what maritime organisations calling for governments to ensure safe passage to keep supply chains running will achieve is difficult to see, short of the deployment of western and NATO minesweeping resources, together with protective support. In view of the latter's refusal to allow Poland to give Ukraine Soviet-era fighter jets that Ukrainian pilots would be able to fly into action straight way, no such deployment seems remotely likely.

Ships have also come under direct fire. Panama reported that several Panamanian-flagged ships have been sunk or damaged having come under Russian fire since the invasion of Ukraine started. *The Guardian* newspaper reported that ships from several other nations had been hit, including Bangladesh and Estonia, with at least one fatality.

Cutting off this major part of the world's grain supply is having a huge impact in North Africa and the Middle East. They are struggling to find alternative supplies and, in some cases, cutting back orders as prices soar.

Egypt, for instance, obtains 80% of its imports from Russia and Ukraine. It is the world's biggest wheat importer and is cutting back purchases, as prices reached $100 per ton with the inclusion of freight. Rates will make the situation worse in war-torn Yemen. Things are coming to a head in Lebanon.

For now, other suppliers are stepping in and new trade flows are emerging. India is starting to export, mainly to Asia. Brazil exported more in the first three months of this year than the whole of last year. The US is exporting again to Spain. Egypt is in the market for Argentinian wheat and may swap fertiliser for Romanian grain. Algeria is buying French wheat again.

These trades may ameliorate matters in the short term, but Dan Basse, president of market research firm AgResource, predicts that if the war is not over by the summer when wheat exports from the Black Sea region pick up "then you start running into problems. That's when the world starts to see shortfalls."

At the beginning of the war, Ukrainian President Zelensky urged farmers to start to sow, where it was safe to do so. By the summer, will the Ukrainian harvest be large enough to supply needs, let alone be able to reach market? Quite possibly not. More recently, he told the Dutch parliament that the Russians are

"doing everything to ruin our agriculture potential and to provoke a food crisis not only in Ukraine but in the world". On top of diesel and fertiliser shortages (crops sown last autumn need fertilising now), farm equipment has been stolen or destroyed and the Russians have sown landmines in fields.

The rest of the world will also be short of fertilisers, such as urea and potash. Russia is one of the main suppliers of these. The country previously stopped exporting one type of fertiliser, ammonium nitrate, ostensibly to protect its own farmers from rising costs. It has now said it will suspend further fertiliser exports. While these have not been sanctioned yet, Russia's suspension of fertiliser exports will, to varying degrees, affect every grain and wheat growing area.

So, whatever the short- to medium-term impacts of the war, the cumulative effects of less production in Ukraine, a shortage of fertilisers for current and future sowings, plus Russian weaponisation of its own crop, will be that the cost of grain will be higher in the future.

While much of the focus has been on grain, Reuters reports that EU countries hunt for global coal stocks as a ban on Russian coal looms – although that will not take full effect until mid-August, a month later than expected following pressure from Germany. That said, in all probability Russia's Chinese and Indian allies will make good any shortfall to the Russian exchequer then – the former especially in view of their spat with Australia.

The effects of the war in Ukraine are bound to feature heavily in discussions this October at our annual conference: *Bulk Terminals 2022 Riga*, kindly hosted by the Freeport of Riga Authority. The conference proper from Wednesday 5-Thursday 6 October will be preceded by a pre-conference terminal visit for early arrivals on Tuesday 4 October

The conference always sets the scene with an analysis of bulk markets. It continues with a full programme focused on the concerns of operators, each year offering sound practical solutions for improving safety; streamlining operations and digitalisation; development opportunities and ensuring environmental protection. Naturally, the ongoing effect of covid-19 on bulk terminal operations as well as the fallout from the war in Ukraine will also be covered.

We had hoped to visit Riga last year, but had to move the conference online. Given the importance to Latvian and Baltic ports of transit cargoes, rail and transport connectivity will also be covered in *Bulk Terminals 2022 Riga*– especially given the impact the Russian invasion of Ukraine may have had.

China's plans to ramp up export goods to Europe by rail – the much-vaunted Belt and Road initiative – have suffered a major setback. Rail shipments that pass through Russia have dropped through the floor. While the EU has not sanctioned imports passing through Russia, freight forwarders are increasingly in anticipation of this seeking alternative routes to market. Good news for shipping.

Similarly, China's dispute with Lithuania has regional and EU implications. China – as we know from their issues with Australia – is prepared to use its massive clout when it comes to trade and commodities in pursuance of political objectives.

Beijing has denied ordering a trade boycott, but the European Commission says it has evidence that China is refusing to clear Lithuanian goods through customs, rejecting import applications and pressuring EU companies to remove Lithuanian inputs from their supply chains. The EU has now taken the case to the World Trade Organization, which could take some time to resolve.

Time will tell what the outcomes of the war in Ukraine, trade disputes with China and the ongoing impact of covid-19 will be. *Bulk Terminals 2022 Riga* will examine the fallout, regionally and internationally.

It's the only event all those concerned with the bulk terminals industry need to attend this year.

Earlier this year in collaboration with our friends at The Wolfson Centre for Bulk Solids Handling Technology, we held *Biomass Operations and Handling Technologies* and *Port and Terminal Operations for Bulk Cargoes*, both online. On Tuesday 20 and Wednesday 21 September we will be holding *Understanding the Total Cost of Ownership: how to Avoid Future Problems and Buy Bulk Solids Handling Equipment Intelligently*, together with The Wolfson Centre and the Solids Handling and Processing Association.

I am grateful to IMechE for their support for all our events.

Our friends at The Wolfson Centre are also looking forward to a move back to physical events, with *Storage and Discharge of Powders* and *Bulk Materials and Pneumatic Conveying of Bulk Materials*. These two popular courses cover a variety of essential topics, giving a good base knowledge to the new recruit, or a valuable learning experience to the more experienced engineer. They will also be available online.

Similarly, one of our partner associations, the Materials Handling Engineers Association (MHEA) is delighted to announce the launch of BulkEx 22 on 18 -19 October 2022 as a physical event.

Our other partner association, ICHCA International, will be holding the next ICHCA Technical Panel meeting on 19 May 2022.

To register an interest in attending any of ABTO's events or short training courses, please contact events@bulkterminals.org +33 (0)3 21 47 72 19. Keep an eye on the Events section of our website at bulkterminals.org for developments and registration details. Follow the links in the Partners section of our website for details of their activities and events.

Enjoy our spring edition of *Bulk Terminals International*. Keep in touch and, especially in today's world, stay safe.

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WORLD NEWS ROUND-UP

The ongoing crisis in Ukraine will have far-reaching effects on the industry, according to analyst Drewry. Meanwhile, green initiatives continue apace

Shipping analyst Drewry is not the only one who has been trying to assess what the repercussions of the ongoing conflict between Russian and Ukraine will be and in a recent report on the situation said that the situation remains highly fluid, as the company has assessed the impact on the main shipping sectors.

Since the conflict started, insurance premiums for ships operating in the conflict zone have risen sharply, Drewry says, resulting in tight vessel supply in the area.

Drewry said in March that "in the short term, demand for crude and chemical tankers will increase as importers of Russian crude oil turn to distant suppliers while importers of sunflower oil will switch to soybean oil supplied by countries located further afield than Ukraine and Russia.

"While the war could dampen charter rates for dry bulk vessels in the short term by hampering grain and coal exports, in the medium-to-long term, it will negatively impact rates even in the crude and chemical sectors because of the possible contraction in overall crude oil and veg oil trades."

Clearly the global grain export market will be affected as both Russia and Ukraine are major players and grain trade out of the Black Sea region will therefore be affected with ongoing impact on the employment of dry bulk vessels.

Russia also supplied around 42% of the EU's total coal imports last year and 16% of global coal requirements, according to Drewry estimates.

"Due to the financial sanctions on Russia, arranging necessary finance for importing Russian cargo has become a tedious task for Asian importers. Given the uncertainty on how long sanctions will remain in force and how the war will unfold over the next few months, miners in other coal exporting countries like Australia, the US, Canada and South Africa are also unlikely to lift production to counterbalance Russia's share in the short term.

"Consequently, coal prices have started rising, limiting the demand in Asia." The EU will be forced to switch to coal-fired power generation without access to Russian power supplies. Other commodities that may be affected include sunflower oil exports from Russia and Ukraine so trade will shift to soybean oil in the short term," Drewry says. This will mean long-haul exports from South America to India, China and Europe resulting in higher tonne-mile demand.

"Assuming that the war halts sunflower oil exports from Russia and Ukraine for an extended period, it will be difficult for sunflower oil importers to find an alternative supply of vegetable oil as sunflower oil exports from these two countries contribute about 9% to the global vegetable oil trade. The global vegetable oil trade thus will eventually start declining, hurting tonnage demand and freight rates in the IMO-class MR tanker market."

As far as crude oil exports are concerned, in the light of sanctions, "it will be difficult for other suppliers to fill the void created by the Russian barrels. Russia accounts for about 11.5% of global supply", Drewry says.
For more information on issues resulting from the Ukraine crisis and other information, visit: drewry.co.uk

PORT MERGER

The city of Antwerp and the city of Bruges have reached an agreement to merge their respective ports Antwerp and Zeebrugge and the merger will take place at the end of April. The Belgium competition authority approved the merger in January this year. The ports will operate under the name Port of Antwerp-Bruges.

As a result of the merger, the ports will be able to strengthen their position within the global supply chain and continue their course towards sustainable growth. Furthermore, the unified port will be more resilient to the challenges of the future and will take a lead in the transition towards a low-carbon economy. The ambition is for Port of Antwerp-Bruges to become the world's first port to reconcile economy, people and climate.

The merged port will become the most important container port (157m tonnes/year), one of the largest breakbulk ports and the largest port for the throughput of vehicles in Europe. Furthermore, the port will account for more than 15% of Europe's liquid natural gas transited and it will of course remain Europe's most important chemical hub.

Antwerp is Europe's second-largest seaport, handling some 239.7m tons in 2021. This was 3.8% more than in 2020 – a new record level. In Zeebrugge, throughput increased by 4.6% to 49.2m tons in 2021.

Antwerp is located on the Scheldt River, handling containers, liquid goods, especially basic chemicals. Zeebrugge, on the other hand, is located 100km from Antwerp, directly on the North Sea coast, and handles RoRo ferries and cruise ships as well as liquefied gas and projects for large hydrogen plants. In the coming years, Belgium plans to invest in additional rail and pipeline routes between the two ports.

Antwerp and Zeebrugge aim to become centres of green hydrogen technology. An electrolysis plant with a capacity of 25mw is already being built in Zeebrugge. This will primarily draw electricity from Belgian North Sea wind farms. In addition, large terminals for the import and use of liquid hydrogen are to be built in both ports. Major investments are also planned in carbon capture, utilisation and storage.

ZEEBRUGGE SIGNS UP

SEA-LNG, the multi-sector industry coalition established to demonstrate the benefits of liquefied natural gas (LNG) as a viable marine fuel, has announced the membership of Port of Zeebrugge, which has been at the cutting-edge of LNG bunkering for decades. The Port pioneered the development of LNG bunkering in Europe, with the world's first purpose-built LNG bunkering vessel – the *Engie Zeebrugge* – commencing operations there in June 2017.

The partnership highlights the level of collaboration between ports and other key players across the LNG value chain, particularly in the EU. It is vital to continue to support infrastructure development for LNG and bioLNG now, it says, and ensure this infrastructure is in place for use with renewable synthetic LNG in the future.

By bringing together parties from across the shipping sector choosing the LNG pathway, SEA-LNG supports investment and development in the ecosystem of assets and infrastructure that allow businesses to rapidly adopt LNG as a marine fuel around the world.

Infrastructure for storing and transferring LNG marine fuel has been installed and used at the Port of Zeebrugge since 1987. The port is one of the main hubs for LNG supply in the region, receiving pipelines from Norway and the UK, and vessel imports from Qatar. The port's LNG terminal, operated by Fluxys, offers regasification and provides distribution in Belgium and across the European network in pipelines, trucks or ships. Onsite storage is equal to 9bn m^3 LNG per year.

Port of Zeebrugge has broad expertise and valuable experience

due to its long-standing and pivotal role in European LNG markets.

Peter Keller, chairman, SEA-LNG, comments: "We're pleased to welcome the innovative Port of Zeebrugge to our coalition. We look forward to working with the port and its users to continue to drive the growth of environmentally-friendly LNG-fuelled shipping in northwest Europe, creating a pathway for long term decarbonisation of the industry".

Tom Hautekiet, CEO Port of Zeebrugge adds: "Sustainability and climate protection are high on the agenda of the port authority of Zeebrugge. This new partnership with SEA-LNG will definitely offer us new opportunities to stimulate the switch to eco-friendly fuels and pursue our ambitions to become a green energy hub internationally. We look forward to working closely with all the partners involved and jointly developing new projects in which we contribute to the planet. Therefore, we can only congratulate SEA-LNG with this effective coalition."

In 2021, nearly one-third of orders for vessel newbuilds, by capacity, were powered by LNG. Globally, LNG bunkering infrastructure is growing rapidly, with Clarksons forecasting that by the end of 2022 LNG bunkering will be available in 170 ports worldwide. This growth reflects the fact that LNG is already a fuel in transition, which, with a pathway that includes drop-in carbon neutral fuels, can take shipping from today all the way to 2050. Today, LNG offers 23% reduction over oil-fuelled vessels, after 2030, a 10% increase in the carbon-neutral blend of LNG fuel, will secure an additional two years of compliance with CII regulations.

CLIMATE DAMAGE COSTS

A new report reveals that the global shipping and port industry is susceptible to billions of dollars in infrastructure damage and trade disruption from climate change impacts. Authored by RTI International, a non-profit research institute, for Environmental Defense Fund (EDF), *Act Now or Pay Later: The Costs of Climate Inaction for Ports and Shipping* explores data on climate-related disasters and projects the cost of future damages to the industry. Without ambitious action to reduce emissions, climate change impacts could cost the shipping industry up to $25bn every year by the end of the century.
Read the full report at edf.org

FUEL CELLS RULE NOTE

Class society Bureau Veritas has released a new rule note (NR 547) on fuel cell power systems on board ships. The rule note covers safety requirements for ships using any type of fuel cell technology, providing rules for the arrangement and installation of fuel cell power systems and the delivery of electrical energy.

Over the last few years, fuel cells have proved to have strong potential to help decarbonise the maritime industry. The technology, which is based on an electrochemical reaction like that in batteries, can run continuously without recharging as long as energy is provided. Fuel cells can bring significant environmental benefits, eliminating nitrogen oxide, sulphur oxide and particle emissions while reducing CO_2 emissions, compared with diesel engines.

However, this technology comes with a number of challenges that must be addressed to ensure safety. Bureau Veritas' NR 547 outlines requirements on the design, construction and installation of fuel cells systems to ensure that the safety of the ship is maintained. The aim is to identify and mitigate risks to persons on board, the environment and the structural integrity of vessels. Fuel cell systems and ship design must limit the risk of explosions, the spread of toxic chemicals and fire outbreaks.

Among the requirements outlined by NR 547, maritime stakeholders developing and using fuel cells must carefully assess the risks associated with their design, from construction to installation and operation.

SPOTLIGHT ON CORRUPTION

The Maritime Anti-Corruption Network has released the results and lessons learned from 10 years of collecting data of corrupt demands in maritime trade. This data has been collected in over a decade through MACN's Anonymous Incident Reporting platform, a system designed to allow the maritime industry to report when it has been faced with corrupt demands in ports globally. To date, the reporting system has close to 50,000 incidents reported in over 1,000 ports, across 149 countries.

This report – the first of its kind covering maritime corruption – provides a unique insight into the scale, type, and volume of corruption in the maritime supply chain. MACN is pleased to share insights and experiences of why data collection is important to drive change and reduce corruption.

Across the world's ports, corrupt demands are most commonly made for cigarettes, alcohol, and cash. While multiple actors are reportedly involved in making corrupt demands, the consequence of rejecting such demands is similar across the world's ports – delay of the vessel, which has knock-on detrimental effects.

"The cost of corrupt demands, and the repercussions for refusing them, have massive consequences for the industry and trade," says MACN CEO, Cecilia Müller Torbrand.

"At a time when supply chains and economies are under increasing pressure, corruption is having a real impact on trade and livelihoods – onshore and at sea."

During the covid-19 pandemic, MACN noticed that incidents dropped in numbers, most likely due to reduced interaction with port authorities and increased adoption of electronic systems for vessel clearance.

"Despite increased awareness of MACN's reporting system globally, we see a slight reduction in reporting. We can carefully draw the conclusion that some of the mitigating actions taken to reduce health risks are also having a positive effect by limiting the person-to-person interaction usually associated with corrupt demands. We hope this trend will continue in the post-covid era," says Müller Torbrand.
To see the report in full,visit: tinyurl.com/MACNReport

CARBON VENTURE

Value Maritime, the emission-reducing tech entrepreneurs, and Carbon Collectors, specialists in collecting, transporting and storing CO_2 safely, will together perform a conceptual design study for a new fleet of tugs to be built by Carbon Collectors.

Value Maritime will work together with Carbon Collectors to investigate the feasibility of capturing carbon onboard their new marine gas oil-fuelled tug vessels, using VM's unique technology to ultimately ensure that Carbon Collectors' fleet is CO_2 neutral from the start.

Jointly, the two teams will investigate and determine:

- The required installed power of the diesel generators.
- The estimated CAPEX / OPEX.
- The best discharge options for the captured CO_2.
- The optimal solution for unloading and underground storage.

Value Maritime developed Filtree, a system that cleans both air and water from all ship types and includes an integrated carbon capture feature making today's fleet (newbuild or retrofit) not only sustainable today but future-proof for tomorrow.

The CO_2 capture feature removes and stores carbon from the vessel's exhaust gases and uses it to charge a CO_2 battery, which can be offloaded and re-used to facilitate the growth of crops, used to enrich future fuels or it can be safely stored until needed – a truly clean circular solution.

GREEN FUELS JOINT

In the presence of the Egyptian prime minister, a memorandum of understanding with Maersk was signed recently in a joint bid to further accelerate the supply of green fuels and the global transformation to net-zero shipping.

This partnership follows six fuel sourcing partnerships announced earlier this year, and with it Maersk joins forces with the General Authority for Suez Canal Economic Zone (SCZone), the Egyptian New and Renewable Energy Authority (NREA), the Egyptian Electricity Transmission Company (EETC), and the Sovereign Fund of Egypt for Investment and Development (TSFE).

"Egypt has excellent conditions for renewable energy production and ambitions to become global leader in the green energy value chain. We are very excited to be able to explore options together, drawing on our more than 100 years of business relations in the country," says Henriette Hallberg Thygesen, chief executive, fleet and strategic brands at Maersk.

The parties will be conducting a feasibility study before the end of 2022 to examine an Egypt-based hydrogen and green marine fuel production, powered by renewable energy with Maersk as committed offtaker.

The availability of green energy and fuel in sufficient quantities and at cost-competitive price levels is the single biggest challenge to the decarbonisation of global shipping.

ENERGY ANSWERS

The deadline for compliance with the IMO's Energy Efficiency Existing Ship Index (EEXI) is looming. Are charterparties flexible enough for the transition phase? How should parties approach the new time charterparties which they are entering into to cater for the vessel's EEXI compliance? Gard takes a closer look at these questions.
Visit: gard.no

BLOCKED MERGER

The UK Competition and Markets Authority (CMA) has blocked the merger between Cargotec and Konecranes.

According to the CMA's final report issued recently, the remedies – which would have removed all overlapping businesses of the two companies and were accepted by the European Commission – would not be effective in addressing the CMA's concerns and thus the planned merger between Cargotec and Konecranes cannot be completed.

The completion of the planned merger would have required approvals from all relevant competition authorities. Thus, Cargotec and Konecranes have decided to cancel the planned merger.

Meanwhile, MacGregor, part of Cargotec, has been selected to supply comprehensive packages of RoRo equipment for four Aurora class Pure Car and Truck Carriers (PCTCs) to be built by China Merchant Heavy Industries (Jiangsu) for the Norwegian owner, Höegh Autoliners.

COLLISION ADVICE

A raft of consequences faces shipowners, insurers, and adjusters in dealing with the aftermath of ship collisions, speakers at the latest joint seminar in London of the Association of Average Adjusters and the International Underwriting Association made clear.

Casualties harbour potential cost implications for salvage, wreck removal, cargo damage, damage to ship, oil pollution, crew and passenger personal injury, limitation of liability, damage to fixed and floating objects, and claims from port authorities.

Alistair Johnston, partner at CJC Law, Chris Zavos, partner with Kennedys, and Michiel Starmans, director of the legal department at Amsterdam-based Spliethoff Group, set out in their talk what they called practical aspects of collision claims. Starmans is current chairman of the Association of Average Adjusters.

The three speakers outlined how, amid the complex interplay of factors, early assessments can be made as to which ship might be to blame, the role of the Collision Regulations,and where parties might commence court proceedings if needed.

BRUKS SIWERTELL ORDER

Bruks Siwertell has received an order from Swecem , a subsidiary of Peab Group's Swerock, for a next-generation Siwertell road-mobile

ship unloader. It will secure environmentally-friendly, dust-free material handling for the Merit producer and cement purchaser in the port of Helsingborg, Sweden.

"Environmental protection is a key consideration for Swecem's operations and it adheres to very strict standards," says Jörgen Ojeda, sales director mobile unloaders, Bruks Siwertell. "With this in mind, Swecem was looking for a ship unloading solution that could deliver continuously high through-ship capacities, but at the same time, ensure enclosed dry bulk material handling to minimise any environmental impact.

"This is also an important order because it is part of a growing picture that will see all operators taking more sustainable steps," Ojeda continues.

"Sweden has a mounting legislative drive to reduce the environmental impact of the country's cement industry. However, the same industry has to maintain, and even exceed, current ship unloading capabilities to keep up with growth, posing a potential future gap in supply and demand. Our systems can, and will be, part of this positive change."

Swecem's new Siwertell 10 000 S next-generation road-mobile unit will have a continuous cement unloading capacity of 300t/h and is able to discharge vessels up to around 10,000dwt. It will be delivered fully assembled to the operator's import terminal in May 2022.

PSR ABOLISHED

The British Ports Association has welcomed moves by the UK Department for Transport to abolish the port services regulation (PSR). The BPA has consistently lobbied against the PSR since it was introduced by the European Commission 10 years ago.

A consultation has been opened seeking views on the government's plans to remove legislation regulating the provision of services at ports, such as on bunkering and towage, as well as unnecessary rules on financial transparency.

The regulations were implanted into UK law prior to the UK's departure from the European Union and ministers have consistently supported the removal of the regulations.

BULK TERMINALS RIGA 2022

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HITTING THE BRAKES

The UK Competition and Markets Authority has pulled the plug on the planned merger between Cargotec and Konecranes. Meanwhile, a raft of new contracts have given the industry a lift

Big players in the port sector, Cargotec and Konecranes have had their planned merger blocked by the UK's competition authority and are now re-evaluating their strategy in the market.

According to the UK Competition and Markets Authority's (CMA) final report issued at the end of March, the remedies – which would have removed all overlapping businesses of the two companies and were accepted by the European Commission – would not be effective in addressing the CMA's concerns and thus the planned merger between Cargotec and Konecranes cannot be completed. The completion of the planned merger would have required approvals from all relevant competition authorities. Therefore, Cargotec and Konecranes have decided to cancel the planned merger.

Cargotec and Konecranes obtained clearances for the planned merger from numerous competition authorities. The European Commission conditionally approved the planned merger between them on the basis of the same remedy package rejected by the CMA, which comprised commitments to divest Konecranes Lift Truck business and Kalmar Automation Solutions. In

addition, the State Administration for Market Regulation (the competition authority in China) and nine other jurisdictions have approved the planned merger.

As a consequence of the CMA's negative final report, the boards of directors at Cargotec and Konecranes have therefore concluded that it is in the best interest of each company and their respective shareholders that the merger is cancelled.

Ilkka Herlin, chairman of Cargotec says: "The board of Cargotec is convinced that the merger would have created substantial value for the entire industry, as well as shareholders, by improving sustainable material flow. The combination would have created a strong European company enabling accelerated shared abilities to innovate without harming competition. We have done all we could to realise the merger and are disappointed that our plans have had to be abandoned. After a long and extensive regulatory review process and merger planning preparations, it is time to shift our full focus on executing Cargotec's own strategy and value-creation opportunities."

Christoph Vitzthum, chairman of Konecranes adds: "The combination of Konecranes and Cargotec, as planned and announced on 1 October 2020, would have created a company that would have been greater than the sum of its parts. The merger control process has been extensive and the investigations thorough, and Konecranes board of directors is disappointed that the remedy package offered did not satisfy the concerns of all regulators. At the same time, we believe that further remedies would have not been in the best interest of Konecranes' shareholders as they would have changed the strategic rationale of the transaction. Konecranes will continue to drive its strategy and pursue value-creation potential on a standalone basis."

Cargotec and Konecranes will immediately cease the pursuit of the merger and the related processes and continue to operate separately as fully independent companies.

THE WAY FORWARD

Following the failure of the planned merger with Konecranes, Cargotec has announced that it is refocusing its strategy for higher financial performance through sustainability and growth in profitable core businesses. It plans to exit Kalmar's heavy cranes business and start evaluating strategic options for MacGregor

The company says: "Cargotec will initiate an evaluation of strategic options of MacGregor, including a potential sale of the business. The evaluation covers the whole business area inclusive of its merchant, offshore and services businesses. MacGregor is global leader in sustainable maritime cargo and load handling solutions.

"Cargotec will also shift Kalmar's focus towards mobile solutions and will start planning an exit from the heavy port cranes business. Going forward, Kalmar would offer industry shaping, eco-efficient cargo handling equipment and lifecycle services in the mobile equipment product categories, straddle and shuttle carriers, as well as Bromma spreaders."

Hiab is the world's leading provider of on-road load handling equipment, intelligent services, smart and connected solutions and will be at the core of Cargotec's strategy. Hiab's business portfolio will remain the same, but Cargotec plans to accelerate the development of Hiab's M&A pipeline.

In addition to the planned actions, Cargotec plans to review its operational model to support the refocused group. Cargotec's capital allocation priorities for the coming 12 months are planned to be acceleration of M&A, research and development investments in electrification, robotics and digitalisation, as well as Cargotec's climate programme, Mission Climate.

"This strategic direction and the refocusing of Cargotec demonstrate our commitment to profitable growth, sustainability and the excellence of our people adapting to new challenges. The board is convinced that it is the right time to ensure an accelerated but orderly transition to an even more profitable and futureproof business", says Cargotec's chairman Ilkka Herlin.

"Cargotec refined its strategy in April 2021 with sustainability and profitable growth as breakthrough objectives. Our vision remains, but we will further focus our businesses. That would enable us to accelerate M&A and R&D investments in our profitable core and I'm confident that with our refocused strategic direction we will be well positioned to capture growth in industry trends of electrification, automation and digitalisation," says Cargotec's CEO Mika Vehviläinen.

"With this planned balanced portfolio we will support our customers with lifecycle services as well as market leading equipment and technology in our profitable core businesses Hiab and refocused Kalmar. These are recurring businesses with already above 10% comparable operating profit margins. The markets are structurally attractive and we hold leading market positions there. We are now planning to exit or evaluate strategic options for the project businesses where we have been less successful,"Vehviläinen concludes.

ROBOTIC SOLUTIONS

Kalmar, part of Cargotec, has signed a joint development agreement with Coast Autonomous to speed up the development and launch of robotic solutions across the mobile equipment offering. To emphasise the common long-term interests of the partnership between the companies, Kalmar has become a minority shareholder of Coast Autonomous.

The joint development agreement and investment in Coast Autonomous follows the introduction of Kalmar Robotic Portfolio – a future range of intelligent, flexible and autonomous mobile equipment solutions designed to improve safety, eco-efficiency and productivity of cargo and material handling in ports and terminals, distribution centres and heavy logistics.

Coast Autonomous is an autonomous driving technology start-up based in California , providing mobility solutions to move people and goods in urban and industrial environments. The company has developed a proprietary

autonomous vehicle system that includes mapping and localisation, robotics and artificial intelligence, fleet management and supervision.

In the initial phase, the partnership between Kalmar and Coast Autonomous will focus on the autonomous driving functionality of the Kalmar RoboTractor – an autonomous terminal tractor.

Lasse Eriksson, vice president of technology at Kalmar, comments: "The partnership between Kalmar and Coast Autonomous highlights the importance of collaboration in our industry, especially in the area of robotics. Coast's unique technology that addresses safety on each level and the broad experience in autonomous driving solutions provides us with a great opportunity to accelerate the robotisation journey and the launch of Kalmar Robotic Portfolio.

"As safety is the key criteria in everything we do, we are excited about the collaboration with Coast and the opportunity to integrate their safe autonomous driving solutions that will enable autonomous operation in mixed-traffic environments in the future."

Adrian Sussmann, president of Coast Autonomous adds: "Our technologists have been focused for more than 20 years on developing safe autonomous vehicle systems for pedestrian and industrial environments. The collaboration with Kalmar is the perfect application for our technology and we are excited to integrate our robotic solutions into their best-in-class vehicles, bringing improved safety and efficiency to the market.

"We are at the dawn of a new era in robotics and the partnership with Kalmar validates our belief that safe autonomous vehicles will proliferate rapidly in industrial settings providing tremendous benefit and value for all."

SHORT RAIL SOLUTION

Gantrex has devised a new solution to improve crane performance.

The Gantrex HingeGuard Short Rail is a self-damping short rail solution designed to support the trolley track constraints and to easily enable the boom opening at the hinge joint of the crane. The patented solution has the particular characteristic of extending the soft mounting features used for the fixing systems to the hinge.

It is a tailor-made system solution, completely adapted to individual circumstances, that fits all ship-to-shore cranes, can be installed with no additional impact on installation timing to shorten operational downtimes and delivers substantial noise reduction, the company says.

With on-site analysis and measurements based on a first prototype, Gantrex has gained a precise understanding about short rail systems and challenges. The company says that plus points of the new system include: extended benefits of the soft mounting system to the hinge; reduced vibration (by up to 30%) to the benefit of the entire crane and driver comfort; reduced rail wear; and minimisation of standard geometric imperfections. It also eliminates the need to replace the short rail between long rail replacements.

LIEBHERR DEVELOPMENTS

The new Liebherr crawler crane LR 1100.1 is optimised for all typical lifting applications in the 100-tonne category. It can be configured either with a main boom up to 62m, or with a main boom up to 44m, in combination with a fixed jib up to 20m.

The LR 1100.1 is fitted with the most powerful engine in its class – 230kW – to provide the necessary performance for lifting operations. Thanks to the Eco-Silent Mode, the engine speed can be reduced to a predefined level. This means that diesel consumption and noise emission are reduced. Nevertheless, the performance remains the same.

The automatic engine stop control, meanwhile, offers a further economic and environmentally friendly solution. After checking certain system functions, the engine is switched off during longer work interruptions.

The crawler crane is optimised for quick transfer between construction sites. The transport width is 2,983mm or 3,500mm, depending on whether the crane is transported with or without crawlers. At the construction site, the assembly of the LR 1100.1 is simplified through the self-assembly system and radio remote control.

Radio remote control allows the crane operator a high degree of flexibility and additional safety even during operation. The crane can be operated from outside the cabin and so allow for a better overview of the construction site. So-called blind spots can thus be better avoided.

Depending on the application, a second person is no longer required to assist with hand signals during lifting operations. The cabin of the new crawler crane can be elevated by 2.8m thus allowing for a good all-round view.

For the safe negotiation of slopes and inclines, the new crane is fitted with Gradient Travel Aid. The control system automatically calculates the centre of gravity and warns the operator before the crane leaves the safe area.

While travelling, the operator receives information about the permissible and actual gradient and the crane's overall centre of gravity at all times. If necessary, the boom angle can be altered so that the machine remains in the safe area.

THE LR 1100.1 IS A MULTI-PURPOSE CRANE SUITABLE FOR ANY CONSTRUCTION SITE

THREE HUNDRED ORDERS

Liebherr recently celebrated an order for a LHM550 mobile harbour crane from Polish port operator Port Gdańsk Eksploatacja. The new machine will primarily be used for bulk handling of coke, coal and scrap metal. The LHM 550 is the bestseller in Liebherr's mobile harbour crane portfolio.

This is the 300th order of this crane type in total. The LHM 550 thus marks more than 10 years of international success for Liebherr.

THE NEW MACHINE WAS HANDED OVER TO RADOSŁAW STOJEK, CHIEF EXECUTIVE OF THE POLISH PORT OPERATOR PORT GDAŃSK EKSPLOATACJA BY LIEBHERR SALES MANAGER JAN HAMMERSCHMIDT

One of Poland's largest port-handling operators based in Gdansk, Port Gdańsk Eksploatacja carries out handling activities on a total area of over 89 hectares, and the new order is one of the largest investments in the company's thirty-year history.

The crane supplied has a boom length of 48m and a lifting capacity of up to 104 tonnes. The new machine will primarily be used for bulk handling of coke, coal and scrap metal.

"We want to increase the effectiveness, functionality and speed of our services," comments Radosław Stojek, chairman of the port's board. "The quality of our work processes will improve significantly. This will have a positive impact on our handling rate. In addition, our customers can expect faster handling of the commissioned vessels. We greatly appreciate the extraordinary mobility of this machine. We trained our crane operators at an early stage and carried out extensive modernisation measures in the port area in advance so that we could use the machine as quickly and as efficiently as possible."

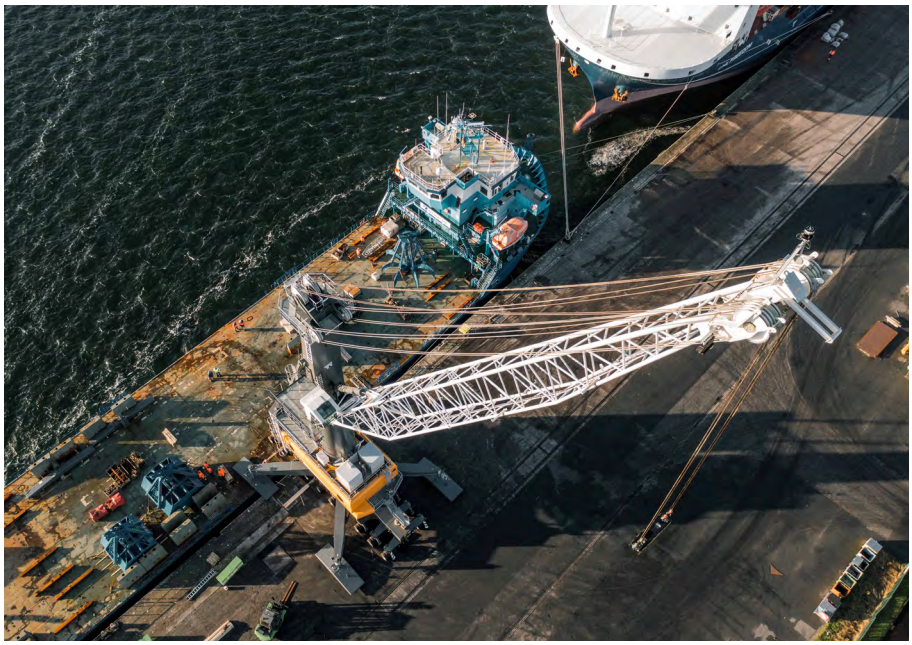
The delivery of the first LHM 550 to Kuwait in 2010 marked the beginning of the Liebherr success story. As the most popular crane type in the Liebherr mobile harbour crane portfolio, the LHM 550 has contributed significantly to Liebherr's position in the mobile harbour crane market. In terms of sales per country, India leads the ranking with 23 units sold, closely followed by Italy and the US. In the 2021 sales year alone, 26 LHM 550s were sold worldwide.

The Liebherr mobile harbour crane series is suitable for a wide range of applications. For example, the LHM 550 can be used for bulk or general cargo handling, as well as for container handling. Even heavy-duty lifts of up to 154 tonnes are possible. Statistics show that a large number of Liebherr customers use the LHM 550 for several applications. Well over 200 of the units sold are used for at least two or three applications. Of these, most are used for bulk and container handling.

THE MOBILE HARBOUR CRANE LHM 550 HANDLING BULK CARGO IN THE PORT OF GDANSK

Multiple drive types are also versatile. In addition to a hybrid drive concept consisting of diesel and electric motors, the cranes can also be used exclusively in electric-only operation, thus making an important contribution to emission-free goods handling.

More than 30 % of the LHM 550s sold in the 2021 sales year were equipped with an electric main drive.



THE 300TH LHM 550 IS LOADED IN ROSTOCK'S CITY HARBOUR FOR DELIVERY TO GDANSK

MACHINE, REPAIR AND SERVICES

COMPANY NEWS

Established in 1977, MRS Greifer GmbH is a leading engineering company providing design, manufacture, supply and after sales services for grab buckets up to 30m³ capacity. Our commitment to continuous research and development ensures our grabs are world leaders in terms of technology, quality and performance.

With five decades of experience in the design, manufacture, research and development of grabs, plus an extensive after-sales service backed by our team of highly skilled engineers, MRS Grabs has clients from every corner of the world.

We design grabs to fully meet the needs of our clients and the parameters within which they work, producing equipment capable of unloading all kinds of bulk cargo. Our machines include the latest features and are of optimal weight, ensuring an exemplary performance for a longer period of time. When it comes to hydraulics and other outsourced parts, we only use trusted brands so the highest quality is ensured.

Each grab is manufactured under the industry's strict quality controls, according to the QAP approved by our experts. We are only too aware that delays in shipping can result in exorbitant costs so we keep a full stock of spare parts, and our committed after-sales service team is available to see to all our customers' needs in the quickest possible time.

With grabs to handle bulk, logs, scrap, underwater dredging and more, please don't hesitate to contact us to talk through your needs.

MRS GREIFER

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74921 Helmstadt
Tel: +49 7263 9129-15
Fax: +49 7263 9129-12
Email: export@mrs-greifer.de
mrs-greifer.de

NEGRINI: ADDING REMOTE ASSETS

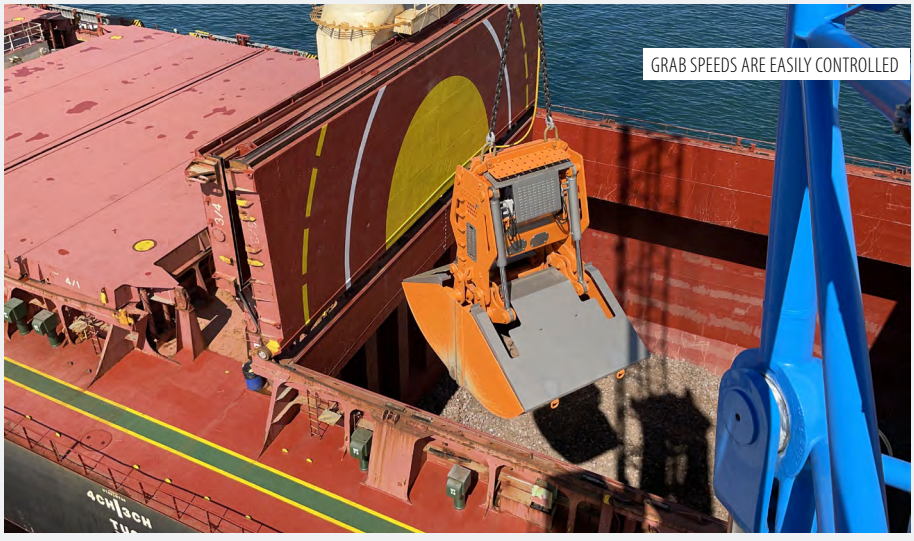
COMPANY NEWS

Negrini has introduced a new tool to further enhance its extensive range of electro hydraulic grabs. Remote Control Industria 4.0 is ideal for routine maintenance, as well as to improve the efficiency and operation of customers' production processes.

REMOTE MONITORING IS SIMPLE WITH INDUSTRIA 4.0

STATE-OF-THE-ART FEATURES

- Monitoring and control of processes in electro-hydraulic equipment
- Real-time scans and diagnostics
- System communication via wi-fi or data sim
- Notifications via email, sms or smartphone, tablet and PC
- Preliminary production analysis
- Routine maintenance alert
- Failure prediction
- Immediate alarm in case of failure or malfunction


GRAB SPEEDS ARE EASILY CONTROLLED

THE SMART GRAB

With Remote Control Industria 4.0 installed, the grab parameters automatically adapt to the type of material being handled without the need for human intervention, therefore maximising production and reducing costs.

In the presence of high-density materials such as mineral, the grab speed is reduced and the hydraulic pressure is increased – parameters that are not suited to lighter materials such as coal or cereals, where we see a change in speed

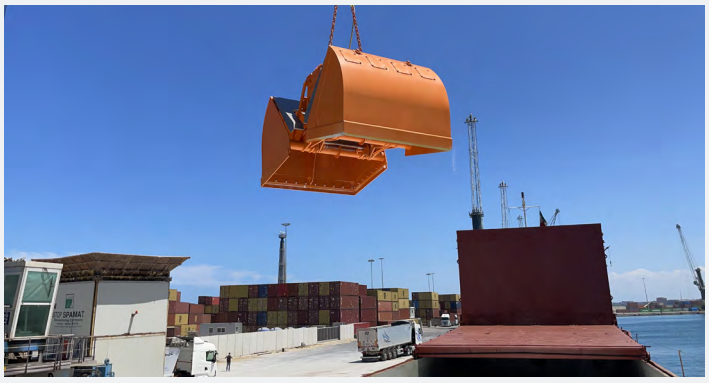
and reduction in hydraulic pressure – thereby reducing energy wastage and wear.

The most important advantage offered by the Remote Control Industria 4.0 device installed on Negrini's equipment concerns the processing of data, thus allowing preliminary production analysis and failure prediction. Notifications are sent via email and sms and each time an event occurs, either an incident, arrest or maintenance request is recorded.

Costly machine downtime is therefore avoided while maximis ing production, reducing periods of non-activity and minimising expenses normally incurred by corrective maintenance works. The client and Negrini Srl have total control over the condition of the equipment via wi-fi or a data sim, using a smartphone, tablet or PC, and will receive all notifications sent by the system so as to always be informed of machine requests and events.

For more information, visit negrini.org

NEGRINI since 1967 S.R.L.



NEUERO: KICK-STARTING INNOVATION

COMPANY NEWS

French agri-food group Soufflet in Rouen recently took delivery of the new Neuero Kiko (kick-in kick-out) shiploader, which has a loading capacity of up to 1,200t/h of grain with minimal dust emission. After four successful installations in the region, the Neuero Kiko DSH (dust suppression head) has impressed port operators with its efficient operation and high dust suppression, due to mass flow control.

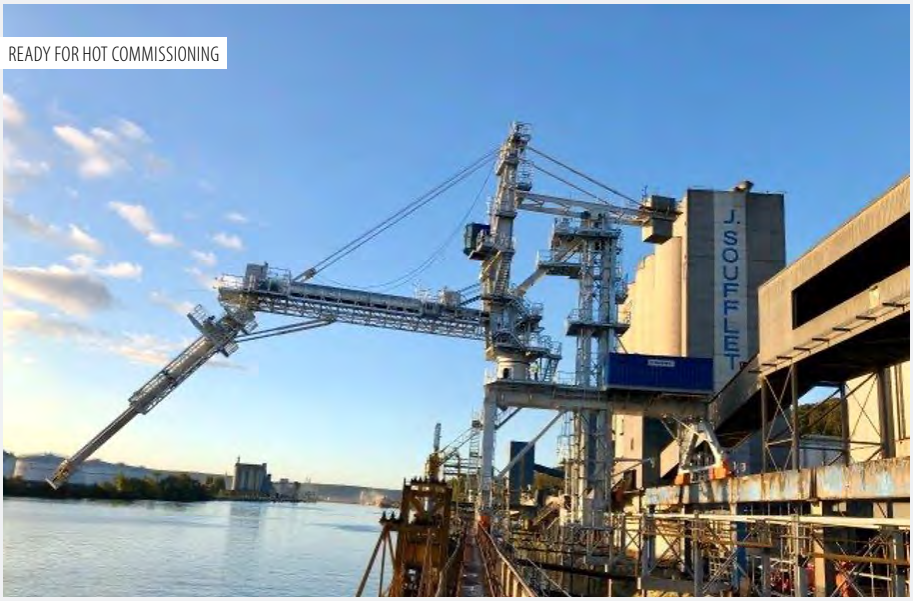
The shiploader was assembled in Germany and transported using a heavy lift ship to France. The most significant advantage of this means of transport is the short downtime of the terminal. However, such transport is not easy and requires a lot of planning and preparation. Therefore Neuero and Soufflet already agreed on this shipment method at the beginning of the project so that lifting points and lashing points could be integrated into the machine design.

Heavy lift cranes set the shiploader into position at the site and Neuero was able to begin dry testing. The next step was hot commissioning after the site conveyor was ready.

So what is the difference that makes the Kiko DSH operate so efficiently and with the highest environmental standards available today? The answer is a combination of mass flow and pendulum movements. The mass flow allows loading of the cargo at low speeds, reducing dust emission. The shiploader does not eliminate dust completely, but reduces it significantly, therefore avoiding product segregation and slow material discharge speed. Older systems throw the product at boom height and try to stop it at arrival, especially during hatch trimming work where it is needed to fill all gaps.

The pendulum movement that we call Kiko allows the loading head to move simultaneously with the vertical telescope and enclosed system. Additionally, the slewing movement allows all areas of the hold to be reached, including the corners.

For more information, visit: neuero.de/en



READY FOR HOT COMMISSIONING


DEPARTING FROM GERMANY

KEEPING MOBILE

Mobility and versatility are two key issues when considering effective shiploading techniques

Samson Materials Handling has received an order for a narrow quay shiploader system with two mobile material feeders and two mobile link conveyors for the Port of Darica Kocaeli in Turkey. The mobile material feeders are fed by trucks.

This project is based on the shiploader discharging to vessels typically up to 64,000dwt, with a maximum beam of 32.2m and a freeboard from quay height of 11m. The shiploader includes an enlarged reception hopper to receive the material simultaneously direct from the two link conveyors, which are fitted with a centralising, dust sealing, discharge chute. Under standard conditions, the Samson shiploader can achieve a peak loading rate of 1,000tph.

The shiploader is mounted on rubber-tyred wheels and its design includes the latest mobility options improving the machines manoeuvrability and reducing the overall loading time associated with its operation. The shiploader is based on the new boom design incorporating a cambered tubular lattice structure which offers maximised structural strength, whilst minimising the total equipment weight.

The benefits gained through this design are reduced imposed loads on the quay surface, whilst maintaining the ability to mount various trimming and dust suppression options to the equipment offered. The cambered boom design allows for maximum clearance of the vessel with a shorter boom and minimum material fall into the hold while reducing the demand on the main boom belt.

The two link conveyors will include small reception hoppers designed to receive direct from the centralising, dust-sealing transfer chutes of two Samson mobile material feeders.

The two Samson mobile material feeders are mounted on wheels. Both feeders have flared loading entry sections, 4.5m wide, to increase the effective volume of the feeders' entry and to reduce loading vehicle alignment time. The two feeders are equipped with integral truck ramps to receive the material from tipping trucks.

Samson also recently received an order for an eco hopper from Bataan in the Philippines. The unit is designed to receive coal, which is unloaded at the quay area via crane grabs with a discharge direct to ongoing conveyors. Under standard conditions, the discharge will achieve a peak rate of 1500 tph, based on a material density of 0.85 t/m^3.

The rail-mounted hopper designed by Samson is based on maximum grab dimensions and volumetric capacity of 45m^3. The hopper is positioned between loading points by means of a basic tow travel design which includes non-driven rail wheel blocks, equipped with rubber impact buffers. Access platforms, walkways and handrails are included at all levels for secured maintenance and inspection purposes.

The eco hopper is 7.5x7.5m, a height of 21.9m above the quay and runs on crane rails. The hopper has sectional reinforcements which are integrated into the design to offer optimal strength and weight to the unit. The inner hopper shield is designed to isolate the dust filter elements from the main material flow and to optimise the filter operations.

The eco hopper's inlet system is based on the Samson flex-flap design, which reduces the volume of air necessary to control dust both from the opening grab and displaced air from material falling into the inner hopper below. This design significantly contributes to the reduction of airflow, reducing filter and power consumption of the equipment. Additionally, the eco hopper includes a turbulence reduction system to reduce the wind turbulence above and inside the shroud, which is commonly caused by cross winds. As a result, this system reduces the filtration airflow requirements.

The dust filters are located on three sides of the eco hopper. This keeps one side clear to allow for the grabs to pass over thus minimising the potential of material falling onto the filter system.

The benefits of the eco hopper are that it captures all airborne dust generated when unloading coal from the vessel. It then efficiently transfers the coal to the quayside belt conveyors for onward transport to the storage/power plant.

EXAMPLES OF RAIL MOUNTED ECO HOPPERS

MOBILE OPERATIONS

The operational success achieved within the mobile sector has gone a long way to highlight the rigidity and limitations of traditional "fixed" operations, according to mobile equipment supplier Telestack.

"The ability to achieve flexibility, efficiency and compliance within any given multi-cargo port along with the ability to meet all the necessary operational metrics with ease, has prompted a definitive global trend towards mobile equipment in the port," the company says.

"The introduction of the Telestack all-wheel travel direct 'truck to ship' shiploading system has transformed the flexibility and rapidity given to operators, not only in terms of speed (achieved by faster loading rates), but also the agility achieved through the ability to operate and move large scale shiploaders within the limited space on current jetty/docks," the company says.

The surge in demand for this type of system encouraged Telestack to develop the concept further, with the introduction of a high-rise chassis that enables the unloading truck to drive under the system, opening up a host of options for jetties that are restricted in width (<25m - 80ft wide jetty / dock). The demand for such a system is particularly strong in regions with a developed infrastructure that would not allow for expansion, but where the desire to move to mobile' exists, based on the level of success achieved by fellow multi-purpose ports.

International sales manager with Telestack, Carl Donnelly explains: "Before the development of the 'high-rise' system, mobile solutions would not be a viable option for those operations loading handymax/panamax-type vessels. This would render the operator's equipment selection limited to typical fixed conveyor systems or grab/mobile harbour crane systems. In modern developed ports around the world, where space is such a commodity, certain infrastructures could only consider fixed systems as there was not enough space to allow for mobile operating systems until the high-rise design eliminated this issue.

"The TB range of radial telescopic shiploaders from Telestack offers a range of mobility features including in-line, parallel travel, radial and steering. This results in the most mobile all-wheel travel system in the market ensuring the unit can move with speed, ease and accuracy from 'hold to hold' during the loading operation. The high-rise design allows the unloading truck to drive underneath the ship loader chassis with ease marking a host of options for the compromised jetty."

These mobile ship loading systems represent a new generation of equipment, the company says, offering the performance of traditional systems, but with the added benefits of mobility, flexibility and ultimately a lower cost per tonne achieved by increased production rates, reduced cycle times and reduced labour costs, plus the ability to customise the product to meet the customer's needs, including incorporating dust containment solutions that fall in line with environmental regulations or the demands of an individual port's operating system. Autonomous operation and use of shore power are also options that should prove attractive to users, Telestack believes.

The need for flexibility to adapt to differing operational needs in the handling of any dry bulk is important, Telestack says. "One of the main reasons for the growth within the mobile sector is the ability to use the same equipment along several parts of the logistics chain. The mobility factor ensures that a company can use the equipment as required in one area of the operation and move to another area with ease and speed, or indeed move the units to storage areas, as and when required. This is flexibility that simply cannot be achieved by a traditional fixed infrastructure.

"In the current climate where the nature of any given business may have to change in response to changing commodity demands, mobile equipment allows the owner to react quickly. The smart design means that the unit can be easily dismantled, packed into containers and relocated to another site or country as the demand requires. The versatility and multi-faceted use in a variety of global applications (sea ports, river terminals, mines, quarries, power plants, cement plants, steel mills, and so on.) coupled with the excellent resale value ensures there is always a high demand for the mobile product."

BULK HANDLING SOLUTIONS

COMPANY NEWS

BulkHandlingMaterials.com offers high quality bulk handling equipment with proven technology, for various industries. Our installations can be commissioned quickly and are able to transport all your bulk products as efficiently as possible. We have ready-made solutions in stock or these can be manufactured relatively quickly. The result – an affordable installation.

Our bulk handling solutions are mainly used in quarry and mining industries, ports and inland terminals, warehouse management, power plants, rail yards, steel mills, cement kilns and many other industries for bulk material handling. We can handle all free-flowing bulk materials including ores, coal, aggregates, fertilisers, grains, wood chips, pellets and many more bulk materials that need to be moved.

BulkHandlingMaterials.com is a turn-key specialist in:
- Bulk handling
- Transport systems
- Storage bunkers

Why **BulkHandlingMaterials.com**?
- We make use of proven technology
- Our mobile solutions offer significant savings in your operating costs
- Our installations can be commissioned quickly
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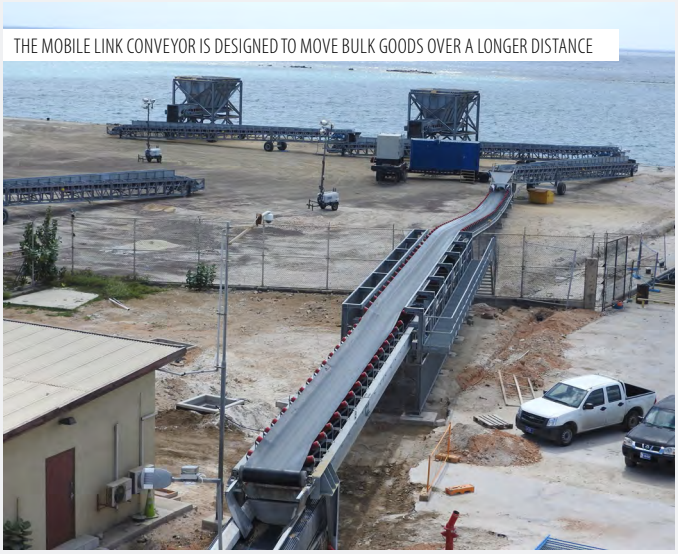
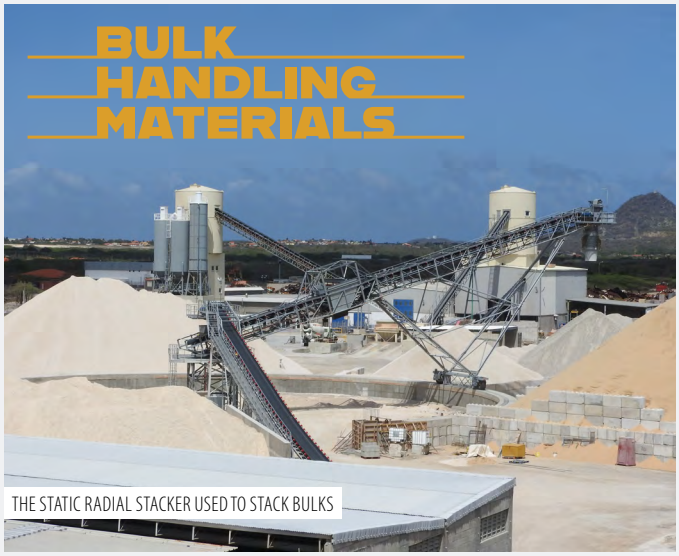
MOBILE RADIAL STACKER TO TRANSPORTS BULK GOODS IN A SHIP OR ON A STOCK PILE


THE MOBILE LINK CONVEYOR IS DESIGNED TO MOVE BULK GOODS OVER A LONGER DISTANCE



THE STATIC RADIAL STACKER USED TO STACK BULKS

REACHING NEW HEIGHTS

Suppliers of stackers and reclaimers have seen new contracts as well as new systems in recent months

Kalmar, part of Cargotec, has signed a one-year agreement with Norwegian rail operator CargoNet covering the field-testing of a Kalmar electric reachstacker. The agreement was signed in January 2022 and the machine will be delivered to CargoNet in the first quarter of 2023.

CargoNet is Norway's leading rail-freight operator, focused on rail-based intermodal services within Norway and between Norway and Sweden. The company, which is 100% owned by Norwegian State Railways, is headquartered in Oslo and employs approximately 400 people. CargoNet's equipment fleet already includes 18 Kalmar reachstackers and one Kalmar heavy forklift truck.

The high-capacity Kalmar electric reachstacker to be field-tested by CargoNet will have a wheelbase of 7.5m. The maximum lifting capacity of 45 – 45 – 34 – 23 tons in the first, second, third and fourth rows respectively represents a world first for an electric reachstacker. The field test will analyse the overall function, performance, behaviour and durability of the electric powertrain.

Kalmar introduced its new range of electric reachstackers to the market in December last year. The range currently

comprises eight models – six toplift and two combi – with lifting capacities up to 45 tons, stacking up to six high and four rows deep, with a wheelbase of up to 6.5m. All models are powered by lithium-ion batteries and have Bosch Rexroth drivelines, with four battery capacities available to choose from.

"Transitioning away from traditional diesel-powered lifting equipment towards fully electric drivelines is a must if we are to achieve our goal of drastically reducing the CO_2 emissions from our operations. We are excited to be continuing our long-term partnership with Kalmar, an industry leader in eco-efficient cargo-handling technologies, by thoroughly evaluating their electric reachstacker offering," Per Allan Kristensen, terminal manager at CargoNet says.

Alf-Gunnar Karlgren, vice president at Kalmar says: "CargoNet's capacity requirements are a perfect match with the next step in the development of our electric reachstacker concept, which is to introduce a model with a 7.5m wheelbase. Our industry-leading eco-efficient solution will provide CargoNet with a powerful tool to help them achieve their ambitious emission-reduction targets."

> "The specific challenge is that the equipment, including rails and fixings, will be designed with the ability to withstand not only high wind loads, but also earthquakes

DOOSAN SIGNS UP SCHADE

Schade Lagertechnik of Gelsenkirchen, Germany, has for many years been a major supplier of equipment for bulk materials stockyards and blending beds in the Asia-Pacific region. Its latest contract is with South Korean company Doosan Engineering & Construction, which placed the order with Schade for the supply of two full-portal reclaimers and two stackers to the power plant operator PT Indo Raya Tenaga in Indonesia.

PT Indo Raya Tenaga's current expansion project, Java 9 and 10, will see two additional power plant units of 1,000mw each at Suralaya near Cilegon in Banten Province in West Java. In April 2021, Doosan ordered from SCHADE two full-portal reclaimers, each with a capacity of 1,500tph of coal and a rail span of 71m, as well as two stackers, each with a capacity of 3,500tph of coal and a rail span of 8m, for this project.

The full-portal reclaimers will be designed in lattice-work construction because of their size. This reduces not only the weight of the machines, but also the amount of welding work required on site, which was a strict prerequisite imposed by the customer.

The specific challenge is that the equipment, including rails and fixings, will be designed with the ability to withstand not only high wind loads, but also earthquakes. To meet environmental requirements, critical parts will be equipped with fire extinguishing systems, and a water spraying system will minimise dust. Supply will be in October 2022.

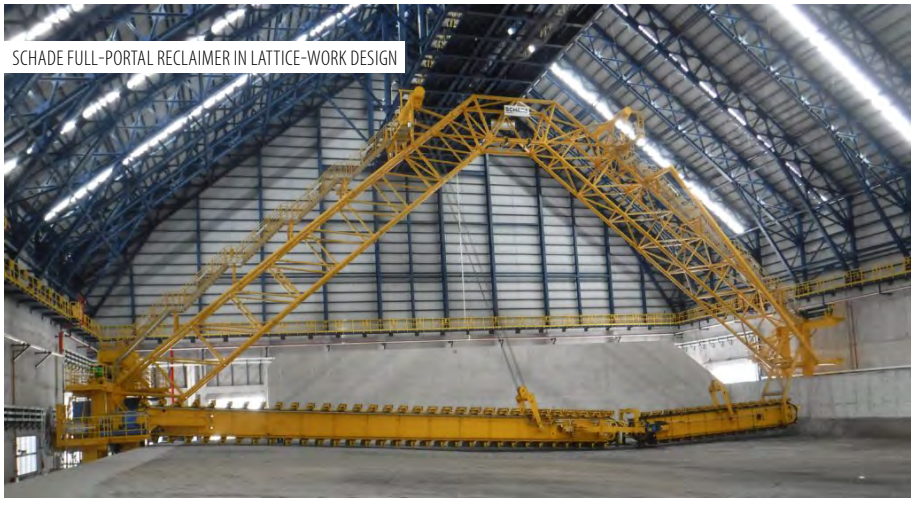
TELESTACK SOLUTIONS

Telestack specialises in the design, manufacture and installation of a complete range of mobile stockyard management solutions for handling a complete range of dry bulk materials.

The Telestack mobile range of equipment takes into consideration the day to day operational capabilities and bottle-necks of any stockyard system, consisting of stockpiling, reclaiming, blending, truck unloading and material transport. Such equipment offers the operator cost-efficient solutions with unrivalled mobility and flexibility. The Telestack mobile stockyard range offers reliable, flexible and robust solutions to achieve all of these objectives.

Telestack's radial telescopic conveyor is one of the most cost-efficient and effective ways of stockpiling material on the market, the company believes, and can stockpile coal, for example, at up to 2,000tph, with stockpile heights of up to 20m and a stockpile capacity greater than 100,000 tonnes. The radial, telescopic and luffing (up/down) facility of the units allows the operator to utilise the entire space, even in areas with restricted stockpile height.

In addition, the automatic stockpiling system reduces the labour required



SCHADE FULL-PORTAL RECLAIMER IN LATTICE-WORK DESIGN

to operate the equipment, while reducing the degradation, segregation, contamination and compaction of the coal. The robust heavy-duty design allows stockpiles of up to 2,000tph with the ability to handle a complete range of materials from coal/pet coke to iron ore which is ideal for multi-material stockyards.

The mobility of the units is key to ensuring production rates are maintained changing from one stockpile to another.

Telestack's integrated tracked dolly units ensure a highly mobile independent unit with the ability to operate with ease on harsh ground conditions within the stockyard. The radial telescopic can be fed directly from the mobile link, reclaim and truck unloading conveyors to stockpile in the yard. The mobility allows the units to move back and around the stockyard/ Inter-yard transfer to maximise the space/efficiency in the yard as required while limiting downtime in the stacking process.

TAKRAF TAKES STOCK

Takraf combined stacker/reclaimers with bucket-wheel booms are primarily employed where medium or large or very large material flows are to be stacked and then later reclaimed by the same machine. Typical machines cover the following flow rates and sizes:

» Stacking and reclaiming capacity: 500 t/h to 20,000 t/h
» Rail gauge: 6m to 20m
» Boom length: 25m to 60m

In applications involving low- or medium-flow rates and/or medium-length booms, machines in which the bucket-wheel and counterweight boom are combined in a fixed rocker arrangement are generally preferred. This arrangement results in a reduced number of articulation points.

A variety of different machine types can be employed to reclaim stacked material from stockpiles. Typical machines range from bridge-type bucket-wheel reclaimers to boom-type bucket-wheel reclaimers and drum reclaimers.

Takraf bridge-type bucket-wheel reclaimers are primarily employed in applications where bulk material is to be homogenised with high required material flow rate.

In applications involving smaller flow rates and/or smaller particle sizes, Takraf is able to configure machines in such a manner in which the bucket-wheel is located below the bridge.

Where higher flow rates and/or larger particle sizes are required, the company strongly suggests a machine configuration in which the bridge is mounted through the bucket-wheel. In this manner, power transmission between bucket-wheel trolley and bridge is enhanced which has a positive effect on machine life.

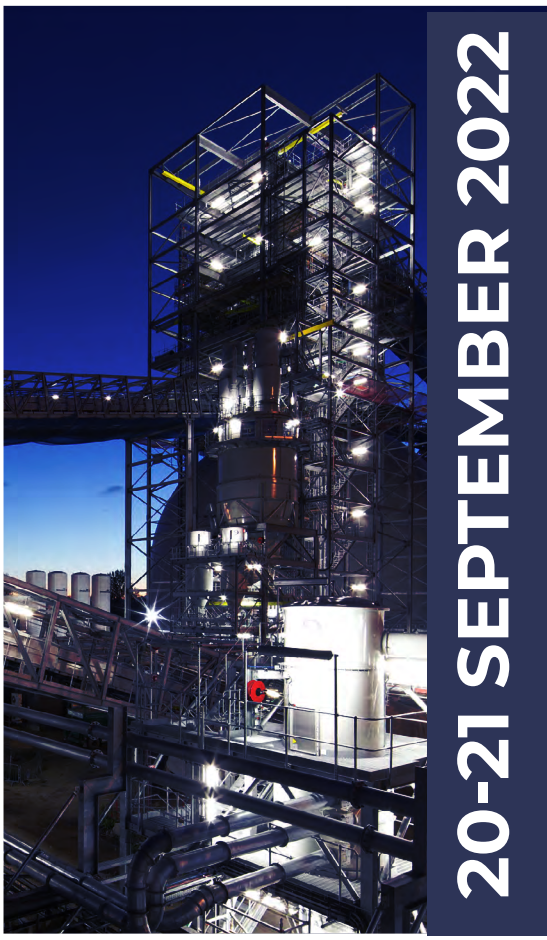
A number of further configurations are also able to be specified, ranging from the number of mounted bucket-wheel trolleys to the manner in which they are arranged. Machines employing two bucket-wheel trolleys are able to achieve a higher reclamation rate, while also achieving greater homogenisation at lower flow rate fluctuations. When installing two bucket-wheel trolleys, the trolleys can be mechanically linked so that they both share a common trolley drive system.

In applications where very high flow rates are required, where very wide stockpiles are employed, Takraf prefers to install each bucket-wheel trolley with their own drive system. A trolley speed controller, developed in-house by the company, is then employed as this increases interaction efficiency between the two bucket-wheel trolleys.

TAKRAF'S COMBINED STACKER/RECLAIMERS

UNDERSTANDING THE TOTAL COST **OF OWNERSHIP**

HOW TO AVOID FUTURE PROBLEMS AND BUY BULK SOLIDS HANDLING EQUIPMENT INTELLIGENTLY



20-21 SEPTEMBER 2022

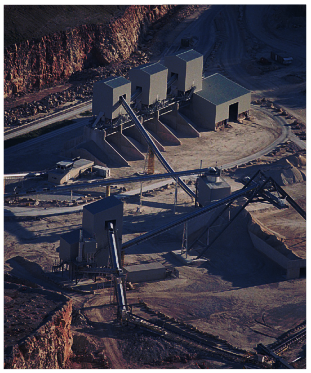
The OBJECTIVE OF THE COURSE is to raise awareness amongst bulk terminal buyers of the need to behave in a better-informed way and equipment suppliers to understand the operational needs of the equipment they are supplying.

KEY TAKAWAYS: The course will give both terminal operators and equipment manufacturers an insight into what should be on the one side be specified, and on the other side supplied.

The course will be delivered through EXPERT PRESENTATIONS, CASE STUDIES and GROUP WORKING facilitated by The Wolfson Centre for Bulk Solids Handling Technology and the Solids Handling & Processing Association (SHAPA).

SUBJECTS COVERED INCLUDE:

- Nature of the problem
- The Hall of Shame – examples of projects that have gone off the rails to greater or lesser degree
- Quantifying how high the risk is – a review of the Rand Report findings
- Understanding why technical risk is so high with bulk solids handling projects
- Know your enemy – materials for design and for controlling technical risk
- Practical approach to design to accommodate material characteristics
- The virtue of the bespoke suit over prêt-à-porter
- A project management approach is not enough – understanding the true cost of a bulk solids handling system to a business
- CASE STUDIES: Risk management in solids handling projects – examples of good practice in bulk handling project procurement and some projects that managed significant risks effectively
- DISCUSSION GROUPS – delegates break into groups under the supervision of the course tutors to discuss how well they currently apply best practice, what they can improve for the future and the difficulties to be overcome



abta
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For further **COURSE DETAILS** and to **REGISTER** please see *bulkterminals.org/events/courses-and-training/understanding-the-total-cost-of-ownership* or contact **Simon Gutteridge** events@bulkterminals.org +33 (0)321 47 72 19

We are pleased to offer delegates to **CHoPS 2022** the same discounted rate as **ABTO** and **SHAPA** members. Please use the discount code **CHoPS22** on the course registration form.

BEUMER: FIRST FOR EFFICIENCY

COMPANY NEWS

A loading and unloading system in a port must be able to handle ships quickly – with minimal dust emissions and without the loss of bulk goods. BEUMER Group provides efficient systems for this purpose, which take into account different ship sizes as well as the space available at the port. The modular design of BEUMER Group's systems makes it possible to deliver a precisely tailored solution for every requirement.

The right loading technology is crucial for efficient and safe delivery of products to the customers. BEUMER Group offers sophisticated solutions for loading and unloading trucks, railway wagons – and ships. The modular design of BEUMER's systems allows customised solutions for every application and offers shiploading technology, including quadrant type ship loaders, rail-mounted shiploaders with a luffing and swivelling boom, and simple stationary loading towers. All shiploaders can, of course, be equipped with telescopic chutes.

Coarse bulk materials, such as clinker or lumpy ores, are loaded into bulk carriers efficiently and dust-free with belt conveying systems and a vertical telescopic tube. The loading of powdered goods is handled by fully enclosed loading machines. An emission-free operation is ensured at all times, helping protect the environment.

In just one example, BEUMER Group has installed a shiploader at one of the largest urea manufacturing plants in Malaysia. This shiploader receives bulk material from belt conveyors and loads ships with up to 1,000 tons of material per hour. The swivel-mounted shiploader runs on rails with a telescopic chute and a throw-off belt conveyor to ensure effective and flexible loading.

For more information, visit:
beumer.com

BEUMER GROUP'S SHIPLOADERS ENSURE FAST AND RELIABLE LOADING OF SHIPS IN PORT
(© BEUMER GROUP GMBH & CO. KG)

A MARKET IN TURMOIL

The war in Ukraine is having a huge effect on the movement of grain cargoes in the region, with blockades of port facilities likely to mean exports of grain from the country will be drastically reduced

Some estimates have put the loss of grain revenue to Ukraine at $6bn as the country is a major producer of grain and other cereal products, most of which are handled through ports rather than rail.

According to International Grains Council estimates, between them Ukraine and Russia account for about 22% of global grain exports. Movement has been severely curtained by ships being stranded in Ukrainian ports since fighting began in February.

In its March report, the Council said that the ongoing conflict between Russia and Ukraine had "fuelled concerns about potential food security risks, especially in import-dependent countries in Near East Asia and Africa."

It said that while "there are efforts to increase exports via railway routes through the country's western borders, overall volumes are likely to be limited. An export licensing system was recently introduced for wheat, maize and sunflower-seed oil, while shipments of barley, rye, oats and millet are currently banned.

While the extent of infrastructure losses is unknown, potential damage to port facilities, railroads and storage silos could impact shipments over the longer

term." Any loading could also be affected by trade finance restrictions and additional insurance requirements, the council added.

"Additional exports from other origins, including India, the US, the EU and Brazil, will likely only partially offset lower Black Sea shipments over the remainder of the current season.

"With high prices expected to ration demand, 2021/22 world wheat and maize trade is forecast to fall short of earlier predictions, while uncertainties prevail for 2022/23.

"There are also significant downside risks to Ukraine's 2022/23 grain and oilseed crops, which could exacerbate longer-term export supply shortfalls. In addition to tight availabilities of fuel, farm inputs and labour, access to some fields is currently impossible, leading to mounting worries about farmers' ability to fertilise winter crops and plant spring varieties."

Condemning the attack on Ukraine by Russia, the council said in a statement that it called "on all countries to keep their agricultural markets open and to refrain from excessive stockpiling and hoarding or imposing any restrictive measures on their exports, taking into account the World Trade Organization rules.

Due to low stock levels of grains in the major exporting countries, any measures to further limit trade would further fuel the current food price inflation."

LOCKDOWN HALTS SUPPLIES

Grain supplies through Chinese ports have been severely affected by the ongoing impact of a lockdown by the authorities to prevent the spread of covid-19, with hundreds of bulk cargo vessels awaiting the chance to offload supplies.

At time of going to press, there were more than 200 bulkers waiting off Shanghai, according to Bloomberg statistics. Other ports in the region were also being affected as operators sought to divert ships. Congestion affecting other Chinese ports had been exacerbated by a shortage of port personnel needed to process incoming cargoes.

Meanwhile, grain exports from Argentina are being affected by a strike by truckers in the country, who are demanding higher rates for moving grain and livestock cargoes. This could have a knock-on effect on grain exports during a key period of the harvest season. Argentina is the world's second largest exporter of corn and a leading exporter of soy derivatives. The majority of Argentina's grain is transported by truck to ports for export.

T-PORTS MOVES FORWARD

Australia-based T-Ports' Wallaroo port project development was officially launched earlier this year, signalling a shift in grain exports for Yorke Peninsula and Mid North grain growers.

T-Ports, which has provided a boost to the Eyre Peninsula grain supply chain through the introduction of its transshipment port at Lucky Bay and upcountry sites at Lock and Kimba, has recently received final development approvals for the Wallaroo development.

T-Ports chief executive officer Kieran Carvill says the company was also proud to announce the successful negotiation of an Indigenous Land Use Agreement with the Narungga Nation Aboriginal Corporation.

Carvill says with construction underway, the company was looking forward to being able to offer growers competition.

"The port at Wallaroo is the logical next step in the T-Ports journey and we're excited to see the opportunities for Yorke Peninsula growers after witnessing the significant returns delivered to Eyre Peninsula growers this past harvest," he says.

"There are efficiencies and cost savings in building this port on the opposite side of the Spencer Gulf to Lucky Bay as we will use the same transhipment vessel, the *MV Lucky Eyre*.

"We're looking forward to offering competition for growers in the Yorke Peninsula and Mid North regions and delivering supply chain savings."

Minister for Primary Industries and Regional Development David Basham says the new port will be a game changer for local growers.

"The new port has been in planning for a long time and to see construction starting is a fantastic milestone," Basham says.

"The new port will be warmly welcomed by Yorke Peninsula and Mid North grain growers and it will be ready to receive grain in time for the 2022/23 harvest."

Carvill thanked the Copper Coast Council for their "unerring support and patience" as the development progressed.

"We also want to thank the South Australian Government for the work they have done in supporting both Lucky Bay and this Wallaroo development."

The grain export facility will also feature steel silos with 20,500 tonnes of grain capacity and a 500m rock causeway with grain conveyed to a ship loader for loading on to the transshipment vessel.

A bunker site will feature six bunkers with a total of 240,000 tonnes of grain capacity. T-Ports will be ready to receive grain for the 2022/23 harvest.

"We are pleased to welcome Allied Grain Systems as the builder of the grain export facility," Carvill says.

YANBU AGREEMENT

A joint venture of the Saudi Agricultural and Livestock Investment Co and the National Shipping Company of Saudi Arabia, the National Grain Company has signed an agreement with Haif Trading and Construction to build a grain terminal at Yanbu Commercial Port.

Under the terms of the contract, Haif will build a grain terminal with a storage capacity of 156,000 tons in the first phase, consisting of 12 silos with a total capacity of 96,000 tons and a flat warehouse with a capacity of 60,000 tons.

The terminal will also include a 650m-long conveyor belt, unloading equipment with 800 tons per hour of discharge capacity, and a dedicated area for loading trucks and packaging.

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WILL COAL SOLVE THE CRISIS?

Rising energy prices plus the effects of Russian sanctions is giving a boost to coal production


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As energy price rises begin to bite, there is a school of thought that aside from speeding up the move towards new forms of energy uses, one of the commodities that will solve that crisis will be coal, attendees at the recent FT Commodities Global Summit heard.

Coal trade has risen in the period since the invasion of Ukraine by Russia in February, with coal being shipped for longer distances and traders seeking to replace Russian supplies under embargo with other sources from markets such as Australia.

Coal trades had already been affected by China's ban on imports of coal from Australia in 2020, and speakers at the conference said the industry was now being affected by the Russian situation, with European power stations using coal to reduce Russian gas use, which is being affected by EU sanctions. EU coal use is set to rise as a result, pending the arrival on stream of larger quantities of liquefied natural gas to supplement its use.

That said, Australian supplies of coal have been affected by recent floods in the country. For example, the coal terminal at Port Kembla near Sydney was closed due to flooding in March. According to a report by Bloomberg, the disruptions will further tighten the global coal market as importers scramble to replace Russian shipments. Asia's benchmark Newcastle coal price rose to a record in March on the back of increased demand .

The Kembla port services coal producers include Glencore and Peabody Energy. The terminal exports around 14m tons of coal annually, mostly to Asian buyers.

"The only commodity that can help solve the energy crisis in Europe in the short term is coal," Sveinung Stohle, deputy CEO of Greek-based shipping company Angelicoussis Group, was quoted by *S&P Global Commodity Insights* as telling conference delegates. "Like it or not, coal will play a very important role."

Angelicoussis Group chief executive Maria Angelicoussis said that coal has become a "swing factor" in freight markets, with trade patterns again shifting following China's ban on imports of coal from Australia in late 2020.

China's seaborne coal demand is likely to increase in the near term as domestic buyers look to stock up ahead of summer and railway maintenance that is expected to hamper the supply chain in April, market sources told *S&P Global Commodity Insights* in March.

The move in favour of coal looks like bucking the trend to reduce its use. One of the largest container terminals in Russia, Vostochnaya Stevedoring Company (VSC), stopped its coal handling services last year with plans to adapt the space for container storage.

The last consignments of coal cargo were loaded on to outgoing vessels and shipped to recipients in September 2021, and the dismantling of dust screens and dust suppression equipment has already started at the terminal.

The decision to cease coal handling services and focus on the container cargo was made in view of the significant increase in container handling volumes in the first half of the current year, according to the announcement.

"Using the converted capacity for containers will allow VSC to handle the increased import and export flows of this cargo in a more efficient way," Ilia Dolgiy, managing director of Vostochnaya Stevedoring Company said at the time, adding that the decision to phase out coal handling "will allow the terminal to reduce its environmental impact".

VSC has been handling coal since 2011 and in the first half of 2021, it handled 925,000 tons of coal.

EXAMPLES OF RAIL MOUNTED ECO HOPPERS DESIGNED AND DELIVERED BY SAMSON MATERIALS HANDLING

EQUIPMENT INVESTMENT

Coal handling facilities have been investing in equipment in recent times as a means of reducing their environmental impact by using eco-friendly techniques.

Samson Materials Handling received an order for an eco hopper from Bataan, Philippines recently. The unit is designed to receive coal, which is unloaded at the quay area via crane grabs with a discharge direct to ongoing conveyors. Under standard conditions, the discharge will achieve a peak rate of 1500tph, based on a material density of 0.85 t/m^3.

The rail-mounted hopper is based on maximum grab dimensions and volumetric capacity of 45m^3. The hopper is positioned between loading points by means of a basic tow travel design which includes non-driven rail wheel blocks, equipped with rubber impact buffers. Access platforms, walkways and handrails are included at all levels for secured maintenance and inspection purposes.

The eco hopper is 7.5x7.5m, at a height of 21.9m above the quay, and it runs on crane rails. The hopper has sectional reinforcements that are integrated into the design to offer optimal strength and weight to the unit.

The inner hopper shield is designed to isolate the dust filter elements from the main material flow and to optimise the filter operations.

The eco hopper's inlet system is based on the Samson flex-flap design, which reduces the volume of air necessary to control dust both from the opening grab and displaced air from material falling into the inner hopper below. This design significantly contributes to the reduction of airflow, thus reducing filter and power consumption of the equipment.

Additionally, the eco hopper includes a turbulence reduction system positioned above the inlet shroud. This system allows reduction of the wind turbulence above and inside the shroud, which is commonly caused by cross winds. As a result, it reduces the filtration airflow requirements.

The dust filters are located on three sides of the eco hopper. This keeps one side clear to allow for the grabs to pass over, thus minimising the potential of material falling onto the filter system.

The benefits of the eco hopper are that it captures all airborne dust generated when unloading coal from the vessel. It then efficiently transfers the coal to the quayside belt conveyors for onward transport to the storage/ power plant.

ON THE RAILS

China has also been reported as boosting coal transports by train as the country also tries to ensure sufficient supplies of energy. More freight trains will be put into operation to boost coal transports from round the country, according to local reports.

Other countries facing coals shortages on a regional basis included India, but in spite of this dry fuel imports during the period from April last year to January 2022 because output within the country had been at record breaking levels.

However many regions faced shortages last year as a result of heavy rain which affected power supplies.

COMBUSTION PREVENTION

Samson has also recently supplied a Stormajor 2.0 to a Japanese company for the handling of coal at their chemical plant in Indonesia. The site, located in Banten province, is a specialist manufacturing facility producing various chemicals for the global supply chain. Coal is delivered by sea-going vessels, then it is offloaded and stored in the facility directly. During storage, the coal can spontaneously combust due to its quality. The Stormajor manages the continuous in- and out-loading of the

A STORMAJOR® 2.0 OPERATING IN AN OUTDOOR COAL STOCKYARD

coal, whereby the coal is cooling down and hot spots will be avoided.

In 2018, a coal fired power plant was opened to support the chemical manufacturing operations. This 2x151mw facility is located on the periphery of the production plant, with its own covered coal stockyard. The environmental conditions, if not ideal, can cause hot spots of burning fuel. These hot spots, if left un-treated, can spread, resulting in a potentially dangerous situation and a loss of usable product.

To combat this, the operating company has been using a combination of excavators and dump trucks to move the coal out from the covered storage area to an external uncovered stockpile. Once the coal has cooled down, the reverse process occurs and the excavator loads a dump truck to take the material back into the covered area before another excavator manoeuvers the material back onto the covered stockpile. This movement, along with manipulation from an excavator on the external pile allows any hot spots to be dealt with.

Prior to the purchase of the Stormajor, a number of excavators and dump trucks were being used to move the material, this double handling was time consuming and tied up a lot of resources.

A track mounted, self-powered, 450 series Stormajor with a 27m boom was selected. The Stormajor has been positioned with the reception feeder inside the facility and the boom outside, allowing the excavator to load the material transported outside directly on to the coal pile.

Keeping the Stormajor in place and turning the machine around it could subsequently feed cooled coal back inside onto the covered stockpile.

The versatility of this machine allows the company to reduce the number of truck movements and the number of personnel needed in the coal facility thus reducing operating costs, increasing material yield and improving operator safety.

The Stormajor is Samson's material feeder combined with an outloading boom conveyor, which can slew and luff. The feeder and boom are combined into a single mobile machine. Mobility is achieved via self-powered tracks for uneven terrain or wheeled units designed to be towed. Three different types are available on the feeder section to enable the handling of light to heavy bulk materials. The modular outloading boom can be up to 27m long and achieves stockpile heights of over 11m.

Dust control can be achieved by fully enclosing the material feeder and belt conveyors then employing integral filter units mounted on the feeder and boom. In addition, for certain applications a telescopic discharge chute can also be fitted to the boom to allow dust free loading.

The feeder is able to accept material delivered by numerous methods such as a front end loader, tipping truck, mining dump truck, grab and excavator.

MARTIN: V-PLOW DESIGN DELIVERS

COMPANY NEWS

The global leader in bulk handling conveyor accessories has redesigned one of its most popular tail protection devices to be a lighter weight, modular unit delivered in a compact package for improved safety and convenience. The re-engineered Martin® V-Plow HD achieves the gains with no compromise in performance.

"The result is a package that fits most local delivery trucks and can be easily carried by workers to sites that may have accessibility issues, with the components assembled as they are installed to reduce the risk of injury," says Martin Engineering conveyor products manager Dave Mueller.

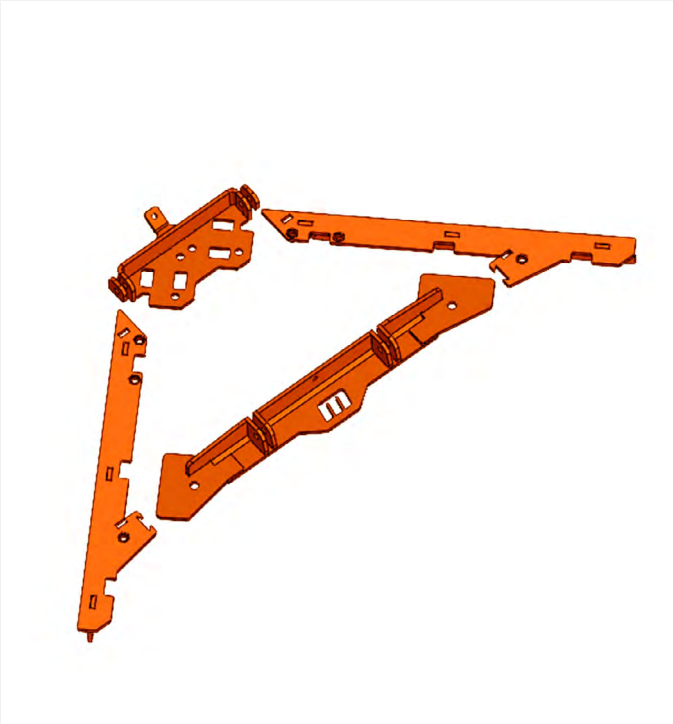
THE V-PLOW HD HUB MOUNTS CAN BE WELDED OR BOLTED TO THE HANGER BARS

"Tail pulley protection is essential for efficient conveyor operation, but because of their size, the components can be cumbersome to ship and install," Mueller continues. "In most designs, the wide V-shaped unit is typically delivered with mounting equipment in a large box that can pose a logistical problem to both air and ground transport, due to the weight and size. This can lead to frustrating delays during tight installation schedules."

Mueller further points out that, once the previous design was delivered, getting it to the installation point could be a challenge with potential safety issues. Often workers needed to carry the oddly-shaped box by hand up several flights of stairs, through corridors, or to areas with limited accessibility. According to the US Occupational Safety and Health Administration, workplace injuries caused by lifting, carrying and falling/dropped debris are among the most prevalent.

The Martin V-Plow HD prevents tail pulleys from becoming fouled and damaged by spillage travelling on the return side of the conveyor belt. Fugitive material commonly migrates from the cargo side to the return side during normal operation. If this spillage reaches the tail pulley, two things can happen.

THE V-PLOW HD PREVENTS TAIL PULLEYS FROM BECOMING DAMAGED BY SPILLAGE ON THE RETURN SIDE



THE MODULAR REDESIGN IS EASIER AND SAFER TO TRANSPORT, REQUIRING MINIMAL ASSEMBLY ON-SITE

One is that lumps get caught between the pulley and the belt, gouging and damaging both the belt and pulley face. The other is spillage being crushed by the pressure between the pulley and the belt, adhering to the pulley face and the return side of the belt, causing pulley slippage and fouling of idlers along the system.

Engineered for belts as wide as 3,048mm with speeds up to 4.6 m/sec, the Martin V-Plow HD redesign has made the equipment modular, segmented into a few pieces that are arranged in a box that fits almost any form of delivery transport. This also makes the equipment easier and safer to carry to the installation area.

With easy-to-understand instructions for the tongue-and-groove assembly, the rugged painted steel parts can be snapped and securely bolted together in minutes, creating a strong structure. The time saved on delivery to the facility and the work area more than makes up for the few minutes of assembly time.

Mounted to hanger bars by clamps or welding, the unit glides on the return side of the conveyor belt using a hinge system, deflecting any fugitive debris off of the belt. The assembly holds an easily replaceable 100 mm wide, 25 mm thick blade, which provides 50 mm of wear life.

Blades are available in 60 Shore A durometer nitrile rubber or long-wearing 90 Shore A durometer urethane and the unit can be ordered with specialised blades that are chemical resistant or designed for high temperature applications.

The Martin V-Plow HD mounting system and security cable assembly is safer, longer-lasting and less damaging to the belt than competing units. If the Martin V-Plow HD detaches from one mount, the other mount and safety cables keep it in place, protecting the belt and workers until the system can be stopped and the unit can be repaired.

For more information, contact:
Tel: (800) 544-2947
Email: info@martin-eng.com,
martin-eng.com

FUTURE-PROOF SOLUTIONS

German companies have revealed a number of initiatives to save time, reduce emissions and cut costs in port operations

Thyssenkrupp, Holcim and TU Berlin have begun a research product on CO_2 reduction, which aims to reduce emissions at cement plants using carbon capture by means of a new amine scrubbing process.

The cement industry is working on reducing CO_2 emissions in a number of ways. Even with the sole use of renewable energies, the raw materials used in cement production result in CO_2 being released and emitted to the atmosphere. Thyssenkrupp Uhde, Holcim and the Technische Universität Berlin have therefore partnered up in a joint project to investigate the use of a novel amine scrubbing technology for carbon capture.

The goal is to significantly reduce CO_2 emissions from existing cement plants and at the same time utilise the captured CO_2 for other applications. In concrete terms, this includes the development of new mass transfer process equipment that is more efficient and resilient to contaminations. The project is being funded by the German Federal Ministry for Economic Affairs and Climate Action.

Ralph Kleinschmidt, head of technology, innovation and sustainability at Thyssenkrupp Uhde, says: "Amine scrubbing is already commonly used to recover CO_2 from process gases or exhaust gases. Now, we are developing the technology further and optimising it for the cement industry. Additional applications for capturing CO_2 direct at source, such as in waste incineration plants, are also possible.

Arne Stecher, head of decarbonisation at Holcim Germany adds: "Carbon capture will be a must for cement plants in the near future. That is why we are testing different processes to find the best carbon capture technology. Carbon capture by means of amine scrubbing is a promising solution. I am pleased that, together with our partners, we can test the use of this innovative process in the cement industry."

Jens-Uwe Repke, chairman of process dynamics and operations at TU Berlin, says: "Developing innovative carbon capture technology for gas treating and improving the efficiency, environmental compatibility, and sustainability of existing carbon capture processes, as well as putting them into practice, is an urgent and crucial task that makes a direct contribution to climate praotection. These goals can only be achieved if industry cooperates closely with research facilities such as universities."

The performance and efficiency of this equipment is being tested using real exhaust gas at the cement plant located in Beckum, Germany. This is paving the way for commercial use. Various possibilities for using the captured CO_2 are also being examined, for example methanol or sustainable fuels.

With this process, the partners are seeking to make a contribution to the reduction of greenhouse gases, especially in existing cement production plants. These can then be retrofitted with equipment for capturing CO_2 from the process gas without further adapting the production process.

CHANGING MAINTENANCE

LiMain – Liebherr Intelligent Maintenance – is Liebherr's answer to the market demand for next generation maintenance

According to the company, LiMain paves the way for an even higher crane availability at lower operational costs (OPEX) on offshore platforms.

The fully digital, semiautomatic, and remote maintenance system offers more independency of time, place and resources for platform owners, resulting in never-before-seen savings.

A KEY ELEMENT OF LIMAIN IS ITS MODULAR SYSTEM ARCHITECTURE WITH FOUR DIFFERENT MODULES TO CHOOSE FROM

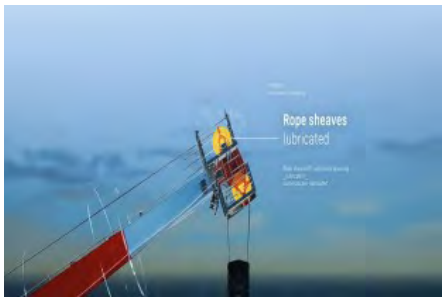
Accelerated by the global pandemic, there is a growing desire among platform operators for new approaches to regular maintenance.

Previously, maintenance processes for offshore platform equipment were time-consuming, costly and also required the use of many resources, further adding to the costs.

Additionally, platform owners face many obstacles that are difficult to manage, such as availability of personnel, weather conditions and need for professional expertise.

To solve the tension between increased crane availability at lower OPEX in combination with a higher degree of independence from these conditions, Liebherr has launched LiMain, which performs maintenance processes without having to operate the crane on site.

According to the company the achievable savings are outstanding: LiMain offers up to 75% less mobilisation on unmanned platforms and up to 50 fewer service days on manned platforms per year



EVEN IN COMPLEXLY INSTALLED POSITIONS, CRITICAL COMPONENTS ARE CONTINUOUSLY CHECKED AND AUTOMATICALLY LUBRICATED

"We commit ourselves to shape the future of maintenance for our customers. LiMain will change the way they think about maintenance", says global application manager Stefan Schneider. "The result of our commitment is an intelligent maintenance system, which solves challenges that platform operators have grappled with all around the world for years."

STATE-OF-THE-ART SENSOR TECHNOLOGY RECORDS DETAILED DATA ABOUT RELEVANT COMPONENTS AND CRANE SYSTEMS, INCLUDING POTENTIAL ENVIRONMENTAL MONITORING

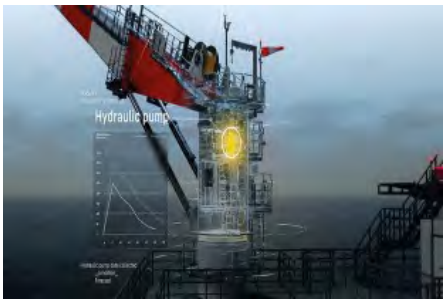
A key element of LiMain is its modular system architecture, which consists of four different modules: automatic greasing, condition monitoring, predictive maintenance and remote maintenance cycle.

Automatic greasing means that core components of the crane are continuously checked and automatically lubricated, while the other modules set a new standard on different levels of maintenance.

With modern sensor technology as a part of the condition monitoring module, detailed data about the crane and its components are monitored in real time, which delivers an unprecedented level of transparency.

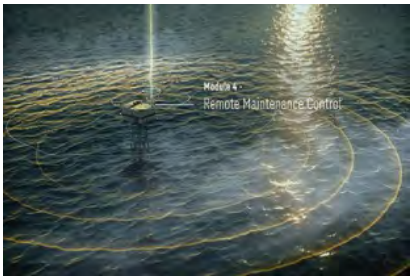
With predictive maintenance, Liebherr puts ad-hoc data into context, building on decades of experience from the construction of more than 1,000 offshore cranes and sharing this knowledge with the customers.

The remote maintenance cycle represents the all-inclusive-approach, which combines all LiMain modules and enables semiautomatic maintenance as well as self-diagnosis of the crane.



ADVANCED SENSOR TECHNOLOGY AND MANY YEARS OF EXPERIENCE ARE BUNDLED TO ADVANCE MAINTENANCE IN THE MOST EFFICIENT WAY POSSIBLE

According to Gregor Levold, sales director offshore for ship and port cranes: "Due to the modular architecture, our customers have the freedom to choose how automated their processes should be, meeting the specific needs of each client. In the near future, LiMain will also be available for further products in our Liebherr maritime crane portfolio."



THE COMBINATION OF ALL LIMAIN MODULES ENABLES SEMIAUTOMATIC MAINTENANCE OF THE CRANE

Besides the usual maintenance processes, LiMain also has a positive effect on general logistics. The ability to pinpoint the optimal time to exchange spare parts eliminates unnecessary service intervals and results in more storage space for other equipment – keeping costs down and availability high.

CRANES HEAD TO LAGOS

Tincan Island Container Terminal Limited (TICT) has ordered two eco-efficient Konecranes Gottwald ESP.8 Mobile Harbor Cranes for their operations in Lagos, Nigeria. Booked at the end of 2021, for delivery in June this year it is the first order of a Generation 6 crane for Africa.

The cranes will be operated by TICT in the Port of Lagos, where they will handle containers alongside a large fleet of Model 4, Model 6 and Model 7 Konecranes Gottwald mobile harbour cranes already on site.

TICT is a consortium made up of Bolloré Ports and a Chinese partnership formed by China Merchants Holding International and China Africa Development Fund.

"The cranes will provide improved handling capacity to meet the demands of the steadily growing business. We look forward to the additional features the Generation 6 will bring, such as the possibility of electric operation in the future", says Etienne Rocher, managing director of TICT.

The cranes on order are Konecranes Gottwald ESP.8 Mobile Harbor Cranes, with a working radius of 54 m and a capacity of 150 t. The natural successor to the Generation 5 cranes already on-site, they feature strong lifting capacity curves for improved performance and a higher classification, which effectively doubles their service life in container handling operations.

The cranes have a customised propping base adapted to local conditions, as well as a tower extension to reach higher container stacks and a better view of the vessel for improved precision and safety.

Built-in readiness for an external power supply will make conversion to electric operation easy when resources allow.

"This order shows the strength of our long-term partnership with TICT. With a total of 12 Konecranes Gottwald Mobile Harbor Cranes in its fleet, as well as RTGs and reach stackers from Konecranes, TICT will have the terminal capacity and flexibility to handle containers from almost any kind of vessel," says Andreas Czwalinna, regional sales manager for Konecranes Port Solutions.

PIECES OF THE PUZZLE

Handling equipment is a major part of the global logisitics jigsaw, but port congestion, labour shortages and supply chain disruption have all had an effect on the industry in the past couple of years

In an opinion piece penned by Lauren Romano, Johanna Karlberg, head of equipment at Wallenius Wilhelmsen recently considered the effect that challenges such as congested ports, labour shortages driven by high cargo volumes and ongoing pandemic-related issues will have on logistics and the availability of handling equipment for breakbulk shipments.

As well as these issues, the general imbalance between demand and supply means supply chain disruptions remain commonplace this year, Karlberg said.

According to Karlberg, handling equipment "is one piece of the global logistics puzzle, meaning it's not immune to the imbalance in tonnage demand and congestion hampering supply chains. For example, if the pick-up of cargo from handling equipment is delayed due to labour shortages or stretched trucking capacity at the discharge port, then that will have a knock-on effect on how quickly we can reposition that piece of handling equipment and make it available for cargoes in other ports.

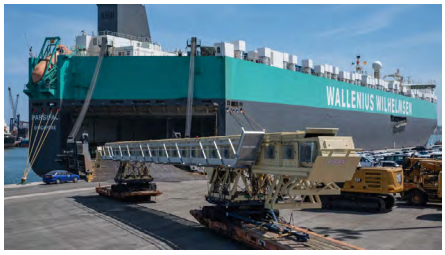
"Widespread port congestion is another factor, as this can delay the general flow of empty handling equipment and make it more difficult to plan. Given the current short tonnage situation, vessel schedules might also change unexpectedly, meaning a port call where handling equipment was due to be loaded or discharged is cancelled and a new plan needs to be created at short notice.

"Meanwhile, a lack of spare parts due to supply chain disruptions could impact the speed of handling equipment repairs and maintenance."

As far as trade flows go, she said that there has been a shift in the general flow of cargo handling equipment. "Whereas historically our handling equipment was mainly repositioned empty to Europe from both the US and Asia, we are now balancing the empty repositioning flow between Europe and Asia where export volumes have increased considerably.

"With both the current global tonnage shortage and the high demand for tonnage in Asia, we could see fewer sailings calling at European ports, which might mean a delay in empty handling equipment being discharged in Europe."

In terms of those transporting breakbulk cargoes, the lead time to distribute handling equipment for export cargo can be longer than normal, she says and the company relied on the support of customers to ensure there is a quick turnaround of equipment. Fast pick up of cargoes also has a part to play in reducing port congestion.



OFFERING A WIDER TIPPING POINT THAN A REGULAR ROLL TRAILER, MULTI-PURPOSE BOGIES ARE A SAFE SOLUTION FOR WIDE, HIGH OR LONG CARGO, LIKE THIS DRAG CONVEYOR

A GAS TURBINE IS STOWED ON BLOCKS AND BEAMS – DESIGNED TO HANDLE CARGO UP TO 400 TONNES – ONBOARD A RORO VESSEL

SUBSEA CABLE DRUMS ARE PLACED ON ROLL TRAILERS DESIGNED FOR CARGO UP TO 140 TONNES AND TOWED ONBOARD THE VESSEL

So how does the company ensure it has the equipment to handle products and minimise delays?

Karlberg said there is a global weekly forecast for the coming five weeks in place that gives the company an overview of all expected export bookings. Based on that forecast it is then possible to plan where handling equipment needs to be moved to be available for the booked cargo (see photos, left). The company also takes handling equipment incoming with import cargo to a port into consideration to optimise the unpacking of these units so as to ensure they are available for export cargo again.

"The goal is to have as fast a turnaround on the fleet as practically possible," said Karlberg.

In terms of which sectors are likely to be prominent this year, she said the power sector is strong globally and there are a number of projects in the rail sector.

"For project cargo, we try to plan for all projects together, to ensure handling equipment moved with cargo in one direction is then used for cargo in the other direction so that we can cover all needs. Ideally handling equipment should be used for cargo instead of being repositioned empty."

So what predictions does she have for the handling equipment fleet?

"I believe that the current high pressure on our handling equipment will continue throughout 2022. But by working proactively for effective repositioning options and trialling new solutions, such as the next phase of our GPS tracking initiative, I am confident that we can optimise the turnaround of our handling equipment and lift even more cargo," she concluded.

BULK BAG DISCHARGE

Flexicon has a new portable half-frame bulk bag discharger with a manual bag dump station and integral flexible screw conveyor, which transfers material discharged from bulk bags and/or manually dumped from hand-held sacks into downstream process equipment or storage vessels, dust free.

Mounted on a mobile frame with locking casters for in-plant mobility, the system minimises weight and maintains a low centre of gravity by eliminating upper frame components, relying on the user's forklift or plant hoist to suspend bulk bags above the discharger during unloading. At timed intervals, flow flexer

bag activators raise and lower the opposite bottom edges of the bag to loosen agglomerates and direct material through the bag spout. As the bag lightens, the stroke of the bag activators increases, ultimately forming a steep "V" shape to promote total discharge.

For manual dumping, the operator raises a hinged bag-dump support shelf and a hinged hopper door and pours material through a coarse screen into the hopper.

When the hopper lid is open for manual dumping, an integral Bag-Vac® dust collector draws air and dust away from the operator. When the hopper lid is closed, the dust collector creates negative pressure within the dust-tight system to contain dust during discharge, and to collapse empty bags prior to retying and disconnection, eliminating dust emitted during manual flattening of empty bags.

Ready to plug in and run, the self-contained system can serve multiple functions and afterwards it can be rolled to a cleaning station where a lower clean-out cap on the conveyor tube can be removed to flush the smooth interior surfaces with steam, water or cleaning solutions, or to fully remove the flexible screw for cleaning and inspection.

SUSTAINABLE SOLUTIONS

With the increased attention being given to sustainability, Starlinger has been showcasing its products to the Chinese market, including its machine range for the production of sustainable woven plastic packaging and recycling of post- consumer and in-house plastic scrap.

As the demand for Stalinger's Ad*Star cement bags is high in China, the company is focusing on the production technology for them – starting with its tape extrusion lines and winders, as well as the lamiTEC coating technology, which is crucial for Ad*Star® block bottom valve bag conversion, Hermann Adrigan, sales director of Starlinger says.

The coming into force of the Chinese standard on cement packaging has led to an ongoing demand for Ad*Star sacks in China during the past two years. The new standard permits only three types of sacks for packaging cement in order to improve sustainability and resource conservation and was implemented in March 2022.

Ad*Star block bottom bags, developed by Starlinger and made of coated polypropylene tape fabric, feature a favourable carbon footprint, an extremely low breakage rate and protect the cement against humidity.

Starlinger's machine range also includes a new circular loom: the RX 6.0pro scores with high production speeds of up to 1,140ppm, new shuttle and take-off design, as well as frequency-controlled motors. The innovations ensure easy handling, less maintenance, longer lifetime of the wear and tear parts, and improve energy efficiency even more.

The RX 6.0pro is designed especially for the production of high-strength lightweight fabric which is also used for Ad*Star sacks.

"China is one of our most important markets in Asia", says Paul Niedl, commercial head of the business unit. "The reprocessing of PET bottles, as well as the re- and up-cycling of other post-consumer plastics such as PE and PP, are topical issues in the area of plastics recycling.

"Due to the fact that the use of recycled PET is not yet unrestrictedly permitted for food contact applications, the bottle-to-bottle market is still in its early stages of development.

"Currently, only a limited number of companies are producing rPET for food packaging - using, among others, Starlinger technology", explains Niedl. "We hope that the conditions will change soon – China has huge potential in bottle-to-bottle recycling."

Recycling technologies from Starlinger also work well for other applications: for the recycling of polyester fibre, efficient melt filtration as well as an increase of the intrinsic viscosity (IV) is desired to achieve optimum quality of the recycled material. This way, fibre producers can process high shares of recycled material and make their products more sustainable.

"We are also witnessing growing demand in the post-consumer sector," says Niedl.

"With our C-VAC technology and the odour reduction module, plastic waste cannot only be recycled, but up-cycled so that it is fit for use in demanding applications such as packaging for the cosmetics and pharmaceutical industries."

FILLING LINE

Concetti has designed a new semi-automatic filling line with a production capacity of up to 1,200 bags per hour. The filling and closing line uses an innovative bag holder that protects the operator when attaching the bag to the filling spout. The dust extraction system helps to provide a clean and safe environment.

The bag closing system is either by sewing or welding. The bag can be closed by simple sewing, fold (of the upper flap of the bag) and stitching; or by heat sealing in the case of plastic packaging (PE, PET).

The plant can process flat and gusseted bags in paper, raffia, plastic, from 10-50kg, with a fully automatic format change. Applications include granular products, including corrosive ones.

The plant, in the completely stainless-steel version, is designed for weighing and packaging aggressive granular products such as salt and fertilisers, ensuring reliability, safety and long life.

For the packaging of products such as rice, grains, feed, pet food, vegetable, forest charcoal, and minerals, Concetti offers the mild steel version with the parts in contact with the product in stainless steel.

Concetti's semi-automatic packaging systems significantly improve bagging operations, combining high productivity, flexibility and safety for operators.

CLEAN LIVING

There have been a number of green initiatives in recent months aimed at reducing emissions as well as reducing hazards when changing from one fuel to another

Aderco, a leading fuel treatment technology specialist has launched an app for iOS and Android, designed to support both onboard officers and crew, as well as shore-based staff with regard to the often complex subject of fuel quality, increased hazards during fuel changeover procedures, fuel lubricity and incompatibility of fuels, as well as the presence of catalytic fines and contaminants.

Olivier Baiwir, chief executive of Aderco, says: "We are super excited with our new app, which has been built entirely from inception to completion in just nine months, with the principal goals of offering ease of navigation, a fast download time and the ability for users to use the app offline, the latter being of particular importance for those serving at sea with potential connectivity challenges."

With the maritime industry today swiftly moving towards intelligent digitalisation solutions and, in order to optimise assets and procedures in a sustainable way, key features of the Aderco app include:

» Fuel competences, fuel types and fuel compliance, including VSLFO, HFO, MGO and biofuel.

- Correct application of the Aderco products.
- A full support section encompassing onboard issues, FAQs, troubleshooting guide, a technical library, preventative treatment and curative treatment for both two stroke and four stroke engines.
- Videos covering fuel incompatibility and stability, water and catfines, as well as bacteria and biodiesel (FAME).
- Fuel data received directly into the app via VPS, the largest bunker fuel testing company for ship operators in the world, covering selected bunkering ports and duly incorporating a traffic light warning system.
- Aderco offices, contact points, stock points and partners.

In addition to Aderco's normal day-to-day activities, particular focus has concentrated in offering practical solutions and help for those ships which have become affected when experiencing fuel problems. Such issues requiring to be addressed invariably relate to fuel quality, including the areas of total sediment, pour point, cat fines, CCAI, viscosity, acid number and chemical contaminants, with typical challenges being sticking plungers, damaged injection valves, broken rings, cracked pistons and even bent connecting rods. To this end, the new app will help identify the fuel related issue.

In many cases, Aderco is able to help a ship suffering from fuel contamination get back to port safely, being the most effective short-term solution to engine contamination resulting from poorly blended fuels. Fuels with high sediment will result in excessive sludge in tanks, which can lead to engine fuel starvation due to blocked and inefficient filters.

SHORE POWER FOR NSW

According to Australian transport minister David Elliott, New South Wales will be home to the world's first 100% renewable energy shore powered shipping precinct, at the Bays Port in the heart of Sydney.

Elliott says Bays Port, which includes Glebe Island and White Bay, will be the first bulk shipping precinct fully supplied by shore power. The White Bay Cruise Terminal will also be the first shore powered cruise berth in the Southern Hemisphere.

"Our government is creating the ports of the future and in doing so transforming the communities in which they continue to operate," he says.

"The first berth is set to come online in 2024, and will allow shore power capable ships to cut their diesel generators, and thereby reducing emissions, air pollution and noise levels whilst at port.

"Shore power is cleaner and quieter, minimising the impact of ships on neighbouring areas and ensuring our last remaining deep water harbour berths continue to operate sustainably into the future."

In the Bays Port area alone, renewable shore power will remove up to 14,000 tonnes of carbon dioxide from entering the atmosphere over 12 months, the equivalent of taking more than 4,000 cars off the roads every year.

The Port Authority of New South Wales (NSW) chief executive Philip Holliday announced the net zero and shore power plan with the support of bulk shipping and cruise industry leaders.

"This is an historic partnership with the Port Authority of NSW investing over $60m to deliver this infrastructure as the first step, with port users already pledging to retrofit and build ships to take advantage of this technology," Captain Holliday says.

"Delivering shore power will drive us even further than our already ambitious NSW net zero targets, of a 75 per cent emissions reduction by 2030 and be net zero by 2040."

FUEL POWER

Classification society Bureau Veritas has released a new rule note on fuel cell power systems on board ships. The rule note covers safety requirements for ships using any type of fuel cell technology, providing rules for the arrangement and installation of fuel cell power systems and the delivery of electrical energy.

Over the past few years, fuel cells have proved to have strong potential to help decarbonise the maritime industry. The technology, which is based on an electrochemical reaction like that in batteries, can run continuously without recharging as long as energy is provided. Fuel cells can bring significant environmental benefits, eliminating nitrogen oxide, sulphur oxide and particle emissions, while reducing

CO_2 emissions, compared with diesel engines. However, this technology comes with a number of challenges that must be addressed to ensure safety.

Bureau Veritas' NR 547 outlines requirements on the design, construction and installation of fuel cells systems to ensure that the safety of the ship is maintained. The aim is to identify and mitigate risks to persons on board, the environment and the structural integrity of vessels. Fuel cell systems and ship design must limit the risk of explosions, the spread of toxic chemicals and fire outbreaks.

Among the requirements outlined by NR 547, maritime stakeholders developing and using fuel cells must carefully assess the risks associated with their design, from construction to installation and operation.

Shipyards and equipment manufacturers have to meet specific safety requirements to earn certification for fuel cell systems. Once fuel cells are integrated onboard, ship operators must safeguard crew and ensure proper handling of fuel cell equipment. An extensive range of risk assessments are required for the fuel cell additional service feature to be granted.

These assessments include a Hazard Identification (HAZID) study of fuel cell spaces, a Hazard and Operability analysis (HAZOP) study of the fuel cell power system, and a Failure Mode and Effect Critical Analysis (FMECA) of the fuel cell power installation (if used for essential services).

In addition to covering fuel cells using hydrogen, the new note rule addresses fuel cells technologies that are adapted to multiple alternative fuel types, each with their own risk profile.

Laurent Leblanc, senior vice president technical & operations at Bureau Veritas Marine & Offshore, comments: "Our new rule responds to the latest advances in fuel cell technology, and incorporates information from the most recent industry-wide collaborations. For shipowners and operators taking the fuel cell route to sustainability, NR 547 lays the groundwork for operating safe, sustainable, and high-performance vessels."

Bureau Veritas has released its new rule note NR 547 on fuel cell power systems on board ships, covering safety requirements for ships using any type of fuel cell technology.

CARBON CAPTURE ON TUGS

Value Maritime (VM), the emission-reducing tech entrepreneurs, and Carbon Collectors, specialists in collecting, transporting and storing CO_2 safely, will together perform a conceptual design study for a new fleet of tugs to be built by Carbon Collectors.

VM will work together with Carbon Collectors to investigate the feasibility of capturing carbon onboard their new marine gas oil (MGO) fuelled tug vessels, using VM's unique technology to ultimately ensure that Carbon Collectors' fleet is CO_2 neutral from the start.

Jointly, the two teams will investigate and determine:

- The required installed power of the diesel generators.
- The estimated CAPE /OPEX.
- The best discharge options for the captured CO_2.
- The optimal solution for unloading and underground storage.

According to Christiaan Nijst, director and co-founder of Value Maritime: "This is a first for us. We've conducted many studies in relation to larger sea-going vessels but now Carbon Collectors are affording us the opportunity to apply our carbon capture expertise to tugs, extending the reach of our sustainable shipping solutions. We're excited to see how these vessels will perform with our leading technology."

Once the design is proven, Carbon Collectors aim to use Value Maritime's carbon capture module to the fullest extent. It is currently designing a custom fleet of power-efficient tugs with the construction of the first vessels scheduled to start in the first quarter of 2024. Once operational by 2026, the MGO-fuelled tugs could be effectively capturing all of their CO_2 emissions onboard.

Both parties will not only review the carbon capture abilities of the vessels but jointly look into the optimal solution

for safely unloading and permanently storing the CO_2 underground.

Haije Stigter, technical director at Carbon Collectors comments: "As a company aiming to speed up the reduction of CO_2 emissions, we also want to make sure that our own fleet contributes by becoming carbon-neutral as fast as possible. For years to come, carbon-neutral fuels will not be available in amounts that are large enough to fulfill demands, so carbon capture and storage seems the only feasible option in the short and medium term."

VM developed Filtree, a unique system that cleans both air and water from all ship types and includes an integrated carbon capture feature making today's fleet (newbuild or retrofit) not only sustainable today but future-proof for tomorrow.

The CO_2 capture feature removes and stores carbon from the vessel's exhaust gases and uses it to charge a CO_2 battery, which can be offloaded and re-used to facilitate the growth of crops, used to enrich future fuels or it can be safely stored until needed – a truly clean circular solution.

FUEL CELL POWER

ABB and Ballard are progressing with their industry-leading partnership to decarbonise marine transport and have received an Approval in Priniple (AiP) from DNV for their high-power fuel cell concept, the development of which was launched in 2018.

An AiP is a major milestone in developing new technology as an independent assessment of the concept, confirming that the design is feasible and no significant obstacles exist to prevent the concept from being realised.

With the AiP in place, the jointly developed solution can be completed within the next couple of years for application onboard a wide range of vessels.

"We are pleased to have worked with ABB and Ballard on this AiP," says Tuva Flagstad-Andersen, regional manager North Europe, DNV Maritime. "Hydrogen plays an important role in the energy transition, so it is essential to establish safe technologies that the industry has confidence in. As an early phase verification for new design concepts, based on long-standing, trusted and independent standards, an AiP can help build this confidence."

The high-power fuel cell unit is a flexible solution that will support the energy needs of a diverse range of vessels requiring multiple 3mw blocks of power. A cruise vessel operating in coastal areas could either run entirely on fuel cell power or switch to it when operating in environmentally sensitive areas or emission control zones, while a ferry with a regular schedule and frequent bunkering opportunities could operate solely on fuel cell power. For ocean-going vessels, fuel cell power could support auxiliary needs. The concept of the solution also envisions the integration with an energy storage system.

"This AiP is an important milestone in making high-power fuel cells commercially available, and it underpins our commitment to bring new levels of efficiency, reliability and sustainability to the global shipping industry," says Juha Koskela, division president, ABB Marine & Ports. "As we continue to pave the way toward decarbonising shipping, we are confident that vessel electrification, including fuel cell technology, will play a pivotal role in helping the marine industry achieve its environmental targets."

The successful development of a high-power fuel cell system concept builds on a collaboration between ABB and Ballard, the leading global provider of proton exchange membrane (PEM) fuel cell solutions, initiated in June 2018.

Demand for hydrogen, which has grown more than threefold since 1975, continues to rise. Scaling up technologies and bringing down costs of production is vital to enable hydrogen to become widely used. ABB is collaborating with customers and partners to develop and integrate technology that will make hydrogen an accessible, affordable component of the world's low carbon energy mix.

In Italy, ABB is partnering with Swiss utility company Axpo to develop modular green hydrogen plants that aim to create an optimum operating model to produce affordable, green hydrogen.

In France, ABB is supplying its Freelance distributed control system and ABB Ability Manufacturing Operations Management digital platform to the first production site for Lhyfe, a producer and supplier of 100 percent green hydrogen.

ABB is also working with Hydrogen Optimized, a sustainable energy conversion company in Canada, to jointly explore the development of large-scale green hydrogen production systems connected to the electrical grid to offer a clean, sustainable, and affordable energy carrier.

EEXI TRANSITION CLAUSE

The deadline for compliance with the IMO's Energy Efficiency Existing Ship Index (EEXI) is looming. Are charterparties flexible enough for the transition phase? How should parties approach the new time charterparties which they are entering into to cater for the vessel's EEXI compliance?

Gard takes a closer look at these questions in an article on its website. *Visit: tinyurl.com/GardUpdates*

WHICH WAY FORWARD?

BY BASIL KARATZAS

Attempting to adhere to an ESG Framework in a post-covid, inflationary world, the cement industry is at the crossroads

For many, the recent geo-political events in Ukraine amount to a real-life gauge of whether adherence to new regulations for a cleaner environment and a safer world is indeed the way forward. With the world barely having recovered from the covid-19 pandemic, the focus of the global community – having obtained a higher awareness status from the pandemic – had been on environmental, social and governance (ESG) as the way for a better and more equitable society, and a world better positioned to face future crises.

But again, combined with supply chain disruptions and generous stimulus packages, inflation has escalated much higher than anytime in recent memory, and prices for commodities have almost doubled since the depths of the pandemic. And, while the governments and central banks globally were shifting their focus on fighting inflation, Russia's brutal invasion in Ukraine has elevated the inflation problem to a new level. And along with it are the tough decisions that have to be made, on humanitarian and political grounds, but also decisions on momentary and fiscal policy – and, yes, decisions that will show whether the ESG cause had any meaning at all, or was just a "lip-service cause" to be dropped at the first sign of trouble.

Decisions on ESG (including decisions about achieving zero -emission goals by the end of this decade or so) are critical for many aspects of our societies and lives. For certain industries that are heavy pollutants by their own nature, such decisions on ESG may be of existential dimensions for companies active in such markets. Fossil fuels and coal, for instance, have been under heavy criticism – understandably – and there has been a concerted effort to move away from such sources of energy.

For the maritime industry, where its 940m tons of CO_2 emissions or almost 2% of the global greenhouse emissions, the primacy of the goal for emission reduction is self evident.

For the cement industry, the stakes are even higher, given that industry accounts for almost 7% of greenhouse emissions and accounts for almost 25% of all CO_2 emissions produced by industrial activity. Since late 2021, when it became apparent that the world had started controlling the pandemic, ESG considerations had become the focal point for societies moving forward.

The current world events may provide for an easy excuse for government and industry bodies to take their eyes off ESG and delay environmental targets: in a world where the price of fuel at the pump has increased by 50% in a year and Germany is contemplating of rationing natural gas to its population, keeping tabs on emissions milestones would seem preposterous.

And, while citizens seem to have come out of the pandemic with an enhanced sense of conscientious awareness in reference to the environment, now it is the time to see whether people really will be prepared to absorb the costs (however those costs are defined) in order to live up to heightened expectations.

For governments and government bodies, obviously handling geo-political events and fiscal policy should take precedence, at least in the short term. For regulatory bodies, still trying to find their footing after their year-old hibernation induced by covid-19 shutdowns, it would be interesting how hard they will be prepared to "push" to effect policy, especially in the face of governments focusing on different targets.

It is likely that there will not be a uniform reaction by all industries and in all countries and trading blocks. Politics is a local sport, after all, and each government plays to its own audience and for the next election cycle. However, there may be clues from events taking place in certain industries – that have been under the microscope – on how strict compliance with ESG there will be and how it will be effected.

For instance, for the maritime industry, with its widely fragmented regulatory environment and even more fragmented vessel ownership structure, there have been the voices about the extraordinary nature of our times, the inopportune timing of world events and a call to maintain the status quo; that is, for the ships to keep burning heavy fuel oil, if fitted with scrubbers, or ultra-low sulphur marine diesel fuel if without scrubbers, with no further discussion of meeting zero-emission carbons by 2035, or even 2050.

But again, new technology companies in the marine industry keep advancing their agenda, as one would expect in a competitive marketplace. In addition, shipping banks have been insisting on financing vessels and companies sailing on a demonstrable path to achieving ESG milestones. Likewise, for a few (primarily well-established) shipowners, advancing with the times and pursuing a robust ESG strategy is seen as an effort to distinguish themselves "from the pack" and get preferential access to cargoes, charterers and financiers.

It would appear that, at least in the maritime industry, the fight to improve has started gaining momentum from within the industry itself – irrespective of the costs – rather than exclusively depending on governments and regulators to set the pace.

In general, while the cement industry is a much more consolidated industry than the maritime industry, it faces equally titanic concerns when it comes to ESG compliance, and especially emissions. If the cement industry were a country, its CO_2 emissions would be third in the world, behind only China and the US. And, it's the worst industry worldwide per CO_2 emissions per dollar of revenue generated, whereby each US$ dollar of revenue requires the creation of 6.9kg of CO_2; even the heavily criticised oil and gas industry "only" produces 0.4 Kg of CO_2 per US$ revenue.

For the world to ever meet the stated goal of keeping global warming within the target of 1.5°C to pre-industrial levels, the cement industry has to be tamed. But again, there seem to be companies in the cement industry dedicated to lowering emissions and make for a "cleaner" industry. Although a "hard-to-abate" industry, there is the low-hanging fruit in the short term to save on emissions; for instance, 780 of the 925 kg of CO_2 for each ton of cementitious material produced is generated in the kiln and pre-heating / pre-calcination process to produce clinker, and such emissions could easily be reduced by switching to cleaner sources of energy.

Several cement companies have been putting emphasis on using waste material (besides flying ash) in the cement production process, in an effort to achieve an overall clean goal. And at least one cement company has been experimenting with bypassing the kiln phase, creating clinker at much lower temperatures and thus lowering the energy requirements.

More ambitious cement companies have been working on commercialising the injection of CO_2 when preparing concrete, a technology that not only absorbs CO_2 from the atmosphere, but also makes the concrete stronger. Similar to the maritime industry, institutional investors and financiers in the cement industry appear to keep focused on demanding for the industry to meet ESG stated goals, which by itself, it can be a great catalyst for a cleaner world.

It has been said that a crisis is a terrible thing to waste. No doubt recent geo-political events have dragged our world back to historical times by a few decades, to an age that most of us thought would never live in again. While we all try to comprehend – and, to an extent – cope with the implications of the geo-political events, steering away from established ESG goals and failing to implement the 1.5°C goal of global warming would be the biggest catastrophe of all. But again, seeing recent developments taking in heavily pollutant industries, like the maritime and cement industries, one feels optimistic.

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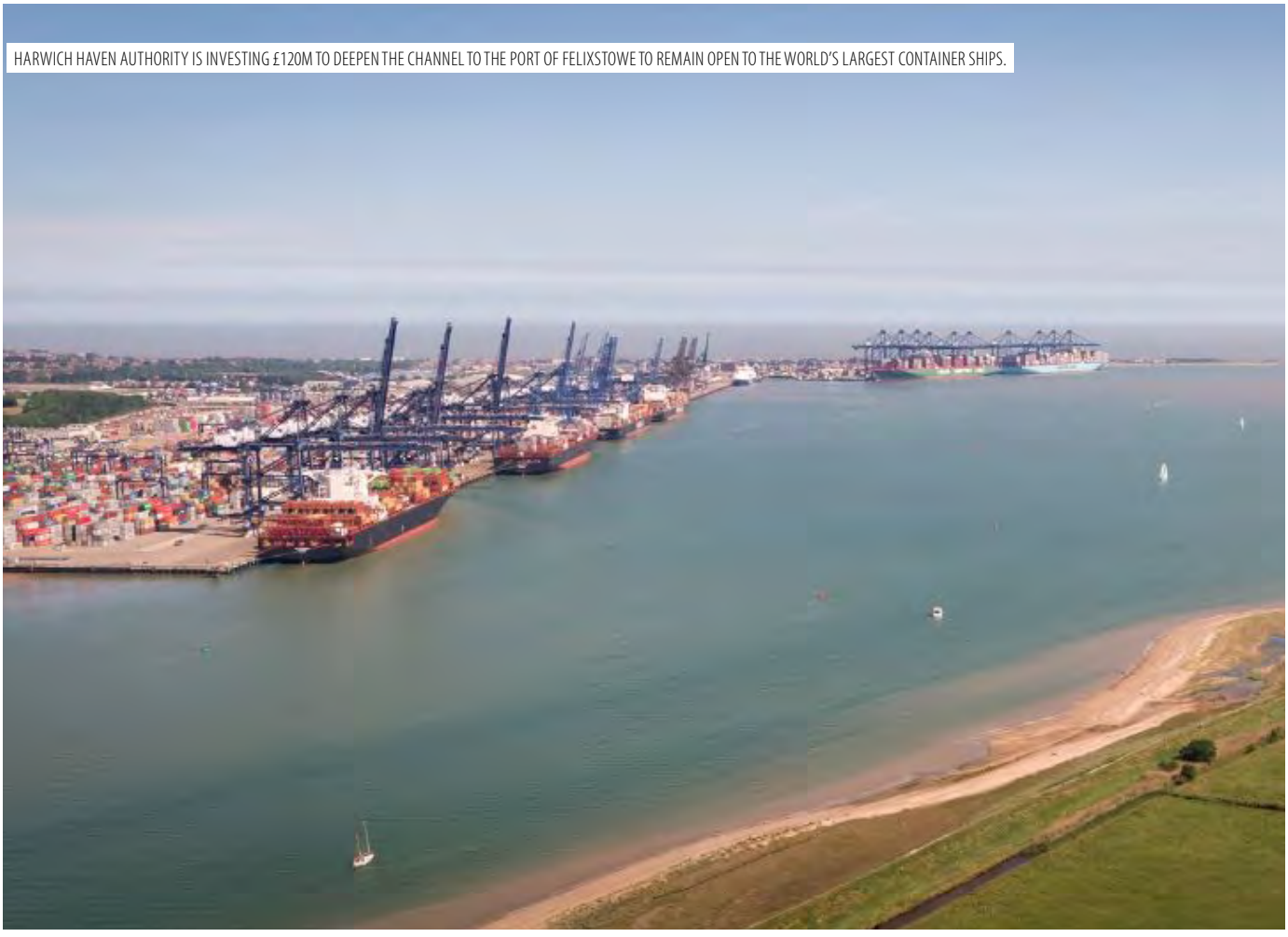
BOOST FOR BRITISH PORTS

Port investment has been continuing despite tough market conditions and the difficulties in operating practices caused by the pandemic



HARWICH HAVEN AUTHORITY IS INVESTING £120M TO DEEPEN THE CHANNEL TO THE PORT OF FELIXSTOWE TO REMAIN OPEN TO THE WORLD'S LARGEST CONTAINER SHIPS.

New research published by the British Ports Association recently reveals that UK port investment topped £1bn in 2021 despite continuing pandemic volatility. The figures are being published alongside BPA analysis of new trade data that shows how continued depressed demand for fuel is masking a strong recovery across multiple cargo segments.

Investment in port infrastructure in 2021 stood at more than £1bn, swelled by several big projects such as the £300m fourth berth at DP World's London Gateway, which will raise capacity at the container port by a third. Significant investment in modernising port machinery, pilot vessels and buildings adds at least another £75m to the total, although this is almost certainly an underestimate as the value or existence much of this investment is not routinely published.

Other notable port infrastructure investments announced last year include:

- £25m development of the Port of Lowestoft's Eastern Energy Facility
- a £50m expansion at the Port of Cromarty Firth
- Teesport's new £9.2m bulks terminal
- the start of a new £60m programme of works to redevelop areas within Pembroke Port
- £40m of investment in the Port of Leith by Forth Ports

Recent investment figures for last year showed volumes for most cargo types returned to pre-pandemic levels or are stronger than they have been for years. Weak liquid bulk volumes due to a drop off in transport demand during the pandemic have masked what is shaping up to be a very busy year for many ports.

The BPA published analysis of new experimental "live" trade statistics from the government at the end of last year.

HUMBER ENTERPRISE PARK

Associated British Ports (ABP) has launched the first of its new tranche of port-manufacturing sites, called the Humber International Enterprise Park (HIEP), at ABP's Port of Hull. ABP has appointed leading commercial property consultants, CBRE together with Savills, to act as agents and advise on the project.

The 468 acres of prime land of the HIEP site includes 212 acres of port estate that benefits from Enterprise Zone Status, being situated within the Humber Freeport Tax Assisted Zone.

The site also has potential quayside access to the Port of Hull via a dedicated road/rail link, which can offer the benefit of access to port facilities.

Simon Bird, ABP's regional director for the Humber, says: "HIEP offers huge potential to support business growth for those looking to base themselves in the Humber. Port-centric manufacturers would have easy access to import and export commodities while benefiting from the Humber Freeport status. The development area is also close to the A1033, providing access to the A63 and M62 motorway."

This development site in the Humber is the first of a tranche of 14 sites – of more than 1,000 acres of development land – that ABP has brought forward to support the UK's supply chain, manufacturing, and renewable energy sectors. ABP continues to demonstrate its commitment and contribution to the UK's economic recovery and supply chain efficiency.

SKILL DEVELOPMENT

The forces that influence UK port operations are evolving. As the sector responds to new demands, the challenge of creating more sustainable and digitally-optimised port operations is highly likely to impact on the future pipeline of skills and labour requirements in the sector.

To mark the start of National Careers Week in the UK in March, the British Ports Association (BPA) released a new report outlining the future skills agenda for port operators and their supply chain partners. Produced by maritime innovation agency Thetius, this report explores the high level prospects for the ports sector as it adapts to harnessing emerging technologies to stay competitive and remain fit for purpose in a digitally-enabled and decarbonised global supply chain.

Ports in the UK and beyond are rapidly approaching a paradigm shift. Pressure is mounting from the international community, nation states, and the global supply chain for ports to embrace the opportunity new technologies bring to process ever-greater cargo volumes with ever-decreasing impacts on the environment, while continuing to promote the wellbeing of their work forces.

"We see a ports sector that is increasingly embracing process optimisation through greater autonomy and a more integrated approach to data sharing between supply chain partners. The report considers the implications of technological change in port operations and calls on key stakeholders to consider future port skills as an issue that needs imminent attention," says Matthew Kenney, head of research and intelligence at Thetius.

"A key part of our Port Futures initiative, this compelling report shines a spotlight on how technological change at ports will have wider implications, putting skills and workforce progression central to the future development of our sector. Port workforces should remain a critical focal point and supporting and developing port staff should be considered essential to success in the coming years."

"The UK ports industry is a major employer, providing around 115,000 jobs across the country, often in areas of high deprivation. The BPA is keen to shine a light on the sector during National Careers Week and we will be examining what the findings in this report might mean for the sector," adds Richard Ballantyne chief executive of the British Ports Association.

Terminal Velocity was commissioned as part of the BPA's Port Futures programme, which is exploring how future developments in our sector might shape the industry. The report is also intended to provide insight to the Maritime Skills Commission which is looking at the skills needs of the shipping and ports sector in the UK.

PILOT EXCHANGE PROGRAMME

Associated British Ports is the first ports group in Europe to use a new digital Master Pilot Exchange programme developed by Ports of Auckland, eMPX, simplifying the current process.

Already in use at ports in New Zealand and Australia, ABP's 21 ports will become the first European-based ports to roll out and use the software. After a successful trial completed in 2021, eMPX will assist all ABP marine pilots in helping to guide ships of all shapes and sizes into safe harbours.

eMPX, the new global standard for master-pilot exchange, is designed with cutting-edge technology, and provides pilots with an entirely digital experience, eliminating the need for paper-based processes.

Using an iPad, pilots will be able to plan ahead of a vessel's arrival at port, before sharing the plans and port data with ships' masters, with the ability to update the plan if a ship is delayed. Data can also be stored, with all data then stored in the cloud, readily available for future reference.

Speaking about the partnership, James Clark, technical authority marine, says: "It has been great working with Ports of Auckland to develop this new software for ABP's pilots, and we are delighted to work with the team in New Zealand to make it happen. Not only does this simplify the process in terms of a paper-to-digital process, but we will now be in a position to send ships information about their planned passage ahead of time, which all contributes to better bridge resource management as well as providing our customers with better information."

Jason Ranston, business manager, Ports of Auckland, says: "At Ports of Auckland, we have been thoroughly impressed with the deep level of insight that ABP's pilots have been able to provide, as well as the commitment to support the ongoing development of eMPX. For us, ABP's ports represent eMPX's first step into Europe as a software provider, and we are excited to have ABP join a growing global community of marine pilots dedicated to the enhancement of our master pilot exchange system."

The use of eMPX at ABP's ports is part of its long-term vision for digitalisation. Already in use among marine pilots in Southampton, ABP plans to roll out eMPX with pilots in its other 20 ports by the end of 2022.

DUBLIN VOLUMES DOWN

Following a surge in activity in the fourth quarter of 2020, before Brexit border controls were introduced on 1st January 2021, overall volumes at Dublin Port declined in the fourth quarter of 2021 by -10.3% to 9.1m gross tonnes.

This decline was driven by a -11.9% reduction in the number of containers and trailers year-on-year from a pre-Brexit spike of 418,000 units in the fourth quarter of 2020 to 369,000 units in the corresponding period of 2021.

For the year as a whole, overall volumes at Dublin Port fell by -5.2% to 34.9m gross tonnes.

83% of Dublin Port's volumes are in the Ro-Ro and Lo-Lo modes and there were contrasting outcomes in these two modes:

- The number of Ro-Ro units fell by -9.3% or 99,000 trailers
- This was significantly offset by an increase in Lo-Lo units of +10.2% or 43,000 containers
- Overall unitised volumes (Ro-Ro and Lo-Lo combined) were down by -3.8% or 56,000 units
- Trade vehicle imports increased by +10.9% during 2021 to 82,000 notwithstanding space constraints causing a number of ship arrivals to be cancelled during December, the busiest month in the year for Irish vehicle imports.

The full year impacts of Brexit on Dublin Port's unitised volumes (Ro-Ro and Lo-Lo) are now clear the port authority said:

The overall decline in the number of containers and trailers was small at just 56,000 units (-3.8%).

Fewer goods are now moving in trailers in the Ro-Ro mode and more are moving in containers in the Lo-Lo mode. Lo-Lo's share of unitised volumes increased from 29% to 33%.

Fewer Ro-Ro trailers are moving driver-accompanied. During 2021, their number declined by 90,000, contributing substantially to the overall decline in Ro-Ro volumes of 99,000.

The decline in Ro-Ro volumes was concentrated on routes to the GB ports of Holyhead, Liverpool and Heysham where volumes declined by 187,000 (-21%) to 703,000.

However, Ro-Ro volumes on direct routes to Continental Europe increased by 88,000 to 259,000.

As a result, where GB routes accounted for 64% of all of the 1.5m unit loads (Ro-Ro and Lo-Lo combined) in 2020, they only accounted for 52% of the 1.4m unit loads in 2021.

Some 17% of Dublin Port's volumes are in the bulk commodity modes and these grew by +2.1% during 2021. Bulk liquid – primarily petroleum imports – grew by +1.7% to 3.9m tonnes. Bulk solid volumes grew by +0.9% to 2m tonnes. This includes movements of animal feed, lead and zinc ore concentrates, scrap metals and petroleum coke. Overall, bulk commodities increased by +2.1% to 6m tonnes.

Commenting on the 2021 figures, Dublin Port's chief executive, Eamonn O'Reilly, says: "Dublin Port finished 2021 with overall volumes down on their 2020 levels by -5.2%. The reduction in cargo throughput was accounted for by a drop of 56,000 in the number of containers and trailers to 1.4m. Behind this figure there was a substantial decline in unitised volumes with GB – down 214,000 units – largely offset by a strong increase in volumes with the EU of 158,000 units.

"Brexit has caused the make-up of Dublin Port's unitised volumes to change significantly. Ro-Ro volumes were down by 99,000 and, for the most part, this decline was accounted for by a 90,000 reduction in driver accompanied Ro-Ro. By comparison, the number of Lo-Lo containers increased by 43,000.

"The extensive Brexit preparation work completed in 2020 paid off in 2021. There was none of the catastrophic congestion that had been projected and what disruptions there were in the early days of 2021 were quickly resolved as supply chains adapted to the new realities. Over the course of the year, the average number of trailers called for

some physical inspection on services from GB was just 2.5 per ferry.

"The risks of Brexit were comprehensively mitigated and Dublin Port's volumes are set to increase again during 2022 driven by growth in trade on direct services with Continental Europe.

"Looking ahead, we are currently preparing our third and final Masterplan project – the 3FM Project – to provide additional infrastructure for continued future growth. The 3FM Project includes the construction of Ireland's largest container terminal with an annual capacity of 360,000 containers to meet Ireland's long-term port infrastructure needs."

BLYTH INVESTMENT

The Port of Blyth, has ordered an eco-efficient Konecranes Gottwald ESP.6 Mobile Harbor Crane for the newly refurbished Bates Clean Energy Terminal in the North East of England. Booked in October 2021, the crane is scheduled for fully erected delivery in April 2022 and will be the first Generation 6 crane to be delivered to the UK.

Port of Blyth handles a wide range of cargo across three major terminals, with a key focus on supporting internationally significant projects and mobilisations in the offshore energy sector.

Positioned midway between Aberdeen and Great Yarmouth, the Port is home to a mature supply chain of offshore energy related businesses and is considered a one stop shop for all energy related activities carried out in the North Sea. The Port also supports transportation of a whole range of goods and materials and facilitates a twice weekly container service from Europe.

"With a key focus on delivering an ambitious decarbonisation strategy over the coming years, we were looking for a solution to help us achieve that goal. We are keen to put Konecranes' renowned and innovative eco-efficient electric drives to good use.

"Our recently modernised quay at our flagship Bates Clean Energy Terminal now has mains access, so the crane can operate fully on electricity. Their ESP.6 mobile harbour crane suits our requirements perfectly," says Alan Todd, port director at the Port of Blyth.

This Generation 6 Konecranes Gottwald Mobile Harbor Crane is equipped with an external power supply. Thanks to its electrical design concept, efficiency increases when connected to the harbour mains.

It completely eliminates local carbon emissions and reduces noise to an absolute minimum. In addition, a smart power management system recovers energy from braking and lowering movements which can then be re-used by other crane functions, or alternatively fed back into the harbour mains, as needed. The crane also offers the flexibility to be operated on nearby quays not yet connected to the mains, with its state-of-the-art onboard diesel generator set.

GREEN SHIPS INITIATIVE

FuelTrust, the technology company dedicated to creating a trusted and sustainable fuel ecosystem for the marine industry, and Isle of Man Ship Registry (IOMSR), one of the world's leading registers of ships, have signed a Memorandum of Understanding.

IOMSR will use FuelTrust's fuels and emissions digital technology to validate vessels for the flag's Green Ship scheme and to collaborate on further projects to incentivise and enable emissions reductions.

The collaboration and co-operation agreement will enable shipowners and operators registered with the IOMSR to use FuelTrust's Bunker Insights® product to predict, measure and authenticate their fleets' emissions reductions.

Under this collaboration, IOMSR will accept FuelTrust's AI-based validation of a vessel's performance regarding its emissions and fuel quality programmes. This will make vessels using Bunker Insights eligible for IOMSR's green ship designation and benefit from discounts or offerings on their annual registration fee.

The Green Ship discount programme, which comes into effect on 1 April 2022, is available to operators of cargo ships, commercial yachts or passenger ships that invest in biofuel, alternative fuels, wind, or shore-side energy technology.

FuelTrust and IOMSR will collaborate further to explore methodologies for tracking emissions reductions from zero-carbon fuels, among other projects, to reduce greenhouse gas emissions.

"The agreement with Isle of Man Ship Registry creates significant opportunity for vessel owners," says Darren Shelton, chief product officer of FuelTrust.

"IOMSR recognises how advanced technologies such as ours can help its members reduce their carbon emissions, track fuel usage and monitor performance.

"The advent of low- or zero-carbon fuels, each with their own supply chain, is making the bunkering market even more complex. Owners and operators need to demonstrate to charterers, shippers, insurers, financiers and regulators that they are purchasing fuel that delivers against decarbonisation targets. Digital technologies are required to ensure shipping companies have a validated analysis of their fuel profile and environmental impact."

Cameron Mitchell, director of the Isle of Man Ship Registry, says: "As the world's first flag state to reduce registration fees for ships deploying green technology, we want to support our members' efforts by giving them access to the best technology for supporting fuel choice and to manage and monitor vessel emissions for regulatory compliance.

"Our collaboration with FuelTrust provides Isle of Man-registered ship operators and charterers the insights, expertise and transparency to assess the collective carbon output of their fleets and to manage compliance with emissions regulations."

DARREN SHELTON, CHIEF PRODUCT OFFICER OF FUELTRUST (LEFT) AND CAMERON MITCHELL, DIRECTOR OF THE ISLE OF MAN SHIP REGISTRY (RIGHT)

PRIVATISATION PLANS

There have been a number of interesting initiatives affecting South American ports in recent months, not least privatisation initiatives, which will introduce a new dynamic to ports in the region

Brazil's government is moving ahead with plans to privatise South America's largest seaport at Santos, with moves afoot to expand the surface area of the port in order to accommodate more greenfield areas, which can be used for new project development.

The Brazilian government is keen to privatise the country's ports so Santos is something of a trailblazer and expansion was needed because most of the port's space was already occupied so new space was needed to accommodate development plans. A public consultation on how best to privatise the port of Santos has been held this year.

The national waterways authority, ANTAQ, has said that the privatised operation will be for a 35-year period with potential to renew for a further five-year period and an initial grant of $250m will be available, with planned investment totalling $2bn over the term of the concession.

ANTAQ recently approved a bidding process for Codesa, which oversees the ports of Barra do Riacho and Vitoria. The concession agreement will also be valid for 35 years and renewable for another five years, and it is expected to bring in $60m in private investments.

ITAQUI PORT MOVEMENTS

Wilson Sons was responsible for the agency of the vessel *Pelican Arrow*, owned by G2 Ocean, which carried out the first full load operation at Pier 99, recently opened in the Port of Itaqui.

In total, 59,002 tons of wood pulp were shipped, of which 28,172 tons were destined to the Port of La Pallice, in France, and 30,830 tons to the Port of Flushing, in the Netherlands.

"As berth 99 is still in the commissioning and approval phase, there are restrictions to be considered for this operation, such as co-ordination with pilotage and other stakeholders to carry out manoeuvres only during the day, seeking to maintain productivity combined with safety", highlights André Nogueira, coordinator of agency operations in São Luís.

Nogueira explains that the agency is also responsible for managing the export documentation of the cargo with the customs broker and shipper, for communicating with regulatory agencies and for the services that are required by the crew and the ship.

The new pier was built by Suzano, the largest producer of eucalyptus pulp in the country, which exported over 1.6m tons in 2021.

The company also invested in the construction of a new warehouse which more than doubled the cargo storage capacity.

"In addition to exporting pulp, Pier 99 is also an alternative for the operation of other commodities, such as wheat and fertilisers, and will contribute to reducing the waiting time of the ships", says Iully Matos, maritime agent for Wilson's São Luís branch.

Itaqui has also gained a new fuel distribution base, with the inauguration of the Raízen terminal, which has the capacity to handle 1.5bn litres of fuel per year.

"Itaqui is already consolidated in the region as a fuel hub and the new Raízen terminal will strengthen this already important infrastructure for the movement of liquid bulk," says port president Ted Lago.

The inauguration of the new Raízen terminal is part of the package of public and private investments for the Port of Itaqui, which total around R$2bn.

Investments include, in addition to the new fuel terminal, the second phase of the Maranhão Grain Terminal, and a new fertiliser terminal among other projects.

A recent visit by Governor Flávio Dino to Porto do Itaqui (above) marked the launch of a package of infrastructure works that add up to more than R$500m in investment by Empresa Maranhense de Administração Portuária.

The initiative is part of the company's strategic plan, with the objective of raising the cargo handling capacity of the Port of Itaqui above 40m tons/year by 2025.

"Itaqui has grown in recent years, with successive records, thanks to public and private investments in infrastructure and technology," Lago says.

"We went from 18m tons of cargo handled in 2014 and reached 31m tons in 2021. To continue this growth, we are launching a package of works that will bring improvements to our operations, more security in the expansion of the handling capacity of cargo."

The Port ended 2021 with more than 31m tons of cargo handled and grew 23%, compared with the previous year.

There was an emphasis on soybeans, which reached 10m tons; fuels, which reached 9.9m tons, and fertilisers, with 3.3m tons handled.

Only liquid bulk cargoes increased by 56%; solid bulk grew by 12% and general cargo was 8% above the volume recorded in 2020.

Fuel warehouse operations, mainly diesel and gasoline, were 189% higher than in 2020, due to the resumption of consumption after the most critical phase of the pandemic, which demanded an increase in imports, associated with the improvement in fuel rates and productivity at the port.

For the coming year, expansion of liquid bulk terminals, investments in rail access, with the advancement of the rail loop project (in the medium and long term) are underway.

CARGO QUANTITIES IN ARGENTINA

Are shore figures mandatory when determining the cargo quantity for bulk cargoes? This is the question asked by P&I club Gard for ships loading or unloading bulk cargoes at Argentinian ports.

"Many Masters have experienced the demand of cargo interests to use the shore scale figures to determine the loaded/discharged quantity arguing that only shore figures are recognised locally. But is this true and are owners, charterers and operators obliged to accept the shore scale figures blindly?" the P&I Club asks in an insite piece on its website.

"Prior to 2013, importers and exporters had the benefit of selecting the method to be used to establish the weight of dry bulk cargoes. In June 2013, the Argentine Customs Authorities issued General Resolution No. 3506 on Determination of weight by draft and tanks' sounding for operations with solid goods in bulk according to which customs will decide the method of determining the cargo weight between the shore scale and draft survey figures.

"Since 2017, and pursuant to General Resolution No. 4138-E/2017, it is again importers and exporters who can select the method to be used to establish the weight of a dry bulk cargo.

"However, Customs authorities are still authorised to counter-check the weight declared.

"It is a misconception that only the shore scale figures are accepted in Argentina. Even if the shore scale figures are chosen in the commodity sale contract, the vessel may perform a draft survey and any of the parties involved may also engage surveyors to take part in such draft surveys.

In any event, members are expected and obliged under the Hague-Visby Rules to conduct their own draft surveys when loading or discharging cargoes. The draft survey figures will be a point of reference when shippers present a bill of lading reflecting shore figures."

The insight piece goes on to say that "in Argentina, the most common problem is when local shippers present the shore figures to be inserted into the bills of lading and there is a discrepancy between such figures and the vessel's draft survey figures.

"If the discrepancy is within normal or customary limits, it is usually acceptable to issue clean bills of lading with the shore figures without any remarks."

What is a normal or customary discrepancy depends on the circumstances and the means of measurement used to determine the ship's figures, it adds.

ENVIRONMENTAL STEPS

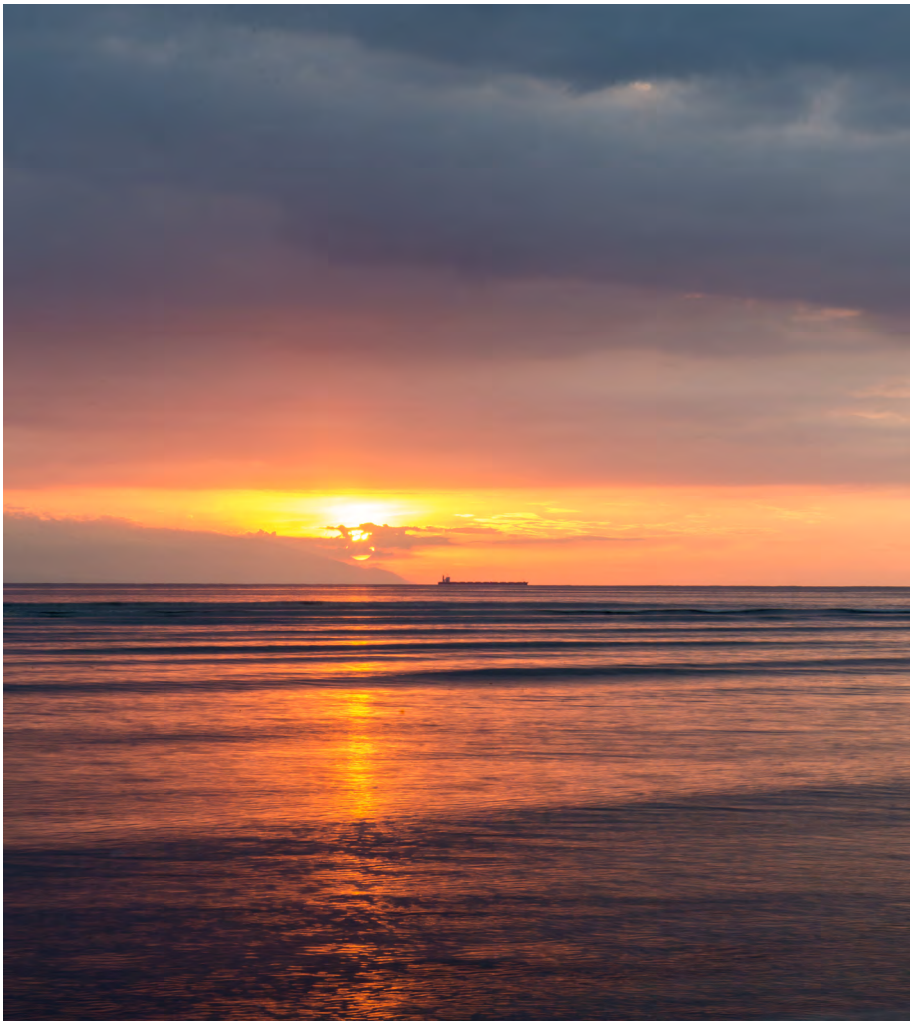
The first step towards the establishment of carbon reduction targets in the public port of Maranhão has been taken, with the conclusion of the Greenhouse Gas Emissions Inventory, an instrument that aims to identify and measure carbon emissions in port activity.

Maranhão is one of the few Brazilian states to have legislation on reducing greenhouse gas emissions and

> "What is a normal or customary discrepancy depends on the circumstances and the means of measurement used to determine the ship's figures

LOW CARBON IS KEY

South East Asian countries are putting sustainable solutions firmly in the spotlight



As countries seek to tackle the climate crisis, Singapore has announced plans to spend at least $300m to cut carbon emissions for shipping industry over the next 10 years. Transport minister S Iswaran announced the investment in March, which aims to meet the target of net zero emissions at all port terminals by 2050.

Investment will also be made to ensure that Singapore is ready for a multi-fuel approach, including new generation fuels including ammonia, hydrogen, biofuels and methanol.

The push will be on to ensure that Singapore-flagged ships implement measures to reduce carbon emissions – there are about 4,000 ships flagged in Singapore.

The Maritime Singapore Decarbonisation Blueprint: Working Towards 2050 charts ambitious and concrete long-term strategies to build a sustainable Maritime Singapore. Developed by the Maritime and Port Authority of Singapore (MPA) in consultation with industry partners, the Blueprint will contribute to Singapore's commitments under the UN's 2030 Sustainable Development Agenda, Paris Agreement and the Initial IMO

Strategy on reduction of greenhouse gas emissions from ships, and strengthen our value proposition as a leading global hub port and International Maritime Centre.

According to the MPA, over the past two years, global supply chains have witnessed major disruptions. The pace of change is expected to continue to accelerate as emerging trends reshape the operating environment. It is critical that the global maritime industry and supply chains remain connected and resilient.

Against this backdrop, the Singapore Ministry of Transport and Maritime and Port Authority of Singapore have established a Maritime International Advisory Panel (IAP) to seek global perspectives on key trends that will shape the maritime industry. The Maritime IAP will also discuss how the maritime sector and adjacent industries can collaborate to enhance the resilience and connectivity of the global maritime industry and supply chains, and how Maritime Singapore can play a role in this.

The Maritime IAP will be chaired by Singapore's minister for transport and minister-in-charge of trade relations, S Iswaran, and comprises 12 top global business leaders from the maritime sector and adjacent industries such as consultancy, e-commerce, energy and commodity, finance, logistics and manufacturing, and technology. This will complement the network of industry leaders based in Singapore.

S Iswaran says: "The disruptions from the pandemic have highlighted the importance of having a connected and resilient global maritime supply chain. It is critical to keep global supply chains flowing to bring supplies and goods to countries and people who need them. As more countries in the world open up their economy and transit to living with covid-19, it is also important that we pay heed to the driving forces that are shaping the future of the maritime sector."

Quah Ley Hoon, chief executive of MPA, says: "As a leading global hub port and international maritime centre, Maritime Singapore is a key node in the global supply chain. The Maritime IAP will provide us with important insights on how we can continue to strengthen our value proposition to the global maritime industry and supply chains."

Iswaran said during the debate on the transport ministry's budget in Parliament that maritime centres like Singapore could play a meaningful role in achieving the emissions targets set by the International Maritime Organisation.

In addition to 2050 goals, medium-term goals included at least a 60% reduction in absolute emissions at port terminals by 2030 compared with 2005 levels, and a 15% reduction in absolute emissions for domestic harbour craft by 2030 from 2021 levels.

The MPA said research on cleaner marine fuels and setting standards on issues such as carbon accounting and reporting should also strengthen Singapore's value as an international maritime centre going forward.

In April last year, Singapore's government announced the setting up of a $120m global decarbonisation centre to research and pilot programmes that can make greener shipping a reality.

The MPA plans to use artificial intelligence and machine learning to manage the increasing scale and complexity of ship movements in Singapore's waters, which see more than 1,000 vessels entering and exiting every day. The next-generation vessel traffic management system will be equipped with advanced smart collision detection capabilities. There will also be 5G coverage in Singapore's port waters.

Widespread use of 5G applications in Singapore's ports should come in during the next two to three years, according to the MPA.

INDIAN FUEL IMPORTS

Dry fuel imports into India fell to 173.32m tonnes between April 2021 and January 2022, compared with 180.56m tonnes during the same period in the previous year according to coal ministry figures. The fall came into spite of shortages of coal supply in September and October of last year, which meant some states were facing the possibility of blackouts.

During the April 2021 to January 2022 period, coal imports by the power sector had fallen to 22.73m tonnes compared with 39.0m tonnes during the corresponding period of the previous year.

PORT EXPANSION

Malaysia's Port of Tanjung Pelepas (PTP) will invest RM750m to expand its capacity this year, its chief executive officer,Marco Neelsen says.

Spurred by double-digit growth last year, he says the port, which currently has a capacity of 11.5m twenty-foot equivalent units (TEUs), would grow to 12.5m TEU within the next six months.

"We will be receiving 18 new quayside and yard cranes, as well as an ongoing yard expansion," he says.

LOW CARBON AWARD

Jurong Port has received the Global Compact Network Singapore's LowCarbonSG logo, awarded to companies that demonstrate progress in monitoring their carbon emissions, supported by the National Environment Agency and Enterprise Singapore.

"Jurong Port is committed to make environmental sustainability an integral part of our journey towards being the Next Generation Multipurpose Port. We will continue our decarbonisation efforts and help build greener supply chains, bringing greater value to our customers and the community," the port said.

LowCarbonSG is a capability-building programme to guide and encourage local businesses in Singapore to monitor and reduce their carbon emissions. In support of the Singapore Green Plan 2030, LowCarbonSG aims to demystify the decarbonisation process for businesses in their transition towards lower carbon operations and investments. The programme will help businesses build the habit of measuring, tracking and reporting their carbon footprint through capacity-building and recognition efforts.

Jurong Port joined the Castor Initiative last year. The initiative is a multinational coalition consisting of MISC Berhad (MISC), Lloyd's Register (LR), Samsung Heavy Industries (SHI), MAN

Energy Solutions (MAN), the Maritime and Port Authority of Singapore (MPA) and Yara International ASA (Yara) which is committed to make zero emission shipping a reality.

This announcement follows another key project milestone in September 2021 when LR awarded Approval in Principle (AiP) to SHI for its ammonia fuel supply and fuel storage system. SHI had earlier received an AiP in September 2020 for its ammonia-fuelled tanker design.

With Jurong Port, a provider of multipurpose port services as the Castor Initiative's latest partner, the multinational coalition will now have an even wider and diverse circle of maritime expertise to ensure and support the complete ecosystem required for their ammonia-fuelled tanker to operate sustainably on water. True to its firm commitment to reduce total carbon footprint, Jurong Port is home to the world's largest port-based solar power generation facility as well as the world's first green berths.

Jurong Port chief executive Ooi Boon Hoe, said at the time: "We are delighted to be part of The Castor Initiative, which is determined to take concrete steps to meet IMO 2050 targets through the development and deployment of ammonia-fuelled ships.

"As actions by the shipping industry in meeting the decarbonisation goals are gaining momentum, we recognise that there could be multiple pathways for future marine fuels. Being the operator of the busiest bunkering terminal in the world's largest bunkering port today, Jurong Port is keen to facilitate the adoption of such future marine fuels, including Ammonia, by providing suitable supporting bunkering infrastructure. We look forward to contributing to the success of The Castor Initiative and reinforcing Singapore as the world's leading bunkering hub."

MISC President and Group CEO, Datuk Yee Yang Chien, said: "We welcome Jurong Port to The Castor Initiative. The Castor Initiative is privileged to have another strategic enabler be part of our multinational alliance as we journey together to commercialise the development of our first ammonia-fuelled tanker by 2024. It is without a doubt that Jurong Port's diverse expertise and rich legacy of commercial success will be key to the sustainable operations of deep sea zero carbon emission vessels for the industry.

"We look forward to establishing further concrete industry milestones with all our partners, as collaboration is a must and we hope that the Castor Initiative will inspire others to join forces to work together seamlessly to accomplish the industry's greenhouse gas (GHG) aspirations ahead of 2050."

Nick Brown, LR chief executive said: "The collective drive to decarbonise the maritime sector is gaining momentum and deep-sea zero-carbon vessels will be in operation by the middle of the decade. Collaboration among the Castor Initiative partners on an ammonia-fuelled tanker continues apace and we are delighted that Jurong Port has joined our development project and will support our efforts to deliver technically viable and safe zero-emission shipping.

"We warmly welcome Jurong Port to join the Castor Initiative, our ambitious collaboration to make the zero-carbon deep-sea vessel operation reality. With regard to the industry coalition for the zero-carbon shipping, we believe that the final piece of the jigsaw puzzle will be completed with the participation of Jurong Port.

"We also expect that the performance of our partners' collective efforts will be further strengthened by the expertise of Jurong Port for future fuel bunkering including ammonia," said Jin Taek Jung, SHI president and chief executive.

Brian Østergaard Sørensen, vice president and head of R&D two-stroke business at MAN Energy Solutions, added: "MAN Energy Solutions is very happy to work with a broad variety of industry partners and to take advantage of their expertise on our mutual path to decarbonisation. More than ever, this Initiative's commitment to decarbonising the maritime economy through developing an ammonia-fuelled tanker seems timely and we look forward to be working with Jurong Port in this respect."

"We welcome Jurong Port coming onboard. As the operator of one of the largest bunkering terminals, Jurong Port brings with it valuable experience and expertise. As maritime decarbonisation requires a global approach, it is critical for projects like the Castor Initiative to involve stakeholders across the entire value chain. Jurong Port's participation will enable us to test the port infrastructure and processes required to handle future marine fuels, including ammonia. This will enable the global shipping industry to work towards the International Maritime Organization's 2050 targets for emissions reduction," said Quah Ley Hoon, chief executive of MPA.

"We recognise the need for collaboration through the whole value chain in order to make zero-emissions shipping a reality, by using ammonia as a fuel. We are therefore delighted to have Jurong Port join the Castor Initiative. Their expertise will add value to the existing collaboration within this initiative and will ensure a more complete approach toward the first ammonia-fueled tanker becoming a reality by 2024," said Murali Srinivasan, commercial head of Yara Clean Ammonia.

To meet the International Maritime Organization's (IMO) 2050 ambitions on halving greenhouse gas (GHG) emissions from 2008 levels, zero-carbon vessels need to enter the world fleet by 2030.

The Castor Initiative was motivated by the partners' shared belief that the maritime industry needs leadership and greater collaboration if shipping is to meet the IMO's GHG ambitions.

While ammonia is one of the fuels being considered by maritime stakeholders, the partners also recognise that the shipping industry will need to explore multiple decarbonisation pathways and hope their collaboration will spur others in the maritime industry to join forces on addressing this global challenge.

TERMINAL TALES

AN AUTONOMOUS ROUTE

At the Nor-Shipping trade fair, DNV, Kongsberg Maritime, Kongsberg Seatex, Bastø Fosen and the Norwegian University of Science and Technology announced the launch of the new SAFE Maritime Autonomous Technology (SAFEMATE) project. The RCN-funded project will work on improving and assessing the safety and efficiency of autonomous navigation systems and deploy a pilot on an operational ferry, the *Bastø VI*.

The promise of automating more functions in shipping shows great potential and interest continues to grow throughout the industry as more projects are developed.

For autonomous navigation, in particular, the technologies that support object detection and collision avoidance have the potential to enhance safety and efficiency across the whole industry.

THE RIGHT CONNECTIONS

It is always good to hear a story about shore power in ports, not least because of the difficulties in the past in connecting to the local grid, either because plugs were not compatible, or the source of shore power was less green than that available using the ship's own power.

Associated British Ports' Port of Southampton is celebrating the successful commissioning and use of its shore-power facility for cruise ships. Shore-power-enabled ships can now plug in at the port's Horizon Cruise Terminal and Mayflower Cruise Terminal, for zero emissions at berth.

The total shore power project cost was £9m, supported by a grant from the Solent Local Growth Deal, arranged through the Solent Local Enterprise Partnership (LEP).

Tthe UK government recently announced the launch of its UK SHORE unit to encourage and help facilitate sustainable shipping. Maritime Minister Robert Courts says: "It's yet another significant milestone in the journey to decarbonising the maritime sector. As we work towards building a green maritime legacy, it's amazing to see ports such as ABP's Port of Southampton leading by example to utilise clean maritime technologies for a greener port and better air quality."

MISSION ACCOMPLISHED

The Mission to Seafarers has launched a new Adventure Race Japan, taking place in May 2023. All sponsors and participants of this exciting challenge event will support the Mission's Emerging Port Strategy 2022-26, a five-year plan to develop existing operations in Asia specifically, but also globally.

The Adventure Race Japan will take place on the Izu Peninsula, Japan, regarded as a place of outstanding natural beauty and a designated UNESCO Global Geopark. Companies are invited to enter teams of three to take on this endurance challenge, which includes trail running, and water-based activities.

Participants will benefit from team building with colleagues, networking with both Japanese and international industry partners during the challenge and at the gala dinners, as well as raising money to help seafarers.

Designed to suit both those who are relatively new to adventure races and to those hardened athletes who are raring for a new challenge, there will be two race options: the Green Dragon Race and the Black Dragon Race, offering the option to walk or run the trails on the first two days of the challenge.

Companies will be asked to pay a registration fee of US$6,000 per team of three, which will cover the cost of running the event.

For more information on Mission's Adventure Race Japan, and to sign up, please visit: mtsadventurerace.org.

The sponsorship brochure detailing the various packages of support is also available on the website.

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