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FEBRUARY 2025 issue

featuring...



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Dry bulk trade growth: losing momentum?

After another solid performance in the past twelve months, commodity import demand could slacken in the year ahead, tentative signs suggest. World seaborne dry bulk trade growth in 2025 seems likely to decelerate as a consequence.

Prospects for economic activity affecting industrial output in countries importing related dry bulk commodities are positive but not especially bright. Global growth in gross domestic product during 2025 appears set to remain broadly similar to the 3.2% increase estimated for last year. Of particular significance is that China's pace of advance is not expected to improve, while among other countries overall economic performance may remain muted.

IRON ORE

Currently there are only limited indications of strengthening trends in the steel industry that could be enough to boost iron ore trade. According to a recent forecast by analysts at the Australian Government Department of Industry, crude steel production in Japan, South Korea and the European Union could increase by 1–2% in 2025 compared with last year's level, but China's total is expected to weaken slightly.

Provisional data published by the World Steel Association confirms that crude steel output in 2024 among raw materials importing countries displayed a mixed pattern. Expansion was visible in

the EU and India, where volumes rose by 2.6% to 129.5mt (million tonnes), and 6.3% to 149.6mt respectively. Elsewhere reductions were prominent, including a 1.7% decrease in China, a 3.4% decline in Japan and a 4.7% fall in South Korea.

COAL

During 2024 world seaborne coal trade apparently increased again, by 3–4%, following a faster 7% expansion in the previous year. The strength of this upwards trend has exceeded many expectations, mainly as a result of much larger imports into China than generally predicted.

Over the past two years while China and India have boosted coal imports, several other major importers — Japan, South Korea and the EU plus United Kingdom — saw reductions. Growth in other countries was modest, but China's massive upturn was enough to ensure that the overall global coal trade trend was very positive. Whether this pattern can be maintained in the year ahead is unclear, because some of the influences providing support may moderate or reverse.

GRAIN & SOYA

Indications of changes in import demand among grain and soya importing countries point to a possible weakening. In the current 2024/25 trade year ending third quarter 2025, US Department of Agriculture data for world grain and soya trade suggests that the total could fall by

24.3mt or 3%, from 714.2mt in 2023/24, to 689.9mt.

Contributing to this estimated global outcome, a large reduction in China's imports is expected to be prominent. Lower Chinese import demand for wheat, corn and barley after continued growth in domestic grain production is envisaged, while soyabeans purchases also could be lower. Wheat and coarse grains imports in 2024/25 are forecast by USDA at 41mt, a 21mt or 33% fall from the previous twelve months.

MINOR BULKS

Steel products (coil, plate, sheet and other items) are a prominent part of the minor bulk commodities segment. Calculations for 2024 suggest that seaborne trade growth may have been similar to the previous year's outcome, at more than 4%, raising the total volume to over 390mt. Some signs point to a further increase this year.

BULK CARRIER FLEET

Additional new carrying capacity expanded the world fleet of bulk carriers in 2024, as shown by table 2. Bulk carrier newbuilding deliveries of all sizes totalled an estimated 34 million deadweight tonnes according to Clarksons Research data, a similar figure to that seen in the preceding year. Although scrapping diminished, fleet capacity grew by a steady 3%. In 2025 newbuilding deliveries may be somewhat higher, but scrapping may also rise.

TABLE 1: KEY ASIAN SEABORNE COKING COAL IMPORTERS (MILLION TONNES)

	2019	2020	2021	2022	2023
Japan	54.6	49.7	52.1	51.3	49.8
South Korea	22.6	21.2	21.5	22.3	22.2
China	42.0	44.5	39.5	36.1	44.9
India	63.2	59.2	67.8	72.2	67.9
Total of above	127.8	174.6	180.9	130.6	184.8

source: various & BSA 2024 estimates * estimate

TABLE 2: BULK CARRIER NEWBUILDING DELIVERIES (MILLION DEADWEIGHT TONNES)

	2019	2020	2021	2022	2023
Handysize (10–39,999dwt)	3.1	2.8	4.1	4.3	4.4
Handymax (40–69,999dwt)	8.2	9.2	7.0	7.3	9.4
Panamax (69–99,999dwt)	11.4	12.1	8.6	9.8	10.9
Capesize (100,000dwt and over)	19.0	25.1	19.0	10.3	10.7
Total	41.7	49.2	38.7	31.7	35.4
% change from previous year	45.8	18.0	–21.3	–18.1	11.7

source: Clarksons Research & BSA 2024 estimates * estimate

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Vulnerabilities overshadow global coal trade



Heyl & Patterson stacker reclaimer.

Richard Scott, Bulk Shipping Analysis

An upwards trend in global coal trade continued last year. This outcome contradicted expectations of a flattening or perceptions of a possible weakening trend beginning. Another uplift from China's strengthening imports was enough to ensure further global growth. But doubts about whether the positive pattern will persist through 2025 remain valid, and a lower volume seems a perhaps more likely result.

Based on incomplete information, provisional estimates suggest that world seaborne trade in steam and coking coal was about 50mt (million tonnes) higher in 2024, reaching around 1,360mt. Imports into Europe declined again, but sustained expansion of China's imports more than offset reductions in other countries. Although suppliers benefited widely, a notable exception was an apparent fall in

Russia's exports.

Last year's global coal trade performance demonstrated that, despite forecasts of a longer-term downwards trend evolving over the years ahead, international demand for imported coal is still solidly supported. Nevertheless the buoyant pattern is likely to be affected in future years by the priority in many countries attached to cutting carbon emissions, and shifting energy consumption towards cleaner energy sources. Coal consumption and trade eventually will reflect this reality.

BASIC INFLUENCES

Among coal consuming and importing countries, the progress of economic activity affecting energy use varied during the past twelve months. These underlying influences had some visible effects on fuel

usage patterns. The broad indicator of gross domestic product (GDP) for the world economy as a whole grew by 3.2% in 2024, according to International Monetary Fund calculations published last month, similar to the previous year's 3.3%. IMF estimates suggest a 3.3% growth rate could be seen this year.

Varying performances were a feature of the past year. In Japan and India economic growth rates slackened in 2024, compared with the previous twelve months, in the European Union and South Korea modest improvements were seen, while China's growth remained unchanged. Japan slowed from a 1.5% increase in 2023 to -0.2% last year, and India decelerated from 8.2% to 6.5%. By contrast the EU improved from 0.6% to 1.0% and South Korea saw an advance from 1.4% to 2.2%. In China the growth rate stayed flat at 5.0%.

WORLD COAL TRADE — PRINCIPAL IMPORTERS (MILLION TONNES)

	2019	2020	2021	2022	2023	2024*	2023 % change**
China	258	238	281	234	360	420	+17
Japan	180	168	176	178	163	160	-2
India	256	227	204	243	254	260	+3
South Korea	135	117	119	120	115	110	-3
EU+UK	109	70	90	121	84	65	-24
Other importers	362	361	356	331	340	350	+3
Total	1,300	1,181	1,226	1,227	1,316	1,365	+4

* Bulk Shipping Analysis 2024 estimate ** 2024 estimate compared with previous year
source: Clarksons Research and Bulk Shipping Analysis, January 2025

During the year ahead most of these economies are expected to see maintained or slightly improved performances. But forecasts for China point to the possibility of a slowing economy both in 2025 and as a longer-term trend.

Uncertainties are underlined by the IMF's update report published in mid-January this year entitled 'Global growth: divergent and uncertain'. This report acknowledges that "the global economy is holding steady, although the degree of grip varies widely across countries", and suggests that "global growth is expected to remain stable, albeit lackluster". One prominent positive influence is the continued global disinflation process, implying lower interest rates.

Energy demand, reflecting specific influences amid changes among energy sources, will also reflect the broad patterns of economic activity. Assuming that energy costs remain well below those seen recently (especially in 2022 and into 2023, when gas prices rose to exceptionally high levels), energy consumption trends may be firmly supported. However, benefits for coal usage and import demand will be limited because of the ongoing emphasis on renewable energy supplies — particularly wind and solar, but also nuclear and hydro-power.

Over the year ahead and longer term overall consumption of energy, with implications for coal, will be affected by national and regional policies resulting from political decisions in numerous countries. An intensifying embrace for zero-carbon fuels and power sources, amid the decarbonization imperative to counteract global warming, is having a very profound impact. Government measures, especially among many of the largest coal importing countries, to limit and eventually eliminate carbon emissions while also cutting air pollution in urban areas, are having increasingly noticeable repercussions.

Differing prospects for the two categories of coal trade are apparent.

Coking coal, used in the steel industry is proving more difficult to substitute with other fuels, or the process is more extended. Steam coal, used mainly in power stations but also substantially in cement works and other manufacturing industries, has been the main focus of fuel switching.

EVOLVING TRADE TRENDS

After growing strongly in 2023, last year saw a further substantial increase in world seaborne coal trade according to provisional calculations. During 2024 expansion was facilitated by rapid growth in China's imports, partly offset by an extended weakening trend in Europe's import volumes. In both steam and coking coal segments trade volumes grew, with the smaller coking coal category increasing at the fastest pace.

The table shows trends among the largest importers and for world trade as a whole based on historical data compiled by Clarksons Research and calculations by Bulk Shipping Analysis. World seaborne coal trade in 2023 was 89mt or 7% above the previous year's level at 1,316mt, followed by an estimated 49mt (4%) increase to 1,365mt in 2024. Tentative expectations for 2025 suggest that a decline is likely, possibly in the 2–4% range.

A more optimistic forecast using alternative data was published in late December by the Australian Government's Department of Industry, Science and Resources. This calculation suggests that the outcome for the current year could be flat. Including all international coal trade movements, on overland as well as seaborne routes (although the majority is seaborne), the total is shown as 1,414mt in 2025, almost unchanged compared with 1,416mt estimated for last year.

Coking coal, the smaller category of seaborne coal trade with about one-fifth of the total, was boosted by higher import demand in China, India and South Korea last year, accompanied by reduced volumes

elsewhere. Within the dominant steam coal category, comprising the remaining four-fifths of trade, the biggest contribution to the rise was China's further imports enlargement, partly offset by the extended downwards trend in Europe.

Contrasting outcomes in the importing countries last year are underlined by the percentage changes shown in the table. Seaborne imports into China in 2024 apparently were up by about 60mt or 17%, reaching 420mt. Despite lacklustre economic activity amid a continued depressed residential property market, attractive international coal prices and stockbuilding as well as slow growth in domestic coal production contributed to much higher coal imports.

India's imports appear to have seen limited expansion, possibly of about 3% in 2024 to 260mt. Also changing positively, in the past twelve months steam coal purchases by a group of five smaller Asian importers — Malaysia, Pakistan, Philippines, Thailand and Vietnam — not shown separately evidently increased by around 6mt or 4%, to 144mt. This group has become a prominent trade segment amid rising power station capacity and continued electricity demand growth. Conversely, Japan and South Korea may have experienced decreases.

Another feature of last year's coal trade pattern was sharply reduced seaborne imports into Europe. The European Union and United Kingdom together are estimated to have seen a decline of about 19mt or 24% in 2024, to below 70mt, extending the previous year's huge reduction. Since the disruption of energy supplies occurring after natural gas pipeline imports from Russia were mostly ended, the energy market has become more abundantly supplied and the earlier downwards pressures on coal consumption and imports have resumed.

Numerous changes have been unfolding also among coal suppliers to the world market, affecting the geographical pattern

*Indonesian steam coal.*

of global coal trade. Final 2024 figures are awaited but some annual variations are already visible. In the steam coal segment exports by Indonesia, the largest supplier, are estimated to have increased. Conversely those of Russia weakened. In the coking coal segment, exports by Australia and the USA (excluding to Canada) were higher.

BARRIERS FOR IMPORT DEMAND

Last year's growth in global coal trade was again surprisingly strong, for the second consecutive year, contrasting with downbeat predictions sometimes expressed. A question is still prominent. Is the upwards trend sustainable through 2025, or are influences likely to become mainly negative and result in a downturn? Several indications continue to suggest that further growth will be difficult to achieve.

Difficulties in interpreting signs are a common feature applicable to several major and some smaller coal importing countries. Future changes in several influences determining the outcome — whether imports are up or down, and by how much, or unchanged — are surrounded by great uncertainties. Annual forecasts are often informed guesses of what result may arise, and consequently are subject to continuous modification as the year progresses. The outlook for some countries' coal markets and domestic production (where relevant) is unclear,

sometimes because political influences are unpredictable.

An especially prominent complication at the forefront of the current global outlook for coal trade during 2025 and later is evaluating China's coal imports surge in the past two years. Part of the 2023 expansion represented a recovery from an unusually low volume in the preceding year. The remainder of that year's and 2024's upsurge was a consequence of several changing aspects, some of which may not remain positive influences in the next twelve months. But more precise expectations for changes in consumption, stocks and domestic output which could result in an imports downturn are largely speculative.

Reflecting the contribution of almost a third to global import demand, purchases by China are one of the most visible uncertainties affecting international coal trade in future years. Estimates of annual volumes tend to be guesses. While Chinese buying on international markets reflects commercial factors, short-term government policy decisions and influence often intervene, complicating analysis and intensifying doubts. While general indications about these policies are known, or may be envisaged, the timing and magnitude of effects on coal imports are much less predictable. Short-term trade flows may change rapidly.

A broader perspective of factors affecting the longer-term trend of world

seaborne coal trade shows negative impulses pervading the international coal market and maintaining ongoing downwards pressure. These influences severely constrain potential for coal trade to strengthen in 2025 or subsequent years. National and regional policies on energy supplies, within which the broad strategy is visible but the timing and extent of specific measures is often less clear, are likely to reduce coal use and movements. The global impact of policy trends is set to drive a decline in coal trade over the decade ahead.

It seems clear that measures introduced with the intention of benefiting the environment will continue to prioritize switching away from coal-fired power generation, towards cleaner natural gas or the often preferred choice of renewable energy supplies. Especially in European countries, the emphasis has greatly reduced coal-fired power plant capacity and electricity generation and decimated the coal market.

As a result of these imponderables, forecasts of world seaborne coal trade in 2025 incorporate speculation and guesses, albeit informed by perceptions about underlying trends and information emerging about actual changes occurring. Signs currently point towards weaker import demand in some countries during the next twelve months, which may be and probably will be only partly offset by rises elsewhere.

CAUTIOUS PREDICTIONS

A range of cautious views of prospects for coal trade this year were reinforced by the analysis already briefly referred to earlier, published recently by the Australian Government's Industry Department. These calculations showing no further growth in world coal trade during 2025. The total of 1,414mt forecast for this year is almost the same as the estimated 1,416mt in the past twelve months.

Looking at the components of this forecast, changes in volumes among the main importers are expected to vary. One prominent positive element envisaged in 2025 is India's imports, predicted to increase by 12mt or 5% to reach 274mt, including faster growth in coking coal than in steam coal purchases. By contrast, China's imports are expected to fall by 62mt (12%) this year to 436mt. A 14% reduction in the steam coal volume could be accompanied by a 8% decline in the coking coal component. These two countries together comprise over half of the world total.

Other elements estimated individually show flat or reduced imports during 2025. It seems clear, based on this assessment, that growth in India and in some smaller importing countries — mainly in Asia — could be completely offset by downturns elsewhere, resulting in the flat projection for world coal trade as a whole.

Potential for India's upwards trend to continue reflects expectations of rising coal use, exceeding growth in domestic coal production. Some uncertainty about the direction and pace of future coal import demand in India is still evident, however. National policy intentions of reducing or eventually eliminating dependence on foreign supplies, by boosting coal output from domestic mines, are emphasized although it seems likely that such a massive market change is not achievable in the short term.

This forecast excludes a specific forecast for Europe's entire coal imports, although the coking coal element is expected to remain flat. Alternative calculations from other analysts suggest that downwards pressures on European steam coal imports will remain prominent, amid further closures of coal-fired generation capacity and the sustained move towards cleaner fuels.

A CHANGE IN THE TREND?

Multiple influences will affect coal trade's progress in 2025 and beyond. Global economic activity's strength and composition, and its implications for energy demand are likely to be consequential.



Probably more prominently, coal's competitiveness with alternative energy supplies, and pressure from decarbonization policies can be expected to prove crucial factors.

It seems predictable, and is a widespread view, that the recent robust trend in world seaborne coal trade will not prove sustainable. During 2025 there seems to be limited potential for positive changes in influences to have enough impact to alter the outlook. Trade may have reached a plateau or may begin a downwards trend soon. The most obvious uncertainty surrounds China's imports and evaluations of the direction and pace of any change in volume. A major decline in China's purchases could be reflected in reduced world trade.

The International Energy Agency, in an analysis published at the end of last year, concluded that "global coal trade volumes are set to shrink, with thermal (steam) coal seeing the biggest decline". It was observed more precisely that "through to 2027 we anticipate the global coal trade to experience a reversal of trend, initiated by China and India". While some Asian countries are expected to see growing demand for imported steam coal, demand reductions elsewhere seem set to ensure a global downtrend unfolding.

As events in the past two years have shown, however, unexpected changes among importing countries can occur, and so uncertainty

about the direction and pace of change in the year or more ahead is still evident. Coal retains a central role in the world economy, as an especially significant contributor to energy supplies in power generation, steelmaking and some other manufacturing industries. It remains unclear whether peak global coal consumption has yet occurred, or whether it is approaching in the near future.

Among foreseeable influences, the impact of economic and commercial drivers of coal use and imports will be modified by the effects of environmental policies adopted by governments, accompanied by the responses of businesses and consumers. The outcome of this combination of influences probably will be visible in downwards pressure on global coal trade.

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New report shows that Green Shipping Corridors will need additional support under a global fuel standard

Under current and prospective policies from the IMO, EU, and US, the business case for green shipping corridors could improve markedly — but not sufficiently — according to a new report published by UMAS, UCL and the Global Maritime Forum (GMF).

Titled *Building a Business Case for Green Shipping Corridors*, the report looks at the significant commercial challenges associated with green shipping corridors, how these could change under future regulation, and what additional support may be needed to ensure the viability of such projects.

Green shipping corridor projects — which focus on initiating the maritime value chain for scalable and sustainable fuels such as hydrogen-derived e-ammonia and e-methanol — have thus far faced an insurmountable cost gap. Against the backdrop of an evolving global and regional policy landscape, the business case for such first mover initiatives will begin to improve, but targeted support will be needed to ensure uptake of e-fuels.

The report emphasizes the important role of regulation in enabling shipping's energy transition and the wider implications for the industry operating under a future compliance regime where fleet and bunkering strategies will need to become more sophisticated. Policies such as the IMO's new global fuel standard, the EU's Emissions Trading System (ETS), and the US Inflation Reduction Act (IRA) will play a critical role in reducing costs for green shipping corridors but fall short of fully bridging the gap between the cost of e-fuels and the cheapest solution to meet compliance.

The report explores the potential opportunities and options that could be available for green shipping corridors in three different shipping sectors — gas carriers, container ships and bulk carriers — to highlight how public and private efforts could accelerate early adoption of e-fuels. The scenarios explored reveal that while biofuels and blue ammonia are lowest cost options over the near term, scalable e-fuels such as e-ammonia are expected to become increasingly competitive as production costs fall and compliance requirements tighten, indicating that targeted support would only be required over the short term.

With 62 green shipping corridors initiatives already announced, support for these early mover projects could enable

significant strides to be made in the development of sustainable fuel production and in investment in the storage, bunkering, and port infrastructure required to decarbonize the wider shipping industry later in the transition.

Deniz Aymer, Senior Consultant at UMAS, commented, "Upcoming regulation will shift the business case for green shipping corridors — as well as shaping how the wider shipping industry approaches compliance. To fully bridge the cost gap, however, targeted support for e-fuels is needed. But this short-term support will pay future dividends by ensuring that scalable and sustainable fuels are available to the wider industry when needed."

Dr Nishatabbas Rehmatulla, Principal Research Fellow at the UCL Energy Institute, stated, "The findings of this study make it very clear that without clear demand signals and additional public support over the near term, closing the cost gap on e-fuels will be challenging. Without this support and guardrails on fuels, some of the announced green shipping corridors are at risk of failing to fulfil their crucial role as first movers, and stalling before implementation or gravitating towards least-cost compliance options."

Jesse Fahnestock, Director of Decarbonisation at the Global Maritime Forum, commented, "The most important role Green Corridors can play is to coordinate and kick-start the value chain for tomorrow's shipping fuels. Participants in corridors will need to be creative in how they leverage a range of regulations, but it's clear from this work that the scale of their impact will depend on policymakers delivering targeted support for e-fuels."

To accelerate progress, the report outlines actionable solutions for industry and policymakers. It highlights how business models will need to adapt under incoming regulation and how long-term commitments from cargo owners and ship owners and operators can help de-risk investment and drive e-fuel adoption. Strategic partnerships across the value chain will be essential for sharing risks and rewards, ensuring a more equitable cost distribution.

Despite this, the business case for green shipping corridors will remain challenging without targeted measures to support the uptake of e-fuels. Mechanisms such as Contracts for Difference (CFDs), e-fuel

auctions, and/or multipliers for over-compliance with e-fuels will be crucial to the short-term viability of these initiatives. Economic support could be underwritten by the IMO through revenues raised by a levy on shipping industry emissions. In the absence of a global levy, however, national governments may need to step in to directly support corridor projects.

ABOUT UMAS

UMAS is an independent commercial consultancy, leading the decarbonization of the shipping, maritime and related energy sectors towards a carbon-free future. Drawing upon deep relationships with a wide range of research partners, UMAS supports clients in navigating complexity; delivering practical, honest, and unbiased evidence-based advice.

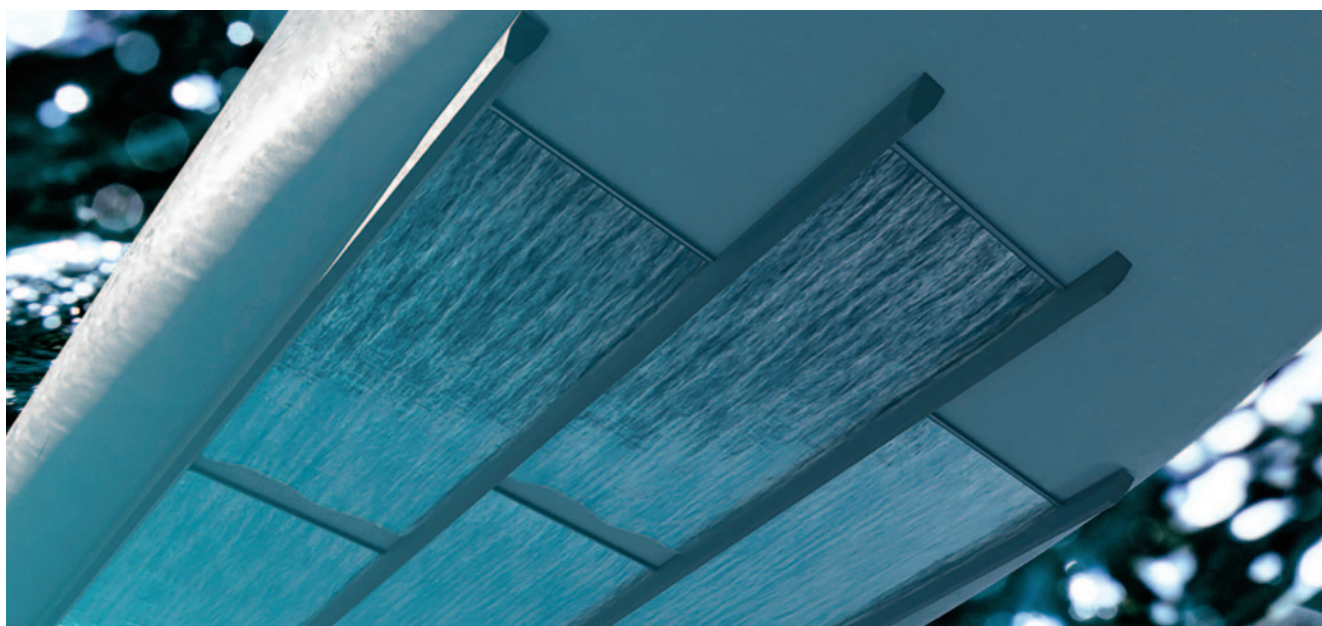
ABOUT THE GLOBAL MARITIME FORUM

The Global Maritime Forum is an international not-for-profit organization committed to shaping the future of global seaborne trade. It works by bringing together visionary leaders and experts who, through collaboration and collective action, strive to increase sustainable long-term economic development and human well-being. Established in 2017, the Global Maritime Forum is funded through a combination of grants and partner contributions. It operates independently of any outside influence and does not support individual technologies or companies.

ABOUT UCL ENERGY INSTITUTE

The UCL Energy Institute hosts a research group which aims to accelerate the transition to an equitable and sustainable energy and trade system within the context of the ocean. The research group's multi-disciplinary work on the shipping and ocean system leverages advanced data analytics, cutting-edge modelling, and rigorous research methods, providing crucial insights for decision-makers in both policy and industry. The group focuses on three core areas: analysing big data to understand drivers of historical emissions and wider environmental impacts, developing models and frameworks to explore energy and trade transition to a zero emissions future, and conducting social science research to examine the policy and commercial structures that enable the decarbonization of the shipping sector.

Damen Air Cavity System fuel efficiency capabilities verified by Lloyd's Register



INDEPENDENT ASSESSMENT MARKS SECOND VERIFICATION FOR AIR LUBRICATION SYSTEM

The Damen Air Cavity System (DACS) has once again demonstrated its fuel saving credentials during an independent verification undertaken by Lloyd's Register. DACS' efficiency boosting potential had earlier been confirmed by classification society RINA.

These latest findings offer valuable evidence of the potential of air lubrication technology to lower both fuel consumption and emissions.

BORNE OF COLLABORATION

DACS is the result of a collaboration between Damen and the Delft University of Technology (TU Delft). The air cavity system maintains a thin layer of air over the flat bottom of the vessel's hull, lowering resistance in the water and, thereby, fuel consumption.

Last year, Damen installed the DACS system to Amisco's cargo vessel *Danita* in Estonia. During *Danita*'s sea trials, Damen collected a range of data on the vessel's performance. Independent verification of this information by RINA confirmed that DACS enabled the vessel to make significant savings in fuel consumption (6–7%).

SIGNIFICANT SAVINGS

To add weight to the findings, Damen wanted a second opinion. Its next step was to provide Lloyd's Register with the same data. With this, Lloyd's performed a further

independent verification, applying its own methodologies.

Strikingly, Lloyd's findings were similar to those of RINA, demonstrating that, at the vessel's typical operating speeds, DACS enabled a reduction in fuel consumption by between 7–8%.

SUSTAINABLE PERFORMANCE

With this increased fuel efficiency comes a considerable reduction in emissions. This paves the way for more straightforward compliance with environmentally focused regulations such as the EU Emissions Trading System (EU ETS), Carbon Intensity Indicator (CII) and Energy Efficiency Existing Ship Index (EEXI).

Marcel Onink, Managing Director of Damen Green Solution said, "We're very pleased with this second, independent verification from Lloyd's Register. The results confirm our expectations and back up the verification earlier undertaken by RINA. Such findings highlight the potential for air lubrication to increase vessel efficiency and reduce environmental impact."

RAPID RETURNS

Rutger van Dam, responsible for business development at Damen Green Solutions added, "With these considerable savings in fuel, DACS offers vessel owners a reduced emissions operation with a rapid return on investment within approximately three years of installation."

Maarten Veenstra, Business Development Manager at Lloyd's Register, said, "In

having DACS verified by more than one classification society, Damen offers the market increased confidence in the potential of air lubrication. Given the current challenges posed to maritime operators by a range of environmentally focused regulations, there is a clear argument to be made for investing in energy saving technologies with proven credentials."

DAMEN SHIPYARDS GROUP

Damen Shipyards Group has been in operation for over ninety-five years and offers maritime solutions worldwide, through design, construction, conversion and repair of ships and ship components. By integrating systems, Damen creates innovative, high quality platforms, which give its customers maximum added value.

Damen's core values are fellowship, craftsmanship, entrepreneurship and stewardship. Its goal is to become the world's most sustainable shipbuilder, via digitalization, standardization and serial construction of its innovative vessels and through use of circular materials.

Damen operates 35 shipyards and 20 other companies in 20 countries, supported by a worldwide sales and service network. It delivers in the region of 100 vessels per year, with a total production value of over €3 billion.

Damen offers direct employment to approximately 12,500 people. In all that it does, Damen aims to ensure a positive impact on the local environment and society.

Offshore stevedoring and transshipment

A MinRes transhipper delivering the first shipment of iron ore from the Onslow Iron project in May 2024.

the flexible solution



Louise Dodds-Ely

MinRes establishes significant transshipping operation in Australia

Diversified resources company Mineral Resources (MinRes) is establishing one of the largest and most sophisticated transshipping operations in Australia.

The fleet of transshippers is pivotal to MinRes' Onslow Iron project in the Pilbara region of Western Australia, transporting iron ore from a wharf at the Port of Ashburton to bulk carriers off the coast.

The innovative solution, which was designed inhouse by MinRes, drastically reduced the amount of seabed dredging that was required for the loading berth at the port.

"Transshippers significantly reduced Onslow Iron's environmental footprint compared to developing a deep-water port, which would have required substantial dredging and capital investment," a MinRes spokesperson said.

"This approach enabled Onslow Iron to be developed in record time, just 21 months after the final investment decision in August 2022 and only one year after major construction commenced at the mine and port.

"While cost and timeframes were important, we also wanted to minimize the

impact of the operation on local communities, leading to Onslow Iron being the first mine-to-ship, dust-free iron ore project in Australia."

Headquartered in Perth, Western Australia, MinRes is one of Australia's leading pit-to-ship mining services providers with an expanding portfolio of world-class commodity projects in lithium, iron ore and energy.

MinRes developed Onslow Iron's transshippers in collaboration with naval architects, as well as local and international engineering firms, and construction took

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A MinRes transshipper being loaded with iron ore at the Port of Ashburton in the Pilbara region of Western Australia.



place at the COSO Shipyard at the Port of Ningbo Zhoushan in China.

After sea trials off Zhoushan port, the first two transshippers, *MinRes Airlie* and *MinRes Coolibah*, were transported from China to Australia via a Cosco Shipping

heavy lift vessel in May 2024.

In an intricate marine operation, the specialized vessel *Xin Guang Hua* was partially submerged to lift the transshippers out of the water and secured for the voyage to Western Australia.

On arrival at the Port of Dampier in the Pilbara, the transshippers were unloaded from the heavy lift vessel, towed to anchorage and linked to a pair of tugs: *MinRes Thor* and *MinRes Odin*.

When locked together, the transshipper



Onslow Iron's Ken's Bore iron ore site.



barge and tug operate as one vessel, known as an Articulated Tug and Barge (ATB) system. The tugs also serve as accommodation for the crew, providing home-like comforts.

Measuring 123 metres long and 36 metres wide, the transshippers have a shallow seven-metre draught (hull depth) when they are loaded with 20,000 tonnes of iron ore.

They have a loading rate of 8,000tph (tonnes per hour) and are equipped with a self-loading system that distributes ore throughout the barge hold.

Once berthed alongside Capesize bulk carriers anchored 22 nautical miles (40 kilometres) offshore, iron ore is transferred through a gravity gate system that feeds a loading boom at a rate of 6,000tph.

A third transshipper, *MinRes Montebello*, joined the operation later in 2024, with a fourth vessel scheduled to arrive in Australia in February 2025 and the fifth set

to join the operation in April.

Once ramped up to nameplate capacity, *Onslow Iron* will ship 35 million tonnes of iron ore a year.

MinRes' customers include China Baowu Steel Group, the world's largest steelmaker and a joint venture partner in Onslow Iron.

More than 3,000 people worked on Onslow Iron's construction phase and up to 1,600 operational jobs are forecast at the peak of the project's ramp up.

The transshippers were designed, built and delivered in just two years and the fleet will eventually grow to seven vessels.

Onslow Iron's haulage, port and transshipper operations are fully enclosed to ensure dust-free transport of iron ore from the Ken's Bore mine site, located 150km east of Onslow, to the port.

The port operation required further innovative thinking to design infrastructure that supports this dust-free environment.

MinRes developed a system where the ore, once received into an enclosed facility, does not see the light of day until it enters the ocean-going vessel anchored offshore.

To achieve efficient loading of the transshippers, MinRes designed and constructed a bespoke 220,000-tonne, negative pressure ore storage shed at the port.

The wharf incorporates an advanced mooring design to ensure the transshippers are turned around in the fastest time possible, with mooring lines only required in limited weather conditions.

The port also includes bespoke non-processing support infrastructure, transshipment vessel bunkering facilities and a 14.4 megawatt capacity gas-fired power station — all designed, constructed and commissioned in-house.

The first shipment was achieved in May 2024, just 11 months after ground was broken at the mine site. Onslow Iron

The best bulk truck loader in the world



Dino advantages:

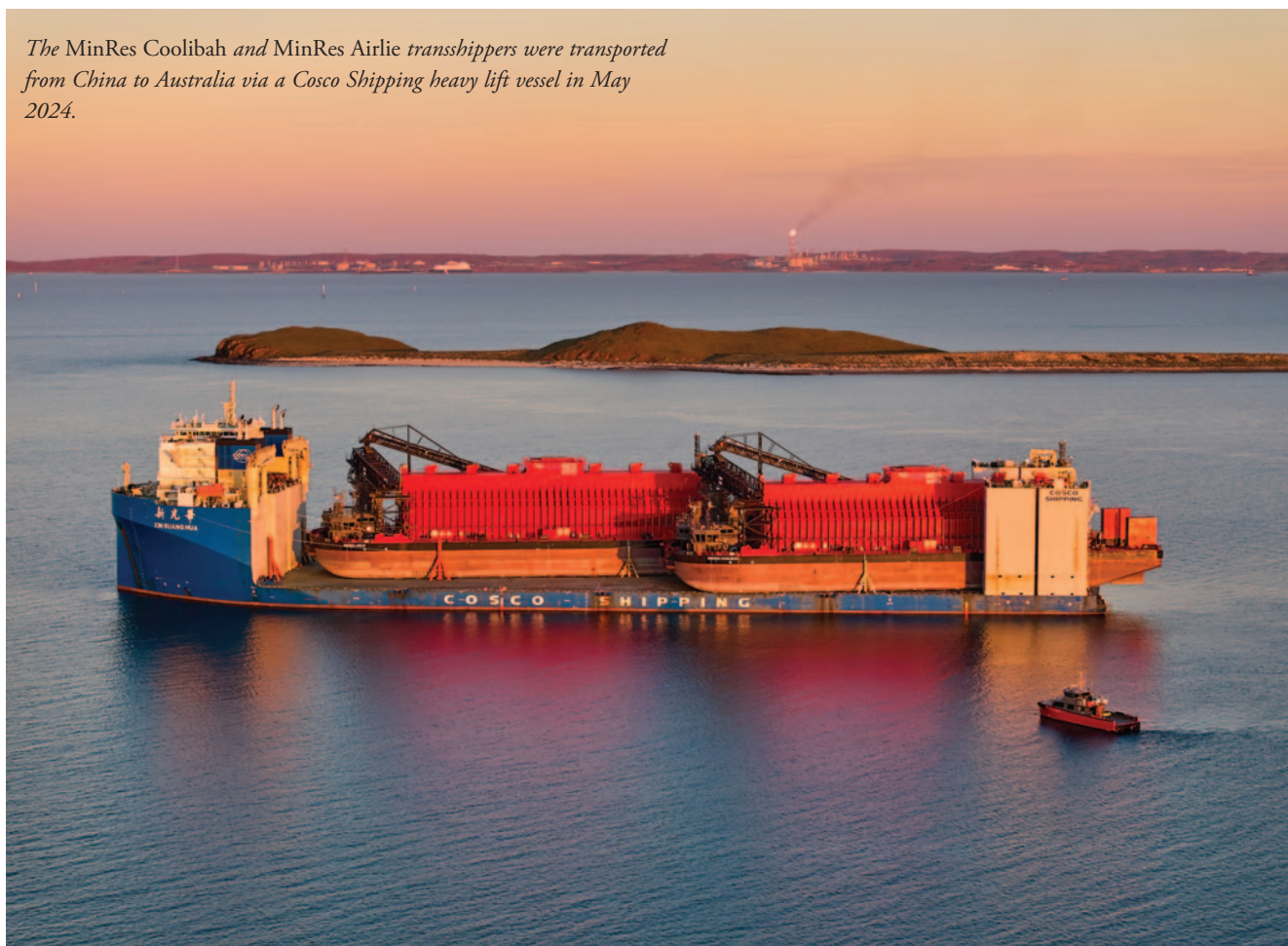
- + Saves time and money
- + High capacity, 40 or 80 m³/h
- + Safe and easy to operate
- + Low-dust and hygienic
- + Easy to clean
- + Mobile and flexible in use
- + Steel or stainless steel version
- + Low maintenance
- + ATEX versions available
- + Modular expandable

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vanBeek
THE STANDARD IN SCREW CONVEYING

The MinRes Coolibah and MinRes Airlie transshippers were transported from China to Australia via a Cosco Shipping heavy lift vessel in May 2024.



celebrated another significant milestone more recently with the first loading of a Newcastlemax ship in late 2024.

A Newcastlemax is the next size of bulk carrier after a Capesize vessel and has an intake of about 190,000 to 210,000 tonnes with a maximum beam (width) of 50 metres and a maximum overall length of 300 metres.

A total of 203,100 tonnes was successfully loaded onto the *Mount Aconcagua* within three days, representing 22,900 tonnes more than any previous shipment from Onslow Iron's anchorage at the Port of Ashburton.

Despite the larger vessel size, this was the fastest turnaround time for any vessel loaded at its Port of Ashburton anchorage

to date.

Mount Aconcagua is also the first LNG-powered bulk vessel chartered by MinRes, which reduces associated carbon emissions by around 425 tonnes when compared to traditional vessels powered by heavy fuel oil. The step up to Newcastlemax vessels was achieved just six months after Onslow Iron delivered first ore on ship.



Iron ore is transported from the mine to port via a fleet of road trains on a 150km dedicated haul road.

LDPL: one-stop-shop for all transportation and transshipment services



Louis Dreyfus Ports and Logistics (LDPL) is a subsidiary of French-owned company Louis Dreyfus Armateurs (LDA), which was founded in 1851. LDPL specializes in logistics, maritime and port operations, in particular for the dry bulk cargo industry.

Louis Dreyfus Armateurs originally started as grain trader within the Louis Dreyfus Group and eventually entered into the shipping business by firstly chartering ships and then later owning and operating them. As business grew over centuries, LDA ventured into, and specialized in, various types of shipping and maritime solutions for a wide range of industries such as submarine cables, offshore wind farms, oversized and heavy transport, with a specialization in the aeronautics sector; and last but not least mining and dry bulk commodities handling.

Louis Dreyfus Ports and Logistics has, over more than the last three decades, been a pioneer and specialist in providing maritime solutions such as offshore transshipment, barging, port handling and ship management, performing long-term contracts with industrial customers in different types of commodities such as iron ore, bauxite and coal through different types of offshore transshipment solutions.

Louis Dreyfus Armateurs and Louis Dreyfus Ports and Logistics, being conscious of their responsibility in reducing carbon emissions from the shipping industry, are actively working on alternative fuels as well as on wind-assisted propulsion vessels which will reduce industry greenhouse gas emissions.

Louis Dreyfus Armateurs, among others, has been granted an Approval In Principle from an IACS class society and is currently developing a maritime logistic solution dedicated to low carbon energies, called FRESH (Fresh Renewable Energy Solution for Hydrogen).

WHAT IS THE DRY BULK OFFSHORE TRANSSHIPMENT?

Not everybody is familiar with what exactly dry bulk offshore transshipment is, and why it is necessary in many cases for the export and/or import of dry bulk cargoes. Below is a brief explanation of the nature of the operation, and information on how it has significantly developed during the last decades.

There is no doubt that the nature of trades in dry bulk commodities has evolved, generating challenges and so creating opportunities throughout the

global supply chain. This is especially true when it comes to scale of shipping goods to the end users.

Dry bulk cargoes trades have changed, in terms of market requirement for different commodity types. Over the last 25 years, seaborne transportation has more than doubled, and become bigger and bigger in terms of shipments sizes. These changes have required exporters and importers to adapt their operations and develop solutions that can make the supply of raw resources viable from an economical perspective.

Main dry bulk cargoes, like grain, coal, iron ore, bauxite and manganese are today mostly transported in large bulk carriers, like Capesizes and Newcastlemaxes, whose dimensions and draughts are often not suitable at the receiving ports where exporters and/or importers operate. In these cases, typically, dry bulk transshipment is most useful, as it makes it possible to handle larger vessels in geographical areas where port draught restrictions — and insufficient infrastructure — would have previously meant that cargo operations were not viable.

In these cases, solutions — including

floating cranes, transshippers, tugs and barges and self-propelled barges — are required to facilitate the export and/or import of dry bulk cargoes at large scales. Tugs and barges and self-propelled barges make it possible to load and/or discharge cargoes at ports with restrictions and limitations, while floating cranes and transshippers allow to load and/or discharge them offshore to/from the big and gearless oceangoing vessels. This type of operation normally requires customized solutions which are usually different from each other, and which make it possible to overcome infrastructure challenges in a tailored, practical and reliable logistics solution.

LOUIS DREYFUS PORTS AND LOGISTICS IN DRY BULK OFFSHORE TRANSSHIPMENT

Dry bulk offshore transshipment is one of the native activities of Louis Dreyfus Ports and Logistics commencing in the early 1990s with the deployment of floating cranes in Indonesia for the transshipment of coal.

Louis Dreyfus Ports and Logistics rapidly expanded its dry bulk offshore transshipment business comprising of floating cranes, transshippers, tugs and barges and self-propelled barges worldwide. These are in operation from Asia to South America, working in Indonesia, India, the United Arab Emirates, Australia, Sierra Leone, Guinea, Colombia and Dominican Republic among others. Major customers include NOMAC, Adaro, Kideco, Sinarmas, Fomento, Emirates Global Aluminum, Harbin Electric International, Metro Mining, Glencore, Vale and Banpu to name a few.

The biggest strength of Louis Dreyfus Ports and Logistics is the capability to study, develop and provide solutions in short periods of time and in a contractual format that is acceptable to its clients. It has provided customized shipping solutions to large reputed industrial customers in contractual formats such as EPC, O&M, take or pay, joint ventures, time charters and the company is always open to



evaluating newer and different viable options.

Louis Dreyfus Ports and Logistics is also involved in shore handling projects where it acts as port operator for operation and maintenance of harbour cranes employed for loading/discharging dry bulk cargo. It also offers consulting and ship-management services to third party ship owners.

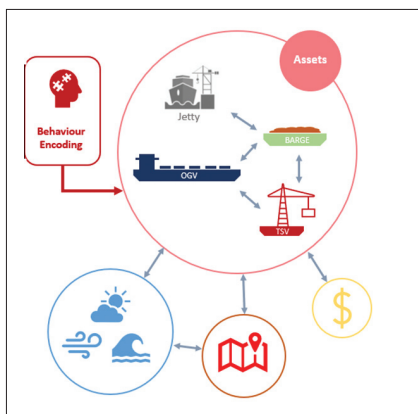
This makes Louis Dreyfus Ports and Logistics a niche full marine logistics service provider capable of offering one-stop-shop for all transportation and transshipment services of its clients.

DIGITALIZATION IN DRY BULK OFFSHORE TRANSSHIPMENT

While the choice for the type of transshipment system to be employed is critically determined by cargo volumes, weather working days, infrastructure restrictions, cargo characteristics, operat-

ional needs and targeted handling rates, Louis Dreyfus Ports and Logistics has developed an in-house software, specific for dry bulk offshore transshipment operations modelling, which uses simulation optimization to provide a comprehensive range of solutions for study, design and optimization of any dry bulk offshore transshipment project. This software is able to determine the best modelling complying with an extensive list of operational constraints within a few seconds, calculating and suggesting the best way to manage all deployed assets and providing accurate results and outcomes of the operations, using Monte-Carlo algorithms. Simulations include an extensive list of parameters which model every single manoeuvre and marine operation.

In parallel, Louis Dreyfus Ports and Logistics, alongside another company, has developed an application that it uses for its project management. It is made of one vessel interface, that ships and ports use to input their data, records and information. This application has a user interface, which works through a web browser, and gives shore personnel the input of what the ships or port have recorded. Combining a live tracking and a live performance analysis, users can extract in a second a huge amount of data and information about the operations in a specific given project, from performances, quantities, speed, consumption etc





LD Ports & Logistics

**DRY BULK TRANSSHIPMENT, SHALLOW WATER
TRANSPORTATION, SHIP MANAGEMENT AND
PORT OPERATIONS**

**DESIGN OF INNOVATIVE SOLUTIONS TO SOLVE
CHALLENGES BROUGHT BY THE ENERGY TRANSITION**

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EMS-Tech: engineering the future of self-unloading and transshipment systems



EMS-Tech self-unloading system discharging to a shore hopper.

For over a century, self-unloading vessels have been a transformative force in maritime bulk material handling. Designed to enhance efficiency and minimize reliance on port infrastructure, these vessels have evolved into the most sophisticated bulk-handling solutions available today. At the forefront of this evolution stands EMS-Tech, a global leader in self-unloading and transshipment system design. Since its establishment in 1988, EMS-Tech has continuously pushed the boundaries of innovation, delivering cutting-edge solutions that redefine efficiency, reliability, and sustainability in bulk material logistics.

PIONEERING SELF-UNLOADING TECHNOLOGY

EMS-Tech has played a crucial role in shaping the self-unloading industry with groundbreaking advancements that optimize performance, reduce operational costs, and improve environmental sustainability.

One of EMS-Tech's most significant contributions is the Feeder Gate system, developed in the early 2000s. This innovation revolutionized self-unloading operations by improving cargo flow control, reducing maintenance demands, enhancing discharge efficiency, while allowing one operator at a control console to offload the vessel. Today, with over 6,000 Feeder Gates installed worldwide, EMS-Tech has set the benchmark for efficiency and reliability in self-unloading systems.

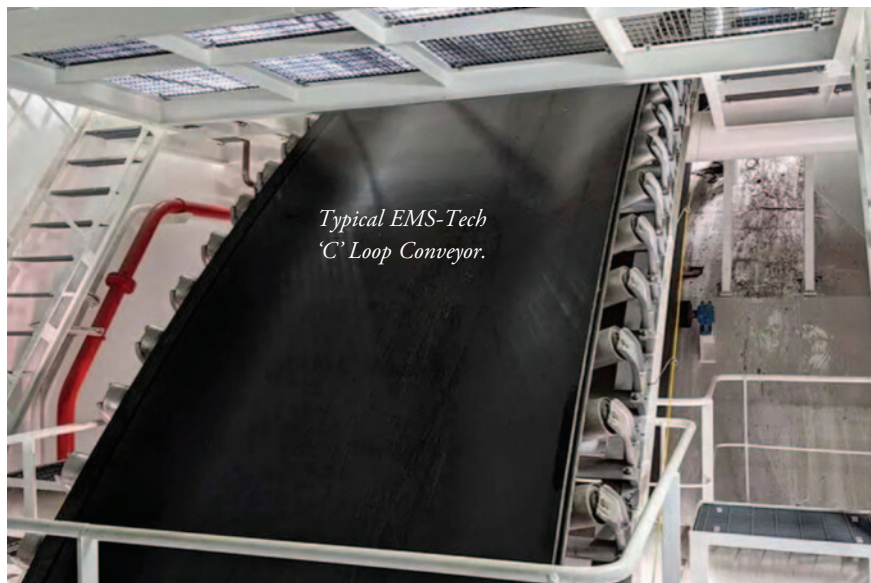
Another defining technology is the 'C' Loop sandwich belt system, an advanced vertical material handling elevating solution. With over 100 of these elevators now in place on land and on the water, with capacities to 10,000tph (metric tonnes per hour), EMS-Tech has refined and enhanced this system to meet the demands of modern bulk handling. The 'C' Loop's dual conveyor belts sandwich and lift materials vertically at varying rates, making it ideal for operations requiring compact and efficient vertical transport.

Automation and real-time operational controls are also at the core of EMS-Tech's approach. By integrating predictive maintenance capabilities and automated cargo flow adjustments, EMS-Tech's systems maximize efficiency, reduce downtime, and enhance safety—further

solidifying its leadership in self-unloading technology. Automation, autonomous operation, are no longer visions of the future, but rather a logical next step.

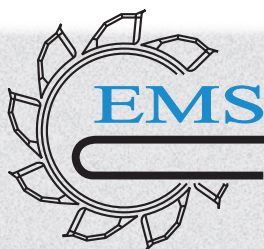
VERSATILE AND HIGH-CAPACITY SOLUTIONS

With unloading rates capable of exceeding 10,000, or even 20,000tph, EMS-Tech delivers some of the highest-capacity systems in the industry. EMS-Tech's self-unloading and transshipment systems are engineered to accommodate a wide range of operational requirements. From single and dual tunnel configurations to gravity-assisted designs with flat tank tops, and elevating systems such as 'C' Loops or incline conveyors, EMS-Tech provides tailored solutions to optimize and best match owner/operator cargo handling needs.



Typical EMS-Tech 'C' Loop Conveyor.

Delivering world-class engineered solutions



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mobile equipment and bulk
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A key component of self-unloading systems, the boom discharge conveyor plays a crucial role in efficiently transferring cargo to receiving facilities or vessels. EMS-Tech designs industry-leading boom discharge conveyors tailored to diverse operational needs, offering both fixed-length and variable length telescoping configurations. Fixed-length boom discharge conveyors, while typically around 80 metres long, can vary from short (10m) to very long (>90m).

These booms provide a reliable and straightforward solution for operations with consistent unloading requirements. In contrast, variable length telescoping boom conveyors feature extendable sections, allowing operators to adjust the conveyor's reach as needed. This flexibility is particularly advantageous in transshipment operations, where vessels of varying sizes require precise cargo distribution. Both conveyor types can be equipped with slewing and luffing functionalities to enhance manoeuvrability and optimize material flow, ensuring precise cargo placement, superior discharge control, and effective vessel trimming — even in dynamic offshore environments.

Beyond gravity-based systems, EMS-Tech specializes in advanced unloading solutions, including those involving bucket wheel reclaimers, scraper reclaimers, bucket elevators, and pocket belts — ensuring flexibility and efficiency across all bulk material handling applications.

INNOVATING SELF-LOADING TECHNOLOGY

EMS-Tech has not only mastered self-unloading technology but is also at the forefront of self-loading system



EMS-Tech self-unloading 90.5 metre discharge boom on the Fjordnes.

development. These innovative systems dramatically reduce the need for costly port infrastructure, eliminate vessel shifting during loading, and improve both environmental and operational safety.

A prime example is the *Northern Venture*, owned and operated by McKeil Marine, which features a single-point loading system that allows all four cargo holds to be loaded via reversible shuttle conveyors from a single deck-mounted hopper. This system marked a significant milestone for EMS-Tech, as the company originally designed the self-unloading system for this vessel, the *Da Shen* as she was known then, in the early 1990s. The conversion introduced modern improvements, enhancing efficiency and flexibility.

Another milestone project is the Mineral Resources' Onslow Iron project in Western Australia, where transshippers incorporate EMS-Tech self-loading technology to efficiently distribute iron ore throughout the vessel's hold before shifting

offshore to transfer the iron ore onto capesize bulk carriers. This system, the largest self-loading arrangement delivered by EMS-Tech to date, boasts an impressive 10,000tph loading rate.

The *Nukumi*, a purpose-built vessel for CSL serving Windsor Salt's operations in Eastern Canada, demonstrated EMS-Tech's ability to set new industry standards. The fully automated single-point loading system receives material from a shore-based shiploader at a rate of 4,000tph through a fixed receiving hopper midship. A reversible shuttle conveyor then distributes the salt into the cargo holds. This project showcased EMS-Tech's self-loading expertise and earned the Best Ship Loading/Unloading System award at the 2022 International Bulk Journal Awards Gala held in Rotterdam.

GLOBAL IMPACT: INDUSTRY-LEADING PROJECTS

EMS-Tech continues to drive efficiency and



EMS-Tech self-loading & self-unloading system on the Northern Venture.

innovation across the global shipping industry, delivering advanced self-unloading and transshipment systems for some of the world's most ambitious projects:

❖ **Onslow Iron Transshipment Systems (Australia):**

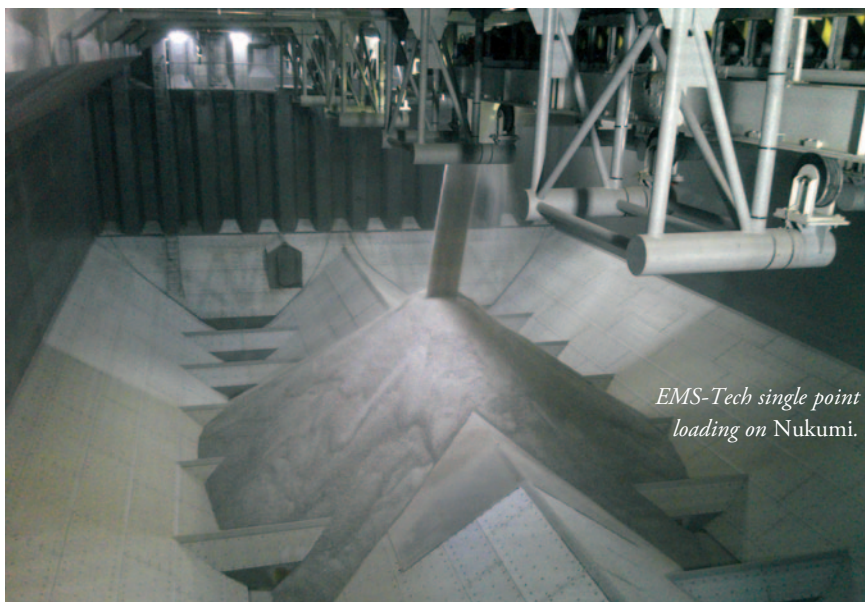
EMS-Tech designed the material handling systems on these 20,000dwt transshippers. These systems, feature sophisticated automated self-loading and unloading solutions. The high-speed conveyors and precision-engineered off-loading booms enable rapid offshore transfer of material at rates up to 6,000mtph onto capesize bulk vessels—eliminating the need for deep-water port requirements and lowering environmental impact. The loading systems are designed for an impressive transfer rate of 10,000mtph. EMS-Tech's excellence in this project earned the Best Ship Loading/Unloading System award at the 2024 International Bulk Journal Awards Gala in Antwerp.

❖ **Simandou Transshipment Systems (Guinea):**

EMS-Tech is delivering transshipment solutions for Rio Tinto's Simandou iron ore project, featuring dual 'C' Loop Elevators and dual shiploaders with a combined unloading rate of 12,000mtph. It will be one of the most advanced/efficient self-unloading system when these vessels enter service.

❖ **ArcelorMittal Transshipment Hub (Liberia):**

EMS-Tech's TSV One, set for delivery in mid-2025, will support



EMS-Tech single point loading on Nukumi.

ArcelorMittal Liberia's iron ore export expansion, handling 15 million tonnes annually. Once operational, the system will be among the largest self-unloaders in the world, with unloading rate capabilities of up to 7,000tph.

❖ **Fleet renewal for CSL/Algoma (International Pool):**

EMS-Tech is supplying self-unloading equipment for five methanol-ready Kamsarmax-based ocean self-unloading vessels, scheduled for delivery between July 2025 and mid-2026. These vessels will play a critical role in modernizing the CSL/Algoma fleet and replacing older assets.

❖ **CSL ADBRI Self-Unloader (Australia):**

EMS-Tech is collaborating with CSL to

deliver a next-generation self-loading and gravity-assisted self-unloading vessel for Adelaide Brighton Cement Ltd. (Adbri), replacing the *Accolade II*. Expected to enter service in early 2026, the vessel will enhance limestone and cement handling while improving operational efficiency.

❖ **CSL Transshipper for BCI Mardie Salt (Australia):**

EMS-Tech's self-loading and unloading systems will support BCI Minerals' Mardie Salt and Potash Project. This 16,000-tonne transshipper will use gravity discharge technology to efficiently load and off-load salt and sulphate of potash to ocean going vessels up to 207,000dwt. The system will feature a 3,300tph single-point loading system and a 4,000tph self-unloading system. Construction begins in spring 2026, with completion expected by mid-2027.



EMS-Tech loading and unloading systems for Mineral Resources.

SETTING THE STANDARD FOR BULK MATERIAL HANDLING

EMS-Tech is the driving force behind the evolution of self-unloading and transshipment technology. By delivering innovative solutions that enhance efficiency, reduce costs, and minimize environmental impact, EMS-Tech remains the trusted partner of the world's leading bulk cargo operators.

With an unmatched track record of successful projects and cutting-edge solutions, EMS-Tech is redefining global bulk material logistics. The company's expertise, reliability, and commitment to excellence ensure that operators worldwide benefit from the most efficient and effective self-loading and self-unloading solutions available today.

Innovative transshipment equipment by Liebherr-Rostock GmbH

TRANSHIPMENT VESSELS AND EQUIPMENT

Liebherr-Rostock GmbH is renowned for its advanced transshipment solutions, including

a range of high-performance, heavy-duty cranes designed for various applications. The CBG series is particularly notable, with

models ranging from the CBG 310 to the CBG 500 E offering versatile and efficient cargo-handling solutions.

The CBG 310: with advanced hydraulics and smart digital features, this crane is designed for durability and efficiency. It handles up to 45 tonnes and offers two cabin sizes for comfort and convenience.



The entry-level model in this series is the CBG 310, which represents a new generation and an upgrade of the CBG 300. This four-rope grab crane is designed primarily for the bulk handling market on floating solutions in both sheltered and open water. This versatile crane can also be installed as a fixed solution in ports. Known for its reliability, more than 150 units of the CBG 300 have been sold already, with the oldest active crane dating back to 1998.

COMPARISON BETWEEN CBG 300 AND CBG 310

The CBG 310 crane is an upgraded version of the CBG 300, incorporating several enhancements to meet modern requirements and improve operational efficiency:

- ❖ **Design and structure:** the CBG 310 features a steel construction based on the latest structural analysis methods, providing increased robustness and durability. It also offers two cabin sizes: a standard solution and a comfort version, which is identical to the one used for other Liebherr CBG and Liebherr mobile harbour cranes.
- ❖ **Hydraulic system:** the drive system of the CBG 310 benefits from a constant pressure system, which offers stable system performance, increased energy efficiency, simple control and reduced wear on hydraulic components.
- ❖ **Pipes instead of hoses:** Liebherr replaced long-length hose lines with pipes, increasing lifespan and durability, reducing service costs, and thus contributing to easier maintenance. Consequently, pipes are routed more space-efficiently with a smaller bending radius.
- ❖ **New standardized control system:** with the integration of the latest digital functions, the crane is now primed for automation. The CBG 310 is equipped with the latest digital features such as the Litronic control system (Master V), enhancing operational efficiency and control precision. Additionally, the system's advanced computing power is now available for further digital solutions, such as SmartGrip (intelligent grab handling) and LiCas (Collision Alert System).
- ❖ **Load capacities:** the CBG 310 can handle up to 45 tonnes in hook operation and 30 tonnes in grab operation, with a maximum outreach of 30 metres. Relative to the performance of the CBG 300, the load charts have been enhanced by 20%.
- ❖ **Speeds:** thanks to the technical

improvements to the hydraulics, the crane achieves the following speeds: The CBG 310 outperforms the CBG 300 with a maximum hoisting speed of 130m/min (vs. 90m/min) and a slewing speed of 1.2rpm, which represents a 20% improvement. These enhancements significantly boost handling performance, making operations more efficient and powerful. Due to the increase in load capacity and speed, a significant increase in turnover is achieved.

SUPPORTING STEVEDORES IN THEIR WORK

The cranes of the CBG series significantly support stevedores by providing reliable and efficient transshipment cranes that simplify their tasks. The cranes' advanced control systems and ergonomic designs ensure that operators can handle cargo with precision and ease. Cabin extensions in various lengths improve visibility on the load, which increases safety during the handling process. Features on the CBG 310, such as the constant pressure hydraulic system, provide stable performance, allowing for precise control and low-fatigue operation. Additionally, the ability to switch quickly between different types of grabs allows stevedores to handle a wide range of commodities without extensive idling periods in various operational conditions, from sheltered waters to open water.

MARKET COMPETITIVENESS

Transitioning to crane technology, the development of the CBG 310 was driven by market requirements and changes in classification society regulations. New components ensure future spare parts availability.

Liebherr maintains a high level of manufacturing depth by using Liebherr components or specially developed welding processes. It ensures the highest quality standards for materials, which leads it, for example, to define its own recipe for the steel used in Liebherr cranes.

By constantly questioning its processes and investing in innovative technologies such as welding robots and machining centres, Liebherr ensures that its manufacturing capabilities remain at the cutting edge, delivering superior quality and efficiency to meet the evolving demands of its customers.

To remain competitive, Liebherr is active in many areas. A key focus is sustainability, for which the company's efforts have been awarded the Gold Medal in the Ecovadis assessment process for several years. The

general evaluation criteria include environment, ethics, labour and human rights, and sustainable procurement.

TECHNOLOGICAL DEVELOPMENTS

The CBG 310 now operates with constant pressure systems, offering several advantages:

- ❖ **Stable system performance:** constant pressure in the hydraulic system allows for very precise control as the pressure remains constant regardless of load or operating conditions.
- ❖ **Efficiency improvement:** increased energy efficiency as the constant pressure makes performance more predictable and stable, leading to less energy loss and better energy utilization.
- ❖ **Simple control:** different consumers have different loads but the same pressure, allowing for simple and effective control. No additional control systems are needed to compensate for varying loads.
- ❖ **Wear reduction:** reduced wear on hydraulic components as pressure peaks and fluctuations are minimized, resulting in longer lifespans for pumps, valves, and other hydraulic components, saving maintenance costs.

RECENT PROJECTS

The use of Liebherr transshipment cranes for projects worldwide remains consistently strong. Various projects, such as crane barges, transshipment vessels, or Floating Loading Facilities (FLF), are equipped with various numbers of CBG cranes, either with or without an eccentric arm, focusing on both sheltered water and open water operations. The main volumes involve the handling of bulk cargo, which is crucial for the efficiency and connectivity of supply chains. Recently, Liebherr was awarded for the delivery of CBG cranes, especially the CBG 310, for installation on several FLFs for the export of bulk material.

COMPANY BACKGROUND

Founded in 2002, Liebherr-Rostock GmbH is a key player in the maritime crane industry, developing and manufacturing ship, mobile harbour, and offshore cranes. The company's strategic location by the Baltic Sea facilitates the efficient global distribution of their products.

Liebherr's dedication to quality and innovation ensures it remains at the forefront of the maritime crane industry, providing reliable and efficient solutions to meet the diverse needs of its customers.

Elevating transshipment efficiency: keys to effective loading and unloading cargo ships



Transshipment plays a big role in the seamless operation of the global supply chain, enabling bulk goods to reach their final destinations through strategic intermediate stops. However, the process is filled with operational, technical, and financial challenges, from avoiding port congestion and demurrage costs to maintaining operations under harsh sea conditions and navigating market pressures.

In this article we dive into these challenges and discuss optimization strategies that are essential for enhancing the efficiency and cost-effectiveness of transshipment operations. We illustrate how strategic practices and the right equipment choices, specifically in crane and grab technology, can significantly improve productivity even in geographically challenging conditions.

A good example of a transshipment situation is in Sierra Leone, West Africa, where SMT Shipping has achieved significant transshipment advancements. This region presents a unique challenge due to its shallow shores, extending 10 to 20 metres in depth for up to 10 miles. To be profitable, you will have to ship your cargo with colossal ore carriers. For more information on how SMT Shipping has overcome these challenges and boosted its

productivity by 25%, please see 'From challenge to conquest: SMT Shipping's journey to a 25% productivity boost using the NemaX grab,' on p15 of the October 2024 issue of *Dry Cargo International*.

WHAT IS THE DEFINITION OF TRANSSHIPMENT?

Transshipment refers to the process where goods or dry bulk cargo are transported to an intermediate destination before reaching their final destination. This logistical strategy serves various purposes, including the consolidation of multiple smaller shipments into a single larger one, enhancing efficiency and reducing transportation costs. Conversely, large consolidated shipments can also be divided into smaller packages (deconsolidation).

High-performance transshipment is typically carried out at onshore or offshore transport hubs. These hubs are strategically located to optimize logistics and supply chain operations, serving as key points where cargo can be seamlessly transferred between different modes of transport — such as from ship to rail or truck or even from ship to ship. Typical transshipment vessels, like bulk and barge carriers, are specialized ships designed to facilitate the transfer of cargo between vessels or

between a vessel and a port, where direct docking may not be possible or efficient. These vessels play a crucial role in the global supply chain and maritime logistics, enabling the efficient movement of goods across different transportation modes.

This transshipment process not only streamlines the movement of goods across global networks but also enables businesses to navigate regulatory requirements, optimize inventory levels, and access new markets more effectively. Through the strategic use of transshipment, companies can enhance their operational flexibility, minimize transit times, and potentially lower shipping costs, contributing significantly to the global trade system's efficiency.

REASONS FOR TRANSSHIPMENT

Next to (de)consolidation to enhance efficiency and reduce transportation cost, there are several other reasons why logistics operators choose to use transshipment:

1. NAVIGATING GEOGRAPHICAL CONSTRAINTS

It allows for the movement of goods around geographical barriers or through regions where direct transportation might not be possible or practical. For example,

goods might be transshipped through a port to cross an ocean or moved from a rail network to a truck for final delivery.

2. IMPROVING CONNECTIVITY

It enhances connectivity between different transportation networks, making it possible to ship goods to destinations that are not directly served by a single carrier or mode of transport.

3. MANAGING CAPACITY CONSTRAINTS

When a particular segment of the transportation network is at capacity, goods might be transshipped through an alternative route or mode to avoid delays.

4. FACILITATING INTERNATIONAL TRADE

Transshipment is crucial in international trade, allowing goods to be moved efficiently between countries with different transportation infrastructures or regulatory environments.

5. OVERCOMING EQUIPMENT AND TRANSPORT MODE LIMITATIONS

Some goods may require specific handling or transportation conditions (e.g., refrigeration, special containers) that are not available on all segments of their journey. Transshipment allows these goods to be transferred to the appropriate equipment or mode as needed.

6. ENHANCING FLEXIBILITY AND RESILIENCE

By allowing goods to be rerouted in

response to disruptions, delays, or changes in demand, transshipment can make supply chains more flexible and resilient.

7. COMPLYING WITH REGULATIONS

In some cases, transshipment is used to comply with international regulations or sanctions, where direct shipment between two countries might be restricted or prohibited.

8. OPTIMIZING INVENTORY MANAGEMENT

Transshipment can be part of a strategy to reduce inventory levels and storage costs by moving goods closer to their final destination or market in anticipation of demand.

9. REDUCING ENVIRONMENTAL IMPACT

Efficient transshipment strategies can help reduce the environmental impact of transportation by optimizing routes and reducing the total distance goods need to travel.

By strategically using transshipment, businesses can improve the efficiency, cost-effectiveness, and reliability of their supply chains, ultimately enhancing their competitiveness in the global market. Like VLI PECÉM, demurrage costs can be reduced by increasing productivity with a Nemax grab.

TRENDS AND CHALLENGES

Apart from management issues on board,

managing seaborne operations involves key issues in operational, technical, and financial areas:

OPERATIONAL CHALLENGES

Question: “How do I avoid congestion and demurrage costs of ingoing and outgoing vessels due to slippage in ETA & ETD, availability of the installation due to bad sea state and other meteorological conditions?”

Answer: The goal here is to manage the arrival and departure times of ships (ETA & ETD) better to avoid traffic jams at ports and extra charges (demurrage costs) when ships are delayed. This requires tackling the unpredictable nature of the sea and weather (bad sea state and meteorological conditions) that can affect when ships can dock or leave. A solution is to use technology for better scheduling and real-time updates to adjust plans as needed.

TECHNICAL CHALLENGES

Q: “How do I keep my installation going at open sea under severe conditions and without too much technical support?”

A: Keeping a ship's operations going in the middle of the sea, especially during bad weather, with limited help available, is a technical challenge. The focus is on ensuring that the ship and its equipment (the installation) can withstand tough conditions and keep running. This can be achieved by ensuring regular maintenance, equipping the crew with the skills to manage minor repairs, and utilizing remote





monitoring technology to keep an eye on the ship's vital systems.

FINANCIAL CHALLENGES

Q: "As the handling rates are under pressure due to overcapacity in the dry bulk market, how do I increase efficiency and lower costs per tonne of transshipment?"

A: The aim is to make each shipment more cost-effective by improving how efficiently goods are loaded, moved, and unloaded. This might involve optimizing operations, using automation to speed up processes, and finding smarter ways to plan shipments to lower overall costs.

In essence, addressing these challenges involves strategic planning, embracing technology for operational efficiency, and enhancing the crew's skills and capabilities to ensure the seamless, cost-effective movement of goods across the seas.

IDEAL CRANE AND GRAB FOR LOADING AND UNLOADING CARGO SHIPS

Many high-performance marine transshipment hubs are equipped with four-rope (grab) slewing cranes. The reason for choosing four-rope cranes is significantly higher efficiency compared to, for instance, slow-moving, single line derrick cranes equipped with slow-operating remote-controlled or electro/hydraulic grabs.

In most cases, these four-rope cranes are standardized to a high degree with specific speeds and accelerations, depending on the make and type. Within these constraints, the productivity of any transshipment crane depends entirely on the productivity of the grab.

Any grab, regardless of type or brand, will have a given deadweight and payload. The general idea is that the lower the grab's deadweight, the higher the payload and the higher the productivity.

When selecting the best grab, operational speed and the weight of the material are generally the most important aspects. When it comes to transshipment, maintenance is a key factor that affects the choice of grab. Generally, both the clamshell grab and the NemaX are suitable, but the choice is as follows:

CLAMSHELL GRAB

A clamshell grab is highly versatile. It can handle almost every material and is an excellent all-rounder. It can handle soybeans, grain, fertilizers, iron ore, bauxite and more. A single clamshell grab can manage different materials, which is advantageous given the limited number of grabs (usually two or three) a pontoon can carry. Additionally, its ability to close completely is beneficial for environmental containment.

NEMAX

However, if the material is compatible, the NemaX grab emerges as a better option. Its revolutionary design translates to lower dead weight, faster opening and closing, and it also simplifies maintenance — an essential consideration in remote transshipment locations. With fewer moving parts, the NemaX's maintenance needs are reduced compared to a clamshell. In addition, this grab can be accessed from the ground when open, which also facilitates easier maintenance. However, the NemaX is not universal

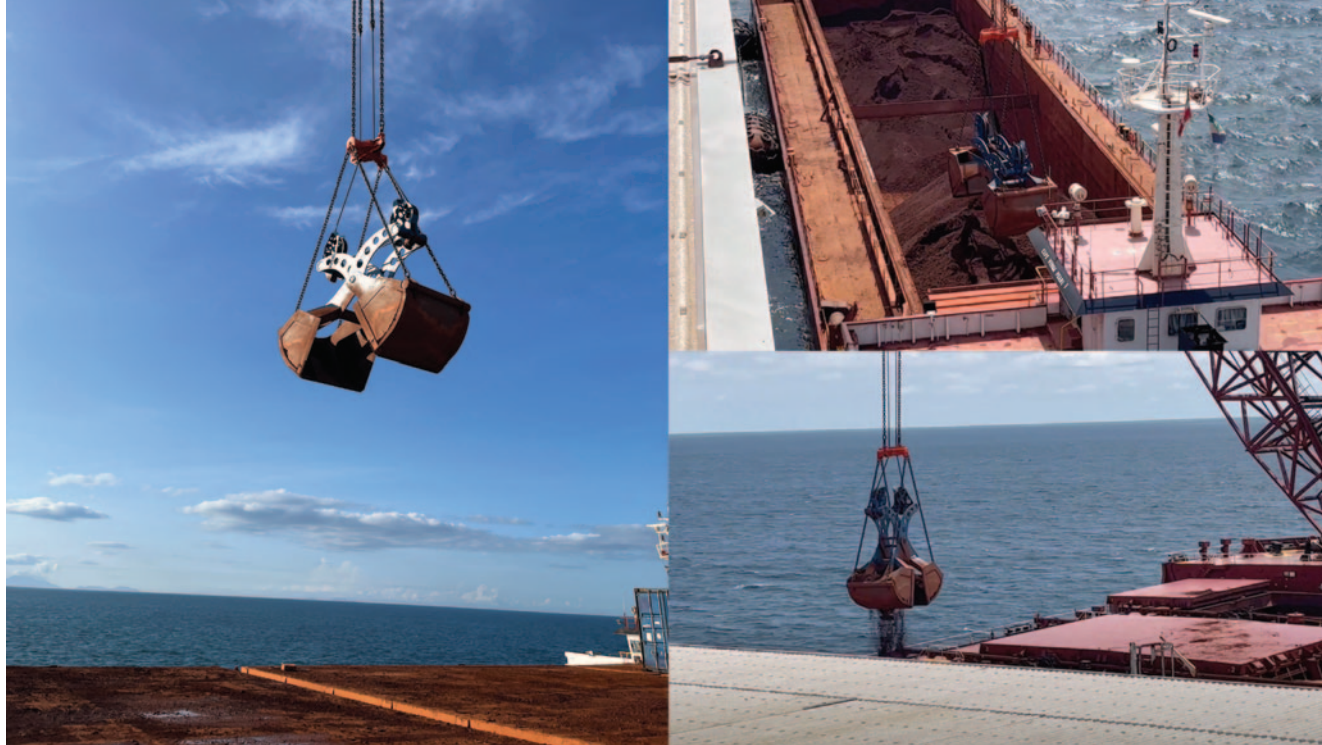
across all materials yet. The major streams of material in transshipment are coal, bauxite and iron ore, for which the NemaX is suitable.

In conclusion, default to a clamshell grab for diverse material handling on a pontoon, considering its capability to secure multiple materials. Then evaluate if the NemaX is a feasible option for the material(s) that must be handled; if so, it is often the best choice due to its productivity and maintenance advantages, with the added benefit of ground-level accessibility for any necessary maintenance.

HOW TO IMPROVE TRANSSHIPMENT OPERATIONS

Improving transshipment efficiency depends significantly on the optimization of crane and grab operations. Productivity, defined as the product of payload capacity and the number of cycles per hour (productivity = payload x cycles per hour), underscores the importance of matching the optimal grab with the crane and material being handled. Since different materials require specific grabs for efficient handling, having a selection of grabs tailored to the various materials being transshipped is crucial. In fact, less productivity can also lead to demurrage costs.

The cycle time, which significantly influences productivity, is determined by the sum of the crane's hoisting and slewing times, along with the grab's opening and closing times. The speed at which the crane's winches operate affects the grab's closing time, which in turn depends on the length of the grab's closing cable



withdrawal. It is essential to note that a crane can only begin slewing once the grab is fully closed and lifted out of the cargo, making the grab's opening and closing speed a critical component of overall productivity. This is particularly true for operations requiring small slewing angles, where operators aim to minimize cycle time for maximum efficiency. Therefore, investing in grabs that can open and close rapidly, without compromising on payload capacity, can significantly enhance transshipment productivity by reducing cycle times. This not only boosts throughput but also

reduces the risk of demurrage costs by ensuring an efficient transfer of cargo, emphasizing the need for precise equipment selection and operation in optimizing transshipment processes.

NAVIGATING THE FUTURE OF TRANSSHIPMENT WITH STRATEGIC INSIGHTS

Transshipment is an integral component of the global supply chain, enabling the strategic movement of bulk goods through intermediate stops to their final destinations. Yet, it is a process filled with operational, technical, and financial

challenges — from mitigating port congestion and demurrage costs to ensuring seamless operations under challenging sea conditions and overcoming market pressures. Through this article, we've explored various optimization strategies crucial for boosting the efficiency and cost-effectiveness of transshipment operations. We've highlighted the significance of strategic practices and the selection of appropriate equipment, particularly in crane and grab technology, to significantly enhance productivity, even in the face of geographical challenges.



Bateman Manufacturing's scrap grab specifically engineered for use in ships' gear applications

ENHANCING EFFICIENCY AND VERSATILITY : BATEMAN MANUFACTURING'S CUTTING-EDGE MATERIAL HANDLING EQUIPMENT

Bateman Manufacturing has firmly established itself as a respected manufacturer of high-quality material handling equipment. With a rich history spanning several decades, the company has honed its expertise in designing and producing cutting-edge solutions that optimize the handling of various commodities. The company's commitment to reliability, durability, and superior performance has garnered a distinguished reputation in the industry.

Bateman's knowledgeable service team is at the top of its game when it comes to solving complex problems for any type of installation. Bateman can provide servicing and repairs for existing handling equipment, and it has an on-site service team that can repair any issues regarding handling equipment, magnets, or generators. The team at Bateman provides detailed and individualized on-site training and installation services to help customers, so they can safely and properly operate the equipment that was purchased.

Bateman Manufacturing's scrap grapple exemplifies the company's dedication to innovation and practicality. This versatile tool, characterized by its four-tine orange

peel design, is adept at efficiently handling scrap materials in rail and barge operations. With a robust hydraulic system and a powerful grip, the scrap grapple ensures

secure and effective loading, unloading, and transportation of bulk commodities. Its superior design minimizes spillage, reduces manual labour, and maximizes operational efficiency, ultimately saving time and resources.

SHIPS' GEAR APPLICATIONS

In the realm of maritime transportation, Bateman Manufacturing's ships' gear grapple stands as a testament to the company's commitment to innovation. This diesel-hydraulic grab is specifically engineered for use in ships' gear applications, enabling the efficient handling of various types of bulk materials. Equipped with advanced hydraulics and intelligent control systems, the ships' gear grapple enhances productivity, streamlines operations, and ensures safe and secure cargo handling.

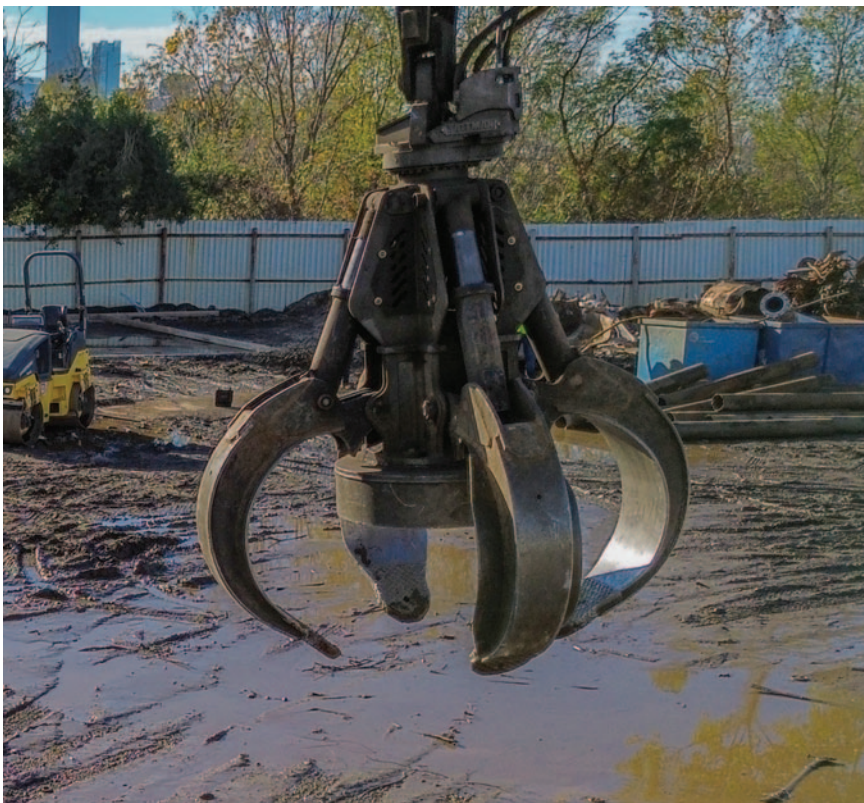
Its adaptability to different ship types and cargo configurations makes it an indispensable tool for port operators and vessel owners worldwide.

CLAMSHELL IDEAL FOR RAIL AND BARGE

Bateman Manufacturing's clamshell bucket offers superb versatility, making it an essential asset in rail and barge



Bateman Manufacturing's diesel-hydraulic ships' gear grapple is specifically engineered for use in ships' gear applications,. It is equipped with advanced hydraulics and intelligent control systems, and its adaptability to different ship types and cargo configurations makes it an indispensable tool for port operators and vessel owners worldwide.



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Bateman Manufacturing's clamshell bucket offers superb versatility, making it an essential asset in rail and barge transportation.

transportation. Designed to handle a wide range of commodities, including bulk materials, grains, fertilizers, and aggregates, the clamshell bucket excels in applications that demand precision, efficiency, and controlled material placement. With its hydraulic control systems, optimized weight distribution, and customizable configurations, this bucket enables seamless loading and unloading in diverse environments, maximizing productivity while reducing waste and spillage.

STATE-OF-THE-ART

Bateman Manufacturing's commitment to staying ahead of the curve is evident through its continuous pursuit of technological advancements. Through extensive research and development, the company consistently refines its equipment to incorporate the latest innovations. By leveraging state-of-the-art technologies such as intelligent control systems, advanced hydraulics, and ergonomic

Versatility is at the core of Bateman's skip pan design. With a 360° continuous rotation capability, its skip

pan empowers operators with unprecedented manoeuvrability.



designs, Bateman Manufacturing ensures that its products meet the evolving needs of the rail and barge transportation industry.

CUSTOMER SATISFACTION

Bateman Manufacturing's dedication to customer satisfaction is reflected in its extensive clientele, comprising major players in the rail and barge transportation

sector. Recognized for its exceptional build quality, reliability, and customer support, Bateman Manufacturing has forged strong partnerships with prominent companies operating in both domestic and international markets. These collaborative relationships allow it to stay attuned to industry requirements and deliver tailored solutions that address specific challenges.

In an industry driven by efficiency and adaptability, Bateman Manufacturing shines as a prominent provider of material handling equipment for rail and barge transportation. Its scrap grapple, ships gear grapple, and clamshell bucket represent the epitome of technological innovation, ensuring streamlined operations, improved productivity, and optimized cargo handling. With a steadfast commitment to excellence, Bateman Manufacturing continues to evolve, anticipating industry needs, and delivering groundbreaking solutions that contribute to the success of the rail and barge transportation market.

Cooper Consolidated receives North America's largest E-Crane bulk cranes



Cooper Consolidated, LLC has proudly announced the expansion of its bulk stevedoring fleet with the addition of two 4000C Series Equilibrium Cranes, the largest cranes built by E-crane. These cranes, named *Pelican* and *Creole King*, solidify Cooper Consolidated, LLC as the Mississippi River's premier bulk stevedoring service provider.

"Cooper Consolidated is constantly aiming to provide our customers with the highest quality of service and the most efficient cargo handling," said Chris Blanchard, Executive Director of Cooper Consolidated, LLC. "The addition of North America's largest E-crane to our fleet helps us continue to meet our high standards and exceed our customers' expectations."

The *Pelican* and *Creole King* will handle both bulk and breakbulk cargoes on the

Mississippi River. These high capacity cranes offer the latest technology to ensure less maintenance, longer component life, and better energy efficiency.

Each crane is mounted on new barges measuring 200' x 72' x 12' built in 2024 at Corn Island Shipyard in Grandview, IN.

"The decision to bring the largest E-Cranes to the Mississippi River was a collaborative effort between the E-Crane and Cooper Consolidated teams and continues our tradition of adding unique assets to our operations that offer value for our customers," said Billy Fitzpatrick, Managing Director of Sales and Stevedoring at Cooper Consolidated, LLC.

The *Pelican* was erected and commissioned in December 2024, and

the *Creole King* is set to begin operations in May 2025.

Already in operation on the Mississippi River, the *Pelican* has 47 cubic yard buckets, which have a bulk capacity of 52 tonnes.

ABOUT COOPER CONSOLIDATED, LLC

Cooper Consolidated is the largest asset-backed stevedoring, barge, marine, and logistics company operating in the ports of New Orleans, Baton Rouge, South Louisiana, and Plaquemines. With offerings that span the entire reach of the Lower Mississippi River between Southwest Pass and Baton Rouge, Cooper Consolidated's services are provided and directed by its own assets and employees, thereby providing customers with the most reliable and flexible service that can be achieved.

Bedeschi closes another deal for a floating terminal system

Through the focused activity of its Far East branch in Hong Kong, Bedeschi has finalized a new contract with a key business and energy development company in Indonesia for a new floating terminal. The floating terminal will have a capacity of 35,000 tonnes per day, handling coal from loaded barges to big oceangoing vessels. The new floating terminal is planned to operate in the mining area of Kalimantan and all the Far East Oceans.

The contract includes the full scope of the entire machine, including: structures; key components and controls for two receiving hoppers with a dedusting system; two belt feeders with a blending mixer; one belt conveyor system complete with transfer towers; and one slewing-luffing-telescopic shiploader equipped with a trimming chute. The Bedeschi transshipping system can operate in automatic, semi-automatic, and manual modes through the Bedeschi electronic control panels and the operator pulpit. The shiploader can also be easily operated and trimmed by the deck personnel through a remote radio control.

Bedeschi closed the deal thanks to the commercial and technical support of Bedeschi Far East, which has a key strategic role both for the new installations and for the aftersales, spare parts, inspections, and procurement in the Asian market.



Rocktree to acquire Atria to expand global footprint and service offerings

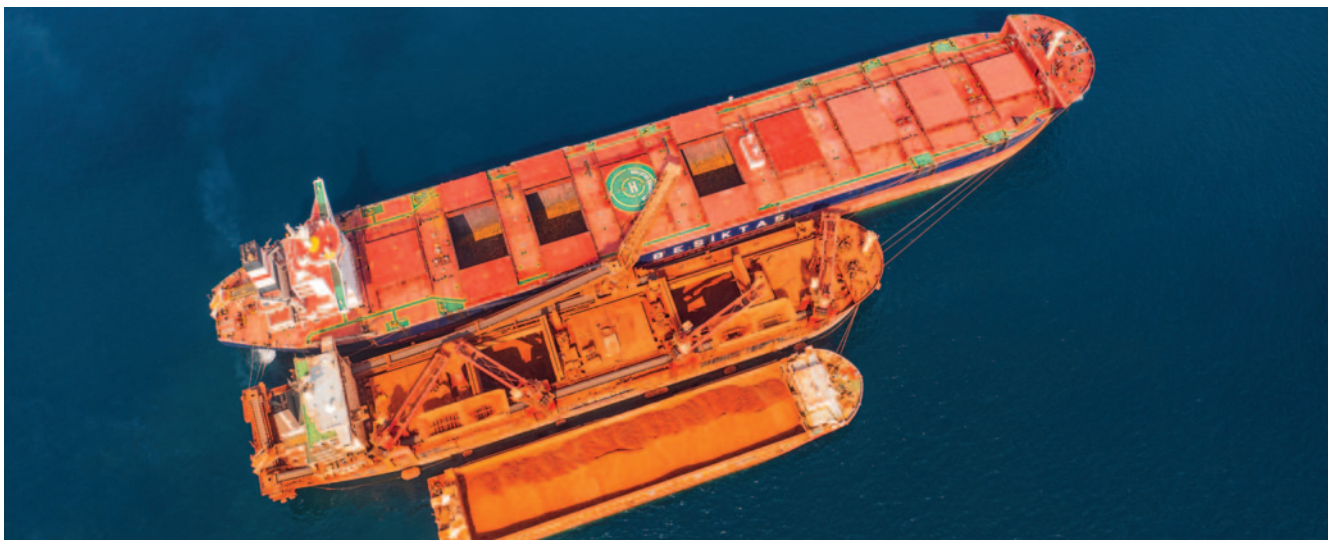
Rocktree Logistics Group (Rocktree), a major infrastructure service provider through a global network of offshore terminals, shuttle vessels, barges, and other turnkey solutions, announced in early February that it has agreed to acquire 100% of a group of companies known as ATRIA Soluciones Logísticas (Atria), a respected South American port services and river transportation group. Through this transaction, Rocktree will significantly expand its global footprint across the commodities and agriculture value chain, offering a

broader range of services to new and existing customers. Rocktree will acquire Atria from Southern Cross Group, and the financial terms of the transaction were not disclosed.

Combined company to service broad universe of commodities across dry and liquid bulk cargoes with operational and commercial presence spanning five continents.

Daniele Pratolongo, CEO of Rocktree, said, "We are thrilled to welcome Atria to Rocktree. This transaction represents an important step in our history, as we will significantly expand service offerings for our customers. Atria's assets, operations, and long-term customer relationships are unparalleled in our industry, and our combined company will be well-positioned for day-one scalability and long-term growth and value creation as we work together to expand our leadership in logistics solutions across the globe."

In connection with the transaction and other expansion plans, Rocktree





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has secured private credit financing of up to \$350 million from the Blue Ocean maritime investment platform managed by EnTrust Global, a prominent global alternative asset management firm. Pratolongo continued, “Equally important to this acquisition is the firm that has helped to finance it. We would like to extend our thanks to the entire team at EnTrust Global. As we look to continue to expand Rocktree’s offerings with Atria under our wing, this financing will help fuel Rocktree’s next phase of growth, which may include a combination of organic growth initiatives coupled with other strategic M&A opportunities.”

Atria is one of the largest logistics companies operating on the Paraguay-Parana Waterway (PPW), South America’s most critical waterway, playing an important role in the exportation of agricultural commodities worldwide. Atria’s distinguished portfolio includes push-boats, barges, port terminals, an offshore floating crane, a shipyard and repair facility, and other key land-based assets. The acquisition will enable Rocktree to diversify across regions, commodities, and product offerings, achieve meaningful commercial synergies, and rapidly scale its global platform in the Americas. Notably, the combination will allow Rocktree to

unlock opportunities in the food and feed supply chain by building on Atria’s leading position in the PPW market and optimizing grain transport operations with Rocktree’s turnkey solutions worldwide.

An estimated \$75 trillion in infrastructure spending is required to support population growth, improve existing infrastructure, and invest in new technology to digitize and decarbonize the global economy. New and expanding infrastructure projects require a significant volume of raw commodities, which are key inputs for steel, aluminium, energy, and food, among others. As raw commodities are increasingly sourced from remote locations without port infrastructure, offshore floating terminals and other logistics solutions are necessary for the global movement of commodities. Through this transaction, Rocktree is well-positioned to continue capitalizing on this strong market momentum and solve for pinch-points in global supply chains.[1]

“In Rocktree, we have found an ideal partner for Atria. By embarking on this next phase of our growth journey alongside the established Rocktree team, we will be able to expand and enhance the integral services our customers rely on,” said Francisco Mackinlay, CEO of Atria. “Our shared cultural values of reliability, collaboration, and safety will facilitate a seamless integration and allow us to grow together and deliver even more offerings for our partners.”

The transaction is expected to close in the first quarter of 2025, subject to the satisfaction of customary conditions.

ADVISORS

Evercore served as financial advisor while a group of law firms led by Proskauer Rose LLP and Beccar Varela served as legal advisors to Rocktree. BNP Paribas served as financial advisor while a group of law firms led by Salaverri, Burgio & Wetzler Malbrán served as legal advisors to Southern Cross Group.

ABOUT ROCKTREE

Rocktree Logistics Group is a prominent global infrastructure service provider through its network of offshore floating terminals, shuttle vessels, barges, and other turnkey solutions. Since its founding in 2007, Rocktree has delivered reliable, cost-effective, and lower emissions logistics solutions.

With ten global offices and nearly 900 employees, Rocktree ensures seamless logistics through strong partnerships with international traders, producers, and end-users across the Americas, Asia, and West Africa with a broad range of commodities.

ABOUT ATRIA

Atria was founded in 1994 and is one of the largest operators in the Paraguay-Parana Waterway in South America. It has over 500 employees and operations in five countries across over 4,000km of waterways, differentiating itself as the sole operator of liquid cargo in the Alto Parana. Atria offers dry and liquid bulk transportation, along with port services, providing an integrated service offering to its clients.

1. Source: Global Infrastructure Hub, Deloitte. Infrastructure needs defined as new investment, replacement investment and spending on maintenance where the investment will substantially extend the lifetime of an asset, but excluding land purchases. Needs determined on the basis that countries match the performance of their best performing peers in terms of the resources they dedicate to infrastructure investment



VERSTEGEN

GRAB INTELLIGENCE



Professional companies in more than 110 countries worldwide work with Verstegen grabs, because our grabs offer them the highest reliability and best productivity. Combining our extensive knowledge and experience with the feedback from our loyal customers results in optimized grabs for all bulk materials and unloading situations. We call this 'Grab Intelligence'.

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Shepherds of the sea

Ships' Agents & Ship Managers

Jay Venter

The silent force of ship managers: Shi.E.L.D. Services' excellence in dry bulk operations

When thinking about shipping logistics, safety, performance and major investments are usually the first aspects that come to mind. However, at the core of a successful operation lies the expertise of the people managing the vessels. Shi.E.L.D. Services, as a premier ship manager, plays a critical role in ensuring that mining companies, transshipment operators and shipping companies, as well as commodity traders maximize profitability through well-designed and expertly managed operations.

A MULTIFACETED APPROACH TO SHIP MANAGEMENT

Managing a vessel is a comprehensive responsibility encompassing technical oversight, commercial acumen, and an in-depth understanding of the maritime world. For bulk carriers and transshippers that operate under demanding conditions and transport or handle a variety of cargoes, effective ship management is not just beneficial, it is essential.

Shi.E.L.D. Services ensures every project is built on a solid foundation of technical excellence and professional

expertise. Vessel management involves overseeing the technical health of the fleet, guaranteeing compliance with strict international regulations, and executing maintenance schedules that include prompt repairs and the timely procurement of necessary supplies. From the smallest bolt to the largest engine component, ShiELD meticulously monitors vessel upkeep to minimize downtime and maximize operational efficiency.

Beyond technical oversight, a vessel's commercial viability is another critical component of successful ship management. Budgeting, accounting, and cost control play key roles in ensuring a ship remains profitable. ShiELD negotiates contracts, manages expenses, optimizes cargo capacity as well as loading performance, and minimizes fuel consumption, recognizing that financial efficiency is paramount to sustainable success.

THE HUMAN ELEMENT: CREW MANAGEMENT AND WELFARE

A vessel is more than just steel and machinery, it is a floating community, a temporary home for the crew who

dedicate months of their lives to keeping it operational. ShiELD places a strong emphasis on the human factor by recruiting and training highly skilled seafarers, managing crew rotations, ensuring medical care, and providing essential services. The company acts as a liaison, balancing the crew's welfare with corporate objectives to foster a safe, efficient, and motivated working environment at sea with all stakeholders' benefit.

NAVIGATING INDUSTRY CHALLENGES WITH EXPERTISE

The role of a ship manager is constantly evolving due to environmental regulations, technological advancements, and stricter compliance requirements. To remain competitive, ShiELD continuously refines its strategies by:

- ❖ Expanding fleet management capabilities, applying data-driven decision-making and predictive maintenance strategies.
- ❖ Investing in talent and training, cultivating a highly skilled workforce that understands the intricacies of dry bulk shipping and logistics.



- ❖ Enhancing sustainability and efficiency, implementing operational improvements that reduce emissions and optimize vessel performance.
- ❖ Leveraging technological advancements, integrating digital tools to streamline ship management and operations.

A PROVEN TRACK RECORD IN DRY BULK LOGISTICS

With extensive experience in dry bulk logistics, Shi.E.L.D. Services has played a pivotal role in landmark projects worldwide. From pioneering transshipment operations in Gabon to introducing major Northern European operators to

transshipment for the first time, the company has consistently delivered innovative solutions that drive success.

Shi.E.L.D. Services and its team has worked on groundbreaking projects in Asia, Africa, Europe, Middle East.

The company operates any type of transshipment vessels, feeder barges, tugs,

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Shi.E.L.D. Services specializes in onshore and offshore logistics of dry bulk materials. We offer a complete suite of services including feasibility studies, definition and development of optimal logistics solutions, vessel design, supervision of new-building construction and vessel conversion, technical, crew and operational management of a diverse range of offshore assets.

ensuring first and last-mile connectivity in challenging environments.

FUTURE GROWTH AND EXPANSION

ShiELD has ambitious strategic plans aimed at strengthening its market position. The company is actively expanding its presence in emerging markets, enhancing its ship management and technical consultancy capabilities, and growing its expertise in transshipper management and asset design. With a forward-thinking approach, ShiELD remains committed to providing high-quality, personalized service to clients looking to optimize their dry bulk logistics operations.

RECOGNIZED INDUSTRY LEADERSHIP

Shi.E.L.D. Services' excellence in the industry has been recognized with multiple awards. The company won the 'Bulk Logistics Excellence' category at the IBJ Awards in 2019 and 2022, followed by the 'Lifetime Achievement Award' for its CEO

in 2023. These accolades highlight its dedication to innovation, operational efficiency, and leadership in the dry bulk sector.

ABOUT SHI.E.L.D. SERVICES

Shi.E.L.D. Services is a logistics management consulting firm specializing in dry bulk shipping. The company helps commodity traders, bulk shipping companies, and port operators streamline supply chains, reduce operating costs, and maximize profitability. With roots in Coeclerici, one of the industry's leading players, ShiELD has built a reputation for excellence, reliability, and efficiency in maritime logistics and shipping.

As a trusted partner in bulk carrier and transshipment operations, ShiELD ensures continuity in the logistics chain, even in the most challenging environments. Its commitment to technical expertise, operational efficiency, and crew welfare cements its status as a leader in the industry.

Guglielmo Tersalvi, Operations Director, ShiELD Services.



Shi.E.L.D. Services is not just a ship manager, it is the silent force that keeps the logistics chain moving, ensuring that cargoes reach their destination safely, efficiently, and on time.

Owners expect managers to deliver

Owners faced by the growing complexity of emissions regulations and marine fuel alternatives are entitled to expect practical solutions from their ship management partners, writes Ioannis Stefanou, Wallem Managing Director, Ship Management.

New regulations are often accompanied by lack of clarity over the letter of the law and the learning process can sometimes be heavy-going, especially when ship owners come up against authorities with which they are unfamiliar.

There can be few examples that better demonstrate the relief ship management organizations can bring to owner pain-points than Europe's Emissions Trading Scheme and the 2025 arrival of FuelEU Maritime.

For those focusing on specific vessel types or trades, the 'classic' attractions of the ship manager is that organization's ability draw on experience of dealing with many owners, multiple ship types and diverse trading routes. But ETS and FuelEU Maritime create additional proof points in favour of the ship management model.

As a straightforward example, it can be easier for Wallem to deal with opening ETS maritime operating holding accounts across European states for the new emissions trading scheme than it is for a given owner.

In fact, Wallem's administrative service has worked so well for some of our principals that they have asked us to

Ioannis Stefanou, Wallem Managing Director, Ship Management.



perform it for vessels that are managed in-house, and even for ships that are managed by other third-party groups.

But to prove truly valuable, ship managers need to demonstrate not only that they take problems away, but also that they are partners who add value by driving greater efficiency.

ASSESS, ADVISE, ACT

For this reason, the Wallem ETS service has been set up to advise owners about reporting requirements and gather all the necessary data, either through our own vessel operating platform or by linking to any other platform that an owner has opted to use. This way it will become

possible to mine the ETS for monetary value.

This is not to say that Wallem has all the answers in an unfolding scenario. There are plenty of ships that will be affected by the ETS which have yet to call at a European port. Negotiations with owners and charterers continue as to who will be the responsible party, and how the flow of allowances will happen when reporting starts in earnest, in 2025.

Nevertheless, after setting up a dedicated team in Cochin to examine vessels' operating performance, we are confident Wallem can gather the right data either from our own platform or working with whatever systems owners have.

Where FuelEU Maritime is concerned, the role ship managers play in upholding the ISM Code is likely to bring even greater levels of responsibility, although here too interactions with charterers and owners will be critical.

Bimco has only recently drafted a standard time charter clause for FuelEU aimed at being workable in most scenarios and commercial relationships. It looks likely that longer period charter party agreements will bring flexibility to decide on compliance strategies which and may utilize pooling, banking or borrowing.

FOCUS ON FUELEU

Wallem is also focusing on strategies to help clients minimize costs for FuelEU for the immediate term, for example by

burning biofuels. It has conducted biofuel trials on various types of vessels and has made calculations on how much biofuel intra-European voyages need to save on costs and achieve acceptable ratings.

We now know what technical considerations and precautions need to be taken for biofuels and we continue to build our expertise for other alternative fuel requirements.

In the meantime, we have prepared for other responsibilities which our clients look to Wallem to fulfil. For example, we

spent over a year getting ready for the introduction of the SIRE 2.0 tanker inspection regime — through trial runs, training and preparation for our crews. We set up a dedicated team for SIRE 2.0 which ensured the necessary documentation was always ready.

Wallem went as far as training our seafarers for when an inspector is onboard so as to avoid situations where the crew know their stuff but feel uncomfortable due to the inspection process itself.

The attention to detail is part of an

approach which supports the complete life cycle of a ship — leveraging in-house expertise on safety, technical and commercial performance to deliver services that extend from newbuilding supervision to end-of-life recycling guidance.

For emissions management, we know that owners seek ship management partners that are in it for the long haul, and will stand alongside their planning, financing and fuelling decisions for the 15 or 20 years ahead as more stringent regulations apply.

ASBA sheds some light on the challenges facing the ship agent

Maritime shipping is a complex business. Coordination and expertise are needed to make things run smoothly. The ship agent plays a critical role in insuring everything moves according to schedule. The ship agent is truly the 'boots on the ground' and manages the process to keep commerce moving, writes *Kate Torpey, Executive Director, Association of Ship Brokers & Agents (USA)*.

An efficient port call is vital. They are complex and not without challenges. Every port has unique requirements and procedures, and even government entities operate differently in each port. Understanding the particulars of the local port is part of the essential role the ship agent plays in the supply chain. Any hiccup can cause delays and cost significant money.

Appointing a quality agent certainly helps the process. The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) Recommendation No. 45 (Minimum Standards for Ship Agents and Ship Brokers), recommends appointing a quality agent that adheres to the Quality Standard established by the Federation of National Ship Brokers & Agents (FONASBA). In the United States, all certified agent companies of the association of ship brokers & agents (USA) are awarded the FONASBA Quality Standard. In addition to on-the-job training, all ASBA-certified agent companies are required to have their agents pass a certification exam. The ship owner, charterer and operator all benefit from appointing a qualified ASBA-Certified agent.

Costs associated with port calls have increased significantly over the years. Fully-funding the ship agent is more important than ever. The ship agent is responsible for managing many third-party Vendors such as harbour pilots, tugs, security guards, surveyors and fuel suppliers, all of which come at a very high price. Many vendors will not perform

services without advance payment as it is often unclear to them who is responsible for payment. The ship agent makes sure services are not delayed due to payment requirements. Delays can result in demurrage claims and delays in transport. To help avoid such delays, the ship owner, charterer or operator that appoints the agent (also known as the Principal) should always fully fund the port call.

Practical realities support fully-funding a port call. First, although an agent will notify vendors that it is only acting as agent for the ship owner, charterer or operator, vendors traditionally look to the agent for payment notwithstanding that the owner, charterer or operator — as a disclosed principal — is legally liable to the vendor. This is because the vendor would rather look to the local ship agent for payment than have to pursue a party that may be based overseas.

Similarly, while in most cases a vendor's services constitute a maritime lien that can be enforced by the arrest of the vessel, once the ship has departed the port, exercising the lien may become practically impossible.

This is because high legal costs and the uncertainty of litigation — especially if the lien must be enforced in a foreign jurisdiction — create undue risk and exposure to the vendor.

Thus, the vendor will look to the local ship agent to be primarily responsible for payment up front. Since the ship agent cannot be expected to satisfy vendors out of the agent's own funds, it is imperative that the agent be fully funded before the ship arrives.

Not only will this make for a smoother port call, but it will avoid a situation where an unpaid vendor refuses to provide future services to the agent that represented the delinquent ship owner, charterer or operator.

Over the past several years, agents have

often been asked to accept 80% or less of the ship's estimated port costs. With inflation, supply chain cost increases, the rising cost of fuel and larger ships being the norm, the value of the underfunding has increased dramatically. For example, a typical pre-arrival pro-forma disbursement account (PDA) for a large bulk carrier calling at a US port can be in excess of \$150,000, so if only 80% is pre-funded, \$30,000 of the agent's own funds are exposed.

If the agent, relying on its status as an agent for a disclosed principal, refuses to pay a vendor out of the agent's own funds, the vendor may refuse to render the services necessary to allow the vessel to leave the port (for example, harbour pilots, tugs, line handlers, etc.). This will delay the vessel with resulting demurrage charges and the possibility of port congestion. Demurrage adds up quickly and can easily exceed the perceived benefit of a less than fully-funded port call.

ASBA Certification includes a number of financial security, insurance and accountability components that should reassure the ship owner, charterer and operator that an ASBA agent will be a trustworthy and reliable steward of the advanced funding. First, ASBA-Certified agents must have a CPA conduct an annual procedural review which confirms that the agent's accounting procedures properly verify amounts payable with supporting invoices and receipts that comport to their general ledger.

In addition, ASBA Agents must maintain separate accounts for each Principal with supporting documents that demonstrate that the Principal's funds were properly allocated to services related to the subject vessel's port call. ASBA agents must also meet minimum insurance cover and all boarding agents and their direct managers must successfully complete the ASBA agent exam.

How port agents can gain a competitive edge with a data sharing API

Technology is no longer just an operational tool — it has become a strategic advantage for port agents looking to stand out in a competitive market, writes *Anders Carlsson*, CEO, Enqlare.

As customer expectations evolve, traditional email-based communication is proving insufficient. Clients now expect real-time access to data, directly integrated into their systems, eliminating delays and reducing manual data entry. Port agents who embrace modern digital solutions will not only improve efficiency but also strengthen their client relationships and future-proof their businesses.

At Enqlare, we've worked with over 50 port agencies to help them modernize their operations and enhance customer service through technology. In addition to supporting port agents, we also provide solutions for their clients — giving us unique insight into both sides of the industry. We understand the operational pressures port agents face and the digital expectations of their customers. This deep understanding has driven the development of our Unified API, a powerful tool designed to simplify data exchange and

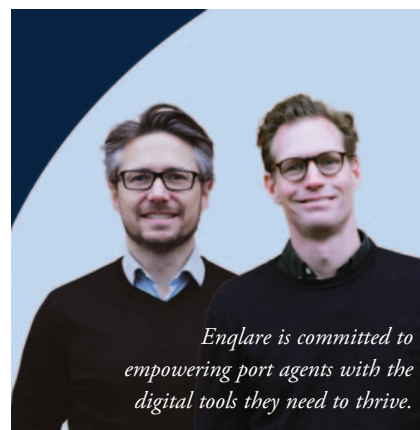
enhance service capabilities.

A Data Sharing API acts as a single connection point that integrates seamlessly with multiple client systems. Instead of developing and maintaining separate API connections for different customers, port agents can rely on one streamlined integration. This approach significantly reduces IT complexity, improves data accuracy, and lowers operational costs.

More importantly, it allows port agents to provide faster, more transparent service, meeting client demands with minimal effort.

By leveraging a Data Sharing API, port agents can transform how they interact with customers, moving from reactive communication to proactive, automated data-sharing. This shift not only enhances efficiency but also builds trust — customers can rely on accurate, real-time updates without the delays of traditional communication channels. In a competitive industry where responsiveness is key, having the ability to deliver data directly into client systems can be a significant differentiator.

As a pioneer in maritime SaaS, Enqlare



is committed to empowering port agents with the digital tools they need to thrive. Our modular solutions optimize bulk freight workflows, enhance collaboration, and enable data-driven decision-making. With the introduction of the Data Sharing API, we are reinforcing our mission to help port agents not just keep up with industry changes — but lead the way.

By embracing technology as a competitive advantage, port agents can future-proof their operations, exceed client expectations, and win more business in an increasingly digital world.

Navigating the maritime industry's evolving landscape

From a distance, shipping looks like a simple business. But anyone who works within the industry understands the expertise in planning, operations, execution and post-fixture activity it requires to ensure trouble-free trading of ships and cargoes.

Recent years have seen the shipping industry faced with an increasingly complex operating environment. Challenges range from ensuring vessel and fuel quality to compliance with sanctions and other charter party clauses.

"Today's owners, operators and charterers must contend with a demanding regulatory situation and global sanctions regimes, heightened operating risks and the need for the highest possible operational performance," says Prokopios Krikris, Sagitta Marine SA Legal Director and Representative in Greece.

This requirement for safe, compliant and efficient performance is not new, but the weighting placed on performance — and the consequences of failing to meet agreed standards — can result in disputes and claims that can impact business relationships.

"Environmental regulations are among

the most demanding for vessel operators because they layer goal-based requirements on top of prescriptive standards. This new approach to compliance also means they are often less than perfect when first introduced and challenging to implement in practice," he adds.

Specific performance clauses under the Carbon Intensity Indicator (CII) require close co-operation between owner and charterer and detailed discussion of how to address the required energy efficiency rating.

"The parties will make an agreement of what daily speed and fuel consumption should be, but so much of overall voyage performance depends on sailing conditions, there needs to be flexibility, transparency and pragmatism in the process," says Prokopios.

Not everyone agrees that the CII is a useful tool in improving vessel performance because of the inherent conflicts of interest within it, but with the upcoming revision by the IMO, it seems likely operators will be dealing with more performance clauses in future.

"Sagitta is deeply committed to

adhering to all our regulatory and compliance obligations and we implement rigorous due diligence measures to safeguard the integrity of the business," he says.

Sagitta's commercial operations team is dedicated to ensuring the smooth and proactive management of all business activities. This commitment mitigates exposure to claims and strengthens relationships with counterparties, ensuring our operational standards remain exemplary.



Prokopios Krikris, Sagitta Marine SA Legal Director and Representative in Greece.

Unimar – managing diverse cargoes and destinations

Founded in 1995 in the city of Santos, Unimar is committed to providing efficient and personalized Shipping Agency and Logistics solutions. Over the past 30 years, the company has built a strong presence in 13 Brazilian states through 23 business units. This national coverage allows it to respond quickly and effectively to market demands, ensuring customer satisfaction at every stage of the process.

Unimar's clients include major breakbulk and special project carriers, dry and liquid cargo brokers, Ro-Ro carriers and off-shore/dredging companies.

The company's expertise includes managing major regular shipping routes in Brazil and handling maritime transport for global commodities. Through its extensive in-house network and international partnerships, the company ensures the safe and efficient transport of goods, including consumer goods, raw materials, minerals, agricultural products, liquid bulk, as well as special cargoes and project logistics.

To support its clients and partners, Unimar provides an advanced operational and financial management system, allowing full control over their processes. With a highly qualified and experienced team, Unimar remains committed to delivering high-quality services tailored to specific needs.

As shipping agents, Unimar's core responsibilities include:

- ❖ acting as Carriers representative in Brazil;
- ❖ vessels' attendance ensuring compliance with Brazilian regulation;
- ❖ providing services such as husbandry attendance, crew change, spare parts, underwater inspections, certifications, and cash-to-master;
- ❖ operational/financial performance optimization; and
- ❖ proactively communicating with all the stakeholders to ensure smooth port operations.

Aligned with its ESG policy, Unimar has been accredited by UN Global Compact since 2018, with initiatives covering the 17 SDGs. In 2023 the company has been awarded by FONASBA's with its Young Ship Agent or Broker Award in recognition of the study developed by Thiago Santos, its Strategy Director on CO₂ emissions in the maritime industry.

Since last year, Unimar has expanded its service portfolio by introducing Special Cargo Logistics, offering comprehensive solutions for the transportation of oversized cargo.



Transshipment of an oversized cargo on a floating device in the middle of the Amazon River — the transport was co-ordinated by Unimar's Special Projects Team.

A significant milestone was reached this year when the company successfully transported specialized equipment during one of the worst droughts in the Amazon River. Given the draft limitations, it tailored the logistic operation through an innovative solution involving transshipment from a vessel to a smaller barge to complete the journey to its final destination.

Technology and innovation are at the core of Unimar's strategy. It continuously develops customized solutions to improve its customers' experience, including:

- ❖ **Port Cost Management Digital Tool:** such a platform provides an extensive monitor tool to analyse and evaluate all the costs variables of the

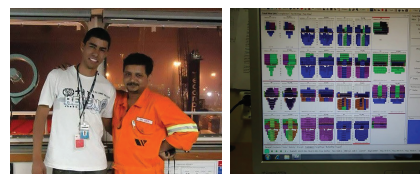
port call. 100% of Unimar PDA's and FDA's are provided digitally to our customers as well as control dashboards that allow companies to take advantage of such data and speed up decisions;

- ❖ **Online Intelligence Portal** that provides real-time market insights and analytics via personalized analyses developed in partnership with our customers compiling different data sources powered by Unimar professionals' expertise.

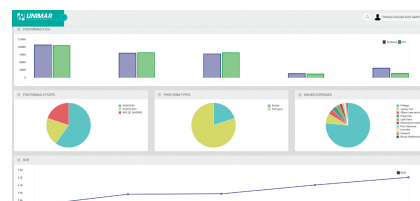
By leveraging innovation, expanding its service offerings, and maintaining a strong operational presence, Unimar ensures its continued leadership in the maritime industry.



A Unimar crew member on the pier before boarding a fertilizer vessel berthed at Vila do Conde Port in northern Brazil.



A Unimar crew member on board, being welcomed by the vessel staff and reviewing the vessel's plan.



Screenshot of Unimar's Port Management tool where customers can assess overall operational costs 24/7.



Screenshots of Unimar's Intelligence Portal with tailor made reports on market trends, commodities performance, and other relevant data.



Unimar attends all major ports in Brazil in over 23 offices.

Morska Agencja Gdynia (MAG)/Poland – on duty since 1951



COOPERATION BASED ON EXPERIENCE AND TRUST BUILT FOR 75 YEARS

The Sea Agency in Gdynia was established in 1951 to provide ship agency services and to represent foreign shipping lines, shipowners and insurance clubs (P&I), writes EUBALTICA's Marek Kowalski — Consultancy & Advisory company for Morska Agencja Gdynia (MAG).

Over time, its specialization was expanded. Now Morska Agencja Gdynia (MAG) offers forwarding services and chartering, warehousing logistics, customs agency, crewing, wind farms transport and handling.

Morska Agency Gdynia is a member of the Baltic And International Maritime Council (BIMCO) and the Association of Ship Agents and Brokers in Gdynia.

The role of the ship agent is very broad and is constantly changing. The catalogue of cases conducted by a ship agent is not closed. Regulations are changing, work is becoming more and more computerized. The ship's agent must co-ordinate the work in such a way that all matters related to the ship's stay in port run smoothly and effectively.

MORSKA AGENCJA GDYNIA (MAG) SERVICES INCLUDE:

1. Ship handling organization in port with stevedoring companies/ port terminals:

- ❖ assistance in ship entry and exit;
- ❖ supervision over port operations;
- ❖ organization of all handling and loading operations;
- ❖ repairs;
- ❖ inspections and controls;
- ❖ handling of ship documentation;
- ❖ crew change; and
- ❖ shipowner deliveries.

2. Agent co-operation with various parties operating in the port-maritime trade:

- ❖ towing companies;
- ❖ pilot companies;
- ❖ shippers;
- ❖ freight forwarders; and
- ❖ suppliers of the cargo.

3. Co-operation with Maritime Administration:

- ❖ Harbour Master Offices;
- ❖ Chief Dispatcher;
- ❖ Customs Office — part of the tax administration;

- ❖ border services — coastguards; and
- ❖ sanitary and other services.

4. Co-operation with ship-handling companies during a stay in port:

- ❖ appraisers, assessment, and control companies;
- ❖ ship service providers;
- ❖ services to vessels at dry docking, repairs and suppliers of spare parts;
- ❖ certification companies; and
- ❖ cargo documentation (bill of lading, statement of facts, etc.).

5. Crew service /crew changes:

- ❖ liability from ship-check-in documents;
- ❖ reporting dossier;
- ❖ billing documentation;
- ❖ insurance records; and
- ❖ crew and passenger list: visas, transport, other airports, medical care (visits to doctors, hospital stay).

MAG LOGISTICS SERVICES

As a logistics service provider, MAG operates in the process of managing resources, including how they are transported, stored, and received, including customer service, demand forecasting, warehousing, material handling, inventory control, order processing, and transportation. MAG guarantees reliable cargo delivery anywhere in the world — by sea and land. Thanks to many years of experience and creativity of its staff, Morska Agencja Gdynia has become a partner brand of exporters and importers around the world, forwarding companies, shipping lines, forwarders, ports, maritime offices, customs and border offices, banks, financial institutions and insurance companies.

WAREHOUSING

MAG operates its own or leased warehouses in strategic locations in Poland; in Gdansk, Gdynia, Swinoujscie and Szczecin Port and Malaszewicze (Polish east border). Storage space can function like bonded warehouse, temporary storage warehouse or reloading place under customs supervision.

MAG warehouses are in key transport locations in Poland. An optimal location is important for organizing logistics and reducing costs. The warehouses are adapted to both the shipment of products transported by sea and rail. They also meet all safety standard.

MAG TERMINAL IN THE PORT OF DARŁOWO

The MAG Darłowo terminal plays an



Gdansk North Port, coal cargo.

important role in logistics activities. It has its own transshipment quays and has warehouses and paved storage yards with a total area of over 17,000 square metres.

It offers comprehensive services to individual customers and forwarding companies, including land transport, i.e. rail, road and sea transshipment.

NEW PROJECT

MAG is currently in the design phase and will then begin the process of building a paved storage yard for products transported by sea, road and rail. The new storage yard with an area of nearly five hectares is located near the largest coal import terminal, i.e. the Import Terminal in the Northern Port of Gdańsk. Once the construction is completed, MAG will provide customers with storage space for bulk cargo and other operations such as screening, loading onto trucks and rail cars. The next stage will be the design and construction of a closed warehouse.

This investment is a milestone for MAG in terms of logistics solution.

SUMMARY

MAG ensures the safety and economic efficiency of port terminals and offers many



View of the hold of the ship, under unloading in the port of Gdansk, import terminal.

additional services, such as product screening, quantity and quality control for all groups of goods handled in ports, sea transport and in storage throughout the country. The scope of services includes all types of operations related to cargo securing, preparation of loading plans, supervision, reporting and documentation, and distribution to end customers.

MAG acts as a ship agent and freight forwarder for principals operating in the port's terminals in the field of wide range of bulk goods in Polish ports, such as: agri products, coal, coke limestone, biomass, aggregates, cement, fertilizers, wheat pellets, chemical products, scrap, wood logs, wood cheeps and others.

The number of ships handled in 2024 reached a record level of 1,338, ranging from offshore, coasters to ships the size of Panamax and Cape. Thanks to the fact that MAG is the number one ship agency in Polish ports. Coal and coke are the main group of all bulk goods, in which MAG also

plays the role of a logistics service provider. Dry bulk cargo accounts for about 32% of the agency's vessel volume. The total volume of bulk cargo is about 2.2 million tonnes. in dedicated departments to handle these issues.

The dynamic growth of logistics works mentioned above resulted in the employment of additional staff in dedicated departments to handle these issues.

Reliability, safety and professionalism supported by many years of experience of a team of specialists from each industry have created a well-coordinated team, which has resulted in the position of the Gdynia Maritime Agency as a leader among companies in the maritime services industry in Poland.

The management board emphasizes "Our company always strives to maximize customer satisfaction, is characterized by flexibility and diversification, and guarantees that customer expectations are met to achieve their business goals."

SEA OF SOLUTIONS SINCE 1951

MAG
Morska Agencja Gdynia

**CARGO HANDLING IN POLISH PORTS | WIND & OFFSHORE
SHIP AGENCY SERVICES | TRANSPORT (MARITIME, RAIL, AIR, ROAD)
WAREHOUSING LOGISTICS | CREWING | CUSTOMS CLEARANCE**



www.mag.pl

Wilson Sons Shipping Agency: coverage throughout Brazil



charterers, and traders engaged in Brazilian trades. Customers are assured not only by the best HSE, Quality and Governance standards in the market, but also by an insurance policy that covers the company for potential eventual errors and omissions.

Rooted in history, driven by the future. Wilson Sons is also a very data-centred company and gives to its customers the same vision: the Shipping Agency has an in-house Market Intelligence team providing analysis, outputs and intelligence to its customers. The data is generated by Wilson Sons' unmatched coverage of 20 branch offices in Brazil and serves as a source for real-time reports and statistical analysis detailing volumes of commodities handled in the country, average waiting times and much more.

Besides the analyses produced by the Market Intelligence team, players also have access to WS Connect, the customers portal that reunites all the intelligence created to facilitate their day-to-day operations. Among WS Connect features, the highlight is the consolidated line-up of all Brazilian ports updated on a daily basis, the report on Average Waiting Time per port, the history of cargoes handled per port and insights on the main commodities such as fertilizers, grains, steel, woodpulp, iron ore.

Major industry players already use this technology to strengthen their market intelligence. Global agribusiness leaders access WS Connect daily to enhance their strategic vision and optimize their logistics operations.

For dry cargo stakeholders navigating the complexities of Brazilian ports, Wilson Sons offers more than just agency services — it delivers strategic solutions, cutting-edge technology, and local expertise to streamline operations and maximize efficiency. With its robust infrastructure, market intelligence tools, and proven track record, Wilson Sons is a trusted partner for dry cargo logistics in Brazil.

Brazil plays a pivotal role in the global dry cargo trade, with vast volumes of dry bulk commodities like iron ore, grains, sugar and fertilizers moving through its ports. At the heart of this market, the Shipping Agency of the Wilson Sons Group boasts over 187 years of experience and unparalleled expertise in dry bulk and break bulk cargo operations.

Wilson Sons Shipping Agency is today the largest port agency in Brazil, with more than 20 branch offices along the Brazilian coast and river ports: this superior territorial coverage allows the company to operate with its own specialized personnel throughout Brazil. With an outstanding background, Wilson Sons is today one of the market leading shipping agencies for dry and break bulk cargoes in Brazil.

Wilson Sons aims to be more than just

a service provider, but also a strategic partner dedicated to maximizing charterers' and owners' operational efficiency and profitability. In the dry bulk sector, where every hour counts, the company's specialized operational and commercial teams ensure that its customers' port call's operational and documentation aspects are handled with speed and precision, minimizing delays and optimizing vessel turnaround times. With strong relationships with Brazilian authorities and extensive local expertise, Wilson Sons navigates regulatory processes smoothly to keep operations on schedule.

While deeply rooted in Brazil, the shipping agency has commercial offices in China and Europe, facilitating seamless communication with dry cargo owners,



ERSHIP Group: Over a century of excellence in maritime services

With over 100 years of experience in the maritime sector, ERSHIP Group considers itself a benchmark in the industry, renowned for its high-quality services and strong international reputation. The group's presence extends across the major ports in Spain, Portugal, Netherlands, Colombia, and specific ports in Africa and Asia, ensuring global coverage with top-tier service.

A STRONG AND DIVERSIFIED STRUCTURE

ERSHIP Group consists of several specialized companies working in perfect synergy:

- ❖ Ership;
- ❖ Beship Brokers;
- ❖ Marship;
- ❖ Ership Lisboa / PortShip;
- ❖ Pérez Torres Marítima;
- ❖ Ronco;
- ❖ Compas/Comship;
- ❖ Portillo; and
- ❖ Maja Stuwadors.

In the Iberian Peninsula, ERSHIP Group's network of 27 agency offices allows it to manage over 5,000 vessels annually, providing customized solutions



Meet <WS>



WS Connect

An advanced market intelligence platform that transforms the data of maritime operations in Brazil into valuable insights for strategic decision-making

- Real-time information about your operations
- Updated lineups of major Brazilian ports
- Interactive reports on main commodities and port intelligence
- Port Handbooks
- Port Cost Estimator

and much more...



Discover the power of these exclusive features!
Contact us to unlock your potential:

intelligence.agency@wilsonsons.com.br



that minimize costs and optimize efficiency. Thanks to its shipowner DNA, it deeply understands the industry's needs and work to add value at every link in the logistics chain.

COMMITMENT TO OPERATIONAL EXCELLENCE

Each port call requires meticulous planning and flawless coordination. ERSHIP Group's professionals work 24/7 to ensure every operation runs smoothly, seamlessly connecting shipowners, charterers, terminals, and clients.

As port agents, the group handles

authorizations, co-ordinates loading and unloading operations, manages customs documentation, assists crew members, oversees supplies, repairs, crew changes, and medical assistance, among other key services.

To ensure consistent and top-quality service, it has established an Interagency Committee responsible for standardizing

procedures, minimizing risks, and optimizing resources at each office. Furthermore, ERSHIP Group's internal quality and audit policies enable it to maintain exceptional service levels at every port it operates.

INNOVATION AND DIGITALIZATION: THE KEYS TO SUCCESS

ERSHIP Group embraces digital transformation as a driver of efficiency. Its in-house IT team has developed a proprietary port operations and billing management software, allowing it to automate repetitive processes and reduce human error. Thanks to this tailor-made technology, it provides a more agile, transparent, and adaptable service that meets each client's specific needs.

A COMPREHENSIVE MARITIME SERVICE ECOSYSTEM

ERSHIP Group operates across multiple areas within the maritime sector, acting as:

- ❖ shipowners;

- ❖ charterers;
- ❖ brokers;
- ❖ stevedores;
- ❖ customs agents; and
- ❖ freight forwarders;
- ❖ warehouse operators.

The interaction between the group's departments enables a holistic and coordinated approach, ensuring efficient and customized solutions for its clients.

Additionally, ERSHIP Group's Fleet Technical Division provides significant added value with its expertise in maintenance and problem-solving, ensuring first-class technical support.

CERTIFICATION AND INTERNATIONAL RECOGNITION

ERSHIP Group is certified as an Authorized Economic Operator (AEO) for customs operations, which serves as a key competitive advantage. This accreditation not only validates the group's security and reliability in the eyes of Public Administration, but also allows it to offer faster and more efficient customs processes, optimizing time and costs for its clients.

ERSHIP Group's active participation in major industry associations keeps it at the forefront of regulatory and operational changes, ensuring its services remain up-to-date and aligned with market demands.

THE DIFFERENCE BETWEEN DOING THINGS WELL AND DOING THEM BETTER

At ERSHIP Group, excellence is not an option — it is an obligation. Its commitment is to continue innovating and evolving to provide superior quality service, backed by a highly skilled team and an infrastructure that guarantees efficient, secure, and tailored solutions for



Clarksons Port Services: dedicated to excellence

Clarksons Port Services stands as a cornerstone in the maritime industry, delivering comprehensive dry bulk services that encompass port agency, customs clearance, shortsea broking, and Sentinel terminal operations. With a strategic network of offices and a commitment to digital integration, Clarksons ensures seamless and efficient solutions for clients worldwide.

PORT AGENCY SERVICES

At the heart of Clarksons' offering is exceptional port agency service. With a presence in over 23 European offices Clarksons provides unparalleled coverage in key maritime locations. Its experienced team co-ordinates vessel port activities, including berthing, pilotage, and the arrangement of quayside services such as stevedoring and warehousing. This extensive network ensures that clients receive prompt and efficient support, minimizing delays and optimizing operational efficiency.

CUSTOMS CLEARANCE

Navigating the complexities of international trade requires meticulous attention to customs procedures. Clarksons' dedicated customs clearance team, comprising over 15 experts, offers streamlined services to facilitate the smooth movement of goods across borders. As an Authorized Economic Operator (AEO), Clarksons adheres to the highest standards of compliance, assisting clients with import and export declarations, safety and security filings, and

transit documentation. The company's proactive approach ensures that goods are cleared promptly, mitigating potential disruptions to the supply chain.

SHORTSEA BROKING

Specializing in the transportation of dry cargo on smaller vessels across shorter routes, Clarksons' shortsea broking team is renowned for their deep industry knowledge, particularly in the grain sector, and robust relationships with shipowners. Handling over 1.3 million tonnes of cargo annually, they cater to regions including Northern Europe, the Baltic, the Mediterranean, the US and Canada. The company's expertise spans a diverse range of commodities such as coal, grains, biomass, timber, and fertilizers. Leveraging in-house market intelligence from Clarksons Research, the team provides clients with data-driven insights, enabling informed decision-making and optimized shipping solutions.

SENTINEL TERMINAL OPERATIONS

Sentinel terminal, located at Cliff Quay in Ipswich, exemplifies Clarksons' commitment to providing state-of-the-art facilities for efficient cargo handling. This strategically positioned terminal offers comprehensive services, including loading and discharging of bulk cargoes, storage solutions, and seamless integration with other logistics services. The Sentinel terminal is a testament to Clarksons' dedication to enhancing operational efficiency and meeting the evolving needs of the maritime industry.

STRATEGIC OFFICE LOCATIONS

Clarksons' extensive network of offices plays a pivotal role in delivering localized expertise with a global perspective. It operates from all major UK ports, with each location staffed with seasoned professionals skilled at addressing challenges while maintaining consistent service quality. This strategic presence enables Clarksons to offer tailored solutions, fostering strong client relationships and ensuring operational excellence across all touchpoints.

EMBRACING DIGITAL INTEGRATION

In an era where digital transformation is paramount, Clarksons integrates cutting-edge technology to enhance service delivery. Through platforms like the Shipping Intelligence Network, clients gain access to real-time data on vessel movements, market trends, and trade analytics. This digital integration empowers clients with actionable insights, facilitating strategic planning and informed decision-making. Clarksons' commitment to leveraging technology underscores their role as a forward-thinking leader in the maritime sector.

In summary, its comprehensive suite of dry bulk services, bolstered by strategic office locations and a robust digital infrastructure, positions Clarksons as a trusted partner in the maritime industry. The company's dedication to excellence ensures that clients receive tailored, efficient, and innovative solutions, navigating the complexities of global trade with confidence.



Synergy Marine Group – Driving innovation and operational excellence

Synergy Marine Group provides comprehensive ship management solutions, covering technical management, crew management, commercial management and fleet performance optimization. “Our holistic services ensure that vessels operate safely, efficiently and sustainably, delivering long-term value to shipowners and charterers,” says Mr Ajay Chaudhry, Co-CEO of Ship Management at Synergy Marine Group.

Synergy Marine Group manages around 700 vessels, operating from 30 offices worldwide, which places it as the world's second-largest ship manager.

Approximately 55% of this fleet consists of dry bulk carriers, ranging from Handysize to Capesize vessels and VLOCs (Very Large Ore Carriers), serving global trade routes.

“With approximately 170 global port calls every day, our operations are undeniably complex,” explains Chaudhry. “On average, 300 Synergy seafarers and shore-based staff travel daily to key global maritime hubs with excellent connectivity, and also to remote ports, often with multiple stopovers, to join or attend vessels that are in port for a specific and limited duration. Ship management has evolved, and the industry now recognizes IT as a differentiator rather than just an enabler. As ever, the challenge is to find ways to make the best use of technology in order to enhance efficiency and improve operational outcomes.”

THE CORE ASPECTS OF SYNERGY'S SERVICES:

- ❖ **Technical management** – overseeing vessel maintenance, dry docking, regulatory compliance, and operational efficiency in order to minimize downtime and optimize asset performance;
- ❖ **Crew management** – with about 28,000 seafarers under their care, they focus on recruitment, training, and overall wellbeing, ensuring operational excellence and a high level of retention.

TRAINING

Synergy Marine Group is at the very forefront of dual fuel vessel management, supported by state-of-the-art training centres that prepare its seafarers for the complexities of advanced propulsion systems.

“Our Marine Advanced Simulation and Training (MAST) facility, established in 2014 as a joint venture with MOL, offers a blend

of classroom and simulator-based training” says Chaudhry. “This includes ship-specific familiarization on a self-learning platform, ensuring that our crews are adept at handling modern maritime challenges”. The centre features a Full Mission Integrated Bridge Simulator capable of recreating any navigational scenario, enabling officers to master ship handling skills. Additionally, an advanced Engine Room simulator trains engineers in efficient and safe operations, also enhancing their emergency response capabilities.

EXPERTISE IN NEW BUILDS, CONVERSIONS, AND RETROFITS

Synergy Marine Group has extensive experience, having managed nearly 350 new builds, conversions, and retrofits across leading shipyards in Japan, Korea, China, Turkey, and Vietnam. “Our expertise spans the entire vessel lifecycle, from initial design concept to final delivery and later on green recycling,” adds Chaudhry.

By leveraging economies of scale, optimising construction processes, and coordinating seamlessly with shipyard and owner partners, the company ensures that projects are completed safely, on time, and within budget. Chaudhry also points out that, “We are committed to pioneering innovative concept ships that align with evolving market demands in both the maritime and offshore sectors, with substantial and developing offshore expertise.”

ROLE OF SHIP MANAGERS IN DECARBONIZATION

Synergy Marine Group regards decarbonization as a collective responsibility, a view that was further substantiated by the landmark development at COP29, where the IMO, ICAO, and UNECE aligned for the first time on reducing greenhouse gas emissions across maritime, aviation, and inland transport. The journey toward lower emissions along global supply chains has already progressed significantly, and Synergy remains at the forefront of implementing practical measures for both immediate and long-term sustainability.

“Rather than adopting a one-size-fits-all approach, we embrace the principles of a circular economy – optimizing resources, promoting collaborative innovation, and integrating scalable low-carbon technologies to create a truly sustainable maritime ecosystem,” comments Chaudhry.

“From a ship management perspective,”



Ajay Chaudhry addressing crew during a ship visit — engaging with seafarers to strengthen safety culture, teamwork, and operational best practices.

continues Chaudhry, “we also view decarbonization as an opportunity to drive operational excellence while supporting owners in achieving compliance with evolving environmental regulations. By proactively integrating low-carbon technologies and leveraging data-driven decision-making, we help shipowners navigate this complex regulatory landscape and remain competitive. Our initiatives reinforce sustainable practices that not only meet current standards but also future-proof fleets for upcoming environmental requirements.”

THE SYNERGY DIFFERENCE

Synergy Marine Group operates in a highly competitive landscape, and what differentiates the Group is its fundamental shift from a cost-based ship management model to a value-based technical partnership outlook.

This evolution has driven its remarkable growth over two decades by creating long-term linkage with shipowners and charterers. Synergy goes beyond transactional management to deliver tangible operational value, promote asset longevity, ensure regulatory compliance, and maintain a future-ready position.

A key force behind this major change is the vision of the company's founder and Chairman, Captain Rajesh Unni, whose foresight in embracing innovation, technology, and sustainability has positioned Synergy as a leader in the ship management sector.

Among the main factors driving Synergy's leadership are:

- ❖ **Scalability and Growth:** with

continuous expansion in vessel management, Synergy is strengthening our capabilities in order to support greater scale and efficiency, ensuring a structured and sustainable approach to growth;

- ❖ **Technology Leadership:** investment in proprietary digital platforms, real-time fleet analytics, and AI-driven insights for optimal efficiency, proactive risk mitigation, and absolute compliance;
- ❖ **Decarbonization Expertise:** through its decarbonization arm, Azolla, Synergy pioneers fuel efficiency initiatives, alternative fuel adoption, and carbon reduction strategies;
- ❖ **Seafarer Wellbeing and Diversity:** Synergy is deeply committed to crew welfare programmes, mental health initiatives, and gender diversity efforts, recognizing that seafarers are the foundation of safe and efficient ship operations.

SPECIALIST KNOWLEDGE

Synergy Marine Group has extensive experience in managing specialized dry bulk cargoes, including:

- ❖ **Coal, bauxite, and iron ore** – implementing all cargo safety and handling procedures daily;
- ❖ **Grain and other agricultural commodities** – ensuring appropriate fumigation, aeration, and hold cleaning compliance;
- ❖ **Hazardous cargoes** – developing robust procedures for the safe handling of any dangerous or potentially dangerous cargo, ensuring strict compliance with IMDG and IMSBC regulations while mitigating associated risks;
- ❖ **Project and break bulk cargoes** – providing bespoke and customized solutions for oversized, heavy-lift, and non-containerized loads.

Synergy has cultivated strong relationships with leading miners, shippers, and charterers worldwide. This deep understanding of industry requirements allows the Group to leverage its expertise in ship management, delivering a distinct advantage to vessel owners.

DRY BULK STRATEGY: FUTURE-PROOFING FLEET EXPANSION

The dry bulk shipping market is poised for steady growth, driven by the increasing transportation of minerals, steel, grain, and other essential commodities. Rising global trade volumes, infrastructure development, and shifts in energy demand are reinforcing

the need for modern, efficient, and sustainable bulk carriers.

Chaudhry explain, “With shifting global trade patterns and evolving newbuilding trends, Synergy Marine Group is strengthening its position as the world’s foremost dry bulk ship manager, ensuring alignment with long-term industry demands. The surge in bulk commodity transport, combined with a growing emphasis on fuel efficiency and decarbonisation, has made adaptability a key priority for ship managers. Synergy’s proactive and data-driven approach ensures that the vessels under its management operate at peak efficiency, comply with evolving regulations, and remain optimized for future market shifts.”

CORE ASPECTS ARE:

- ❖ Digitalization and operational optimization, leveraging real-time data through Synergy’s remote operations optimization centre in order to enhance efficiency, reduce downtime, and improve vessel performance;
- ❖ Sustainability-driven fleet growth, integrating Azolla’s decarbonization solutions so as to improve fuel efficiency and ensure compliance with IMO and EU sustainability mandates;
- ❖ Targeted fleet expansion, strengthening Synergy’s dry bulk segment to meet the rising demand for bulk cargo transport, and so positioning the company as a leader in managing fuel-efficient, next-generation vessels.

By embracing digitalization, sustainability, and fleet modernization, Synergy Marine Group continues to set new standards for future-ready ship management, ensuring that its fleet remains adaptable in a dynamic global trade environment.

OPTIMIZING OPERATIONS: “REMOTE OPERATIONS OPTIMISATION CENTRE”

Synergy’s “Remote Operations Optimisation Centre” is redefining efficiency, safety, and sustainability in ship management. By consolidating vast amounts of real-time data through Synergy’s digital desk, this facility empowers both shore-based and onboard teams to enhance decision-making. This proactive, technology-driven approach enables:

- ❖ Predictive maintenance and reliability through continuous monitoring that helps identify potential issues before they escalate, reducing unplanned downtime;

- ❖ Enhanced fuel efficiency and cost optimization using advanced analytics to drive energy savings and emissions reductions;
- ❖ Regulatory compliance by ensuring that vessels exceed IMO decarbonization goals and evolving sustainability mandates.

DECARBONIZATION AND REGULATORY COMPLIANCE: AZOLLA AND CASPER

Synergy’s decarbonization arm, Azolla, leads efforts in alternative fuels, energy transition, and efficiency improvements. A key development is CASPER (compliance and sustainability performance evaluation and reporting), a cutting-edge platform designed to simplify FuelEU Maritime and EU Emissions Trading System compliance. CASPER offers:

- ❖ automated calculation of emissions allowances and penalty cost estimation;
- ❖ real-time tracking of carbon intensity performance;
- ❖ access to a digital marketplace for trading in compliance surpluses.

By integrating sustainability into every aspect of operations, Synergy ensures that its fleet remains ahead of regulatory and market demands.

SEAFARER WELLBEING AND MENTAL HEALTH

Long recognizing the increasing importance of mental health in the maritime industry, Synergy has introduced WeTeam 2.0, a 24/7 global mental health support system available to all seafarers and their families.

This initiative provides confidential access to mental health professionals across multiple platforms, alongside a wellbeing champions program that trains crew members in peer support, fostering a stronger onboard community.

DRIVING DIVERSITY AT SEA

Synergy is a very active participant in the Diversity@Sea initiative, a pilot program under the Global Maritime Forum All Aboard Alliance, aimed at improving diversity, equity, and inclusion across the seagoing workforce.

The Synergy-managed vessel *Southern Reverence* is pioneering this approach, sailing with a diverse crew – including a minimum of four women on board – and implementing inclusive workplace standards such as Wi-Fi access, PPE tailored for women, and enhanced workplace policies.

Good year for Slovenia's Port of Koper



The Luka Koper Group ended 2024 with good business results. It exceeded most financial indicators, achieving 3% growth in total maritime throughput, 6% growth in container throughput and 8% growth in general cargo commodity group. The Group actively pursued the investments identified in its new strategic business plan and successfully concluded several projects.

The Luka Koper Group completed 2024 above expectations, despite the first months of last year being marked by the Red Sea crisis and a number of uncertainties. Net sales revenue for the year reached €330.1 million, up 6% or €17.3 million on the previous year and 2% ahead of plan. Revenue from maritime cargo handling, container stuffing and stripping services and other services were up, while storage revenue was slightly down due to a faster turnaround of goods.

GROWTH IN CARGO THROUGHPUT AND A NEW MILESTONE AT THE CONTAINER TERMINAL

The situation at the beginning of 2024, which was mainly linked to the crisis in the Red Sea, required a number of adjustments from all of those involved in the logistics chain. The Luka Koper Group had to seek and exploit new business opportunities,

while maintaining the excellent service that has for years consolidated its position as one of the most important ports in the region. The Container Terminal achieved a 6% growth with a record 1,133,340 TEUs. General cargo and liquid cargoes also grew, while dry bulk cargoes were slightly down compared to the previous year.

Another challenge in 2024 was represented by the gradual cooling of the global economy and the decline in car sales in key markets, reflected in a 3% decrease in vehicle throughput. "The beginning of the year has been anything but promising, with the escalating conflict in the Middle East and the delay in cargo arrivals by 14 days or more, resulting in slightly lower-than-planned throughput. However, already in April the situation started to return to normal, with shipowners stepping up their services and ensuring the regular and reliable arrival of ships as well as cargo. This was further boosted by new business for the Port of Koper, linked to the planned construction and fitting out of new production facilities and factories in our hinterland markets. In the light of the circumstances, the results achieved are remarkable. I am pleased that we were able to realize the majority of our investments and to start the development cycle

envisaged in our strategic business plan," said Nevenka Kržan, President of the Management Board of Luka Koper, when announcing the results.

DEVELOPMENT ORIENTATION OF THE PORT OF KOPER

In 2024, the Luka Koper Group launched a number of important investments that will increase the port's capacity and create the conditions for the planned growth in throughput. These include the construction of a new 12th berth for general cargo and vehicle handling, as well as the 14,000m² Warehouse 54, which will be its first largely automated warehouse for steel products. With a solar power plant on the roof, the building will be energy self-sufficient and the overhead cranes will be electrified to recover the energy saved.

Construction has started on the northern part of Pier I, which includes new shore structures with two berths with a total length of 326 metres and 7 hectares of storage and handling space. Other major projects to be launched this year or in the coming years include the extension of the parking garage with a capacity of just under 12,000 vehicles, the construction of additional car parking areas (the so-called cassette 7A) and a berth for RO-RO ships.

A standout year for grain at the Port of Montreal

Among the highlights of 2024 at the Port of Montreal, the grain sector had a remarkable year characterized by strong growth in export volumes. Preliminary results for the year show a significant increase of 794,000 tonnes, a 20% surge over 2023 (from 3.8mt [million tonnes] to 4.6mt). These figures attest to the Port of Montreal's strategic importance in the grain trade and its ability to address the realities of a dynamic market.

SOLID PERFORMANCE STIMULATED BY RECORD HARVEST

The year 2024 reaped the benefits of a bumper harvest in Canada. Grain crops posted an overall increase of 2%, and more specifically a 5.4% gain for wheat. Of the varieties that transited through the Port of Montreal, wheat, soybeans, canola and corn stood out.

Global demand for Canadian grains remained especially strong in Asia, Europe and North Africa. The latter region alone accounted for close to 25% of grain exports through the Port of Montreal, with Morocco and Algeria among the main destinations. Venezuela emerged as the

main importing country, accounting for close to 20% of grain shipped. These agricultural products are not limited to human consumption, as they also support livestock feed in many importing countries.

Among the factors that made Canadian grain more attractive on international markets was the weight of geopolitical uncertainties, notably the conflict between Russia and Ukraine, since Russia is the world's leading wheat producer. Also, the low Canadian dollar favoured Canadian exporters, making their prices more competitive.

STRATEGIC POSITIONING

The Port of Montreal continues to play a key role for Canadian grain producers thanks to its world-class infrastructure and strategic location. Producers in Canada's grain-growing regions benefit from an efficient, cost-effective supply chain to move their goods from Thunder Bay to Montreal. With direct access to two Class I rail networks (CN and CP), as well as to the St. Lawrence Seaway, the Port of Montreal guarantees seamless, competitive logistics, further enhancing its appeal to

players in the grain industry.

Once at the port, exporters make the most of reliable maritime connections to such key markets as Europe, North Africa and the Caribbean.

OUTLOOK FOR 2025: ALL SET FOR SUSTAINED DEMAND

Looking ahead, forecasts for 2025 are optimistic, and the beginning of the year is so far promising.



Although this market segment is subject to the uncertainties of climate and geopolitics, global demand for Canadian wheat should stay robust, spurred on by quality and competitive exports. Agricultural production in Canada could also grow slightly.

The Port of Montreal remains well positioned to support Canadian producers and meet the demands of global markets. In collaboration with its industry partners, the Port continues to invest in innovative and resilient solutions to strengthen both its competitiveness and its strategic role in the grain trade.



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Record achievement, Bukit Asam (PTBA) coal sales reach 42.9mt in 2024

PT Bukit Asam Tbk (PTBA) in Indonesia has achieved the highest coal sales performance in its history. In 2024, PTBA's total coal sales reached a record-high 42.9mt (million tonnes), growing by 16% year-on-year.

For comparison, PTBA's coal sales in 2020 were 26.4mt, then 28.4mt in 2021, rising to 31.7mt in 2022, and further increasing to 37.0mt in 2023.

"This record sales achievement was supported by coal exports of 20.3mt in 2024, marking a 30% increase year-on-year. The Domestic Market Obligation (DMO) reached 22.6mt, growing by 6% compared to the previous year," said Niko Chandra, Corporate Secretary of PT Bukit Asam Tbk (PTBA).

PTBA's coal sales were primarily driven by the domestic market. However, the proportion of exports has been steadily increasing. Currently, the domestic market accounts for 53%, while exports account for 47%. Key markets have been successfully maximized, with exports to India increasing by 32% to 6.4mt.

Additionally, exports to Vietnam, Thailand, and Malaysia saw significant growth. Sales to Vietnam surged by 250% to 3.0mt. Exports to Thailand reached



1.6mt, up 153% year-on-year, while exports to Malaysia soared by 221% to 888,700 tonnes.

The increase in PTBA's coal sales was also supported by a record-high coal production of 43.3mt and coal transportation of 38.2mt throughout 2024.

"With increasingly excellent operational performance, Bukit Asam is ready to provide endless energy to achieve

energy self-sufficiency, which is part of the Asta Cita, a focus of the government," said Chandra.

In 2025, PTBA targets coal production of 50.0mt, coal sales of 50.1mt, and coal transportation of 43.2mt. "The company is making plans by considering current market developments and anticipating various dynamic external factors," Chandra emphasized.

Decarbonization influences bulk throughput at Hamburg

For the Port of Hamburg, the year 2024 was marked by numerous geopolitical and economic challenges. International trade was impacted by both the war in Ukraine and the conflicts in the Middle East, fuelling uncertainty in global markets. In Germany, economic output declined by 0.2%. Industrial production also experienced a year-on-year drop of 4.5%.

Despite these challenges, the Port of Hamburg once again reported growth in container throughput. The positive trend in container traffic with the USA continued in 2024, while container throughput with China recovered.

Overall, the Port of Hamburg handled 78.7mt (million tonnes) of general cargo, the majority of which (77.5mt) was in containers. Conventional general cargo throughput increased to 1.3mt (+8.7%).

Nowhere is the energy transition more evident than in the figures for bulk cargo throughput. The decline in the use



of fossil fuels affected the throughput result. Companies in the port industry imported 3.8mt of coal, 2.1% less than in the previous year. Throughput of mineral oil products totalled 5.7mt, a decline of 21.7%. This drop is partly due to exceptionally high throughput in 2023. In addition, lower demand due to weaker economic performance and mild temperatures led to lower imports in 2024.

Throughput of bulk goods totalled 33.1mt. This corresponds to a decline of

8.6 percent compared to the previous year. Of particular note are the 5.6% increase in imports of oilseed crops to 3.2mt and the 9.4% increase in exports of animal feed to 1.4mt.

As a result, the total volume of goods handled at the port stood at 111.8mt, 2.1% less than the previous year.

The global situation is expected to remain highly volatile for the foreseeable future due to the large number of international crises. At the same time, the German government has forecast just 0.3% growth for the German economy. This will continue to influence the throughput figures at the port. However, several new liner services, announced by the Port of Hamburg in early 2025, signal positive developments ahead. For example, February saw the launch of a North and South America service by shipping lines CMA CGM and ONE, along with an India service operated by the Gemini Cooperation.

Pakistan International Bulk Terminal important part of coal supply chain

Pakistan International Bulk Terminal Limited has been set up as the country's first terminal for handling coal, clinker and cement on a build, operate and transfer (BOT) basis at Port Qasim Authority.

PIBT has built capacity for handling up to 12mt (million tonnes) of coal and 4mt of cement & clinker per year, which can together be further enhanced up to 20mt per year. The terminal has a storage area of 250,000m² for coal and clinker storage and five enclosed silos with capacity of 10,000 tonnes per each silo for cement storage.

PIBT has been set up for handling and delivering coal to power and cement plants by utilizing the rail, road and sea networks. PIBT has become an integral part of the coal supply chain up to the entry gates of power and cement plants located across the country.

BEST BULK TERMINAL COMPANY OF THE YEAR EXCELLENCE AWARD

On 8 October, 2024 Pakistan International Bulk Terminal Limited received the twelfth FPCCI Excellence Award as 'Best Bulk Terminal Company of the Year Excellence Award'.

PIBT'S MAJOR CLIENTS ARE:

- ❖ Lucky Electric Power Company Ltd
- ❖ Lucky Commodities (Private) Limited
- ❖ Lucky Cement Limited
- ❖ Lucky Core Industries
- ❖ Attock Cement Pakistan Limited
- ❖ Awan Trading Company (Private) Limited
- ❖ FFBL Power Company Limited
- ❖ Kohat Cement Company Limited
- ❖ Power Cement Limited
- ❖ Fauji Cement Company Limited
- ❖ Nishat Chunian Limited

PIBT HAS IMPLEMENTED THE FOLLOWING STRATEGIES TO ENSURE IT STAYS COMPETITIVE IN THE SECTOR:

- ❖ Adopting international safety standards for coal handling and storage.
- ❖ Integrating energy-efficient and environmentally friendly technologies to minimize the carbon footprint.
- ❖ Ensuring compliance with global safety and environmental standards.
- ❖ Upskilling personnel to effectively manage and operate the modernized equipment.
- ❖ Upgrading fire safety systems. Conducting regular drills and simulations to ensure preparedness for emergency situations.

PIBT IMPORT FIGURES LAST FIVE YEARS

FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25 (Q2)
10,071,090.00	8,244,213.07	4,842,785.28	6,415,707.31	2,582,114.07



ENVIRONMENTAL RESPONSIBILITY

PIBT successfully planted mangroves on 520 hectares, surpassing the 500-hectare target in 2012–14. Plant survival rate was approximately 76%.

The main species planted were *Avicennia marina* and *Rhizophora mucronata*, at a density of around 1,100 plants per hectare across multiple locations within PQA jurisdiction.

Replanting and natural regeneration were conducted as needed. After five years, the mangrove plantations will serve as a barrier against disasters and provide breeding grounds for marine and terrestrial life.

PIBT also started planting mangroves along its trestle bridge, covering 36,000m², to control dust emissions and sustain the ecosystem.

Klaipeda Port's 2024: growth in cargo handling, new records and increased market share

Highlights of the Port of Klaipeda's 2024 include new records in the handling of construction materials, minerals and containers, and Klaipeda taking almost a quarter of the market among Baltic country ports. It ended the year with 35.5mt (million tonnes) of cargo handled, recording an 8% growth and a 39% market share among Baltic country ports.

"Despite the geopolitical challenges, the Port of Klaipeda has remained the first choice in the Baltic countries. While surrounding ports are still looking for ways to overcome their difficulties, Klaipeda is showing steady growth. These results are due to the Port Authority's steady investment in infrastructure, the companies' determined decisions to modernize their equipment, and their persistence in working with their customers. Klaipeda Port's cargo handling performance is not only a number, but also a symbol of a reliable and innovative partner," says Algis Latakas, Director General of Klaipeda State Seaport Authority.

In 2024, the highest growth in the Port of Klaipeda was in the handling of construction materials and minerals. The handling of these cargo almost doubled (99%) from 1,040,000 tonnes in 2023 to 2,068,000 in 2024. This growth is mainly driven by active road and rail construction. This is historically the highest ever volume of handling operations in the Port of Klaipeda. The majority (93%) of the construction materials and minerals handled at the port last year were imported, with almost half of the imports (47%) coming from Scandinavian countries.

Container cargo handling was the second largest contributor to tonnage growth last year, with 859,000 tonnes or 9% more than in 2023. Last year, the total amount of handled cargo was just over 10mt. This represents 28% of the port's total cargo handling.

The one million TEU (standardized container unit) handling milestone, which was surpassed for the third year in a row at the end of the year, is not the only achievement in this cargo group. In 2024, a new record of handling 1,068,771 TEUs was set, or 2% more than the previous year. In 2023, the Port of Klaipeda ended the year with a cargo handling result of 1,050,804 TEUs.

The third place for cargo handling in terms of tonnage growth last year was won



Bulk handling using CRS's container rotation system at the Port of Klaipeda.

by cargo group ro-ro — with 852,000 tonnes or 16% more than in 2023. This is the second best cargo handling result in this segment in the Port of Klaipeda. Only in 2021, the result of handled ro-ro was higher. The total annual handling of vehicles transported by ferry is 6.1mt. This represents 17% of the port's total cargo handling.

There was also a significant increase in the handling of timber and forestry products, with 244,000 or 49% more handled cargo. Last year, 189,000 tonnes of iron, steel and steel structures were handled, or 75% more than in 2023. Fertilizer handling grew by 201,000 tonnes or 13% — in 2024 1.76mt was handled.

The number of ships arriving at the port has also increased. Last year, the Port of Klaipeda received 5,478 of them. This is an increase of 132 or 2% compared to 2023. The number of passengers using the Port of Klaipeda last year was slightly more than 381,000 — an increase of around 25,000 thousand or 7%.

Ninety-eight ships (including ten modernization projects) have been repaired in the Port of Klaipeda, and one hull has been built with partial fitting out.

Only a few cargoes indicated a decrease in cargo handling last year. One of these is oil products. The cargo handling in this segment decreased by 784,000 tonnes or 18% to 3.63mt compared to 2023. Last

year, the port handled 319,000 tonnes of liquefied natural gas (LNG), or 14% less. In total, this cargo amounted to just over 2mt per year. The amount of grain loaded in 2024 was 70,000 tonnes less than in 2023. In total, 4.15mt of grain were handled, or 12% of the total cargo handling of the Port of Klaipeda.

Looking at last year's cargo handling and dividing it into quarters, the second half of the year was more successful for Klaipeda Port. In both the third and the fourth quarters of the year, cargo handling exceeded 9mt.

Last year was the most successful year for the Port of Klaipeda compared to other Baltic country ports. Its market share grew by three percentage points, from 36% in 2023 to 39% last year.

The Port of Tallinn's cargo handling in 2024 increased by 548,000 tonnes or 4%. In total, the Port of Tallinn handled 13.1mt of cargo in 2024. This is more than half the volume of the Port of Klaipeda.

The Port of Riga saw a drop in cargo handling of 732,000 tonnes, or 4%. In total, Riga handled 18.1mt of cargo. In Liepaja, cargo handling fell by 3% to a total of around 7mt last year, while in Ventspils it fell by 21% to 8.2mt. Combining the three Latvian ports, their handling consists of 33.3mt of cargo. This is 6% less than the cargo handling of the Port of Klaipeda alone.

Bahía Blanca reports recovery in grain exports

Information released by Argentina's Bahía Blanca Grain and Commodities Exchange (BCPBB) shows that the Port of Bahía Blanca greatly improved its exports last year. These amounted to 10.5mt (million tonnes), up 42% compared to 2023. Significantly, though, total volume remains below the average of the last five years.

Indicating reasons for the recovery in traffic, the BCPBB emphasizes an improvement in prevailing weather within Argentina compared to 2023 as the main element, since this resulted in a bigger harvest. In addition, pests such as leafhoppers, which damaged crops in other regions, were not a factor in the production that is centred on the port.

Maize remains the leading commodity, with 5.8mt exported. This is equivalent

to 56% of all traffic, up 42% on the year. 80% of shipments went to Vietnam, South Korea, Malaysia and Saudi Arabia.

Soybeans also did well, exports growing by 198% to 1.4mt. All but five percent of shipments went to China.

Wheat exports rose by 94% to 1.5mt. Although this was encouraging, the total is still 27% below the five-year average. Brazil absorbed 56% of wheat exports, although demand on the year grew significantly from Indonesia.

Only one grain commodity registered a decline: barley. This dropped 31% compared to 2023 to 964,707 tonnes. Key was a 52% reduction in demand from China.

Exports peaked in May 2024, with a total of 1.3mt shipped thanks to strong

demand for maize and soybeans.

Vietnam is now the port's leading destination for exports, having overtaken China last year. Its 2.1mt of imports was equivalent to growth of 63% on the year, with maize dominating. China, however, still attracts the most soybean and barley traffic. Brazil remains the third-largest customer, last year increasing traffic by 14%, with significant hikes in both wheat and malt.

Ironically, the drop in water levels on the Parana River actually helped Bahia Blanca whilst hindering operations at other export ports. This allowed the port to fill many larger bulk carriers, although problems remain in consolidating export volumes of products such as wheat and barley.

Barry Cross

El Ferrol seeks coal alternatives

The Spanish north-western port of Ferrol San Cibrao is having to face up to a future that no longer includes its most important traffic: coal, which is gradually being phased out by electricity generators. However, this has been accounted for in the port's business plan, which envisages total tonnage of around 9mt (million tonnes) being handled in 2025. This will then increase to 12,272,000 tonnes in 2026, and 12,435,000 tonnes and 13,196,000 tonnes in 2027 and 2028 respectively.

Overall, in 2024, dry bulk at Ferrol San Cibrao performed well. In 2023, this sector had accounted for 3.8mt, although the figure last year had declined by just 100,000 tonnes, despite a downturn in coal traffic.

There are also uncertainties surrounding aluminium producer Alcoa, which has a plant at San Cibrao that was responsible for traffic of around 3.1mts in 2024, far from the highs of around 5.7mt recorded in previous years.

In order to recover from the loss of coal traffic, a series of measures is to be implemented, the first of which is the linking of the inner and outer harbours by rail, with upgrades also undertaken on all existing track. Rail will allow new commodities, such as liquid bulk and containers, to be targeted.

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Ports of Indiana ships second-highest annual total with 13mt in 2024



Ports of Indiana's Burns Harbor facility handled 2.8mt of barge, laker and ocean cargo, up 5% from the prior year.

Ports of Indiana shipped 13mt (million tonnes) of cargo in 2024, the second-highest annual volume in the port authority's 60-year history. Cargo shipments increased during the fourth straight year for the statewide port authority, up 3% from 2023 and second best to the 2018 record of 14.8mt.

"We have world-class companies operating at our three ports, and their increased use of our barge, ship, and rail services is a good indicator for Indiana's economy," said Ports of Indiana CEO Jody Peacock. "Agriculture products, coal, and steel-related shipments made up about 85% of our cargo in 2024, which demonstrates our ports' critical role in the manufacturing, energy, and ag sectors. We're pleased to see our ports have increased shipments by 50% since 2020, but our team is focused on investing in the future and making sure our facilities can support the growing needs of Indiana's economy."

Public and private investments into Indiana's three ports totalled more than \$200 million in 2024, including four company expansions, three new companies locating at the ports, and six federal grant projects supporting critical infrastructure investments. Ports of Indiana also launched Indiana River & Rail Terminals in 2024, which is the largest general cargo operation on the Ohio River. The new venture helped increase the terminals' annual cargo shipments by 48% at Mount Vernon and 12% at Jeffersonville.

For overall shipments, the Mount

Vernon port led the way with 6.6mt, 2% below 2023's total but 32% above the previous four-year average. The Jeffersonville port handled 3.6mt, up 10% from 2023, and the Burns Harbor facility handled 2.8mt of barge, laker and ocean cargo, up 5% from the prior year.

The highest-volume commodities moving through Indiana's ports were coal (3.7mt) and steel (2.9mt), followed by grain, soy products, fertilizer, minerals, ethanol, road salt, and DDGs (dried distillers grains). The largest overall increases came from steel (+246,000 tonnes), coal (+140,000 tonnes), and road salt (+80,000 tonnes), which was shipped at record levels during recent winter storms.

The largest percent increase was DDGs at Jeffersonville, which were up 1,773% due to the opening of the port's new high-speed bulk terminal operated by Consolidated Grain & Barge. Other major increases included slag (+74%), salt (+44%) and steel

(+14%) at Burns Harbor, salt (+17%), grain (+12%) and oils (+12%) at Jeffersonville, and salt (+48%), cement (+17%), and steel (+14%) at Mount Vernon.

According to a 2023 economic impact study conducted by the leading maritime economist, Martin Associates, Ports of Indiana's business activities support more than 49,000 jobs and generate \$8.7 billion annually for the state's economy, including \$3.5 billion in annual wages and \$536 million in state and local taxes.

ABOUT PORTS OF INDIANA

Ports of Indiana is a statewide port authority operating three ports on the Ohio River and Lake Michigan. Established in 1961, Ports of Indiana is a self-funded enterprise dedicated to growing Indiana's economy by developing and maintaining a world-class port system, and by serving as a statewide resource for maritime issues, international trade, and multimodal logistics.

Jeffersonville port handled 10% more cargo in 2024 than in 2023.



Port of Tilbury invests in LHM 550 MHC

new mobile harbour crane will facilitate port's operational expansion



At its new home, the Port of Tilbury, the LHM 550 is rigged and ready for work.

- ❖ The Port of Tilbury, a part of the UK's Forth Ports group, is situated on the UK's most renowned river for the import and export of goods and services: the River Thames. Each year, the port has a throughput of 16mt (million tonnes), making it the largest Port on the river
- ❖ The LHM 550 mobile harbour crane has been equipped with Liebherr's latest technical innovations to enhance the port's logistical operations

- ❖ Leading the way for sustainability, the crane incorporates green technology to help the port achieve its goal of being net zero by 2042

Sitting on the north bank of the River Thames, the Port of Tilbury has expanded its fleet with its third LHM 550 mobile harbour crane from Liebherr Great Britain. The multifunctional crane has been acquired to support the growing operations of London's major port, including Aggregate Industries' new cement grinding

manufacturing facility and import terminal.

The crane arrived on Saturday 18 January via the Baltic Sea fully assembled on the Meri heavy load vessel from Liebherr-MCCtec Rostock, Germany. With an outreach of 54 metres and 144-tonne configured lifting capacity, the LHM 550 is engineered for high-volume cargo throughput. The unloading of the crane was assisted by an LH 150 Port Litronic material handler which has been in operation at Tilbury since 2023.

The LHM 550 crane has been specified

with additional technology, including an over-pressure system to best aid future projects, including Aggregate Industries' facility on the port. Once it's operational in 2026, the crane will handle granulated blast furnace slag (GBFS) a low carbon alternative to conventional cement, unloading it from the vessel into the hopper of the plant. Due to the aggressive nature of GBFS, an over-pressure system has been fitted to force-ventilate the slewing platform of the crane to prevent product ingress into the machine rooms. Furthermore, corrosion control of the mobile harbour crane is largely protected by the paint finish. Liebherr applies the same paint finish on the LHM crane range as it does for its offshore and ship cranes, ensuring that the quality exceeds most port standards.

Aggregate Industries' new facility will allow the company to serve its customers 24/7 with conventional, low carbon and circular cementitious materials from five loading heads.

In alignment with Forth Port's objective to achieve net-zero emissions, the mobile harbour crane incorporates several of Liebherr's green technologies. Firstly, the LieGEN energy recovery system captures and reuses energy, enhancing operational efficiency and reducing fuel consumption. The latest engine technology is fitted to comply with the most stringent emissions standards, setting new benchmarks for environmentally friendly port equipment. The crane can operate on Hydrotreated Vegetable Oil (HVO) fuel, supporting the port's initiative to operate the crane on HVO from the delivery date, thereby reducing carbon emissions. Finally, the crane's electric-ready design allows for connection to an electrical power supply, facilitating the transition to zero-emission



The LHM 550 being unloaded from the Meri at the Port of Tilbury with the support of an LH150 Liebherr material handler.

operations in the future.

These innovations underscore a commitment to sustainability and demonstrate a proactive approach to enhancing the ecological footprint of the Port's operations.

Commenting on the arrival of the new mobile harbour crane, Paul Dale, Chief Operating Officer of Forth Ports said: "We have set out ambitious net zero targets across our business and are investing in greener technology to ensure that our operations are sustainable. The Liebherr LHM 550 joins our busy fleet in Tilbury and they will all support our growing bulks and heavy lift work across our port estate. We have a long-term relationship with Liebherr across the group and we are aligned in our commitment to greener operations."

Liebherr Great Britain's Port Equipment and Maritime Cranes Sales Manager, Robert Alexander, comments: "Liebherr Great Britain is proud to continue supporting the Port of Tilbury, as it invests in cutting-edge equipment to enhance its operations. The addition of an LHM 550 mobile harbour crane marks another milestone in our strong partnership."

"This state-of-the-art crane joins two existing LHM 550s at Tilbury and a third at the Port of Rosyth, underscoring Forth Ports' commitment to operational excellence."

"With advanced green technologies and future-ready design, the LHM 550 aligns perfectly with Forth Ports' ambitious growth plans and sustainability objectives. We are honoured to support their leadership in efficient and environmentally

responsible logistics. Our sincerest thanks to Forth Ports for its trust in Liebherr solutions and its collaboration in achieving this latest milestone."

ABOUT FORTH PORTS/PORT OF TILBURY

Forth Ports Limited owns and operates Tilbury, alongside seven other commercial ports on the Firth of Forth and the Firth of Tay: Grangemouth, Dundee, Leith, Rosyth, Methil, Burntisland and Kirkcaldy.

The Port of Tilbury is the number one UK port for forestry products, construction materials, paper, grain, recyclables and warehousing space. The port has a strong market presence in bulk commodities, ro-ro, cars and cruise vessels. The port's London Container Terminal handles a mix of short and deep-sea services, is the UK's number four port for containers and has the greatest reefer (refrigerated container) point connectivity in Europe.

Tilbury's strategic location makes it a natural point for distribution, with nearly 20 million people living within 75 miles. Serving the UK's market, the port offers customers excellent transport links to and from the UK's capital and across the South East where over 50% of the population live and work.

The port is a diverse multi-modal hub, covering around 1,100 acres (850 acres and the London Distribution Park, in addition to the Tilbury2 site) and is well positioned to access the M25 orbital motorway and the rest of the UK's national motorway network. In addition, there are direct rail connections within the port and dedicated barge facilities.



Port of Tilbury's LHM 550 departing Liebherr-MCCtec Rostock.



Bridging the Gulf

with high-tech
US Gulf bulk
& breakbulk
handling ports
and equipment
experts

Growing to new depths: Port of Brownsville strengthens global trade in South Texas with channel deepening groundbreaking ceremony

Signalling a major turning point in the Port of Brownsville's 88-year history, on 6 December, the Brownsville Navigation District (BND) and the U.S. Army Corps of Engineers (USACE) held a groundbreaking ceremony for Phase 2 of the Brazos Island Harbor (BIH) Channel Improvement Project.

The transformative project will deepen the 17-mile-long Brownsville Ship Channel from 42 feet to 52 feet, improving navigational safety and enabling larger commercial vessels to access South Texas.

"The Brazos Island Harbor Channel Improvement Project is paramount to the Port of Brownsville's continued success.

We are moving forward to enhance the navigational safety of the channel while securing our standing in the global marketplace," said Brownsville Navigation District Chairman Esteban Guerra. "The BND is proud to partner with the U.S. Army Corps of Engineers and NextDecade to ensure lasting economic benefits and opportunities for families in the Rio Grande Valley."

The BIH project solidifies the port's role as a vital gateway for global trade. The project promises enduring benefits for the regional economy, driving significant economic activity and job creation across the Rio Grande Valley. According to the

USACE, the project is estimated to generate over 6,000 jobs at the peak of construction and create more than 800 permanent full-time positions.

The project advances business development while conserving the regional ecosystem. An environmental assessment conducted by the USACE found no anticipated impacts on aquatic environments or critical habitats during and after the completion of the project.

"The BIH groundbreaking ceremony marks a milestone in our journey to shape the Port of Brownsville's future," said Port of Brownsville Director and CEO William Dietrich. "With the BIH project, we are

strengthening our role as a catalyst for business growth and demonstrating our responsibility to the community by transforming the port into a dynamic hub for value-added industries.”

According to the USACE 2022 annual report, the Port of Brownsville ranked 50th among 150 US maritime ports for waterborne cargo, handling 9.1mt (million tonnes) in 2022. The port witnessed a banner year in 2023 with 17.8mt of cargo moving through the port’s docks, a 17% year-over-year increase. The BIH project is funded via a two-phase innovative Public Private Partnership (P3) led by USACE, the Port of Brownsville, and NextDecade Corporation, parent company of Rio Grande LNG.

“We’re very excited about the collaboration between USACE, NextDecade, and the Port of Brownsville on this P3 project,” said USACE Galveston District Commander Col. Rhett Blackmon. “These types of partnerships are another innovative way to deliver projects faster — up to three years sooner — and with several millions of dollars in cost savings. The P3 programme is part of USACE’s strategy to revolutionize its civil works programme to advance the delivery of our national infrastructure by synchronizing actions, developing new tools, and streamlining activities.”

In 2019, NextDecade committed to fully fund Phase I, a \$400 million investment, to deepen the channel from the western edge of its lease site, where they are constructing Rio Grande LNG, to the channel’s entrance near South Padre Island. This portion of the project began in 2023 and is expected to be completed in 2026.



L–R: Matt Schatzman, NextDecade Chairman and CEO; Ernesto Gutierrez, Brownsville Navigation District Commissioner; John Wood, Brownsville Navigation District Commissioner; Sergio Tito Lopez, Brownsville Navigation District Vice Chairman; Jaime Pinkham, Assistant Secretary of the Army, Civil Works; Esteban Guerra, Brownsville Navigation District Chairman; William Dietrich, Port Director and CEO; John Reed, Brownsville Navigation District Secretary; Col. George H. Walter, U.S. Army Corps of Engineers Southwestern Division Commander; and David Keane, NextDecade Senior Vice President Policy & Corporate Affairs.

“As the private partner in the Brazos Island Harbor Channel Improvement Project, NextDecade is committed to investing in the Rio Grande Valley’s future by creating thousands of jobs, helping educate current and future generations, and protecting the environment. We recognized back in 2019 the great benefits that deepening the Brownsville Ship Channel would bring to our LNG project, and to the Brownsville community and the surrounding Rio Grande Valley,” said NextDecade Chairman and CEO, Matt Schatzman.

Managed by the Port of Brownsville and USACE, Phase 2 will deepen the channel from the turning basin to NextDecade’s site. The \$139.5 million cost of Phase 2 is supported by \$68 million in federal funding through the Infrastructure Investment and

Jobs Act Appropriations Law, with the Port of Brownsville contributing \$71.5 million. In October, the Port of Brownsville secured a \$43 million loan from the Texas Department of Transportation to assist with the financing of the project.

Phase 2 of the BIH project began in 2023 with the dredged material placement area improvement portion of the project. As part of the dredging process, materials collected are placed in approved disposal sites. The dredged material is often utilized for beach renourishment projects led by the USACE.

In August, the USACE awarded a \$104 million contract to Callan Marine Ltd. for Phase 2 of the BIH project. The contractor is required to remove approximately 7,000,000 cubic yards of material using a pipeline dredge. The estimated completion date for Phase 2 of the project is 2026.

ABOUT THE PORT OF BROWNSVILLE

The Port of Brownsville is the only deep-water seaport directly on the US–Mexico border and encompasses 40,000 acres — the largest land-owning public port authority in the country. The port transships more steel into Mexico than any other US port and is home to premier energy, shipbuilding, and ship recycling industries. As the major multimodal transportation hub serving the Rio Grande Valley and northern Mexico, the Port of Brownsville supports investment opportunities and jobs.

Activity at the port is responsible for adding more than \$2 billion to the regional economy, \$3 billion to the Texas economy, and the creation of more than 51,000 jobs statewide.



L–R: Col. George H. Walter, U.S. Army Corps of Engineers Southwestern Division Commander; Matt Schatzman, NextDecade Chairman and CEO; Jaime Pinkham, Assistant Secretary of the Army, Civil Works; Esteban Guerra, Brownsville Navigation District Chairman; William Dietrich, Port Director and CEO; Col. Rhett Blackmon, U.S. Army Corps of Engineers, Galveston District Commander; and Aaron Snyder, P3 Program Director, U.S. Army Corps of Engineers.

Alabama Port Authority awards major contract to US-based Richmond Engineering

Alabama Port Authority's stacker reclaimer, which was installed in 1974; this photograph is 40 years old (all photos: Alabama Port Authority).



In December last year, the Alabama Port Authority announced a major contract to a US company with significant work to be completed in Alabama. This contract, which will fund the production of two new stacker reclaimers, was awarded to Richmond Engineering Works, L.L.C.

(REW). The US-based company, headquartered in Pittsburgh, PA, will engineer, fabricate, and install the new equipment at McDuffie Coal Terminal and has pledged that all engineering and fabrication for the project will occur within the United States.

The new stacker reclaimers are a critical component of the \$200m+ McDuffie Coal Terminal modernization project and will replace two ageing units installed in 1974 and 1982. These state-of-the-art machines will nearly double the productivity of the old equipment, ensuring



A recent photograph of Alabama Port Authority's stacker reclaimer, installed in 1974.



the terminal's loading rates meet the increased capacity of the deeper ship channel and additional demand from customers' mine investments statewide.

"With the widening and deepening of the channel coming online next year, these investments are a top priority for the port so we can load bigger ships with more cargo even more efficiently," said John Driscoll, Director and CEO of the Alabama Port Authority. "Not only will the new efficiencies allow us to deliver a competitive advantage to our customers, but it also strengthens our ability to drive economic growth for the State of Alabama."

The Mobile Harbor deepening and widening project, which will be completed in May of 2025, will take the channel from -45 to -50 feet. Depending on vessel configurations, the port estimates that the additional five feet of depth could allow the terminal to load 25,000 to 35,000 more tonnes of coal per ship.

REW, which specializes in bulk material handling equipment, will spend at least 34% of the contract value — approximately \$20.5 million — with Alabama-based fabricators, suppliers, and contractors. Local Mobile-area businesses will provide concrete, fasteners, and installation services, ensuring that a significant portion of the project directly benefits the regional economy. This will be the first time in nearly 50 years that stacker reclaimers have been produced domestically.

"Selecting Richmond Engineering Works reinforces our commitment to

investing in US manufacturing and supporting the Alabama workforce," said Driscoll. "This project is especially exciting because it enhances our operational capabilities at McDuffie Coal Terminal and highlights the strength and ingenuity of American engineering and manufacturing."

Richmond Engineering Works Operating Manager R. Mark Judy, P.E., expressed enthusiasm for the partnership, saying, "We are extremely honoured to have been selected by the Alabama Port Authority to provide the two new stacker reclaimers for McDuffie Coal Terminal. These will be the first machines of this size built in the United States and engineered by a US-based company in nearly 50 years. All of the fabrication for these machines will be done in the United States, with much of it provided by Alabama-based shops. Construction labour will be performed by Mobile-area contractors. Over the past few years, we have supplied a new rail car dumper and a train positioner, along with major upgrades to barge unloading equipment at McDuffie Coal Terminal. We look forward to working together with the men and women of the Alabama Port Authority for another successful project."

REW's barge unloading project for McDuffie was funded by a \$20m appropriation from the State of Alabama in 2022. An additional \$5m of public funding for coal handling equipment at McDuffie was secured by Congressman Jerry Carl in 2023.

Ninety-seven percent of coal passing through McDuffie Terminal is metallurgical

coal mined in Alabama for use in steel-making operations worldwide. Much of this steel returns through the Port of Mobile for use in the Alabama automotive industry, further supporting Alabama businesses.

Richmond Engineering Works will also establish a local office in Mobile staffed with engineers and technicians to ensure seamless execution of the project. This office is expected to remain operational for at least two years, further demonstrating the company's commitment to the region.

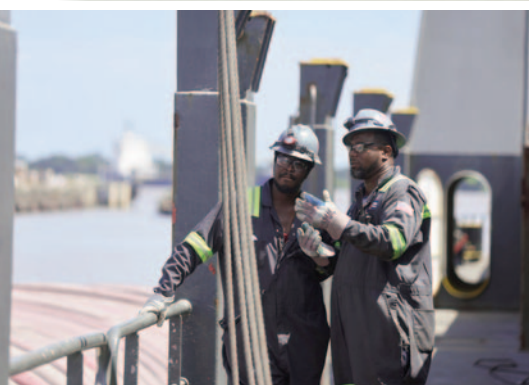
ABOUT RICHMOND ENGINEERING WORKS, L.L.C.

Richmond Engineering Works, formed in 1996, specializes in the design and supply of material handling equipment, including stacker reclaimers, rotary car dumpers, and shiploaders. With over 39 engineers and technicians, the company has a proven track record of delivering innovative solutions for clients across the US.

ABOUT THE ALABAMA PORT AUTHORITY

The Alabama Port Authority serves all 67 counties in the state of Alabama and oversees the deep-water public port facilities at the Port of Mobile. In addition to interstates, airports, and inland waterways, the Port Authority's container, general cargo, and bulk facilities have direct access to five Class I railroads. Once the channel deepening and widening project is completed in 2025, the Port of Mobile will be the deepest port in the Gulf of Mexico.

A quick note of “Thank you” to our Global Partners.



We appreciate the opportunity to work with you.

Our strengths are our people and our innovative technologies, allowing us to move cargos safer and more efficiently than ever before. Our team strives every day to meet our customers' waterborne transportation needs while also being leaders in safety and environmental stewardship. Waterborne commerce never stops, and neither do we.

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**ASSOCIATED
TERMINALS**

Port of Corpus Christi: the energy port of the Americas



The Port of Corpus Christi Authority has been in operation since 1926. The Port ranks as the third-largest port in the United States in total waterborne tonnage and is the nation's largest energy export gateway. It is ranked the third-largest port in the United States in total tonnage. The Port of Corpus Christi provides a straight 36-mile, 47ft-deep channel (currently dredging to 54ft) with quick access to the Gulf of Mexico, the Gulf Intracoastal Waterway, and the entire United States inland waterway system.

The Port of Corpus Christi delivers outstanding access to overland transportation with direct connections to three Class I railroads; the BNSF Railway (BNSF), Canadian Pacific Kansas City (CPKC) and Union Pacific Railroad (UP). Class I railroads enter the port terminals via the Nueces River Rail Yard, which is owned by the Port and managed by Texas Coastal Bend Railroad (TCBR or Watco), with the capacity to hold eight 8,500ft. unit trains. Railcars are switched to various terminals using the Corpus Christi Terminal Railroad, Inc. (CCTR).

In terms of logistics and storage, the

Port of Corpus Christi offers multiple general cargo docks with direct-to-rail discharge; over 120 acres of open storage and 300,000ft² covered storage; Foreign Trade Zone 122; and the Channel Improvement Project, which will deepen the draught from 47 feet to 54 feet by the end of 2025, becoming the most improved channel in the USGC.

PORT OF CORPUS CHRISTI

FEATURES AND BENEFITS:

- ❖ BNSF, CPKC and UP service
- ❖ 120 acres of open storage and 300,000ft² covered storage;
- ❖ Bagging facility;
- ❖ Multiple general cargo docks with direct to rail discharge;
- ❖ Roll-on/roll-off (RO/RO) ramp;
- ❖ Foreign Trade Zone (FTZ) designation
- ❖ Access to U.S. Highway 181, Interstate Highways 37 and 69; and
- ❖ Direct access to the Gulf Intracoastal Waterway System

PLANS FOR THE FUTURE

Bulk Terminal expansion, with: a new dock; new shiploader; new import and export

conveyors; new storage pad acreage; and a new railcar dump station.

PORT CUSTOMERS

Main customers with installations at the port include:

- ❖ ArcelorMittal
- ❖ Archer Daniels Midland
- ❖ Cimbar Resources
- ❖ Citgo
- ❖ Halliburton
- ❖ South Texas Cement
- ❖ Steel Dynamics, Inc.
- ❖ Superior Weighting Products
- ❖ Valero
- ❖ Vulcan

INVESTMENTS

Recent equipment acquisitions include: at the Bulk Terminal, in 2019, a Liebherr LPS 550 portal crane; and, currently located at Cargo Dock 8, the port's latest addition, a Liebherr LHM 550 (in 2024).

DRY BULK COMMODITIES HANDLED IN THE LAST YEAR

Total tonnage YTD (year to date) in 2024 is 9,734,704 tonnes. Twelve-month total

tonnage handled in 2023 is 9,344,018 tonnes.

Please note totals below — first number is YTD for 2024, second number is 12-month period for 2023).

- ❖ Non-mineral dry bulks/aggregates = 64,366/72,185 tonnes.
- ❖ Iron and steel = 1,445/2,358 tonnes.
- ❖ Primary metal products = 335,958/289,063 tonnes).
- ❖ Ores and minerals = 4,527,151/5,545,054 tonnes.
- ❖ Agriculture = 2,985,504/2,246,799 tonnes.
- ❖ Non-petroleum chemicals – dry bulk = 73,971/22,068 tonnes.
- ❖ Petcoke - 1,545,952/901,652 tonnes.

DRY BULK

BULK TERMINAL

Strategically located on 200 acres with highway connectivity, deep draught, and direct access to rail, the Port of Corpus Christi's Bulk Terminal can handle logistics for breakbulk and dry bulk cargoes throughout the Southwest, Midwest and Mexico. Bulk Terminal consists of Bulk Docks 1 and 2, as well as open storage pads for private leasing and transient cargoes. The Port has available greenfield sites for new cargo opportunities and waterfront for future development of additional terminals. The Bulk Terminal has direct access to Joe Fulton International Trade Corridor (JFITC); Intracoastal Waterway System; I-37, I-69 and I-81 Highways; and BNSF, CPKC and UP via Texas Coastal Bend Railroad (TCBR) operated by Watco.

SPECIALIZED DRY BULK HANDLING

Bulk Dock 1

In 2019, the Port of Corpus Christi added a new Liebherr LPS 550 rail-mounted crane with a maximum outreach of 48 metres (157ft), 144-tonne maximum capacity, and a maximum free digging unloading rate up to 1,200tph (tonnes per hour) with continuous unloading. The

harbour crane is operated by port staff. (For loading and unloading dry bulk commodities directly to rail, truck, or ground, unloading rates may vary). Coal, ore, minerals, metals and other dry bulk commodities can be discharged directly from vessels to open ground or hopper to truck at Bulk Dock #1. This facility can also be used to unload breakbulk vessels when shore crane is required.

Vertical clearance: At maximum crane outreach, there is an 83-foot clearance from the bottom of the bucket to the water line at mean high tide for either 18- or 52-yard bucket. Panamax class vessels are handled at this facility.

Cargo handling arrangements are managed by local permitted stevedores.

Dock specs:

- ❖ draught: 34ft
- ❖ slip length: 835ft
- ❖ dock length: 396ft
- ❖ gantry crane travel length: 335ft
- ❖ loaded bucket outreach: 157ft

Bulk Dock 2

BD 2 is served by a conveyor system and loading of vessels is accomplished by a radial ship loader, operated by Port staff. Coal, petroleum coke, and other dry bulk commodities can be loaded directly to vessels from storage pads sites, bottom dump railcars and dump trucks at Bulk Dock #2.

The radial shiploader is capable of loading products weighing 55 pounds per cubic foot at a maximum rate of 1,500tph. (Actual productivity will vary depending on the product and vessel).

A certified rail track scale is located conveniently at the Bulk Terminal for accurate weighing of railcars.

A certified truck scale is located near the entrance of Bulk Terminal for accurate weighing of trucks (managed by Port Corpus Terminal).

Aerial clearance: From bottom of spout to waterline at MHW (mean high

water): 62 feet. Panamax class vessels are handled at this facility. Vessels over 850 feet length overall must be shifted to permit full access by the loader.

Cargo handling arrangements are managed by permitted stevedores.

- ❖ draught: 45ft
- ❖ slip length: 1,270ft
- ❖ dock length: 375ft
- ❖ loading area (without shifting): 350ft on a 135ft beam
- ❖ outreach from face of dock: 87ft.

BREAKBULK CARGO

Customers across the globe trust the Port of Corpus Christi to manage their supply chain needs through its expanding dock and laydown yard facilities, whether by vessel, railroad or truck.

The Port manages five multi-purpose cargo docks for loading and unloading your breakbulk cargo, including wind turbine components, steel pipe, coils, containers, RO/RO cargo, super-sacks, heavy lift and project cargo. The Port has over 100-acres of improved laydown areas, all which are served by all Class I railroads. Short- and long-term open and covered storage options are available. Handling of cargo is quoted and managed by permitted stevedores.

PERMITTED STEVEDORES AND FREIGHT HANDLERS

STEVEDORES

- ❖ Cooper Marine & Timberlands Corp.
- ❖ Cooper/Ports America
- ❖ Dix Fairway Terminals, LLC
- ❖ Gulf Stream Marine, Inc.
- ❖ Port Corpus Terminal, Inc.
- ❖ Savage Services
- ❖ Suderman Contracting Stevedores, Inc.

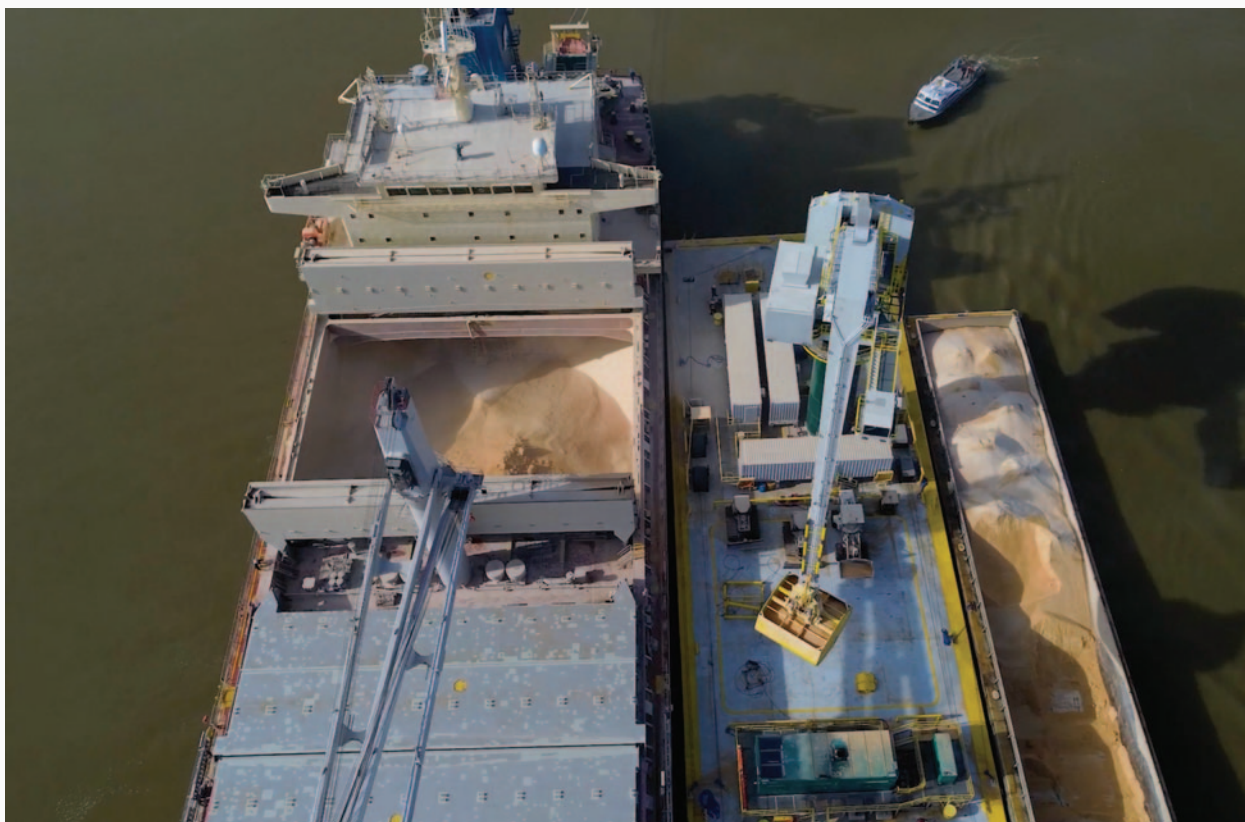
FREIGHT HANDLERS

- ❖ Anderson Columbia Co, Inc.
- ❖ Dirt Rocks, Construction Industry Solutions, LLC
- ❖ Gulf Coast Limestone, Inc.



South Texas Cement facility at the Port of Corpus Christi.

E-Cranes solidify Cooper Consolidated's Mississippi River stevedoring reputation



Cooper Consolidated, LLC is expanding its bulk stevedoring fleet with the addition of two 4000C Series Equilibrium Cranes, the largest cranes built by E-crane. These cranes, named *Pelican* and *Creole King*, solidify Cooper Consolidated, LLC as the Mississippi River's premier bulk stevedoring service provider.

The *Pelican* is already in operation handling bulk and breakbulk cargoes, and the *Creole King* is due to begin operations in May this year. For more information on these impressive cranes, please see 'Cooper Consolidated receives North America's largest E-Crane bulk cranes,' on p31 of this issue.



Corn Belt Ports and Louisiana Ports sign Cooperative Endeavor Agreement

In September last year, in a landmark move to enhance the efficiency and competitiveness of the Mississippi River's vital agricultural and industrial trade routes, the Upper and Lower Mississippi River ports signed their first-ever Cooperative Endeavor Agreement (CEA) at the National Waterways Conference's Annual Meeting. This historic partnership is poised to drive significant advancements in cooperation efforts toward business development, infrastructure investment, and federal support for port operations along America's Marine Highways 35 and 55.

The signatories, convened by Corn Belt Ports, include Plaquemines Port, Harbor and Terminal District, Port of Greater Baton Rouge, Port of New Orleans, Port of South Louisiana, and St. Bernard Port, Harbor and Terminal District.

Key goals of the agreement include:

- ❖ Expanding Global Markets for US agricultural products.
- ❖ In collaboration with the US Department of Agriculture, the ports will address supply chain bottlenecks and enhance the flow of agricultural exports from the Midwest to global markets through Louisiana's coastal ports. In addition, the group will convene an annual agricultural business development event in New Orleans.
- ❖ Support federal port and waterways infrastructure investment, navigation channel maintenance, and dredging funding priorities.
- ❖ The ports will take a unified approach to government relations in natural and man-made infrastructure and construction, operations, and maintenance. Coalitions are more powerful than the simple sum of their parts, and multi-front government relations are more effective than individual, disjointed efforts.
- ❖ Support for U.S. Army Corps of Engineers Reforms.
- ❖ Recognizing the essential role of the U.S. Army Corps of Engineers in maintaining inland waterways, the ports will actively support ongoing reform initiatives aimed at increasing the efficiency and effectiveness of water resources infrastructure development.
- ❖ Support for MARAD Marine Highway Programs.
- ❖ The CEA will bolster efforts to create and strengthen federal programmes that meet the needs of ports along

Marine Highways 35 and 55, ensuring these critical trade routes remain viable and competitive.

This CEA marks a significant step forward in the unified effort to advance the economic and operational capabilities of ports up and down the Mississippi River. By working together, the Upper and Lower Mississippi River ports will ensure that these vital trade routes continue to serve as a major backbone of America's agricultural and manufacturing industries.

ABOUT CORN BELT PORTS

Corn Belt Ports is the four federally recognized rural, regional, multi-modal, inland ports within the Corn Belt's Lock and Dam System on the Upper Mississippi River and Illinois Waterway. Through continued investment and innovative organizing, Corn Belt Ports supports the integrity and sustainability of the supply chain. The Corn Belt Ports handle nearly 100 million tonnes of freight annually, which is expected to increase year after year. Since its inception in 2019, Corn Belt Ports have helped attract over \$2 billion of investment in multi-modal and natural infrastructure from multiple sources.

ABOUT PLAQUEMINES PORT, HARBOR, AND TERMINAL DISTRICT

Plaquemines Port, Harbor, and Terminal District, located at the mouth of the Mississippi River, is a leading maritime hub along the Gulf Coast. With its state-of-the-art infrastructure and strategic location on the Mississippi River, the port plays a pivotal role in fostering economic growth, supporting local industries, and connecting communities. Equipped with modern terminals and facilities, the port handles a diverse range of cargo and implements environmentally sustainable practices. The port owns and operates the ferry system in Plaquemines, an essential connectivity asset. Through its operations, the Port generates employment opportunities, stimulates regional economic diversification, and fuels long-term prosperity.

ABOUT THE PORT OF GREATER ROUGE

The Port of Greater Baton Rouge offers a full range of maritime services and outstanding facilities, from a deep-water complex on the Mississippi River that can accommodate Panamax vessels to our Inland Rivers Marine Terminal on the Gulf Intracoastal Waterway. Facilities are

situated at the convergence of the Mississippi River and the Gulf Intracoastal Waterway. They are linked to other major ports between Florida and Texas and throughout 15,000 miles of the Mississippi River inland waterway system as well as to the Gulf of Mexico and ocean trade lanes to the world. Their exceptional maritime infrastructure and connectivity provide direct access to ship, barge, truck, and rail.

ABOUT THE PORT OF NEW ORLEANS

The Port of New Orleans (Port NOLA) is a modern multimodal gateway for global commerce and an in-demand cruise port — delivering seamless, integrated logistics solutions between river, rail, and road. Port NOLA is a diverse deep-water port uniquely located on the Mississippi River near the Gulf of Mexico — with access to 30+ major inland hubs such as Dallas, Memphis, Chicago, and Canada via 14,500 miles of waterways, 6 Class I railroads and interstate roadways. Strategic alignment with the New Orleans Public Belt Railroad, a Class III connecting railroad, strengthens Port NOLA's position as an integrated hub and supports the port's mission of driving regional economic prosperity.

ABOUT THE PORT OF SOUTH LOUISIANA

Founded in 1960, the Port of South Louisiana [PortSL] is a 54-mile port district on the Mississippi River between New Orleans and Baton Rouge, encompassing the parishes of St. Charles, St. John the Baptist, and St. James. The Port of South Louisiana is the largest port in Louisiana and #2 in the Western Hemisphere. It ranks as the #1 US grain exporter and #2 US energy transfer port. Port SL is home to seven grain transfer facilities, four major oil refineries, 11 petrochemical manufacturing facilities and several other facilities, including the Executive Regional Airport.

ABOUT THE ST. BERNARD PORT, HARBOR AND TERMINAL DISTRICT

The St. Bernard Port, Harbor and Terminal District regulates all domestic, coastwise and intercoastal commerce and traffic of the district, and all commerce and traffic which is conducted by or through a facility wholly owned by the Port. The St. Bernard Port's mission is to create jobs and provide economic development, while maintaining a positive impact on St. Bernard Parish and its citizens. The St. Bernard Port and its tenants, collectively, create the largest employment facility in St. Bernard Parish, employing over 18% of its workforce. 

It's time to decide

CONVEYING
ADVICE

Over the past two decades, Chinese exports of manufactured goods have increased twenty-five-fold, with more and more of the manufacturing base in Europe succumbing to this growing dominance. Conveyor belt manufacturing is no exception. Low-grade, cut-price belting imported from Southeast Asia, primarily China, continues to grow at an unprecedented rate. As a result, more and more conveyor belt manufacturers have either gone out of business entirely or have had to reduce capacity by closing production plants. None of us should therefore really be surprised by recent announcements of more such closures in Europe. Indeed, it serves as a timely reminder that for everyone involved with conveyor belts in the Western world, the very future of conveyor belt supply is in our hands.

PLAYING THE LONG GAME

Chinese industry, across all spectrums, likes to 'play the long game'. This involves taking advantage of a combination of abundant, cheap labour, state subsidies, producing products of only marginal



Looking to knock out western manufacturers – but are they hitting below the belt?

acceptability at best, and using low-grade, unregulated raw materials with an almost complete disregard for human and environmental safety. It has been a successful tactic used in many industries. Their 'key to the door' is remarkably low prices offered for apparently 'like for like' specification products.

In the case of rubber conveyor belts, they rely on the fact that a great many end-users do not really understand the technicalities of what is a surprisingly complex component. Consequently, buyers of conveyor belts find such offers irresistible, despite the fact that all the evidence shows that such pricing defies logic. Added to this, the economic model

also fails to work when taking into consideration the considerably longer operational lifetime afforded by high-quality European and North American belts and the appreciably lower repair and maintenance costs during that lifetime.

IN THEIR BEST INTERESTS

A considerable proportion of end-users source their conveyor belting from companies that supply, fit, repair and maintain conveyors and trading companies for which conveyor belts are simply a commodity. The stark realities of business mean that to survive they must meet the budgetary requirements of their customers and beat their competitors on price.

Ironically, supplying lower grade components that need a higher level of intervention and ultimately need to be replaced many times more frequently than their premium quality counterparts, is good news for service companies and traders alike. It would, of course, be wrong to accuse all service companies of such self-interested practices because, as I know from my own experiences throughout Europe and North America, there are many service companies whose business model is based on quality and value for money, interspersed with a proportion whose path is somewhere in between.



Belts that need a high level of intervention and need to be replaced more frequently is good news for service companies and traders.

NOWHERE LEFT TO GO

The big prize for the 'market saturation' tactics employed by Southeast Asian manufacturers is that, ultimately, when their competitors have been forced out of business, the market is wide open and at their mercy. Not only will they have lost their challengers in terms of quality standards, they will also be free to charge what they like, which we have seen happen in many other industries and with a number of important raw materials used by conveyor belt manufacturers.

Yet another vitally important but woefully forgotten fact is that, by its very nature, Asian manufacturing relies heavily on copying rather than product development and improvement. Within that lies the demand for 'specialist' conveyor belts such as fire resistant, rip- & tear-resistant, oil-resistant and so on. In fact, it is worth noting that every type of specialist belt, without exception, has been developed by the very manufacturers that Asian manufacturers are trying to force out of business. In terms of volume, the demand for such belts is not of sufficient interest to those manufacturers who rely on the economy of scale created by mass volume production of conventional belting such as everyday abrasion resistant belting. The continued demise of western manufacturers would therefore close even more doors.

In truth, this all means that those end-users who choose to select on price rather than the quality, whole life cost option, and the service companies and traders who import and re-sell belts from Asia, are simply playing into the hands of Southeast Asian manufacturers and hastening the end towards a market that no longer has a choice. Ultimately, without a conscious effort from those that buy conveyor belts to support western manufacturers, it will be more than just the European belt manufacturers who will become victims. It's time to decide.

Bob Nelson



Nowhere left to go. No more high-quality options, no more specialist belts, no more price competition.

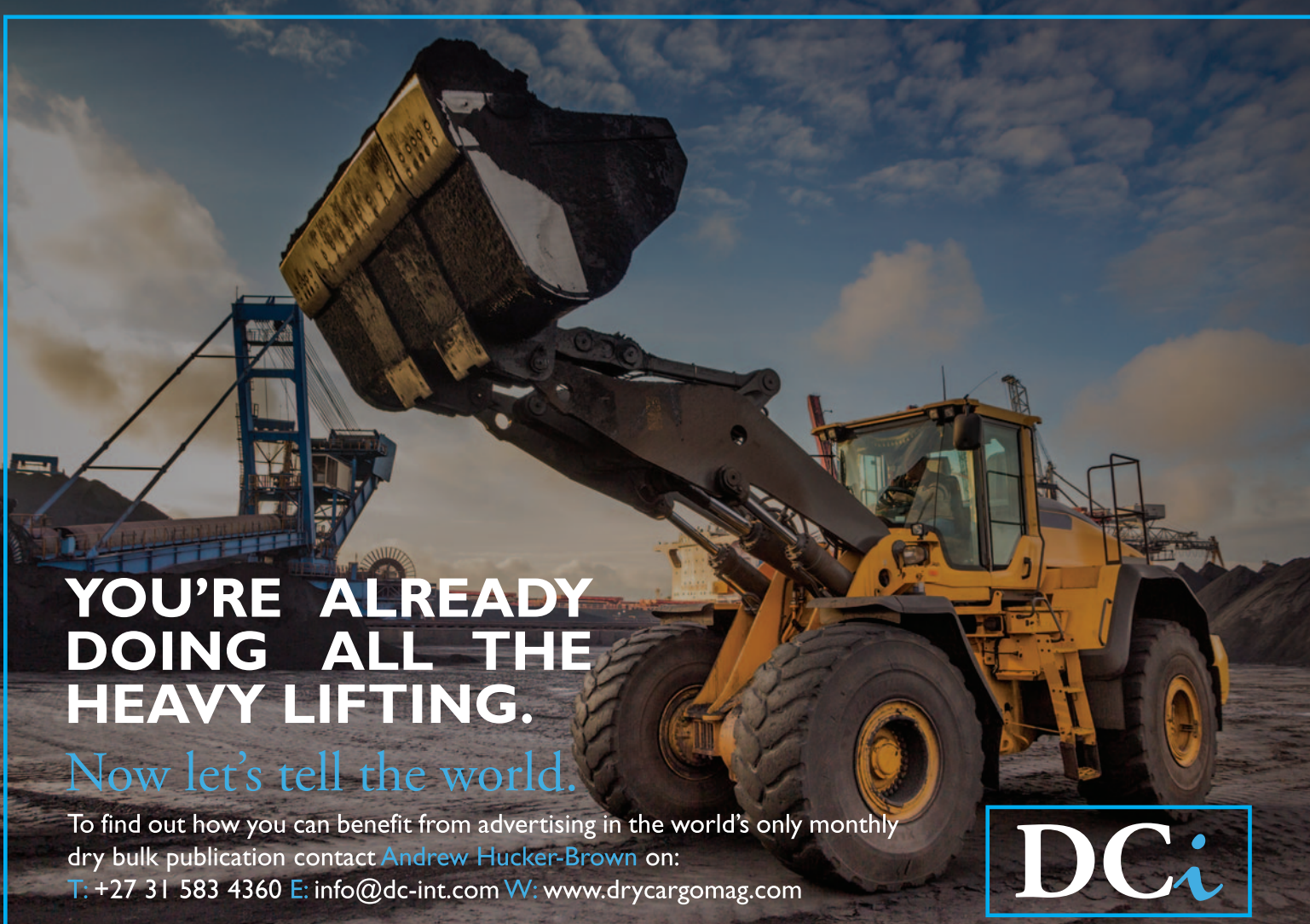
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Martin Engineering expands operations in Australia

A respected global expert in belt conveyor accessories and bulk flow technology is expanding its operations in Australia to offer solutions to more customers nationwide.

Martin Engineering first entered the Australian market in 1978 and has since grown to become the country's top bulk-handling service and solutions provider, improving production, safety, and efficiency for the mining, quarry, cement, and port sectors. By building a new manufacturing



facility in Yatala on the East Coast and opening a fully staffed office in Perth on the West Coast, Martin is investing in and adding jobs to the Australian economy. Using a "factory direct" sales, service, and equipment model, customers receive reliable product fulfillment, faster response times, and hands-on service from local experts.

"Our purpose-built space has been designed to enhance our customer service, operational capabilities, and provide a better working environment for our team," said Bo Hu, Australia Manager, Martin Engineering. "This expansion ensures we continue delivering industry-leading solutions to our customers. We will now have full production capabilities in Australia of a wider range of products beyond our already established polyurethane parts production for cleaners and other wear parts."

YATALA

The newly built facility in Yatala will house Martin Engineering Australia's headquarters in addition to 13 sales, production, and service team employees, allowing them a



central hub to offer the best solutions and technical service to the market. Although the Yatala facility will be Australia's primary manufacturing site, Perth will also have partial production capabilities.

Historically, Australian equipment production at Martin Engineering focused on polyurethane belt conveyor cleaner blades to ensure fresh products for a longer equipment life. The new Yatala facility expands the manufacturing capability to include a wide variety of patented equipment, all designed and

engineered by Martin Engineering at the company's Center for Innovation in Neponset, Illinois, USA.

"Our new manufacturing facility will produce bulk flow equipment and conveyor accessories," said Hu. "These include air cannons, customized conveyor transfer points, impact cradles that protect the belt during loading, belt support cradles and idlers that ensure a smooth belt path, skirting to mitigate dust and spillage in the transition, and innovative belt alignment devices."

The Yatala service and manufacturing personnel have all completed Martin Engineering's popular Foundations™ training on conveyor maintenance and safety. In addition to online tutorial tools and hands-on training, Martin® Service

Technicians (MSTs) who visit customer sites are updated on the latest bulk handling technology and methods. The training ensures that any MST who enters a customer site utilizes servicing best practices and consistently complies with WorkSafe Australia standards.

PERTH

Since 2020, Western Australia and its largest city, Perth, have seen double the economic growth rate compared to the rest of the country. The region is quickly

emerging as an economic powerhouse for raw materials and trade. Martin Engineering is prepared to support that growth through shorter equipment lead times, a faster service response than competitors, and a greater understanding of local challenges.

With a 14-person trained staff, a targeted manufacturing capability, and a large warehouse, the Perth branch focuses on service, maintenance, and solutions to new and existing customers. The MSTs specialize in bulk material flow on belt conveyors through belt cleaning, dust-/spillage-free conveyor transfers, belt alignment, and mitigating hopper/chute clogging using efficient air cannon designs.

DEDICATED TO A CLEANER, SAFER, AND MORE PRODUCTIVE AUSTRALIA

Bo Hu serves as the Financial Controller of Martin Engineering's Australian Business Unit, overseeing operations with support from Oleksiy Yakovlenko. Martin CEO, Robert Nogaj and Yakovlenko will jointly manage the operations of the Western location's commercial department. Jorge



Martin® Service Technicians (MSTs) enthusiastically receive some hands-on training.

Enriquez leads the engineering team. Sales for both branches are cooperatively managed by Yakovlenko and Marcelo Silvestre, who also oversees the East Coast Sales Department and the New Zealand territory. Additionally, Silvestre assumes

responsibility for all marketing activities within the Australian territory.

"After years of experience in the Australian market, Martin Engineering understands the everyday challenges for bulk handlers and mining operators in the varying climates and extreme environments the country has to offer," concluded Mr. Hu. "With these new spaces, Martin Engineering Australia is excited to embark on the next chapter of delivering excellence and innovation. Stay tuned as we continue to grow and invest in Australia's mining landscape."

ABOUT MARTIN ENGINEERING

Martin Engineering has been a global innovator in the bulk material handling industry for more than 80 years, developing new solutions to common problems and participating in industry organizations to improve safety and productivity. The company's series of *Foundations* books is an internationally recognized resource for safety, maintenance and operations training — with more than 22,000 print copies in circulation around the world. The 500+ page reference books are available in several languages and have been downloaded thousands of times as free PDFs from the Martin website. Martin Engineering products, sales, service and training are available from 18 factory-owned facilities worldwide, with wholly owned business units in Australia, Brazil, China, Colombia, France, Germany, India, Indonesia, Italy, Kazakhstan, Malaysia, Mexico, Peru, Spain, South Africa, Turkey, the USA and UK. The firm employs more than 1,000 people, approximately 400 of whom hold advanced degrees.



Belgium's Katoen Natie invests in four all-electric Konecranes Gottwald mobile harbour cranes to modernize operations at the Port of Antwerp

- ❖ Deal underscores Konecranes' strength in helping operators meet sustainability targets with high operational performance
- ❖ Order includes a ten-year service level agreement. Each crane comes equipped with Konecranes TRUCONNECT remote condition monitoring and predictive services

Belgian logistics giant Katoen Natie has ordered four all-electric Konecranes Gottwald mobile harbour cranes for its Port of Antwerp operations. The order, which includes a ten-year service level agreement, was booked in Q1 2025, with delivery scheduled for Q1 2026.

For more than 170 years, Katoen Natie has played a key role in global trade. Sustainability is the heart of their operations, guiding every aspect of their logistic processes. To modernize their port operations, the company is leading by example by investing in Konecranes Gottwald mobile harbour crane technology for several terminals at the Port of Antwerp.

The order is comprised of:

- ❖ Two ESP.9 Konecranes Gottwald mobile harbor cranes with a maximum lifting capacity of 200 tonnes each. The cranes are equipped with a Tandem-lift Assistant, enabling a combined maximum lifting capacity of 400 tonnes.
- ❖ Two ESP.8 Konecranes Gottwald mobile harbor cranes with a maximum lifting capacity of 150 tonnes each.

Each crane features a Konecranes all-electric drive system. Seamlessly integrating an external power supply with rechargeable batteries, the system optimizes energy efficiency while producing zero local tailpipe emissions. With this investment, Katoen Natie joins a growing number of global port operators adopting Konecranes' all-electric drive technology.

"Katoen Natie has chosen Konecranes Gottwald mobile harbour cranes after a thorough evaluation of the existing solutions in the market. Konecranes' all-electric drive concept is the best choice for achieving our goals in sustainable port operations while also offering a new level of performance," says Tom Brouwers, Energy Manager at Katoen Natie.

To ensure high availability and minimal downtime, all four cranes come equipped with Konecranes TRUCONNECT for

remote condition monitoring. The order also includes a holistic ten-year service level agreement, with predictive servicing based on a condition-based monitoring system provided by Konecranes Service Frontline in Belgium. Special spare parts packages ensure fast and efficient maintenance.

"This was a long-term project where we worked closely with Katoen Natie to share our experience from a decade of field operations with all-electric drives. Through detailed technical discussions we demonstrated the unparalleled combination of performance, reliability and sustainability provided by this Konecranes technology," said Alexandros Stogianidis, Regional Sales Manager at Konecranes.

POWERED BY ECOLIFTING

This contract is part of Ecolifting™, Konecranes' vision to increase its handprint — meaning the beneficial environmental impact that can be achieved with its product and service portfolio — while reducing customers' carbon footprints. From eco-optimizing diesel drives, to

hybridization and fully-electrified fleets, Konecranes will continue to do more with less.

A strong focus on customers and commitment to business growth and continuous improvement make Konecranes a material handling industry leader. This is underpinned by investments in digitalization and technology, plus its work to make material flows more efficient with solutions that decarbonize the economy and advance circularity and safety.

ABOUT KONECRANES

Konecranes is a global leader in material handling solutions, serving a broad range of customers across multiple industries. It consistently sets the industry benchmark, from everyday improvements to the breakthroughs at moments that matter most, because it knows it can always find a safer, more productive and sustainable way. That's why, with around 16,800 professionals in over 50 countries, Konecranes is trusted every day to lift, handle and move what the world needs. In 2024, group sales totalled €4.2 billion.



JSC RIKON enters Latvia's top 20 largest exporters

JSC RIKON has proudly secured a place among the top twenty largest exporters of the Republic of Latvia, recognized for its growth in export product volumes, according to the data published by *Diens Bizness*. This remarkable achievement can be attributed to the company's effective operations in two key areas of supply: double jib level luffing cranes and container rail-mounted cranes. During the period from 2023 to 2024, contracts totalling €90,672,500 were signed, of which €44,552,500 accounts for the supply of double jib level luffing cranes, while €46,120,000 is attributed to and container rail-mounted cranes. This balance underscores the company's strategic approach to both product types.



In addition, JSC RIKON has developed its own remote-control system for gantry cranes, enabling operators to manage them from their offices. The first cranes of this type were successfully delivered to ADIF, the state-owned company responsible for operating railways, stations, and terminals in Spain. Currently, these cranes are undergoing the commissioning phase.

Bruks Siwertell secures second air-supported Tubulator conveyor order from US operator

"We are proud to continue supporting St Marys Cement in its efforts to enhance both operational efficiency and environmental sustainability. The order also reinforces the trust that customers place in our air-cushion conveying technology and expertise," notes Derek Tatum, Business Development Manager, Conveyor Technology, Bruks Siwertell.

"The reliability and efficiency of the first Tubulator installation were instrumental in securing this follow-up order," Tatum continues. "Although shorter, the new system replicates the previous Bruks Siwertell installation, which has been operating successfully for over four years."

The new Bruks Tubulator will have a length of 89m (292ft) and a rated capacity of 86 tonnes per hour. Like its counterpart, it will transfer alternative low-carbon fuels such as, non-recyclable plastics and construction demolition debris, to fuel the plant's calciner.

"The decision to opt for a second Tubulator ensures equipment continuity and operational efficiency at the Charlevoix site," he adds. "St Marys Cement wanted to maintain uniformity across its material handling operations, and specifically requested a Tubulator system that mirrors the performance and reliability of the earlier model, avoiding the complications of integrating different systems for the same task."



Air-supported Bruks Tubulator conveyors deliver a wide range of benefits, including a fully enclosed design that prevents dust emissions and spillage, maximizing environmental protection. Also, their low-friction, air-cushion technology, eliminates traditional idlers beneath the conveyor belt, which lowers energy consumption and significantly reduces maintenance and operational costs.

The Tubulator conveyor is planned for delivery within eight months, with installation scheduled for May 2025.

New reclaiming system order for Bedeschi Australia

Bedeschi has announced that Bedeschi Australia has won a new reclaiming system for Spodumene in the Western Australia (WA) region. Bedeschi, a global OEM for materials handling, has been providing equipment for the industry for over 115 years. With the establishment of an Australian office in 2023, Bedeschi has expanded, opening a workshop in WA to support its customers beyond the supply of this equipment, with service, spare parts and offsite repairs. With offices on the East and the West Coast, Bedeschi is available to support its customers through its extensive engineering experience in the Australian Mining Market.



The image shows a Bedeschi reclaiming system which is very similar to the new one the company will supply.

JSC RIKON completes delivery of fourth RPS crane to Batumi Sea Port

JSC RIKON has successfully completed the delivery of its fourth RPS crane, boasting a lifting capacity of up to 40 tonnes, to Batumi Sea Port (BSP). This crane was ordered by LLC 'Batumi Oil Terminal', a subsidiary of JSC 'KazTransOil', and is set to enhance the operational capabilities of the

port's dry cargo terminal.

The addition of this new portal crane marks a significant advancement in the modernization of the port's infrastructure. It is expected to notably improve the technological productivity of the terminal, particularly in servicing large-tonnage

vessels of the Handysize and Handymax types. This enhancement is crucial for the port's continued growth and competitiveness in the maritime market.

Recent data indicates that Batumi Sea Port handled 1.4 million tonnes of dry cargo from January to September 2024, reflecting a substantial increase of 51,100 tonnes compared to the same period in 2023. This growth underscores the urgent need for upgraded equipment to meet rising operational demands.

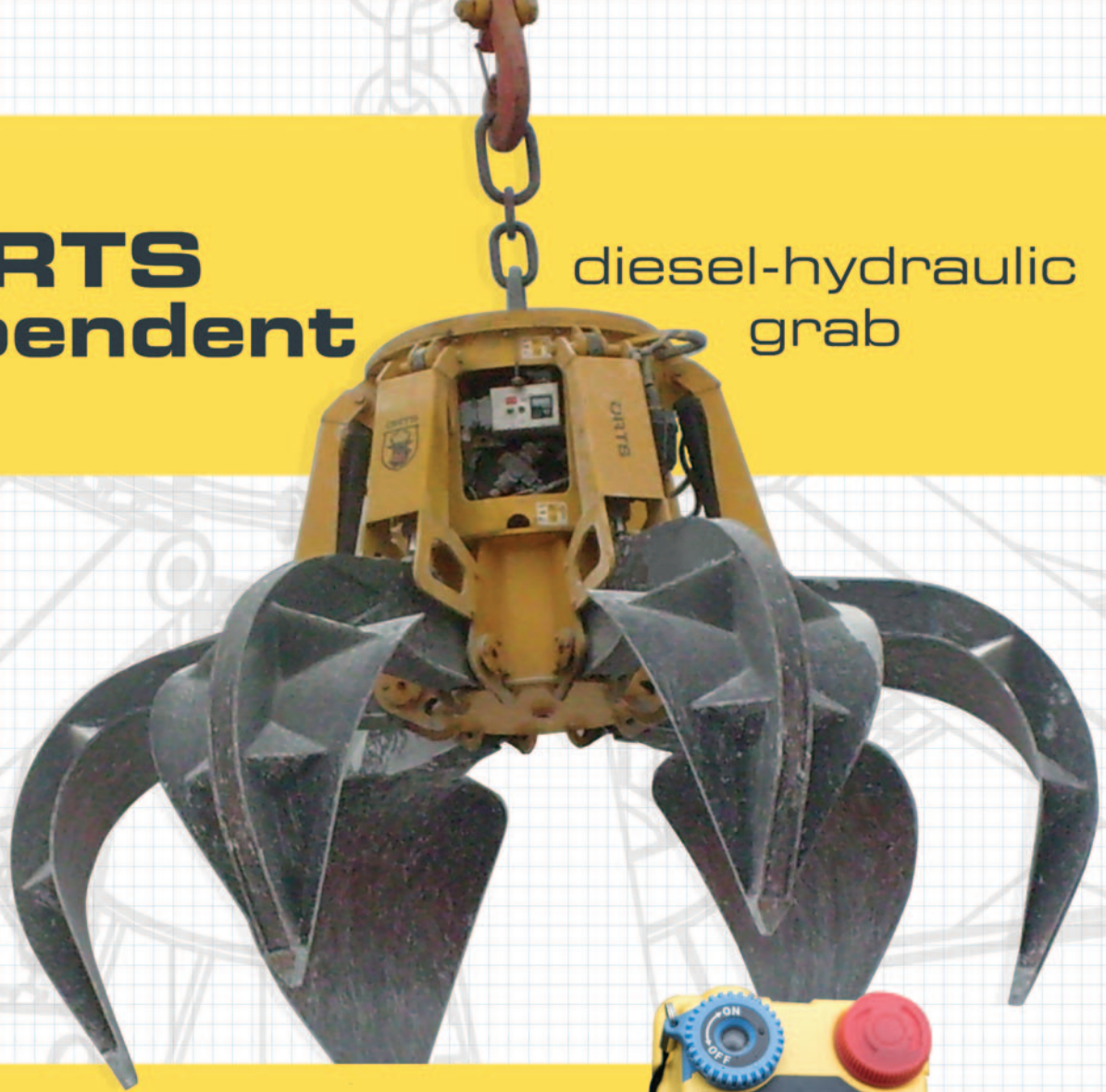
The newly installed RIKON 'RPS' crane, with a remarkable productivity rate of 620 tonnes per hour when operating with a grab, is part of a comprehensive long-term development strategy for Batumi Sea Port. This initiative aims to bolster cargo turnover and solidify the port's position as a key logistics hub in the region.

Over the past decade, RIKON has successfully supplied four cranes to Batumi Sea Port, demonstrating the high quality and reliability of its equipment. This track record has led to a strong preference for RIKON among long-standing clients, further establishing the company as a trusted partner in port infrastructure development.



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SENcon: the modern SENNEBOGEN control system on a new technology platform

SENcon, the SENNEBOGEN Control System, is the integrated control system from SENNEBOGEN. In the latest generation, it impresses with many new, intelligent functions that support both the driver and the fleet manager and enable optimum handling of the machine — for maximum availability and efficiency.

CUSTOMIZABLE DRIVER PROFILES

Even at first glance, the new SENcon proves to be particularly user-friendly, as all basic functions can be controlled on a single, intuitive 10-inch touch display in the cab. If this is not desired or the situation does not allow it, it is also possible to assign individual functions to switches or buttons. This is just one example of the system's customizability, as the operator can use the driver profiles to tailor the machine to their individual needs. On the one hand, comfort and control elements in the cab such as the automatic climate control, the radio as well as joystick and speed settings, which increase driver comfort and concentration, can be personalized. In addition, certain machine parameters can be memorized that are common for a specific application or adapted to a specific driver, for example. This not only increases efficiency and precision in multi-shift operation or with changing tasks, but also makes the cab the personal space of the respective operator.

HELPFUL ASSISTANCE SYSTEMS AND (PARTIAL) AUTOMATION

The new control system from SENNEBOGEN also offers various useful assistance systems that ensure increased safety and accuracy during operation: starting with the Virtual Wall, a virtual boundary that blocks the system as soon as the boom exceeds it, through to the continuous weighing of loads in the grab, which can be used to effortlessly record the handling capacity of the material handler, among other things. Machines equipped with the new SENcon are also prepared for partial and/or full automation. This means that it will be possible to automate repetitive work sequences in the future, reducing the operator's workload and increasing productivity at the same time.



The new SENNEBOGEN control system SENcon creates the basis for the long-term technological further development of the machines through its intelligent networking and communication capability.

REAL-TIME MACHINE MONITORING WITH DIAGNOSTIC TOOL

Another important point is the machine's ability to communicate, which is reflected in the diagnostics tool. The machine provides the operator with real-time insights into the most important parameters and helps him to correctly assess the condition of the machine and achieve optimum performance in the respective situation. This enables the operator to make decisions efficiently and quickly based on real data.

By connecting the system to the SENNEBOGEN Troubleshooter, the operator can also find all the solution steps for troubleshooting directly. In addition, customer service can connect to the machine for diagnosis without having to be on site.

The service technicians can offer solutions remotely or get an overview so

that they can arrive with the right spare parts straight away, for example. This not only saves valuable time and service costs, but also increases machine availability.

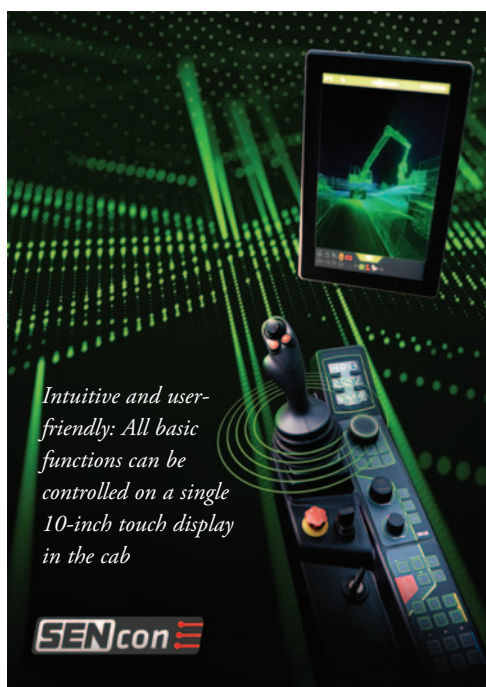
WIRELESS SOFTWARE UPDATES FOR MAXIMUM AVAILABILITY

Another advantage of the new SENcon is that software updates can be transferred easily and conveniently 'over the air'. This means that the machine's performance is always kept up to date thanks to regular and easy-to-install updates. In addition, new functions (for example with regard to automation) can be easily installed or activated long after purchase. Here, too, there is no need for on-site servicing.

CONTINUOUS ANALYSIS AND MACHINE OPTIMIZATION

The communication capability of the control system not only ensures that the driver is informed in the best possible way, the connection with the SENtrack telematics system also provides the fleet manager with a large amount of data that allows him to analyse the machine or his entire fleet in detail. Among other things, this allows the performance and utilization of the machine and the driver to be analysed and optimization potentials to be identified. Potential energy savings and predictive maintenance work can also be derived from this.

All in all, the intelligent networking and communication capability of the new SENcon control system has created the basis for the long-term technological development of SENNEBOGEN machines — with technologies and functions that leave our customers and users all options open for the future.



Duferco Terminal Mediterraneo in Sicily takes a Konecranes Gottwald ESP.6 mobile harbour crane into operation

Italian steel-logistics giant Duferco Terminal Mediterraneo S.p.A. (DTM) has started using a 125-tonne Konecranes Gottwald ESP.6 mobile harbour crane at its Giammoro terminal in Sicily. The crane was delivered in mid-October 2024 and fully commissioned by 15 November.

Duferco Terminal Mediterraneo S.p.A. (DTM) is a subsidiary of Duferco Group, an Italian steel production, renewable energy and logistics conglomerate. The group is investing €95 million to expand and electrify the Giammoro terminal as it aims to transform the entire area — including an adjacent steel plant — into a low-emission industrial hub for sustainable logistics and production.

“This is a significant step forward in efficiently developing our Giammoro operations. The ESP.6 crane enables us to deliver on our productivity goals, while also enhancing environmental sustainability. DTM aims to set a benchmark for sustainable logistics operations that support Italy’s industrial growth,” says Maurizio Miduri, Terminal Director, Duferco Terminal Mediterraneo.

The Konecranes Gottwald ESP.6 mobile harbor crane will be located on a newly developed pier connecting directly to an industrial area where part of the commercial traffic will be moved from the urban port. The logistics operator already uses Konecranes lift trucks at the terminal, but this is the first order for a mobile harbour crane from Konecranes.

DTM ordered the crane equipped with an onboard hybrid drive. It combines a fuel-optimized diesel engine with ultracapacitors that can be recharged by energy recovered from lowering and braking motions. This provides the power needed for peak performance, while fuel is saved when handling lighter loads.

The crane is also prepared for an external power supply, which allows DTM to switch easily when the electrification of the pier is complete. Electrification further increases eco-efficiency by reducing tailpipe emissions. Noise emissions are reduced too.

In successfully delivering and commissioning the crane by the agreed deadline of 15 November, Konecranes ensured that DTM met the timeframe to qualify for benefits under legislation for Italy’s Special Economic Zones (Zone Economiche Speciali, ZES).

“Our team did a great job to meet the ZES timeline, demonstrating Konecranes’ commitment to meeting special customer needs. Duferco is a very important logistics player in Italy and shares our focus on enabling sustainable operations with eco-efficient lifting equipment,” says Tommaso Chindemi, Konecranes Regional Sales Manager for Italy.

A strong focus on customers and commitment to business growth and continuous improvement put Konecranes at the forefront of the material handling industry. This is underpinned by investments in digitalization and technology, plus Konecranes’ work to make material flows more efficient with solutions that decarbonize the economy and advance circularity and safety.

ABOUT KONECRANES

Konecranes is a global expert in material handling solutions, serving a broad range of customers across multiple industries. It consistently sets the industry benchmark, from everyday improvements to the breakthroughs at moments that matter most, because it knows it can always find a safer, more productive and sustainable way. That’s why, with around 16,800 professionals in over 50 countries, Konecranes is trusted every day to lift, handle and move what the world needs. In 2024, group sales totalled €4.2 billion.



JSC Rikon set to expand product range with move into MHC and STS markets

JSC RIKON was founded in 1991 in Riga, the capital of Latvia. The company provides a full-cycle production including all stages of manufacturing of cargo handling equipment, from development of drawings to production of the finished product, including supply of spare parts and service maintenance. Currently RIKON offers two types of cranes. The first is the double jib level luffing cranes, which RIKON offers as a series product. In 2024 RIKON delivered double jib level luffing cranes to Batumi Seaport in Georgia, Port of Brcko in Bosnia and to the Aktau Port in Kazakhstan.

Currently, RIKON has six double jib cranes in production for large industrial companies in Turkey.

The second crane type is the RMG (rail-mounted gantry). In 2024 RIKON supplied two RMGs to the First Dry Port Terminal in Uzbekistan. In 2023 ADIF, the Spanish rail infrastructure authority, ordered three automated RMGs for the intermodal terminal at Vilcálvaro, Madrid. RIKON won the contract in a public tender and will deliver the cranes in 2025. RIKON has since secured further RMG contracts, bringing the total number of RMGs it has on order to ten cranes. In addition to the three RMGs for Madrid, ADIF has ordered two RMGs for a terminal in Valencia. These RMGs will be operated by remote control. In Slovakia, BB-Trade has ordered two RMGs for the Haniska terminal redevelopment in Košice, which will also be operated by remote control.

In Germany, RIKON has won an order for an RMG from BEHALA, the operator of the trimodal freight hub in Berlin. A RIKON spokesperson describes this contract as a “huge step for us.”

The company has ambitious plans for the future focused on expansion to meet demand for cost-effective European-produced cranes. RIKON has its own



factory to produce crane steel structures in Riga, employing about 120 people. The complete production cycle is fully in-house, starting from the preparation of steel sheets and pipe structures, right up finishing with customer-specified coatings in the paint shop. RIKON also has an assembly area, which allows the company to erect full cranes that can be shipped out from a berth at the factory.

STS AND MHCs

RIKON's big announcement for 2025 is that it is now interested in entering the markets for mobile harbour cranes (MHC), STS (ship-to-shore) cranes and shiploaders. The mobile harbour crane is likely to come first, and the company said it is now finalizing its design.

RIKON is encouraged by the response to its products and its strategy. Being a mid-sized company based in Latvia, RIKON

enjoys competitive labour costs without the need to support a large corporate organization. All externally sourced components come from European suppliers, which enables RIKON to offer a full-service local crane shop of sorts, bringing together more than 30 years of experience in steel fabrication, together with in-house equipment integration.

On the service side, RIKON offers on-site installation and 24/7 maintenance and support. All its cranes are equipped with connected drives that allow RIKON to monitor key parameters remotely and respond to any issues quickly.

CUSTOMER CENTRIC APPROACH

What is also helping RIKON win business, a spokesperson said, is its customer-centric approach and ability to offer tailored solutions. “This is really a big plus for us, because we are able to design a crane according to the customer's needs, not only serial models.” In recent years much of the focus in the crane market has been on developing automation systems. RIKON offers automation and remote control, but the company believes that in the market today customers are more focused on working with companies that have their own fabrication facilities and greater control over the whole crane design and production process. The in-house philosophy is helping RIKON stand out in the market and win contracts, the spokesperson said. “It's a whole different level of trust when customers see the crane superstructures in your factory.”



Covered cargo

Enclosed storage and handling

TAKRAF Portal Scraper Reclaimer installed at a major thermal power project in Bangladesh.



Jay Venter

TAKRAF Group: Integrating advanced material handling technologies with enclosed storage solutions

As enclosed storage and material handling facilities play a crucial role in environmental protection and product preservation, evaluation of a number of factors at the design stage is essential to their efficiency and reliability.

When designing material handling technologies for enclosed storage, key considerations such as material characteristics, flow rates, space constraints, environmental factors and safety regulations must be carefully assessed to maximize system efficiency and benefits.

As a result, TAKRAF Group's material handling solutions for enclosed storage systems are designed to the client's and site-specific requirements, utilizing the Group's extensive expertise in high-capacity and complex systems, typical of those required for challenging, sticky and abrasive commodities.

INTERNATIONAL RECOGNITION

TAKRAF Group boasts an extensive reference list in the supply of bulk material handling equipment, for which it is an acknowledged leader. For example, installations of scraper reclaimers, which are being increasingly employed in enclosed storage applications, exceed 400 installations for handling different bulk materials and for longitudinal and circular storages. Such an extensive track record demonstrates TAKRAF Group's competence in designing field proven scraper reclaimers, a fact acknowledged by a major Chinese steel producer through the award of an 'outstanding service' certificate to the Group for its superior technology and technical support. TAKRAF Group supplied eight 1,500tph (tonnes per hour) semi-portal scraper reclaimers and one portal scraper reclaimer over a period of five years to the

producer to operate within covered raw material storages. As highlighted by the certificate, a repeat award, the machines have performed consistently on their design promise since installation.

INDOOR SCRAPER RECLAIMERS

TAKRAF Group, with its wide range of scraper technology, is ideally positioned to service the growing trend within the industry for covered bulk material storage, either due to environmental regulations or to protect the material against adverse weather conditions. The scraper range covers both pure buffer storage and storage for homogenizing and blending of bulk materials for reclaiming.

Well suited for operation in covered storage facilities or sheds, TAKRAF Group's indoor portal scraper reclaimers are designed with regard to, amongst others, boom arrangement and shovel

TAKRAF Tube Conveyor with a capacity of 1,400tph in Bulgaria.



design, to consider the specific characteristics of the material to be reclaimed.

The twin boom portal reclaimers are high-capacity machines that are usually employed in operations where high volumes of bulk material are being handled, while the compact semi-portal reclaimers allow for box operation with various bulk material types. When semi-portal reclaimers are installed, as a pair or a quartet, in a bulk storage facility with several boxes of varying bulk material, then the simultaneous reclaiming and blending on downstream conveyors is also possible. This blending method is gaining increasing popularity for, for example, the blending of iron ore for steel plants as a result of the reduced footprint, increased machine redundancy and increased flexibility from the ability to blend from various boxes.

Other TAKRAF scraper reclaimers suitable for enclosed storage applications include bridge type scraper reclaimers, which, in combination with appropriate stacking method, are able to achieve optimal blending results.

GLOBAL INSTALLATIONS

Recent TAKRAF Group installations for enclosed storage facilities include the supply of four full portal scraper reclaimers for a project in Bangladesh. The twin boom portal reclaimers each boast a capacity of 1,250tph and a main boom length of more than 37m, and were supplied as part of a contract that included three 1,700tph rail-mounted grab ship unloaders serving vessels up to 25,000dwt.

Four TAKRAF portal scraper reclaimers

were also supplied for a multi-commodity power plant in Japan, which is fired by a combination of thermal coal and woodchips or biomass. This requires the reclaiming system to convey material from one site to the other to provide the flexibility to restore or (if required) mix material.

In Africa, TAKRAF Group supplied a 400tph portal scraper reclaimer, with a main and auxiliary boom, as part of a urea bulk handling system for an enclosed storage application for a mega fertilizer plant in Nigeria. Handling urea in bulk storage poses unique challenges and, as a result, the client required special design considerations from TAKRAF Group. These included sealing all conveyor galleries and transfer towers to avoid moisture entry or exposure of the product to the outside environment. In addition, the portal scraper reclaimer was provided with a 'de-lumper' to break the lumps formed during storage. Despite the challenging nature of the project, it was completed within the required tight schedule.

ENCLOSED CONVEYING

TAKRAF Group designs and supplies overland belt conveyors, in-plant conveyors for indoor and outdoor application, and, for enclosed conveying, tube conveyors, which are becoming increasingly popular, with TAKRAF Group boasting an impressive record of tube conveyor installations across various commodities.

While the tube (pipe) conveyor offers numerous advantages, including flexible routing, reduced transfer points and protection of the environment and

material being conveyed from mutual contamination, these conveyors are prone to belt twisting. This is due to, amongst others, an unstable belt position of the upper belt during the empty conveyor run, which can, in a worst-case scenario, lead to conveyor collapse. In addition, the belt overlap, where the tube belt opens in order to discharge the material, needs to be precisely controlled for accurate and efficient operation.

As a result, TAKRAF Group developed the Automatic Belt Training System (ABTS), a patented measurement, control and training device for ensuring the correct overlap position at the discharge area of a tube conveyor. The system has been fitted to a variety of TAKRAF tube conveyor installations, including a conveyor for ash and gypsum at a Bulgarian power plant, a conveyor in Eastern Europe that is part of a residual material handling and disposal system, and two conveyors conveying direct reduced iron at a USA steelworks.

As one of the largest full service providers of mining and material handling equipment, TAKRAF Group support its products and that of other OEMs over their full lifecycles. The Group's holistic and intelligent approach to maintenance focuses on addressing maintenance requirements and the risks associated right from the start, during the engineering of a technology. True to TAKRAF Group's slogan 'Innovation out of tradition — it pays to talk to a specialist!', incorporating developments, such as the ABTS, results not only in increased operational efficiency, but also improved safety and lower total cost of ownership.

Transforming enclosed storage for dry bulk: innovation, efficiency, and sustainable performance



Traditional storage systems often rely on periodic inspections and reactive maintenance strategies, which can lead to inefficiencies, unplanned downtime, and safety risks. GBS Group International's intelligent monitoring infrastructure utilizes a network of IoT sensors, AI-driven analytics, and cloud-based data processing to provide continuous visibility into critical operational parameters. By capturing real-time data on temperature fluctuations, humidity levels, material weight distribution, and conveyor belt integrity, GBS Group International enables

In the global bulk materials industry, storage efficiency is no longer just about capacity — it is about maximizing operational control, ensuring environmental compliance, and maintaining the integrity of stored materials. As the demand for dry bulk commodities continues to grow, enclosed storage solutions have become critical in optimizing supply chain performance, reducing material losses, and mitigating environmental risks. However, enclosed storage must go beyond containment. To truly enhance operational value, it must integrate advanced automation, intelligent monitoring, and next-generation material handling systems that drive efficiency and sustainability.

At GBS Group International, the company is redefining the standards for enclosed storage through the development of highly specialized solutions that address the industry's most pressing challenges. GBS Group International's expertise lies in delivering cutting-edge technology for monitoring, automation, and material flow optimization, ensuring that bulk storage facilities operate at peak efficiency while minimizing operational risks. By seamlessly integrating real-time data analytics, adaptive conveyor systems, and predictive maintenance protocols, it empowers operators to enhance productivity, streamline workflows, and achieve higher levels of sustainability.

A key differentiator in the company's approach is the implementation of real-time monitoring and predictive analytics within enclosed storage units.

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predictive maintenance strategies that prevent costly failures before they occur, ensuring continuous and optimized performance.

Beyond monitoring, material handling efficiency plays a pivotal role in enclosed storage optimization. Poor material flow management can result in segregation, compaction, uneven distribution, and increased energy consumption. To address these challenges, the company deploys adaptive conveyor belt systems, mobile stacking conveyors, and automated reclaim systems that ensure precise material placement while minimizing handling losses. Its conveyor solutions are designed to dynamically adjust speed, loading angles, and transfer rates in response to real-time storage conditions, eliminating bottlenecks and maximizing throughput efficiency.

Environmental sustainability is at the core of the company's storage innovations. One of the most critical concerns in enclosed bulk storage is dust control and air quality management. While enclosed structures inherently reduce atmospheric emissions compared to open storage, internal dust accumulation remains a major challenge that can compromise worker safety, regulatory compliance, and equipment performance.

To combat this, GBS Group International incorporates high-efficiency dust suppression systems, enclosed conveyor transfer points, automated misting units, and negative pressure containment technologies that drastically reduce airborne particulate matter. This not only ensures compliance with environmental regulations but also preserves the quality of stored materials by

preventing contamination and degradation.

Beyond dust control, the company is committed to reducing the overall carbon footprint of enclosed storage operations. Its energy-efficient conveyor drive systems, intelligent motor control technologies, and optimized material flow strategies significantly reduce power consumption while maintaining high operational output. Additionally, by improving bulk density management and optimizing inventory distribution, it helps facilities maximize space utilization, reducing the need for additional infrastructure and associated energy expenditures.

Safety is another fundamental aspect of GBS Group International's storage technology, particularly in high-risk bulk materials such as coal, grain, and combustible minerals. The risk of spontaneous combustion, gas buildup, and fire hazards within enclosed storage units requires advanced detection and mitigation measures. The company's safety systems integrate thermal imaging cameras, real-time gas detection sensors, automated fire suppression units, and early-warning predictive analytics to identify potential hazards before they escalate. These technologies not only enhance worker safety but also protect assets, prevent catastrophic losses, and ensure strict compliance with international safety standards.

GBS Group International's commitment to innovation extends beyond technology — it also prioritizes customization and adaptability in its enclosed storage solutions. No two bulk storage facilities operate under identical conditions, which is why GBS Group International designs

modular, scalable, and fully adaptable storage management systems that can be tailored to specific operational requirements. Whether it involves retrofitting existing storage units with smart automation, integrating new conveyor systems into complex storage networks, or deploying AI-driven control platforms for end-to-end operational visibility, GBS Group International works closely with clients to develop highly specialized, site-specific solutions that deliver measurable performance improvements.

Looking toward the future, GBS Group International remains at the forefront of enclosed storage innovation. It is actively investing in AI-driven warehouse automation, autonomous robotic material handling, and next-generation storage facility design that will redefine industry benchmarks for efficiency and sustainability. Its vision is to create fully integrated, self-optimizing storage ecosystems that leverage real-time data intelligence to continuously adapt, optimize, and improve bulk handling operations.

As the global bulk materials industry continues to evolve, embracing advanced technology, sustainability-driven practices, and data-driven decision-making will be imperative for long-term success. At GBS Group International, the company isn't just responding to industry changes — it is shaping the future of enclosed storage. By delivering intelligent, high-performance, and sustainable solutions, it enables its clients to stay ahead of the competition, maximize operational reliability, and achieve new standards of excellence in bulk material management.

Innovative enclosed storage solutions by REEL Aluminium



REEL Aluminium, a division of REEL International, has established itself as a global leader in providing comprehensive solutions for the primary aluminium industry. With a focus on optimizing processes and enhancing performance, REEL Aluminium offers a wide range of enclosed storage solutions tailored to meet the specific needs of aluminium production, transport and storage facilities. Through years of expertise and dedication to research and development, the company has continually improved its technologies and service offerings to help aluminium producers worldwide to streamline their operations and achieve greater efficiency.

COMPREHENSIVE STORAGE SYSTEMS

Understanding the critical role of efficient materials handling systems in aluminium production, REEL Aluminium provides complete materials handling solutions. These include storage systems designed to manage raw materials such as alumina oxide and calcined coke amongst others, ensuring their safe and efficient storage and transport. Proper storage and handling of these materials are vital to maintaining the quality and integrity of aluminium production, reducing waste, and optimizing energy consumption. The company's expertise extends to industrial cranes, ship loaders and unloaders, facilitating the

seamless transfer of materials from port to pot. By designing systems that integrate with existing operations, REEL Aluminium ensures that clients benefit from enhanced workflow efficiency and reduced operational downtime.

CUSTOMIZED SOLUTIONS FOR ENHANCED EFFICIENCY

REEL Aluminium's approach is centred on delivering customized solutions that address the unique challenges of each client. The company prides itself on working closely with customers to understand their specific requirements and provide solutions that are both practical and innovative. By integrating advanced technologies and cutting-edge designs, REEL Aluminium enhances the efficiency and productivity of aluminium production processes. Its enclosed storage systems are engineered to optimize space utilization, protect materials from environmental factors such as humidity and contamination, and streamline the flow of materials through various stages of production. These storage solutions provide a safe and reliable environment for sensitive materials.

Additionally, REEL Aluminium's enclosed storage systems incorporate automated features that allow for real-time monitoring, reducing the need for manual intervention and increasing overall

operational efficiency. These advanced features help prevent material loss, maintain consistent quality, and reduce energy costs over the long term.

GLOBAL REACH AND EXPERTISE

With its global network of Support & Technology Centres, and a team of highly skilled engineers and employees, REEL Aluminium combines professionalism, expertise, and innovation with knowledge and experience to deliver solutions that meet the highest standards of quality and reliability. Its technology centres serve as dedicated hubs for research, development, and customer support, ensuring that REEL Aluminium remains at the forefront of industry advancements.

The company's international presence allows it to provide rapid support and tailored solutions to clients worldwide. Whether it's a large-scale industrial facility in North America, or the Middle East, or an aluminium processing plant in Europe, REEL Aluminium's experts are available to provide insights, consultation, and hands-on technical assistance. This global network of expertise ensures that customers receive reliable, high-performance storage solutions regardless of their location.

COMMITMENT TO SUSTAINABILITY

In line with REEL International's

commitment to environmental responsibility, REEL Aluminium's solutions are designed to minimize environmental impact.

By optimizing material handling and storage processes, the company helps clients reduce energy consumption and emissions, contributing to more sustainable aluminium production practices. The use of recyclable materials, energy-efficient manufacturing techniques, and sustainable operational strategies underscores the company's dedication to reducing its carbon footprint.

REEL Aluminium also invests in research and development to create storage solutions that align with global environmental standards. REEL continuously seeks to innovate and

develop technologies that promote energy efficiency and waste reduction, reinforcing its role as a responsible industry leader in sustainability. By partnering with clients to implement greener practices, REEL Aluminium supports the industry's transition toward more environmentally friendly production methods and contributes to the collective goal of a net-zero aluminium sector.

CONCLUSION

In conclusion, REEL Aluminium's enclosed storage solutions exemplify the company's dedication to innovation, efficiency, and sustainability in the aluminium industry. Through customized designs, a strong commitment to technological advancement, and a comprehensive understanding

of production processes, REEL Aluminium provides clients with the tools needed to achieve optimal performance and environmental stewardship. As industry demands continue to evolve, the company remains at the forefront of developing new solutions that address emerging challenges while maintaining its commitment to quality and efficiency.

By offering world-class storage systems, expert consultation, and a global support network, REEL Aluminium continues to lead the way in enclosed storage solutions. Whether enhancing existing infrastructure or designing state-of-the-art facilities from the ground up, the company remains dedicated to shaping the future of aluminium production through cutting-edge innovations and sustainable practices.

Tension without apprehension – Legacy Building Solutions' tension fabric buildings



Legacy tension fabric building.

Finding the ideal solution for storing and handling dry bulk commodities involves evaluating the type and quantity of material to be stored, the operational processes required on-site, and the influence of the location's environmental conditions.

Many operations have identified tension fabric buildings as the most practical and economical solution for protecting stockpiles of loose materials such as frac sand, fertilizer, coal and more. From flat

storage to loading and other material handling processes, today's fabric buildings are engineering to enhance operational efficiency.

RIGID-FRAME ENGINEERING

Historically, fabric structures used for dry bulk storage relied on hollow-tube, web-truss framing. However, the hollow metal tubes often lacked the strength and longevity needed for

demanding applications.

The industry experienced a big breakthrough when Legacy Building Solutions introduced the combination of fabric cladding and structural steel I-beam framing. The adoption of rigid-frame structural design, universally accepted within the engineering community, immediately gave fabric buildings a higher level of credibility.

The introduction of I-beam framing also

Legacy structural steel frame.



transformed the design process. Previously, users were limited to selecting from a manufacturer's pre-engineered size offerings. With the rigid-frame approach,

buildings are instead designed with a clean sheet from the start, with the dimensions and layout customized to user specifications.

This advancement has cemented tension fabric buildings as an optimal dry bulk storage solution, especially when facilities require long clear spans. I-beam

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frames allow for larger, more economical designs, creating open spaces for storage, loading, driving and other operations.

SUPPORTING EQUIPMENT

Facility optimization also allows items such as overhead conveyors or other collateral loads to be accounted for in the design. Using finite element analysis software, engineers can calculate the optimal I-beam strength to support hanging loads, rather than over-engineering the entire structure at an unnecessary cost. By suspending equipment from above, the floor space below is left open, allowing for maximum layout flexibility.

For some material distribution applications, cast-in-place concrete retaining walls remain a traditional solution on the floor. However, precast wall systems are becoming more popular, as they can be reconfigured as storage needs change. Some fabric structure suppliers will handle the sourcing, transporting, and installing of precast walls as part of their overall contract.

The versatility of structural steel beams has also enabled fabric building manufacturers to develop more creative designs. For example, if land constraints prevent having a typical rectangular footprint, a multi-section design can be employed, allowing for distinct operational zones within the overall structure.

For instance, in a three-tiered building design, the most spacious section could hold storage bins; a narrow outer section could have overhead doors and function as a drive-through lane for trucks; and finally, a center section could hold hoppers and loading equipment. In effect, tension fabric buildings with I-beam design enable businesses to bring all their operations together under one roof.

CORROSION PROTECTION

An obvious reason fabric is a popular cladding material for buildings is its inherent resistance to corrosion — a critical advantage over metal-sheeted buildings when storing salt, fertilizer, or other corrosive bulk materials. While the fabric itself is immune to rust, the framing system supporting it requires careful protection.

With traditional web truss fabric structures, the hollow tube framing was prone to rusting from the inside out over time. The transition to solid steel I-beams eliminated this weakness, but potential corrosion on the I-beam surface still needed to be addressed.

Most manufacturers initially relied on hot-dip galvanizing, which provides a 3-mil



Legacy bulk salt building.

zinc coating over the beam. While effective in some dry bulk applications, galvanizing truly only delays rust rather than preventing it entirely.

To provide more reliable and long-term protection in corrosive environments, manufacturers like Legacy have adopted advanced coating processes as a standard feature. This involves sandblasting the steel and applying a triple-layer coating — a 3-mil base layer of zinc followed by two 5-mil coats of epoxy paint. This combination creates a durable barrier that outright prevents corrosive dust and moisture from ever touching each steel I-beam.

Epoxy coatings have become popular among building operators looking to combat corrosion more effectively. Many material distribution facilities have extended this approach to other metal equipment, such as conveyors.

FABRIC AND VENTILATION

A standard rigid-frame fabric structure can address ventilation with a low-cost passive system that uses ridge and soffit vents. Such passive systems rely purely on the natural movement of warm air. Allowing for that air flow is typically all that's necessary to manage moisture and humidity inside the building. For situations where additional ventilation is desired, the I-beam frame can support fans and other mechanical components.

Fabric roofs also offer a high degree of translucency, which allows sunlight to permeate the inside of the building and provide ample illumination during daytime hours. The natural thermal characteristics of fabric also help keep the interior

temperature cooler during the summer and warmer in the winter months.

For decades, polyethylene (PE) was the most common fabric for these structures, with polyvinyl chloride (PVC) fabric typically only utilized for more costly projects. Several years ago, Legacy Building Solutions introduced a new higher-quality PVC to provide greater longevity, while also maintaining a comparable price point to PE fabric.

This PVC features a high-strength woven fabric with additional primer and lacquer layers. Through independent testing, the material has been found to retain more than twice the tensile strength of standard PE, thereby providing several more years of life expectancy to a fabric structure.

Combined with advancements in structural frame engineering and fabric attachment methods, modern fabric material enables buildings to withstand harsh environmental forces, such as heavy snow loads or hurricane-level winds. The ability to customize structures for regional climate conditions helps ensure they will provide reliable storage protection in any location.

Today's tension fabric structures provide the engineering flexibility needed to customize layouts, integrate equipment, and optimize operations — all while addressing corrosion concerns with advanced epoxy coatings and durable PVC fabric. Combining faster delivery schedules, lower costs, and the ability to withstand extreme environments, tension fabric buildings deliver unmatched value for dry bulk and other storage applications.

Reassess and redesign – TIS Terminals adapts to new circumstances

The TIS group of terminals is located in Ukraine's largest port on the Black Sea, Pivdenny. "For the past three years, we have been operating under wartime conditions, ensuring the continuous handling of cargo and sea vessels," says Alex Chebruchan (GiM) CEO, TIS-Ruda.

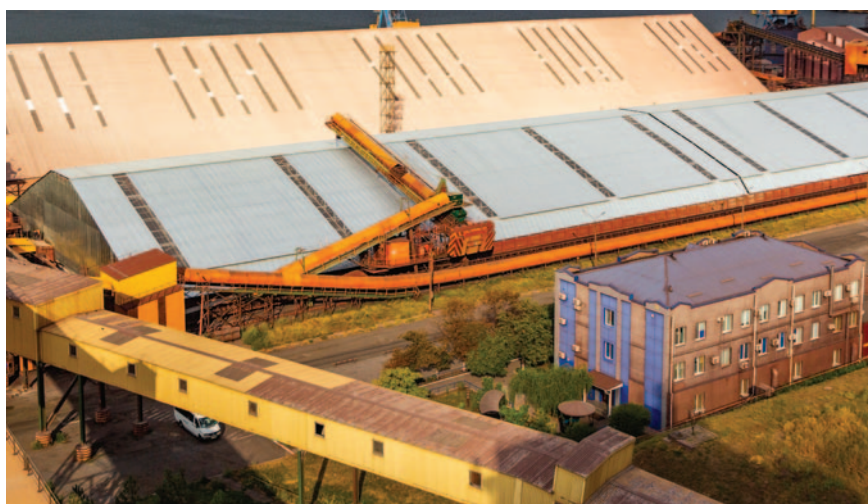
TIS owns the country's most extensive railway infrastructure, state-of-the-art equipment for loading and unloading ships, railcars, and trucks, as well as hundreds of thousands of square metres of indoor and outdoor storage facilities. With the longest berthing line in Ukraine, TIS has established itself as the country's largest logistics hub.

"The Russian Federation's aggression forced TIS management to reassess its business strategies," explains Chebruchan, "The war has forced us out of stability, predictability, and comfort. Suspending such a vital resource was a painful decision for both the state and the facility's owners."

In 2022, TIS' top priority was ensuring the maximum safety of employees and ship crews. It implemented rapid evacuation procedures, emergency medical care protocols, new communication systems, and expanded cooperation with the military. Additional shelters were built to enhance protection. Instead of adopting a wait-and-see approach, the terminals chose to adapt, compete, and continue operations under the new circumstances.

"The second critical step was modernizing our technological infrastructure, as the cargo mix changed significantly. Container shipping came to a halt, while transshipment volumes of metals and mineral fertilizers sharply declined," says Chebruchan. Conversely, demand surged for grain, processed grain products, clay, and ore. "In response, we reconfigured our technological lines," elaborates Chebruchan, "built new storage sites, and expanded covered warehouse space. Our engineers successfully integrated new processes into existing operations, resulting in innovative and unmatched solutions. A prime example is the TIS-Ruda terminal, where the ore transshipment system was redesigned for grain handling. Notably, the cargo filling system using a stacker outside the warehouse, along with the car unloading system, represents a unique engineering achievement."

Next, TIS terminals had to prove its reliability and operational efficiency to cargo owners while sharing some of the risks with customers. It became evident



In 2024 TIS-Ruda built a new ore stockpile covering warehouse.



A technology for discharging of trucks into underground conveyer belt.

that working solely with major market players was no longer sufficient. TIS expanded its partnerships, welcoming clients regardless of company size, cargo type, or shipment volume. Grain companies were the first to respond to TIS' proposals, followed by ore shippers such as Metinvest and Poltava GOK. "By fall 2024, we began processing applications for packaged general cargo," adds Chebruchan.

Thanks to the efforts of the Ukrainian military and government, the 'maritime security corridor' has been stabilized. Ships can now safely navigate from Sulina along Ukraine's coast to the Odessa roadstead without delays. The only factors that could disrupt a voyage are technical issues with a vessel or failure to maintain the required speed. This co-ordinated effort has played a crucial role in restoring cargo flows to Ukrainian seaports.

In 2024 a crisis management group was established to ensure commercial operations. Previously, its task was limited to developing proposals and measures in response to changes that had already

occurred. Now, the group prepares forecasts and proactively develops measures to maintain the company's position in the stevedoring services market.

Looking ahead to 2025, the main cargo categories for the TIS transport hub will include corn, meal, and ore concentrate, which is expected to see significant growth. Imports of coal (both coking and thermal), bagged mineral fertilizers, and even metal products are also projected to increase. Some experts predict the return of container shipping to Ukraine.

However, alongside these positive developments, there are challenges that could impact next year's results. Beyond the war — which remains a universal hardship for both business and human life — several economic factors pose risks. These include declining tariffs for stevedoring services, rising energy and material costs, labor shortages, market instability, and the inability to forecast beyond two to four months. These tasks are yet to be solved.

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Louise Dodds-Ely

How wind fences are revolutionizing coal storage & handling

It is no secret that the enormous amounts of dust generated through mining and handling of coal products is the bane of the industry, writes *Claire Cowie*. Without properly planned dust mitigation strategies in place, coal dust and stockpiles can significantly contribute to air and dust pollution, health conditions and the contamination of our environment. The global need for energy is constantly increasing and with the doubling of coal consumption over the past three decades, industry decision makers, now more than ever, are at a pivotal juncture when it comes to preserving both product quality and the environment. Although not without their benefits, traditional methods of controlling dust and precious BTUs [British thermal units] on stockpiles — water, pile shaping, chemicals — often fall short of the mark when it comes to providing effective, long-term solutions. However, there is hope, other solutions

such as wind fences have emerged as game changing technology in the fight against coal dust and lost BTUs.

WIND FENCES: THE BASICS

The principle behind a wind fence is fairly straightforward: reduce the wind and you reduce the dust. A wind fence reduces wind velocity in a pre-defined area in order to protect it from the impacts of strong winds. They are constructed by erecting a porous material to act as a barrier and reduce dust generation and wind erosion which are critical considerations in the coal industry.

The porous barrier reduces the velocity of wind and significantly diminishes dust by two key modes: upwind fences and downwind fences. Upwind fences reduce the velocity of incoming winds thereby preventing dust particle uptake, whereas downwind fences ‘catch’ dust that is still in motion. As wind directions change, an

upwind fence may become a downwind fence, and vice versa. In an unprotected situation, wind blows up the side of a stockpile and causes particulate matter to become airborne. The smaller the particle, the further it spreads. Some particles ‘can travel hundreds or thousands of miles and influence the air quality of regions far from the original source’.

Now that we’ve looked at what a wind fence does, how does it work? A wind fence slows the wind while allowing a small amount of air to pass through the porous barrier effectively equalizing the differential pressure on either side of the barrier. The result is a ‘sheltered zone’ on the leeward side of the fence without the turbulence and wind eddies that are observed with a solid structure. The size of the area that is protected is dependent on the height and design of the wind fence.

For a well-designed wind fence with controlled porosity, wind speeds can

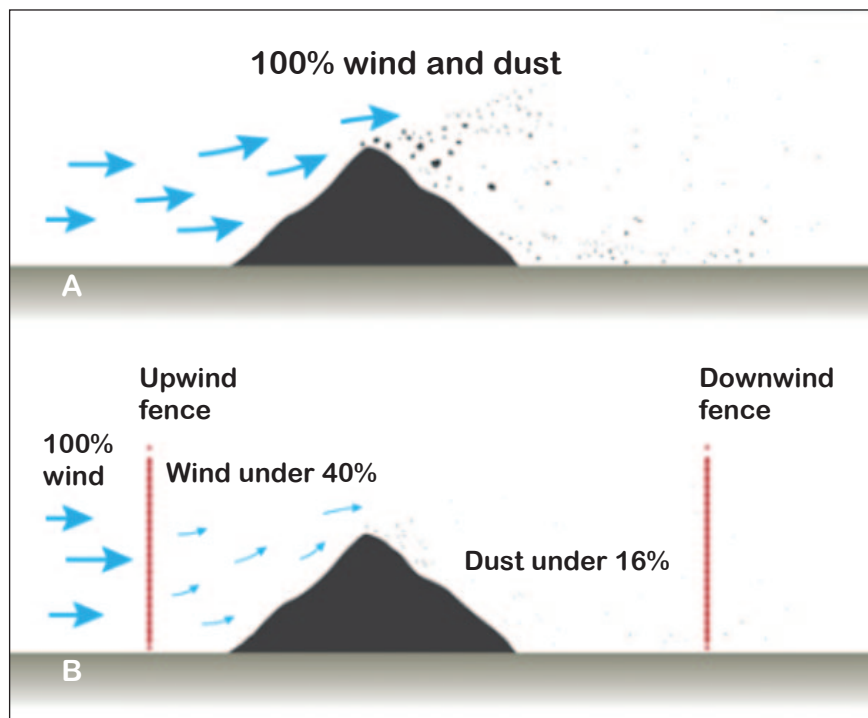
realistically be reduced by approximately 50–75% on the leeward side. Factors such as wind fence material, fence design, site topography, fence orientation, and size of the area to be protected must also be considered to achieve optimal results.

THE CASE FOR WIND FENCES IN THE COAL INDUSTRY

Unprotected or compacted coal stockpiles are exposed to weathering and oxidation which can alter their properties and structure. Over the course of a year a stockpile can lose a substantial amount of its BTUs rendering the coal less effective and resulting in significant financial impacts. A Spanish study on an Endesa power plant revealed that wind-fenced coal piles experienced significantly lower mass and BTU losses compared to standard stockpiles. The study was conducted over 270 days on stockpiles with varying degrees of wind protection. The control pile was a pyramid shape with no wind protection in place. The second stockpile was compacted on a regular basis while an additional stockpile was protected with a wind screen, and yet another protected with a slurry of fly ash and water. The results of the study showed that the pile protected by a wind barrier demonstrated excellent preservation of BTUs and overall mass. Considering that the U.S. Energy Information Administration expects stockpiles to remain well over 100 million tonnes at US power plants alone throughout 2025, it is plain to see that the potential global financial and environmental implication of under protected coal stockpiles is substantial to say the least. The importance of protecting usable coal energy in stockpiles must be underscored.

WIND FENCES IN ACTION

Our real-world example takes us to a port city in South America where a company was in need of mitigation strategies to reduce dust, pollution and preserve public health and coal stockpile integrity. The expertise of WeatherSolve Structures was enlisted to design and implement a custom wind fence



that would provide a long-term solution for the challenges presented. Thorough CFD (Computational Fluid Dynamics) analysis of the site determined that the wind fence design suggested by WeatherSolve could potentially reduce dust emissions by 78%. The fence was constructed based on WeatherSolve's design using its proprietary porous fabric and stress-release clip system. Real world validation studies of WeatherSolve wind fences and CFD studies have shown reduction levels to be within $\pm 5\%$ of analysed CFD results. Research evidences that an effective windbreak can reduce coal dust concentrations at coal terminals by 58–81%, with this project further demonstrating the efficacy of wind fences for coal dust reduction and preservation of pile integrity.

THE FUTURE OF COAL STORAGE & HANDLING WITH WIND FENCES

As we look to the future, wind fences are poised to become a standard feature in coal storage and handling facilities worldwide. Custom wind fences have the unique ability to address a plethora of challenges offering long term solutions with substantial fiscal benefits. As the industry continues to grapple with the pressures of environmental responsibility and operational efficiency, wind fences present a holistic approach to coal management allowing for the requirements of both objectives to be achievable. Dust will always be a part of the coal industry, but with wind fences, we are able to start closing the gap by shaping a cleaner and more efficient future.



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Cleveland Cascades' chutes minimize dust and enable high-speed loading

Cleveland Cascades Ltd located in Thornaby, UK, has been in operation since 1992 and has developed the Cascade chute system for over three decades. The hundredth chute was sold in 2024 reaching a significant benchmark for the company.

Cleveland Cascades' regular customers for systems include shiploader manufacturers who would work with the company closely to ensure the optimum equipment supply for the materials being handled, as well as many end-users who have completed turnkey projects.

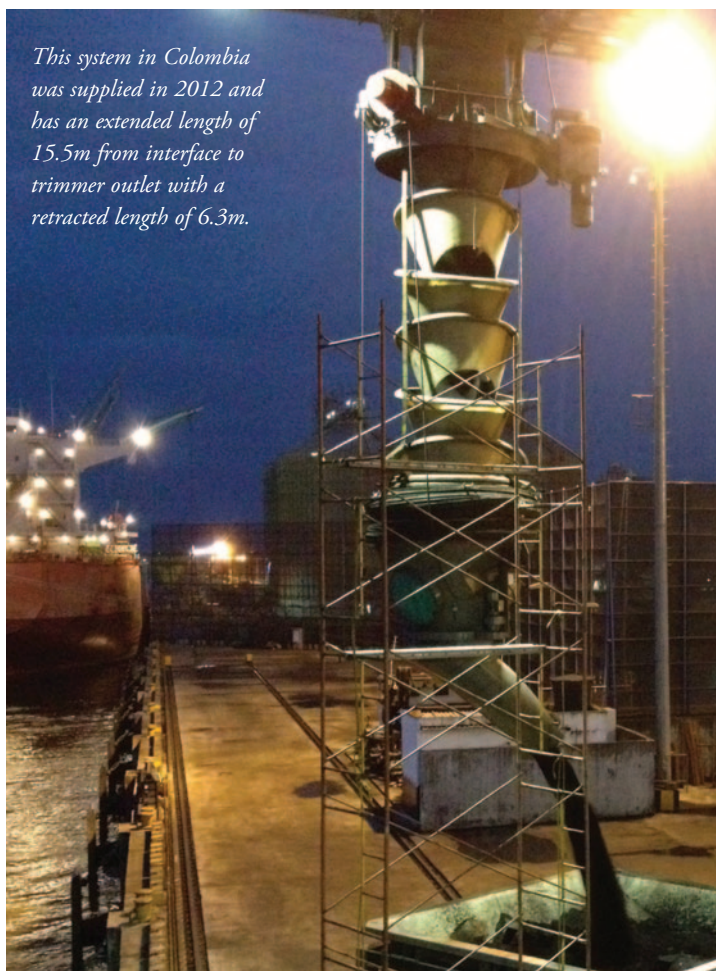
The cascade chute is a specialist loading system designed to control the flow of bulk materials in mass flow; this is a single stream of material moving in high volume at very low velocity through the chute. Mass flow reduces the liberation of dust, and the low velocity down the cascade virtually eliminates the movement of dust-laden air within the surrounding shroud. The shroud is fitted to the outer of the cascade chute and eliminates the adverse effects of side winds.

It is understood throughout the bulk handling industry that coal-based materials can be challenging to handle and have the potential to create large amounts of dust during loading. Also, with coal, there can be large particle sizes meaning high levels of abrasion. The cascade system is designed to control, limit and contain the dust created whilst loading bulk materials. The Cleveland Cascades systems are also designed to protect product quality by minimizing product degradation through the promotion of mass material flow as described above.

This CC711 is specified for loading coal in Colombia, South America. Inset: an example of the rotating trimmer outlet employed in this chute.



This system in Colombia was supplied in 2012 and has an extended length of 15.5m from interface to trimmer outlet with a retracted length of 6.3m.



Cleveland Cascades has supplied over 30 systems dedicated for loading coal products. These systems have been for, vehicle, stockpile, transfer chute and shiploading purposes. Some of these have been Cascade chutes and some have been conventional free fall tube systems.

The majority of these have been supplied across Europe and South America with the remainder spanning across Africa, Asia and Australia.

Cleveland Cascades offers services for on-site engineering for the installation supervision, cold and hot commissioning of the systems. In recent years Cleveland Cascades has also been undertaking complimentary health check services on its chutes; this has allowed it to give close support to customers, and ensure system optimization and recommendations for any adjustments or replacement for worn parts.

Some examples of Cleveland Cascades systems loading coal include:

CC711

CC711 is specified for loading coal in Colombia, South America. This system has an extended length of 15.5m from interface to trimmer outlet with a retracted length of 6.3m.

Cleveland Cascades Ltd 1300 sized cones are used to meet the customers' requirement of 1,000tph (tonnes per



hour) throughput. This translates to a required volumetric loading capacity of $1,176\text{m}^3/\text{hr}$ for the given density of the coal ($0.8\text{t}/\text{m}^3$). The 1300 sized cones have capacity for up to $1,450\text{m}^3/\text{hr}$ leaving room for any material surges which could occur during loading.

This system is fitted with a rotating trimmer outlet. Employing the use of a rotating trimmer outlet allows the material

to reach the corners of a vessel when loading, meaning all of the available space is utilized more efficiently. A typical trimmer assembly can be seen inset in the image on p90. These units are supplied for use with many applications and can be lined with various grade liners for abrasion resistance.

FFT843

For this project a Cleveland Cascades

Freefall Telescopic system was supplied to the Port of Riga in Latvia designed with the intent for loading coal.

The four telescopic tubes allow the system to reach an extended length of 12m from interface to trimmer outlet and provide enough travel to retract the system to be 7.6m long.

The system can be seen installed awaiting loading in the picture above.



One of Cleveland Cascades CC848 coal loading systems was supplied in 2016 to Colombia, South America.

CC848 loading with the shroud down during initial load trials.



Each Freefall Telescopic system is designed around the customers' requirements. On this occasion, the maximum particle size for the coal was

stated as 100mm with required nominal and surge throughputs of 2,000tph and 2,200tph respectively. This allows Cleveland Cascades engineers to create

bespoke head chute and tube designs in order to reduce the risk of blockages occurring whilst loading operations are carried out.

CC848

One of Cleveland Cascades coal loading systems was supplied to Colombia, South America. The extended length of the system is 23.8m long and can retract to a length of 6.1m.

Due to the lump size expected to travel through the system paired with the required throughput, 1,500 sized cones were supplied in order to promote mass material flow and reduce product degradation.

Material detection probes are used to provide automation for raising the system as product is loaded. At the outlet of the system a skirted outlet was supplied, the main advantage of using a skirt is that it allows for dust suppression by maintaining contact with the material pile as the system retracts during loading. This system can be seen loading with the shroud down during initial load trials in the image on p92.



The CC848 has a 23.8m-long extended length and can retract to a length of 6.1m.



Cleveland Cascades offers services for on-site engineering for the installation supervision, cold and hot commissioning of the systems. In recent years, it has also been undertaking complimentary health check services on its chutes.

Bulk coal handling with Mobile Conveying Services Pty Ltd

Bulk cargo handling plays a critical role in sustaining global trade, and MCS leverages its specialized equipment and management expertise to meet the unique demands of the bulk cargo market. With innovative tools such as MCS mobile truck unloaders and conveyors, the company has revolutionized the process, ensuring supply chains remain robust and uninterrupted.

Established in Brisbane in 2007, MCS is a private Australian company that has emerged as a major market expert in the bulk materials handling industry. The company provides specialized equipment, skilled labour, and expert management to a wide array of customers. MCS has built a strong reputation around its fleet of mobile conveying equipment and telebelts, which it owns and operates both domestically in Australia and across regions in the Pacific.

One of the key products MCS handles is coal. The company has supplied its specialized equipment and management solutions to some of the largest coal producers in the region. Coal, a critical resource for numerous industries, demands



MCS overland conveyor and telestacker conveyor unloading coal trains at 2,000tph.

efficient handling to ensure operations keep running and product reaches key markets without delays. MCS plays a pivotal role in this process, offering seamless and reliable coal handling services.

Effective coal handling often requires a comprehensive range of operational platforms, including mobile truck unloaders, transfer conveyors, and radial telestacker conveyors. These systems enable smooth co-ordination and maximize

productivity in coal handling operations. The adaptability of MCS equipment ensures high performance, even in challenging environments such as remote locations or congested worksites.

By combining cutting-edge technology with operational excellence, MCS continues to support the efficient movement of bulk materials, underscoring its role as an essential partner in global trade and resource management.

MCS truck unloader and telestacker stockpiling coal.



Truck tipping coal into truck unloader for transfer to stockpile.





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Ensuring consistent quality and optimizing operational efficiency with Scantech International's COALSCAN range

*COALSCAN 9500X XXL
on a 13,000tph conveyor
for lignite in Europe.*



Scantech International is a major player in the application of on-line real-time measurement technology for bulk materials. The company has developed a broad range of industrial instrumentation utilizing various measurement technologies, including microwave methods. The application of its products is principally in the resource sector including coal, cement, and minerals industries.

Scantech's flagship offering is the highly successful COALSCAN range of representative, real time conveyed bulk material analysers. They have been produced since the early 1980s and use various technologies including: dual energy transmission (DUET) for ash analysis (COALSCAN 2100); microwave transmission for free moisture analysis (ReadiMoist TBM 200 series); prompt gamma neutron activation analysis (PGNAA) for elemental analysis (COALSCAN 9500X); natural gamma for ash content (COALSCAN 1500); 3D infrared camera technology (SizeScan) for particle size distribution, volume and belt speed measurement; and fast neutron and gamma transmission for moisture (CM200)

in conductive materials such as coke. Only the SizeScan uses surface measurement while all others fully penetrate the conveyed flow and measure continuously to ensure representative measurement. To minimize sampling errors, the analysers are usually used on full flows at rates up to 13,000tph (tonnes per hour), but sometimes systems are installed on sample streams. Scantech's focus is to provide the best quality measurement data in digitalizing conveyed flow quality that is affordable, reliable and timely for quality management purposes.

As well as customized configuration of analysers to each client's application, Scantech offers customized calibrations and ongoing support services to ensure measurement performance is continually optimized. The calibration methods developed ensure minimal integration time into operations and availability of reliable data as soon as possible after completion of the commissioning and calibration visit. Remote access to the analysers enables effective remote support to minimize support costs and unnecessary travel and expenses. Scantech has secured long term

supply of radiation sources (including Californium-252) for all its various analyser models ensuring customer certainty of this aspect when considering purchasing of its analysers.

Scantech has sold its COALSCAN analysers to leading coal companies around the world whose focus is high quality data and continuous operational improvement through digitalization and active quality management. They are companies that wish to reduce unnecessary processing but also to optimize utilization of their resources and provide their customers with consistent quality products. COALSCANs are utilized in coal mines, preparation/wash plants, stockyards, rail and shiploading and unloading sites, power stations, and coke making operations and any other locations where coal quality is important.

Many recent sales have been to existing clients requiring more analysers as operations expand or restart given the recent and forecast continued growth in coal demand for energy and steel production. Many companies searching for more efficient performance are more

focused on quality rather than quantity of coal.

Scantech continuously updates the COALSCAN products to ensure the best performing components and overall system design are offered to the market. This allows existing clients to upgrade older systems as components, such as electronics, become superseded and higher performing or more reliable components are developed. Improved calibration processes are adopted as they are developed. A large part of Scantech's role is education of the market to help clients plan and perform effective due diligence processes by better understanding analyser technology and operational aspects. Cheaper systems are almost never better performing, yet pricing can be the overriding consideration during procurement. The performance aspect (which determines payback or ROI) is often overlooked during procurement.

RECENT TECHNOLOGICAL DEVELOPMENTS

While the SizeScan is the latest technology to be commercialized there is still demand for improvements to existing systems. The CM100 has been replaced with the CM200 in the coke-making sector to provide both

increased safety and lower maintenance while ensuring high measurement performance. Moisture in coke is important to consider in blast furnace feed to optimize pig iron production. While many blast furnaces are being replaced there is still a need to optimize those still operating. Ongoing performance optimization of the COALSCAN 9500X continues to add more elements to its measurement capabilities and its high specification can already account for conveyor belts containing chlorine and steel cords. It appears that COALSCAN 9500X is the only PGNA system offered on the market that is proven to directly measure carbon content with accuracy, and be successful in accurately measuring conveyed lignite quality in flows up to 13,000tph on 2.7m (9 feet) wide steel corded conveyors at speeds up to 7m/s (23 feet per second). Many improvements are the result of collaboration with customers seeking new solutions unavailable elsewhere.

ABOUT SCANTECH INTERNATIONAL

Scantech analysers use proven technologies in customized configurations to digitalize conveyed flows in coal, cement, minerals,

steel, recycling and alternative fuel industries. Over 1,400 analysers have been sold in over 80 countries. Its analysers provide the best precisions over the shortest measurement times available. Scantech has become a leading supplier of representative, real time elemental and moisture analysers to the global minerals industry.

Many unique capabilities have been developed with the GEOSCAN (PGNA equivalent to COALSCAN 9500X) including direct measurement of gold in conveyed ores, phosphorus in iron ores, elements such as Cl, Na and K in potash, and much more. All analysers are designed for no contact with the conveyor or material, significantly reducing maintenance cost, need for wear components, and potential for damage to the analyser or conveyor belt.

GEOSCAN has been successfully applied to analysis of big bags and slurry flows in various commodities. Scantech's network of qualified and well-trained support staff ensures a local presence in each major region and prompt response to customers for any assistance needed. Scantech analysers are proudly designed and manufactured in Australia.



Revolutionizing coal terminal operations: AI-driven conveyor monitoring for unparalleled efficiency and sustainability



In the ever-evolving landscape of global coal trade, port terminals face mounting challenges that demand a shift in operational strategies. With fluctuating market demands, increasingly stringent environmental regulations, and the constant pressure to optimize efficiency, the ability to mitigate downtime, enhance throughput, and ensure compliance has become a strategic priority. The coal industry, historically reliant on conventional handling and maintenance methods, is now at a turning point where innovation dictates competitiveness.

Among the most critical aspects of coal terminal operations is the handling of bulk materials, where conveyor belt systems serve as the backbone of efficiency. These systems operate under extreme conditions, enduring continuous exposure to abrasive coal dust, high mechanical loads, and harsh environmental factors. Unplanned failures in these systems can lead to severe operational disruptions, costly repairs, and significant financial losses stemming from supply chain inefficiencies. Traditional maintenance models, based on reactive or scheduled servicing, are proving increasingly inadequate in preventing these challenges. To remain competitive, coal terminal operators must transition toward predictive, data-driven solutions that harness cutting-edge technology to improve system resilience and efficiency.

GBS Group International is leading this

transformation by integrating AI-driven conveyor monitoring systems that not only enhance equipment reliability but also redefine operational efficiency. By leveraging artificial intelligence and real-time data analytics, these solutions enable terminals to anticipate and prevent failures before they occur, reducing downtime and optimizing overall performance. The continuous monitoring of critical conveyor parameters such as belt alignment, vibration levels, load distribution, and thermal variations allows for a level of precision in maintenance planning that was previously unattainable. Early detection of irregularities translates into proactive decision-making, extending the lifespan of key infrastructure components and significantly lowering maintenance costs.

The integration of cloud-based monitoring platforms further enhances the agility of terminal operations, granting remote access to real-time conveyor system data. Operators can make immediate adjustments to optimize speed, schedule preventive maintenance, or initiate emergency shutdowns as necessary. This level of automation and control introduces unprecedented flexibility, ensuring that coal handling facilities can swiftly respond to both anticipated and unforeseen operational challenges. For executives and decision-makers, this capability not only strengthens risk management but also aligns with the

broader industry movement towards digitalization and intelligent automation.

Beyond operational efficiency, sustainability has become a defining factor in the future of coal terminal operations. As regulatory scrutiny intensifies and environmental accountability grows, the ability to minimize emissions, reduce waste, and optimize energy consumption is no longer optional — it is essential. GBS Group International is at the forefront of this shift, implementing intelligent resource management systems that drive sustainability initiatives without compromising efficiency. The AI-driven monitoring platform identifies opportunities for energy savings, reducing unnecessary power consumption while maintaining performance standards. Additionally, innovative programs for repurposing worn-out conveyor belts into secondary raw materials contribute to a circular economy, mitigating environmental impact while promoting sustainable business practices.

Safety remains another paramount concern in coal handling facilities, where dust accumulation, high-speed mechanical systems, and combustible materials present inherent risks. AI-based monitoring systems play a crucial role in enhancing safety by providing instant alerts on potential hazards, including overheating components, structural fatigue, and abnormal belt slippage. The ability to preemptively address these issues not only

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safeguards personnel but also ensures compliance with increasingly rigorous industry regulations. In an era where workplace safety is directly linked to operational reliability and corporate responsibility, adopting proactive risk mitigation strategies is imperative for long-term business viability.

As the global coal industry navigates shifting market dynamics and regulatory landscapes, the role of smart technologies in terminal operations will only continue to expand. The transition towards AI-powered

automation and predictive analytics represents more than just an incremental improvement — it marks a fundamental shift in how coal is handled, transported, and managed at an industrial scale. GBS Group International remains committed to driving this transformation, investing in research and development to refine machine learning algorithms, enhance automation capabilities, and integrate intelligent monitoring systems into broader industrial IoT networks.

For coal terminal executives, logistics strategists, and industrial decision-makers,

the adoption of these advanced technologies is not just about embracing innovation — it is about securing long-term operational resilience and maintaining a competitive edge in an unpredictable global market. The future of coal terminal operations belongs to those who lead with technology, foresight, and adaptability. GBS Group International is dedicated to ensuring that coal handling facilities worldwide operate with maximum efficiency, safety, and sustainability, setting a new benchmark for the industry.



SAMSON strengthens bulk terminals and coal handling with the redesigned BF0415T Stormajor® Boom Feeder

SAMSON has relaunched its BF0415T Stormajor® Boom Feeder, an upgraded bulk material handling solution developed to meet the evolving needs of modern industry. First introduced nearly a decade ago, the BF0415T has been comprehensively re-engineered to provide greater flexibility, efficiency, and performance for applications across bulk terminals, coal yards, quarries, ports and terminals, rail operations, power generation, and mineral processing plants.

With the updated BF0415T, SAMSON continues its commitment to delivering practical, high-performance equipment designed to handle demanding material transfer tasks. Whether for coal stockpiling, barge loading, rail wagon and truck loading, material intake and transfer, emergency feed, or maintenance bypass, this mobile boom feeder is engineered to enhance operations across multiple sectors.

ENHANCED PERFORMANCE FOR BULK AND COAL HANDLING APPLICATIONS

The BF0415T Stormajor® Boom Feeder is a tracked mounted, bulk material handling system featuring a wide loading section combined with a luffing and slewing boom. It is designed to handle a variety of bulk materials, with a particular focus on coal, aggregates, petcoke, fertilizers, and other minerals, delivering a feed rate of up to 1,000tph (tonnes per hour). Additionally, it can handle materials with a density of up to 1.6t/m³, making it a highly capable solution for a high-volume of bulk materials across multiple applications. Its flared entry design improves vehicle alignment, optimizing material flow and increasing holding capacity. By reducing the need for extensive access ramps, the BF0415T enhances operational efficiency while maintaining a compact footprint.

Mobility is a key feature of the new design. The BF0415T can be transported over distance easily on a flatbed truck, offering maximum flexibility for site operators and owners who need equipment that can be relocated quickly and efficiently. This transportability is particularly valuable for operations that require seasonal or project-based material handling solutions.

INTELLIGENT DESIGN FOR MAXIMUM EFFICIENCY

At the core of the BF0415T is a PLC-based



control system, providing operators with precision control over proportional speed, slew, and luffing functions. A handheld remote control ensures ease of operation, allowing adjustments to be made swiftly and safely, reducing downtime and enhancing productivity. This level of control makes the BF0415T ideal for high-precision loading and stockpiling applications, particularly in coal handling environments where material flow management is critical.

The BF0415T's heavy-duty tracked undercarriage ensures stability and durability, even in challenging environments. Its design enables it to operate in varied conditions, from coastal coal terminals to inland processing plants, offering a reliable and adaptable solution for bulk material handling.

Key features and benefits

- ❖ Standardized design provides a consistent and proven solution for bulk and coal handling applications.
- ❖ Handles up to 1,000tph, supporting large-scale operations.
- ❖ Capable of handling materials with a density of up to 1.6t/m³.
- ❖ Easily transportable on a flatbed truck, allowing for quick relocation.
- ❖ Flared entry design improves vehicle alignment and material handling efficiency.
- ❖ PLC-based system with handheld remote control for precision operation.
- ❖ Suitable for coal stockpiling, barge loading, rail/truck loading, and material transfer.
- ❖ Heavy-duty tracked undercarriage ensures reliability in demanding environments.
- ❖ Delivered with minimal set-up for timely operations

MEETING THE NEEDS OF MODERN BULK AND COAL HANDLING OPERATIONS

The redesigned BF0415T reflects SAMSON's commitment to continuous

improvement and customer-driven innovation. By refining an already trusted design, SAMSON has created a solution that meets the evolving challenges of bulk and coal material handling, helping operators improve efficiency, reduce downtime, and optimize throughput.

"We are confident that the redesigned BF0415T will meet the needs of operators looking for a flexible and high-performance material handling solution," said Matthew Jones, Managing Director at SAMSON. "This upgraded version offers improved functionality, ensuring our customers can continue to manage their operations with ease."

With the newly redesigned BF0415T now available, SAMSON is inviting industry professionals to learn more about its capabilities. The company will be hosting product demonstrations and live events, offering firsthand insights into how this latest equipment can benefit bulk material and coal handling operations.

ABOUT SAMSON

SAMSON Materials Handling Ltd, based in Ely, UK, is a key member of the AUMUND Group, specializing in mobile bulk material handling solutions. With over 50 years of experience, SAMSON designs and manufactures flexible, high-performance equipment for ports, terminals, power plants, and industrial applications.

As part of the AUMUND Group, a global leader in conveying and storage technology, SAMSON benefits from an extensive worldwide network. The group includes AUMUND Fördertechnik GmbH, SCHADE Lagertechnik GmbH, TILEMANN GmbH Chains & Components, AUMUND Group Field Service GmbH, and AUMUND Logistic GmbH. Operating across 20 locations in Asia, Europe, North and South America, and supported by five strategic warehouses, the AUMUND Group delivers innovative and reliable solutions for bulk material handling worldwide.

Bruks Siwertell wins new shiploader contract for the US Port of Long Beach

COAL IS AMONG PRODUCTS HANDLED BY NEW SHIPLOADER

Bruks Siwertell has won an order to deliver a new Bruks shiploader to the US Port of Long Beach, California. Following a competitive public request for proposals (RFP) process, Bruks Siwertell's innovative design and proven technical expertise secured this high-profile contract.

"The Port of Long Beach is one of the busiest and most influential ports in the US, and also has some of the country's strictest environmental protection regulations," notes Daniel Pace, Sales Manager Americas, Port Technology, Bruks Siwertell. "Our successful bid highlights Bruks Siwertell's ability to think outside the box to deliver a tailored, technically advanced, innovative solution for a complex challenge. It also strengthens our position as a trusted partner in global port technology.

"We offered a shiploader with a low weight, efficient design that fits seamlessly within the existing dock space, along with the capacity to load larger Capesize vessels. Additionally, Bruks Siwertell's ability to meet the Port's strict delivery timeline, our financing capabilities, and technical expertise were key factors in securing this contract," he continues.

The fully enclosed travelling and shuttling Bruks ship loader will handle a wide range of dry bulk materials, including coal and petcoke at a rated capacity of 5,000tph (tonnes per hour), and soda ash, pyrobor, and sulphate at 2,000tph, loading vessels up to 120,000dwt.

"These materials have very different characteristics, which require numerous design nuances," explains Pace. "Multiple shifts of washdown are required between vessels to ensure that there is no material cross-contamination. Furthermore, when handling coal and petcoke, a water misting system is required at the transfer points, along with a specialized free-fall spout with trimming spoon. When handling dusty soda ash, a dust collection system is required at these transfer points and a cascade spout. To keep the dust collection units free from contamination, they will be fitted with isolation gates.

"To comply with California's environmental protection requirements, along with full containment, all washdown water needs to be directed to designated treatment areas on the dock," he adds.

As part of the turnkey contract, the shiploader will be delivered fully assembled to the Port's Pier G bulk terminal via heavy-lift vessel. Final connections and commissioning will be completed on-site by Bruks Siwertell, ensuring seamless integration into the port's operations. It is planned to commence service towards the end of 2026.



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Rulmeca has always been at the forefront of the design and manufacturing of bulk material handling components — coal is one of the major products handled by its equipment. Rulmeca's wide range of products includes rollers, transoms, pulleys, motorized pulleys, covers, cleaners and other accessories to set up belt conveyors. Thanks to its competence, the company provides reliable support and can recommend the product most suited to the specific application.

Among possible fields, Rulmeca bulk handling solutions are ideal to assemble mining conveyor systems. Rulmeca material handling components are used at every stage of this application: from the initial dig and transportation of any type of materials from the extraction point to the production of refined market-ready materials and all the intermediate steps required.

THE MOST EFFICIENT SOLUTION IN MINING CRITICAL ENVIRONMENTS

While the design for each project is highly specific, material handling components are the elements that make a difference in mining conveyor belts. Strong, safe and reliable parts are required to support heavy loads and resist to wear, due to the various conditions of materials and environment. The quality and durability of the design and materials of Rulmeca products guarantee full efficiency and functionality in mining critical environments. They can be used for any conveyor belt that requires the transportation of heavy and abrasive materials (coal, lignite, gold, copper and so on) and in any range of temperatures, both for underground and open-air extraction.

Therefore, Rulmeca is now a reliable partner for the updating or modernizing of production lines as required in many

RULMECA worked with Cintasa to ensure continuous improvement of its products, with the delivery of different types and sizes of rollers.



industrial sectors. Indeed, the growing demand for raw materials combined with systems offering ever-higher levels of performance require increasingly flexible handling. To this end, the use of conveyor belts is undoubtedly the fastest, most practical and economic solution.

CASE STUDIES

❖ **Customer:** Cintasa — design and manufacture of conveyor systems; coal and lignite mining in Spain.

The main activity of Cintasa centres on the engineering, production and installation of handling, transport and warehousing element systems.

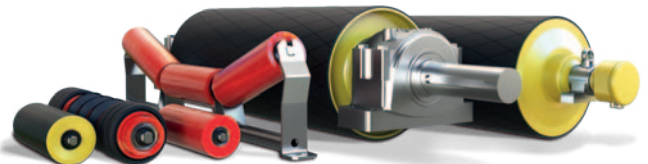
Its wide range of conveyors is based on diverse systems such as belts, rollers, chains, metal plates, buckets, etc. Moreover, Cintasa incorporates distinct auxiliary elements in its installations, which could be: galleries, silos, hoppers, structures, etc. This specialization in the field of conveyors and in all its variants for 50 years has given Cintasa the necessary experience to be able to offer the client an ideal solution to each requirement.

SOLUTION

There are many reasons why RULMECA is a reference provider for CINTASA. Both CINTASA and RULMECA are family



PREMIUM COMPONENTS FOR MATERIAL HANDLING



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MOVING AHEAD



and cleaner; they also use guide and garland rollers. Sometimes it also uses drum motors.

BENEFITS

The main advantage provided by RULMECA products is their quality, which meets the standards Cintasa has established for its products and the recognition among its customers. It is absolutely necessary to position itself as a quality manufacturer, and RULMECA plays a fundamental role in this position. RULMECA products have helped Cintasa to evolve in the design of the products and in improving quality. Cintasa is very satisfied with RULMECA products, but above all, with the human capital that forms part of it. Immediacy in delivery and adjusted prices are also valued. In Cintasa's evolution to new projects that imply more responsibility, it wants RULMECA's experience to be able to support and help it to achieve its objectives.

❖ **Customer:** SAHAKOL Equipment, Thailand.

The long-term relationships of RULMECA

businesses, which makes them share values and interests that go beyond the business and in which the personal relationship is also essential to be able to confidently deal with the issues that concern them and that they can share. Beyond sharing values and principles, RULMECA is a collaborator that has allowed Cintasa to evolve in improving the quality of its products. RULMECA's quality is widely recognized worldwide, and all of Cintasa's clients (engineering, cement, the chemical sector, etc.) perceive it. The relationship between both companies goes back many years; they have celebrated successes, they maintain fluid communication and trust is mutual both in the products and in the people who are part of both companies. CINTASA mainly consumes rollers of different types and sizes since its projects are designed to measure. Within the range of rollers, the company mainly uses the PSV, MPS, impact, and return series, both smooth and scraper

Roller garland.



PSV roller.



Motorized pulley.



In late 2016, RULMECA Germany GmbH received an order for rollers and garlands from SAHAKOL for use in Thailand.

to the owner of the opencast mine, as well as to the service provider for the overburden excavation — as well as very good experiences with RULMECA products meant that customer SAHAKOL found the decision to work with RULMECA again a very easy one.

At the end of 2016, RULMECA Germany GmbH received an order for the delivery of rollers and garlands for the equipment of the new conveyor belt systems of the overburden project No. 8 in opencast mine MAE MOH in northern Thailand. Approximately 18km of belt system in the widths 2,600mm, 2,200mm and 1,800mm are equipped with RULMECA technology for the upper and lower belt as well as the transfer stations. SAHAKOL Equipment Public Company Ltd. is the contracting partner for the procurement of the rollers and garlands. SAHAKOL operates conveyor belt systems for the EGAT (Energy Generating Authority of Thailand). The long-term relationships of RULMECA to the owner of the opencast mine as well as to the service provider for the overburden excavation and the associated very good experiences with RULMECA products made SAHAKOL easy to make the decision. In the very well

maintained belt systems, ten-year and longer service life is common.

In Thailand, too, the use of conveyor systems is increasingly seen from an ecological point of view. Low energy consumption and low noise emissions are included in the requirements for bearing rollers, as well as long life and associated material and cost savings.

SAHAKOL decided to use rollers with a diameter of 194mm. Compared to the diameter of 159mm used in older belt systems; there is a considerable advantage in terms of energy consumption due to the considerably smaller pushing rolling resistance. With a belt width of 2,000mm and a belt length of 1,887m, the reduction in the pushing rolling resistance of up to 300kW is achieved.

Taking into account the fact that the energy is generated in a coal-fired power plant, this means a CO₂ saving of approx. 2,400 tonnes/year. These data have convinced the owner of open pit mining and the operator of the conveyor systems. In the peripheral equipment such as excavators, crushing plants or spreaders, RULMECA rollers of the same type are used on the operator's request, which significantly improves spare parts stock

and availability.

Energy generation from coal is an important part of the energy mix for the emerging economies in Southeast Asia. With advanced technologies, such as those from RULMECA, this can help to limit the emission of climate-damaging CO₂. Until renewable energies have increased their share so that CO₂ emissions can be reduced, the focus lies with the Thai energy supplier EGAT on the efficiency improvement of existing plants.

Also in other industries and regions of the world, the energy-saving and noise-reduced roles of RULMECA find their field of application. Whether in bulk port installations, iron ore or copper mining, building material production or the transport of other bulk materials RULMECA rolls are enjoying a strongly growing demand. The roller types developed in the RULMECA laboratory can be largely adapted to the customers' requirements and thus provide maximum efficiency for the operator. The modern and powerful RULMECA test bench is specially designed for tests and developments in order to adapt the products to the ever-increasing market requirements.

PSB Inspection's focus on dry coal ensures high level of service for clients

PSB Inspection, founded in 2017 and headquartered in Vlaardingen near the Port of Rotterdam, has established itself as a trusted partner in the handling and inspection of dry coal. With decades of combined expertise in the bulk cargo industry, the company provides comprehensive services to ensure the quality, safety, and compliance of coal shipments, catering to the growing demands of global trade.

EXPERTISE IN DRY COAL INSPECTION

Coal represents a significant portion of the global dry bulk cargo market, and PSB Inspection has developed specialized expertise in its handling and inspection. The company offers a broad range of services to support coal logistics, including:

- ❖ **Inspection and sampling:** PSB Inspection ensures that dry coal shipments meet the required quality standards by supervising the loading and unloading of seagoing vessels and inland barges. Inspections include checks on cargo holds, onboard equipment, and the overall condition of the coal.
- ❖ **Sample preparation and laboratory analysis:** to verify the quality and

properties of coal shipments, PSB Inspection collects representative samples and conducts laboratory analyses. These tests provide essential data on coal composition, including calorific value, moisture content, ash levels, and sulphur content.

- ❖ **Weight verification:** accurate weight measurements are crucial in the coal trade. PSB Inspection performs draught surveys and weight determinations for vessels ranging from coasters to Capesize ships, ensuring transparency and accountability in transactions.
- ❖ **Temperature monitoring:** coal is prone to self-heating and spontaneous combustion during storage and transportation. PSB Inspection conducts regular temperature measurements to monitor the safety of coal cargoes and prevent potential hazards.
- ❖ **Gas and toxic measurements:** the company has recently introduced gas and toxic measurement services to address the risks associated with coal handling, such as the release of hazardous gases during storage or transport. Certified experts utilize

advanced equipment to detect and manage these risks effectively.

MEETING THE NEEDS OF A GLOBAL CLIENTÈLE

PSB Inspection serves a diverse range of clients, including international trading companies, power plants, and industrial producers. The company's focus on dry coal has allowed it to develop deep insights into the challenges and requirements of this sector. By adhering to strict international standards such as ISO and ASTM, PSB Inspection ensures that its services meet the expectations of its global clientèle.

STAYING COMPETITIVE IN THE COAL MARKET

The global coal industry faces increasing scrutiny due to environmental concerns and the rise of alternative energy sources. Despite these challenges, coal remains a critical energy source, particularly in emerging markets.

PSB Inspection has remained competitive by investing in advanced technology and expanding its range of services to address the evolving needs of the industry.

Recent innovations include the addition



of gas and toxic measurement capabilities, which have become essential in ensuring the safe storage and transportation of coal. The company's modern laboratory is equipped with state-of-the-art tools to deliver accurate and reliable analyses, helping clients make informed decisions about their coal shipments.

RECENT CONTRACTS AND DEVELOPMENTS

In recent years, PSB Inspection has handled several high-profile contracts in the dry

coal sector, reflecting its strong reputation in the market. The company's ability to provide end-to-end solutions — from inspection and sampling to detailed analysis — has made it a preferred partner for many clients worldwide.

Additionally, PSB Inspection has expanded its operations to cover emerging coal markets. This strategic move allows the company to tap into new opportunities while continuing to serve its existing client base effectively.

SUPPORTING SUSTAINABILITY IN COAL HANDLING

Although the global energy landscape is shifting towards renewable sources, coal remains a vital resource for many industries. PSB Inspection recognizes the importance of balancing economic needs with environmental responsibility. The company actively works with clients to ensure that coal shipments comply with safety and quality standards while minimizing environmental impact.



Negrini company, established in 1967, specializes in engineering and manufacturing a comprehensive range of grabs and buckets for rope machines and crawler mounted cranes; they are employed to do many jobs. Negrini buckets and grabs are very well-known for quality as well as for the very accurate and skilful engineering work; in fact Negrini supports their clients by analyzing the job to be done and, if needed, by adjusting the standard design of grabs and buckets to enhance their performance once in operation.

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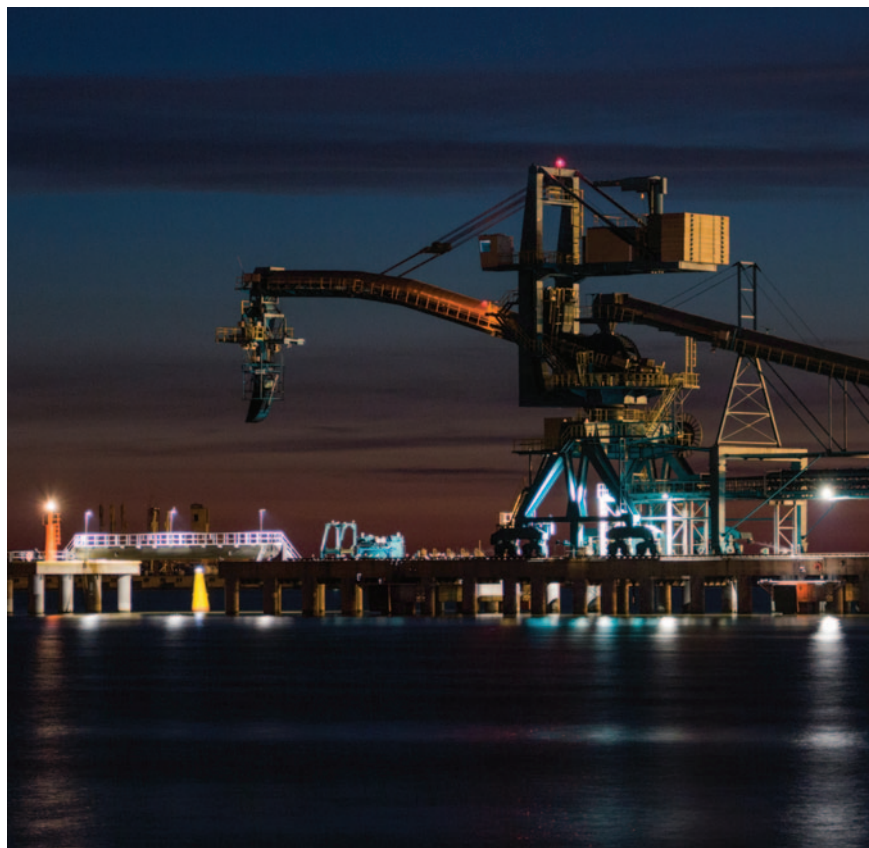


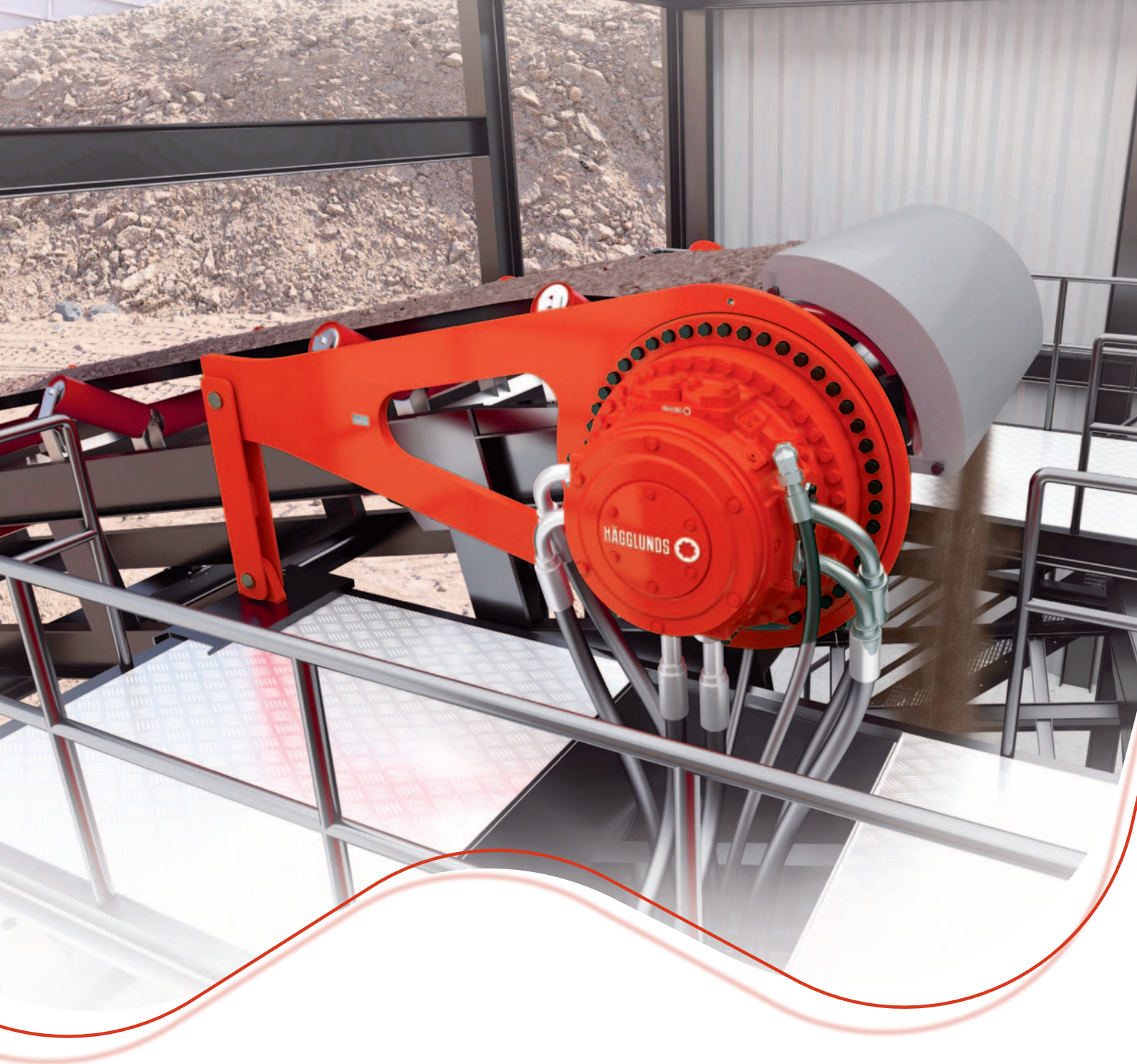
For instance, the introduction of advanced gas and temperature monitoring services helps prevent incidents such as spontaneous combustion or the release of harmful emissions, ensuring safe and sustainable coal handling practices.

COMMITMENT TO EXCELLENCE

PSB Inspection's success in the dry coal sector is built on its commitment to excellence. The company's team of experienced professionals combines technical expertise with a client-focused approach, delivering tailored solutions that meet the unique challenges of coal logistics. Whether it's verifying the quality of a coal shipment or ensuring the safety of its storage, PSB Inspection provides reliable and precise services that clients can depend on.

As the demand for high-quality inspection and analytical services in the coal industry continues, PSB Inspection remains a trusted name, offering innovative solutions to meet the challenges of a dynamic market.





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Clean belts: coal conveyor discharge for less spillage & dust



Discharge from the belt no longer needs to be a dirty and dusty process (all photos: ©Martin Engineering 2025).

Suggesting the 'total discharge' of coal from a conveyor belt is enough to give operators and maintenance staff of coal mines and transfer terminals a good belly laugh, writes Dan Marshall, Process Engineer, Martin Engineering. In the dirty and punishing atmosphere of coal, there are no absolutes. Spillage, carryback, chute clogging and fugitive dust emissions obstruct walkways, foul rolling components, cause unscheduled downtime and degrade air quality, but they don't have to. Manufacturers of innovative equipment solutions are always striving to improve workplace safety and production efficiency by eliminating the causes as much as possible.

Following the installation of modern belt cleaning technology, operators realize that the volume of material entering the transfer chute grows exponentially, rather than piling around the discharge zone. This greater volume can lead to blockages in the transfer chute followed by downtime to unclog it. However, designers can take a holistic approach and engineer an efficient discharge transfer point with components that work together. This approach strives to make equipment last between scheduled closures, improves safety by minimizing

maintenance, and addresses the causes of inefficiency.

SIGNS OF INEFFICIENCY AT A DISCHARGE ZONE

The discharge zone starts at the last troughed idler before the conveyor belt flattens and encounters the head pulley.

Cargo falls from the conveyor into a transfer 'drop' chute that can lead to several places including another conveyor, a storage silo/pile, a transport vehicle, etc. The primary cleaner is located after the discharge stream to clear any adhered material caused by the weight or characteristics of the cargo (moisture, cohesion, heat, etc.). A secondary



When material carryback touches the belt, the abrasion erodes the untreated return side and splice, reducing the belt's life.

cleaner clears dust and fines from divots and cracks in the belt. Material cleared from the secondary cleaner is generally directed to a sloped surface connected to the transfer chute.

Obvious signs of discharge inefficiency are spillage, carryback, chute clogging and dust. Alone, each can lead to a workplace safety violation, together they result in unscheduled downtime and an increased cost of operation. From an operational standpoint, three of the most expensive consequences are workplace injuries, belt damage from friction and fouled equipment replacement.

SPILLAGE AND SAFETY

Primary cleaners or 'scrapers' can fail in several ways, causing adhered coarse aggregate and caked fines to pass by the blade and spill around the discharge area. This fugitive material can build up quickly and encapsulate the belt, fouling rolling components and causing the belt to ride on top of the course pile, leading to serious belt damage and increased belt temperatures from friction.

Fugitive material spills into walkways, obstructs access for maintenance and creates a trip and fall hazard. When coarse grit fouls rollers it causes them to freeze, leading to friction and high-heat damage to the vulnerable return side of the belt, lowering the equipment's life. To avoid belt fires and dust explosions, seized idlers/rollers should be maintained and changed right away, which makes clear access to the system imperative.



Innovative cleaner designs require less monitoring and no tensioning.

Cleaning spillage can be costly, divert staff from other essential duties, and become a workplace safety issue if workers are clearing material around a running belt. What may seem like a routine job in the beginning, clearing spillage by either shoveling it back into the cargo stream or into bins, requires more labor as time goes on and the problem worsens. Clearing material using machinery (front loaders, industrial vacuums, etc.) can result in accidental contact with the stringer or supports, potentially leading to belt mistracking.

Mistracking can be a major cause of

spillage, not just along the belt path, but at the discharge point as well. The blade is centred on the head pulley, but if the belt is not, adhered material becomes spillage.

- ❖ **Recommendation:** install a belt tracker a distance of three to four times the width of the belt prior to the head pulley the head pulley as the trough angle flattens to ensure the belt hits the head pulley in the center.

Over-/under-tensioning and/or extending blade changes for too long can also cause spillage. Over-tensioning causes rapid wear on the belt/splice and lower blade life. Under-tensioning allows material to pass

Loading coal into a barge can create dust both in during transfer and on the return side of the conveyor.



without being removed. Allowing primary cleaners to go too long can result in pull-through, where the force of the belt causes the blade to face the opposite direction and, in some cases, break off.

❖ **Recommendation:** enter a service agreement with the blade manufacturer to regularly monitor, tension, and change the blades as needed. Consider installing a modern assembly that allows workers to slide units from the stringer for fast and easy one-person blade changes. There is also the option of innovative cleaner technology with 4x the life of the normal primary blade and needs no tensioning for the life of the blade.

REDUCING CARRYBACK

Anything that clings onto the return side of the belt and travels with it is considered carryback, which can seriously damage a system. Not only is it a major source of fugitive dust and fines, but it migrates easily into return rollers and take-up pulleys, fouling the bearings, drives and the face of the roller. The grit grinds down roller bearings and leads to excessive friction heat, causing them to misshapen and seize.

Like spillage, carryback can migrate to the non-carrying underside of the belt. These chunks travel all the way to the tail pulley. The intense pressure between the pulley and the belt causes the hard sharp mass to damage the vulnerable side of the belt and the pulley face, cycling over and over, delivering more damage as it does. Along with lowering the life of the belt, dust and fines can get into these blemishes and foul the pulley face.

When a roller or pulley face becomes fouled, it is caked with abrasive grit that can degrade and damage the belting over time. In some cases, fouling causes slippage which can disrupt the smooth operation of the belt and promote mistracking.

❖ **Recommendation:** if there is adequate space, install secondary and tertiary cleaners to ensure the belt is absolutely clean on the return. To improve safety, consider units that allow a single worker to pull them away from the stringer for faster external servicing. Consider a diagonal or V-shaped plough placed underneath the loading zone right before the tail pulley that rides on the underside of the belt removing any loose travelling material. For more effective cleaning and reduced friction damage, consider a plough with torsion arms rather than one held in place by chains. Install belt trackers or



The plough diverts fugitive carryback to either side of the system, ensuring tail pulley health.

crown rollers along the upper and low belt path to ensure alignment.

SAFELY ADDRESSING BULK HANDLING CLOGS

A clogged transfer chute or hopper is one of the most dangerous situations in bulk handling. Untrained and uncertified (enclosed chute entry certification) personnel should never enter a clogged chute or bin under any circumstances. A sudden discharge can be deadly as an unknown void engulfs and crushes a worker. Material adhered vertically to the sides can loosen and send a sheet of debris falling on anyone occupying the vessel.

BUILD-UP POINTS IN CHUTES INCLUDE:

- ❖ **Rockboxes** — shelves, even if they're sloped, can experience buildup.
- ❖ **Exit gates or doors** — as these help control flow, they are also prone to clogging.
- ❖ **Sloped points** — under the secondary cleaner, chute grades, or located at choke points.
- ❖ **Metal surface grain** — the metal grain of chute plating should match the flow of cargo.
- ❖ **Exposed surfaces** — surfaces where moisture can collect and cause buildup.
- ❖ **Damaged surfaces** — surfaces that have scratching, denting, creasing, or divots.

Misguided practices for addressing buildup are banging on the sides of the hopper with a mallet or to loosen the obstruction by poking at it from below. In some operations, clogs are so frequent that spots for pounding are marked and mallets are

left in the area for convenience. This is hazardous because it reduces the structural integrity of the vessel or chute, causing it to buckle. Ripple damage from pounding creates a situation where it is easier for material to build, shortening periods between clogs and leading to more unscheduled downtime. Poking from below is even more dangerous, since a sudden discharge sends tons of material in a surge that can injure anyone in the vicinity and break equipment below.

❖ **Recommendation:** air cannons strategically installed around the chute have nozzles pointed in the direction of the material flow. Powerful shots of air are distributed across the surface inside the vessel, dislodging material and preventing buildup. The air cannons are supported by vibration units that ensure gates and narrow spouts on hoppers and chutes retain proper flow before bridging starts. In many cases, vibration alone can handle most dry material flow but changes in humidity raising the stickiness of cargo and chute surfaces, along with fluctuations in production volumes, are much better handled by air cannons.

DISCHARGE DUST

Emissions at the discharge zone can be found billowing out of the chute against the direction of the cargo stream or exiting the sides and bottom as it loosens from the belt's return side. Dust has become a highly regulated workplace and environmental concern which can lead to stiff fines and potential forced downtime if high volumes of respirable crystalline silica (RCS) is detected. RCS is found in nearly every



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substance pulled from the earth, but is prevalent in limestone, coal, clay, etc. Regulators measure fugitive particulate matter (PM) at the size of <10 microns mass (μm) in volumes of >50 micrograms (μg) per cubic metre (m^3) over an eight-hour time weighted average (TWA). This is the volume and size determined to cause serious chronic lung issues in workers and it doesn't just apply to RCS, it is any PM.

Dust emissions returning from the chute can derive from uncontrolled airflow at the exit point. The emissions can also be caused by hitting rock boxes meant to slow the flow of material or an unobstructed impact causing turbulence.

Dust from carryback can permeate the area and spread emissions down the entire length of the belt return. If the belt reaches into a tower or is exposed to the outdoors, this causes dust to be carried long distances on air currents into nearby communities leading to possible violations. Studies have shown that dust can be controlled by adequate cleaning at the discharge using Levels 1–3. One is a primary cleaner, two a secondary cleaner, and level three a tertiary cleaner.

❖ **Recommendation:** by reconfiguring the chute's exit into a sloping scoop, material can be slowed and loaded onto the next belt in a controlled and centred manner with less turbulence. Air cannons installed along the chute are pointed with the material stream

and can help direct air flow.

CONCLUSION

The modern coal industry is changing and growing every day. Production increases can change throughput volumes and belt speeds, which have a direct effect on spillage, carryback, clogging and dust.

Retroactively installing equipment that improves both safety and efficiency should be a priority of any operator. Although the initial capital investment might be slightly higher, the return on investment (ROI) and benefits are not just in fewer injuries, but reduced labour costs for maintenance, less equipment replacements, greater compliance and an overall lower cost of operation.

ABOUT THE AUTHOR

DANIEL MARSHALL, PROCESS ENGINEER, MARTIN ENGINEERING

Daniel Marshall received his Bachelor of Science degree in Mechanical Engineering from Northern Arizona University. With nearly 20 years at Martin Engineering, Marshall has been instrumental in the development and promotion of multiple belt conveyor products. He is widely known for his work in dust suppression and considered a leading expert in this area. A prolific writer, Marshall has published over two dozen articles covering various topics for the belt conveyor industry; he has presented at more than fifteen conferences

and is sought after for his expertise and advice. He was also one of the principal authors of Martin's *FOUNDATIONS™ The Practical Resource for Cleaner, Safer, and More Productive Dust & Material Control*, Fourth Edition, widely used as one of the main learning textbooks for conveyor operation and maintenance.

ABOUT MARTIN ENGINEERING

Martin Engineering has been a global innovator in the bulk material handling industry for more than 75 years, developing new solutions to common problems and participating in industry organizations to improve safety and productivity. The company's series of *Foundations* books is an internationally recognized resource for safety, maintenance and operations training — with more than 22,000 print copies in circulation around the world. The 500+ page reference books are available in several languages and have been downloaded thousands of times as free PDFs from the Martin website. Martin Engineering products, sales, service and training are available from 17 factory-owned facilities worldwide, with wholly owned business units in Australia, Brazil, China, Colombia, France, Germany, India, Indonesia, Italy, Malaysia, Mexico, Peru, Spain, South Africa, Turkey, the USA and UK. The firm employs more than 1,000 people, approximately 400 of whom hold advanced degrees.

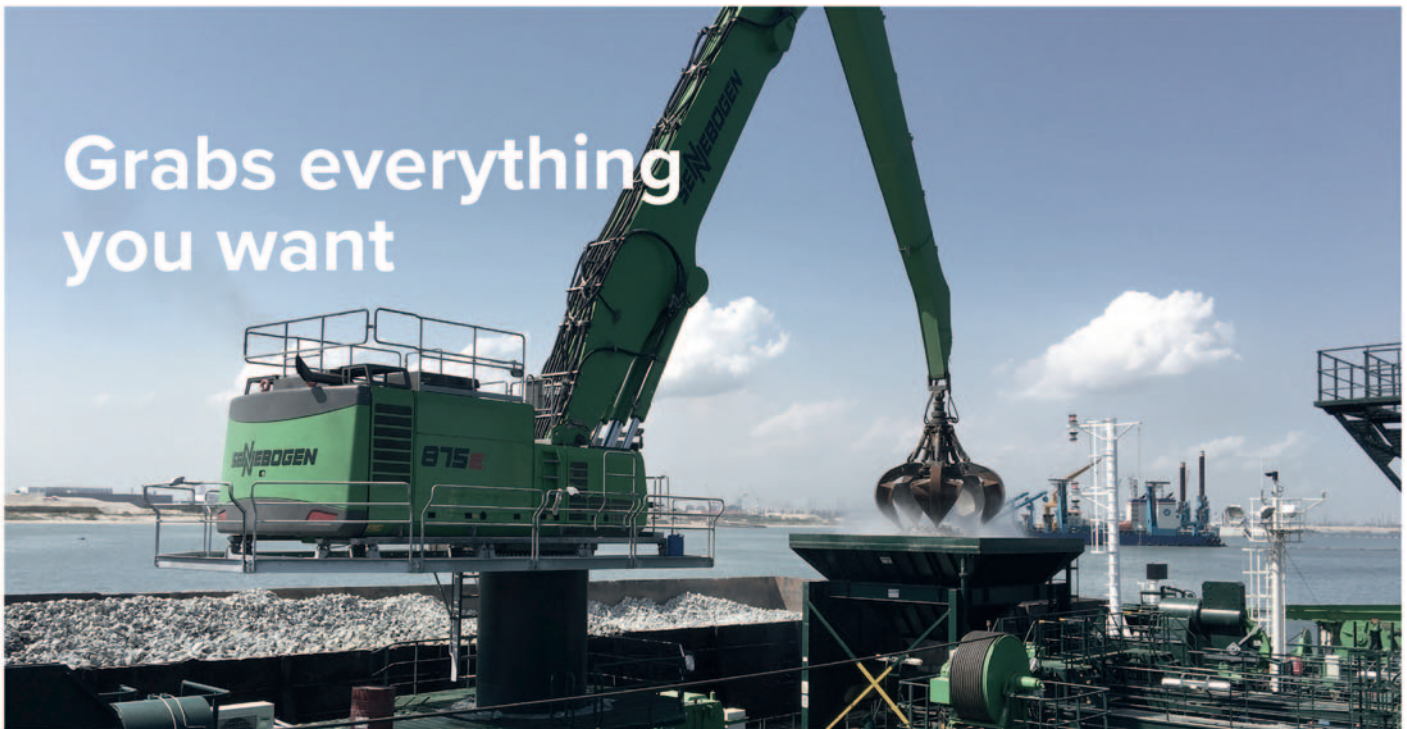
This hopper directs material to a conveyor while the air cannons support flow and prevent clogging.





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Tru-Trac optimizes coal handling systems at Richards Bay Coal Terminal with advanced belt tracking solutions

Efficiency, safety and reliability are paramount in coal operations, mines, power plants and other bulk material handling facilities. Among the key components that ensure smooth operations are conveyor belts which transport coal across various stages of processing and logistics. However, maintaining the alignment, performance and durability of conveyor systems has always been a challenge. This is where Tru-Trac products prove indispensable, offering robust and innovative solutions designed to optimize coal handling systems.

With its range of belt tracking solutions undergoing constant innovation, Tru-Trac has proven its patented Apex Trough Tracker under arduous conditions at the Richards Bay Coal Terminal (RBCT) in KwaZulu-Natal, South Africa — one of the world's largest coal export facilities.

Guy Fitt, Sales Manager at Tru-Trac, says that the company has achieved great success with its new Apex Trackers at mining operations and was keen to test the new design in challenging applications on wider and faster belts. RBCT was the ideal site, as it operates some of the most demanding conveyor systems, says Fitt.

"These include 2.2-metre-wide steel-cord belts running at 6,7 metres per second and carrying up to 11,000 tonnes of coal per hour," he says. "We already have some of our older-generation trackers on RBCT's conveyors, and were excited to offer them the advantages of our latest innovation."

Tru-Trac placed their test unit on one of RBCT's larger conveyors where the belt was experiencing frequent misalignment, causing damage to the conveyor structure and the belt itself. This was also causing material spillage, leading to production losses.

Tru-Trac Technical Manager Gerhard



Designed for demanding conditions, Apex Trough Tracker excels in high-tonnage, high-speed conveyor applications.

Strydom explains that the new Apex design has reduced the amount of steelwork around the tracker's cradle and uses cantilever wing rolls with an angle adjustment mechanism located below the rollers. This makes the cradle lighter allowing it to react more quickly to movements of the conveyor belt and

eliminates the protruding adjustment bolts on older models.

"Even before the end of the initial four week testing phase at RBCT, the Apex Trough Tracker had proven its value by performing exceptionally well in keeping the belt aligned," says Strydom. "The RBCT team were so impressed with the performance that they placed an order for additional units."

Another important benefit of the Apex Trough Tracker is its adjustable wing rolls which allow for a range of adjustment from 10° to 60°, making it a versatile retrofit to any conveyor belt. When adjusted to the lowest level the unit is almost flat making storage, handling and installation much safer and quicker — especially when working with heavier belts — as the tracker can be easily slid under the belt.

"When working with belt widths of between 2.1 metres and three metres, the installation process of a conventional tracker may need special lifting equipment,



The Apex Trough Tracker's innovative cradle design simplifies installations in restricted conveyor spaces.



Faster safer installations made possible as the Apex Trough Tracker eliminates the need for special lifting equipment.

which is not always available at short notice,” he says. “The adjustable wing rolls of the Apex Trough Tracker make for faster installation, so conveyor system uptime is optimized.”

At RBCT, the installation process took a little over an hour, he says, compared to a typical installation time in the industry of between two to three hours. Ease of maintenance has also been improved by the new Apex Trough Tracker design.

“The maintenance technicians can now simply drop the wing rolls down and slide the tracker out, and install the new unit in the same way before adjusting the wing rolls to their operating angles,” he says.

The Apex Trough Tracker installation at RBCT also demonstrated a further advantage with the new design. Previously it had been necessary to create space in the conveyor hoods or guards to allow for the adjusting rod protruding from the wing rolls. This required permission from the relevant safety personnel as well as some additional metalwork — all of which extended the installation time.

“In our latest innovative design, the cradle no longer requires that section — so it allows a more universal installation ability as there are no restrictions to consider,” says Fitt.

Tru-Trac’s ongoing innovation continues to enhance the performance of the Apex Trough Tracker, according to Fitt. The



The Apex Trough Tracker’s lightweight design ensures quick reactions and superior belt alignment.



Improved maintenance access with drop-down wing rolls ensures quick repairs and maximum uptime.

company is currently commissioning its own unique in-house injection moulded rubber lagging system. In addition to better turnaround times and quality control, this will also allow design improvements to the lagging itself, to deliver better grip and faster reaction times.

"The performance of our latest Apex Trough Tracker at RBCT has definitely

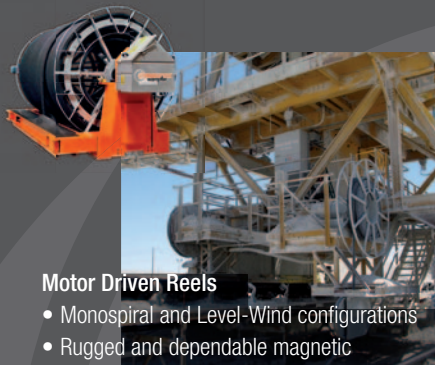
opened doors for us," Fitt says. "It has given us a strong reference point to showcase our capability on high-speed high-tonnage conveyors in international markets — both in coal and hard-rock applications."

In an industry where downtime can result in significant financial losses, Tru-Trac's products deliver peace of mind

by ensuring continuous and efficient operations. From enhancing safety and efficiency to reducing environmental impact and operational costs, these solutions address the full spectrum of challenges faced by coal handling systems. With Tru-Trac, conveyor systems stay on track, maintaining productivity and profitability in an increasingly competitive landscape.

Efficiency and effectiveness prompted the RBCT team to order more Apex Trough Trackers after successful testing.





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DemcoTECH: optimizing coal handling at ports



The materials handling system for a multiproduct terminal at Richards Bay in South Africa utilized, amongst others, pipe conveying technology to comply with stringent environmental regulations.

Seaborne trade accounts for some 90% of all traded coal, meaning that ports are a vital node in the supply of coal worldwide. Efficient port infrastructure and facilities are therefore essential to supporting global trade by ensuring the timely and cost-effective movement of cargo through port facilities.

Handling of bulk commodities such as coal not only requires specialized equipment such as grabs, stackers,

reclaimers and conveyor belts, says DemcoTECH General Manager, Paul van de Vyver, but also, given the significant environmental impacts of port operations, sustainable practices such as utilizing dust control technologies are important.

This, together with increasing trade globally, is driving port expansion and upgrade projects to increase the handling capacity of ports and enhance operational efficiency, while minimizing environmental

and dust issues.

“For example, a recent expansion to a power station in Malaysia to include an additional 1,000MW coal-fired power plant, required significant additional coal supply capacity to be imported from a variety of locations worldwide,” says van de Vyver. “A project was therefore initiated to upgrade the existing grab-type ship-unloaders and to add a new conveying stream from the import jetty to the existing power station stockyard facility.”

DemcoTECH was engaged to undertake the detailed design of the new coal import conveying system, with the brownfield project requiring significant interfacing between existing equipment and the new conveying system.

The coal import and distribution system comprised eight conveyors and 11 transfer points, an inclined moving head, multiple fixed tripper transfer points and actuated trouser-leg chutes for dual discharge from a single head pulley.

DemcoTECH's scope of work comprised the detailed mechanical and structural design including conveyor equipment, take-ups, structures, fabrication drawings,



Enhancements to the rail tandem tippler were part of upgrading the throughput and system reliability of a coal delivery facility at a power station in South Africa.

design of the transfer chutework using Discreet Element Modelling (DEM), seismic assessments and managing the engineering design phase of the project. DemcoTECH also integrated the new system into the existing system, generated interface details and provided on-site direction during implementation.

"The range in coal characteristics was particularly difficult to cater for and simulate in the DEM process due to the fact that the coal behaviour varies tremendously as it is sourced from significantly different environments — from frozen Russian mines to monsoon-affected Indonesian suppliers to drier South African mining operations," adds van de Vyver.

"Complicating the chutework was the fact that, when the coal is off-loaded at the power station, it commences as dry, middlings product but, towards the bottom half of the ships' holds, the product is often fine and very wet."

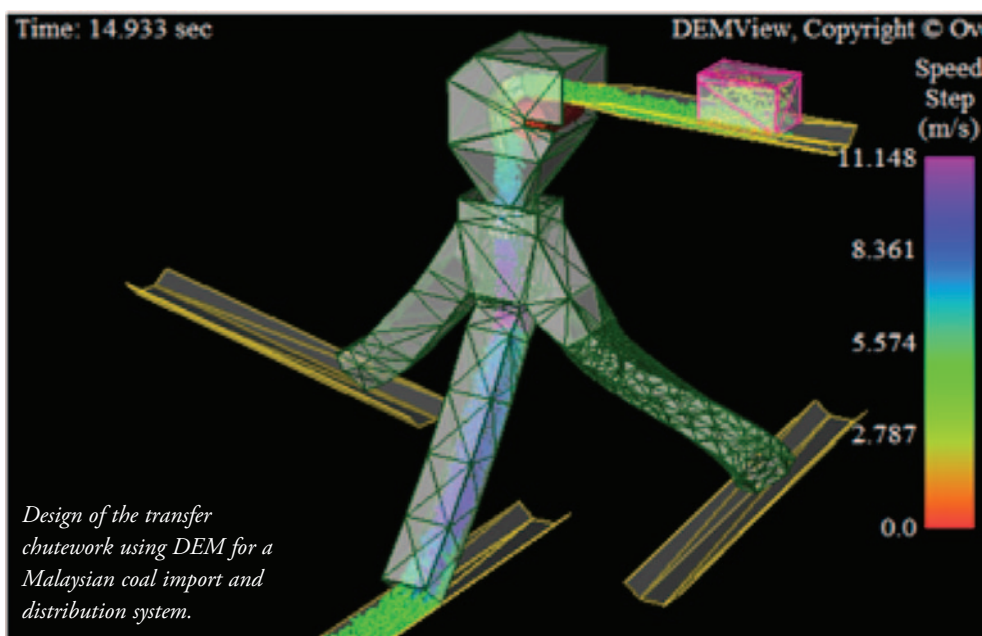
"Our solution was to use Tivar and VRN liners in the chute design, as well as curved and adjustable deflector plates, while load centralizing was achieved by bevelled chute edges at the loading boots onto the receiving conveyors."

DemcoTECH was also contracted to design a bulk cargo import terminal for coal and iron ore, located in the Port Ploce on the south western seaboard of Croatia. The terminal, which was to import coal for a local power plant and iron ore for distribution inland, comprised a ship-unloading system, stockpiling operation and rapid rail-loading facility.

DemcoTECH's scope covered the detailed design and engineering of the material's handling system, which included five belt conveyors with associated transfer stations, two hydraulically-operated dewatering lifting tables, two rail-mounted loading hoppers for mobile plant reclaim operations and the rapid train loading system.

The import and stockpiling systems were designed for 4,000tph (tonnes per hour) iron ore or 2,000tph coal, while two reclaim systems were provided; one being a conventional bucket-wheel operation while the secondary system comprises two independent rail-mounted motorized reclaim hoppers fed by mobile plant.

The 2,400tph rapid rail loading facility comprises a gravity-fed design where a flask



Design of the transfer chutework using DEM for a Malaysian coal import and distribution system.

on load-cells is used to harmonize the dispatched load to a variety of rail wagon sizes.

"Challenges in this project included ensuring that the structural design incorporated the requisite features to dissipate and resist severe seismic-related forces and loads typical of this area, as well as designing the conveyor system to handle both coal and iron ore interchangeably, through the same chutes."

An expansion project for a multi-product terminal at South Africa's premier bulk cargo port, Richards Bay, included the materials handling system to convey various materials, but mainly rock phosphate and coal, from the three terminal sites. DemcoTECH provided the design, engineering, procurement and construction management for the materials handling portion, with technologies such as pipe conveyors employed to comply with stringent environmental regulations.

In other work for the coal mining industry, DemcoTECH investigated the existing coal offloading and rail delivery facility at a 6 x 700MW power station in South Africa with the view to upgrading the throughput and system reliability. DemcoTECH developed various conceptual designs and evaluated the tippler system for the coal delivery, tippler and power station feed system, in order to predict the suitability and equipment capacity and rail infrastructure modifications necessary to deliver 14 million tonnes of coal per annum reliably.

"This enabled DemcoTECH to be able to recommend the specific equipment scope for upgrading and enhancing of the coal off-loading system, while we also prepared a detailed implementation scope

supported by designs, drawings and specifications, according to which the plant was to be upgraded by EPC contractors."

Through this process of design, optimization and re-engineering, DemcoTECH has been able to offer the client significant throughput enhancements with CAPEX and OPEX optimization.

DemcoTECH provides a complete range of technologies for offloading trains, through to coal storage, and in-plant and overland conveyor systems. This is supported by advanced testing, flow modelling and system simulation tools for these systems to be based upon a thorough understanding of the properties of the coal. Dust control systems are also critical in coal handling and DemcoTECH has an extensive track record in the supply of effective dust suppression and dust extraction systems, as well as in utilizing its in-house pipe conveyor design capabilities to contain, reduce and eliminate dust and environmental issues.

ABOUT DEMCOTECH

With extensive experience both in Africa and internationally, DemcoTECH offers services from concept design through to project completion to the power generation, cement, mining, metallurgical, manufacturing and port handling industries. Services include conceptual design, feasibility studies, design, engineering, procurement, expediting, construction and commissioning.

After-sales services include spares, maintenance, refurbishments and operational readiness packages covering procedures, systems and workplace tools required to successfully operate and maintain a new or upgraded plant.

Efficient coal handling with Weba Chute Systems



Site personnel stand ready with critical spares in front of a Weba transfer chute at a coal mine, ensuring seamless material flow and reduced downtime.

In coal handling operations, the efficiency of material transfer plays a pivotal role in ensuring productivity and cost effectiveness. Weba Chute Systems, a specialist in transfer point solutions, provides custom-engineered transfer systems that offer significant advantages for coal handling applications. These systems are tailored to the specific needs of each operation, resulting in enhanced performance, reduced maintenance and improved safety.

Coal, being a bulk commodity, presents numerous challenges during handling. Dust generation, material degradation, spillage and excessive wear on equipment are common issues that operators must address. The unique design approach of Weba Chute Systems mitigates these challenges by focusing on controlled material flow and optimized impact management.

Unlike conventional chute designs, which often rely on high velocity material transfer, Weba Chute Systems adopt a more scientific approach. The systems are designed to control the speed, direction and volume of material as it moves through the chute. By employing advanced simulation tools, engineers at Weba Chute Systems analyse material trajectories, particle interactions and flow dynamics.

This ensures that the final design aligns precisely with the operational requirements of individual coal handling processes and applications.

One of the standout features of Weba Chute Systems is the ability to minimize wear and tear on critical components. The controlled flow of material reduces impact forces on the chute liners and receiving conveyors. This not only extends the lifespan of equipment but also reduces downtime for repairs and maintenance. In

coal handling facilities where uptime is critical, this advantage translates into substantial cost savings and uninterrupted operation.

Dust suppression is another area where Weba Chute Systems excel. Traditional chute designs often allow for uncontrolled material discharge, leading to significant dust emissions. In contrast, Weba Chute Systems' transfer solutions are engineered to optimize the material flow, effectively minimizing airborne particles. This

Coal material is efficiently fed into a Weba head chute, controlling flow dynamics and minimizing dust generation for a cleaner, more efficient operation.



contributes to a cleaner working environment and ensures compliance with environmental regulations. In coal operations, where dust can pose safety hazards and health risks, this feature is particularly valuable.

Spillage and blockages, frequent problems in coal handling, are also addressed through Weba Chute Systems' innovative designs. By directing material along a controlled flow path, the system prevents material from escaping the chute and causing operational disruptions. The streamlined design also ensures that material flows smoothly, reducing the risk of blockages that can halt production and require time-intensive clearing procedures.

The adaptability of Weba Chute Systems is another key factor that sets them apart. Each system is custom-engineered to match the specific characteristics of the coal being handled, such as particle size, moisture content and flow rate. This bespoke approach ensures that the system delivers optimal performance under real-world conditions. Additionally, the modular nature of the designs allows for easy integration with existing infrastructure, minimizing installation time and costs.

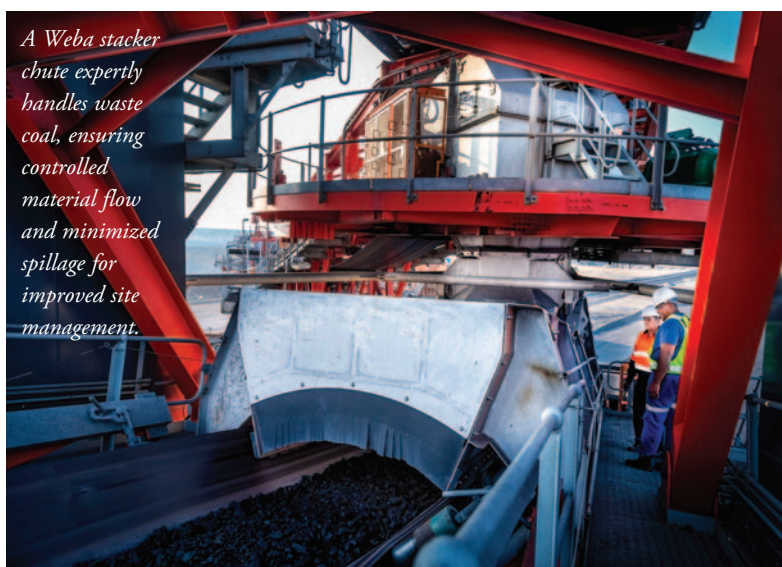
Safety, a critical concern in coal handling, is significantly enhanced by the implementation of Weba Chute Systems. The controlled material flow reduces the risk of material ejection, protecting workers and equipment from potential hazards. The systems also incorporate features such as inspection doors and easy-access panels, which allow for safe and efficient maintenance. By prioritizing safety, Weba Chute Systems not only protects personnel but also fosters a culture of responsibility within coal handling operations.

Furthermore, the energy efficiency of Weba Chute Systems contributes to their appeal. By optimizing material flow and reducing unnecessary friction and impact, the systems require less power to operate compared to conventional designs. In an industry increasingly focused on sustainability, this energy-saving feature aligns with broader environmental goals and helps operators reduce their carbon footprint.

Weba Chute Systems' commitment to continuous improvement and innovation ensures that its solutions remain at the forefront of coal handling technology. The company's team of experts works closely with customers to understand their specific needs and develop solutions that deliver measurable results. This customer-centric approach has earned Weba Chute Systems a reputation for reliability and excellence in the field of material handling with the company offering a comprehensive solution to the challenges of coal handling. By combining custom engineering, advanced simulation and innovative design principles, these systems deliver unparalleled performance, efficiency and safety. For coal handling operations seeking to enhance productivity and reduce operational costs, Weba Chute Systems represent a proven and effective choice.



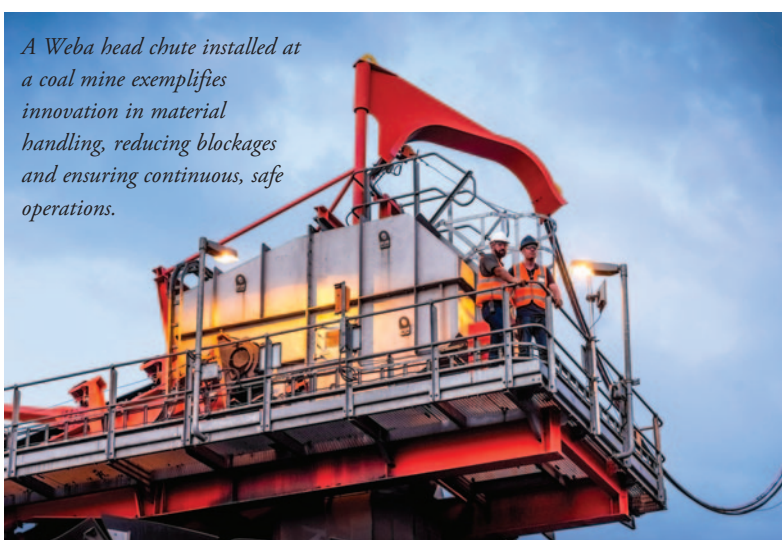
A Weba transfer chute installed at a coal mine showcases advanced design principles that enhance material handling efficiency while reducing wear and maintenance.



A Weba stacker chute expertly handles waste coal, ensuring controlled material flow and minimized spillage for improved site management.



A conveyor belt efficiently moves coal.



A Weba head chute installed at a coal mine exemplifies innovation in material handling, reducing blockages and ensuring continuous, safe operations.

Robust and reliable encoder solutions for coal handling plants

The extreme conditions in the coal industry demand reliable and safe industrial applications. Custom solutions and comprehensive services also play a crucial role in this context. As a major supplier, Johannes Hübner Fabrik elektrischer Maschinen GmbH provides encoder systems specifically designed for heavy-duty applications. Recognized as an industry expert in measurement, encoder, and drive technologies, Hübner Giessen has installed thousands of applications in mining and coal handling industries over the past 90 years.

The company's products are in great demand for use in stackers, reclaimers, shovels, belt conveyors, coal loaders and unloaders, cranes, and hoist systems. Reference projects across the globe, from Canada to China and South Africa to the USA, demonstrate Hübner Giessen's extensive track record. The product portfolio includes incremental and absolute encoders, universal encoder systems, overspeed and position switches, SIL-certified systems, magnetic encoder systems, fibre-optic components, output multipliers, pulse converters, and tachogenerators, as well as mechanical accessories like couplings, adapter shafts, and torque brackets.

Hübner Giessen offers a comprehensive service package, including on-site analysis of installation conditions, the design and delivery of the complete encoder system, and full installation support.

ENSURING MAXIMUM SAFETY FOR PEOPLE AND MACHINES

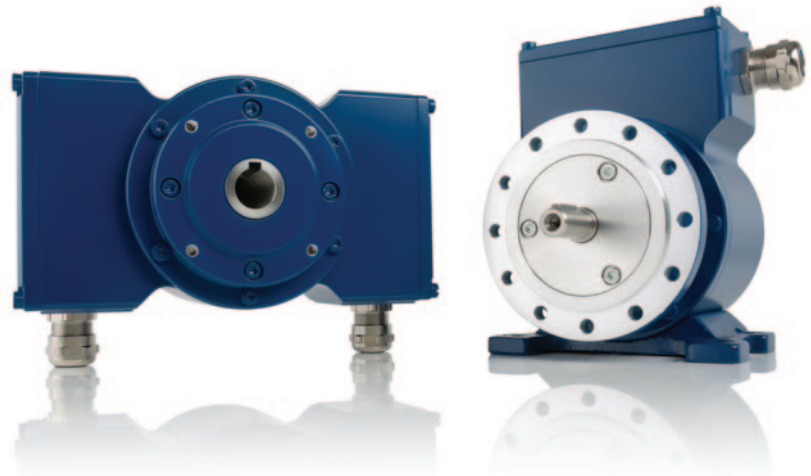
Safety is paramount in coal handling applications, especially when managing risks such as overspeed and collision damage. To address these challenges, Hübner Giessen offers the SIL-certified absolute encoders AMP(NH) 41 and the electronic overspeed switch EGS(H) 41.

ABSOLUTE ENCODER WITH SIL CL3 CERTIFICATION

The AM 41 series of absolute encoders, including AMP(H) 41 (PROFIsafe via PROFIBUS DP) and AMPN(H) 41 (PROFIsafe via PROFINET IO), is certified to DIN EN 61508 up to Safety Integrity Level (SIL) CL3 and EN ISO 13849 up to Performance Level (PL) e. These encoders were developed specifically for heavy industry applications.

The encoders are available in various versions:

- ❖ AMP 41 and AMPN 41 with solid shaft (14mm diameter) as flange (B5) and flange-foot (B35) versions for



coupling-mounted applications.

- ❖ AMPH 41 and AMPNH 41 with continuous hollow shaft (20mm diameter) for direct mounting onto the drive shaft.

With a total resolution of 28 bits (13-bit single-turn and 15-bit multi-turn), an additional incremental output of 4,096 pulses, and robust features such as a thick-walled aluminum casing and corrosion-resistant coating, these encoders are ideal for coal handling environments. Operating temperatures range from -25°C to +70°C, and the protection class extends to IP66, making them suitable even for salt-laden atmospheres.

SIL 2 CERTIFIED OVERSPEED SWITCH: EGS(H) 41

The electronic overspeed switch EGS(H) 41 ensures a high level of safety for coal handling systems. It is certified up to SIL 2 per IEC 61508 and Performance Level (PL) d according to DIN EN ISO 13849. The EGS(H) 41 offers the following features:

- ❖ Up to four independently programmable, electrically isolated switches to monitor overspeed and underspeed from as low as 0.5rpm.
- ❖ Programmable functions: switching range, delay, hysteresis, standstill, direction of rotation.
- ❖ Diagnostics for hardware and software modules, overcurrent detection, and optional incremental output.

With robust electronic switching contacts and large bearings with high dynamic load rating, the EGS(H) 41 offers highest reliability in coal processing plants.

PROVEN SOLUTIONS FOR HEAVY INDUSTRY

"In heavy industry, it is imperative that high performance and robust construction go hand in hand," explains Andre Neumann,

Product Manager. Hübner Giessen's products, including the AMP(N) 41 and EGS(H) 41, are specifically designed for demanding applications such as coal conveyors, reclaimers, and other critical components in coal handling plants.

Their robust construction, high vibration resistance, and thick-walled housing ensure reliable operation even in harsh environments. The high degree of protection (IP66 to IP67) further underlines their suitability for the toughest applications, including those in salt-laden or dusty conditions.

CUSTOMIZED SOLUTIONS AND ALL-AROUND SERVICE

Hübner Giessen specializes in tailoring encoder solutions to individual customer requirements. Engineers assess on-site conditions, provide support throughout the design and installation phases, and ensure seamless integration of their systems. With a strong emphasis on robustness and durability, their encoders and safety systems set the benchmark for reliable operation in coal handling plants.



Polimak container discharge system for fly ash

Fly ash is a commonly handled material in the bulk handling industry and requires special care due to its unique characteristics. **Polimak's** Container Discharge System provides a safe and reliable solution for handling fly ash, addressing critical criteria such as dust control, environmental sustainability, and operational efficiency. Designed with advanced technology, it ensures minimal environmental impact while maximizing productivity and safety during the unloading process.

The key features of the Container Discharge System include:

- ❖ By using ISO containers, the product can reach its final destination without incurring transloading costs.
- ❖ The system eliminates the need for container tilting equipment.
- ❖ The container discharge system allows for the standard unloading of 20', 30', 40', 45', or 53' containers efficiently and securely.
- ❖ The unloading process is mechanical, allowing output to be measured and controlled based on time and/or quantity to meet destination requirements.
- ❖ It provides significant cost savings in packaging, handling, and labour when compared with using super-sacks, 25kg bags, octabins, or pallets.
- ❖ Additionally, the system ensures optimal use of container cargo space, helping to reduce the cost per kilogram transported.

Fly ash, commonly used in bulk handling systems, is a byproduct of burning coal in power plants. The main challenges during the handling of fly ash are as follows:

- ❖ Due to its fine particles fly ash is prone to dusting. Inhaling this substance can pose health risks and contribute to air pollution.
- ❖ Fly ash with fine particles presents challenges for storage and transportation, necessitating specialized handling techniques and containment measures to address environmental and safety concerns.
- ❖ Especially when stored in large quantities, it may exhibit poor flow characteristics, leading to the formation of clumps or blockages that prevent its efficient handling. This can result in difficulties during transportation, increased wear on equipment, and delays in processing. These difficulties require the use of



additives or special mechanical systems to enhance its flow properties and avoid operational delays.

- ❖ Given its lightweight and fine characteristics, low-density fly ash can easily spill or be lost during transport.

This loss leads to environmental contamination, possibly polluting the air, water, and soil. It also has economic impact, leading to wasted materials, increased operational costs, and the necessity for additional resources to clean up and prevent further spillage.

- ❖ Because low-density fly ash takes up more space for the same weight, transportation costs can rise. The need for additional storage space and higher transportation volumes can lead to inefficiencies in the handling process, increasing overall operational expenses.

Polimak's Container Discharge Systems are specially designed to overcome these challenges. The main advantages of the system are as follows:

- ❖ Handling time is reduced by up to 75%.
- ❖ Space utilization is fully optimized in standard ISO containers.
- ❖ By bypassing conventional transfer methods, tilting equipment is no longer required.
- ❖ Prevents dust release into the environment without the need for a dust collection system.
- ❖ **Polimak's** container discharge system is integrated with either a mechanical or pneumatic conveying system, which helps reduce additional equipment costs.
- ❖ By converting large quantities of loose materials into a more manageable and transportable form, bulk materials can be shipped by container transport vessels.
- ❖ Enhanced volume utilization of cargo spaces results in more efficient use of available capacity.
- ❖ Eliminates the need for intermediate stops to transload cargo between the origin and final destination.

Polimak's over 40 years of technical expertise and know-how provide high quality, problem-free, safe and cost-effective solutions for containerized bulk material handling systems. With the various benefits outlined above, the company offers industry-specific solutions for a wide range of dry bulk materials, including fly ash. Its aim is to continue manufacturing tailor-made solutions for dry bulk material handling processes, ensuring optimal efficiency, reliability, and adherence to sustainability criteria.

Innovating cleanliness in coal handling: DISAB Vacuum Technology AB

Efficient coal handling is critical for ensuring smooth operations across the dry bulk industry. DISAB Vacuum Technology AB, headquartered in Eslöv, Sweden, has established itself as a trusted provider of advanced vacuum systems that address the challenges of coal dust, debris, and material recovery in industrial environments.

SPECIALIZED EQUIPMENT FOR COAL HANDLING

DISAB's product line includes powerful industrial vacuum systems designed to handle coal and other bulk materials safely and efficiently. The flagship equipment includes:

- ❖ **DISAB Centurion™ vacuum loaders:** designed for heavy-duty applications, these machines can suction and transport wet and dry materials, including fine coal dust and granules, across large distances.
- ❖ **TrailerVAC™ systems:** compact, mobile solutions ideal for cleaning coal silos, conveyor belts, and processing areas.
- ❖ **Fixed vacuum systems:** tailored for coal storage facilities, these systems help maintain cleanliness, ensuring compliance with health and safety regulations while reducing downtime.
- ❖ **DISAB Futurion™ vacuum loaders:** a range of high-performance vacuum loaders, including the Q-series models (Q10, Q20, and the new Q30), built to provide powerful suction, pressure, and ADR-certified transport for hazardous materials. The Futurion™ line offers greater customization options, enabling operators to configure machines to suit specific site conditions and handling requirements.



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Each machine is engineered to deliver high suction power, filter efficiency, and user-friendly controls, making them indispensable for coal terminals, power plants, and mining operations.

SOLUTIONS FOR KEY INDUSTRY CHALLENGES

Coal handling generates significant dust, posing risks to both personnel health and equipment longevity. DISAB's vacuum systems offer a solution by:

- ❖ **Reducing dust exposure:** capturing fine coal particles as small as ten microns, minimizing air contamination and health hazards.
- ❖ **Enhancing efficiency:** recovering spilled materials quickly and cost-effectively, contributing to sustainable operations.
- ❖ **Compliance with ADR standards:** specialized equipment for handling hazardous materials, ensuring safety during coal transport and storage.

GLOBAL CLIENTELE AND PARTNERSHIPS

DISAB has worked with some of the most prominent players in the coal and dry bulk industries. One such client, Lanes Group, relies on the DISAB Centurion™ P30 for maintaining critical infrastructure, including coal transportation systems.

Additionally, DISAB's solutions are widely used in coal-fired power plants across Europe, the Middle East, and Asia. The company's growing presence in regions like MENA and Germany underscores its commitment to meeting global demands.



TECHNOLOGICAL ADVANCEMENTS

DISAB invests heavily in research and development to stay ahead of market trends. Recent innovations include:

- ❖ **Automated filter cleaning systems:** enhancing operational reliability by minimizing manual intervention.
- ❖ **Energy-efficient engines:** reducing carbon footprints while maintaining high vacuum performance.
- ❖ **Digital monitoring tools:** allowing real-time diagnostics and predictive maintenance, ensuring uninterrupted operation.

A COMPETITIVE EDGE

What sets DISAB apart is its commitment to tailored solutions. Each system is customized to the client's specific needs, ensuring maximum efficiency and cost-effectiveness. This customer-centric approach has earned DISAB a reputation for reliability and innovation.

RECENT MILESTONES

In 2024, DISAB completed several notable projects, including the installation of a vacuum system for a major coal terminal in Northern Europe. This system, spanning over 2,000 metres of piping and 50 suction points, significantly improved material recovery and workplace cleanliness.

LOOKING AHEAD

As the demand for cleaner, safer coal handling continues to grow, DISAB remains at the forefront of innovation. The company's focus on sustainability, efficiency, and client satisfaction ensures its solutions remain integral to the future of the dry bulk industry.

INTRODUCING THE Q30: THE NEXT GENERATION OF VACUUM LOADERS

Building on its legacy of innovation, DISAB is proud to introduce the Q30 vacuum loader, its latest technological advancement designed to meet the evolving needs of coal-handling operations.

The Q30 combines the best features of our previous Q-series vacuum loaders and P30 ADR-certified models, resulting in a more modern, efficient, and highly customizable solution. With a broader range of configurations, operators now have more flexibility to tailor the machine to their specific requirements.

KEY BENEFITS OF THE Q30:

- ❖ **Vacuum and pressure functions:** handles both wet and dry materials with high efficiency.



- ❖ **ADR-certified for hazardous materials:** ensures compliance with transport regulations for coal dust and other sensitive materials.
- ❖ **Upgraded pump system:** provides greater suction power and optimized fuel efficiency.
- ❖ **Customizable options:** more

configurations allow clients to adapt the Q30 to different site conditions and operational needs.

The Q30 is an evolution of DISAB's proven designs, delivering better performance, increased safety, and the ability to handle a wider range of coal-handling challenges. 

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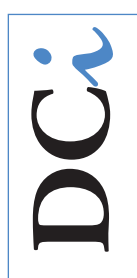
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