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Favourable grain trade signs

Some signs of more buoyant commodity import demand around the world have been seen recently, yet other indicators point to negative influences. Global seaborne dry bulk trade evidently saw very limited growth last year, and a similar outcome in 2026 is looking quite likely.

Positive effects from growth in economic activity among commodity importing countries during the twelve months ahead seem set to be restrained. Recent forecasts, such as that published by the OECD organization last month, suggest that China, Japan and the European Union, as well as the USA, are unlikely to see any improvement in GDP growth rates this year. World GDP could decelerate from 3.2% in 2025, to 2.9%.

Grain & soya

In the grain and soya segment, by contrast, a distinct strengthening of global cargo movements appears to be unfolding. After a downturn in 2024/25, a sizeable increase in the current 2025/26 year ending third quarter 2026 is expected. Much higher imports into Asian countries, in particular, are envisaged.

World trade in wheat plus corn and other coarse grains could increase by 5% in 2025/26, based on calculations last month by the US Department of Agriculture, following the previous year's 8% reduction. The total is forecast to rise by 21mt (million tonnes), reaching 447.2mt. As shown by table 1, much of this growth is expected to reflect stronger Asian import demand. Among these countries, a turnaround in China's imports from steep reduction to recovery may contribute a large boost.

Coal

A large decline in world seaborne coal trade provisionally calculated at about 4–5% was recorded last year. Lower imports, especially steam coal, into China, India and some other countries were notable features. Amid downwards pressures from the decarbonization process on global movements of this commodity, a continued weakening trend seems foreseeable.

Estimates by analysts at the Australian Government's Department of Industry published a few weeks ago emphasized the negative influences. World coal trade (including land movements, but mostly seaborne) may have fallen by 7% from the previous year to 1,441mt in 2025. A further 2% decrease to 1,412mt in 2026 is predicted, reflecting weakening steam coal trade and despite a possibility of additional coking coal movements.

Iron ore

Global seaborne iron ore trade has been benefiting from sustained buoyancy in China's import demand despite the country's lower steel production. Imports into Vietnam also apparently are still strengthening, preserving the rising trend seen over the past few years. Elsewhere, among the main buyers, adverse influences have been visible.

Further growth in iron ore trade during 2026 is estimated by some forecasters. A positive trend may be hard to achieve, however, especially if there is no more growth in China's dominant import volume. Expectations for steel production in a number of the main raw materials importing countries remain subdued. Potential for Japan, South Korea and the European Union to increase steel output and iron ore usage seems limited.

Minor bulks

Indications point to trade in fertilizers, a prominent minor bulks component, increasing in 2025. Total potash, phosphate (rock and processed), sulphur and urea seaborne movements may have been about 2% higher than seen in the previous twelve months at over 210mt. The upwards trend may persist in the year ahead based on tentative signs.

Bulk carrier fleet

Among bulk carrier size groups, the world fleet of Handysize (10–44,999 deadweight tonnes) vessels — forming about 12% of the entire fleet's capacity — grew by a steady 4% last year. As shown by table 2, Handysize capacity reached an estimated 132.4m dwt at year-end. In the twelve months ahead, both newbuilding deliveries and scrapping may be similar to recent levels, resulting in another year with a stable rate of Handysize fleet capacity enlargement.

TABLE 1: MAJOR GRAIN IMPORTING AREAS (MILLION TONNES)

	Wheat and coarse grains, crop years ending June (wheat), September (coarse grains)					
	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26*
East Asia	106.0	96.5	89.7	107.1	67.3	78.4
Southeast Asia	46.3	45.3	43.2	52.7	51.6	55.8
European Union	21.2	26.2	37.9	34.3	30.6	26.7
Middle East	59.7	68.5	64.7	59.7	58.3	63.9
North Africa	49.5	47.1	46.0	53.0	55.0	56.1
Sub-Saharan Africa	30.3	30.8	28.2	33.6	38.4	35.4

source: US Department of Agriculture **December 2025 forecast*

TABLE 2: HANDYSIZE 10–44,999DWT BULK CARRIER FLEET (MILLION DEADWEIGHT TONNES)

	2020	2021	2022	2023	2024	2025*
Newbuilding deliveries	3.0	4.3	4.4	4.4	5.7	6.0
Scrapping (sales)	1.0	0.6	0.3	0.5	0.5	1.0
Losses	0.0	0.0	0.1	0.0	0.0	0.0
Plus/minus adjustments	0.0	0.5	0.1	–0.1	–0.1	0.0
World fleet at end of year	**109.8**	**114.2**	**118.5**	**122.3**	**127.4**	**132.4**
% change from previous year-end	+1.8	+3.6	+3.7	+3.3	+4.2	+3.9

source: Clarksons Research (historical data) & Bulk Shipping Analysis December 2025 forecast **forecast*

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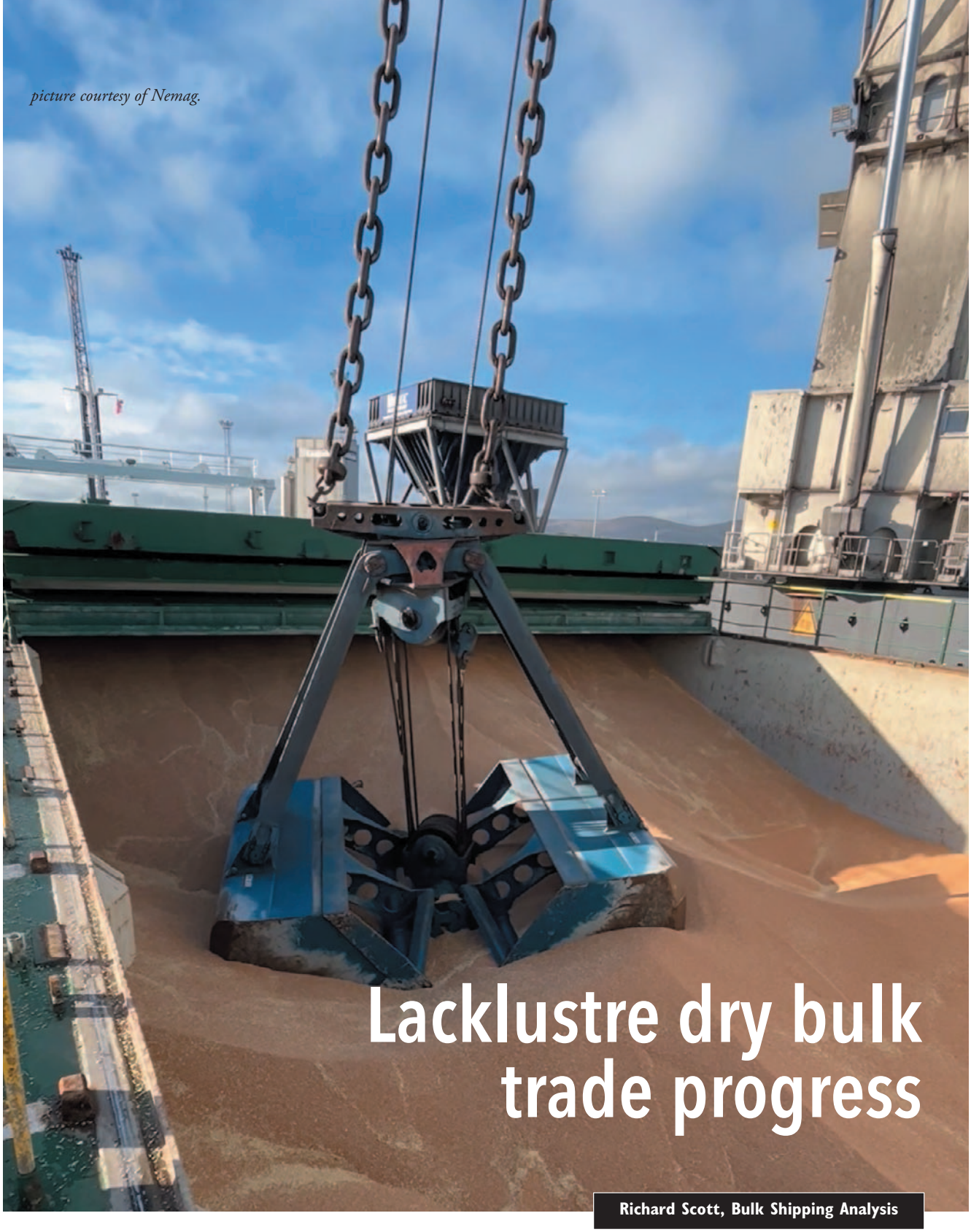

picture courtesy of Nemag.

Lacklustre dry bulk trade progress

Richard Scott, Bulk Shipping Analysis

Dry bulk commodity trade momentum slowed during the past twelve months, amid a sharp deceleration in China's imports. This pattern of limited global seaborne trade progress was foreseen at the beginning of last year as a possible outcome. The slacker trend seems quite likely to persist during 2026.

Tentative estimates point to a 2025 annual dry bulk trade increase of about 50mt (million tonnes), about a quarter of the previous year's 190mt expansion. This estimate is based on available data for last year's first ten or eleven months, and calculations for the remaining weeks, which may be revised. By contrast with the previous year, China's contribution to growth was greatly reduced. Other countries' imports in aggregate appear to have advanced modestly, enabling a small rise in the global total to be recorded.

Indications for 2026 currently suggest similarly constrained potential for dry bulk commodity importers to raise volumes. Among individual commodity trades, differing circumstances are influential. Cargoes related to industrial activity in many countries may not show signs of robust strengthening, but there have been some clearer signs of stronger agricultural bulk commodity movements.

Provisional data

When more figures for the final months of 2025 become available over the weeks ahead, world seaborne dry bulk trade

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TABLE 1: WORLD SEABORNE DRY BULK COMMODITY TRADE (MILLION TONNES)

	2021	2022	2023	2024	2025*	2026*
Iron ore	1,520	1,472	1,540	1,593	1,620	1,610
Coal	1,231	1,236	1,334	1,378	1,320	1,295
Grain (including soyabeans)	529	514	523	543	555	570
Other dry bulk commodities	2,281	2,210	2,236	2,308	2,380	2,430
Total dry bulk trade	**5,561**	**5,432**	**5,633**	**5,822**	**5,875**	**5,905**
% growth from previous year	3.7	-2.3	3.7	3.4	0.9	0.5

source: Clarksons Research (2021-2024 data) and Bulk Shipping Analysis forecasts, December 2025 **forecast*

estimates may be revised significantly. As shown by table 1, commodity movements appear to have increased by around 1% last year, following a much larger 3.4% growth rate in 2024. Performance among the main elements varied in the past twelve months, including a sizeable fall in coal trade.

Looking at prospects for this year, forecasts are based on assumptions that may prove inaccurate. This feature is a common characteristic, reflecting the difficulty of foreseeing how world events — economic, weather-related, political or geopolitical — affecting industrial or agricultural commodity trade volumes are often almost impossible to predict. Recent signs, some specific to individual commodities, suggest that events pointing towards firm growth in global dry bulk trade during the course of this year are not prominent.

How are economies evolving?

As emphasized by variations over the past few years, changing patterns of economic activity among many countries directly affect dry bulk import volumes. Large changes in the pace of consumer, business or government spending are reflected in demand for, and output of, industries using dry bulk commodities mainly or partly obtained from foreign suppliers.

The pace of global economic activity was maintained broadly unchanged last year compared with the previous year, according to provisional calculations. According to the latest (December) assessment by the OECD organization "the global economy has been resilient...despite concerns about a sharper slowdown in the wake of higher trade barriers and significant policy uncertainty". World growth in gross domestic product (an overall measure of goods and services output) is estimated to have remained almost flat in 2025 at 3.2%, after 3.3% in the previous year.

For 2026, uncertainties about economic growth prospects prevail, amid disruptive geopolitical influences that potentially could remain problematical. But a positive sign is that inflationary pressures continue to recede and are apparently largely under control, allowing the reduction in policy interest rates to be sustained.

OECD's detailed recent forecasts, shown in table 2 on p8, reflect a cautious view of unfolding events. World GDP growth this year could be below that seen in the past twelve months, down by 0.4 percentage points from last year's estimated 3.3%, to 2.9%. A picture of negative changes among the most influential countries is envisaged. The USA, European Union, Japan, China and India may all see slower growth rates.

An overview by OECD analysts suggests

TABLE 2: GDP GROWTH IN KEY ECONOMIES (% CHANGE FROM PREVIOUS YEAR)

	2021	2022	2023	2024	2025*	2026*
USA	6.1	2.5	2.9	2.8	2.0	1.7
Eurozone	6.2	3.3	0.5	0.8	1.3	1.2
Japan	2.7	1.2	1.7	–0.2	1.3	0.9
India#	9.7	7.0	8.2	6.5	6.7	6.2
China	8.4	3.0	5.2	5.0	5.0	4.4

*source: OECD Economic Outlook, 2 December 2025 #India's fiscal years starting April * forecast*

that although elevated geopolitical and policy uncertainty will "continue to weigh on domestic demand in many economies... global growth is expected to recover through 2026". This process may be assisted by "the fading impact of higher tariff rates, favourable financial conditions, supportive macroeconomic policies and lower inflation". This background could benefit industrial activity, potentially proving a positive influence on elements of dry bulk commodity trade. Nevertheless, slowing growth in China in particular may act as a restraint.

Steel industry impact

A large proportion of global dry bulk commodity trade movements is affected by trends in the steel industry. Demand for steel is influenced by consumer, business and government spending patterns. Changes in steel output volumes resulting, in countries where steel is produced cause variations in consumption and imports of iron ore, coking coal and some other raw materials.

Major raw materials importing countries saw reduced steel production volumes in 2025. In the first ten months of last year, compared with the same period of the previous year, World Steel Association data shows a broad pattern of reductions. During that period crude steel production was 4% lower in China, 3.9% lower in Japan, 3.7% down in South Korea and recorded a 3.3% decline in the European Union. Conversely in India (a leading coking coal importer) production rose strongly by over 10%.

Steel industry seaborne raw materials trades — especially iron ore — are dominated by China's massive import demand. Despite the weaker steel production volume in China last year, related import demand for iron ore remained buoyant amid restocking. Steel usage was restrained amid the effects of subdued demand from residential property construction activity. However, higher exports of steel products provided support.

Prospects for steel production this year indicate a slight improvement. The latest short-range steel demand outlook published by the World Steel Association suggests a possible outcome. Based on this view, there is potential for negative influences on steel demand in some of the main producing and raw materials importing countries to recede in 2026. The European Union plus United Kingdom may see demand growth accelerating to 3%. In both China and Japan, demand reductions may diminish to about 1%. South Korea's decline may cease and a turnaround towards resumed growth of 1% could emerge. Actual steel production volume changes are not forecast by the WSA in the short-range analysis.

Trade in iron ore and coking coal

About one-third of global seaborne dry bulk commodity trade consists of movements of the principal steel industry raw materials, iron ore and coking coal. In 2025 iron ore trade appears to have increased by 2%, compared with the preceding year, to around 1,620mt as

Rio Tinto holds the rights to mine Blocks 3 and 4 of the Simandou iron ore mine, in the Republic of Guinea.

amid the strong upwards steel output trend forecast to continue, which is heavily dependent on foreign coal supplies. China's raw materials imports seem more likely to experience downwards pressures.

Steam coal trade

Global seaborne coal trade is mostly comprised of steam coal also known as thermal coal, amounting to around four-fifths of the total. Consumption and import demand is mainly related to usage by power stations in a wide range of countries, and steam coal is also used in cement manufacturing plants and other industrial processes.

In 2025 as a whole based on provisional calculations, world seaborne steam coal trade may have fallen by 4–5% compared with the previous year, to about 1,040mt, shown in table 1. Coking coal trade (not shown separately) evidently saw a reduction.

China's imports contribute over three-quarters of world seaborne iron ore trade volume, dominating the segment. In 2024 these imports (including some overland movements) totalled 1,240mt. The volume received apparently increased again by about 1% during the past twelve months. Within the category of other importing countries comprising the remaining one quarter of the global total — including the European Union, Japan and South Korea — signs suggest a modest rise last year.

World seaborne trade in the coking coal segment is smaller than in iron ore while imports are more evenly distributed among a range of countries. In 2025 the coking coal global total is estimated to have decreased by around 8%, to 270mt. Lower imports into China and India contributed a large part of the downturn, accompanied by a mixed performance among other main importers. Japan's volume may have decreased while Europe's imports appear to have stabilized.

The outlook for global steel industry raw materials trade (iron ore and coking coal together) in the year ahead suggests that potential for expansion is limited, and the volume may be fairly flat. Many countries are likely to experience continued restraints on steel production growth and raw materials usage. However, India's coking coal imports could rise,

after 3% growth in the previous twelve months. Last year's outcome resulted largely from a steep downturn in China's import purchases. India's volume also appears to have fallen while, by contrast, a group of smaller Asian importers including Vietnam saw stronger purchases.

After extensive disruption of global energy supplies in previous years, which had provided extra support for coal demand, a more normal pattern of influences resumed during 2025. Last year's focus shifted back towards the worldwide trend of transitioning to cleaner energy sources. Government policies aimed at cutting coal usage, especially in power stations, to reduce carbon emissions became more prominent again. Nevertheless in some countries coal's contribution to energy supplies and energy security remains vital.

A large reduction in China's steam coal as well as in coking coal imports last year reflected downwards pressure on this energy source, amid subdued demand and abundant stocks, while domestic coal production and availability improved. The negative trend may persist through 2026 based on recent indications. In several other countries also, adverse influences affecting coal imports may prevail, suggesting another decrease in world seaborne steam coal trade during the year ahead.

VIGAN 700tph grain shiploader in action.

Trade in grain & soya

Within the definition of global seaborne trade in grain and soya, large quantities of wheat, corn and other coarse grains such as barley, plus soyabeans, are usually included. Related trade in soyameal (and other oilseeds and meals) is often included in the minor bulk agricultural commodity trade segment. Calculations suggest growth in seaborne grain and soyabeans trade occurred last year, as shown in table 1, raising the volume by 2% to over 550mt.

Typically, trade statistics for this commodity group are compiled on a 'split year' basis, known as a 'crop year', 'marketing year' or 'trade year', reflecting the sequence of world harvests and timing of new export seasons. An especially prominent feature of trade movements is the impact of weather variations, often unpredicted, affecting crops harvested by export suppliers as well as domestic crops in importing countries. This aspect is a key driver of trade and import demand changes from year to year.

Based on the usual marketing year statistics, world trade in wheat and coarse grains in the past 2024/25 year ending third quarter 2025 was lower than in the preceding 2023/24 period, by about 8%, at 426mt (including land movements). US Department of Agriculture (USDA) figures show that imports by countries in Asia, Europe and the Middle East region were lower than in the preceding twelve months, contrasting with higher imports into North Africa and sub-Saharan Africa.

In the current 2025/26 trade year an upturn in global grain trade is expected. USDA analysts estimate a 5% increase to 447mt, resulting from higher imports into numerous countries around the world, especially in Asia, where China's purchases are predicted to partially recover after declining steeply.

Global trade within the soyabeans and soyameal segment was about 4% higher in the 2024/25 trade year ending September 2025, at 257mt, based on USDA data. The largest buyer is China, forming over two-fifths of the world's total imports. Purchases by Chinese users, mostly consisting of beans, were reduced in the past twelve months, but beans and meal imports by other buyers increased.

Signs point to sustained growth in world soyabeans and meal trade in the current 2025/26 year. A 3% increase to 264mt is indicated by USDA calculations. Imports of beans by Chinese crushing (processing) mills are forecast to rise by 4% to 112mt, benefiting from additional consumption in livestock feed.

Minor bulk trades

The extensive minor bulks category of seaborne dry bulk trade includes many cargo varieties. Commodities of widely differing types contribute, some of which provide large volumes while others are relatively small. The entire segment comprises a huge scale of activity. Estimates suggest that it provides around two-fifths of all world seaborne trade in the dry bulk sector.

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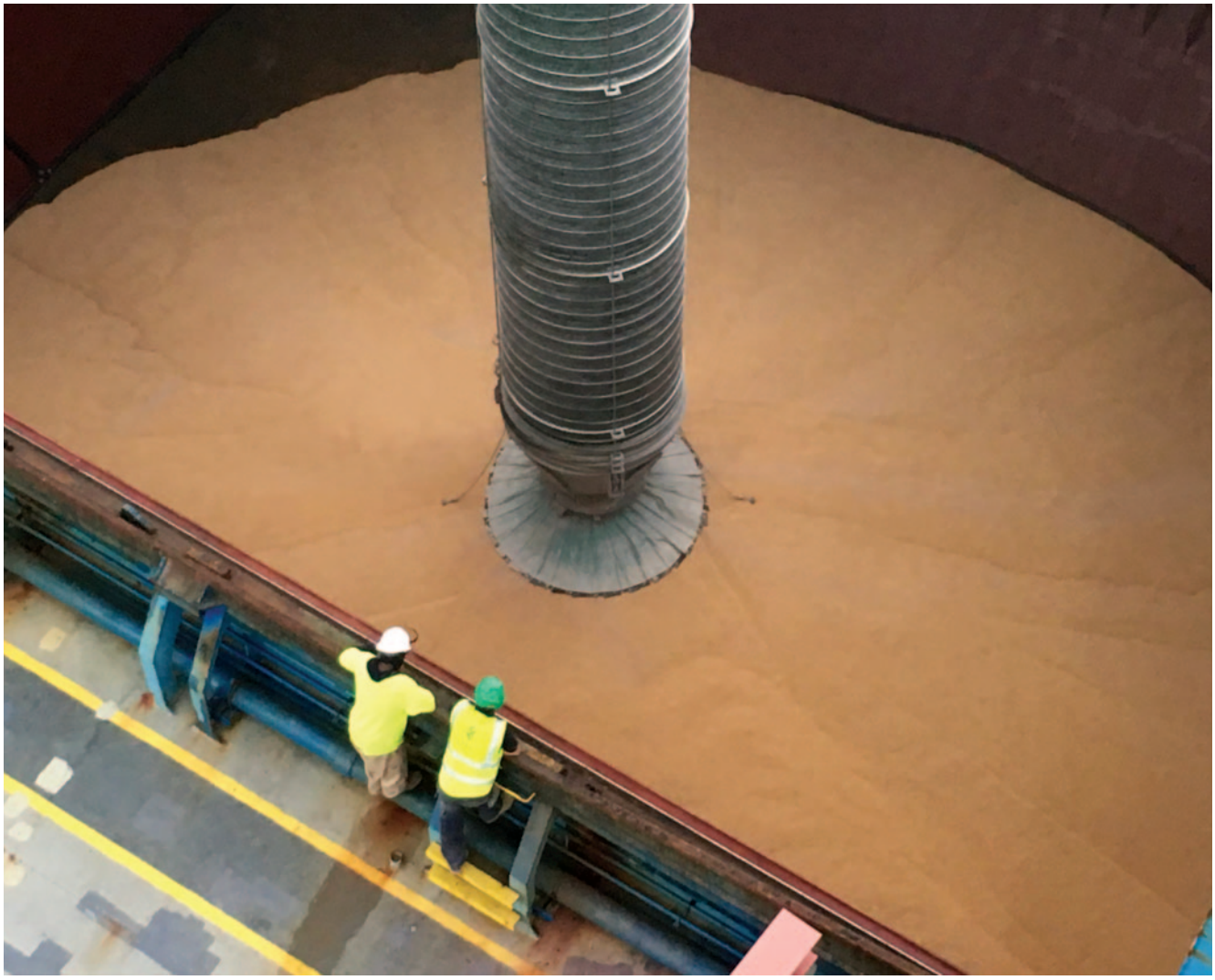

industries and construction activity comprise the biggest part of the minor bulks group. These are described as 'industrial' bulks. The remainder is agricultural or related cargoes. Based on calculations by Clarksons Research, global seaborne minor bulk trade increased by 3% in 2024 to reach 2,300mt. A similar growth rate last year may have resulted in the total rising by about 3%. Prospects for 2026 point to another increase.

Steel products and forest products, both including many different varieties, are the largest among individual components in this trade segment. Other prominent elements in the 'industrial' sub-group are bauxite and alumina, steel scrap, cement, coke and petroleum coke, salt, and nickel and other ores. Agricultural or related bulk cargoes consist of sugar, oilseed meals, rice, plus raw or semi-processed fertilizers.

During 2025, numerous elements of the minor bulks segment strengthened based on provisional data. Modest growth apparently occurred in steel products (coil, plate, sheet and other items) and forest products trades. But the biggest contribution to segment expansion appears to have been derived from the bauxite and alumina trade, where China's imports expanded rapidly. Global cement trade appears to have resumed growth after several annual reductions caused by adverse influences in the construction industry.

Overview of the year ahead

Evaluations of dry bulk trade prospects over a period of twelve months ahead often reflect seemingly reliable indications, accompanied by other signs that are largely conjectural. The elements perceived as more reliable sometimes prove erroneous. One foundation for forecasts is the outlook for global economic activity and its likely effects on commodity-using activities, as a basis for assessing changes in import volumes. But effects are often greatly modified by more specific influences in individual countries.

There are not many signs of an improving trend in the global economy that could benefit commodity import demand substantially in 2026, although support could be maintained. Attention is especially focused on China's economy, because of its huge contribution to world imports of dry bulk commodities and growth of seaborne trade in recent years. Forecasts mostly suggest that economic activity in China is unlikely to accelerate over the next twelve months.

Specific uncertainty surrounds the outlook for imports of iron ore and coal into China in the year ahead. Imports of these two raw materials together totalled an estimated 1,610mt last year, equivalent to more than a quarter of the entire world dry bulk commodity trade volume. If another significant reduction occurs following the 2025 downturn in coal purchases, further expansion of global dry bulk trade will be harder to achieve.

Analysts have cautioned that potential restraints on future global dry bulk trade growth in 2026 and in the longer term are becoming clearer. Over an extended period of years downwards pressure on world coal trade looks set to persist, accompanying international agreement to reduce the use of this fuel. Iron ore trade also may have almost ceased growing, and reached a plateau from where an eventual decline may occur. By contrast, there are brighter prospects in the other categories, grain and soya movements, and some minor bulk elements. DCi

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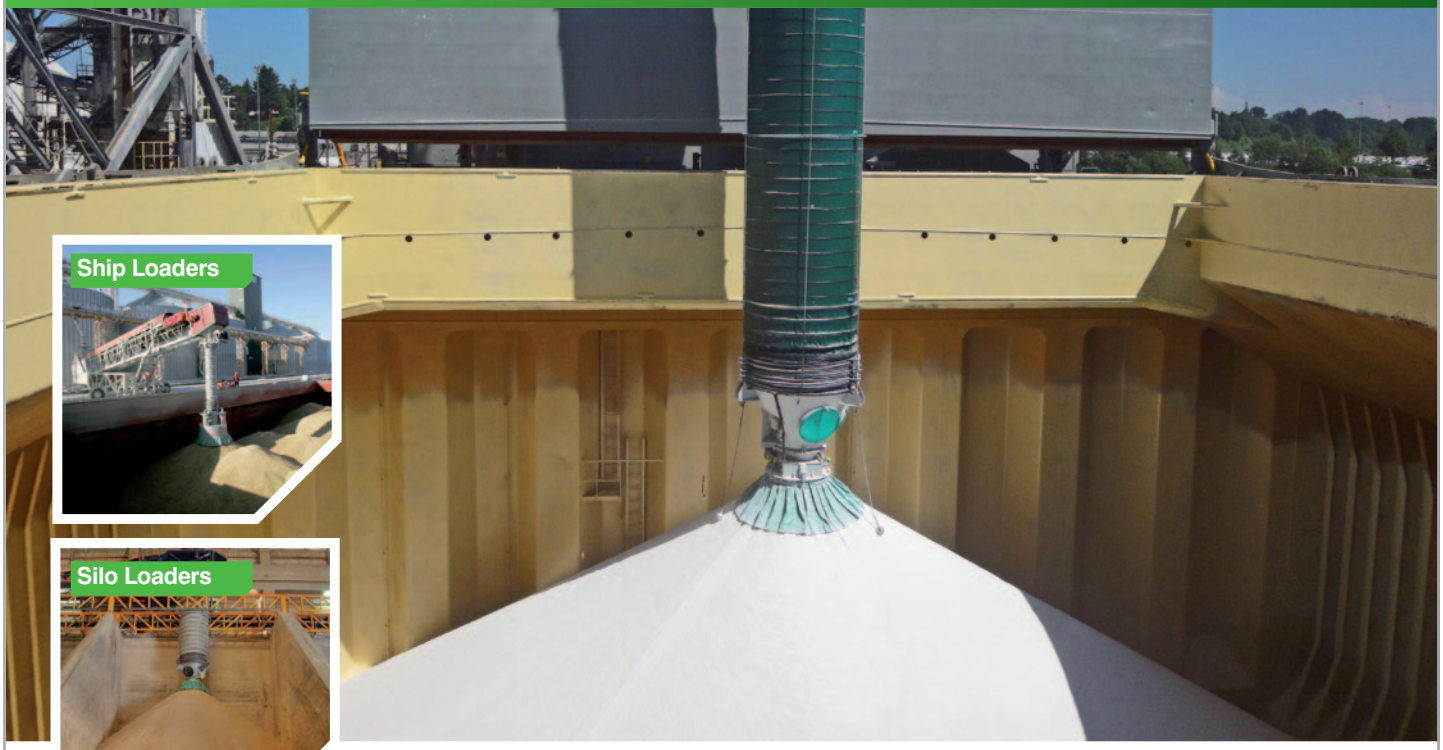

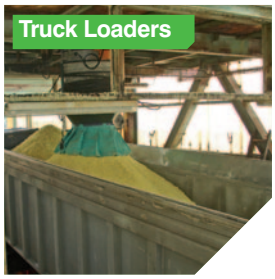

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Anemoi completes installation of four folding Rotor Sails on Newcastlemax in second project with Berge Bulk

Berge Meru *fitted with four Rotor Sails from Anemoi.*

Berge Bulk and Anemoi Marine Technologies Ltd (Anemoi) have successfully completed the installation of four folding Rotor Sails, five metres in diameter and 35 metres in height, on Berge Bulk's 208,000dwt Newcastlemax vessel *Berge Meru*, marking the company's second Rotor Sail project with Anemoi.

The installation was carried out at Yiu Lian Dockyards, China, in December 2025 and the vessel has now completed its first voyage to Singapore. The Rotor Sails, supplied by Anemoi, are designed to harness wind power to provide auxiliary propulsion, reducing fuel consumption and associated emissions during voyages.

This project follows the delivery of four 5x35m Anemoi Rotor Sails on *Berge Neblina*, a Berge Bulk Valemax, in June 2024, the first vessel in Berge Bulk's fleet to be equipped with Anemoi's Rotor Sail technology. The installation on *Berge Meru* draws on the operational experience gained from that earlier installation, together with ongoing in-service performance observations, contributing to confidence in the technology and aligning with Berge Bulk's continued focus on practical, scalable decarbonization measures.

The folding Rotor Sails can be lowered when required, allowing flexibility for port operations and air-draught restrictions while maintaining performance at sea, but the Rotor Sails do not need to be lowered in extreme weather, they will stop generating thrust when simply switched off.

Said Clare Urmston, CEO of Anemoi, "We are proud to complete our second project with Berge Bulk, bringing large-scale folding Rotor Sails to another vessel. *Berge Meru* demonstrates how wind propulsion can be integrated into commercial bulk carriers in a practical and operationally flexible way. We value Berge Bulk's continued confidence in our technology."

Anemoi's first contract with Berge Bulk saw it equip the company's Valemax Berge Neblina *with four Rotor Sails.*

Bulk carrier market

a shifting trajectory

Panamax vessel during loading operations.

Richard Scott, Bulk Shipping Analysis

An improving trend in the bulk carrier freight market during much of the past twelve months reversed at the end of the year. In 2025 as a whole global dry bulk commodity trade, and demand for bulk carriers based on tonne-miles, experienced slower growth than seen previously. This outcome was exceeded by expansion of the world bulk carrier fleet amid higher newbuilding deliveries. A similar pattern may unfold in 2026.

The underlying statistical balance between vessel demand and supply deteriorated last year. Much reduced growth in dry bulk commodity trade volumes accompanied by an apparent sharp deceleration in tonne-mile demand enlargement was recorded. Meanwhile the steadily expanding bulk carrier fleet ensured additional transport capacity available amid changes affecting vessel productivity.

Variations among these influences almost certainly will be seen over the twelve months ahead, although some are not easy to foresee because signs of future influences are unclear or subject to differing perceptions. Prospects for the 'basic' determinants point to a possible weakening balance during 2026, which

TABLE 1: WORLD BULK CARRIER FLEET (MILLION DEADWEIGHT TONNES)

	2021	2022	2023	2024	2025*	2026*
Newbuilding deliveries	39.1	32.0	35.4	33.8	36.5	44.0
Scrapping	5.2	4.3	5.4	3.8	5.5	8.0
Losses	0.1	0.1	0.0	0.3	0.2	0.0
Other adjustments/conversions	–0.1	0.0	-0.1	0.1	0.0	0.0
Net change in fleet	33.7	27.6	29.9	29.8	30.8	36.0
Fleet at end of year	**947.7**	**975.3**	**1,005.2**	**1,035.0**	**1,065.8**	**1,101.8**
% growth from previous year	3.6	2.9	3.1	3.0	3.0	3.4

source: Clarksons Research (historical data) & BSA 2025–2026 forecasts **forecast*

could restrain the freight market. Dry bulk trade growth looks set to remain limited, affecting the vessel demand trend. This pattern is likely to be exceeded by bulk carrier fleet growth, perhaps with a tendency to gain momentum as shown in the table. Other outcomes are possible. There is a lack of clarity surrounding numerous factors.

Steady fleet growth

Looking at the 'supply side' of the bulk carrier freight market, fleet growth was similar in the past year to the annual increases seen in several preceding years. Based on the usual deadweight tonnage measurement — an approximate indication of cargo-carrying capacity — the world fleet grew by an estimated 3% in 2025. Compared with the previous twelve months, a higher volume of new ships joining the fleet was seen, while the tonnage of old or uneconomic ships leaving also increased, as the table shows.

The world fleet of bulk carriers (including all ships with capacity of 10,000 deadweight tonnes and over) at the end of 2024 consisted of 14,172 vessels totalling 1,035 million dwt, according to data compiled by Clarksons Research. One year later at the end of 2025 this fleet was about 31m dwt larger at 1,066m dwt, based on provisional estimates that may be substantially revised when more information is available.

In 2025 newbuilding deliveries, new capacity being added, appear to have risen by over 2m dwt or 8% from the previous year to a total exceeding 36m dwt. Scrapping, also often referred to as demolition sales or recycling also rose. Although large in percentage terms, this rise of a third or more from the previous twelve months to over 5m dwt in 2025 maintains scrapping at a minimal proportion of the bulk carrier fleet, continuing a trend of exceptionally low volumes seen in recent years.

Fleet segment growth rates last year among the main vessel size groups (Capesize, Panamax, Handymax and Handysize) varied in a range of 1% to 4%. The slowest increase at 1% was in the Capesize segment, comprising ships of 100,000 dwt and over, forming two-fifths of the entire world bulk carrier fleet. Within the Panamax 70-99,999 dwt size group, including Kamsarmax 80–89,999dwt bulk carriers, growth exceeded 3%.

Elsewhere, expansion rates were higher. The Handymax 45–69,999dwt segment (including Ultramax ships exceeding 60,000dwt as well as Supramax bulkers of 50–59,999dwt) grew by over 4%. In the Handysize segment of smaller 10–44,999dwt bulk carriers, growth reached almost 4%.

Productivity effects

Transport capacity changes are not always illustrated accurately by deadweight fleet figures. Calculating real capacity available is often more complex. Changes in world fleet capacity to move cargoes partly depend on how productively ships are employed. This productivity aspect reflects numerous influences such as ships' voyage speeds, ballast (empty) voyage patterns, and duration of port visits, comprehensive data for which is not always accessible. Using deadweight tonnage as a measure is advantageous, because it is simple and available promptly. It is a useful broad indicator.

An important determinant of transport capacity is the average voyage speed of the fleet. A relatively small change in the bulk carrier fleet's average speed, resulting in the time taken to complete a voyage increasing or decreasing, significantly affects annual transport capacity available. In recent years a declining speed trend has been evident, resulting in reduced average numbers of voyages completed annually and therefore lower ship productivity.

Slowing sea trade

During 2025 dry bulk trade growth slackened after brisk expansion in the previous couple of years, based on provisional figures. A detailed trade overview is contained in another article on pxx of this edition of *DCI* (entitled 'Lacklustre dry bulk trade progress'). The following paragraphs provide a summary overview.

Last year global seaborne dry bulk commodity trade increased by about 1%, following growth of 3.4% in the previous twelve months. Performances among the main commodity components varied in 2025, ranging from positive to negative annual volume changes. Iron ore and grain/soya are estimated to have seen increases of about 2%, while the minor bulk trade category apparently grew by 3%. Conversely, coal trade fell by an estimated 4–5%. Overall calculations for dry bulk trade suggest a rise of about 50 million tonnes from the previous year, reaching 5.9 billion tonnes.

A feature of last year's reduced world dry bulk trade growth was the change in

Capesize bulker.

the contribution of China's imports. These evidently remained broadly flat, after rapid expansion previously. Lower coal imports into China had a large impact on the total, offset by higher volumes of other commodities. As a result, other countries as a group, with imports growing by about 1–2%, provided all or most of the global trade increase.

Demand for the services provided by bulk carriers is a more precise indicator relevant to a shipping market perspective. This aspect affects how much bulk carrier 'employment' is created. Cargo volumes transported are the usual focus, because these can be measured relatively easily and are a convenient proxy for vessel demand. Also, voyage distances are influential, affecting the number of cargo-carrying trips performed by a ship in each period. Any significant change in the annual average voyage distance performed by the cargo-carrying capacity has an impact on vessel demand.

Both cargo (trade) volume and voyage distance are measured by a 'tonne-mile' unit, providing a more accurate gauge of demand for transport capacity. But statistics compiled on this basis are often not as readily available or as timely, because additional information and extensive calculations are required. In 2025, according to preliminary estimates, the annual tonne-miles percentage growth was about one percentage point above the tonnes volume percentage increase, boosting bulk carrier demand.

The demand/supply balance

Changes in the balance between demand for, and supply of, bulk carriers for moving cargoes shaped trends in freight market rates over the past twelve months and earlier. During the past year as a whole, dry bulk commodity trade and vessel demand was somewhat stronger on average, accompanied by more rapidly rising capacity in the world fleet of ships carrying these cargoes. The changes modified the balance of market influences unfolding.

Patterns evolving on the bulk carrier demand side of the balance in recent years have been especially variable. An upturn in trade volumes and tonne-miles emerged in 2023 after disruptions caused in several preceding years by the pandemic and the global energy crisis. This stronger trend persisted in 2024 but (based on estimates) decelerated markedly in 2025. In total over the past five years world demand for bulk carriers (on a tonne-mile basis) appears to have grown by about a sixth.

The supply side trend has seen a more

Supramax bulker in calm waters.

Ultramax vessel Alwine Oldendorff.

steady progression. Enlargement in the past five years was continuous with annual growth rates in the world bulk carrier fleet slackening modestly, within a narrow range. The outcome was fleet deadweight capacity at the end of last year about 17% higher. Substantial newbuilding deliveries were seen during this period, and there was minimal scrapping in most years, sustaining fleet growth.

These changes influenced the freight market rates trend. Further changes in the balance of elements affecting the market will be seen in the period ahead, through 2026, but there is uncertainty — a typical feature — about how patterns will evolve. Moreover, effects from the direction and trend of the market demand/supply balance will be modified by complications from many temporary developments.

An analysis of basic elements suggests that during this year, according to current perceptions, slow growth in dry bulk trade and vessel demand may be exceeded by bulk carrier fleet expansion. But other influences are likely to alter this relationship.

Among factors that have been prominent in the past twelve months, an influence often considered as temporary but nevertheless prolonged is still causing uncertainty about its future impact. Diversion of trading patterns — to avoid use of the Suez Canal because of attacks on ships in the Red Sea approaches to the canal — has added to voyage distances for many bulk carriers, boosting tonne-miles. Recently there were tentative signs suggesting a return to more normal trading patterns may be approaching, with a negative impact on vessel demand.

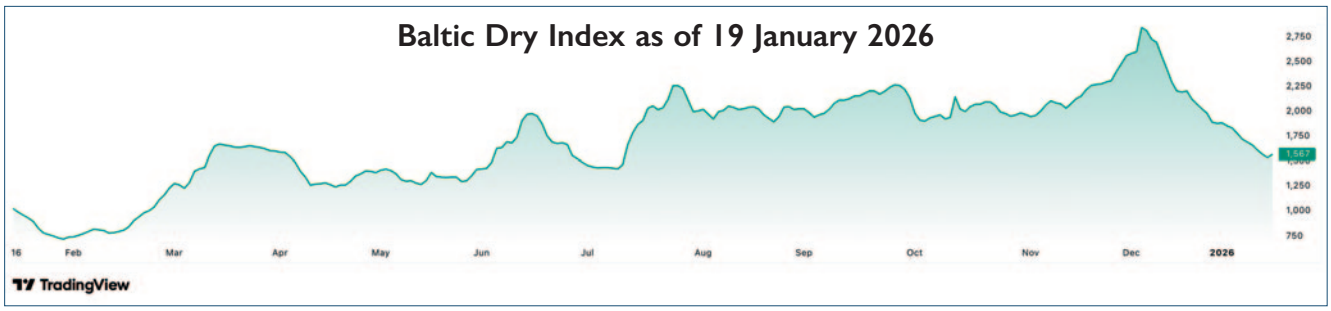
Freight market patterns

From low levels at the beginning of last year, bulk carrier freight rates began a firming trend. This broadly positive course was maintained, with fluctuations, through most of 2025. But in the final month there was a distinct weakening, causing a steep fall in freight rates from the year's highest point.

Although the market generally followed this evolution, changes were not always evenly spread. In the Capesize segment in particular, freight rate changes were often larger and more distorted proportionally than elsewhere, as often happens. Capesize rates are especially volatile, reflecting short-term demand fluctuations in the two commodity trades — especially iron ore, and also coal — on which these large size bulk carriers mostly depend for employment opportunities.

The Baltic Dry Index (BDI) provides a representation of how the bulk carrier market freight rates trend is evolving, although this index does not fully illustrate the sector's entire performance. Calculated daily by the Baltic Exchange, the BDI is based on a weighted basket of time charter hire rates for various bulk carrier sizes and typical employments on the specific long-distance international routes included. It is an approximate indicator of changes in the cost of transport for dry bulk cargoes.

After starting 2025 at around the 1,000 points level, the BDI rose towards 1,700 in mid-March before retreating and then climbing again towards 2,300 by the end of July. A period of fluctuations ensued, followed by a further advance to around 2800 at the beginning of December. This level proved unsustainable, and there was an abrupt and dramatic fall of almost one thousand points to about 1,900 at the end of the year.



Such short-term changes in freight-rate levels are often only loosely and indirectly connected to the 'fundamental' influences determining the demand/supply balance trend. Fluctuating patterns of vessel and cargo availability around the world and in specific trade routes, and market sentiment about current and expected future events having an impact, are large influences on the pattern of freight rates emerging.

Market prospects

Expectations for the bulk carrier freight market over the twelve months ahead point to a possibility that the trend may reflect a deteriorating balance between demand and supply influences. Interpretations and opinions vary, as usual, when so many uncertainties are already apparent.

Among what seem to be likely variations or discernible patterns, in broad terms, limited or no growth in global dry bulk trade volumes and vessel demand in 2026 could be envisaged. Meanwhile bulk carrier fleet capacity seems likely to continue growing this year at a similar rate to that seen in the past twelve months, exceeding the pace at which employment opportunities are increasing and adversely affecting the market balance.

If there is any extra impetus from the world economy, or an individual economy's improved performance, benefiting commodity import demand, there are no signs suggesting that this will be a prominent feature. Similarly to developments in many recent years, substantial dependence on how China's economy performs is evident, and recently there have been indications of restricted scope for positive effects in some dry bulk trades.

Potentially negative changes in China's import demand during 2026 are visible. Coal imports seem vulnerable to further reduction after last year's decline, while iron ore import could begin to weaken after last year's apparent peak volume. Commercial influences on consumption, domestic production and stocks of these minerals will be instrumental in determining import demand. But government decisions about industrial activity and import policy, which is more difficult to predict, are also likely to have a large impact.

The role of 'disruptive influences' affecting bulk carrier employment in the period ahead is another puzzle. Benefits for tonne-mile employment seen in recent years, amid vessels switching to longer trade routes in response to disruption of the usual pattern, have been substantial. Temporary influences, such as re-routing to avoid the Suez Canal, are set to be reversed or at least partly reversed at some point in the future. Other influences affecting the market demand/supply balance, especially port congestion and delays, are difficult to predict in duration and magnitude.

Despite estimates of rising bulk carrier newbuilding deliveries this year, a likely increase in scrapping may assist in restraining fleet growth. This expectation provides a basis for arguing that the underlying market demand/supply balance may not weaken greatly, assuming there is no massive reduction in trade volumes and tonnage demand.

Much higher scrapping of old or uneconomic vessels seems predictable and could firmly support the freight market. The ageing world fleet of bulk carriers reflecting very slow scrapping in the past few years is identified as a reason for expecting demolition sales to accelerate soon. Tightening regulations designed to reduce carbon emissions are seen as hastening this process.

But forecasting recycling volumes more specifically is largely based on guesses. It is a speculative activity because market sentiment among shipowners — reflecting recent, current and expected future freight market rates, and how secondhand vessel prices are evolving — is often a major influence on demolition sales decisions. Collective changes in owners' attitudes and actions are not usually predictable, except very broadly.

International shipping association BIMCO, in a quarterly analysis of the bulk carrier market published at the end of October last year, commented "we estimate that the dry bulk market supply/demand balance will...gradually weaken in 2026". BIMCO analysts drew attention to signs that "cargo demand growth is slowing" and that "fleet growth is expected to accelerate in 2026". A key risk identified is the return of ships to the Red Sea route, resulting in reduced bulk carrier demand.

More market optimism may be, and actually is being, expressed by other analysts and market players. Typically a range of expectations for the twelve months period ahead, sometimes extending from positive to negative, is visible. It is clear though that prior assessments, however competently composed, are often nullified by unexpected events. Unpredicted changes, sometimes singly, or in combination could alter the outlook. DCi

CSL's Ferbec*: Ultramax vessel.*

Why bulk carriers are still being overvalued

and how inspection data is closing the gap

Bulk carrier valuation has long been shaped by a relatively narrow set of indicators, *write John Nicholson, Head of Technical, and Adam Compton, Head of Business Development, Idwal.* Recent comparable sales, prevailing freight rates, availability of tonnage, and vessel age continue to form the basis of pricing discussions across the sector. These reference points are well understood and readily available, which makes them particularly attractive in markets where transactions move quickly and time for detailed analysis is limited. In many cases, they provide a useful starting point for negotiations. However, they do not always reflect the physical reality of the asset being traded, particularly when condition varies materially between vessels that appear similar on paper.

The condition of a bulk carrier remains one of the most influential factors in determining future capital expenditure, operational reliability, and residual value, yet it is still underrepresented in valuation discussions. This is not because condition is viewed as unimportant, but because it is inherently more difficult to assess, compare, and quantify than headline market data. Condition requires physical access to the vessel, technical interpretation, and an understanding of how findings translate into financial and operational risk. As a result, pricing often reflects market sentiment rather than a detailed understanding of the vessel's actual physical state.

In stronger markets, this tendency becomes more pronounced. Rising freight rates and improving liquidity encourage participants to anchor values to recent deals, particularly when competition for tonnage increases and timelines shorten. Brokers, buyers, and financiers are often working under commercial pressure, and there is a natural preference for benchmarks that allow negotiations to progress without delay. Physical condition does not lend itself easily to this approach. Inspection findings can be complex and technical, and without structure they can be difficult to interpret or compare during a live transaction.

As a result, assumptions continue to play a significant role in bulk carrier valuation. Vessels that are in class, recently dry docked, or operated by well regarded owners are often presumed to be in good condition. These factors are relevant, but independent inspection data consistently shows that they are not always reliable indicators of an asset's true state. In practice, they can obscure emerging issues or create misplaced confidence where deterioration is developing beneath the surface.

Class status is a clear example. Class records are an essential component of any due diligence process and provide valuable insight into compliance history and recorded deficiencies. However, class and statutory surveys are conducted for a specific regulatory purpose and are not designed to provide a comprehensive assessment of day to day condition. They may not capture early stage deterioration, localized corrosion, or declining

maintenance standards that develop between survey intervals. The level of detail in class records can also vary considerably, and severity is not always described in a way that supports commercial decision making.

A similar assumption is often made regarding dry docking. A recent yard stay is often taken as a sign that near-term capital expenditure will be limited. In practice, the scope and quality of dry dock work can differ significantly from vessel to vessel. A ship may emerge fully compliant, yet with repairs carried out to minimum requirements, underlying issues deferred, or workmanship that does not provide long-term durability. In some cases, cosmetic improvements can mask deeper structural or coating related problems. Without a detailed independent inspection, it is difficult to judge whether the dry dock has genuinely improved the vessel's condition or simply delayed future costs.

Age remains one of the most heavily weighted factors in bulk carrier pricing because it is simple, visible, and closely linked to regulatory milestones and perceived remaining life. However, age alone provides limited insight into how a vessel has actually been maintained. It does not reveal the condition of coatings in ballast tanks and cargo holds, the extent of corrosion, the quality of past repairs, or the state of machinery systems that can have a direct impact on reliability and operating costs. Younger vessels trading intensively with poor maintenance practices can deteriorate faster than expected, while older vessels that have benefited from consistent care often perform well beyond market expectations.

In transactional practice, a disconnect between market value and inspection findings is not unusual. It is most evident when markets are moving rapidly, when transactions are subject to time pressure, or when the most recent inspection is outdated or limited in scope. In such cases, independent inspection data frequently highlights risks that are not reflected in the agreed price. Early corrosion, coating breakdown, or deteriorating hatch cover condition may not yet have triggered class action, but they have clear implications for future expenditure, cargo integrity, and operational reliability.

Survey reports, certification and maintenance records provide a useful baseline, but an independent inspection remains essential to assess the condition of the vessel. Paper records may not capture deterioration developing between surveys, may not reflect the quality or durability of repairs, and often fail to identify indicators of broader maintenance culture onboard. Issues that satisfy formal requirements can still present material operational or financial risk if underlying causes remain unresolved or if repairs have been carried out without addressing root problems.

Coatings from companies like PPG ensure that vessel hulls and hold remain in top condition.

Certain forms of deterioration are particularly likely to be missed when valuation relies primarily on paperwork. Early stage corrosion and coating breakdown in ballast tanks and cargo holds often develop gradually and remain below renewal thresholds for extended periods. Localized steel wastage may not be recorded if it does not prompt immediate class intervention. Hatch cover condition, including compression bar wear, cleat integrity, and leakage risk, is another area where assumptions are frequently optimistic, despite its direct link to cargo claims. Degraded piping, valves, and pumps that continue to function but perform poorly can also escape attention, as can housekeeping standards that point to deeper maintenance issues and declining reliability.

Introducing inspection data into the sale and purchase process does not necessarily result in a straightforward price reduction. More often, it leads to an adjustment of deal structure. Buyers may request specific repairs, retentions, or warranties to address identified risks. Delivery timelines may be modified to allow remedial work to be completed. In some cases, inspection findings confirm that a vessel presents better than expected and help support the agreed valuation, providing reassurance to both parties.

What independent inspection data consistently provides is clarity. It reduces uncertainty, replaces assumption with evidence, and allows negotiations to be grounded in a shared understanding of the asset. Over time, inspection experience reveals recurring patterns. Older vessels that have been consistently maintained often outperform expectations, while younger ships with poor coating management or demanding trading profiles can show accelerated deterioration. Hatch cover condition and water ingress risk remain among the most frequent areas where inspection findings challenge assumed value.

In practical terms, the value of inspection data is not limited to identifying defects or deficiencies. Its greater contribution lies in providing context and proportionality. Not all findings carry the same operational or financial significance, yet without inspection intelligence they are often treated as binary issues that either

exist or do not. Detailed inspection allows condition to be assessed in terms of likelihood, progression, and consequence, which is far more useful when making commercial decisions.

For buyers, this distinction is critical. Understanding whether corrosion is superficial or advancing, whether coating breakdown is localized or systemic, or whether machinery issues reflect isolated wear rather than broader maintenance shortcomings directly influences how risk is priced. For sellers, the same data can be equally valuable, particularly where inspection findings demonstrate that a vessel has been maintained to a higher standard than the market might assume based on age or trading profile. In these situations, independent inspection data can help defend value rather than undermine it.

There is also a behavioural dimension. Where independent inspection data is gathered consistently over time, it tends to influence maintenance culture onboard. Crews and managers become more aware that condition is being monitored on an ongoing basis rather than intermittently, which often leads to earlier intervention and more proactive upkeep. While the effect may not be immediate, it contributes over time to improved asset condition and greater predictability of costs, both of which support more stable valuation outcomes.

From a broader market perspective, increased use of independent inspection data also has the potential to reduce volatility at the asset level, even when freight markets themselves remain cyclical. When condition is better understood and more transparently communicated, pricing becomes less reactive to headline sentiment and more reflective of underlying asset quality. This does not remove risk from transactions, but it allows risk to be identified and allocated more clearly between parties.

When overvaluation is not addressed early, the consequences tend to emerge quickly during operation. Owners may face higher than anticipated capital expenditure, increased off hire for repairs, and greater exposure to port state control intervention. Cargo related claims linked to hold condition or water ingress can affect earnings and strain charterer relationships. As condition becomes more visible to the market, resale value may suffer, and disputes can arise when expectations at delivery are not met.

There is increasing evidence that lenders, insurers, and charterers are placing greater emphasis on inspection findings than in the past. This shift has been gradual, but it becomes more pronounced during periods of market volatility or heightened counterparty risk. Charterers focus on issues that threaten operational continuity or cargo integrity, while insurers and lenders assess condition factors that correlate with claims experience, downtime, and residual value risk. Across the sector, there is growing recognition that condition is a leading indicator of financial performance rather than a secondary consideration.

One of the most significant developments in inspection practice is the move from isolated surveys to condition data gathered over time. A single independent inspection offers a snapshot of a vessel at a particular moment. Repeated inspections provide trend data that shows whether a vessel is improving, stable, or deteriorating, and whether repairs are effective or merely cosmetic. This distinction is critical when assessing future cost exposure and operational reliability, particularly for assets that have experienced inconsistent maintenance in the past.

Improving the condition of a neglected asset requires sustained effort and investment. Trend based inspection data allows owners to demonstrate progress and provides valuable context in valuation discussions by showing not only the vessel's current state, but its likely trajectory. This perspective is increasingly important in transactions where buyers are focused on longer term performance rather than short term compliance.

Inspection data supports more realistic and consistent bulk carrier valuation by allowing condition to be compared more consistently and linked to likely near term expenditure and operational risk. As inspection methodologies become more standardized and supported by historical data, confidence in their use continues to grow. Inspection intelligence is increasingly being applied not just to identify defects, but to inform valuation, risk assessment, and longer term asset planning.

Inspection data is already moving towards becoming a standard input into valuation models. For this to become established practice, the industry requires confidence in repeatable inspection approaches, clearer links between condition and financial impact, and easier access to inspection intelligence during transactions. As these elements come together, the role of independent inspection data within formal valuation processes will continue to strengthen.

Bulk carrier markets will remain cyclical, and sentiment will always influence pricing. However, as condition data becomes more embedded in commercial decision making, valuations will increasingly reflect physical reality. This narrowing gap between perception and condition supports more informed transactions, more accurate risk pricing, and a clearer understanding of asset value across the dry bulk sector.

Cargo hatch being tested for leaks by specialist company Cygnus Instruments.

About Idwal

Ship inspections, analysis and benchmarking

Idwal is in the ship inspection, technology and data business. It is a global expert in independent sale and purchase inspections and a trusted industrypartner for fleet condition monitoring.

Idwal's 500-point inspection reports provide transparent and actionable insights into a vessel's maintenance, quality and ESG compliance, contextualized by the Idwal Grade®, the industry standard for measuring asset integrity.

Idwal's data-driven methodology ensures that inspection reports are consistent, intuitive to read, accurate and free from bias. Trusted as the industry standard, the company inspects almost half of all vessels sold each year. DCi

Support portside, at sea & beyond

Ships' Agents

Jay Venter

LBH Group – local expertise on a global scale

Every port tells a different story

Different regulations. Different people. Different cultures. Different challenges. For traders, charterers, and shipowners, navigating these differences can mean the difference between a smooth port call and costly delays. At LBH Group, understanding those differences is not a challenge. It is the foundation of the business.

For more than 40 years, LBH Group has been active in the maritime industry, supporting cargo vessels across the world's most important trade routes. With over 12,000 vessel calls handled annually, it has built a reputation as a trusted global shipping agency, known for reliability, local expertise, and a strong commercial mindset.

Today, LBH Group operates across Europe, the Americas, Africa, the Middle East, and Asia, supporting clients in some of the most dynamic and demanding ports worldwide. Wherever its clients trade, LBH acts as their local extension, on the ground and in real time.

What truly defines LBH Group is that it goes far beyond standard port agency. The company's role does not stop at vessel clearance. It actively co-ordinates cargo operations, optimizes turnaround efficiency, supports crews, manages costs, and ensures compliance with local regulations and international standards. Every port call is approached with precision, accountability, and a clear focus on operational details.

LBH's clients include some of the world's largest charterers, shipowners, and global commodity traders. They choose LBH Group not only for its geographic reach, but for its ability to deliver consistent service quality, even in complex or challenging environments. Speed, transparency, and accountability are not promises. They are expectations that LBH Group meets every day.

In an industry where margins are tight and timing is critical, staying competitive requires more than scale. LBH Group's strength lies in its structure. Strong local teams are empowered to act, supported by a connected global commercial network. There are no unnecessary layers and no delays. Just people who care deeply about their clients, their cargoes, and their vessels.

As global trade continues to evolve, shaped by geopolitical shifts, energy transitions, and changing supply chains, LBH Group continues to grow alongside its clients and partners. LBH remains focused on long-term commercial relationships, practical solutions, and adding value to daily port operations.

LBH Group does not just represent vessels, the company represents its clients' interests at every port it serves. And in a world where every port tells a different story, LBH makes sure it is a successful one.

Unlocking supply chains with Clarksons Port Services: a closer look at CPS' expertise and Ipswich's Sentinel Terminal

In a dynamic global trading environment, efficient port services are essential to keep cargo moving safely, reliably and on time. Clarksons Port Services (CPS) stands at the forefront of this challenge, combining deep industry expertise with strategically located operations, tailored solutions and a commitment to excellence across the marine and logistics sectors. As part of the Clarksons Group, a global leader in shipping services, CPS brings specialist know-how and operational strength to clients across the UK, Europe and beyond.

Clarksons Port Services offers a full spectrum of port logistics and marine support designed to meet the demands of today's complex supply chains. Core offerings include:

- **Terminal handling:** specialist loading and discharging of dry bulk cargoes, particularly grains, oilseeds, pulses and biomass, with high throughput capability and asset flexibility.
- **Port agency:** 24/7 vessel agency services that ensure efficient port calls, including co-ordination of pilotage, berthing, linesmen, crew changes, spares handling and shoreside services.
- **Customs clearance and freight forwarding:** integrated customs and logistics services to support inbound and outbound movement of goods by sea, air and road.
- **Shortsea broking and supply chain consultancy:** expertise in shortsea connections and broader logistical planning, enhancing competitiveness in regional and international markets.

With over 20 offices, a global partner network and a team of highly trained professionals, CPS delivers solutions that help customers navigate complex regulatory environments, optimize cost efficiencies and improve operational performance.

Sentinel Terminal, Ipswich: a strategic agribulk hub

A key pillar of CPS's UK operations is the Sentinel Terminal at the Port of Ipswich, a facility synonymous with agribulk handling excellence. Operated by CPS under a long-standing partnership with Associated British Ports (ABP), Sentinel has been central to the region's maritime supply chain since its commissioning in the late 1990s.

The terminal boasts:

- 24,000m² of dedicated storage space with both long and short-term options, supporting a wide range of bulk agricultural products.
- High vessel handling capacity, able to work vessels up to approximately 15,000t and achieve loading rates of up to 5,000t per day.
- Robust infrastructure with multiple weighbridges connected to online stock control systems, TASCC (Trade Assurance Scheme for Combinable Crops) approved facilities as well as storage approval for organic materials.

Over the past 25 years, CPS has managed millions of tonnes of cargo through Sentinel, reinforcing its reputation as a reliable and flexible partner for agribulk exporters and importers in the UK and overseas.

Supporting the UK's agricultural export leadership

The broader Port of Ipswich, where Sentinel is located, has a strong track record in the agribulk market. It has been recognized as the UK's number one port for agricultural export volumes for many consecutive years, a testament to the effectiveness of its infrastructure and the collaborative efforts of operators like CPS and ABP.

This leadership role is particularly vital given the importance of agricultural trade to the UK economy and food supply chains across Europe and beyond. CPS's role in facilitating efficient export programmes, even amidst seasonal challenges, underscores the value of having a capable and trusted terminal partner on the ground.

Looking ahead: innovation and partnership

As supply chains evolve, Clarksons Port Services remains committed to investing in capability development, technology integration and sustainability. Its strategic vision is to continue enhancing service quality, operational capability and strengthening partnerships to help customers meet future challenges — whether in dry cargo, energy logistics or integrated marine support.

In a world where efficiency and reliability are non-negotiable, CPS delivers port services that move cargo, and business, forward with confidence.

A.R. Savage Company celebrates 80th anniversary with new partnership and international expansion

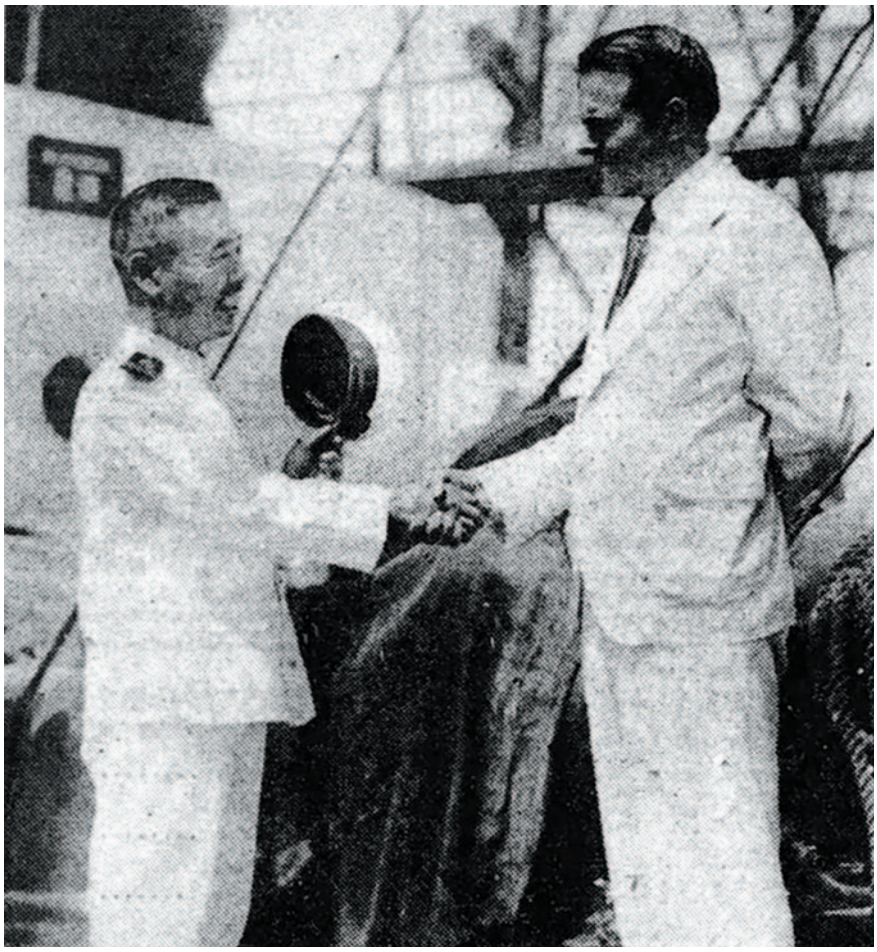
A family-owned firm with roots back to the 1840s turns to a new chapter of growth

The Tampa, Florida-based maritime company A.R. Savage Company LLC helped establish ocean shipping in Tampa Bay, with family roots in shipping dating back to before the US Civil War. Now the family behind the company recently celebrated 80 years of continuous family ownership and operations of the maritime company and is expanding with a new partnership to serve ports throughout the Americas from the headquarters in Tampa.

To recognize these many milestones, the company celebrated with clients, partners and friends on the evening of Wednesday, November 12 at the University Club. The company published a special edition booklet highlighting the history of the family business, which was given to everyone in attendance.

Following WWII, Arthur Russell Savage established his company initially as a ship agent and later as an ocean freight forwarder. When Arthur's son, Bill, married Shirley McKay, the Savage family was now connected to the McKay family, which could trace its shipping roots to the 1840s in Tampa Bay. The family patriarch Captain James McKay Sr. proved in the 1840s commercial shipping could work in Tampa Bay, notably by shipping cattle from Florida to Cuba.

Now as a ship agent and ocean freight forwarder, its operating company A.R. Savage & Son is involved in nearly every step of an ocean-going freight vessel moving through ports such as Tampa. From logistics and compliance, berthing arrangements, arranging harbor pilots, fuel refills, mooring lines, warehousing, cargo loading/unloading, customs clearing, and caring for crews.



Arthur Russell Savage, right, meets with Japanese Captain S. Hirose of the steamship Tatsuno Maruat*, Port Tampa, 1934. SOURCE: A.R. Savage & Son.*

"Through the years of service at our company, we have maintained a steadfast devotion to our people and to quality service for our clients, and that has been the key to our long-term success." said company President and CEO Arthur Savage. "What's even more gratifying is that we are bringing in a fourth generation into the business with my son Billy."

A new chapter for the company emerged in 2024. The Chilean-based shipping firm AGUNSA USA (AGS) invested in the operating companies, and the organizations are quickly expanding their connections to serve more ports around the world. That includes ports in Central America, South America, Asia and Europe.

"These are thrilling times," said William "Billy" Savage who joined the company in 2021 after completing military service in the Army. "New methods and new technologies are dramatically improving the shipping industry. Meanwhile, we expect our focus on service will be key in helping our clients navigate shifts around the world in how commerce is completed over our next 80 years and beyond."

About the A.R. Savage organization

As the oldest ship agency, ocean freight forwarding, and maritime advisory services company on Florida's west coast, A.R. Savage Company LLC provides superior services, quality, and value to ships that call on ports in Florida, Texas, New Jersey, Pennsylvania, Delaware, California and Louisiana. Based in Tampa, the family-owned-and-operated business has provided professional services to the domestic and international maritime trade community for four generations.

Fertimport: Argentinian maritime agency committed to innovation

Fertimport stands as a prominent player in the Argentinian maritime agency market, boasting a rich history of over 24 years of experience in port logistics and maritime services. Initially founded in 1947 in Brazil as Serrana Shipping Society, it began as the logistics arm of Bunge, focusing on the cabotage transport of phosphatic rock in bulk. Over the decades, the company expanded its activities to include maritime agency and port operations, catering to the burgeoning demands of foreign trade. In 1989, the company adopted its current name, Fertimport, solidifying its identity in the industry.

Company profile and evolution

Fertimport has consistently demonstrated a commitment to pioneering and innovation within the maritime agency sector. Its journey is marked by a focus on efficiency and the provision of personalized services. The company prides itself on its robust history of solidity and success, maintaining relationships built on close partnership, trust, and transparency with its clients. Fertimport is ISO 9001:2015 certified, underscoring its dedication to a high-quality management system and operational excellence in all its services. With approximately 14% of the national market share in Argentina, Fertimport is recognized as a leader in the agribusiness maritime agency sector. The company operates with a widespread presence, featuring offices strategically located in major ports across Brazil and Argentina.

Particular duties and services

Fertimport's core duties revolve around providing comprehensive maritime and port agency services. These include acting as Owner's Agent, Charterer's Agent, Protective Agent, and Husbandry Agent. As an Owner's Agent, Fertimport offers full support to shipowners, representing their interests in designated ports and stopovers with a focus on safety, agility, and transparency. This involves managing competitive proformas, providing personalized service, navigating local laws and port authority requirements, and maintaining strong relationships with consenting agencies. For Charterer's Agents, Fertimport safeguards charterers' interests concerning the ship, crew, and cargo, aiming to optimize vessel stay times and reduce costs. As Protective Agents, the focus is on active cost management and co-ordinating the specific demands and needs of owners. This includes a careful analysis of the Charterer Agent's Port Disbursement Account (PDA) to identify cost reduction opportunities, constant monitoring of operations, and rapid assistance for the master and crew. The role of a Husbandry Agent ensures quality and efficient support for the vessel and crew, leveraging Fertimport's excellent relationships with local suppliers.

Beyond these core agency functions, Fertimport offers a range of additional services such as bunkering, which involves coordinating and monitoring the entire ship supply process from intermediation to fuel delivery, optimizing deadlines and costs. It also handles shifting manoeuvring, utilizing its partnerships to help clients reduce operating costs. Fertimport has extensive knowledge and experience in agribusiness, particularly in managing liquid and solid bulk operations.

Business intelligence

Fertimport created its B.I. department, the main goal of which is to furnish clients with tailor-made reports that will equip them to take business decisions more accurately.

Fertimport owns a unique database/ programme that compiles historical and current data from internal and external sources, and then processes all the information to issue actionable reports regarding market share, market segmentation, statistical analysis, etc.

Major clients

While specific company names are not publicly listed, Fertimport's major clients are broadly categorized as shipowners, charterers, importers, and exporters. Fertimport's deep expertise in agribusiness means a significant portion of its clientèle operates within this vital sector, dealing with the import of raw chemicals, fertilizer materials, grains, cereals, and vegetable oils. The company's reach extends to serving these clients across numerous Brazilian and Argentine ports.

Staying competitive in the market

Fertimport employs several strategies to maintain its competitive edge:

Operational excellence and quality management: the company's ISO 9001:2015 certification reflects its continuous commitment to improving its quality management system and delivering operational excellence. The company emphasizes integrity, ethics, trust, and transparency in all operations.

Qualified professionals and personalized service: Fertimport invests in a highly specialized and skilled team of professionals to provide complete and personalized service to clients, partners, authorities, and ship crews, from vessel appointment to cargo release. This personalized approach ensures specific needs are met with assertiveness and transparency.

Strategic geographic presence: with offices in key ports across Brazil and Argentina, and a network of subagents, Fertimport ensures widespread coverage and high-standard service delivery. In Argentina, its decentralized operations department with operators based directly at the port ensures first-hand information and direct contact with all stakeholders, optimizing vessel turnaround.

Business Intelligence and Innovation: Fertimport provides Business Intelligence services, generating customized data, statistics, market intelligence reports, and consolidated lineups to assist clients in making informed decisions. This includes daily analyses of port news, agribusiness developments, and monitoring of operational flows at major terminals. It is also actively engaged in seeking digital initiatives to optimize processes and manage clients' financial resources more effectively.

Tradition and Modernity: with several decades of experience, Fertimport combines its long-standing tradition with modern practices, offering agility and quality in its services. The company's history of pioneering showcases its capacity for innovation.

In summary, Fertimport distinguishes itself through its long-standing expertise, comprehensive service portfolio, strategic operational presence, unwavering commitment to quality and ethics, and proactive adoption of business intelligence and innovation to meet the evolving needs of its diverse clientèle in the maritime and agribusiness sectors.

Discovering Morska Agencja Gdynia (MAG) / Poland: co-operation based on experience and trust built for 75 years

The Morska Agencja Gdynia (MAG) represents foreign shipping lines, shipowners and P&I insurance clubs, and is a member of the Baltic and International Maritime Council (BIMCO) and the Association of Ship Agents and Brokers in Gdynia.

The company roots go back to the 1930s, when Polska Agencja Morska (Polish Marine Agency) was founded. The broad range of its operations today is due to several decades of development, since the establishment in 1951 of a state-owned company under the name Morska Agencja Gdynia (MAG).

MAG provides agency services for Polish and foreign ships, gradually expanding the scope to include ship chartering, forwarding and crew services for Polish and foreign shipowners.

Following political and economic transformations in the early 90s, the company transformed into an employee-owned company under the name Morska Agencja Gdynia. It was the first privatization in the marine services industry in Poland. These changes stimulated subsequent development.

In free-market economy, MAG engaged in rail and air freight forwarding, storage and distribution of goods, and customs clearance services. To strengthen the company's position on the competitive market, MAG focused on complex cargo services in international transport.

Morska Agencja Gdynia (MAG) provides ship agency services in all Polish seaports.

The role of the ships' agent is very broad and is constantly changing. The catalogue of cases is not closed. Regulations are changing, work is becoming increasingly computerized.

The ships' 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.

Port of Gdansk – bulk import terminal. MAG as ship agent.

Morska Agencja Gdynia 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;
- management 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
- supplier of the cargo.

3. Co-operation with Maritime Administration:
- Maritime Offices, Harbour Master Offices – Harbour / Port Captains;
- Customs Office — part of the tax administration;
- border services – coast guards; and
- sanitary and other services.

4. Cooperation with the port, i.e., Maritime Port Administration:
- Chief Dispatcher; and
- port terminals.

5. 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.).

6. 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 service (visits to doctors, hospital

stay), assistance in case of emergencies that require medical care.

The number of ships operated in 2024 reached 1,338, while in 2025 the number of ships from coasters to the size of Panamax and Capesize vessels. operated by MAG reached a record of 1,842.

It is thanks to this that MAG is the number one ship agency in the Polish ports.

Dry bulk cargo amounted to around 36% of the volume of the agency's vessels. The total volume of bulk cargo was about 2.4 million tonnes, mainly coal.

Over time, its specialization was expanded. Currently, in addition to the ship agency, MAG specializes in charter services, port operation, logistics solutions (forwarding services, road and rail transport) as well as inspections and crewing services. MAG acts as agents — both as a ships' agent and freight forwarder — for clients operating in port terminals for a wide range of bulk goods calling at Polish ports such as agricultural products, both steam and cooking coal, coke, limestone, aggregates, biomass, cement, fertilizers, wheat pellets, chemical products, scrap metal, wood logs, woodchips and more.

The above-mentioned dynamic growth of MAG work mentioned above resulted in the employment of additional staff in dedicated departments to handle these issues.

LOGISTICS SERVICES — FORWARDING AND SEA, LAND, RAIL TRANSPORT

MAG as logistics service provider acts in the process of managing resources, including how they are transported, stored and received. Its responsibilities include customer service, demand forecasting, warehousing, material handling, inventory control, order processing, and transport-ation. MAG services encompass the organization of storage imported coal both steam coal and coking coal, screening coal of at open storage yards in many places in Poland, all kinds of operations associated with securing cargo, preparing loading plans, supervision, reporting and documentation and then distribution to end-users i.e. power plants, heating plants and to local distributors / retail sellers all over the country.

With its own and hired means of transport, MAG guarantees timely delivery and full independence of the transport chain.

MAG services include the organization of storage imported coal (both steam coal and coking coal), screening coal for domestic consumption at open storage yards in many places in Poland, all kinds of operations associated with securing cargo, preparing loading plans, supervision, reporting and documentation and then distribution to end-users. MAG arranges additional operations/services and inspections required by clients, including quantity and quality control. MAG is also an emergency agent for foreign insurance companies, helping in loss adjustment in road, rail and sea transport.

In addition to the services of the ships' agency provided by MAG, other activities are also carried out, such as logistics services, warehousing and management of the Dalowo port terminal.

WAREHOUSING — STORING GOODS UNTIL THEY ARE READY FOR TRANSPORTATION TO RETAILERS, DISTRIBUTORS, OR CUSTOMERS IS A VERY IMPORTANT SECTOR OF LOGISTICS SERVICES

MAG operates its own or leased warehouses in strategic locations in Poland; in the ports Gdansk, Gdynia, Swinoujscie, Szczecin and Malaszewicze (Polish east border).

Storage space can function like bonded warehouse, temporary storage warehouse or reloading place under customs supervision.

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

PORT OPERATIONS — IN WHICH THE PORT TERMINAL OF MAG IN DARŁOWO PORT PLAYS AN IMPORTANT ROLE IN THE AGENCY AND LOGISTICS SERVICES

The modern Darłowo Port has its own transshipment quays for small sized vessels approximately 100m long. MAG has warehouses and paved storage yards of the total area of over 17,000m^2 and offers comprehensive services to individual clients and forwarding companies of various cargoes: land transport by rail and by road, transshipment and sea transport.

NEW PROJECT

MAG is currently in the design phase and will then start 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 Gdansk Northern Port.

Once the investment is complete, MAG will provide its customers with storage space for bulk cargo and other operations, such as screening, loading onto trucks and rail wagons.

The next stage will include the design and construction of a closed warehouse to serve its clients.

This investment is a milestone for MAG in logistics solutions.

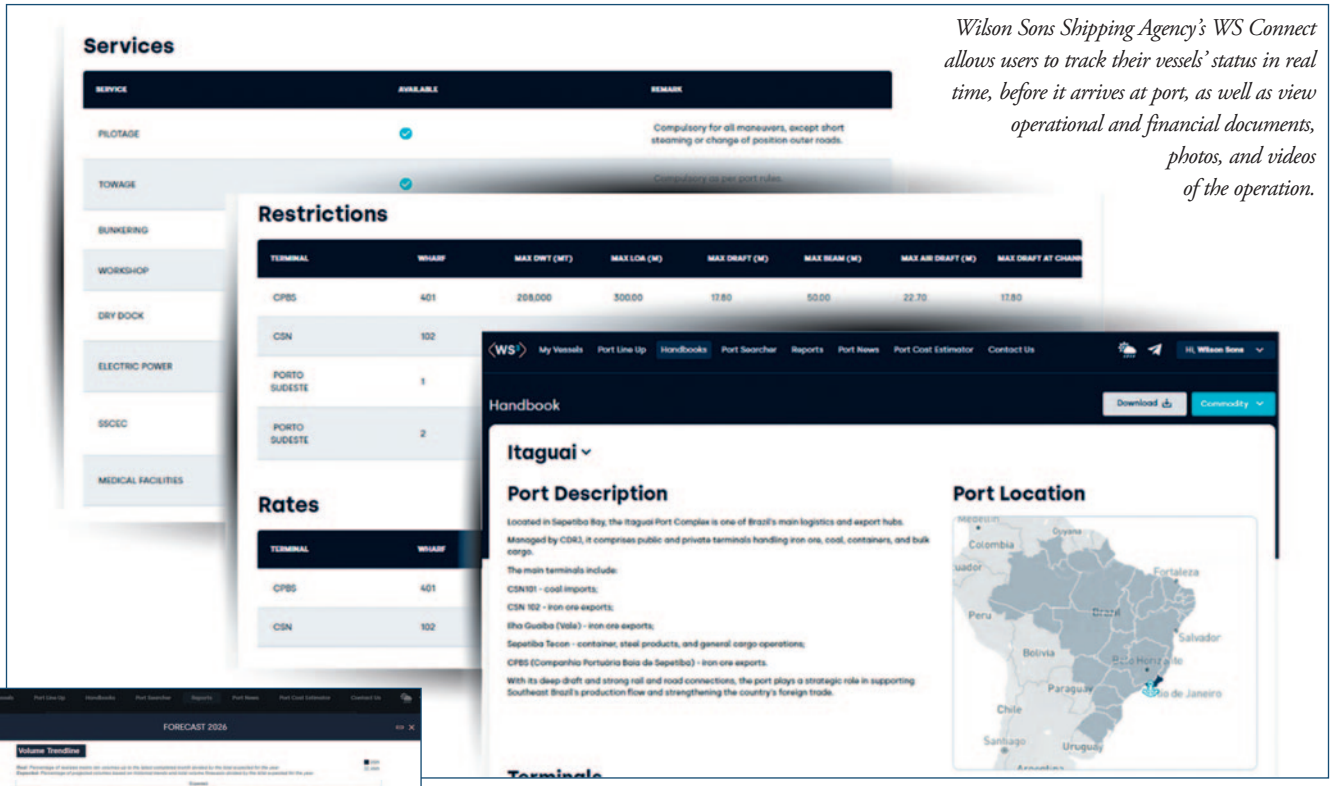
CONCLUSION

All in all, MAG guarantees reliable delivery of cargo to any location in the world. With many years of experience and creativity MAG has become the partner brand of exporters and importers across the world, shipping companies, shipping lines, freight forwarders, ports, maritime, customs and border offices, banks, financial institutions and insurance companies. The dynamic growth of logistics work resulted in the employment of additional employees in the logistics department to handle these issues.

MAG always strives to maximize customer satisfaction, is characterized by flexibility and diversification, and guarantees that customer expectations are met to achieve their business goals.

Solidity, safety and professionalism supported by years of experience of the MAG team of specialists formed a strong team, which resulted in the position Morska Agencja Gdynia as a leader among companies in the maritime industry in Poland.

Wilson Sons Shipping Agency, dedicated partner in Brazil



Wilson Sons Shipping Agency's WS Connect allows users to track their vessels' status in real time, before it arrives at port, as well as view operational and financial documents, photos, and videos of the operation.

With over 188 years of experience in the market, Wilson Sons Shipping Agency possesses unparalleled expertise in handling bulk and breakbulk cargo in Brazil.

Utilizing innovative port and market intelligence tools, the company offers its clients excellent services, particularly relevant to operations, seeking the best opportunities to reduce costs, optimize prices and deadlines, and anticipate and prepare for potential business risks.

Among the strategic information and data shared with clients are in-depth analyses and forecasts of the movement of the main commodities from Brazil: commodities such as soybeans, corn, sugar, iron ore, and oil.

To enable companies to make assertive decisions, Wilson Sons Shipping Agency also provides real-time monitoring of Brazilian ports, reporting on waiting times for berthing and stoppage events, as well as a detailed analysis of the movement of players involved in port logistics — charterers, shippers, receivers, and shipowners.

Wilson Sons Shipping Agency has 22 branches operating along the entire Brazilian coast and in river ports, which afford the company's clients precise cabotage (movement between Brazilian ports) and long-haul (export/import between other countries) data. The company also conducts customized studies, according to each client's needs, considering, for example, the product, port, and size of vessel.

In recognition of Wilson Sons Shipping Agency's dedication, the excellent services offered by the Shipping Agency have earned the long-standing trust of global players. Its main clients include MOL, Louis Dreyfus, Yara, NYK Group, Cosco Shipping, and COFCO.

The company is the largest Brazilian Shipping Agency and has a unique market perspective, combining real operational data from all its branches with detailed market analysis.

Wilson Sons Shipping Agency's service structure also includes exclusive representatives in Europe and its own office in China.

The company is always focused on digital transformation, offering, free of charge as part of its service, a Market Intelligence System as a competitive advantage and a major differentiator for its clients. It has a dedicated Market Intelligence team with extensive expertise in the maritime sectors and commodities, sharing up-to-date information about Brazilian ports quickly and intuitively.

To support large global companies, from business planning to operational execution, Wilson Sons' Shipping Agency has developed the exclusive platform, WS Connect.

The first and most advanced market intelligence platform in the sector in the country provides information dynamically to the client, and is also a source of information for major global market intelligence platforms, such as S&P, Kpler and StoneX.

WS Connect allows users to track their vessels' status in real time, before it arrives at port, as well as view operational and financial documents, photos, and videos of the operation. Another advantage of the platform is that it allows the establishment of a comprehensive network of stakeholders in virtually all Brazilian ports, including more than 110 terminals and 230 berths, aiming to provide valuable information and market analysis.

In an increasingly competitive and dynamic global maritime landscape, and given the complexity of Brazilian ports, Wilson Sons offers Shipping Agency services with strategic solutions, cutting-edge technology, and local expertise to maximize efficiency and ensure the safety of operations. With its solid infrastructure, digital tools, and proven track record, it is a trusted partner for cargo logistics in Brazil.

When chosen as Shipping Agency, Wilson Sons guarantees its clients a strategic partner dedicated to maximizing operational efficiency and client profitability. DCi

Karachi Gateway Multipurpose Terminal and Louis Dreyfus Company sign long-term agreement to develop clean bulk handling & storage facility

The agreement brings together ADQ's portfolio companies AD Ports Group and LDC in a joint effort to strengthen Pakistan's agricultural supply chain and ports logistics ecosystem.

On 5 December 2025, AD Ports Group, a global enabler of integrated trade, transport, industry, and logistics solutions, announced that it has signed a long-term commercial agreement to develop and operate a modern clean bulk handling and storage facility for agricultural goods at Karachi Port. The agreement was signed between Karachi Gateway Terminal Multipurpose Limited (KGTML) — part of Noatum Ports, the international ports operating arm of AD Ports Group — and Louis Dreyfus Company Pakistan (Private) Limited — a subsidiary of major global merchant and agricultural goods processor Louis Dreyfus Company (LDC).

Under the agreement, KGTML will invest in the design and construction of a highly efficient, food-grade clean bulk facility, including a handling and conveyor system along with associated infrastructure and utilities, to support the efficient handling and storage of dry agricultural bulk cargo, in line with international best practices, while LDC has committed to providing an inbound volume of agricultural commodities. LDC will leverage the new infrastructure as part of its plans to grow its presence in Pakistan. The investment is in addition to the US$75 million previously committed by AD Ports Group during phase one of the KGTML project.

The partnership brings together two companies within the portfolio of ADQ, an active sovereign investor focused on critical infrastructure and global supply chains, to strengthen Pakistan's agricultural supply chain and port logistics ecosystem by leveraging their global expertise and regional capabilities.

A Strategic Investment and Infrastructure Utilisation Agreement was signed in Abu Dhabi by Mohammed Al Tamimi, CEO of Noatum Ports, and Rubens Marques, Head of South and Southeast Asia for LDC. The signings took place in the presence of Capt. Mohamed Juma Al Shamisi, Managing Director and Group CEO of AD Ports Group, and Michael Gelchie, Chief Executive Officer of LDC.

The new facility will enhance efficiency, reduce handling times and improve the resilience of Pakistan's agricultural logistics network, in line with international food safety and operational standards. By leveraging advanced infrastructure, the project will strengthen regional trade connectivity and contribute to wider access to food.

This agreement marks another significant milestone in advancing bilateral trade and economic development between the UAE and Pakistan.

Mohammed Al Tamimi, Chief Executive Officer of Noatum Ports, said: "This collaboration reflects a shared commitment to strengthening Pakistan's agricultural supply chain and port logistics ecosystem. Under the agreement, KGTML will design, construct, and operate a food-grade silo system to support the efficient handling and storage of dry agricultural bulk cargo, in line with international best practices. As a key gateway for regional trade, KGTML plays a vital role in enhancing connectivity and driving efficiency across Pakistan's maritime sector. This development will significantly upgrade the country's logistics infrastructure, creating new opportunities for growth, and reinforcing Karachi Port's position as a critical hub for international commerce. The agreement with LDC represents a significant strategic milestone in our partnership. Building on this foundation, we are committed to exploring further opportunities for collaboration across new markets, capitalizing on our shared capabilities to deliver world-class, high-impact infrastructure solutions."

Rubens Marques, LDC's Head of South and Southeast Asia, said: "We are pleased to partner with KGTML, and increase our co-operation with AD Ports Group, on this transformative project to upgrade and modernize Karachi's port infrastructure, supporting the growth of Pakistan's agriculture sector. This development reflects our long-term commitment to the country, where we have been operating for over 15 years, and our confidence in its growing role in global agricultural trade. The facility will be a key lever as we work to enhance our supply chain capabilities for the benefit of our business partners up- and downstream — in Pakistan, the region and beyond."

In addition to KGTML, AD Ports Group is also developing, operating and managing the Karachi Gateway Terminal Limited (KGTL) container terminal at Karachi Port. Pakistan plays a strategic role in AD Ports Group's strategy as the maritime gateway to Central Asia, where the Group is developing the 'Middle Corridor' East-West land route between China and Europe.

Major capital investment programme

Investment boosts trade and economic growth

Associated British Ports (ABP) has announced the latest tranche of a major capital investment programme, which secures the long-term future of its five south Wales ports.

The new investment of £42 million includes the delivery of a new deep-water berth at Middle Quay, Newport, the UK's largest steel-handling port, and will also facilitate upgrades at Swansea and Cardiff. It forms part of a total capital investment programme of £137m for ABP in South Wales, which is designed to strengthen the resilience and competitiveness of South Wales' port infrastructure.

The announcement coincides with the Welsh Government's Investment Summit, where the First Minister highlighted several major investments in Wales — an event ABP is proud to attend as part of its commitment to driving growth and opportunity across the region.

The landmark development at the Port of Newport, with the introduction of a new quayside represents a significant opportunity to increase the port's handling capacity. It will enable the port to handle some of the world's largest vessels and strengthen its role in global supply chains. It will also unlock significant opportunities for businesses seeking access to international trade routes.

Alongside the Newport upgrade, ABP's investment will deliver significant infrastructure improvements at its ports of Swansea and Cardiff — two locations that play a vital role in supporting diverse cargoes and regional industries. Cardiff is a key hub for construction materials, agribulk and project cargo, while Swansea provides strategic access for renewable energy projects and bulk commodities. These upgrades will improve operational efficiency and ensure customers benefit from modern, sustainable infrastructure.

First Minister of Wales, Eluned Morgan, said: "I'm delighted that ABP has announced this significant investment in Welsh ports at our Wales Investment Summit today. Long-term investment in our port infrastructure is vital to economic growth and international trade and investment, especially to key strategic industries such as offshore wind. This investment is a real boost for our coastal economies and the people and businesses who rely on them."

Ashley Curnow, Divisional Port Manager, Wales and Southwest at ABP, said:

Visualization of Middle Quay at Port of Newport (graphic ©ABP).

"Introducing a new deep-sea berth to the market is a cornerstone of our strategy for Newport and for our South Wales ports more widely. It is rare to see a new quayside of this scale come to market, and it will unlock new opportunities for trade and investment across the region.

"We're proud that Newport is the UK's leading steel-handling port and its strategic location means it plays a vital role in connecting Welsh industry to international markets and supporting the UK's wider supply chain.

"We warmly welcome the First Minister's support for this investment, which demonstrates ABP's commitment to supporting regional growth and the industries that rely on our ports."

The new berth will be capable of accommodating vessels up to 220m LOA (Length Over All). With multi-modal connectivity, including direct access to the M4 and links to the national rail network, the Port of Newport provides unrivalled logistics advantages for bulk cargo, project cargo and steel products. Businesses will also benefit from open storage opportunities of up to eight acres and build-to-suit industrial and warehouse units of up to 133,000ft^2, creating flexible solutions close to the quay.

This programme forms part of ABP's wider strategy to invest in its UK port network, supporting sustainable growth and enabling customers to meet evolving market demands.

About ABP Wales

ABP's five ports in South Wales — Barry, Cardiff, Port Talbot, Newport and Swansea — contribute £1.5 billion to the UK economy every year, supporting 21,800 jobs across the UK.

- ABP's **Port of Cardiff** handles around 1.8mt (million tonnes) of cargo each year.
- The **Port of Newport** is the UK's leading steel-handling port terminal, having handled 2mt of steel in 2024.
- ABP has exciting plans to transform the port at **Port Talbot** into a major hub for floating offshore wind (FLOW) and green energy development.
- **Swansea** is the most westerly of ABP's South Wales ports, with the capacity to handle vessels of up to 30,000dwt and offers berths and facilities for most types of cargo.
- More than 14,000m^2 of warehousing and extensive open storage facilities are available at the **Port of Barry**.

About ABP

ABP is the UK's leading ports group. It proudly serves its customers and communities in the pursuit of its ambitious missions which are 'Keeping Britain Trading' and 'Enabling the Energy Transition'. These are underpinned by a strong commitment to safety, sustainability and its people.

ABP's network of 21 ports handles approximately one quarter of the UK's seaborne trade, and ~ £157 billion of UK trade annually. Ports include Immingham, the UK's largest port by tonnage, and Southampton, the nation's number one export port, handling £40 billion of UK exports each year.

ABP is an essential partner for the Offshore Wind industry, providing Operations and Maintenance (O&M) for over 50% of the sector's activity, as well as building infrastructure in facilities like Green Port Hull, a joint investment with SGRE, the largest Offshore Wind blade manufacturer, and LEEF (Lowestoft Eastern Energy Facility).

ABP is delivering on its green ambitions through decarbonizing its operations, supporting customers in building more sustainable supply chains, and investing in infrastructure to realise future renewable energy generation. Since 2014, it has reduced its CO_2 emissions by over 38%.

for ABP's South Wales ports

ABP's vast freehold bank and ports are ready to support the drive towards achieving the nation's target of net zero emissions by 2050.

The group's other activities include:

- **ABP Property:** property division, with an unrivalled land bank spanning 21 multi-modal locations around the country, and 960 hectares of port-based development land.
- **ABPmer:** marine consultancy and survey company, helping clients develop, manage, protect and operate in the marine environment for 75 years.
- **UK Dredging:** port maintenance and dredging service.
- **Beacon Marina Collection:** the Beacon Marina Collection is made up of three marinas owned and operated by ABP: Ipswich, Lowestoft and Fleetwood.

ABPs ports are: Ayr, Barrow, Barry, Cardiff, Fleetwood, Garston, Goole, Grimsby, Hull, Immingham, Ipswich, King's Lynn, Lowestoft, Newport, Plymouth, Port Talbot, Silloth, Southampton, Swansea, Teignmouth and Troon.

US inland ports strengthen transatlantic collaboration through IRPT and EFIP partnership

European summit to advance inland waterway freight through international engagement

Ports and terminals around the United States are investing major resources to boost economic development in their communities as they enter into phase two of the transatlantic partnership with Inland Rivers, Ports and Terminals (IRPT) and the European Federation of Inland Ports (EFIP).

The partnership, formalized through a Memorandum of Understanding (MOU) signed in October, focuses on modernizing infrastructure, expanding commercial opportunities, and supporting the exchange of best practices across the inland waterway freight networks of the United States and the European Union

The next phase is to strengthen the visibility of US inland river system abroad by directly engaging with global leaders, project owners, freight forwarders, ports, and logistics providers from more than 120 countries during a trade mission offered by IRPT, in coordination with EFIP. The Summit will connect US inland and coastal ports and terminals with European inland and coastal ports, will spotlight the US inland river system as the most reliable and efficient option for freight transportation.

Through the trade mission, participating US ports and terminals will be able to present their operations, share approaches to sustainable supply chain management, and pursue international business relationships. This strategic, coordinated international investment into trade has the potential to expand trade channels, shipper engagement, market expansion, and

future investment opportunities.

"IRPT members are committed to elevating America's inland rivers as the choice for transportation to strengthen supply chains," said Aimee Andres, Executive Director of IRPT. "Their investment into this transatlantic partnership demonstrates their ongoing determination to invest in the people and communities they serve. We are committed to providing a forum that connects them directly with European counterparts and supports informed decision-making about the future of inland waterway freight."

Anthony Gex, IRPT Deputy Director, added, "Participants will be able to present their work on sustainable supply chain solutions, explore business partnerships, and take part in discussions on the trends and challenges influencing the sector."

The European Summit, taking place in June 2026, will bring US inland waterway ports and terminals into direct conversations with global freight leaders, elevating the inland river system as a national network and supporting resilient freight movement across the United States.

About Inland Rivers, Ports & Terminals (IRPT)

IRPT is a US-based nonprofit (est. 1974) serving 500+ members across 11 river basins, advocating for the value of inland river transportation and supporting the ports, terminals, and service providers that keep America's supply chains moving.

About the European Federation of Inland Ports (EFIP)

EFIP (est. 1994) represents nearly 200 inland ports and port authorities in 18 European nations, plus Switzerland, Serbia, and Ukraine, advancing policies and practices that strengthen the role of inland ports in sustainable freight mobility.

Two modern fertilizer warehouses open in the FTZ at the Port of Gdańsk

On 16 December, a ceremony was held in the Free Trade Zone (FTZ) at the Port of Gdańsk to inaugurate two modern warehouses belonging to Solid Port, one of the key operators in the Inner Port.

Solid Port conducts tasks like handling operations at the WOC (FTZ) Quay. As part of the new investment, on land leased from the Port of Gdańsk for 30 years, the company has erected two steel-structured tent-type buildings, designed on a rectangular plan with 40x60m base dimensions plus a ridge height of 14.5m. The walls and roofs of the halls have been made using a durable PVC coating. These warehouses are used to store organic fertilizers.

Fertilizers at the Free Trade Zone

Solid Port has a significant role in handling such bulk cargo as loose raw materials, aggregates and fertilizers. These types of cargo are essential for the functioning of many sectors of the economy, including industry, agriculture and trade. The activities of such entities make it possible to maintain the continuity of supplies of these strategic goods. It has invested consistently in the development of infrastructure and superstructure for many years, systematically raising the cargo handling standards.

The opening of new warehouses is a response to the growing needs of the market and customers. The investment significantly increases the operator's throughput and storage capacity, strengthening its position as one of the leaders in bulk cargo handling within the Inner Port. The new infrastructure makes it possible to handle larger volumes of goods, reduce cargo handling time and manage the logistics processes more efficiently.

"Such investments strengthen our position as the largest port in Poland and one of the key logistics hubs in the Baltic Sea region," said Dorota Pyć, President of the Port of Gdańsk. "I am convinced that the new warehouses will serve not only Solid Port, but the entire supply chain, as well as supporting the development of Polish trade and the economy."

The new warehouses are located parallel to each other and to the public internal road within the WOC area, on Przemysłowa Street. Fertilizers are to be stored in big bags with a capacity of 500, 600 and 1,000kg, stacked in up to four layers. The total permissible amount of fertilizers stored in the entire area is up to 12,160 tonnes. A staff room container has also been set up beside them.

The investment also included the reconstruction of the existing technical infrastructure as well as the construction of new infrastructure. Electrical, water and sewage connections were made for the staff room container, as well as a storm water drainage system to drain water from the storage yard.

"Between 2019 and 2025, we handled a total of 242 ships and 1.3 million tonnes of cargo. To meet the expectations of our contractor, ICL Europe Cooperatief UA, in 2024 we decided to make a joint investment to build these two storage warehouses. This is an important step in the development of our company, as it allows us to increase our operational capabilities, streamline the logistics processes and improve the quality of service for our customers," said Henryk Groth, President of Solid Port, during the ceremony.

This is another important step in the development of the logistics and storage facilities of the Port of Gdańsk, as it strengthens its competitiveness and importance on the map of European ports.

Record year for exports at Montevideo's dry bulk terminal

In Uruguay, Terminal de Graneles Montevideo (TGM) or Montevideo Dry Bulk Terminal posted record figures for traffic handled in 2025. In the first 51 weeks of the year, it reported accumulated traffic of 1,686,000 tonnes. The previous best — 1,297,000 tonnes — was recorded in 2024, for a terminal that first started operations in 2016.

Total traffic broke down as follows: soybeans, 1mt (million tonnes); rice, 320,000 tonnes; wheat, 100,000 tonnes; fertilizer, 100,000 tonnes; malt, 64,000 tonnes; and canola, 60,000 tonnes. In terms of customers, China was the main buyer of soybeans, Mexico of rice, Brazil of wheat and malt, and Europe of canola.

The new record was a reflection of Uruguay posting its best ever soybean harvest, which totalled 3.85mt tonnes. Significantly, Montevideo is also heavily used as a top-off port for vessels loading consignments at river ports on the Paraguay-Paraná waterway. This involves stops initially at the Navios and TGU terminals in Nueva Palmira, with cargo holds then completely filled at TGM, thanks to its 13-metre draught.

The excellent wheat and canola harvests are also expected to keep traffic buoyant well into 2026. *Barry Cross*

China shipping alumina in boxes

China has launched a container service conveying alumina consignments linking the ports of Wudi, in Binzhou, and Suizhong, in Huludao. The service has been jointly developed by Yantai Port, which is part of the Shandong Port Group, and the Port of Suizhong, which is part of the Liaoning Port Group.

This should consolidate Yantai Port's position as a central hub port for domestic container trade in Bohai Bay.

According to a representative of local shipowners and alumina companies, "As the world's busiest port for bauxite imports, the Port of Yantai provides essential support for the stable supply of alumina raw materials and is our key partner."

The operation involves the Port of Yantai being responsible for unloading bauxite imports and transferring the bulk cargo to containers. These are then delivered to the Wudi port area in Binzhou for processing by Shandong Marine Corporation. The containerized alumina is then shipped to the Port of Suizhong.

Previously, alumina was shipped to areas such as Inner Mongolia by road, which was 30% further compared to using short sea shipping.

Barry Cross

Castellón consolidates position as Spain's third-busiest dry bulk port

In recent figures released by the Spanish Mediterranean PortCastelló, Castellón boosted traffic in the first ten months of 2025 by 3.2%, thereby consolidating its position as the country's third-most-important dry bulk facility. This compares favourably with an overall 4.5% decline across the Spanish port system as a whole.

Castellón has regularly made the news in recent years because of its policy of implementing an increasingly clean, safe and environmentally friendly operating model. This has seen major purchases of new environmental technologies and particle containment systems.

Many warehouses are now either totally or partially sealed working environments. Tarpaulins have been made mandatory on all HGVs to prevent unwanted dust dispersion. In addition, wheel washers have also been introduced at access points to minimize emissions reaching areas outside port terminals.

According to Rubén Ibáñez, the port authority president, "Bulk handling in Castellón is becoming increasingly clean and efficient, thanks to investment in infrastructure and the professionalism of the sector, because we want to be the best ally of our environment, and because we want to grow, but do so in a sustainable and respectful way."

New berth at Odessos PBM Varna Port Terminal

Odessos PBM Varna Port Terminal has added an important step in the development of modern Bulgarian port infrastructure. A new berth with a length of 221m and a design depth of 12.78m was put into operation, which provides the opportunity to receive ships with draughts up to 12.50m, additional storage areas, a modern cargo testing area with automated probes, new truck scales and a second entry-exit portal, which significantly increase the throughput, efficiency and logistical flexibility of the terminal.

The quay wall is constructed using the proven ArcelorMittal HZM-AZ structural system, which has proven its reliability, durability and resistance under harsh operating conditions in port facilities around the world.

The project was implemented with a focus on sustainable development and environmental protection throughout the entire cycle, from the production of structural elements to construction and installation activities, saving 2,230 tonnes of carbon emissions. This is a significant contribution to the decarbonization of transport infrastructure and the achievement of European climate goals.

Bulgarian and European companies participated in the project, bringing together experience, technologies and good practices at all levels from design, through the supply of structural elements, to the implementation of standard and specialized construction operations. The designer of the facility is Transproject EAD. The main contractor is Milkos Engineering OOD, and the subcontractor for the Hydrotechnical Facilities part is the Romanian company Dewatering and Silent Piling SRL, established in the construction of port infrastructure in the region.

The new cargo screening area ensures fast and precise control of bulk cargo in accordance with international requirements and good port practices. The additional scales and the second gantry significantly optimize vehicle traffic and improve the throughput and safety of the terminal.

Transshipment operations at the new berth at this stage will use Liebherr mobile port cranes with hybrid drive, both diesel and electric. This technological solution reduces harmful emissions, noise and operating costs, while ensuring high productivity and operational flexibility. Storage capacity for bulk cargo in the terminal's covered warehouses is 60,000t of wheat equivalent. The port operator has an additional covered storage area for another 60,000t.

The implemented expansion of the Port Terminal Odessos PBM – Varna creates additional opportunities for the future development of the region as a potential logistics hub on the axis between Asia and Europe. The geographical location, the provided depths and the modern infrastructure reveal significant potential for the inclusion of the port in the transport and trade flows formed within the framework of the 'One Belt, One Road' initiative, as well as for its establishment as a reliable maritime alternative and a complementary element to the European Transport Corridor No. 7, connecting the intracontinental network along the Danube River with the Black Sea region.

UK Port of Sutton doubles handling capacity with the help of SENNEBOGEN

Double the performance — lower consumption

With the SENNEBOGEN 865 E Hybrid, the Port of Sutton Bridge in the UK has nearly doubled its annual material handling volumes — with 27% less fuel consumption. The outstanding service provided by SENNEBOGEN's local sales and service partner Molson prompted the port to order a second, identical material handler.

Located on the east coast of the UK, the dry cargo terminal is part of the Goldstar Metal Traders Group and specializes in the handling of scrap metal, packaged sand, cement, fertilizers, and bricks. Thanks to the robust quay construction, heavy-duty goods are also increasingly becoming a focus. Ships up to 3,000dwt can be reliably handled at the 350-metre-long quay, and at high tide, even ships up to 5,000dwt are possible.

Powerful technology

The SENNEBOGEN 865 E impresses at the port of Sutton Bridge with a 24-metre reach and a 1.8m³ orange peel grab with integrated weighing system — for fast and precise handling between ship and truck. The mobile undercarriage with solid rubber tires ensures optimum flexibility on site. The 865 E combines a powerful but efficient 261kW diesel engine with the SENNEBOGEN Green Hybrid recuperation system, which additionally saves up to 30% in operating costs.

27% lower fuel consumption

"This year, we will handle around 200,000 tons of material, which would not have been possible without the new SENNEBOGEN 865 E. At the same time, we are consuming less fuel. A 27% reduction in fuel consumption saves us approximately 19,000 pounds per year," emphasizes Port Director Gavin Patrick.

Operator comfort

The two machine operators at the Sutton Bridge site work in efficient day shifts. "It's a very comfortable cab for long hours," adds operator John Baggaley, who values the spacious Maxcab for its all-round visibility and ergonomic design. Features such as the DAB radio, Bluetooth connectivity, and heated seat contribute to operator comfort. The Skylift elevating cab also enables optimal working height for unrestricted visibility into ships hull and truck beds.

Second 865 E ordered

Port Manager Gavin Patrick particularly praises the reliable support from service partner Molson: "When a hydraulic hose came loose late in the evening, the machine was fully operational again by 7am the next morning. That gave us so much confidence that we've already ordered a second, identical machine."

With significantly increased handling capacity and reduced fuel consumption, the SENNEBOGEN 865 E Hybrid has positioned the Port of Sutton Bridge for continued growth. The order of a second unit underscores the port's expansion plans and its confidence in the powerful and efficient technology.

Rhenus Group low-emission Green Steel Logistics Hub in Dortmund.

Rhenus Group terminal in Wilhelmshaven.

Coal handling at the Rhenus Group terminal in Nordenham.

Unloading of a coal ship at the Rhenus Group terminal in Wilhelmshaven.

European lifelines

German Port & Terminals

Jay Venter

Germany's dry bulk sector in transition: regulation, resilience & the role of ports

Germany's dry bulk sector is operating in a period of structural change rather than cyclical fluctuation.

Energy policy, environmental regulation and shifting industrial demand are reshaping cargo flows, port operations and long-term investment decisions. For terminal operators and logistics providers, there is less focus on chasing growth and more on maintaining resilience, while adapting to a fundamentally different operating environment.

Over the past five years, regulatory developments have moved from being a background consideration to a defining factor in how dry bulk supply chains are designed. CO_2 reduction targets, rising energy costs, evolving tariff regimes and the wider energy transition are influencing not only what moves through German ports, but also how it is handled, stored and transported inland. At the same time, geopolitical uncertainty and supply chain reconfiguration have added further complexity, forcing operators to plan for volatility rather than stability.

Against this backdrop, Germany remains one of Europe's most important dry bulk markets. Its ports and inland terminals continue to serve core industrial sectors such as steel, construction, chemicals, agriculture and energy, while adjusting to new commodity mixes and operational expectations. The question is no longer whether the sector will change — but how effectively it can respond.

Supply chain adjustments

Dry bulk volumes in Germany have declined in aggregate in recent years, but headline figures only tell part of the story. Demand has become more differentiated by commodity, driven by substitution effects and shifting sourcing strategies rather than uniform contraction.

Minerals and building materials have shown partial growth as supply chains adjust to new trade routes and alternative sourcing. Combustion and substitute fuels, including coal and pellets, continue to move through the system, reflecting the realities of the energy transition, rather than a linear move away from traditional fuels. By contrast, steel and aluminium volumes have softened overall, mirroring broader industrial pressures, while feed, fertilisers and food-related commodities remain active but volatile.

For logistics providers and terminal operators, this fragmentation presents both risk and opportunity. Declining volumes in one segment may be offset by growth or stabilization in another, but only where infrastructure, permits and operational know-how allow for flexibility. The ability to handle multiple cargo types safely and efficiently has become more valuable than specialisation alone.

Ports under pressure: regulation meets reality

Regulation is now a constant in operational planning for German ports. Environmental policy has accelerated investment cycles, while also raising costs.

New high-performance crane at the Rhenus Group terminal in Bremen.

Unloading of a coal ship at the Rhenus Group terminal in Wilhelmshaven.

Emissions reporting, energy efficiency requirements and expectations around sustainable operations are no longer future considerations but, instead, current operating conditions.

Energy costs have been a significant challenge, affecting everything from equipment operation to warehouse climate control. At the same time, workforce availability and skills shortages have placed pressure on labour models, while digitalisation requirements demand continued investment in IT systems and data transparency.

These pressures are, of course, not unique to Germany, but the country's industrial base and central role in European supply chains amplify their impact. Political change, both at federal level and within the EU, adds another layer of uncertainty, particularly around infrastructure funding and inland waterway development, a critical issue for dry bulk logistics.

Investment driven by necessity, not optics

In response, many German ports and terminals have continued to invest, not as a branding exercise, but as a practical necessity. Across the country, terminal operators have upgraded cranes, quays, warehouses and handling equipment, while also introducing photovoltaic systems, electric trucks and low-emission machinery where feasible.

These investments are often incremental rather than transformative, focused on maintaining operational reliability under tighter regulatory constraints. Warehouse upgrades for battery storage, expanded permissions for recycling materials and improved safety systems reflect the changing cargo mix and customer requirements.

Looking ahead, the next three to five years are likely to see more of the same: targeted modernization, replacement of ageing assets and further streamlining of IT systems. Large-scale expansion projects may be rarer, but continuous improvement remains essential to remain competitive.

Operational flexibility as a working reality

German dry bulk terminals operate across a broad mix of cargoes, shaped as much by local industrial demand as by the physical characteristics of each site. Some locations are closely aligned to individual commodities or long-standing customers, while others are set up to accommodate frequent change, reflecting the increasingly mixed flows moving through the system.

That variability shows up most clearly when volumes fluctuate. Seasonal peaks, short-term surges and sudden slowdowns are now part of normal operating conditions. Terminals have responded by building flexibility into how work is organised, whether through adjusted shift patterns, shared personnel across sites or the selective use of temporary labour. These are not exceptional measures, but established ways of keeping operations stable when demand is anything but.

Technology underpins much of this adaptability, although it is rarely the headline act. Incremental upgrades, from more precise crane systems to changes in power and battery technology, have helped to improve handling performance, while reducing downtime and safety risks. At the same time, digital tools that provide clearer operational oversight, including emissions visibility, are becoming part of everyday decision making. Their value lies less in novelty and more in the consistency they bring complex, fast moving environments.

Germany in a global network

Germany's dry bulk operations are closely tied into international trade, both within Europe and further afield. Terminals play a role in supply chains that stretch well beyond national borders, handling everything from steel products arriving from Asia and Scandinavia to mineral cargoes moving in from Eastern Europe for use in the chemical and glass industries. Outbound flows are just as important, with German exports continuing to serve markets such as North America.

Supporting these movements requires more than port-side handling alone. Inland transport remains a critical part of the picture, with barges still providing an efficient and comparatively low-emission option where waterways and water levels allow. Alongside this, services such as customs clearance and supply chain coordination help ensure cargo continues to move smoothly beyond the terminal gate. The long-term reliability of inland waterways, however, is increasingly influenced by political decisions and environmental conditions, making planning more complex than it once was.

Experience gained across international markets feeds back into how German operations are run. Regular exchange between regions allows teams to share insight, refine approaches and avoid repeating mistakes already encountered elsewhere. Rather than applying fixed models, the focus is on taking what works and adjusting it to local requirements, regulatory frameworks and customer expectations.

Sustainability as operational question

Sustainability is increasingly treated as an operational challenge rather than a

Charging station at the Rhenus Group Green Steel Logistics Hub in Dortmund.

Pulp and paper handling at the Cuxhaven site.

communications issue. Expectations around emissions, energy use and transparency now sit firmly within day-to-day terminal management, influencing how sites are run and how investment decisions are made.

Many terminals are responding through on-site renewable energy, more efficient handling equipment and better-connected digital systems. The focus is on reducing environmental impact while also improving reliability, cutting downtime and bringing clearer oversight to operational flows. Emissions-aware routing tools and real-time data analysis are increasingly used to support everyday planning decisions.

Germany's ports also play a growing role in Europe's energy transition. Locations such as Cuxhaven now support offshore wind projects alongside traditional bulk cargoes — a combination that is likely to shape how port operations and infrastructure develop in the years ahead.

Competitive positioning in a changing Europe

Germany continues to hold a strong position among Europe's dry bulk hubs, supported by its industrial base, location and established transport links. At the same time, competitions is increasing as ports across the region invest to meet rising expectations around efficiency and sustainability.

Looking ahead, the pace and direction of change will depend largely on how regulatory goals are balanced with operation realities. Decisions affecting inland waterways, emissions frameworks and infrastructure investment will shape what is possible. In this environment, long-term resilience is likely to come less from scale alone, and more from the ability to adapt, apply technical expertise and retain experienced people.

From the perspective of operators active across multiple markets, including Rhenus, the coming years will be defined by practical problem-solving rather than grand reinvention. The focus is on understanding how commodities, regulations and customer requirements interact on the ground and on translating that understanding into workable, reliable solutions. It is this steady, experience-led approach that will continue to underpin Germany's role in global dry bulk logistics.

At Rhenus, shaped by its broad experience and range across Germany's port and terminal network, the company's priority is to help support customers through any uncertainty ahead and to provide continuity, flexibility and customer service excellence for supply chains under pressure. In markets shaped by disruption, stability, continuity and getting the job done are often the most valuable services of all.

About Rhenus

The Rhenus Group is a logistics specialists with global business operations and annual turnover amounting to €8.2 billion. 41,000 employees work at 1,330 business sites in more than 70 countries and develop innovative solutions along the complete supply chain.

Whether providing transport, warehousing, customs clearance or value-added services, the family-owned business pools its operations in various business units where the needs of customers are always the major focus.

Port of Hamburg Beteiligungsgesellschaft SE submits request to squeeze out minority shareholders of HHLA

Port of Hamburg Beteiligungsgesellschaft SE (PoH) has notified the Executive Board of Hamburger Hafen und Logistik AG (HHLA) (ISIN: DE000A0S8488) on 5 January 2026 that it intends to transfer the A shares of HHLA's minority shareholders to PoH in exchange for an appropriate cash compensation (known as a squeeze-out). PoH, whose shares are held by the Free and Hanseatic City of Hamburg and the MSC Group, holds more than 95 percent of HHLA shares, making it the main shareholder within the meaning of Section 327a of the German Stock Corporation Act (AktG).

The amount of the cash compensation is now determined by the PoH on the basis of a company valuation. The appropriateness of the cash compensation is also reviewed by a court-appointed auditor. The squeeze-out under stock corporation law becomes effective upon approval by the general meeting and entry in the commercial register.

Is autonomous bulk-handling the key to digitalizing cement plants?

The cement industry is facing a reckoning. One of the most energy-intensive sectors of the global economy, it faces growing pressures to cut costs, boost efficiency and meet CO_2-reduction targets. As a result, achieving greater efficiency has become a must-have rather than an optional upgrade.

One key area for improvement is the automation and digitalization of operations where cement lags other heavy industries such as mining, oil & gas, and petrochemicals.

Innomotics' DigiMine Yardmaster, an advanced stockpile management technology which has been helping these sectors operate more efficiently for more than 20 years, could do the same for the cement industry.

Unique barriers

Bringing Industry 4.0 technologies to such a complex, continuous process as cement production is no simple task. Cement plants face a unique set of barriers to digital transformation. Many sites are decades old, with outdated control systems and limited sensor coverage. Upgrading them for advanced analytics or AI can require costly retrofits.

In addition, plants rely on multiple platforms that rarely talk to each other, hindering real-time optimization. A shortage of digital expertise in the industry and resistance to change often stall approval of such projects.

It can also be difficult to prove the benefits of costly digital projects which can also expose plants to new threats such as cyber attacks which can shut down an entire production site.

Bulk-handling complexity

The toughest obstacle lies in the yard itself. Stockpiling, reclaiming and dispatching raw materials remain heavily reliant on manual operation and prone to errors. Inaccurate inventory data and irregular feedstock flow can undermine even the most advanced process controls.

As a result, management of a plant's stockpile inventory can offer the first step to automating the entire complex.

The idea behind an autonomous stockyard is simple but transformative. These innovative technologies combine automation, sensors and digital-twin technology to seamlessly manage bulk-material flows — from the delivery of the limestone to when finished cement leaves.

Innomotics' DigiMine YardMaster begins by tracking material from the moment it arrives at the plant by ship or train. Material volume and quality are measured as it moves from the conveyor to the stacker, using belt scales, laboratory tests, online analysing systems or other sources. It then determines the exact position of the stacker and calculates the stockpile.

The same occurs when material is reclaimed, providing the operator with real-time information about the location, quantity and quality of every tonne of raw material or finished product within the stockyard.

DigiMine Yardmaster also enables planning and scheduling through its Advanced Stockyard Planning application. This assesses all possible planning alternatives to ensure the most efficient operation of the stockyard. Orders are then broken down into feasible jobs which are sent to the Yardmaster for execution.

The technology has been successfully deployed at several major bulk material handling operations around the world, including major mines and thermoelectric power plants.

More broadly, Innomotics is an ideal partner for any cement producer considering automation of its production process. With more than 15,000 experts building on its 150-year legacy of engineering innovation, the company can provide immediate support around the world to help your operations gear up for the future.

The benefits of an automated stockyard are immediate: safety improves as there are fewer people in hazardous areas, equipment wear is reduced due to more efficient deployment, fuel and maintenance costs fall, and more accurate, auditable inventory becomes possible.

Critically, automating stockpile management builds the data foundation needed for wider plant digitalization.

Why start at the yard?

The arguments for commencing automation of a cement plant with stockpile management are multiple.

Firstly, raw material logistics is one of the toughest tasks in any operation due to their unpredictable nature. Automating stacking, reclaiming and blending ensures that the right mix reaches the mill in the correct sequence, stabilizing downstream operations and making them easier to automate.

Stockpile automation also ensures the capture of high-resolution operational data, such as volumes, material quality and process flows that permit the creation of a real-time model of material movement. This can form the backbone for optimization and predictive maintenance powered by Artificial Intelligence.

The data can also be used to construct a Digital Twin of the production process which can identify bottlenecks before they occur in real life and test alternate operating configurations without affecting the whole operation.

An automated yard can also respond more quickly schedule changes, variations in material quality and feed shortages, reassigning stacking and reclaiming tasks on the fly to ensure an uninterrupted supply.

In sum, the yard can act as the launching pad for automating the whole cement plant.

No longer an option

Digitalization is no longer optional for cement producers seeking competitiveness and compliance in a carbon-constrained world. Yet the industry's complexity demands a pragmatic entry point — one that delivers results while laying the groundwork for full autonomy.

Automating the bulk-material yard provides exactly that. It delivers measurable gains in safety, reliability and efficiency while generating the rich operational data essential for AI-driven optimization.

From there, the path to a truly autonomous cement plant — where quarry, kiln and dispatch are orchestrated through a single digital ecosystem — becomes not just possible, but inevitable.

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'.

Looking for increased reliability and productivity, lower maintenance costs and an extended lifespan? Let us know, because together we can move mountains.

LET'S MOVE MOUNTAINS

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Kinder Australia's K-Slide® UHMWPE dramatically improves materials flow at precast concrete manufacturer

Kinder Australia was commissioned to provide its K-Slide® UHMWPE low-friction liner to a customer in the Brisbane region in Australia.

The customer is a manufacturer of precast concrete products and produces its own concrete on site. The manufactured sand is an essential ingredient in concrete mix, and of critical importance to the site's production.

The plant was originally designed for the storage and handling of natural sands and coarse aggregates. However, a change to handling manufactured sand resulted in flow issues, including substantial ratholing and hang-ups, and a corresponding 20% reduction in production rate.

The customer's two bins previously had no lining present; a corrugated steel structure, square and tall, featuring uneven surfaces and ledges.

The flow of manufactured sand from the bins was maintained by keeping the level in the bins low, and by almost constant cleaning. This came at a cost: additional labour for cleaning; and logistics issues associated with more frequent, smaller deliveries.

The challenge for the concrete operator when seeking an improved materials flow solution was to take into consideration predictable manufactured sand factors such as particle size/shape, consistency of the manufactured sand material as well as humid conditions.

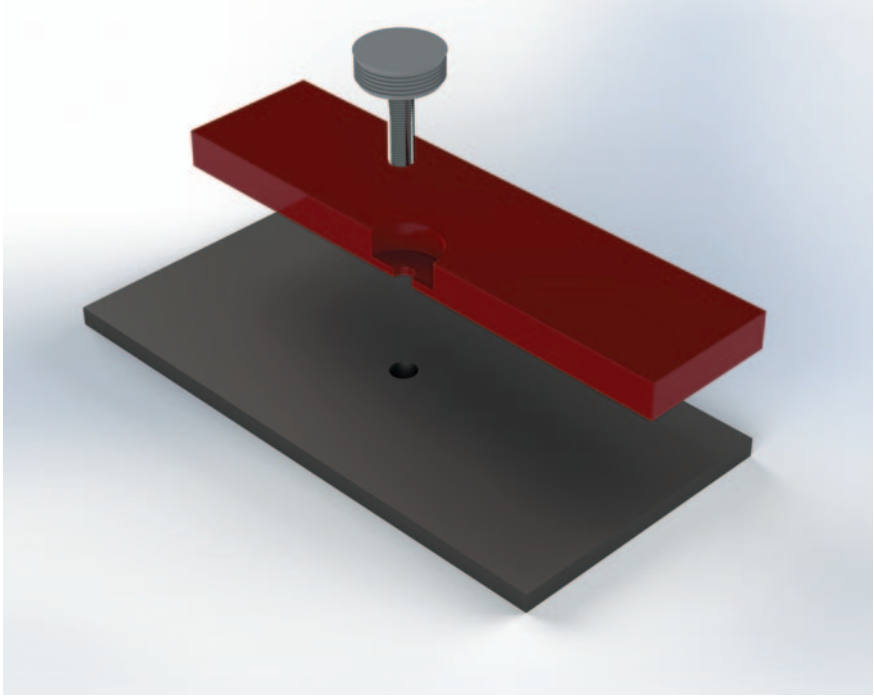
All these factors helped Kinder Australia — together with FSI Engineering and Pentral Fultum — determine the ideal lining material and grade to be installed.

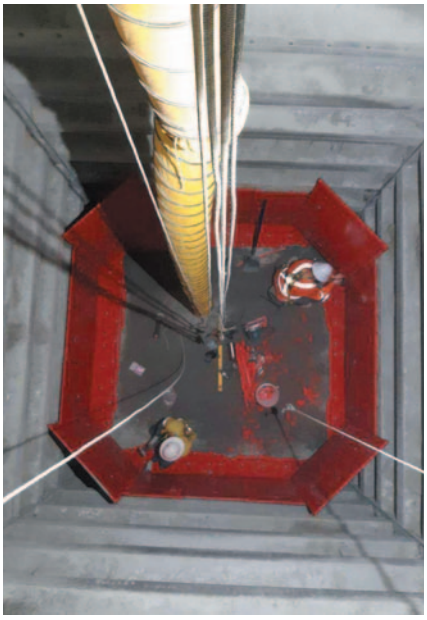
The K-Slide® UHMWPE Low Friction Liner was selected to line the bins because of its low co-efficient of friction and abrasion resistance. It is also lightweight and able to be cut to shape to suit challenging and restricted spaces.

Kinder Australia partnered up with FSI Engineering; Queensland based, reliable and well acquainted with Kinder to provide an excellent solution. The installation involved working-at-heights and in confined space — suited to FSI, as all its personnel had undergone extensive industry training and certification to safely cover this project constraint.

Process improvement specialist, Pentral Fultum, recommended changing the geometry of the internal bin from a rectangular to octagonal profile.

Due to the uneven surface of the bins, a specialized skin needed to be inserted over the corrugations before fastening. Combinations of studs and coated bolts were used to provide a flat and even surface and further aid in material flow.





The result of the K-Slide® UHMWPE Low Friction Liner installation, along with the specialized skin and fasteners, has led to the bins becoming smooth and even, with the manufactured sand moving freely with no hang-up occurrence. Build-up of manufactured sand on the walls and corners is no longer observed and the manufactured sand exhibits mass flow.

Productivity is at an all-time high with a minimal amount of the product lost to ratholing and caking. The K-Slide® UHMWPE Low Friction Liner provides thorough wear protection to the bins, so they can withstand any abrasion from the material.

Crown Cement powers up: five new E-Cranes revolutionize raw material handling

As one of Bangladesh's foremost cement manufacturers, Crown Cement PLC has significantly enhanced its raw material handling operations by installing five new E-Cranes at its main plant. This advancement has streamlined the unloading of essential cement raw materials — such as clinker, slag, limestone, and gypsum — resulting in reduced unloading times and improved overall productivity.

This journey began back in 2011, when Crown Cement installed two 700 Series E-Cranes at its facility in West Mukterpur, Munshiganj. In 2017, the company introduced a different brand of unloading crane to accommodate its growing demand. However, due to unsatisfactory performance as well as increased unloading requirements, it became clear that a more robust and high capacity solution was needed. Consequently — in 2022 — Crown Cement placed an order for five 1000C Series (model EH7290 PD-E) E-Cranes to replace the four existing machines. Over time these new cranes were installed at multiple locations within the same plant, with commissioning of the last unit being completed by the end of August 2025.

The decision to upgrade from the 700 Series to the higher-capacity 1000C Series driven by limited river frontage, which necessitated maximizing unloading capacity within a constrained are. The original 700 Series E-Cranes were successfully relocated to other Crown Cement plants, where they continue to operate effectively.

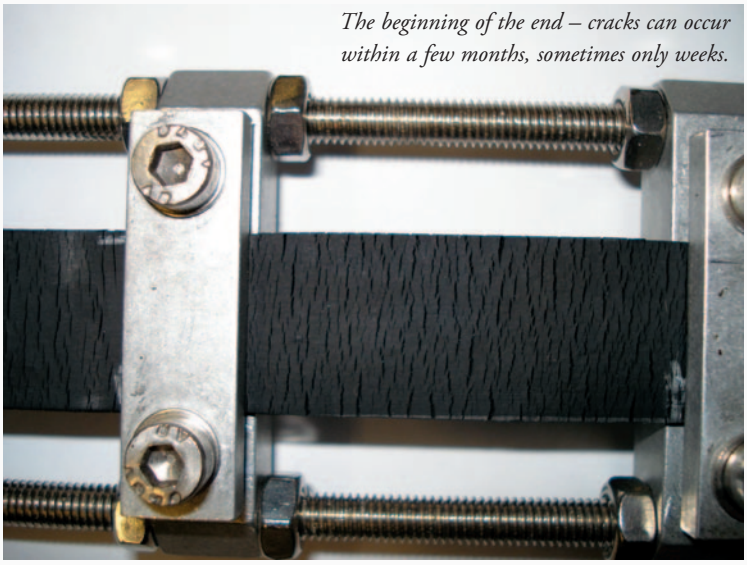
As of the latest records, their operational hours are:

- Crown Cement 1: 64,360 hours
- Crown Cement 2: 69,130 hours

Both the newly installed 1000C Series E-Cranes as well as the relocated 700 Series cranes are currently functioning efficiently, playing a vital role in supporting Crown Cement's ongoing operations.

CONVEYING ADVICE

Rubber conveyor belts: are you being sold belts with a limited life expectancy?



The beginning of the end – cracks can occur within a few months, sometimes only weeks.

Rubber degradation and decomposition caused by exposure to ozone (O_3) ultraviolet light (UV) and oxygen (O_2) is a prime cause of premature and premature wear damage and a serious reduction in both the performance and working lifetime of rubber conveyor belts. If the rubber does not contain sufficient protective chemicals, the decline begins as soon as the rubber is vulcanized during the production process. It is not, as some may believe, something that begins to happen years down the line. The short-term and long-term effects are something that all conveyor operators need to understand, but usually do not.

Although the damage is easily preventable, recent surveys show that more than 80% of rubber conveyor belts sold in Europe, Africa and the Middle East have no protection. The following looks at the science and asks why so many manufacturers and traders are selling conveyor belts that virtually have an inbuilt limitation on their working life expectancy.

Ozone damage — causes and effects

Ground-level ozone (O_3), also known as tropospheric ozone, is a trace gas in the troposphere (the lowest level of the Earth's atmosphere) created by the photolysis of nitrogen dioxide (NO_2) from sources such as automobile exhaust and industrial discharges. Exposure is unavoidable because even tiny traces of ozone in the air will attack the molecular structure of rubber. The scientific name for this is ozonolysis.

When rubber polymers are attacked, the molecular weight drops steadily until very little strength remains in the rubber. The first sign is when cracks start to appear in the rubber surface, which is sometimes referred to as 'dry rotting'. Further attacks occur inside the newly exposed cracks, which grow steadily until they complete a 'circuit' and the rubber fails.

Ultraviolet damage

Ultraviolet light from sunlight and artificial (fluorescent) lighting also has a seriously detrimental effect on rubber. Ultraviolet accelerates rubber deterioration because it produces photochemical reactions that promote the oxidation of the rubber surface resulting in a loss in mechanical strength. This is known as 'UV degradation'.

Entirely preventable

Ozone, ultraviolet and oxygen damage is entirely preventable. Several years ago, Netherlands-based Fenner Dunlop was among the very first in the world to make use of new technology that enabled the effects of ozone to be tested, measured and consequently preventable. The company introduced mandatory testing to EN/ISO 1431 international standards for all its rubber products. As a result, special antioxidant additives such as 2,2,4-Trimethyl-1,2-dihydroquinoline polymer (MQ), anti-degradants, antifatigue agents and antiozonants became compulsory ingredients in every rubber compound without exception.

EN/ISO 1431 testing

Resistance to ozone is measured in accordance with the EN/ISO 1431 test method in which samples of rubber are placed under tension (20% strain) inside an ozone testing cabinet and exposed to highly concentrated levels of ozone for a period of up to 96 hours (@ 40°C, 50pphm). The pass criteria needs to be that the rubber sample does not show any signs of cracking within the 96-hour period.

Worryingly, the vast majority of samples tested typically fail within only six to eight hours, which experience equates as a real time equivalent of within six working months. Despite its crucial importance, ozone and UV resistance is very rarely, if ever, mentioned by conveyor belt manufacturers and suppliers. This is because the ingredients needed to protect the rubber and prolong its working life cost money, thereby reducing the price competitive advantage. A more sinister but nonetheless valid aspect of the non-use of protective agents is that anything that prolongs the working life of belts is not good for business so, together, they explain the widespread absence of protection.

Eighty per cent of samples tested typically fail within only six to eight hours.

Conclusion

Exposure to ozone (O_3) ultraviolet light (UV) and oxygen (O_2) is far more damaging and costly, both in terms of performance and working lifetime, than most conveyor belt suppliers would have you believe. Always insist on certification that confirms that the belt you are being offered is fully resistant in accordance with the EN ISO 1431 test method. Without this essential protection, your belts will be more problematic and need to be replaced far sooner than they should be.

Optimization of conveyor transfers through

$63M+ saved through the use of AirScrape in a Peruvian copper mine

In the bulk material industry, conveyor transfers are considered particularly critical plant components. Due to the combination of impact energy and material throughput, significant dust emissions and excessive wear occur at these points. Conventional sealing systems quickly reach their limits, as direct contact with the conveyor leads to constant wear. A case study from a copper mine in Peru clearly shows that the use of the innovative, contactless AirScrape sealing system not only prevents downtimes but also has a significant impact on production quantity and profitability.

The AirScrape system completely avoids any mechanical contact between the seal and the conveyor belt. Specially arranged, hardened blades create a directed airflow using the Venturi effect, which guides the escaping material dust back onto the conveyor belt. The system differs significantly from conventional seals:

- contactless operation, no mechanical contact with the conveyor belt;
- special blade geometry that generates a directed airflow and redirects fine material back onto the belt; and
- no wear and no need for adjustment, allowing the system to operate maintenance-free for at least five years.

High losses due to dust and wear

The conveyor section studied involves a long transport path with several transfers, heavily strained by the transported copper ores. Before the installation of the AirScrape system, unplanned downtimes occurred regularly (about every three weeks), with a time loss of three hours each due to adjusting or replacing worn rubber seals. The calculated costs per downtime amounted to approximately $200,000 due to downtime and additional personnel requirements. A critical issue was the loss of fine copper dust: about 4% of the production volume was literally 'lost in the dust' every year through the open, conventionally sealed transfer, remaining unused.

The summarized situation included the following problems:

- high wear of conventional rubber seals, which constantly required readjustment;
- significant dust emissions, which burdened both the workplace and the environment;
- unplanned downtimes occurring every three weeks, lasting three hours each, caused by readjusting or replacing worn seals; and
- production losses of about 4% of the annual output, as substantial amounts of valuable material were lost due to escaping fine copper dust.

With the installation of the AirScrape sealing system, dust emissions were reduced by more than 90%. Sealing-related downtimes were completely eliminated, and production reliability was significantly improved. Production losses were almost entirely recovered. Thanks to ScrapeTec's contactless sealing system, belt damage caused by the seals is a thing of the past. The maintenance cycles for eliminating material loss caused by dust and spillage were completely eliminated.

The economic impacts are clearly demonstrated by an example calculation.

Initial data:

- annual production of the mine: 500,000 tonnes of copper;
- before AirScrape installation: 4% dust loss = 20,000 tonnes/year;
- copper price: approx. $3,000/tonne; and

contactless sealing systems from ScrapeTec

- annual costs from approximately 17 downtimes: 17 x $200,000 = $3.4 million/year.

Savings and additional revenue:

- **recovered production volume:** 20,000 tonnes x $3,000/tonne = $60 million/year added value;
- **avoidance of downtime costs:** $3.4 million/year;
- **total economic benefit:** >$63.4 million/year;
- **ROI AirScrape:** purchase and installation (including ancillary costs) approximately $170,000; and
- **payback period:** ROI less than two days, as the investment is paid off in the shortest time through material recovery alone.

The significant reduction in dust improves the work environment, and environmental pollution decreases measurably. Statutory occupational health and safety requirements and limits are reliably met. The maintenance-free design minimizes accident risks during service.

The use of the AirScrape sealing system in the Peruvian copper mine is a prime example of the productivity-enhancing and sustainable effects of modern technologies in bulk material handling. In addition to drastically reducing downtimes and maintenance costs, the overall output of the conveyor system is massively increased — the system pays for itself due to the enormous production losses from dust in just a few days.

RIKON goes to Africa with first major contract

"RIKON" has started the year with a strategic victory, securing its first contract on the African continent. The company has won an international tender for the complex transportation of a double jib level luffing crane (a key product in RIKON's manufacturing portfolio) of German production. The crane will be transported in a fully assembled state from the port of Nador to the port of Safi in Morocco.

The contract was awarded by Marsa Maroc, the leading port operator in the Kingdom of Morocco. The project involves the transport of the crane in a fully assembled state — a logistically challenging operation that demands specialized expertise, meticulous planning, and proven execution capabilities.

RIKON's proven track record in large-scale transport was one of the decisive factors. The company's recent and efficient shipment of double jib level luffing cranes to Turkey (see 'AS "RIKON" presents unique double jib level luffing cranes built in Riga Port' on p50 of this issue) served as a key reference, clearly demonstrating the required competence and reliability. RIKON's participation in TOC Africa 2025 in Tangier proved instrumental, providing a direct platform to present its capabilities to Marsa Maroc and other key regional stakeholders.

RIKON is particularly pleased that this first African contract of its kind for the company comes precisely after its active engagement at TOC Africa. It is always rewarding when dedicated efforts translate into a tangible results and the trust of such a significant industry leader. This success validates RIKON's strategy and opens a new chapter for activities on the continent.

For RIKON, this project is a debut in Africa and powerful proof of our logistics expertise. Successfully delivering this crane will demonstrate its capabilities to the entire region, paving the way for future projects and solidifying the company's position as a reliable partner for complex heavy-lift machinery solutions.

The Grab Specialist B.V.: combining

The Grab Specialist B.V., designs and manufactures high-quality grab/bucket solutions. The company's director started working with metal at 16 years of age when he joined his father's company as a young man. At that time, most of the work was in repair and small metal works. At some point the first customer came asking for a grab repair. Having never done this before

expertise with experience

— but also not shying away from a challenge — this contract represented the company's entry point into the world of grabs. Ever since then, grabs have been designed and manufactured based on customer requests or own ideas. Never shying away from a challenge has been key to the success of the company.

This is one of the reasons The Grab Specialist B.V.'s current portfolio includes robust mechanical, hydraulic, electro hydraulic and diesel grabs engineered for maximum efficiency, durability, and precision in bulk handling operations. Whether for ship-unloading, barge loading, stockpile management, or conveyor feeding, all equipment is designed to withstand the toughest working conditions while ensuring high productivity and minimal downtime. Cement clinker is one example of a particulary tricky material with the abrasiveness of the material and the dust that comes free when handling this cargo.

Depending on the project, The Grab Specialist B.V. executes the grabs with exchangeable turnable knives made of Hardox material to minimize downtime due to the abrasive material. When it comes to dust control, the grab is made using a fully enclosed design with dust covers, which is the best way to minimize dust emissions. Additionally, the company makes the knives with a special rubber sealing to prevent leaking.

Every grab is engineered to meet the specific requirements of a project. Size, weight, and material specifications can be fully customized, ensuring optimal performance for any bulk material handling challenge.

AS "RIKON" presents unique double jib level luffing cranes built in Riga Port

AS "RIKON" — the only manufacturer of portal cranes in the Baltic States — has unveiled two of its unique double jib level luffing cranes, built in Latvia's Riga Port. They were built for a customer from Turkey and will soon be shipped to the port of Isdemir on the Mediterranean Sea, thereby opening a new export niche for Latvia in Turkey. These new cranes were tailored to the customer's needs, incorporating specific technological requirements and ability to work in specific operating conditions. They will be transported from Riga Port to Turkey on a special vessel in a fully assembled state, a unique logistics operation demanding high precision and detailed technical planning.

This crane project is particularly impressive in scale: the structures reach a height of 55 metres (for comparison, Nelson's Column in London is 51 metres tall, and the Freedom Monument in Riga is 42 metres tall) and weigh 550 tonnes. These are the first two of six cranes ordered by the Turkish partners. The subsequent manufactured cranes will be delivered to the port of Eregli on the Black Sea.

"What we are seeing here today is yet more proof that Latvia is capable. Capable of creating and delivering truly ambitious projects that require expertise, high technical precision, and flawless quality, all while competing with the world's leading companies. It is gratifying that Riga Port is home to growing export-oriented companies whose products are competitive, high-value, and in demand worldwide. I wish the company every success in building on this achievement and continuing to develop by conquering new export markets," said Latvia's Minister of Economics, Viktors Valainis.

"Our competitive edge lies in our ability to adapt to each client's specific needs and to manage the entire process from design to the finished product. Undoubtedly, we are delighted to launch this new export route to Turkey; it is a great endorsement of our team's collective effort. We have set our strategic direction towards the West and are focused on this goal. Next year, we will execute a project in Germany, with design and production expected to take a year and a half to two years. Our future target markets are France, Belgium, Morocco, and Italy, as these countries have advanced ports and high demand for cranes," stated Alina Deimonta, Director of Economics of AS RIKON.

All cranes are fully electric, with no hydraulic mechanisms involved. Furthermore, the cranes are not built from standard designs but are custom-developed for each client, factoring in their individual requirements and specifications.

L to R: Director of Economics – Alina Deimonta, Council Chairman – Inal Akhba, Minister of Economics of the Republic of Latvia – Viktors Valainis (photo: JSC "RIKON").

"We are very pleased with the successful co-operation with the RIKON team. These cranes will significantly enhance our port's operational efficiency, and we are proud to partner with a Latvian company that delivers world-class engineering solutions. RIKON's professional approach, responsiveness, and ability to implement such a complex project to the highest quality standards give us great confidence for future collaboration," said Mehmet Türe, representative of the Turkish customer.

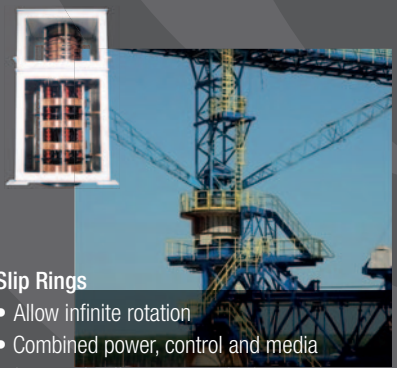
The company's accumulated experience, in-house design bureau, and software development department enable it to manufacture all types of heavy lifting equipment. However, its primary and serial products are double jib level luffing cranes

Motor Driven Reels

- Monospiral and Level-Wind configurations
- Rugged and dependable magnetic coupler for dusty environments

Cable Festoon

- Corrosion-resistant, long-life rollers; precision sealed bearings
- Systems customized for the application
- Preassembled option, for easy installation



Slip Rings

- Allow infinite rotation
- Combined power, control and media (water, air, oil, vacuum, other)
- Available with ATEX and SIL 3 certification

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Conductix-Wampfler has one critical mission: To keep your bulk material handling operations running 24 / 7 / 365. You need proven, worry-free energy solutions - and Conductix-Wampfler has them. Our systems provide reliable electric power and water to stacker/reclaimers, barge and ship loaders/unloaders, bulk conveyors, tripper systems, and gantry cranes. Conductix-Wampfler systems are rugged, low maintenance, and time-tested in tough, dusty environments. All products are backed by the largest sales and service network worldwide!

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CONDUCTIX wampfler

Smart use of VIBCO vibrator ensures faster flow and safer operations

Fertilizer may look simple enough — granules, pellets, or powder waiting to be conveyed, stored, or spread. However, anyone in bulk handling knows it can be a stubborn material. Hygroscopic, cohesive, and prone to compacting under its own weight, fertilizer can turn a smooth operation into a maintenance nightmare if not properly managed. That's where vibration comes in not as a bolt-on accessory, but as a precision-engineered solution.

VIBCO has been solving material flow and compaction problems since 1962. Headquartered in Wyoming, Rhode Island, USA, and family-run since the start, it manufactures the most complete line of electric, pneumatic, and hydraulic vibrators used across ports, terminals, conveyors, spreaders, bins, and hoppers worldwide. VIBCO's mission has always been simple: "Same Day Next Day." When a customer calls, they get the right vibrator, ready to ship fast. However, speed of delivery only matters if you get the right solution and that starts with understanding that vibration is an applied science.

Why vibration matters in fertilizer handling

The physics of fertilizer flow are complex. Moisture absorption, granule shape, and static charge can all lead to bridging, rat-holing, or compacted build-up in storage silos, railcars, and hoppers. These blockages don't just slow production — they pose safety hazards when operators resort to hammering or manual clearing.

Vibration, correctly applied, prevents these problems before they start. The challenge is that most people think you can just 'slap a vibrator on it'. That's a costly misconception. Improper placement, sizing, or mounting can shorten equipment life, damage structures, and fail to solve the underlying flow issue.

VIBCO sees vibration as an engineered process— one that requires data, experience, and collaboration with the end-user. Before recommending a unit, VIBCO looks at material type, moisture content, bin geometry, wall thickness, and available power source. Its engineers walk through the application, sometimes virtually using its Van Visit programme, to get the mounting, location, and energy transfer right the first time.

Built for the field and for the long haul

Fertilizer operations demand equipment that performs in harsh, corrosive, and often mobile environments. From tenders and spreaders to port conveyors and truck unloaders, the machinery is exposed to dust, moisture, vibration, and temperature extremes.

VIBCO's line-up includes heavy-duty hydraulic vibrators like the HLF-1300, which produces up to 1,300 lbs. of centrifugal force at 9,000RPM — powerful enough to keep large hoppers clear while weighing just 20 pounds. For smaller applications, the HLF-700 offers 700 lbs. of force and continuous duty performance, unaffected by mud or dirt.

VIBCO's DC Series electric models, like the DC-300 'SandBuster', are popular on fertilizer tenders for fast unloading. They're totally enclosed, weatherproof, and built for long life in outdoor service. For applications where air is available, VIBCO's pneumatic piston vibrators, such as the 55–2AB, deliver efficient linear impact energy to free stuck material in bins, chutes, or spreaders — ideal for mechanical or pneumatic conveying setups.

And when flexibility is key, VIBCO's Traila™ 150 and 200 Stik-It™ mount systems make vibration portable. With a suction base that requires no bolts or welding, operators can move the vibrator from hopper to hopper using their truck's air supply saving time, weight, and maintenance.

From ports to fields: reliability that travels

Fertilizer's journey from ship to field is a long one and, at every stage, flow matters. In ports, vibration aids in fast discharge of bulk carriers and ensures smooth transfer through conveyor and hopper systems. In transport, it keeps product moving in railcars and trucks. In the field, it helps spreaders deliver a consistent, even application that farmers depend on for yield.

VIBCO vibrators are used globally in port operations to eliminate material hang-up in shiploaders and unloaders, improve the accuracy of weighing systems, and reduce costly downtime. The company's air cannons and railcar shakers complement this by keeping bulk cargo flowing freely during storage and transfer.

Every VIBCO unit is 100% made in the USA and backed by a team that understands what uptime means to customers. Many models ship the same or next day, and VIBCO's support line, which is staffed by real engineers, is available 24/7.

Staying competitive: innovation and speed

The fertilizer market is demanding and cyclical. To stay ahead, VIBCO focuses on responsiveness, innovation, and education. It constantly refines its designs to withstand higher temperatures (from –40°F to 450°F), harsher conditions, and tighter energy efficiency standards. Its bolt pattern compatibility means VIBCO units can replace other brands seamlessly, reducing conversion downtime.

Beyond the product, VIBCO's strength lies in partnership. It works closely with OEMs, port operators, and farmers to help them get the system design right from the start. Because when vibration is engineered into the process — not added as an afterthought — everything works better: faster flow, safer operations, less maintenance, and longer equipment life.

The takeaway

Whether it's unloading fertilizer ships, emptying tenders, or keeping silos clear, vibration is the quiet force behind smooth bulk material handling. VIBCO has spent over six decades mastering that force engineering solutions that combine power, precision, and dependability.

In fertilizer handling, success isn't about how fast you can unload — it's about how smartly you apply vibration to make every part of the system flow. That's the VIBCO way.

Expert advice

for solving conveyor carryback

Figure 2: Fabricated or temporary solutions can be ineffective at best and a serious workplace hazard at worst (all pictures ©2026 Martin Engineering).

Belt conveyor operators in high-volume bulk handling ports and terminals often discuss the efficiency 'sweet spot', which refers to the balance between the amount of spillage beneath the system and dust emissions above, relative to the volume of material being transported and the total uptime, *writes Dave Mueller, Product Manager, Conveyor Products/Martin Engineering*. This balance is a myth. There is no trade-off between maintaining a clean operation and ensuring productivity. In fact, installing the correct material discharge and belt cleaning configuration can effectively address both concerns, along with a variety of other issues throughout the entire conveyor system.[1]

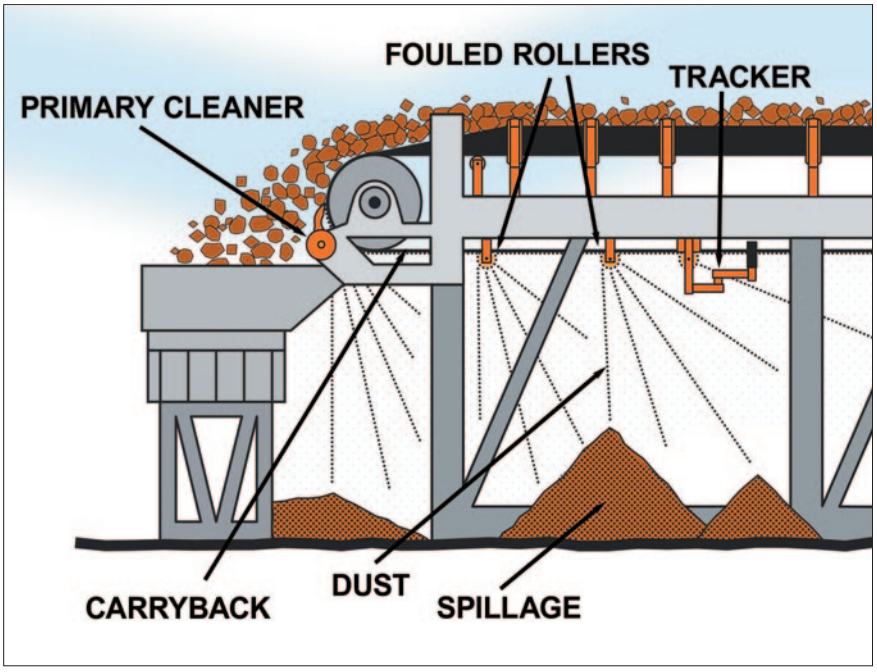


Figure 1 - Identifying some of the indicators of inefficient belt cleaning helps operators devise solutions.

[1] T. Swinderman, A. Marti, L. Goldbeck, D. Marshall, & M. Strebel. Foundations: The Practical Resource for Cleaner, Safer, More Productive Dust & Material Control (Fourth Edition). Ch.14, Pg.201, Belt Cleaning. Worzalla Publishing Company, Stevens Point, WI, 2009.

The quality and construction of belt cleaners are crucial for achieving optimal results. Two cleaners from different manufacturers, both made of polyurethane, may appear quite similar, but once installed and tensioned, operators will notice significant differences. Typically, a lower-quality cleaner (1) allows more material to carryback, (2) requires more maintenance labor, (3) needs to be replaced more frequently, (4) may not be suitable for the application's volume or properties, and (5) could damage the belt, which is commonly the most expensive component of any conveyor system.

This article will discuss the various issues caused by inadequate belt cleaning and their solutions. Those problems are: [see Fig. 1 on p53]:

- carryback;
- dust;
- equipment fouling;
- belt misalignment;
- maintenance labour; and
- safety.

Eliminating carryback improves efficiency

Problem — carryback refers to material that is not discharged, bypasses cleaners, and remains adhered to the conveyor belt beyond the head pulley. In addition to the loading zone, the discharge zone is often a main area where fugitive material accumulates beneath the conveyor system as 'spillage'. This is caused by carryback. After passing through the cleaner(s), material drops at the snub pulley and/or the take-up pulley. It typically does not all come off at once. As the stuck material travels along the belt return toward the tail pulley, it falls off along the belt path, disrupted by return rollers. Thus, cleaning the belt of as much carryback as possible is essential for workplace cleanliness and safety. [see Fig. 2 on p53]

Figure 3 – This configuration is a primary cleaner, three secondary cleaners, and a specialized tertiary cleaner.

Solution — *a primary cleaner blade endures the stress of heavy bulk material, so ensure it is properly graded for light, medium, heavy, or extra heavy duty. When selecting a primary belt cleaner, consider the pulley diameter, belt speed, production volume, and material properties. Wet, viscous, acidic/alkaline, and sharp/abrasive materials may require blades made from specialized polyurethane or material blends (tungsten tips, rubber, etc.).*

Invasive dust emissions

Problem — dust from the return belt can be pervasive. Once the belt is loaded, the pressure of the cargo and the vibration of the belt compress dust into the trough of the belt, packing fine particles into the divots and cracks. The older the belt, the more imperfections it has. As the belt passes through the cleaners — especially the secondary and tertiary ones — unless the cleaners are properly tensioned, the fines can settle in the blemishes and dislodge along the belt path. This creates clouds of dust along the way, and the tiny gritty particles can infiltrate the smallest spaces, leading to equipment fouling.

Solution — *to dislodge fines that drop like dust, a secondary or tertiary cleaner may be necessary. [Fig.3] Positioned behind the head pulley, the secondary cleaner should be tensioned against a hold-down roll within a distance of two to four inches to ensure effective cleaning. Contact with the belt should be in a negative-rake position and made from tungsten carbide or other abrasion-resistant materials for durability. Tertiary cleaners often rely on the weight of the belt combined with a spring tensioner. For extremely abrasive or sticky materials, consider using a washbox. Mounted close to the discharge point, water is used to wash the belt, with slurry collected below and a squeegee blade clearing excess water. When using a washbox, best practices include using a pre-cleaner to remove the majority of the material.*

Dust is also minimized by enclosing the system at the discharge area with curtains and a return run seal. When material is discharged, it can hit the back of the transfer chute, leading to dust formation. As it falls down the chute onto the next conveyor, the impact creates turbulence that seeks an escape route. The receiving belt below generates its own airflow to pull the dust along, but if the top of the transfer chute is open and there is wind, it could trigger the capillary effect and pull the dust back up through the chute.

Figure 4 - Sticky carryback can cake onto a roller, rendering it ineffective and costly to service or replace.

Costly equipment fouling

Problem — carryback and dust are not only violations of workplace safety but also lead to costly consequences throughout the entire system. This results in reduced

equipment lifespan and expensive replacements, which sometimes require unscheduled downtime.

- **Belting:** carryback material accumulating at the discharge zone can encapsulate the tail pulley, rollers, and belt. In this situation, the belt (typically the most costly component of any conveyor) will rest on the abrasive material and erode, reducing the equipment's lifespan.
- **Pulleys and motors:** often, the head pulley acts as the drive pulley, meaning any fugitive dust from the discharge gets drawn into the air intake, clogs the working parts, and leads to a breakdown.
- **Rollers:** fine particulates can foul bearings and cause the rollers to seize over time, leading to roller wear, belt damage, and frictional heat. Heat, combined with combustible dust and oxygen, equals a potential disaster. Furthermore, roller faces can become fouled with caked material, resulting in mistracking. [Fig. 4 on p54]

Solution: *the resolution includes enclosing the system and installing a belt cleaning setup that eliminates carryback and dust. Seal exposed bearings and axles for rolling components. Install a filter in the drive pulley's mechanical air intake and monitor it. Replace equipment immediately to prevent frictional heat and damage. Running equipment to failure is a recipe for disaster. The preferred option is to inspect the system regularly or use a monitoring system, such as a position indicator that shows the status of cleaners and provides data on when they need servicing.*

Mistracking away from efficiency

Problem — many conveyors come with a 'tracking' system that is intended (ineffectively in many cases) to keep the belt from coming into contact with the stringer and shredding the edges. Some operators who experience mistracking on the return install a 'crown' roller design, which is thicker in the middle. If the belt drifts slightly, this design uses its weight to realign it back to the centre. When these return rollers are fouled by carryback, they no longer realign the belt. [Fig.5] If the belt is not centred on the tail pulley, the cargo is likely to be loaded off centre. This can result in the belt drifting further off center, spilling cargo from a full belt and potentially damaging the entire system.

Figure 5: a fouled OEM tracking system, in this case, causing mistracking rather than remedying it.

Solution — *modern belt alignment systems like the Martin® Tracker™ HD can remedy misalignment more effectively than merely installing crown rollers. Designed for either the return or carrying side of the belt, these devices use sensing arms to detect slight variations in the belt path and immediately correct them by turning a roller or idler in the opposite direction.*

Trackers are recommended for all systems because many factors can cause mistracking, not just carryback and broken equipment. However, mistracking results from carryback, so the underlying cause should be addressed first. Belt tracking on the return is also advised, regardless of issues stemming from carryback. With longer gaps between rollers on the return side than the upper carrying side has between idlers, the return side is susceptible to wind, belt camber, and other elements that can lead to drift. [Fig.6]

Figure 6: the Martin® Tracker™ uses the belt's weight and sensing arms to adjust a roller that corrects slight variations in the belt path.

Maintenance labour raises the cost of operation

Problem — running a system to failure due to an overstretched workforce will lead to more expensive and prolonged downtime. Inspection and maintenance of a conveyor system should be routine and performed regularly to prevent unscheduled downtime. It is easier said than done since belt cleaner tensioning is a continuous challenge for many operators. Under-tensioning leads to carryback and expedites the blade wear. In contrast, over-tensioning results in higher power costs, increased heat from friction, runs a higher risk of pull-through, and also accelerates blade wear. After the lock-out/tag-out procedures, changing cleaners can be an ergonomically awkward task performed beneath a conveyor or inside the drop chute, often requiring two or more people and/or a confined space entry certification.

Solution — *carrying out maintenance during a scheduled shutdown, when staff can focus on specific tasks in a controlled*

environment, is the optimal situation. Many innovations to minimize maintenance time have been introduced in recent years. For example, Martin Engineering's N2® Position Indicators (PI) help determine scheduled downtime by providing data on the wear status of belt cleaners. Delivered via mobile app, the N2® PI not only alerts users if an incident occurs, but the data it provides also helps operators understand wear times. This informs managers and aids them in coordinating maintenance schedules for greater efficiency.[Fig.7]

Modern belt cleaner designs such as the CleanScrape® Primary Cleaner are tensioned during installation, tested for performance, and then almost never need to be retensioned. With typically four times the lifespan of the average cleaner, the CleanScrape® features tungsten carbide tips for enhanced equipment longevity in rugged, demanding conditions. It applies minimal pressure to the belt to keep it clean while ensuring mechanical splices can easily pass through.

Figure 7: the CleanScrape® and its unique design requires considerably less maintenance than other cleaners.

Safety

Problem — carryback increases safety risk as well as raising operational costs.[2] Although it is strongly discouraged, operators continue to assign workers to clear spillage from around the system while the belt is running, shovelling the spillage back onto the moving conveyor, or into a skip or barrow — all of which drives up labour costs. If a worker comes into contact with the belt, the risk of an injury or fatality are high. In the bulk handling sector, working on or near moving conveyors remains a leading cause of workplace injuries and deaths. Besides the devastating price paid by a worker's family and colleagues in such circumstances, these incidents always result in costly fines, unscheduled downtime, and increased insurance premiums. [Fig.8]

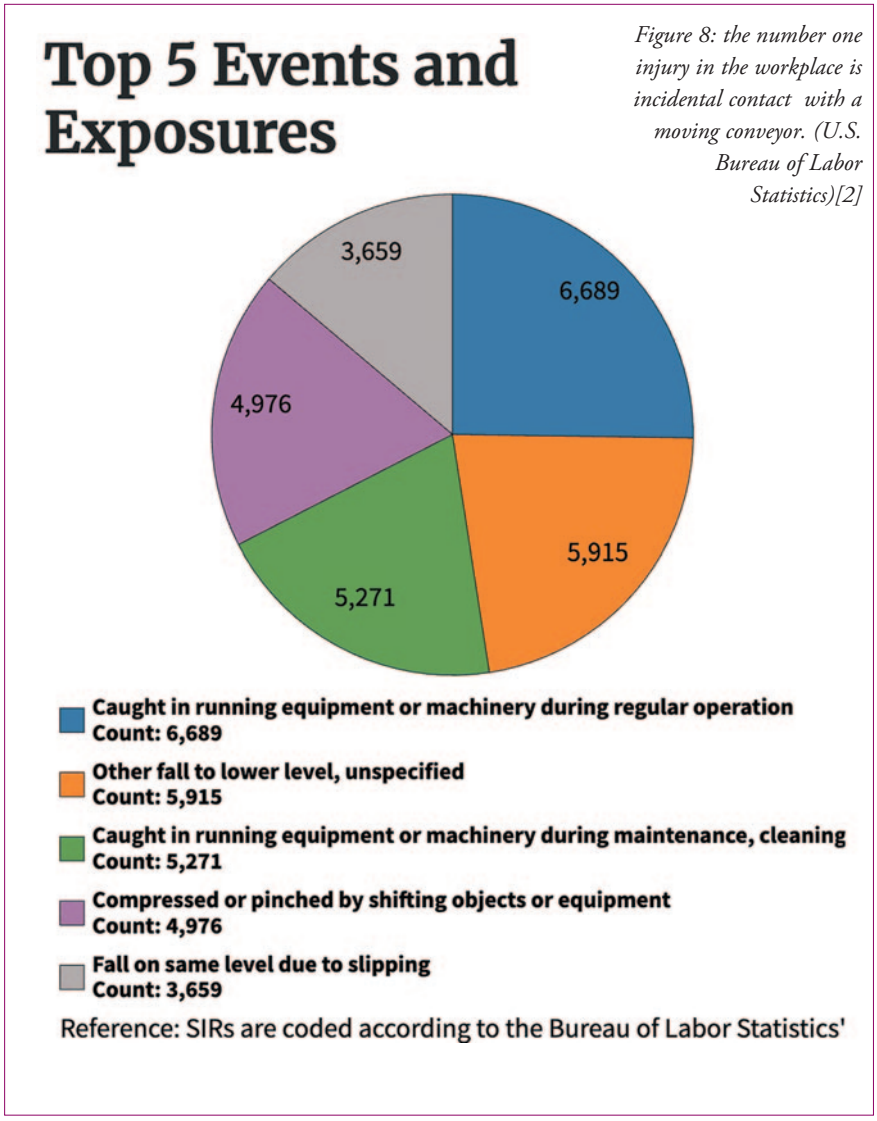


Figure 8: the number one injury in the workplace is incidental contact with a moving conveyor. (U.S. Bureau of Labor Statistics)[2]

Solution — *avoid safety issues and labor costs associated with cleaning by eliminating the cause, carryback. Always follow the lock-out, tag-out (LOTO) procedure and never allow any worker to perform maintenance on or around a working conveyor. One innovation that enhances servicing and safety is the Safe to Service Martin® QC1+™ Primary Cleaner or Safe to Service SQC2S™ Secondary Cleaner. Instead of confined space entry or crawling under the system, these designs enable equipment to be pulled away from the mainframe and serviced quickly and ergonomically by a single worker from outside the chute.*

Anatomy of a Discharge Zone

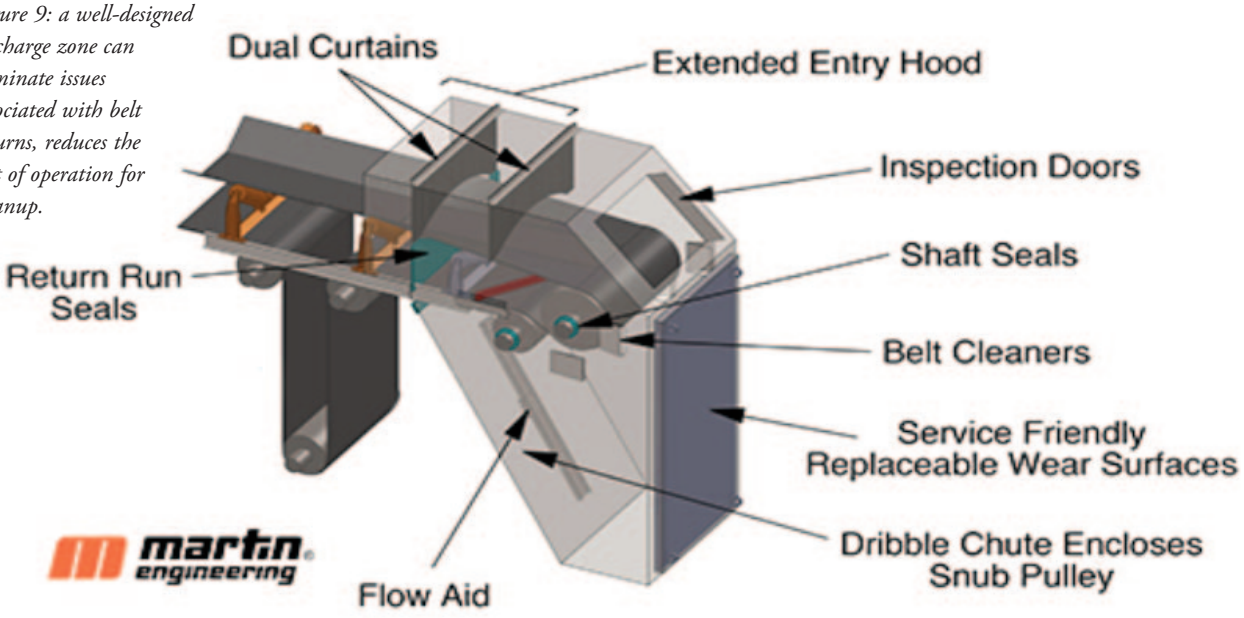
According to the Conveyor Equipment Manufacturers Association (CEMA), "Conveyor belt cleaners are used to remove fugitive material, otherwise known as carryback, from the return side of the conveyor belt after the bulk material has been discharged. Ideally, this will be accomplished from within the chute works so that the removed carryback will pass onto the next system element."[3]

By enclosing the discharge zone and

[2] U.S. Dept of Labor Statistics. Top 5 Events & Exposures. Occupational Safety and Health Administration (OSHA) Severe Injury Reports database. May, 2025. https://www.osha.gov/severe-injury-reports

[3] Conveyor Equipment Manufacturers Association [CEMA]. Classification of Applications for Bulk Material Conveyor Belt Cleaning. Pg.3. Forward. Naples, FL, 2021.

Figure 9: a well-designed discharge zone can eliminate issues associated with belt returns, reduces the cost of operation for cleanup.



extending the entry hood, operators can control airflow with dust curtains and return run seals. When retrofitting a new enclosure, installing a replaceable wear surface plate made of smooth reinforced metal on the impact wall of the transfer chute will reduce buildup and be easier to replace than the entire structure later. This design eliminates dust emissions from the capillary effect. As part of the enclosure, accessible inspection doors that offer a clear view of the equipment should be installed.

However, dust remains within the enclosure, so it is advisable to use shaft seals for bearings to prevent fouling. Once the appropriate primary, secondary, and tertiary cleaners are installed and carryback is significantly reduced, operators will notice an increase in material flow through the transfer chute. It is recommended to install a dribble chute to ensure all captured material is handled. The dribble chute should include a vibrator or air cannon to ensure that dust and fines are reintegrated into the cargo stream and do not accumulate inside the enclosure. [Fig.9]

Inspect and Expect

Inspecting a discharge zone can be time-consuming and requires all your senses. Listen for squeaking rollers and idlers, debris hitting the sides of the enclosure or the inspection door, and the scraping of accumulated materials on the pulley against the mainframe or enclosure. Smell for any metallic friction, as well as burning polyurethane or rubber. Feel for excessive vibration in the system, which may indicate mistracking or a change in the discharge stream. Lastly, always wear safety glasses and observe the operation of each component. Inspect the belt during a full rotation and note how the splice passes through the discharge process.

Conclusion

In the punishing environment of ports and terminals, many aspects of workplace safety and operational efficiency are directly tied to how clean the conveyor belt is. Since incidental contact with the high-speed belt has become the leading cause of conveyor injuries and fatalities, carryback is increasingly being scrutinized by inspectors from government safety organizations. Eliminating the safety hazards associated with belt cleaning also brings benefits such as reduced unscheduled downtime, fewer equipment failures, and lower operating costs.

About the Author

Dave Mueller, Conveyor Products, Product Manager / Martin Engineering

Dave Mueller is a long-time employee of Martin Engineering, having started his career with the company in 1986 and has since established himself as an expert in conveyor accessories. A graduate of Penn Foster College with a B.A. in Business Management, Mueller has 10 years in Research & Development on conveyor products, 28 years as Conveyor Product Manager, is a prolific contributor of articles, and has several patents.

About Martin Engineering

Martin Engineering is a global leader in bulk materials handling solutions. For over 80 years, Martin has designed, manufactured and installed innovative products that make the world's foundation industries cleaner, safer, and more productive. Based in the USA, the privately owned company has drawn on its unrivalled experience and expertise to help operations improve safety, enhance material flow, reduce spillage and dust, and minimize downtime. With factory-owned facilities in 20 countries, on-the-ground presence in another 40, and a worldwide service partner network, Martin has built an enviable reputation for high performance products delivered with exceptional technical service and support. The company's comprehensive *Foundations*™ textbooks, learning resources, and training programs are the global standard for the efficient and effective design, operation, and maintenance of bulk materials handling equipment. DCi

Precision in practice

the prestige of 'Made in Germany' stands firm

Phu My Port connects Vietnam's industrial heartland to global markets, and the LPS 550 ensures rapid agribulk discharge with peak handling rates of up to 1,200tph.

Jay Venter

Electric Liebherr portal crane strengthens Baria Serece

- **The rail-mounted LPS 550 portal slewing crane delivers up to 1,200 tonnes per hour in bulk handling cycles, combining a 144-tonne lifting capacity with a 48-metre boom for high-intensity agribulk operations.**
- **Crane operators further benefit from high cabin visibility combined with integrated digital screens and camera systems, ensuring precision and safety during complex bulk handling sequences.**
- **Baria Serece's equipment portfolio previously included five Liebherr TCC 300 cranes, demonstrating a long-standing partnership with Liebherr for reliable cargo handling.**

Located geographically within Thi Vai River in Vietnam, Baria Serece Phu My Port is the gateway for vessels coming from different regions of the world and transporting different types of cargo, such as agri-commodities, fertilizers, general cargo and more. The increase in productivity through use of the LPS means shorter vessel times in berth, a direct benefit to customers of the port.

Precision meets progress at Phu My Port. The LPS 550 has been deployed to handle bulk commodities with exceptional throughput, combining a 144-tonne lifting capacity and a 48-metre boom with Liebherr's advanced hydrostatic drive. Its high-voltage electric drive ensures energy-efficient operation, complemented by a diesel engine for backup during grid interruptions. The crane's four-rope grab system enhances material flow, while storm anchors and robust structural design guarantee stability under challenging conditions. After commissioning, the unit surpassed expectations during performance tests, achieving up to 1,250tph (tonnes per hour).

Measured throughput gains at Vietnam's river gateway

Phu My's operator recorded nearly 7mt (million metric tonnes) of cargo in recent years, underscoring the need for dependable high-cycle equipment. In its first year, the crane logged 4,000 operating hours, usually running up to 22 hours per day, underscoring its role as a cornerstone of Baria Serece's operational continuity strategy. With two berths totalling 620 metres and a design to receive vessels up to 100,000dwt, the terminal's physical footprint is optimized for bulk flows and quick vessel turnarounds.

Performance tests at the terminal confirmed peak handling of up to 1,250tph, aligning with the crane's four-rope grab concept and hydrostatic drives that sustain

The portal design preserves quay space for hoppers and conveyors, enabling efficient cargo flow and flexible berth operations without sacrificing quay access.

simultaneous hoisting, slewing and luffing. These gains support Vietnam's growing trade volumes by stabilizing discharge times for agribulk products and fertilizer vessels while protecting schedule integrity during seasonal peaks.

Space-efficient engineering for constrained quaysides

The portal undercarriage allows the crane to travel on rails while keeping the working area beneath the portal open for trucks and service traffic, which is particularly valuable on narrow quays. The portal design preserves ground access and enables integration directly above conveyor lines for uninterrupted cargo flow to storage, reducing rehandles and quay congestion. The LPS 550 combines the reach and precision of a dedicated bulk machine with the operational flexibility to serve multiple berths and cargo types without new superstructure.

Liebherr's regional service footprint supports planned maintenance around vessel windows and provides access to parts and field engineers, which helps maintain uptime and predictable duty cycles for high-utilization bulk operations.

"Engineering decisions at Baria Serece were driven by space, cycle time and reliability," said Andreas Ritschel, General Manager Sales Mobile Harbour Cranes at Liebherr-Rostock GmbH. "A rail-mounted portal crane with four-rope grab control offers the stability and handling speed the terminal requires, without sacrificing quay access for landside logistics."

The configuration offers a clear path to ensuring Phu My's bulk operations scale with market demand while retaining a compact quay footprint.

From the elevated cabin, operators benefit from bird's-eye visibility and integrated digital screens, ensuring precision and safety during high-intensity bulk cycles.

About Liebherr-Rostock GmbH

Liebherr-Rostock GmbH is one of the foremost European manufacturers of maritime handling solutions. The product range includes ship, mobile harbour and off-shore cranes. Components for container cranes are also part of the product portfolio.

About the Liebherr Group

The Liebherr Group is a family-run technology company with a highly diversified product programme. The company is one of the largest construction equipment manufacturers in the world. It also provides high-quality, user-oriented products and services in a wide range of other areas. The Liebherr Group includes over 150 companies across all continents. In 2024, it employed more than 50,000 staff and achieved combined revenues of over €14 billion. Liebherr was founded by Hans Liebherr in 1949 in the southern German town of Kirchdorf an der Iller. Since then, the employees have been pursuing the goal of achieving continuous technological innovation, and bringing industry-leading solutions to customers.

For ContiTech German engineering is the foundation – total conveyance is the solution for maximum uptime

In the global dry bulk sector — moving fertilizers, phosphates, alumina, and other commodities — reliability is decisive. Operators face the challenge of transporting large volumes efficiently and without disruption, even in the harshest environments. Heat, dust, abrasion, and remote locations mean that even minor failures can be costly.

ContiTech conveyor belts are renowned worldwide for durability and reliability. Designed for critical applications, they guarantee safe, continuous operation for dry cargo facilities. Building on German expertise, ContiTech, the industry-focused group sector of Continental, now takes the next steps to position itself as a comprehensive provider supporting customers with a complete range of those solutions that they need to ensure maximum uptime of their conveyor lines. Digital monitoring and data analysis support predictive maintenance, while accepting the role of general contractor means that ContiTech can plan and execute both new installations and overhauling projects from end to end. Regional presence ensures fast spare part supply and response teams, maintaining stability even under tough conditions.

Engineering for endurance in harsh environments

Conveying technology for extreme environments: many systems operate in hot deserts, coastal plants, or mining regions with constant dust and sand. ContiTech belts — textile or steel cord — are engineered in Germany for these challenges. Advanced rubber compounds, steel reinforcements, constructive features and protective layers provide resistance to heat, abrasion, and UV exposure — crucial for long-distance and sensitive material applications.

Strong track record through major projects in the MENA region

Successful large-scale projects across the Middle East and North Africa demonstrate ContiTech's market position. In the Gulf, kilometers of conveyor systems were replaced under extreme conditions, including general contracting, material delivery, installation, and commissioning within tight windows. One example: a long pipe conveyor was swapped out quickly despite intense heat and dust, thanks to careful planning and material readiness. The new closed belt ensures clean, contamination-free transport. Another project renewed a system over 11 kilometres long in desert climate — its robust build enables ongoing production with minimal downtime.

In North Africa, ContiTech also secured a major multi-year contract with a leading customer; deliveries from multiple plants highlight the company's global manufacturing capacity and ability to handle complex infrastructure projects.

Beyond the belts

With 'Total Conveyance', ContiTech pursues a new philosophy, moving beyond selling products to ensuring system uptime and operational availability — through regular inspections, preventive mechanical and digital maintenance, rapid troubleshooting, turnkey project support, and local service and storage. This approach shifts maintenance from reactive to proactive, boosting throughput and extending asset life.

For operators, downtime is a strategic risk — a failed belt can halt entire supply chains. ContiTech's solutions combine engineering excellence, efficient procurement, digitalization, and regional proximity to raise productivity.

ContiTech's investments in local teams reinforce its development as a true partner for the dry bulk sector. Close customer contact accelerates decisions and ensures continuous support.

Conclusion

Today, bulk handling means more than moving material — safety, reliability, and long-term availability are essential. ContiTech combines premium belts with engineering, maintenance, digital monitoring, and regional presence, redefining industry partnership. 'Total Conveyance' helps operators achieve what matters most: uninterrupted, efficient, and future-proof bulk transport.

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That’s more than a sound you hear. It’s expectations being shaken. One small change that sets the stage for so much more. When the new Hägglunds Thunder resonates with your needs, the result is electrifying. Learn what a difference a single difference can make at **www.hagglunds.com**.

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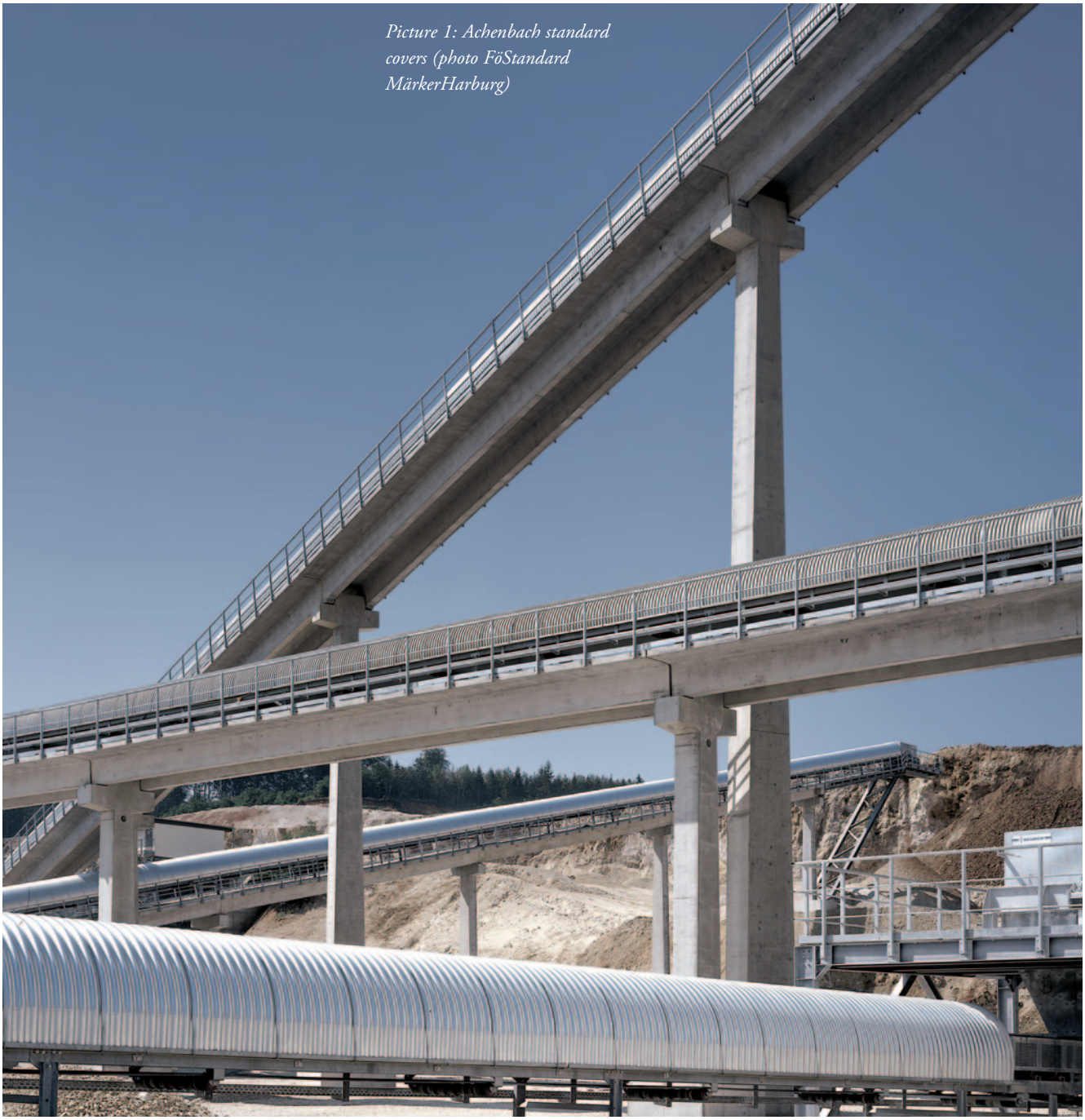
HÄGGLUNDS

Achenbach covers made in Germany: largest variety of covers in the world



Picture 1: Achenbach standard covers (photo FöStandard MärkerHarburg)

The Achenbach company in Wilnsdorf, Germany, has decades of experience in working with corrugated metal sheets.

Of particular note is Achenbach's covers for belt conveyors made from cambered (arched) corrugated sheets, which have stood up to conditions all over the world.

The main reasons for covering conveyor belts include:

Picture 2: Achenbach installation with openable LOOP covers at Europoort Rotterdam in the Netherlands.

Picture 3: this unit, installed in France, is fitted with Organit PVC covers for grain transport.

- weather protection (year-round use of the facility);
- environmental protection (no discharge of the conveyed material);
- accident prevention (no intervention on the running line); and
- economy (protection of the system and extension of the usage time).

Furthermore, several large conveyor belts for a range of conveyed materials have been covered with Achenbach hoods, for example in:

- **Germany:** standard covers (see picture 1).
- **Europoort Rotterdam/Netherlands:** with openable LOOP-covers (see picture 2).
- **France:** unit fitted with Organit PVC covers for grain transport (see picture 3).
- **Brazil:** Achenbach covers fitted with JUMBO covers and windows (see picture 4).
- **USA:** Achenbach JUMBO covers in use at the Lehigh Maryland Beumer project (see picture 5).

Achenbach produces its metal covers in four different sections, in galvanized, coated and stainless steel or aluminium.

Eleven standard sizes of covers are also available with different opening systems for easy inspection and maintenance; alternatively, JUMBO covers are available for one or both walkways.

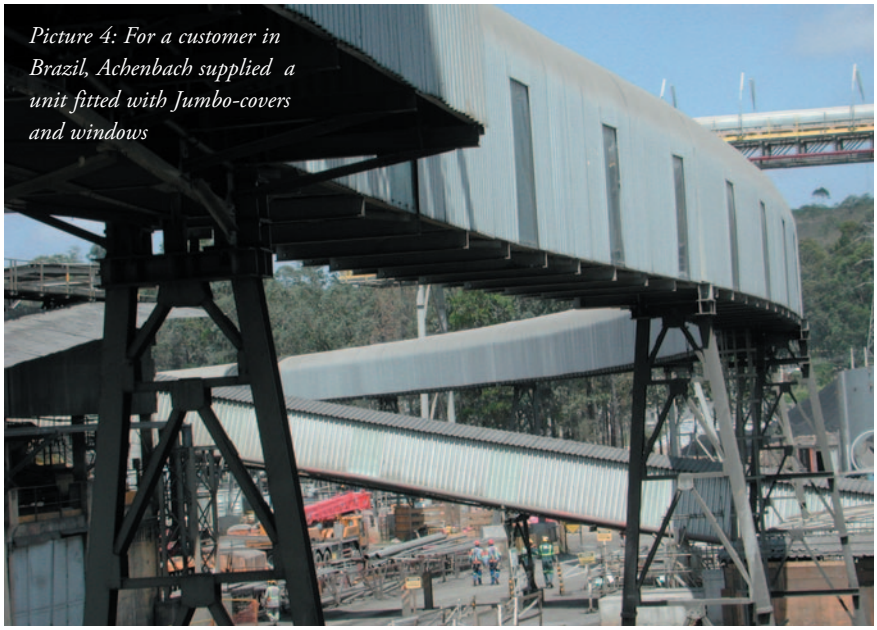
As Achenbach covers are manufactured in its own works, it is able to meet the specific requirements of its customers, and is able to produce nearly any special design in corrugated steel sheet at short notice.

For the user this means that an optimum, value-for-money solution is available.

Various fixing systems and the sale of plastic made Organit-covers for salt and food industries (see picture 3) are also available as part of Achenbach's portfolio.

Furthermore, Achenbach is able to offer a statically tested cover tension strip system and is certified in accordance with the DIN EN ISO 9001:2015.

Picture 5: Achenbach JUMBO covers at the Lehigh Maryland Beumer project.



Picture 4: For a customer in Brazil, Achenbach supplied a unit fitted with Jumbo-covers and windows

Innovative conveyor technology for high-performance bucket elevators

The new central chains from RUD are used in high-performance bucket elevators (photo: RUD).

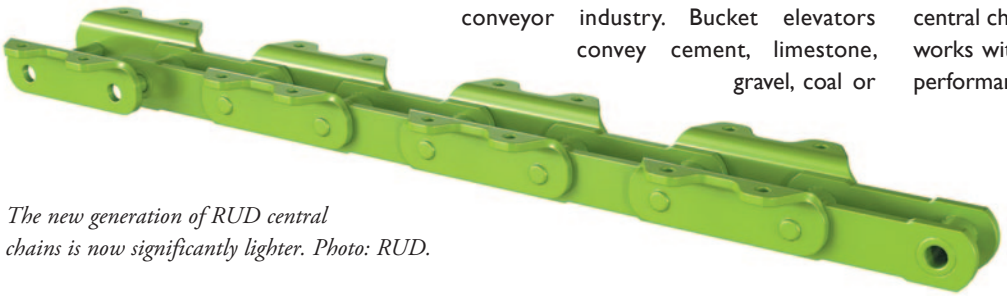
RUD expands its range with new central chains

New design and lower weight: these are the advantages of the new central chains from RUD. The central chains are available in several sizes with an integrated or a separate mounting bracket. As a specialist in conveyor technology and with continuous innovation, RUD is expanding its product range for lower nominal sizes. The RUD central chains are suitable for use in high-performance bucket elevators in various industries including cement production.

"Our central chains have been manufactured since 1992, and now we have launched a new variant with a new design and lower weight. We have also extended the nominal sizes and offer the new central chains in two variants," explains Anne Kühling, Head of Product Management Conveying & Driving at RUD Ketten Rieger & Dietz GmbH u. Co. KG.

Central chains for high-performance bucket elevators

RUD's central chains are used in high-performance bucket elevators in the conveyor industry. Bucket elevators convey cement, limestone, gravel, coal or even rock salt and soda, reliably and efficiently. RUD central chains are a robust means of traction for vertical conveying of powdery, granular, lumpy and high temperature materials.



The new generation of RUD central chains is now significantly lighter. Photo: RUD.

New design with low weight

What's new about RUD's central chains is the design and the technology behind them. Their system works in a similar way to a bicycle chain. RUD has completely updated its original process of rotating pins. The reason for this shift is due to the lower weight. The new generation of central chains is now significantly lighter. It works with less deadload and with better performance.

The market demand

The weight reduction of RUD's central chains was a result of a worldwide survey done with

RUD's customers and sales partners. "The weight factor was raised by the majority of the respondents. We addressed this issue early enough during the development and hence we were able to design and optimize the chains accordingly," explains Rupert Wesch, Head of Application Technology Conveying & Driving at RUD Ketten Rieger & Dietz GmbH u. Co. KG.

For retrofitting or for use in original equipment of bucket elevators: the new central chains from RUD (photo: RUD).

Efficient conversion

RUD central chains are designed in accordance with VDI 2324 and can be used for bucket elevators in the bulk materials industry. In addition to installing them in new systems, they can also be retrofitted on existing bucket elevators that have round link chains or belts.

Thanks to the expanded range, production and maintenance engineers can now get the most appropriate central chains for their bucket elevator systems. Existing round steel and belt bucket elevators can be converted into high-performance systems with RUD central chains. The big advantage of central chains over round link chains is that they can be run at a higher speed. Original equipment manufacturers also benefit from the RUD portfolio: new bucket elevators can be built narrower and with reduced costs.

Expanded range

RUD central chains are available in two variants, with a separate or an integrated mounting bracket.

The central chain with a separate fixing bracket is the RUD solution in size RU 100 which has a breaking force of 1,000kN, a weight of 45.2kg/m and is suitable for bucket widths between 400 and 800mm.

RUD also offers three chain sizes for the central chain with an integrated mounting bracket: RU 40, RU 55 and RU 70. The smallest variant (RU 40) has a breaking force of 400kN and a weight of 20.3kg/m. It is suitable for bucket widths between 200 and 400mm. The RU 55 (breaking force 550kN) and RU 70 (breaking force 70kN) central chains are used for bucket widths between 250 and 240mm and 300 and 630mm respectively. "With this new innovation, we have focused on the lower nominal sizes," emphasizes Wesch.

About RUD

RUD Ketten Rieger & Dietz GmbH u. Co KG, founded in 1875 by Carl Rieger and Friedrich Dietz in the Swabian town of Aalen, generates an annual turnover of over €200 million euros with more than 1,700 employees in over 120 countries. With major offices in Germany, Australia, Brazil, China, India, Romania and the USA in addition to other countries, the family-owned company manufactures sling and lashing components, anti-skid chains, hoist chains, conveyor and drive systems as well as equipment for tool handling. Under the Erlau brand, the long-established German company also manufactures tyre protection chains and equipment for indoor and outdoor use.

Flender One: Now for every application. Fully customized. Configured in minutes.

The new FLENDER ONE variants in February 2026: From two-stage to four-stage gearboxes, available in helical and bevel-helical configurations for highest mounting flexibility up to a power of 4,807kW / torque to 153,000Nm.

"Unlimit your gearbox." This tagline has guided Flender's development of its revolutionary Flender One platform since its launch in 2022. Today, Flender announces the next major milestone: the platform now covers all major industrial gearbox applications while solving what was previously considered an impossible challenge in industrial manufacturing — combining complete customization with the speed and economics of series production. This is powered by Flender's proven end-to-end digital chain that continues to set standards in mechanical engineering digitalization.

With the latest addition of a universal housing concept, Flender One can now be configured for vertical, horizontal, or any mounting orientation. This advancement opens up entirely new applications that were previously impossible to serve with the platform, including agitators and mixers in chemical, food, and pharmaceutical industries, water screw pumps and aerators in water and wastewater treatment, separators, and travel drives in material handling and logistics.

Combined with existing coverage for pumps, paper machines, conveyor systems, overhead cranes, and dozens of other applications, Flender One now addresses virtually every major industrial gearbox requirement. What makes this achievement remarkable is not just the breadth of applications, but that each gearbox is fully individualized to exact customer specifications while maintaining the delivery speed and cost efficiency of a standard catalogue product.

Engineered in minutes, not weeks

At the heart of Flender One's success is its online configurator. The system fundamentally changes how customers specify industrial gearboxes. Traditional selection processes require extensive technical knowledge and weeks of engineering time. Flender One customers simply enter three parameters: application, power requirement, and rotation speed.

"We've eliminated the traditional trade-off between customization and speed," explains Dr. Jan Reimann, Project Lead Flender One. "Customers no longer need to choose between a standard catalogue product that doesn't quite fit or waiting weeks for a custom solution. They tell us what they want to achieve, and our intelligent system designs the perfect solution within minutes, delivering complete 3D CAD models, technical drawings, and comprehensive documentation. A digital twin of the drive is immediately available for the development of the plant."

The configurator draws on a digital engineer with more than 125 years of Flender application expertise, automatically dimensioning each gearbox precisely for its intended use. This approach eliminates the chronic over-dimensioning that industry data shows wastes up to 50% of materials in traditional industrial gearboxes, while still ensuring optimal performance and reliability for the specific application.

Individual. Efficient. Smart.

Like every Flender One, the new release delivers on three fundamental pillars:

Individual: Each gearbox is custom-engineered to exact customer specifications through a fully digital process. With over one million possible configurations across the platform, customers receive precisely what they need for their specific application. Every Flender One maintains identical footprint and connection dimensions within its size class, enabling straightforward 1:1 retrofit of existing Flender industrial gearboxes without modification to surrounding equipment.

Efficient: Flender One's optimized design reduces power dissipation by up to 50% compared to predecessor models. The 30% higher thermal capacity often eliminates the need for external cooling systems. The online configuration and automated manufacturing process reduces project planning time by up to 25%, with faster delivery and lower operating costs throughout the gearbox lifecycle. Precise dimensioning ensures customers pay only for the capacity they need, not the safety margins built into standard catalogue products.

Smart: Every Flender One includes Flender AIQ gearbox intelligence as standard. The integrated sensor technology monitors critical parameters in real-time, enabling predictive maintenance that reduces unplanned downtime by up to 70% and cuts maintenance costs by up to 40% through data-driven service intervals. The AIQ solution includes a comprehensive cloud-based analytics software suite with every gearbox.

Solving the industrial trilemma

The Flender One platform demonstrates how complete digitalization can transform manufacturing. The underlying FIRE (Flender Intelligent Rule Engine) platform enables seamless end-to-end digitization from customer configuration through automated manufacturing to operational monitoring. This digital backbone allows Flender to offer what was previously impossible: universal application coverage, complete individualization, and series production efficiency simultaneously.

"Flender One proves that digital transformation unlocks entirely new business models," states Andreas Evertz, CEO of Flender. "We're offering highly individualized products with the speed and cost efficiency of series production — something previously thought impossible in manufacturing. This approach creates a competitive advantage and serves as a blueprint for industrial transformation."

"We've achieved true customization at scale, serving 100% of major industrial applications with individually tailored gearboxes," says Aleksandra Meissner, President of Industrial Gears at Flender. "But we're not stopping here. Flender One continues to evolve, and we're excited about the innovations still to come."

Immediate availability and ordering

The new Flender One variants are available for immediate ordering through the online configurator at flender.com/one. Registered customers can configure and submit inquiries directly through the platform. All customers are welcome to contact their Flender sales representative or use the contact form at flender.com/one for personalized support.

Flender will continue expanding the platform with larger size ranges and ultimately achieve the industry milestone of fully tailor-made industrial gearboxes manufactured with series production efficiency.

Port handling: diesel or electric material handlers?

In the industrial heart of the Aegean region, at IDÇ Liman port just two kilometres from the company's own steel plant, thousands of tonnes of coal, scrap, iron ore and other bulk materials pass over the quay every single day. With an annual throughput of 7.5 million tonnes, a quay length of 475 metres and the capability to handle vessels up to 120,000dwt, efficiency here is not an objective — it is an absolute necessity.

The IDÇ Liman port handles around 7.5mt of material annually — the ten SENNEBOGEN material handlers are essential for this.

Steel producer operates one of Turkey's most important ports

The publicly listed company Izmir Demir Çelik Sanayi A.S. is among Turkey's most respected steel producers and operates one of the country's most important ports at the strategically located Aliaga/Izmir axis on the Mediterranean. To ensure reliable port handling operations, IDÇ Liman operates ten SENNEBOGEN machines, including four 880 EQ Balancers, two 895 E material handlers, one 9300 mobile harbour crane and several other harbour cranes.

The world's largest material handler at IDÇ Liman port

High handling volumes require powerful machines. The heart of IDÇ Liman consists of two SENNEBOGEN 895 E material handlers with crawler portal undercarriages, which fully demonstrate their strengths on site:

- 40-metre reach for handling especially large vessels.
- Robust design for reliable continuous operation.
- High load capacities enable outstanding handling performance.
- Green Hybrid energy recovery system reduces operating costs by up to 50%.
- Electric drive for maximum energy efficiency.

Electric or diesel drives for material handlers?

Hardly any other location in Turkey can answer the question "Diesel or electric material handlers?" as well as IDÇ Liman. For many years, the port has consistently relied on electric drives — for three key reasons:

- **Up to 80% lower operating costs:** the port has been relying on electric drives for new machines for several years now. In addition, diesel-powered

material handlers are increasingly being converted to electric operation. The savings potential of such a conversion is clearly demonstrated by an 880 EQ in operation at the port: "We reduced our energy costs by up to 80% after converting the machine from diesel to electric, without any loss in performance," reports port manager Emre Söyler.

- **Higher availability:** compared to diesel-powered machines, electric port material handlers offer significantly extended service intervals, fewer wear parts and eliminate time-consuming refueling processes.
- **Long service life:** electric motors prove their strengths in port applications thanks to their simple design. Unlike diesel internal combustion engines, they feature far fewer wear-intensive components such as pistons, plain bearings or complex injection systems. As a result, electric motors are less prone to costly and time-consuming repairs.

The height-adjustable Portcab driver's cab ensures optimum visibility of the entire working environment.

More than 50,000 operating hours

The long service life of SENNEBOGEN material handlers is impressively demonstrated by an 880 EQ Balancer at IDÇ Liman: "This machine has logged more than 50,000 operating hours, and even after more than two decades it is still running flawlessly. All of our machines are in operation every day — that says everything about the reliability of SENNEBOGEN machines," says port manager Söyler.

In addition to the robust machine technology, SENNEBOGEN's service and sales partner Forsen Makina is a key factor in ensuring high availability:

"We don't just sell machines. We provide lifetime support – spare parts, maintenance, training, everything. At IDÇ, we have built a relationship that has lasted for 20 years. It's not just about machines, it's about trust," says Emin Gök, Forsen Makina.

Schrott Wetzel: first CO_2-neutral scrap yard

The EQ-Balancer at Schrott Wetzel has an equipment length of 32 meters and consumes only 75–80kWh – perfect for efficient loading at the scrap yard.

As one of Germany's largest scrap dealers, Schrott Wetzel has been setting standards in the industry for decades — not only in terms of handling capacity but also in terms of sustainability. At its Mannheim site, the company's largest location, another milestone has been reached: as Germany's first carbon-neutral scrap yard, the company underscores its commitment to environmentally friendly operations. A key element of this strategy: the SENNEBOGEN EQ-Balancer, in operation since May 2023.

Since the 1950s, the Schrott Wetzel name has stood for large-scale metal recycling. With multiple locations in Germany and Switzerland — all featuring trimodal access by rail, road, and ship —

the company exports scrap metal for steel production to the deep-sea market, including Turkey and other Far Eastern countries. At its strategically important site in Mannheim, with direct access to the Rhine River, the company has pursued its climate-friendly goals with particular determination.

Maximum efficiency, low operating costs, and high availability: Schrott Wetzel consistently relies on a fleet of SENNEBOGEN material handlers.

Climate-neutral scrap yard

By investing in a 2.4-megawatt photovoltaic system, the site covers around 80% of its electricity needs. The remaining 20% is supplied by certified green energy. This enables fully emissions-free operations — and the EQ-Balancer fits perfectly into this concept.

Endurance runner: 4,700 operating hours in two years

Since May 2023, the electrically powered EQ-Balancer has strengthened Schrott Wetzel's existing SENNEBOGEN fleet — which also includes two 875 E models, one 855 E, and four 835 G material handlers.

With 4,700 operating hours in just under two years, the machine has proven both its value and reliability. A key factor in maintaining this high availability is SENNEBOGEN's sales and service partner, Schlüter Baumaschinen.

Two machines replaced

The stationary EQ-Balancer handles wagon loading, feeds the scrap shear, and manages incoming material — tasks that previously required two separate machines. Its impressive 32-metre reach also brings significant advantages for scrap storage, increasing efficiency within the site's limited space:

"The machine has a big reach thanks to its equipment, we can now stack scrap much higher," says machine operator Adem.

Only 75 kWh energy consumption

The EQ-Balancer's design ensures that each movement of the machine is mechanically counterbalanced by a directly linked counterweight in the rear.

As a result, far less energy is needed to drive its operations. Despite its long boom and demanding workload in scrap handling, the EQ-Balancer consumes just around 75kWh of energy per hour.

"The new SENNEBOGEN machines have been one of the best investments we've made in recent years. The EQ-Balancer delivers an impressive handling rate with extremely low operating costs. Its long reach allows it to feed the scrap shear and load the processed material behind it — a job that previously required two machines", says Tino Wetzel, third-generation owner of Schrott Wetzel GmbH.

German engineering for energy-efficient and sustainable bulk handling

A Gurtec perspective

Sustainability in bulk material handling is no longer an abstract goal. It is a measurable operational requirement. Whether in mining, heavy industry, or bulk logistics, conveyor systems are expected to move larger volumes with lower energy consumption, reduced emissions, and predictable long-term performance. From Gurtec's perspective as a specialist in conveyor components and monitoring systems, reliability, efficiency, and sustainability are inseparably linked.

Every unplanned stoppage wastes energy, material, and time. Every oversized drive consumes unnecessary power. Every premature component failure increases resource consumption through repeated manufacturing, transport, and installation. Sustainable bulk handling therefore begins with a principle that has long defined German engineering: conveyor systems must operate efficiently and predictably throughout their entire service life.

Mechanical efficiency as the starting point

Energy losses in conveyor systems often hide in mechanical details. Rolling resistance, misalignment, vibration, and contaminated bearings all increase drive power demand. Even small inefficiencies, multiplied over kilometres of conveyor length and thousands of operating hours, result in significant extra energy consumption.

Common causes Gurtec encounters in practice include:

- increased rolling resistance from contaminated or poorly lubricated bearings;
- vibration caused by imbalanced rotating components;
- higher friction due to misaligned rollers and pulleys; and
- structural deflections that disturb belt tracking.

Rather than compensating with oversized drives, German engineering focuses on eliminating losses at their source. Precision manufacturing, controlled tolerances, and consistent mechanical quality remain the most effective levers for reducing energy demand.

Long service life as a sustainability factor

From a sustainability perspective, component longevity is critical. Every roller or pulley replaced prematurely generates additional material consumption, transport emissions, installation energy, and downtime. In harsh bulk handling environments, failures often stem from dust ingress, moisture contamination, vibration-induced fatigue, and corrosion. Designing for long service life is therefore a direct contribution to sustainability. Gurtec applies advanced sealing concepts, stable bearing arrangements, corrosion protection, and precise manufacturing tolerances to keep components in service longer, reducing resource consumption across the entire lifecycle.

Efficiency in long-distance conveying

The link between efficiency and sustainability becomes most visible in long-distance conveyors. In mining and bulk transport, systems often run for several kilometers at high belt speeds. Here, even minor improvements in mechanical efficiency can cut annual energy demand significantly. Low-vibration operation reduces dynamic losses, stable geometry minimizes rolling resistance, and consistent bearing performance prevents friction from creeping up over time. The result:

- lower drive power demand;
- reduced peak loads during start-up; and
- lower thermal stress on bearings and structures.

From an environmental perspective, this means lower CO_2 emissions per tonne of material and stable long-term energy consumption.

Corrosion and moisture: the hidden challenge

Open installations such as ports, stockyards, and coastal facilities face accelerated material degradation from salt-laden air, rain, and temperature fluctuations. Corrosion-driven replacement cycles are one of the most underestimated sustainability issues.

Every premature replacement consumes extra steel, coatings, transport energy, and labour. Effective surface protection, proper material selection, and reliable sealing against moisture are essential, just as in open-pit mining, where weather exposure and abrasive dust act simultaneously.

Predictive maintenance as a sustainability lever

Sustainability does not stop at design. It increasingly depends on maintenance strategy. Instead of fixed intervals, modern systems rely on condition-based and predictive maintenance. Three components cause most failures: rollers, belts, and pulleys. Overheated rollers remain a common ignition source for fires, misalignment accelerates belt wear, and damaged splices often lead to catastrophic belt failures.

Early detection is key. Rising bearing temperature is usually the first warning sign. Continuous monitoring identifies failing rollers long before they seize or damage the belt, reducing fire risk, energy losses, emergency shutdowns, and secondary damage. Similarly, optical belt inspection can prevent millioneuro losses by catching splice defects before a full-length tear occurs.

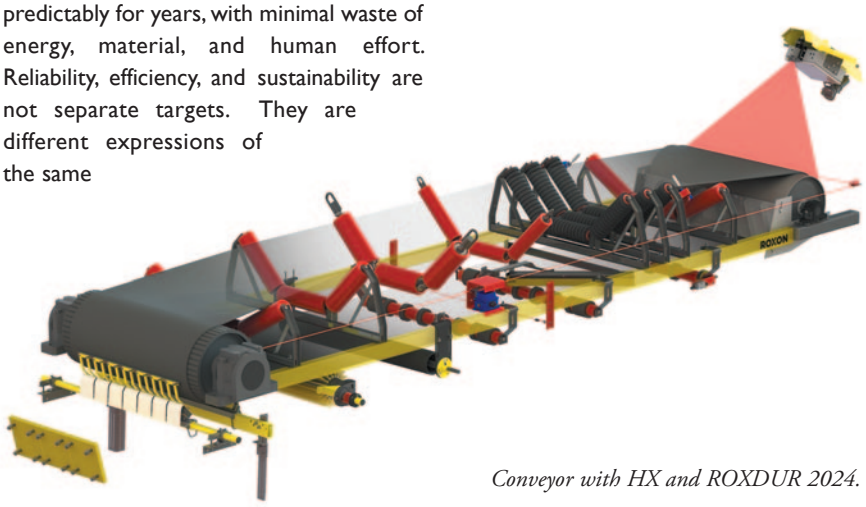
From components to complete systems

True sustainability does not come from isolated green components. It emerges from the interaction of efficient, durable, and well-aligned system elements.

Rollers, bearings, frames, sealing systems, pulleys, and belt guidance all influence rolling resistance, vibration, and wear. System-level thinking is the key to optimizing energy efficiency, availability, and environmental footprint simultaneously.

Conclusion

As global bulk trade and raw material processing evolve, conveyors are becoming longer, faster, and more heavily loaded, while expectations for availability, energy efficiency, and sustainability continue to rise. The goal is achieved when systems run smoothly and predictably for years, with minimal waste of energy, material, and human effort. Reliability, efficiency, and sustainability are not separate targets. They are different expressions of the same engineering principle: designing mechanical systems that perform consistently under real-world conditions.



Conveyor with HX and ROXDUR 2024.

German engineering in practice: Neuero Industrietechnik GmbH and complex dry bulk projects

Floating terminal on the Paraná River in Argentina, GSM + NEUERO Cooperation.

Neuero Industrietechnik GmbH designs and manufactures pneumatic ship-unloaders and mechanical shiploaders for dry bulk materials. The equipment is used for handling grains, meals, fertilizers, alumina, and wood pellets in ports, terminals, and industrial plants worldwide.

The company's engineering focus is on reliable material flow, system integration, and long-term operability. Many projects require customized solutions due to site constraints, environmental regulations, or complex logistics. Several projects that were executed and operated in 2025 illustrate how this engineering approach is applied in practice.

Floating Terminal – Argentina – GSM + NEUERO Cooperation

One 2025 project addressed a logistics problem on the Paraná River in Argentina, where reduced river draught prevents Panamax vessels from being fully loaded at inland terminals. The solution was to load cargo at deeper water using a barge-based system.

GSM Argentina planned a solution and looked for a competent partner. GSM prepared the *Grisel N Barge* to serve as basis.

Neuero contributed a pneumatic ship-unloader combined with a mechanical shiploader on a floating installation. The system unloads non-free-flowing material from barges, conveys it through a certified weighing system, and loads Panamax vessels offshore. The integration of unloading, weighing, vertical conveying, and ship loading into one travelling system required detailed co-ordination of mechanical design, movements, and process control

This project demonstrates engineering focused on system functionality rather than individual machines. The combination of unloader and loader in this configuration had not previously been implemented in this form. Also strong international co-operation was demonstrated.

Neuero delivered two M300AL pneumatic ship unloaders to Rio Tinto's La Baie terminal in Québec, Canada.

Pneumatic continuous unloading – Rio Tinto La Baie, Canada

In Canada, Neuero delivered two M300AL pneumatic ship-unloaders to Rio Tinto's La Baie terminal in Québec. The terminal handles approximately 800,000 tonnes of alumina per year and required equipment designed for continuous operation, low operating costs, and long service life

The unloaders were manufactured in Germany and shipped largely assembled to minimize on-site work and avoid interference with ongoing terminal operations. The machines include

integrated continuous weighing systems and were designed to meet both current operating requirements and future automation concepts

Operational feedback confirms stable discharge rates, high availability, and predictable maintenance behaviour, reflecting a lifecycle-oriented design approach rather than short-term performance optimization.

Mechanical ship loading with controlled dust emissions

Another recurring engineering requirement in 2025 projects has been dust control during shiploading. Neuero's mechanical shiploaders combine controlled material flow with automated hatch coverage using the KIKO® system and DLH® dustless loading head.

Rather than relying on external dust suppression alone, the engineering approach focuses on maintaining stable mass flow and minimizing drop heights. This has been applied in projects handling fertilizers, grains, and meals, including the replacement of older jet-slinger-based systems that no longer meet environmental or operational requirements.

These projects show that dust control is primarily an engineering and process control task, not a cosmetic feature.

Neuero's mechanical ship loaders combine controlled material flow with automated hatch coverage using the KIKO® system and DLH® dustless loading head.

Engineering approach

Across pneumatic unloading and mechanical ship loading projects, Neuero's work is characterized by:

- specialization and focus; and
- tradition combined with innovation, emphasis on reliability, efficiency and environmental friendly solutions.

The year 2026 will be no different with big projects in Tilbury, UK with 1,000 tonnes per hour unloaders, repeated orders for urea loading in the Middle East and biggest export terminal in Brazil.

BEUMER Group inaugurates new state-of-the-art manufacturing facility in Taicang, China

Multi-million-euro investment strengthens BEUMER's global manufacturing network and deepens commitment to China, while BEUMER China celebrates 20 years

BEUMER Group, a provider of material handling solutions, has officially opened a new state-of-the-art manufacturing facility in Taicang, China, marking a major expansion of the company's presence in China. The grand opening ceremony on 10 December 2025, held in Taicang, coincides with BEUMER China's 20th anniversary and the BEUMER Group's 90th anniversary globally. This new high-tech plant is set to significantly enhance BEUMER's global production capabilities and underscores the family-owned company's long-term commitment to the Chinese market.

The newly inaugurated Taicang facility occupies a land area of about 33,350 square metres, with a built-up manufacturing space of roughly 23,000 square metres across two large-scale workshops and additional auxiliary facilities. Construction was completed in an exceptionally swift timeframe of just 12 months — from the start of ground works in July 2024 to the handover in June 2025. This rapid execution was made possible through efficient project management and strong support from local authorities in Taicang, enabling BEUMER to bring its vision to reality on schedule. The new site is now fully integrated into BEUMER's global manufacturing network, allowing the company to serve customers across Asia-Pacific and worldwide more efficiently from China. As part of establishing this new base, BEUMER Group also set up two new Wholly Owned Foreign Enterprises (WOFE) in Taicang, China, to anchor its expanded operations, reflecting a deepening of local operational roots.

"This opening is a proud moment for our team in China and for BEUMER Group as a whole," said Rudolf Hausladen, CEO of BEUMER Group, during the opening ceremony. "It is a great pleasure to celebrate our new Taicang facility in the presence of the local leadership of Taicang and Suzhou — especially as it coincides with 20 years of BEUMER in China and 90 years of BEUMER globally. We believe this state-of-the-art manufacturing facility strengthens our ability to serve our customers in China and the region with even more responsive support and innovation. As a family-owned business, we think in decades, not quarters, and this investment reflects our confidence in the continued growth and long-term partnership with our customers and the community here in China."

Two decades of growth for BEUMER China: the inauguration of the Taicang facility comes as the capstone to BEUMER China's 20-year growth journey. Established in 2005, BEUMER's presence in China began with delivering a single product line. Over the past two decades, the company's footprint in China has expanded steadily into a comprehensive organization that delivers a full portfolio of solutions across multiple industries, including airport baggage handling systems, logistics systems and overland conveyor systems, as well as equipment for the cement, minerals, and mining sectors. BEUMER China has grown in both scale and capabilities — from a modest start to a workforce of around four hundred today — reflecting the sustained success of BEUMER's solutions in the Chinese

market. This journey illustrates BEUMER's long-term commitment to China, developing local expertise and infrastructure to support its customers.

Advanced, sustainable manufacturing: The new Taicang facility is designed as a modern, digital manufacturing base that aligns with BEUMER's global standards for innovation and sustainability. Outfitted with cutting-edge production technology and smart factory principles, the plant will help increase efficiency and ensure high quality across all products manufactured on site. BEUMER Group built the facility with an eye toward sustainability and future readiness, aiming to minimize environmental impact in its operations. By building a modern, eco-conscious production hub in China, BEUMER is aligning with both national and global sustainability goals and ensuring the facility is well-prepared for future industry developments and expansions.

Commitment to long-term partnership: By investing in local manufacturing and embracing advanced digital production techniques in China, BEUMER is strengthening its role as a long-term partner to customers in the region, offering them not only technologically advanced solutions but also the reliability of local support and supply. The company's approach in China — as in other markets — is to build enduring relationships: with customers who can count on world-class products and services, with employees who benefit from growth and development opportunities, and with local communities and authorities who find in BEUMER a committed, responsible corporate citizen. Rudolf Hausladen noted that the foundation built over the past 20 years in China has been critical to the company's success: "Our journey in China has always been about building trust and delivering excellence. This new facility is not just an investment in production capacity; it's an investment in the next decades of partnership with our customers and in the development of our BEUMER footprint in China."

New facility in Taicang, China, [illegible] BEUMER global manufacturing network.

Official opening of the factory in the presence of BEUMER Group management & employees (photos: BEUMER Group GmbH & Co. KG.).

About BEUMER Group

BEUMER Group is a global manufacturer of material handling solutions. As a third-generation family-owned business, the company offers high-quality system solutions and comprehensive customer support worldwide and is a 'Partner of Choice' for the mining, cement, building materials, petrochemical, consumer goods, postal, e-commerce, fashion, and baggage handling industries. With around 6,000 employees worldwide, BEUMER Group generates an annual order intake of around €1.7 billion. In line with the company motto 'made different', BEUMER commits to the highest standards of quality, innovation and sustainability.

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TAKRAF Group: Sustainable mining solutions grounded in a rich engineering heritage

TAKRAF primary crushing station and discharge conveyor transporting crushed material to a TAKRAF transfer silo equipped with a belt feeder, Chile.

Recent project awards, equipment revamps and sustainability initiatives illustrate how TAKRAF Group's long-established engineering expertise continues to be applied successfully to meet modern mining challenges.

Just a few hundred metres from the site where Benedicta Margaretha Baroness von Löwendal fired up the first blast furnace on 25 August 1725, TAKRAF Group celebrated its 300th anniversary on the same date in 2025 at its Product & Service Center in Lauchhammer, Germany. The occasion was more than a commemoration of longevity; it was a tribute to three centuries of engineering excellence rooted in Germany's industrial heartland.

Besides playing a pivotal role in the early industrialization of the Lusatia region, Baroness von Löwendal laid the foundations for what would evolve into one of the world's leading engineering groups. Her legacy lives on in TAKRAF Group's enduring commitment to precision, reliability and technical rigour — hallmarks of German engineering that continue to define the Group today.

The longevity of TAKRAF Group is exceptional in any industry and is the result of continuous innovation and an ability to adapt, reinvent and transform itself in response to changing industrial, technological and societal demands.

Today, TAKRAF Group comprises 14 subsidiaries operating across 22 locations, supported by more than 1,000 employees worldwide. This global footprint is underpinned by an integrated network of technical expertise, market insight and project execution capability. Together, these strengths position the Group to deliver sustainable, future-oriented solutions in line with its renewed purpose: **For Mining with Meaning** — a purpose that is reflected in the major new awards it continues to attract.

Bulk material handling and mining projects

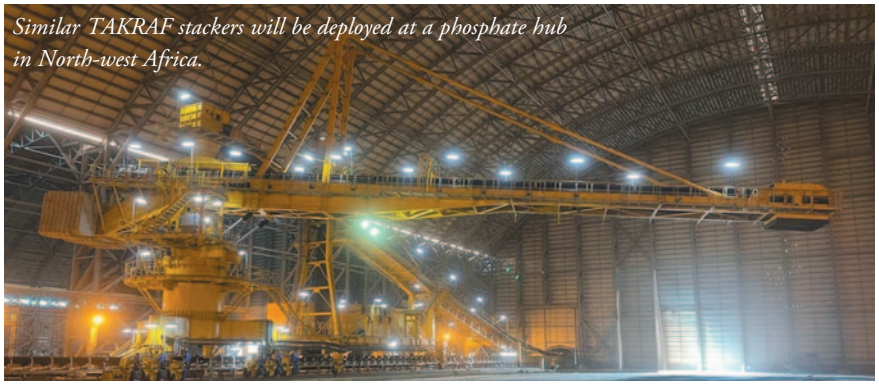
TAKRAF secured several major contracts during the past year. These included a project for Compañía Minera Doña Inés de Collahuasi SCM to design and supply a conveying system for the Ujina Growth Project, aimed at increasing concentrator plant capacity. The scope comprises the design and supply of three advanced conveyors connecting a relocated crushing station to the existing conveyor network. The system is engineered for reliable operation under the demanding conditions of the Collahuasi mine, located in Chile at an elevation of 4,535m above sea level. Awarded more than 20 years after the original installation, the project highlights the durability and lifecycle performance of TAKRAF equipment.

In Indonesia, TAKRAF Group was appointed by PT Freeport Indonesia to supply a ship loader for copper concentrate handling as part of the MOPH-2 project, which includes a major expansion of processing facilities. The project supports future copper supply, a critical enabler of global electrification and sustainable infrastructure development.

Further strengthening its footprint in North Africa, the Group received an order for four TAKRAF Compact Spreaders for a phosphate mining operation. The scope includes engineering and delivery of spreaders equipped with intermediate bridges and trippers. Each machine features a 37.5m discharge boom and intermediate bridge length, 1,200mm boom conveyor width, 13m dump height and dual crawler assemblies. In addition, TAKRAF Group secured a landmark order in North-west Africa for seven stockyard machines, including four stackers, two bucket-wheel reclaimers and one portal reclaimer. Ordered by a leading phosphate and fertilization solutions provider, the machines are to be deployed at a phosphate hub.

In India, TAKRAF Group was awarded a contract by a long-standing client, Hindalco Industries Ltd, for the engineering and supply of a complete bauxite handling system. The system includes a 1,500tph (tonnes per hour) stacking circuit, a 1,200tph reclaiming circuit, a slewing stacker, a bucket-wheel reclaimer, five in-plant conveyors (2.6km total length), apron and belt feeders and auxiliary equipment. Delivery is scheduled within 18 months of project award.

A TAKRAF compact spreader installed in Thailand, similar to the equipment being supplied in North Africa.



Similar TAKRAF stackers will be deployed at a phosphate hub in North-west Africa.

Equipment revamps and lifecycle extension

Over the past year, TAKRAF Group completed major revamps of Special Mining Equipment (SME) for NLC India Limited (NLCIL), one of India's largest lignite and power producers, extending the service lives of the machines by about 15 years. The Group's collaboration with this company dates back more than 30 years.

The major revamps were part of four orders that had been awarded the previous year for the refurbishment and maintenance of bucket-wheel excavators (BWEs), including major mechanical and electrical upgrades to a 1,400-litre bridge-type BWE originally commissioned in 1992. Recommissioned after more than 150,000 operating hours, the machine underwent structural renewal and system modernization.

As part of the same order, TAKRAF completed the first major refurbishment of a 700-litre BWE for the producer. Originally commissioned in 1990 and exceeding 160,000 operating hours, the machine was recommissioned following a comprehensive upgrade that incorporated modern drives, advanced control systems, fire detection, quenching systems and cloud-based remote monitoring.

Bucket-wheel excavator at NLCIL, India after a major revamp.

Sustainability and strategic collaboration

Building on its inaugural publication, TAKRAF Group's 2024 Sustainability Report, published in 2025, reflects progress in embedding sustainability across its global operations and advancing compliance with European Sustainability Reporting Standards (ESRS) under the Corporate Sustainability Reporting Directive (CSRD). As one of the front-runners in adopting the ESRS, TAKRAF Group sees compliance not as an obligation but as a strategic opportunity to strengthen its impact, deliver value to its stakeholders and drive sustainable development across its markets.

As TAKRAF Group CEO Thomas Jabs notes: "Sustainability is not a separate initiative — it is integral to how we operate and create value."

The Group applies a double materiality approach to evaluate both environmental and financial impacts of Environmental, Social and Governance (ESG) factors, with the reporting framework comprising two complementary documents: a Sustainability Report providing an accessible overview, and a Technical Report offering detailed, ESRS-aligned performance data.

In parallel, TAKRAF Group strengthened its global partnerships through a co-operation framework agreement between CFHI Tianjin Heavy Industries Co., Ltd and TAKRAF Mining Technology (Beijing) Co., Ltd. This strategic partnership marks a significant milestone in TAKRAF Group's continued expansion and collaboration in China to jointly develop the open-pit mining equipment market and enhance innovation in sustainable mining solutions. Both companies will leverage their combined expertise in technology, manufacturing and market development to deliver safer, smarter and greener solutions for China's mining sector.

Engineering continuity and lifecycle support

As TAKRAF Group looks beyond its 300-year milestone, its focus remains on addressing evolving mining and materials handling requirements through considered engineering and practical innovation. In addition to ongoing product development and equipment supply, the Group supports the machines throughout their lifecycle, encompassing design, installation, operation, maintenance, upgrades and life-extension. This combination of technical continuity and long-term operational support reflects TAKRAF Group's approach to delivering reliable solutions that respond to changing industry, environmental and regulatory expectations.

About TAKRAF Group

TAKRAF Group, through its established and well-known brands, TAKRAF and DELKOR, provides innovative technological solutions to the mining and associated industries. With experience acquired over more than three centuries, the Group is well positioned to provide equipment, systems and services that best satisfy its clients' mining, comminution, material handling, liquid/solid separation and beneficiation requirements. Servicing owners and operators around the world, TAKRAF Group's engineered solutions are customized to the unique project requirements and are aimed at lowering the total cost of ownership and reducing environmental impact by improving efficiency with safe and reliable equipment.

ORTS Grabs: "The Best Link between Ship and Shore" – made in Germany

For 50 years now, ORTS GmbH Maschinenfabrik has been delivering to customers all around the world. In 2024, these customers came from Southeast Africa, the near and middle East, eastern Mediterranean, North America as well as Sweden and of course Germany.

The company's main customers are shipping companies. They. know that ORTS grabs are ideal for their bulk carriers, and that they can rely on their performance, speed and reliability for many, many years — even under the rough conditions experienced by sea-going vessels. Terminal operators, stevedore companies and heavy industry companies (e.g. steel works) also value the quality of ORTS grabs.

The complete range of grabs is offered, from electro-hydraulic and radio controlled diesel-hydraulic to mechanical rope grabs. Each grab is built by ORTS Maschinenfabrik. This is visible at first sight, because of the unique construction design. It is not enough to just replace the block and tackle construction in the middle of a mechanical rope grab with a hydraulic cylinder, e-motor or hydraulic pump to get an electro-hydraulic grab. If you install a six-cylinder engine in a tractor, you don't get a racing car.

Therefore ORTS electro-hydraulic grabs and also the radio controlled diesel-hydraulic grabs look different. And they do not only look different, they **are** different: They offer a lower dead weight and higher closing force, while being fast and reliable. The construction surrounding the drive-unit (hydraulic parts, e-motor, control block etc.) is easy and safe to reach for the service engineer/seaman. The escutcheons can be opened from two sides of the grab and used as a working platform straight in front of all important parts of the grab.

Unique and innovative grabs, like the radio controlled diesel-hydraulic technology, came from ORTS.

The idea of this grab was born over 30 years ago in the technical offices of ORTS GmbH.

Since then, the radio controlled diesel-hydraulic grabs from ORTS (type DHS-B, DHM and DHZ) have been manufactured in the workshop near Lübeck in Northern Germany.

No other grab maker has this kind of long-term experience with this specific grab type. Over the years, since 1995, the ORTS diesel-hydraulic grabs became flexible, reliable and high-performance 'workhorses' thanks to continuous improvements in co-operation with customers. ORTS' DHS-B (two-clamshell design) and DHM (orange-peel clamshells) are in operation on all continents, in all climate zones.

ORTS was also one of the very first grab makers to design and manufacture environmentally friendly grabs with enclosed clamshells in the 1980s, specifically to address environmental concerns.

All of the grabs by ORTS (diesel-hydraulic, electro-hydraulic and mechanical ones) are well-known for their effectiveness (high discharge-rates), reliability and the long lifetime over millions and millions of tonnes.

The purchasing price for a grab becomes less and less important, the longer the grab is working for the owner/operator. Quality, reliability and performance are more important and are the characteristics that really pay off over the years.

A cheap grab can become a very expensive grab very quickly: when the grab needs its first spare parts after only a short time in operation, has breakdowns during operation or takes more time for loading/discharge operations because the clamshells do not work at full capacity.

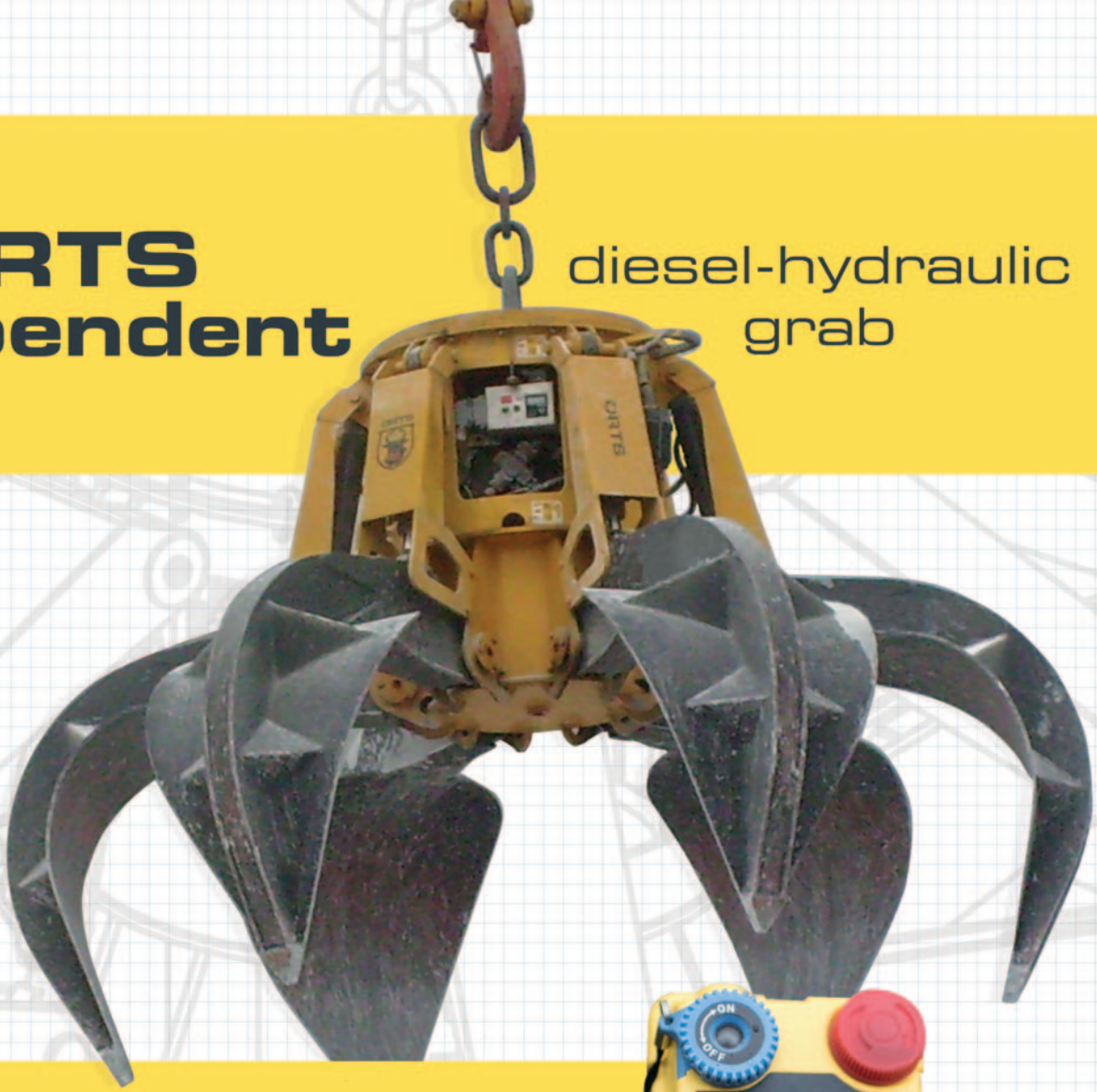
ORTS still supplies customers with spare parts for grabs, even when those are 25–30 years old. One of the company's first radio controlled diesel-hydraulic grabs is still functional after 25 years.

But ORTS doesn't only produce smaller grabs, bigger grabs with 50t (orange-peel dredger grab), 60t, 80t (two-clamshell dredger grabs) and 115t (salvage grab for shipwrecks) dead weight were also constructed and built by ORTS in the past.

In addition to grabs, special constructions like a self-floating oil-salvage grab, which is able to skim off oil from the water-surface after ship-accidents, and load-beams for up to 100t were constructed and built by ORTS.

ORTS independent

diesel-hydraulic grab



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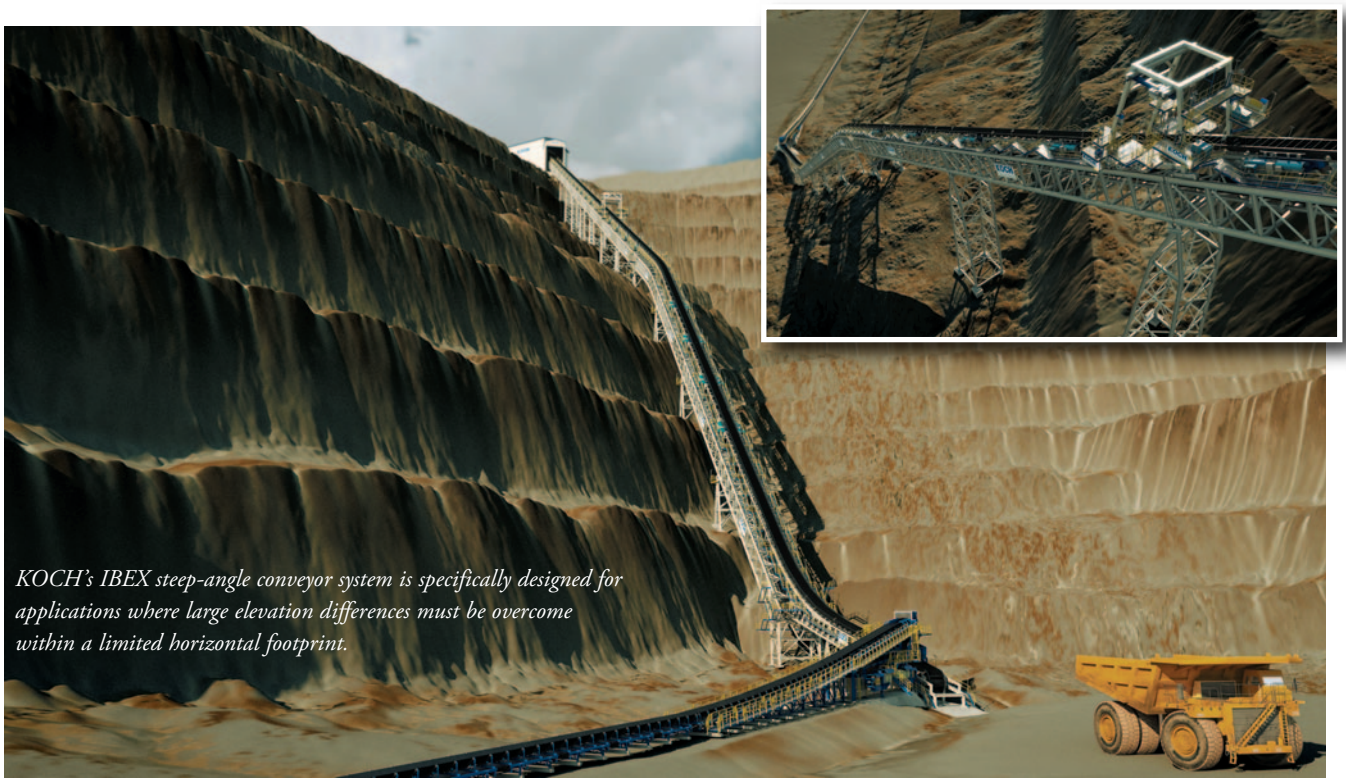

KOCH's IBEX steep-angle conveyor system is specifically designed for applications where large elevation differences must be overcome within a limited horizontal footprint.

Innovative Conveyor Technologies from KOCH Solutions GmbH

German engineering has long been associated with technical excellence, reliability, and systematic problem-solving. In the dry bulk handling sector, these qualities are becoming increasingly important as mining and industrial operators face rising energy costs, stricter environmental regulations, and growing pressure to improve operational efficiency. As a specialist in bulk material handling systems, KOCH Solutions GmbH builds on this engineering tradition by developing innovative conveying technologies that address both economic and environmental challenges.

Rethinking haulage in open-pit mines

Open-pit mines and large quarries are increasingly characterized by steep benches, growing depths, and long haulage distances. Conventional truck-based haulage relies on gently inclined, serpentine roads that often extend over several kilometers, resulting in long cycle times, high fuel consumption, and intensive maintenance requirements. Even where diesel prices are temporarily low, rising global energy demand, fuel price volatility, and stricter environmental standards are fundamentally changing the economics of haulage.

From a system perspective, the most efficient route out of an open pit is the shortest and steepest possible path. Steep-angle conveying technologies allow haul trucks to operate only over short, flat distances between the loading face and a conveyor or an in-pit crushing station. This approach significantly reduces fleet size, operating costs, manpower requirements, and CO_2 emissions while improving overall mine productivity.

"Material transport is one of the key levers for improving both the economic and environmental performance of open-pit mines," explains Claus Butter, Director Mining at KOCH Solutions GmbH. "Steep-angle conveying concepts enable mine operators to fundamentally rethink traditional haulage strategies."

Limits of conventional conveyor technology

Conventional troughed belt conveyors are typically limited to inclination angles of approximately 13°, occasionally reaching 15° under favourable conditions. In steeper terrain, multiple conveyor flights arranged in zig-zag layouts with intermediate transfer stations are required, increasing system complexity, spatial requirements, and maintenance effort. As open pits become deeper and space on benches becomes more restricted, these traditional layouts are often no longer optimal.

This has driven the development of steep-angle conveying systems capable of overcoming large elevation differences in a single or limited number of conveying stages — well beyond the limits of conventional belt technology.

IBEX – steep-angle conveying for extreme elevation differences

To address these challenges, KOCH Solutions has developed the IBEX steep-angle conveyor system, specifically designed for applications where large elevation differences must be overcome within a limited horizontal footprint.

IBEX enables continuous material transport at inclinations far exceeding conventional conveyor limits, with:

- capacities up to 15,000tph (tonnes per hour);
- standard inclines of 30–50°;
- maximum inclines up to 90°; and
- practically unlimited elevation, depending on system configuration

A defining feature of IBEX is its modular and distributed drive concept. Instead of relying on a single high-power drive station, multiple standard electric drive units can be positioned along the conveyor line. The number, power rating, and location of these drives are selected according to lifting height, redundancy requirements, power availability, and site-specific constraints. This approach allows easy system extension as mine depth increases and significantly enhances operational reliability.

IBEX replaces long truck ramps, skip hoists, or discontinuous lifting systems with a continuous, high-capacity, low-emission transport solution, particularly suited for

Performance.

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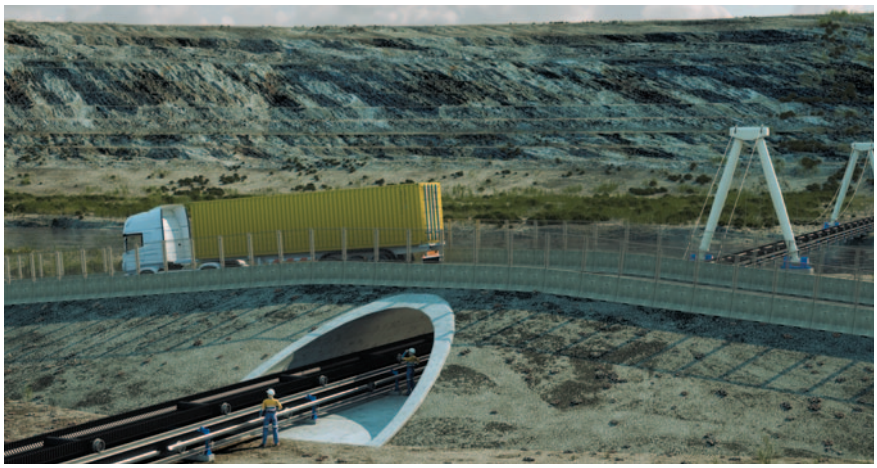
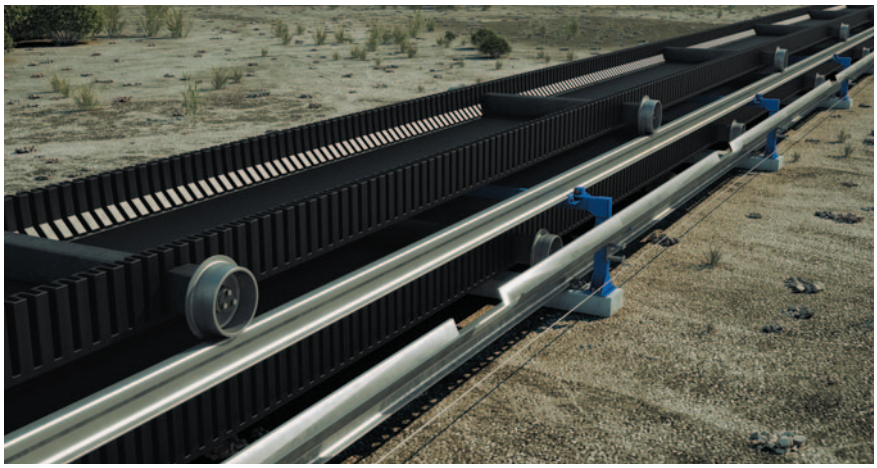




KOCH's TrackBelt system is specifically developed for long-distance bulk material transport, starting from conveyor lengths of approximately 500m and extending up to 40km in a single continuous loop.

steep or unstable benches in open-pit mining.

Continuous and discontinuous steep conveying concepts

Steep-angle material transport can be achieved using either discontinuous or continuous conveying principles. Discontinuous systems, such as rail- or rope-guided skip systems, are mature and well-proven technologies, particularly suitable for very steep and geologically stable benches.

Continuous conveying systems, by contrast, provide a constant material flow and are better suited for integration into modern In-Pit Crushing and Conveying (IPCC) concepts. KOCH Solutions' technology portfolio covers both approaches, allowing the optimal system selection based on geological conditions, material properties, and the operator's overall operational philosophy.

TrackBelt – long-distance conveying with minimum OPEX

While IBEX focuses on overcoming elevation differences, the TrackBelt system is specifically developed for long-distance bulk material transport, starting from conveyor lengths of approximately 500m and extending up to 40km in a single continuous loop.

TrackBelt combines proven belt conveyor technology with railway-inspired rail guidance. The belt is equipped with fixed wheel sets running on steel rails, drastically reducing rolling resistance compared to conventional idler-supported conveyors. The result is significantly lower energy consumption, reduced mechanical wear, and minimal line maintenance. Wheel servicing is concentrated at head or tail stations, further improving system availability. Due to reduced belt stress, TrackBelt systems can achieve belt lifetimes of up to 20 years and enable tighter horizontal and vertical alignments, reducing earthworks and environmental impact. For operators, this translates directly into lower lifecycle costs and improved sustainability.

Quantified energy and CO_2 benefits

Comparative studies between truck haulage and conveyor-based steep-angle conveying systems demonstrate substantial energy and emission advantages. For equivalent transport tasks, conveyor systems typically consume less than half the energy required by truck fleets. In one representative scenario, truck haulage required approximately 43 million kWh per year, whereas steep-angle conveying solutions consumed only 19–21 million kWh per year. Correspondingly, annual CO_2 emissions were reduced from around 33 million kg to 17–20 million kg. These reductions directly improve operating economics while supporting increasingly stringent environmental targets.

Integrated solutions for future mining operations

Rather than isolated products, IBEX and TrackBelt are complementary technologies within an integrated material handling concept. IBEX efficiently lifts material from deep pits or steep terrain, while TrackBelt transports material over long distances with minimal energy consumption and maintenance effort. Together, they form a continuous, scalable, and environmentally responsible bulk material handling chain.

As global demand for raw materials continues and sustainability requirements increase, efficient material transport will play a decisive role in mine design and operation. Through its advanced steep-angle and long-distance conveyor technologies, KOCH Solutions GmbH contributes proven German engineering expertise to the development of future-ready bulk material handling systems worldwide.

The straddle carrier concept is proven, and Konecranes will perfect it

People who have not been to a container terminal, who have not seen container handling equipment, would stop in wonder at the sight of a straddle carrier, ***writes Hubert Foltys, Director, Straddle Carriers, Konecranes and Arne Weiss, Product Manager, Straddle Carriers, Konecranes.***

It is a special machine to be sure, which exists in a number of versions. The tallest stands at around 16m high and weighs around 72 tonnes, running on rubber tyres. Konecranes was in the room at the birth of the straddle carrier. The Konecranes Noell Straddle Carrier was introduced in 1968 at the Port of Hamburg, Germany, the first container handling machine of its kind. This was only 12 years after the birth of containerization itself in 1956 in the USA. Since 1968 close to 4,000 Konecranes Noell straddle carriers have been sold.

In every aspect of its design, from the beginning, the Konecranes Noell Straddle Carrier has been built to pick up, carry, and place containers weighing up to 40t and more with safety and efficiency. "It is the all-round container handling machine, doing all the work of container handling at the terminal from the quayside to the yard, stacking them up to 1-over-3 high and feeding the outgoing trucks and rail wagons if railway lines are in play," says Hubert Foltys, Director of the Straddle Carrier Business, Konecranes. In the 58 years since its birth, the essential design of this machine has been proven in terms of its general physical character. Its technological composition has been improved greatly, and today features a range of state-of-the-art technology.

The straddle carrier concept also includes a shorter version for rapid horizontal container transport between the quayside and the container yard. Konecranes Noell Sprinter Carriers carry containers high enough to pass over grounded containers, and feature all of the technological improvements of the taller Konecranes Noell Straddle Carrier, developing in parallel.

The world was analogue in 1968. It's digital today. The Konecranes Noell Straddle Carrier has a digital, state-of-the art control system which allows for intuitive operation and includes smart assistance systems. The Konecranes TRUCONNECT system gives the possibility of remote connection to access performance data and troubleshoot. Even the connection to a Terminal Operating System (TOS) is possible. All in all, this enables strads to handle very large container volumes with more precise control and higher performance than in 1968.

In container handling, safety is always a paramount concern. The high up straddle carriers can be vulnerable for starting to tip, particularly when they are turning/cornering, since they can be driven at up to 30km/h when carrying a loaded container. The current generation of Konecranes Noell straddle carriers has a low center of gravity, which enhances safety, but this is just one safety factor among many. Konecranes offers a panoply of safety features with its straddle carriers including a stability assistance system, specific driving speed modes like slow, turtle, creep speed when the safety belt is unbuckled, and optional blind spot and 360-degree camera systems.

Beyond the initial CAPEX investment in a straddle carrier, which is spread over a 15-20 year operating life on average, the OPEX cost is also a big factor in the purchase decision. The straddle carrier is a machine composed of many moving, wearing parts requiring maintenance, lubrication and replacement. The lifetime OPEX cost will depend greatly on the machine design and its power source, and it is here that Konecranes has made another breakthrough with the straddle carrier concept.

The Konecranes Noell Straddle Carrier now has a modular design that makes it possible for customers to choose hybrid or pure battery operation, and even a drivetrain powered by renewable energy sources such as hydrogen in fuel cells. An operational trial of a hydrogen-powered Konecranes Noell straddle carrier is ongoing at a major continental European container terminal at the time of writing.

"The modularity of the Konecranes Noell Straddle Carrier is an entirely new thing in the straddle carrier concept. We call it D200 design with 'D' for design and '200' in homage to our history of over 200 years. With D200, for the first time, a straddle carrier can be economically retrofitted to upgrade its powertrain from,

for example, hybrid to pure battery operation," says Arne Weiss, Straddle Carrier Product Manager, Konecranes.

Previously this was possible, but it would have required the complete disassembly and re-assembly of the machine which is an economic non-starter, an effort not fit even for an experiment. Now it's possible with the Konecranes Noell Straddle Carrier — for one unit, five units or a fleet of a hundred units, it's economically feasible arithmetic. This modular way of thinking, with all its benefits in choice of power source and OPEX cost reduction via retrofitting, is what we call Ecolifting at Konecranes, and it doesn't apply only to strads. It applies across the board of our port equipment offering.

Large industries around the world are gearing up for hydrogen, and Konecranes is deeply involved as the most innovative OEM of container handling equipment.

The essential goal of the Konecranes Ecolifting approach with mobile container handling equipment like the straddle carrier is to move in manageable steps away from diesel power to hybrid power, to fully electric operation via batteries and the local grid, or on to hydrogen operation. When the machine is fully electric or hydrogen-driven, it has zero tailpipe onsite emissions and it's fully qualified for Ecolifting.

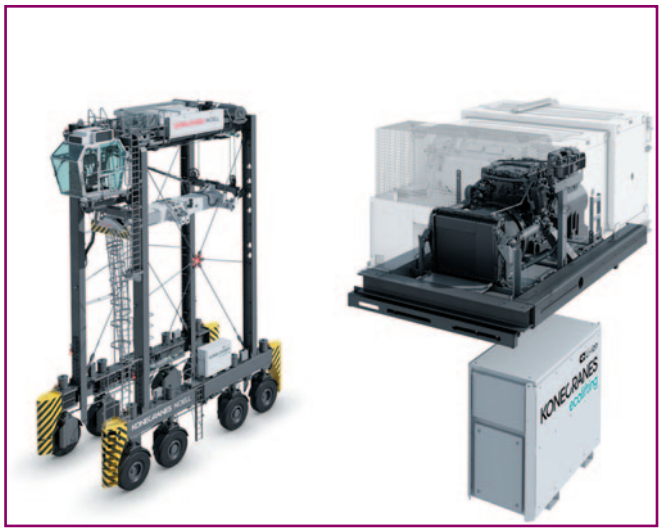
Ecolifting at Konecranes is linked with developments in container handling automation, where Konecranes is a technology leader. With a clear path to port automation, Konecranes guides customers from manual operation via remote control up to fully automated solutions. Konecranes pioneered Automated Guided Vehicle (AGV) system technology for horizontal transport between the quayside and container yard. Konecranes is the leading western supplier of Automated RMG and Automated RTG systems for container yards. Automating fleets of straddle carriers is also a viable option. Here Konecranes has considerable experience and can consult with customers about an automation approach that would best fit their specific case.

The heritage of the Konecranes Noell Straddle Carrier began in 1968 but goes much further back, to 1824, in the beautiful Bavarian town of Würzburg, Germany.

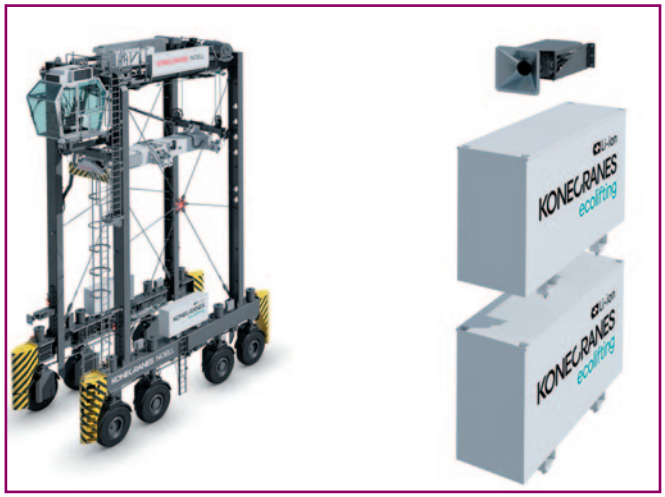
Konecranes Noell 200 year anniversary

For over 200 years and many generations, skilled craftspeople have been working with metal and technology in the tradition of Konecranes Noell in Würzburg. The town is the knowledge base of the Konecranes Noell Straddle Carrier covering design, manufacturing and delivery around the world. Konecranes is continuously investing in this knowledge base to improve manufacturing quality and equipment reliability.

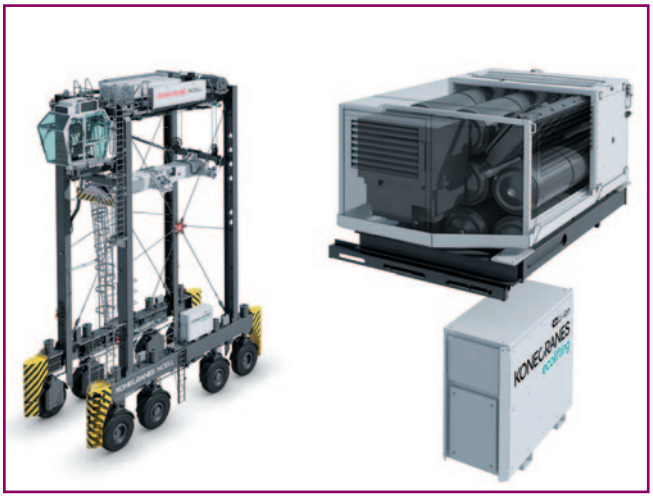
The straddle carrier concept has proven itself and Konecranes will always improve it with the goal of perfection, increasing efficiency and performance for container terminal operators. Everything in the world of container handling is long-term and pragmatic. Every gain is hard-won by slogging in the real world. Konecranes knows this very well and is here for the long-term, constantly building its hard-earned knowledge into the Konecranes Noell Straddle Carrier.



The Hybrid Konecranes Noell Straddle Carrier is very popular with container terminal customers. Hybrid straddle carrier operation is an important step on the Ecolifting road.



The Battery Konecranes Noell Straddle Carrier can be adopted easily by brownfield container terminals without major yard adjustments. The charging station can be placed in an area outside regular terminal operations. Charging sessions can be designed as part of smooth work cycles.



Hydrogen is emerging as an alternative fuel for straddle carriers. Hydrogen fuel cells produce electricity through a chemical reaction between hydrogen and oxygen, with water vapour as the only by-product. Hydrogen-driven straddle carriers are locally emission-free.

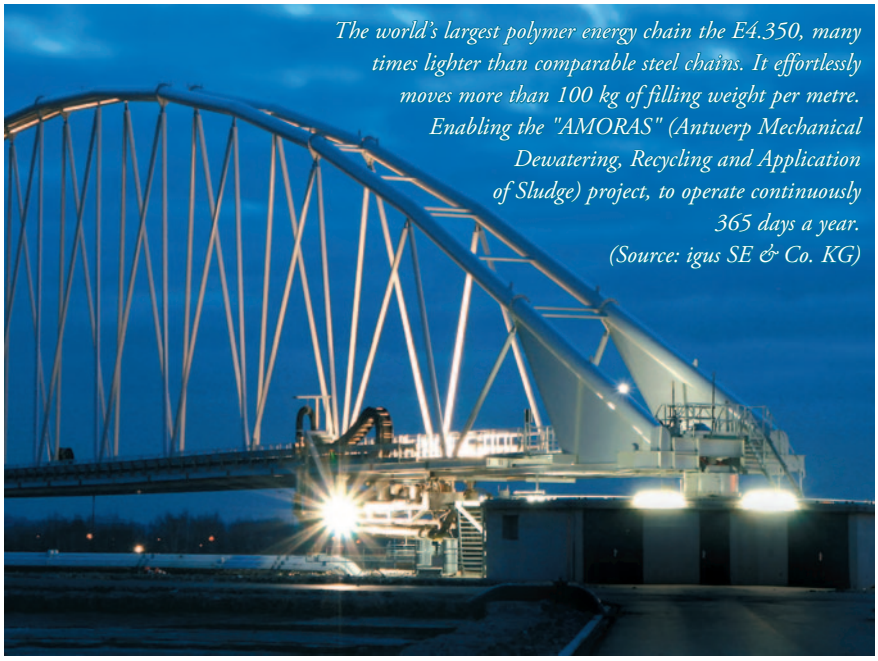
KONECRANES

Grab stronger performance

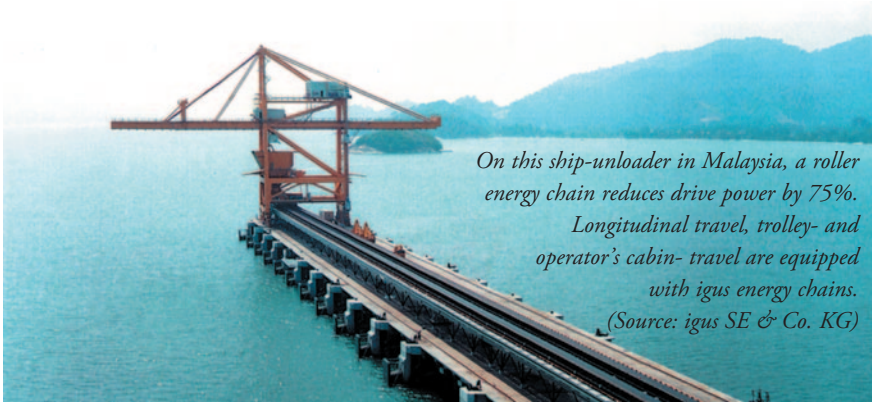
Konecranes Gottwald Mobile Harbor Cranes ensure highly efficient handling of bulk materials of all kinds. Our Generation 6 four-rope grab cranes will impress you with their robustness. With their 74 t grab curves and high classifications for a long service life, they handle up to 2,200 tph. The result: strong performance over the long term – even in continuous operation.
Strengthen the efficiency of your bulk handling with our new Generation 6!

Just scan this QR code to configure the right crane model for your needs
mhc-product-advisor.konecranes.com

German engineering expertise: from setting records to industrial practice – igus engineering at a glance



The world's largest polymer energy chain the E4.350, many times lighter than comparable steel chains. It effortlessly moves more than 100 kg of filling weight per metre. Enabling the "AMORAS" (Antwerp Mechanical Dewatering, Recycling and Application of Sludge) project, to operate continuously 365 days a year. (Source: igus SE & Co. KG)



On this ship-unloader in Malaysia, a roller energy chain reduces drive power by 75%. Longitudinal travel, trolley- and operator's cabin- travel are equipped with igus energy chains. (Source: igus SE & Co. KG)

Around three decades ago, igus began working on individual engineering projects involving energy chains and complete systems. From the outset, igus consistently focused on customer proximity, meaning that projects were supported on site from the initial inquiry through design and construction to installation and commissioning. This enabled the motion plastics specialist to combine theory and practice and learn what works to meet the customer's needs. This knowledge is applied to further develop the products and technologies used.

The projects are diverse: from converting a festoon system (e.g. on a ship unloader) to an energy chain system in Rotterdam to the complete construction of a port facility in the challenging climate of Malaysia

This proximity to the application resulted in a wealth of experience that continues to shape the approach today: theoretical models, calculations, and laboratory results are important — but they only become useful when they have proven themselves under real operating conditions.

From complex challenges to measurable results

The early projects were characterized by a high degree of complexity: long travel distances, high speeds, difficult environmental conditions, and demanding interfaces to machine and plant design. In such scenarios, igus has systematically developed methods to translate loads, motion profiles, and environmental influences into durable designs. This applies to energy chain types, the appropriate guide rail, suitable cables, and mounting brackets.

In the process, projects implemented by igus for its customers regularly broke records in terms of travel distances, speeds, reliability and durability. However, reproducibility is more important than any record: performance that was initially only possible in individual projects became standard.

This continuous development has resulted in a modular system that igus can use to provide repeatable and tested solutions for the most complex applications, significantly reducing engineering costs and times, minimizing risks, and making assembly and commissioning predictable.

Engineering Projects and Installation-Services

A key feature of the igus engineering philosophy is its holistic approach: it supplies not only individual components, but complete systems consisting of energy chains, cables, guide troughs, and installation and final checks — right through to start-up. Complex projects such as converting long travels on stacker reclaimers from motor cable reels to igus e-chain systems can thus be realized within six to seven weeks.

igus turns individual customer solutions into products ready for series production.

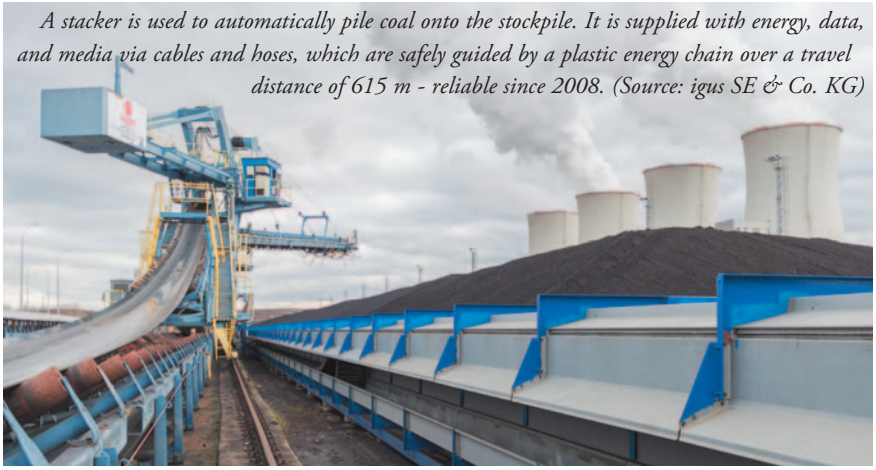
The Engineering business unit provides planning expertise. It ensures fast and precise designs and maximum application reliability. Through reference projects or, if necessary, even through customized tests in the igus test laboratory — the largest of its kind with over 5,500m². This development means that standard products can be given up to 4-years warranty. For complex engineering projects Factory Acceptance Tests (FAT) can be done at igus.

igus is active in over 80 countries worldwide. This allows the company's engineering team to quickly respond to local specification around the world.

Once planning is complete, the installation-service department moves straight into implementation. Specializing in challenging installations, it ensures safe and efficient assembly and rapid commissioning. It takes responsibility "until everything is up and running" and ensures minimal downtime during conversions. Supervisors and assembly teams operate worldwide, so that international projects can also be supported throughout. Warranty packages ensure that customers can count on their systems.

From inquiry to fail-safe working solution

The customer describes an application with a rotary movement, a dusty environment, and limited installation space. The



A stacker is used to automatically pile coal onto the stockpile. It is supplied with energy, data, and media via cables and hoses, which are safely guided by a plastic energy chain over a travel distance of 615 m - reliable since 2008. (Source: igus SE & Co. KG)

Rotary energy chains from igus solve a wide variety of circular movements. Rotation angles of up to 900° have been achieved to date. This system was installed in a bucket wheel excavator in 2011 and has been in continuous operation ever since (source: igus SE & Co. KG).

engineering team records the requirements, checks feasibility, and plans a rotating energy supply. Even in early planning stages, drawings and 3D designs can be shared with the customer for review.

The cable package is usually assembled from proven chainflex cables. Through forward planning of the filling, additional hydraulic or water lines can also be routed in such a way that they function reliably in continuous operation for many years.

Assembly and commissioning concepts are incorporated at an early stage to take transport, lifting equipment, assembly sequence, and safety aspects into account. The goal is to keep the conversion phase from the old to the new system as short as possible.

The team assembles the components on site, performs functional tests, and monitors the gradual increase in speed until the target is reached. Once SAT acceptance has been completed and documentation and training have been handed over, the system is ready for regular operation. Warranty packages cover the start-up phase.

German engineering expertise today – a dynamic system

What began as a series of individual projects is now a structured, learning system: smart plastics enhance energy chain systems with condition monitoring and predictive maintenance.

Sensors in the energy chain, guide trough, and chainflex cables record wear and operating parameters (e.g., tensile/shear forces, frictional resistance, bending radii, temperature, vibration), edge gateways aggregate the data, and models for predicting service life derive maintenance recommendations. Alarms, trends, and remaining service life values can be integrated into control systems and CM platforms via standard protocols; threshold values and diagnostic paths are parameterized specifically for each application.

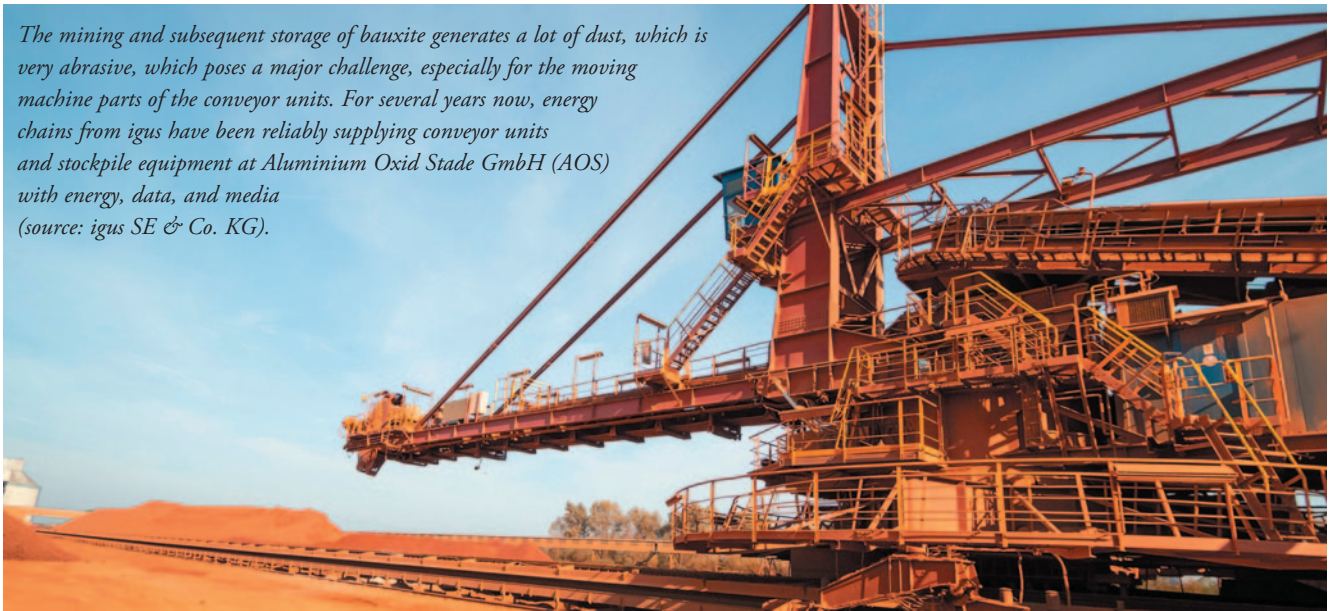
This approach stabilizes plant availability, reduces unplanned downtime, and enables predictable service windows, especially long travel distances, and in heavy-duty environments such as bulk material handling, shiploaders, or open-pit mining.

Smart Plastics components are considered early in the engineering phase: sensor positions, limit value definitions, and SAT checklists are determined together with the mechanics and cable selection, so that mechanical robustness and digital transparency originate from a consistent system.

Feedback from field data into design rules and modular selection accelerates further development — and makes solutions for travel distances of up to 1,000m and more not only mechanically feasible, but also digitally maintainable.

With a spirit of innovation and the courage to try new things, igus turns movement into progress. igus — improves what moves.

DCi



The mining and subsequent storage of bauxite generates a lot of dust, which is very abrasive, which poses a major challenge, especially for the moving machine parts of the conveyor units. For several years now, energy chains from igus have been reliably supplying conveyor units and stockpile equipment at Aluminium Oxid Stade GmbH (AOS) with energy, data, and media (source: igus SE & Co. KG).

The never-ending story

of continuous ship-unloaders

Louise Dodds-Ely

Bruks Siwertell: showing the way with exceptional handling equipment for grain and other cargoes

Grain handlers have to meet some of the most challenging dry bulk material demands. Agricultural dry bulk import and export terminals are subject to massive surges in intake from the seasonality of crop harvests. Additionally, this is organic material, so processing grain, grain storage systems and grain handling equipment must be designed to handle it in a sensitive

way to avoid spoilage.

Bruks Siwertell is the only manufacturer of grain handling equipment that can deliver all the ship-unloading and loading, grain processing and grain storage system needs of these operators, and continuous ship-unloaders (CSUs) form an important part of this portfolio. With its Siwertell screw-type ship unloaders, Bruks Siwertell can discharge grain and other agri-bulk commodities at rated capacities up to 1,800tph (tonnes per hour). Added to this, its grain handling equipment capabilities also include the highest continuous rated loading capacities, which are in excess of 3,000tph.

Bruks Siwertell's grain handling equipment provides exceptional environmentally friendly performance with minimal dust and no spillage. Furthermore, the same machines, ship-unloaders and loaders, can handle soybeans, meals and other non-free-flowing foodstuff materials at these high capacities. Efficient, clean conveying and grain storage systems and reclaiming technology can be matched to Bruks Siwertell's grain handling CSUs and loaders.

Case study: Siwertell CSU secures Brazilian grain exports

Brazilian operator, Novo Remanso Port Terminal (TPNR), needed to secure reliable, high-capacity ship-unloading at its grain export facility on the Amazon River; the good performance of many other Siwertell screw-type CSUs operating in the region underpinned TPNR's decision to also opt for Siwertell technology.

Customer need

Brazilian operator, Novo Remanso Port Terminal (TPNR), needed reliable dry bulk handling equipment to discharge large volumes of agricultural foodstuffs at its grain-handling export site in northern Brazil, on the banks of the Amazon River. The ship-unloading equipment needed to be light enough to be mounted on a floating barge, with very good environmental credentials, and offer competitive through-life operational costs.

TPNR also needed its new ship-unloader to be in operation as soon as possible and capable of being in service for at least 20 years. Bruks Siwertell has a number of installations in Brazil including four individually owned Siwertell ship-unloaders, which serve the buoyant agricultural market, discharging millions of metric tons of grains, cereals, corn and soybean every year. They have also been operating for well over two decades.

Bruks Siwertell's solution

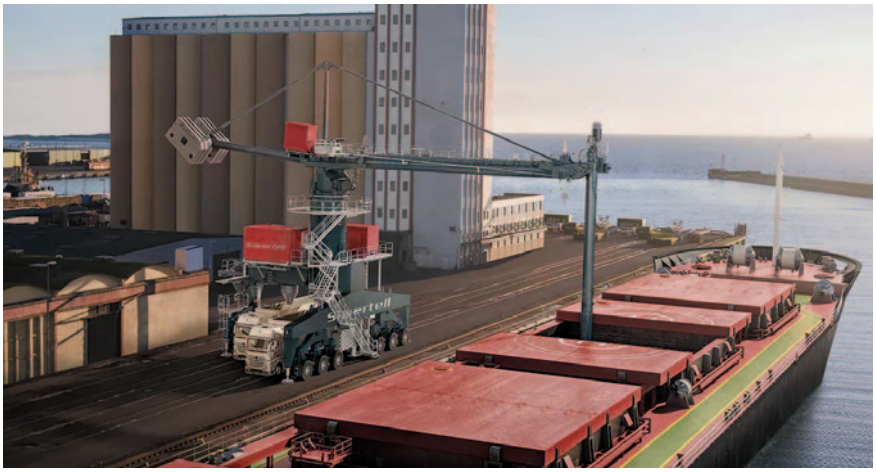
TPNR opted for a Siwertell ST 790-M CSU, fitted onboard a floating barge, which is designed to offer a continuous rated capacity of 1,700tph for handling soya beans and corn. From the CSU, material is conveyed, via belt conveyors, to a storage facility and from here, as required, is transferred to a shiploader that feeds ocean-going vessels for global export.

The operator selected Siwertell ship-unloading equipment on the basis of three very strong elements: firstly, Siwertell CSUs have many successful references in Brazil for reliably handling all types of agricultural foodstuffs; secondly, they offer very good environmental protection because they have enclosed conveying lines; and thirdly, their through-life operational costs far outperform all other systems on the market.

High-volume grain handling not only demands reliable equipment, with good

operational performance and through-ship efficiency, but on top of that, minimal material degradation. Siwertell systems maintain and ensure the quality of grain shipments by minimizing any dry bulk material degradation through smooth conveying velocities and careful handling.

TPNR's Siwertell CSU is operational and meeting its capacity and operational performance expectations.



Gentle handling is the key

Cargo degradation is a key consideration in grain handing equipment. A successful material handling system for grain must offer extremely low degradation and crushing rates, minimizing the production of fines; powdery particles smaller than the individual grains.

Fines make grain difficult to aerate and increase spoilage rates during processing grain and grain storage. Fines must be removed before milling, so their presence in high enough levels can down-grade the quality of entire grain shipments. Furthermore, the greater the number of fines produced, the higher the levels of dust emissions, raising the risk of fire and explosion in grain storage systems and silos and other confined areas.

Siwertell CSUs are ideal for grain handling; their steady conveying velocity, with no high-impact particle collisions or crushing forces means that they avoid the cargo degradation concerns that traditionally accompany pneumatic unloaders, but maintain equivalent throughputs.

Bruks Siwertell's shiploaders and conveying systems offer similar gentle grain handling equipment characteristics. The company can provide independent test results to confirm the low levels of cargo degradation caused by its loaders, unloaders and conveying systems.

Port-mobile unloader advantages

Bruks Siwertell has added a port-mobile CSU to its outstanding range of grain handling equipment solutions. Optimized on many key levels from its stable, lightweight steel structure through to its gentle cargo handling, smooth cargo discharge, and operational performance, the CSU offers full port mobility, excellent efficiency and rated capacities and reduced investment costs.

The port-mobile CSU, like the road-mobile CSU, uses simplified, standard technology, which keeps maintenance and wear parts costs relatively low compared with other unloading systems on the market.

Port-mobile unloaders: optimized to deliver outstanding material handling

Bruks Siwertell's product development is driven by adding value and sustainability to dry bulk handling operations. This is exactly what its Siwertell port-mobile CSU can do. The CSUs offer full port mobility, excellent efficiency and rated capacities and reduced investment costs.

Able to handle materials such as grain, soybean meal, alumina and cement, the port-mobile CSU has been optimized on many key levels from its stable, low weight steel structure through to its gentle cargo handling, smooth cargo discharge, and cost-efficient operation.

Based on a standardized design to keep investment, maintenance and wear parts costs as low as possible, the port-mobile unloader is available as a (grain) 400tph or a 600tph unit; the Siwertell 400 PMU and the Siwertell 600 PMU. They are an ideal solution for operators looking for a port-based system and are able to discharge vessels up to 60,000 dwt.

Siwertell technology ordered for enclosed cement handling in Adelaide

The ship-unloader will be fitted with a rubber-tyre wheelbase ensuring in-port mobility. "Furthermore, the jetty conveyor system will be installed in a recess so that the jetty remains clear for other activities. The entire system, from material pick-up in the vessel's hold to the dome silo, will be totally enclosed, providing a virtually dust-free operation in the port, with no spillage.

The new Siwertell CSU will be suitable for discharging bulkers up to 40,000dwt at a rated cement handling capacity of 500tph. It was delivered in August 2023, and was assembled on site.

Low material degradation

One of the greatest advantages when unloading delicate agri-bulk and sensitive powdery cargoes, such as alumina, with Siwertell screw-

conveyor technology is low material degradation rates. These are delivered through an efficient, continuous conveying velocity, which avoids collisions between material particles and the inner wall of the conveyor, and therefore reduces the production of powdery fines.

A delicate approach

Fines are problematic for many types of cargo, and particularly so for grain and alumina; posing some significant financial and safety concerns.

For grain, the presence of fines can mean that the whole shipment is downgraded. They can make it more difficult to aerate, which increases spoilage rates, and they also have to be removed before milling.

Meanwhile, for alumina, aluminum smelting is very energy intensive and the process is extremely sensitive to the amount of fines in the material. Their significant reduction has a huge impact on the smelting plants energy consumption.

Terminal operators and third-party specialists have measured the level of fines before and after a Siwertell unloading operation and have confirmed these low degradation rates.

Cost-effective cement operations

The dry bulk cement market is strongly linked to the construction industry and its changes in demand. As populations increase, so does the need for infrastructure.

Being able to respond flexibly and efficiently with a dry bulk unloading system that ensures the dust-free discharge of large vessels, up to 60,000dwt, is now an essential at many cement import terminals.

Bruks Siwertell's port-mobile units offer high-capacity unloading, delivering a reliable, asset-light, space-efficient operation with minimal downtime; ideal attributes for any port.

Smooth cargo flows

As standard, the port-mobile CSU features a dual truck-loading system, with the option for a third, which delivers continuous, uninterrupted discharge operations as long as there are trucks available.

As these systems are not interlinked, one, two or three loading positions can be used to load trucks independently and simultaneously, delivering the fastest possible discharge times.

Furthermore, to minimize the impact of truck changeovers and to allow enough time to position the truck correctly, the unloader is equipped with a large-volume intermediate surge hopper.

Through-ship efficiency

Operational costs depend on total unloading times and therefore it is important to maintain high average through-ship capacities to reduce any demurrage costs. Unlike a pneumatic unloader, for example, which can only operate its intake nozzle in a vertical direction in the hold opening, a Siwertell unit can reach practically all areas of the cargo hold, including underneath the hatch opening and corners. This is made possible with the ±30° movement in the unloader's vertical arm combined with a ±20° luffing motion in the horizontal arm; manoeuvrability which directly translates into unloading efficiency advances and leaves less material for the payloader to move at final clean-up.

This capability, combined with the overall efficiency of continuous screw-type conveying technology, means that the Siwertell port-mobile unloader offers a higher through-ship rate than a pneumatic unloader.

Winning combinations

One of the port-mobile unloader's stand-out capabilities is that when not in use, it can relocate and stow elsewhere, leaving port thoroughfares and key operational areas clear. It is equipped with a self-propelled rubber-tyre gantry and an advanced steering system for full manoeuvrability between operations. To secure the gantry in all directions when parked, the end pairs of axles, both on the sea-facing and land-facing sides, are turned by 90°.

Advantages that deliver a competitive edge

- reduced installation and investment costs;
- excellent reach into the ship's entire hold, delivering the highest average efficiency rates on the market;
- significantly lower material degradation in comparison with pneumatic conveyors;
- rapid truck filling times, with independent truck-loading spouts;
- close to zero dust emission; and
- easy to switch between all kinds of grain cargoes, as well as soyabean meal and feedstuffs, and powdery cargoes such as cement and alumina.

Stationary & rail-mounted unloaders

Ship-unloaders that optimize every dry bulk port: Bruks Siwertell designs unloaders that are able to optimize dry bulk material handling at every port, regardless of intake volume; from the smallest to the largest high-capacity operations. All Siwertell CSUs are based on screw conveyor technology in combination with a unique inlet feeder. They reach right into the corners of a hold, resulting in quicker vessel turnarounds and reduced berth occupancy.

To achieve the most profitable unloading operation, it is essential that the CSU is well matched to the port's intake requirements and the ships that it receives.

Bruks Siwertell can find the perfect match and offer the market's highest through-ship efficiencies. Its large-scale CSUs have capacities up to 3,000tph and can be installed as a fixed unit, or rail-mounted for travelling along the quayside. For smaller scale operations that require degrees of mobility, Bruks Siwertell offers road-mobile units and port-mobile units.

All industries appreciate the economies of scale, and this is equally true when it comes to bulk cargoes. Bigger ships transport their bulk cargoes more cost effectively across the oceans, but they can lose time in port because discharge rates are not optimized for large vessels.

Recognizing the need for higher discharge capacities at the intakes for power stations, Bruks Siwertell has for some time been engaged in a development programme for a 3,000tph screw type CSU. The work was completed a few years ago, and customers can now take advantage of the cost savings that can be delivered by the 50% increase in unloading capacity.

Cost savings through the right combinations

Cost savings can be achieved both in terms of initial investment and through-life operational costs, depending on the overall unloading performance required. Specifying two 3,000tph unloaders instead of three 2,000tph machines — to achieve a 6,000tph capacity — results in an investment saving of up to 25% in favour of the 3,000tph CSUs.

If the maximum possible capacity is required from the outset, then three 3,000tph unloaders will provide an unloading capacity of 9,000tph, as opposed to 6,000tph from three 2,000tph units.

Considering a Capesize vessel of 200,000dwt and a through-the-ship capacity of 65 percent the unloading time using three 2,000tph unloaders would be 51 hours. This would be reduced to 34 hours using three of the 3,000tph unloaders.

Choosing unloaders according to ship size

The 3,000tph unloader has been designed for a maximum vessel size of 230,000dwt or a maximum beam of 50m. In general it is aimed at ships between 100,000 and 200,000dwt. It can be used to discharge smaller vessels, but the efficiency level will not be as high as experienced with larger vessels.

Developing the high capacity CSU was technically demanding; it involved far more than simply scaling up the existing product. The whole conveyor chain is new. Re-use of the existing design has been minor. While it was possible to scale up most of the parts in the conveyor chain, the existing steel supporting structure design could not be adapted and Bruks Siwertell has developed a completely new solution.

- NB: 3,000tph can also be expressed as 50 tonnes per minute — this is even more impressive when you realized it translates to nearly a tonne of coal each second.

Through-ship performance

Although rated capacities are important performance indicators; it is Bruks Siwertell's through-ship performance that really sets the company apart from competitor systems such as grab cranes, pneumatic systems and bucket elevators. The excellent through-ship performance and reduced clean-up requirements delivered by Bruks Siwertell's grain handling equipment ensures quick turnarounds that minimize the time grain carrying bulk vessels and barges spend alongside loading and discharge berths.

Grain handling cleanliness

Bruks Siwertell's grain handling systems easily comply with the strict environmental regulations that apply in many ports. Its totally enclosed systems eliminate spillage and offer close-to-zero dust emissions. .

Planned service stops keep Brazil's grain unloaders in their prime

Brazil has vast agricultural reserves and is a world-leader in food production. Technological advances coupled with its natural resources means that Brazil is a strong competitor with the US as the world's largest soybean and corn producer and exporter.

Ports in Brazil are booming and, like the advances in the country's agricultural equipment and infrastructure, its in-port grain handling systems, and grain processing and grain storage equipment, have had to step up to the challenge too. Today, Bruks Siwertell has numerous high-capacity grain CSUs operating in the country, with some machines running for about 3,500 hours/year.

With such a large intake of grain, the Siwertell CSUs are in service all of the time, throughout the whole year, so to be able to guarantee a continuous operation they all must have a planned maintenance stop once a year.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CSUs from VIGAN help ease pressure on port operations & supply chains

For more than half a century, VIGAN Engineering has stood as one of the most innovative forces in the global bulk-handling industry. This discreet yet influential Belgian company has built a reputation for engineering precision, technological innovation, and tailor-made solutions — all essential qualities in an era where port operations and food supply chains are under unprecedented pressure.

Today, as global cereal flows reach historic levels and environmental expectations tighten, VIGAN continues to affirm its role as far more than a machine manufacturer. It is a strategic partner for ports seeking reliable, efficient, and sustainable performance.

A HUMAN-SIZED COMPANY WITH GLOBAL IMPACT

Founded in Belgium in the 1960s, VIGAN quickly specialized in pneumatic unloading at a time when the technology was still emerging. Pneumatic systems — known for reducing dust, limiting product losses and ensuring precise operations — have since become indispensable to modern terminals.

Despite growing international competition, VIGAN has maintained its unique positioning built on three pillars:

- **Fully in-house engineering:** from design to assembly and testing, every phase is controlled internally. This ensures full quality oversight and unmatched equipment reliability.
- **Tailor-made manufacturing:** no two

Handle bulk with efficiency and reliability

Pneumatic and mechanical ship (un)loaders
Up to 2500 tph for loaders and up to 1200 tph for unloaders.

Low noise & no dust emission
Turnkey solutions for cereals, soy flour, fertilizer, pellets and more...

SCAN ME

VIGAN

ports are alike. VIGAN's engineering teams adapt each machine to local conditions such as quay design, climate, noise restrictions, and required throughput.

- **Strong global service capability:** with expert teams erecting and supporting installations across all continents, customers benefit from long-term assistance: commissioning, operator training, maintenance, upgrades, and technical audits.

This approach has allowed VIGAN to establish a presence in over 100 countries worldwide and earn a reputation for robust, durable equipment.

Innovation at the core: more than just ship unloaders

While VIGAN is best known for its pneumatic ship-unloaders, its expertise extends across a wide range of bulk-handling solutions:

- shiploaders;
- mechanical conveyors;
- mobile vacuum units;
- bagging and truck loading stations;
- dust collection and filtration systems; and
- turnkey grain terminal projects.

This diversified portfolio enables VIGAN to support the entire bulk cargo chain, not just the unloading stage.

Efficiency is a defining principle at VIGAN.

Every machine is designed with a clear philosophy: avoid outdated or unnecessary components and focus on what truly matters — performance, reliability, and minimal maintenance. This approach results in equipment that ranks among the most efficient on the market, offering exceptionally low operating costs throughout their lifetime.

At the same time, VIGAN distinguishes itself through intelligent automation. Far from adding gadgets for the sake of novelty, the company integrates robust, pragmatic, and smart automation systems that ensure optimized operation, seamless control, and the flexibility that is required to perform reliably in the most demanding working conditions.

PREMIUM COMPONENTS FOR MATERIAL HANDLING

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Driving environmental performance

Environmental regulations are becoming stricter worldwide. Dust suppression, noise reduction, and energy efficiency are now key requirements for port authorities.

VIGAN has made significant investments to stay ahead:

- **Enhanced energy efficiency:** new generation blowers, optimized airflow systems, and intelligent electronics allow significant reductions in power consumption compared to previous models.
- **Advanced acoustic insulation:** custom noise-reduction solutions lower sound levels by up to 15 dB(A), essential for ports located near urban areas.
- **Zero-dust operation:** modern pneumatic CSUs work with virtually no visible dust emissions, meeting the highest environmental standards globally.

These innovations reinforce VIGAN's long-standing commitment to sustainable engineering.

Recent landmark projects demonstrating global expertise

In recent years, VIGAN has delivered several strategically important installations across the world:

South America: major upgrades of cereal terminals improving productivity while significantly reducing environmental impact.

North Africa: turnkey high-reliability solutions supporting national grain supply security in challenging climates.

Asia: high-capacity systems designed to respond to explosive demand for imported cereals.

Europe: modernization of existing port infrastructures with the latest VIGAN technologies.

These achievements highlight VIGAN's ability to adapt its engineering to diverse operational contexts and deliver long-term value to its clients.

A clear vision for the future: feeding a growing planet

By 2050, the world's population will exceed 9.7 billion, with global grain demand expected to rise by approximately 50%.

Ports — the gateways of the food supply chain — will face immense pressure to increase capacity, reduce turnaround times, and limit environmental impact.

VIGAN will play a key role in this evolution by offering solutions that support:

- faster and more efficient port operations;
- lower logistics costs;
- reduced grain losses during handling; and
- the modernization and automation of grain terminals

With its combination of technological expertise and customer-focused engineering, the company is exceptionally well-positioned to shape the next generation of bulk-handling solutions.

Conclusion

VIGAN Engineering is far more than a manufacturer: it is a technology pioneer, a trusted long-term partner, and a key contributor to the sustainable evolution of global food logistics.

Through its innovations, its international presence, and its deep expertise in pneumatic unloading, VIGAN continues to raise industry standards and support ports in meeting the logistical challenges of tomorrow.

Sumitomo Heavy Industries Material Handling Systems Co., Ltd.: a pioneer in CSUs

Since delivering the first bucket elevator (BE) type Continuous Ship Unloader (CSU) in 1978, Sumitomo Heavy Industries Material Handling Systems has remained at the forefront of the industry. Through continuous innovation, its machines have consistently demonstrated high unloading efficiency and reliability, securing its position as a top player with 85 units delivered or under construction, primarily for the power generation and steel sectors. Sumitomo's success in handling challenging multi-materials like iron ore and coal with its BE-type CSU has been particularly notable, earning it significant trust from its customers.

Over the past few years, Sumitomo has been delivering 1,500tph (tonnes per hour) of high-performance BE type CSUs to coal-fired power plants in Japan. This equipment is highly valued by customers for its high cargo handling efficiency and excellent reliability. It helps reduce operating costs and the burden of maintenance, and improves long-term customer satisfaction by enabling stable operation under strict conditions. In addition, Sumitomo's BE type CSU provides peace of mind to its customers with regular maintenance and support. As a result, many domestic coal-fired power plants continue to choose Sumitomo products as proof of trust.

The company also has experience delivering a 1,200tph BE-type continuous unloader tailored for unloading coal barges for PT. Semen Tonasa, located in Sulawesi, Indonesia. This project exemplifies Sumitomo's ability to meet the specific needs of international clients with reliable and high-performance equipment.

Regarding high cargo handling efficiency, Sumitomo's 'swing' mechanism reduces the remaining load on the bottom of the ship and minimizes the work of heavy machinery on board. Although lifting bottom cargo can lower overall efficiency, this BE type CSU employs this 'swing' mechanism to mitigate inefficiencies by addressing the handling challenges of bottom cargo.

In addition, the hydraulic system has many consumable parts, complex mechanisms, and a high risk of failure, so Sumitomo's BE type CSU drives most of its functions electrically, improving serviceability. Therefore, reliability is enhanced through improvements based on many previous operational performances.

The demand for screw unloaders for power plants using wood biomass as fuel is still high in Japan. As a result, Sumitomo's vertical screw type continuous unloader (VSC) has been active as the company's main product. With the expansion in the use of wood biomass, efficient and reliable cargo handling systems are required in power plants aiming for sustainable energy supply. Sumitomo's VSCs are especially capable in terms of transportation and durability, playing an important role in supporting a stable supply of biomass fuel. Against this background, the products have been introduced to many power plants and are highly trusted within the industry.

From now on, Sumitomo would like to actively provide its products not only to the domestic market but also to overseas steel and power plants. In areas where infrastructure development and environmental regulations have been strengthened, especially in Asia and Europe, the number of situations requiring high-performance equipment from Sumitomo is increasing. In these markets, the company believes that the efficiency of power generation and steelmaking using coal and wood biomass is increasing, and that its technical capabilities and quality will be of great help. By expanding to overseas markets, Sumitomo intends to actively engage in sales activities with the aim of becoming a company trusted by more customers.

DCi

US Gulf region

Port of Mobile launches Phase I of general cargo modernization programme

$100 Million Pier B South Redevelopment

Phase I modernizes historic infrastructure & strengthens Alabama's forest products & steel supply chains

The Alabama Port Authority has begun the demolition and reconstruction of Pier B South, launching a multi-year, multi-phase programme to modernize the Port of Mobile's general cargo terminal — one of the port's most historic and versatile assets.

Built in the 1920s, Pier B South has served Alabama industries for nearly a century. Through a $100 million federal investment championed by Senator Richard Shelby, the port is transforming the aging facility into a modern, high-capacity berth to support the state's

growing breakbulk trade.

"Pier B South has stood for nearly a hundred years as a symbol of Alabama's global trade gateway through the Port of Mobile, and now we're investing to ensure it remains an engine for the next hundred years," said Doug Otto, Director and Chief Executive Officer of the Alabama Port Authority. "From steel producers like SSAB, Outokumpu, Nucor, and Arcelor Mittal to forest products suppliers like Great Southern Wood Preserving, International Paper, and Georgia-Pacific, we are building the Port to serve Alabama businesses who continue to invest and expand production right here in our state."

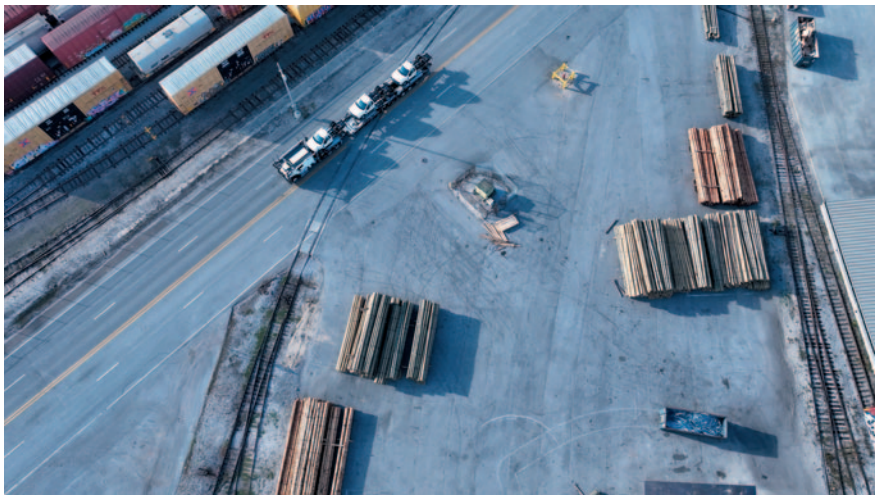
The new Pier B South will feature 1,500 linear feet of modern dock structure built to handle 1,500psf (pounds per square foot) and accommodate mobile harbour cranes and other advanced cargo-handling equipment. The facility will be rail-served, shore-power capable, and designed for seamless integration with the port's general cargo complex.

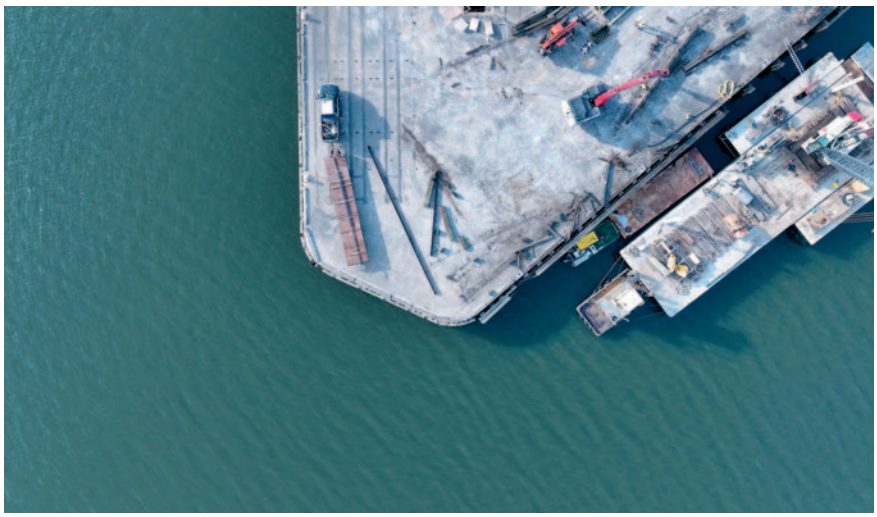
RJ Baggett Construction is leading the construction, which will take approximately three years to complete.

The Pier B South project marks Phase I of the Port's broader General Cargo Modernization Program, a multi-year initiative to enhance capacity, efficiency, and sustainability across the Port's breakbulk operations.

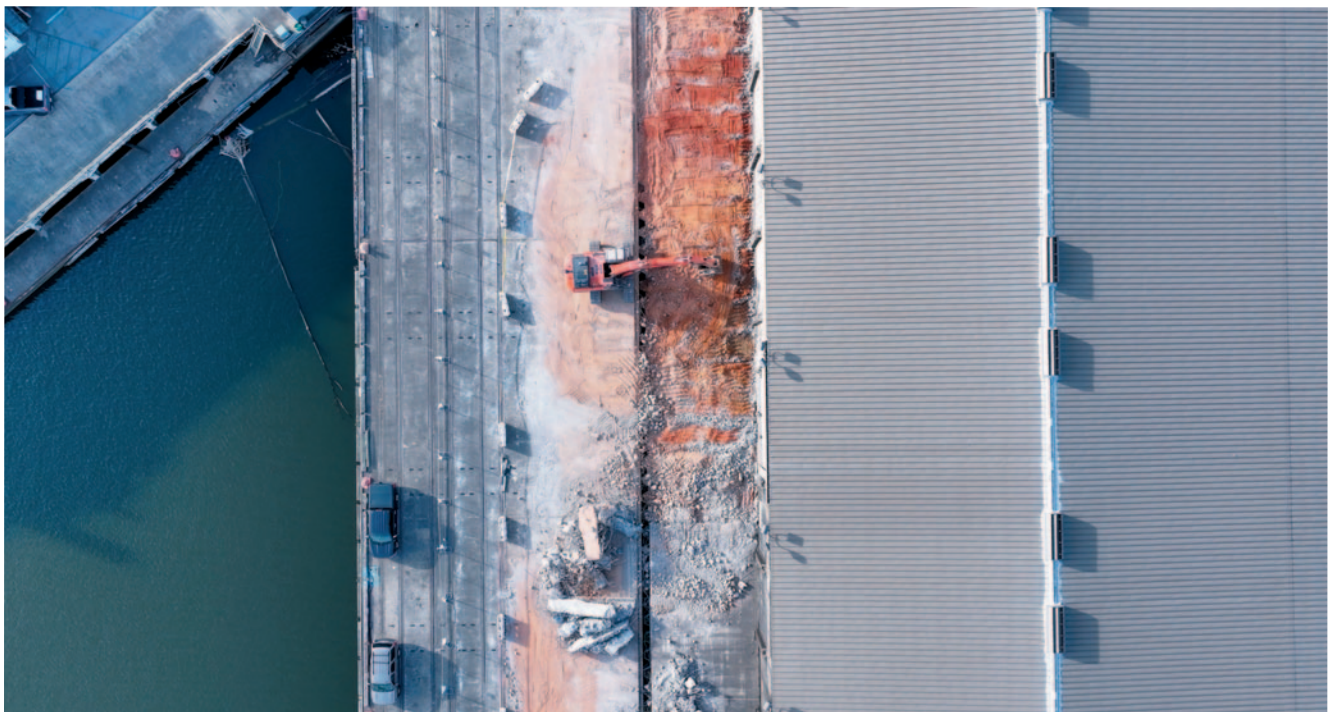
Additional programme elements now underway include:

- **Warehouse upgrades:** modernizing storage and cargo-handling facilities to support higher throughput and improve operating efficiency, targeting an increase of 110,000ft²+ by H1 2026.
- **Harbour optimization study:** in partnership with the U.S. Army Corps of Engineers, the port is pursuing federal funding to leverage existing navigational assets, evaluate barge-lane feasibility, and study Mobile River depth, flow, and tidal impacts, ensuring the port remains competitive for a wider range of vessels.
- **General cargo infrastructure strategy:** a long-term planning effort to prioritize future capital investments, integrate intermodal connectivity, and expand the Port's service to Alabama-based manufacturers and exporters.

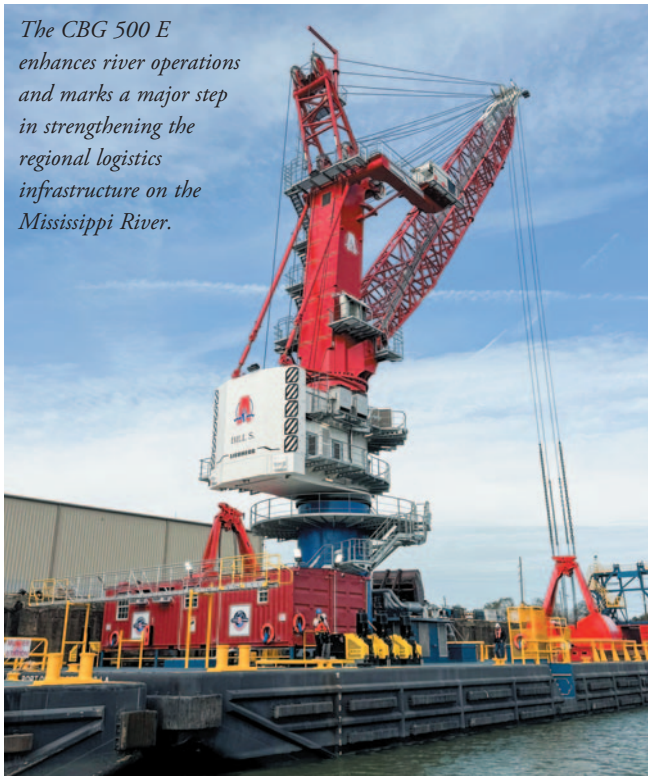




"From warehouse improvements to a harbour optimization partnership with the Corps, every piece of this strategy ties back to a single goal — serving Alabama industry, because when companies invest hundreds of millions of dollars in the state, it's our responsibility to ensure their Port keeps pace with their growth," Otto said.



Electrifying the Mississippi



The CBG 500 E enhances river operations and marks a major step in strengthening the regional logistics infrastructure on the Mississippi River.

At the christening ceremony of the two CBG 500 E cranes, General Manager Sales at Liebherr-Rostock GmbH, Andreas Müller, spoke about the importance of the continued partnership between Liebherr and Associated Terminals and the role the new electric cranes will play in shaping the future of port operations along the Mississippi.

This milestone represents the culmination of a collaborative journey between Liebherr and Associated Terminals, combining engineering innovation with a shared vision to transform river cargo handling through sustainability and efficiency.

Associated Terminals and Liebherr Maritime Cranes celebrated the christening of two CBG 500 E cranes in New Orleans, introducing the first all-electric transshipment cranes of their kind on the Lower Mississippi River. Each crane is engineered for high-volume bulk handling, offering maximum grab capacities of 90 tonnes in sheltered waters and up to 65 tonnes in open water, complemented by a lattice boom design with up to 50 metres outreach. Integrated LiCaTronic energy recovery systems improve efficiency by recovering energy generated when braking or lowering loads, while remote diagnostics and ergonomic cabins enhance operational safety and reliability.

The two CBG 500 E cranes are installed on Associated Terminals' next-generation barges, purpose-built to set new standards in efficiency and sustainability with hybrid-ready power systems, an intelligent load management and reduced fuel consumption. Keel cooling technology further minimizes maintenance needs and environmental impact.

Landmark event for river operations

The christening ceremony, held on the banks of the Mississippi River, gathered hundreds of guests from the maritime industry, politics, and business. It marked the culmination of months of collaboration, driven by a shared ambition: to modernize transshipment while reducing environmental impact. The atmosphere was one of anticipation and pride, as the cranes and barges — symbols of innovation — were officially named and blessed in front of a crowd that recognized the significance of this achievement.

"The christening of these cranes marks a defining moment for our operations," said Zeljko Franks, Chief Operating Officer at Associated Terminals. "It represents years of planning and partnership coming to life. By introducing this technology on the Mississippi, we are combining performance with sustainability in a way that will benefit our customers, our communities, and the river for years to come."

The first crane, delivered in the summer of 2025, has already gone into service and quickly proved itself as a key asset for bulk handling, earning strong praise from Associated Terminals after commissioning. The second CBG 500 E arrived at the end of 2025 and was successfully assembled ahead of the ceremony; following the christening, it will join its counterpart in operation, continuing the same standard of efficiency.

The introduction of these cranes signals a new chapter for inland waterway logistics, setting benchmarks for ecological responsibility.

This milestone is not only a technical achievement but also a strategic step toward electrifying river operations across the United States.

Engineering excellence and partnership strength

This project is the result of a partnership that has grown over years of collaboration, driven by a shared commitment to forward thinking and environmental responsibility. From the earliest planning stages to commissioning, Liebherr and Associated Terminals worked hand in hand to align technical solutions with operational and environmental goals. That same spirit of co-operation will continue throughout the cranes' lifecycle, supported by Liebherr's dedicated service teams, ensuring reliability and performance for years to come.

"The christening reflects what can be achieved through collaboration and forward thinking," said Gregor Hillen, Sales Manager for Port- and Transshipment Solutions at Liebherr-Rostock GmbH. "We are proud to stand alongside Associated Terminals in shaping the future of river cargo handling."

Looking ahead, these installations will serve as a benchmark for sustainable transshipment, reinforcing the role of advanced electric cranes in driving efficiency and resilience across inland waterways.

A quick note of "Thank you" to our Global Partners.

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ASSOCIATED TERMINALS

Port Houston reports on successful initiatives and impressive ranking

Turning Basin Terminal, Port Houston.

Port Houston completes its portion of Project 11 Dredging

Improves safe, efficient two-way vessel movement in the Houston Ship Channel

In late October last year, it was announced Port Houston had completed its portion of the Houston Ship Channel Expansion – Project 11 improving the safe and efficient movement of two-way vessel traffic along the channel:

Port Houston, working in partnership with the U.S. Army Corps of Engineers (USACE), has completed its portion of the Houston Ship Channel Expansion Project 11, a historic milestone in the future safety, efficiency, and competitiveness of the busiest waterway in the United States.

Construction of channel improvements began in 2022. Port Houston announced in October 2025 in a press release that the project has reached its most important milestone dredging completion of the widening of the Galveston Bay reach from Bolivar Roads to Morgans Point. With this work done, Port Houston-led project dredging of the Houston Ship Channel is complete.

Widening of the channel through Galveston Bay, from 530 feet to 700 feet, represents a physical transformation that allows for improved safety, greater efficiency, and increased economic benefit of this critical economic artery of the region, state, and nation. As vessels continue to grow in length, beam, and tonnage across a variety of vessel types, the widened Galveston Bay reach will help keep the facilities relying on the channel competitive and dynamic, both today and into the future.

Port Commission Chairman Ric Campo said. "We commend the incredible Port Houston team, our bipartisan federal and local delegations, and our industry and federal partners for their collaboration and capacity to see clearly the importance of this vital gateway to our nation and ensure its ability to safely sustain and grow international trade. This collaborative achievement is truly a testament to the hard work of all the individuals involved in the project and reminds us of the importance of the Houston Ship Channel to the nation."

While port-led dredging is now complete for navigation, some beneficial use aspects of the project remain under construction, including marsh areas that are being built with dredged material. To the extent possible, all Project 11 dredged material in the Galveston Bay area was used to construct environmental features, which will ultimately include approximately 10 acres of bird islands, 276 acres of marsh, and 324 acres of oyster reefs. In addition to these environmental benefits, Project 11 channel expansion is expected to provide air quality benefits, as vessel nitrogen oxide emissions are expected to be reduced by between three percent and seven percent. In addition, the dredges contracted for the first three segments of the project were equipped with either Tier 3 or Tier 4 engines or scrubbers, which efficiently remove pollutants from exhaust gases.

The 52-mile-long Houston Ship Channel serves more than 200 private facilities and eight public terminals, in industries from petrochemicals and heavy machinery to consumer goods and energy. In a report released earlier this year, the USACE recognized the channel as the busiest waterway in the United States, handling approximately 12% of the nation's total waterborne tonnage. The Houston Ship Channel supports 3.37 million jobs nationwide and generates $906 billion in annual economic activity in the United States according to a 2022 third-party economic impact study.

Project 11 is expected to generate massive additional economic benefits to the region. A draft study by the Perryman Group estimates that by 2040, Segment 1 of Project 11 alone will generate $60.95 billion in statewide economic benefit and

add 440,665 jobs in Texas. Port Houston anticipates publishing the study when it is finalized.

Based on Project 11 improvements and the experience gained through multiple research initiatives and full mission bridge simulations, the Houston Pilots have revised their Navigation Safety Guidelines.

These revisions are expected to deliver measurable efficiency gains for all users of the Houston Ship Channel including LPG carriers, oil and product tankers, bulkers, and container ships.

Among the key benefits, daylight restricted vessels now have up to an additional two and a half hours to transit into and out of port each day, allowing for more time for two-way vessel movements along the waterway and improving flexibility for both inbound and outbound scheduling. These enhancements not only increase the operational efficiency of individual vessels but also create system-wide benefits by smoothing vessel traffic across a broader time window. As a result, harbour assist tug and dock operations are expected to experience greater predictability, reduced congestion, and improved asset utilization.

The planning of Project 11 began in 2010, when Port Houston leadership, working with Congress and the USACE, recognized the need to widen and deepen the channel to more safely and efficiently accommodate the growth in the size of vessels transiting it. In the years since then, the Port Houston team accelerated the project by working in parallel versus typical sequential steps related to specific federal authorizations. The result: this project and its benefits are being realized sooner than typical for almost any project of this scope.

The Houston Ship Channel Expansion Project 11 has been honoured with multiple awards, including the 2025 Environmental Excellence Award from the Western Dredging Association (WEDA) and the 2025 Texas American Society of Civil Engineers (ASCE) Outstanding Civil Engineering Achievement Award (OCEA).

The USACE will lead the remaining portions of the project, which are scheduled to be completed in 2029 and will generate further benefits along the channel.

Port Houston multi-purpose breakbulk and general cargo facilities

Stretching from the Turning Basin to a few miles downstream, the multi-purpose cargo facilities have been serving the needs of customers since the opening in 1914, of the 52-mile-long Houston Ship Channel, the Turning Basin became the head of navigation and would lead the way in Houston trade commerce. The port's multi-purpose, breakbulk, and general cargo facilities have been serving the Houston region since its foundation and has continuously delivered stellar service and operations. On 29 April last year, the Port Commission of the Port of Houston Authority met for its regular monthly meeting. Chairman Ric Campo opened the meeting with an announcement that the Houston Ship Channel is once again ranked the number one waterway in the US, according to a recent report by the USACE.

An incredible 309.5 million short tons of cargo moved through the Ship Channel in 2023, which is the most recent available data, reflecting a 5.3% increase in total tonnage from the previous year and far more cargo than any other port in the nation. In fact, volumes along the Houston Ship Channel are so large that the tonnage gap between Houston and the second-ranked port is larger than 97% of ports in the country.

"This ranking reinforces just how vital the Houston Ship Channel is for our region and for the entire nation," said Chairman Campo. "More than three million jobs depend on our Channel, and at Port Houston, it's our job to protect this asset. With our Channel expansion project, known as Project 11, we are helping ensure this critical waterway remains open, safe, and competitive for decades to come."

Chairman Campo also commented on the current tariff situation. "We are, like everyone, analysing the data and assessing the situation. Tariffs would impact our own expenses at Port Houston, including our STS crane purchases. We support the end goal of strengthening domestic manufacturing and encourage the administration to work with our industry to develop a path forward that minimizes unintended consequences on American workers, exporters and consumers."

Earlier in the month, Charlie Jenkins met with Congressman Mike Collins, representative from Georgia and Chair of the Water Resources & Environment Subcommittee of the Transportation and Infrastructure Committee. They discussed the future of the Houston Ship Channel and its importance to the national economy, as well as how to improve the laws promoting maritime transportation and infrastructure. The relationship is particularly important as it is related to the WRDA bill, legislation that instructs the USACE on the intent of Congress and outlines priorities.

Multiple port terminals

Today, there are many different facilities that help commerce flow through the Houston Ship Channel. Turning Basin Terminal, Care Terminal, Jacintoport Terminal, Old Manchester Terminal, Sims Bayou Terminal, Southside Wharves, Bulk Materials Handling Plant, and Public Grain Elevator No. 2 all help Port Houston continue to be the area's largest breakbulk, steel, and project cargo complex in North America.

Each facility is uniquely designed to handle a wide range of cargo types and customer needs; from grain to steel to heavy lift project cargo to wind turbines and blades.

Houston is the national leader for breakbulk cargo in part due to the large laydown areas located adjacent to the general cargo and heavy lift docks. Details of the terminals that handle bulk/breakbulk cargoes are below.

- **Turning Basin Terminal Northside**: 25 wharves/berths, on-dock storage with transit sheds and laydown areas, grandfathered FTZ, On-dock rail access, Railroad connection serviced through PTRA that connects to Burlington Northern-Santa Fe, Union Pacific and Kansas City Southern, Easy access to I-10, I-610 and I-45
  Terminal operator: Port Houston
  Stevedores: Cooper/Ports America, Metro Ports, Enstructure Companies, Schroder Marine Services
  Primary cargo: breakbulk, bulk, project cargo, heavy lift, RoRo.
- **Industrial Park East**: part of Turning Basin Terminal – Northside Operations, covered storage areas, uncovered storage areas for cargo laydown, stabilized land, fenced acreage, grandfathered FTZ, Railroad connection serviced through PTRA that connects to Burlington Northern-Santa Fe, Union Pacific and Kansas City Southern, Easy access to I-10, I-610 and I-45.
  Terminal operator: Port Houston
  Primary cargo: breakbulk, project cargo, heavy lift, RoRo, steel.
- **Public Grain Elevator No. 1**: Part of Turning Basin Terminal — Northside Operations, Railroad connection serviced by Union Pacific that connects with Burlington Northern-Santa Fe, Easy access to I-10 and 610.
  Terminal operator: Hansen Metro Elevation

Unloading steel at Turning Basin.

Primary cargo: multi-grains.

- **Bulk Materials Handling Plant**: direct interstate access, grandfathered FTZ, 2 wharves/ berths — one ship and one barge, 48 acres of submerged lands, uncovered storage areas.
  Terminal operator: Kinder Morgan
  Primary cargo: multi-grains, dry bulk, petcoke, coal.
- **Care Terminal:** covered storage areas and uncovered storage areas for cargo, two wharves/berths, railroad connection serviced by PTRA that connects with Burlington Northern-Santa Fe and Union Pacific, easy access to I-10 and Beltway 8.
  Terminal operator: Gulf Stream Marine
  Primary cargo: breakbulk, project cargo, heavy lift, dry bulk.
- **Woodhouse Terminal**: four wharves/docks, one transit shed with covered storage, two acres of uncovered storage/laydown area, grain elevator, stabilized steel yard, tank storage, railroad connection serviced by Union Pacific that connects to Burlington-Northern Santa Fe, Easy access to I-10 and I-610.
  Terminal operator: Enstructure
  Primary cargo: project cargo, heavy lift, Ro-Ro, steel, grains.
- **Public Grain Elevator No.2**: wharf/berth, Railroad connection serviced by Union Pacific that connects with Burlington Northern-Santa Fe, Easy access to I-10 and 610.
  Terminal operator: The Andersons, Inc.
  Primary cargo: multi-grains.
- **Empire Terminal**: located on the Turning Basin Terminal Southside Wharves, two wharves/docks, warehouse storage, open laydown area for storage, 2 acres of FTZ storage, Serviced by Union Pacific, Easy access to I-10, I-610, and Highway 225.
  Terminal operator: QSL Stevedoring Company
  Primary cargo: bulk cargo, project cargo, heavy lift steel.
- **Southside Wharves:** part of Turning Basin Terminal, 13 wharves/docks, Facility can service vessels, barges, trucks, and railcar, railroad connection serviced through PTRA, easy access to Highway 225, I-45, and I-610.
  Terminal operator: Port Houston
  Primary cargo: general cargo, breakbulk cargo, heavy lift, RoRo.

Port Houston bulk/breakbulk customers

The Andersons – Woodhouse Grain Elevator (Grains): founded by Harold Anderson in 1947. He believed, as the company still does today, that it should be as easy as possible for farmers to take grain to market. It should be easy for all customers, in all markets, to do business with the company. It is committed to serving customers with uncompromising integrity, loyalty and respect. The Andersons is still headquartered in Maumee, Ohio.

More than 75 years later, it owns more than 50 grain terminals in 11 states as well as Ontario, Manitoba and Saskatchewan, Canada, with a total grain storage capacity of more than 290 million bushels. Its grain facilities accept corn, soybean, wheat, oats, and more commodities. It also has food grade and non-food grade grain and agronomy facilities which has allowed it to diversify its business.

In addition to operating its own grain facilities, The Andersons provides services to the ethanol industry through plant management, corn origination, and the marketing of distiller dried grains (DDGS) and ethanol marketing. Its core competencies in risk management can be extended to help optimize the return on ethanol investments. It has origination and/or marketing agreements in place at several ethanol facilities throughout the Midwest.

Kinder Morgan – Bulk Plant (petcoke): located on the Greens Bayou; storage capacity: 600,000 tonnes; annual tonnage: 5,250,000 tonnes; design system rate: 20,000 tonnes per day petcoke loading. The facility is owned by the Port of Houston and is operated by Kinder Morgan for long-term, dedicated customers.

Marine service is via two docks; one ship (40' MLW) and one barge (20' MLW) accessible by the Greens Bayou. Highway access from Interstate 10 and Beltway 8, rail access from Port Terminal Railroad Association (PTRA); Local switching for UP/BNSF. Terminal services include rail to storage (unit trains); barge to storage; vessel to storage; storage to vessel; major features; unit train car dump; conveyor to/ from storage; multiple storage locations with dust suppression.

Port of Galveston: major cargo improvements on track for 2026 completion

While the Port of Galveston made headlines with the opening of its fourth cruise terminal in 2025, this year it will celebrate another port milestone — completion of major improvements at the West Port Cargo Complex, *writes Rodger Rees, Galveston Wharves Port Director and CEO*.

Located on Galveston Harbor, one of the nation's busiest cargo waterways, the port moves more than 3mt (million tonnes) of general and breakbulk cargoes, including roll-on/roll-off (ro-ro) and giant wind turbine pieces a year.

Hundreds of cargo ships call at the complex to move cargo across port docks, generating thousands of jobs and economic growth for the region.

For the first time in decades, the port is investing $106 million to improve dilapidated waterfront infrastructure, add acreage for cargo handling and extend berthing space. This will allow port tenants to move more cargo through the area and put more people to work on the waterfront.

The phased work began in 2024 with funding from a state grant and port operating reserves, largely from cruise revenues. Follows an update on progress:

- **Pier 38/39:** the port-funded work includes enclosing and filling an outdated slip. The port built a closure structure which will double as a berth beginning in 2026. The slip will be filled with dredge materials beginning in January and completed within the year. The fill will need to settle for a period before the area can be used for cargo laydown.
- **Pier 40/41:** this project includes another slip closure structure and berth extension project. It is funded with a state grant and port operating reserves. The slip closure structure and berth infrastructure will be completed by mid 2026. The slip will be filled in a future phase.
- **Pier 39-40 berth:** along with slip closures, this rehabilitation project makes it possible for the port to complete a 1,434ft-long berth extending from Pier 38/39 to Pier 40/41. Designed to accommodate 46ft-draught ships, the berth will be commissioned in the second half of 2026.
- **Pier 41 paving:** six acres at Pier 41 has been repaved to repair failed subgrade and concrete paving. Now that the giant holes are gone, the area is fully usable for cargo handling.
- **Grain elevator demolition:** the port demolished a decades-old, decommissioned grain elevator to add more acreage for cargo handling. The berth and some acreage are being used now for cargo ships. The area will be completely cleared for cargo use in 2026.

The Pier 38/39 slip will be filled with dredge materials in 2026 to add cargo laydown area at the Port of Galveston West Port Cargo Complex. The closure structure will be part of a new 1,434-foot-long berth.

This is the first time in decades that the port has made an investment of this size in our docks. These master plan projects demonstrate the Port of Galveston's commitment to a diversified revenue stream and jobs growth.

The investment puts the port on the cusp of a new era of cargo growth for Galveston. For the first time in decades, the Galveston Wharves and its partners can develop the cargo business to its full potential, generating hundreds of new jobs and tremendous economic growth for the region.

About the port

Located at the entrance to Galveston Bay and the Houston Ship Channel, the Port of Galveston has been a thriving maritime commercial centre for more than two centuries. Just 45 minutes from open seas, the 840-acre port has infrastructure and assets to serve growing cruise, cargo and commercial businesses.

The port is the fourth most popular cruise home port in the US. The port also leases and maintains a wide range of cargo facilities on the deep-water Galveston Harbor, which is ranked among the top 40 busiest US cargo waterways. The Galveston Wharves is a self-sustaining city entity whose mission is to generate and reinvest port revenues to benefit the Galveston community with economic growth, jobs and sales tax revenues.

The Port of Galveston is one of the busiest cargo ports in Texas, typically moving more than 3mt of cargo a year, including roll-on/roll-off, dry bulk, liquid bulk, general and project cargoes. Facilities at the port include:

- 840 acres.
- 24 berths.
- 307 acres available for development.
- 20,000 linear feet of developed waterfront.
- 46-foot authorized channel depth.
- one turning basin with 37-foot depth and widths up to 1,500 feet.
- 45 minutes from open seas.
- 10 minutes from Interstate 45.
- Rail: 2 Class 1 rails and one short line.
- Foreign Trade Zone #36.
- West Port Cargo Complex.
- State-certified internal police department.

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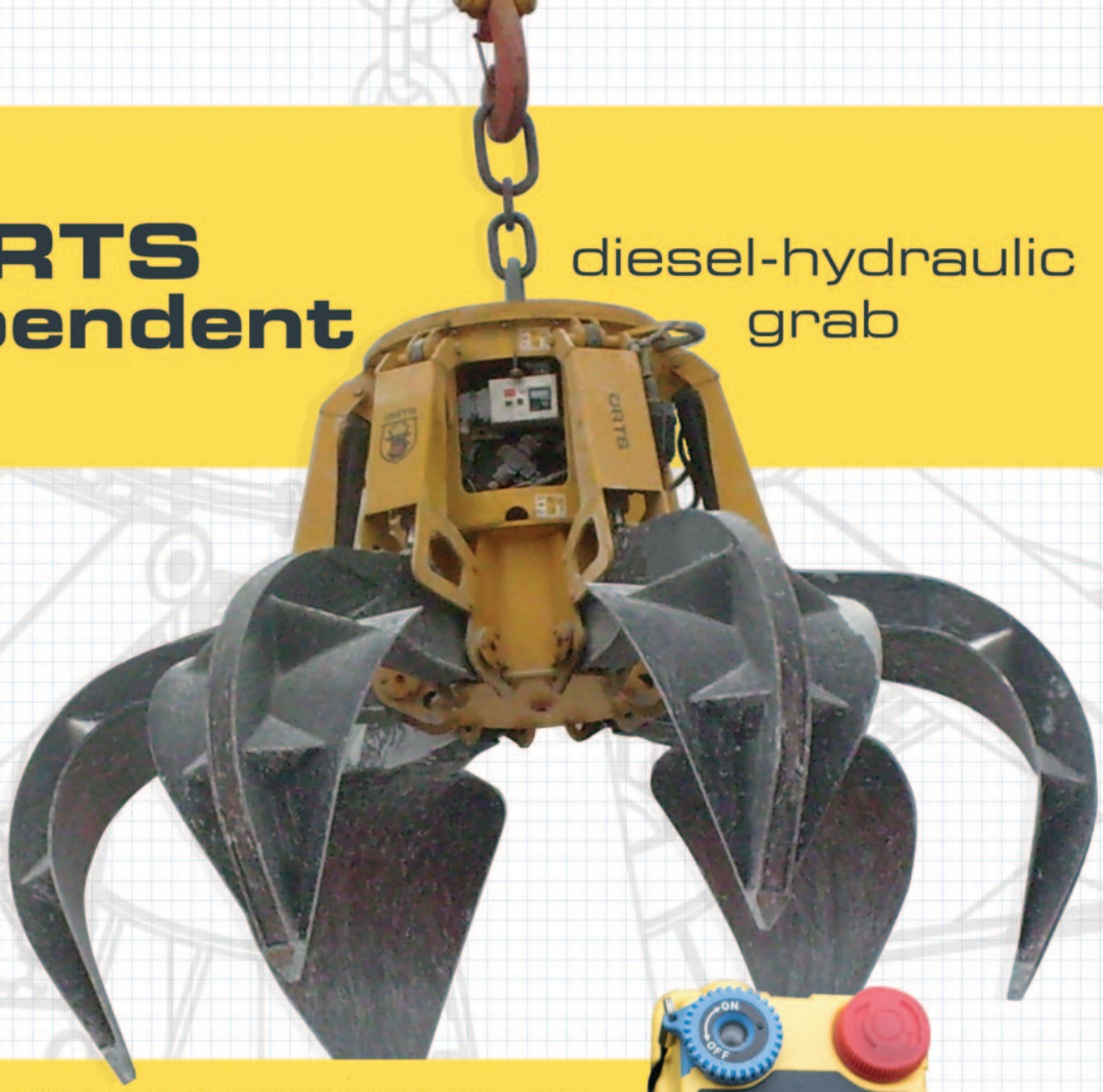

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