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FEBRUARY 2018 issue

featuring...



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# Enhanced support for dry bulk trade

**T**he upwards trend in commodity import demand around the world gained momentum last year. Various signs suggest that it could remain solid through 2018. Preliminary calculations confirm a much improved performance in global seaborne dry bulk trade during 2017, with perhaps a doubled annual growth rate of about 4%.

This outcome was supported by a firm acceleration in economic output growth. Based on IMF estimates published towards the end of last month, the world economy's GDP may have expanded by 3.7% in the past year (compared with 3.2% in the preceding twelve months). A further uptick to 3.9% is envisaged in 2018, within what the IMF describes as "the broadest synchronized global growth upsurge since 2010".

## COAL

Many dry bulk commodity trades benefit from briskly performing economies but the coal sector's position has become more complex, because of environmental pressures. Despite these restraining influences, global seaborne coal trade resumed growth last year and the volume appears to have increased by at least 2% and possibly much more.

In the coking coal sub-sector movements have strengthened, reflecting higher steel production in many coal importing countries. Table 1 shows estimates for key Asian importers. The main countries in this region, together comprising about four-

fifths of the world coking coal trade volume, apparently raised imports by 3% to 233 million tonnes in 2017 and may see further expansion in the year ahead.

## IRON ORE

Buoyant steel production in most areas is boosting iron ore consumption and imports. Prospects for this year look positive in some areas but there are doubts about China's trend. A full statistical picture of steel output in 2017 was published a few weeks ago by the World Steel Association, confirming the widespread upturn unfolding.

Among the most prominent raw materials importers, crude steel production last year was generally 4-6% above the previous year. The main exception was Japan, where the volume was flat, at 105mt. European Union members and South Korea achieved 4% increases, to 169mt and 71mt respectively. India's production rose by 6% to 101mt, while in China steel output was 6% higher at 832mt.

## GRAIN

World movements of grain still seem likely to increase by about 2% in the current 2017/18 crop year ending June, replicating the growth rate seen in the previous twelve months. Changes envisaged among importers are mostly not especially large, with reductions exceeded by rises.

Recently updated International Grains Council estimates show global

trade in wheat plus corn, barley and other coarse grains rising by 7mt (million tonnes) in 2017/18, to reach 360mt. Coincidentally several importers are forecast to raise their imports to 22mt: a 12% rise in the European Union, a 14% rise in Egypt, and 9% growth in Mexico. Indonesia could see a 8% increase to over 11mt, and in South Korea a 7% advance to over 14mt is predicted. These larger volumes are likely to more than offset decreases.

## MINOR BULKS

Exports of steel products (coil, plate, sheet and other items) evidently were affected by weakening influences over the past twelve months. One of the largest elements, China's exports, which exceeded one hundred million tonnes annually in recent years fell steeply during 2017 from 108mt in 2016. By contrast, US imports were up by 4mt (15%) last year, reaching over 34mt.

## BULK CARRIER FLEET

The world bulk carrier fleet's deadweight capacity expanded by 3% during the past twelve months, to 817m dwt at year-end based on Clarksons Research data. Deliveries of newbuilding vessels, and sales for scrapping, were both lower but scrapping diminished especially rapidly. As shown by table 2, newbuildings were about 18% lower in 2017, and a further sharp decline is widely expected in the year ahead as a result of a much reduced orderbook.

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

	2012	2013	2014	2015	2016	2017*
Japan	70.5	77.0	74.1	70.6	74.0	72.0
South Korea	25.7	26.4	29.9	32.5	32.0	33.0
Taiwan	10.5	10.9	10.9	10.8	10.5	11.0
China	53.6	75.4	62.3	48.0	59.3	68.0
India	35.5	39.0	47.5	50.5	51.0	49.0
<b>Total of above</b>	<b>195.8</b>	<b>228.7</b>	<b>224.7</b>	<b>212.4</b>	<b>226.8</b>	<b>233.0</b>

source: various & BSA 2017 estimates

\* estimate

**TABLE 2: HANDYSIZE 10-39,999DWT BULK CARRIER FLEET (MILLION DEADWEIGHT TONNES)**

	2012	2013	2014	2015	2016	2017*
Handysize (10-39,999dwt)	10.5	6.3	5.4	6.5	4.6	3.4
Handymax (40-64,999dwt)	20.9	14.7	11.4	15.9	13.2	11.0
Panamax (65-99,999dwt)	27.0	19.9	12.8	9.9	9.4	9.0
Capesize (100,000dwt and over)	41.9	22.0	18.7	16.9	20.0	15.4
<b>Total</b>	<b>100.3</b>	<b>62.9</b>	<b>48.3</b>	<b>49.2</b>	<b>47.2</b>	<b>38.8</b>
% change from previous year		-37.3	-23.2	1.9	-4.1	-17.8

source: Clarksons Research & BSA estimates for 2017

\* estimate

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## Japanese invest in Moatize as production ramps up



Japanese banks and institutions are becoming firmly entrenched in the Moatize mining and rail operation in Mozambique. In November 2017, the Japan Bank for International Cooperation (JBIC) made available a loan of \$1.03 million to main shareholder Vale. Japan's interest in the project was heightened when, earlier last year, Mitsui acquired a 15% stake, which has also made additional Japanese funding available from other sources. The Japanese government, for its part, has committed to acquire additional better quality coking coal

for the country's steel industry.

Estimates suggest that the mine will have increased production of coking coal to 7.2mt (million tonnes) in 2017. This would be equivalent to growth of 106% on the year.

As for thermal coal, the forecast is for production of 4.5mt last year as against just 2mt in 2016.

When both are added together, production at Moatize will have grown by 113% overall to 11.7mt.

For 2018, the aim is to boost output

further, to 16mt, thence to 20mt by 2021.

Exports for 2017 were on course to grow by 44% on the year to 12.4mt. Of these, 11.1mt were shipped via the Nacala logistics corridor and 1.3mt via the Port of Beira, which is also in Mozambique.

The greater output has allowed Vale to cut production costs in Moatize, which in 2017 amounted to \$78 per tonne, down from \$109 per tonne the previous year. Over the next five years, costs will continue to fall, reaching an estimated \$56 per tonne in 2022.

*Barry Cross*

## NALCO seeks permission to lease Pottangi bauxite mine

Indian company National Aluminium Company (NALCO) is seeking permission to lease the Pottangi bauxite mine, which covers an area of 697 hectares in the Koraput district in Odisha (formerly Orissa).

The company already operates a bauxite mine in the Panchpatmali Hills of

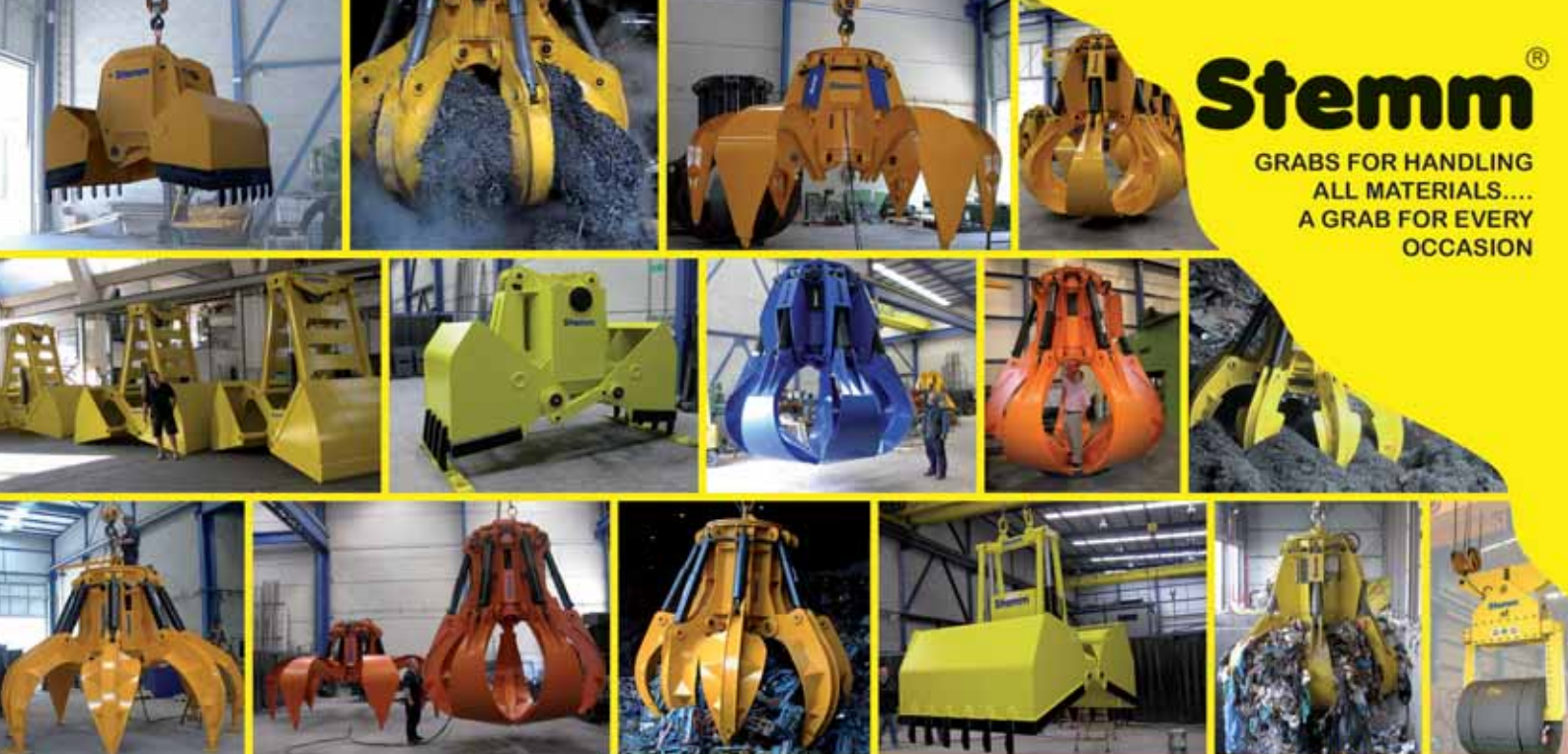
the Koraput district. This is a fully mechanized opencast mine, and has been in operation since November 1985. It serves feedstock to the Alumina Refinery at Damanjodi located on the foothills.

A decision on the application to lease Pottangi is expected to be made shortly by the expert appraisal committee of the

Ministry of Environment, Forest & Climate Change (MoEFCC). The Pottangi bauxite mining lease is set to have an annual capacity of 3.5mtpa (million tonnes per annum). The 75mt bauxite reserves in the Pottangi mine would feed the planned newly expanded 1mt NALCO refinery at Damanjodi.

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# Coal trade upturn raises expectations

*A clamshell grab from Versteegen handling coal cargoes.*



**Richard Scott, Bulk Shipping Analysis**

Anxiety in commodity and freight markets about prospects for global coal trade has receded, amid resumed growth over the past twelve months. But worries about the longer term trend are still at the forefront. Environmental pressures remain prominent and competition from alternative ‘cleaner’ sources of energy, especially gas and also renewable energy are a real threat.

At present, estimates for coal trade in 2017 are provisional. Based on available data coupled with best guesses about the missing elements, the annual increase last year was substantial. Many of the largest importers are known to have raised their volumes. This outcome is a sharp contrast with what happened in the previous two years, when a weakening trend seemed to be becoming a pattern which might persist over following years.

One overriding problem for forecasters now is uncertainty surrounding the global

coal market’s ongoing strength and how much support exists for further trade growth, during 2018 and later as well. There are widespread expectations that a longer term robust upwards trend in coal import demand around the world is unlikely, indeed highly unlikely. Nevertheless, another increase this year does seem to be a probable outcome, although a flat or decreased overall volume is also a possibility, perhaps resuming the earlier negative trend pattern.

#### **A SOLID BACKGROUND**

Energy demand in general, and coal demand in particular, has been supported over the past year by a stronger performance in the world economy. This positive trend looks set to persist during the twelve months ahead. Based on recent indicators, and assumptions about how the main economies — USA, European Union, Japan

and China — will evolve, the immediate outlook seems quite promising.

According to the International Monetary Fund’s latest (January) update, progress in 2017 was enough to raise the world economy’s gross domestic product growth rate by half a percentage point, from 3.2% in 2016, to 3.7%. This measure of goods and services output could accelerate again, albeit modestly, to 3.9% this year, according to IMF economists’ calculations.

Major contributors to the GDP improvement last year were several countries which are key coal importers — China, Japan and European countries. An exception was India, seeing a reduced rate of economic expansion which was still robust. The USA’s acceleration greatly boosted the global economy’s trend, but US implications for coal trade as an importer are limited, because it is mainly an

## WORLD COAL TRADE — PRINCIPAL IMPORTERS (MILLION TONNES)

	2016	2017	2018*	2019*	2018 ** % change
China	255	271	257	237	-5
Japan	189	192	195	196	+2
India	214	190	187	188	-2
South Korea	135	142	141	141	-1
European Union	203	196	185	176	-6
other importers	363	375	388	397	+3
total	1,359	1,366	1,353	1,335	-1

\* forecast \*\* 2018 forecast compared with previous year

source: Australian Government Dept of Industry, Innovation and Science, 8 January 2018, and BSA calculations

export supplier to the international market.

If the broad economic background remains favourable this year, coal trade will derive some benefit. The IMF's chief economist observes that "as the year 2018 begins, the world economy is gathering speed", an encouraging sentiment. More specifically, this trend implies rising levels of production in energy-consuming industries. But the downside for coal is the increasing intensity of government measures in numerous countries, designed to cut air pollution and reduce carbon emissions, a determined and forceful effort seemingly set to persist for many years.

#### TRADE RECOVERY UNFOLDS

The coal trade year of 2017 was remarkable, because the global import demand trend revived solidly, confounding expectations of a flat or lower volume. During the preceding two years what had been previously a strongly expansionary evolution, over a long period, abruptly went into reverse. In 2015 a 5–6% actual reduction in seaborne coal trade occurred, followed by a flat twelve months with no growth in 2016.

Current estimates of the upturn last year vary. One recent calculation was revealed early last month by the Australian Government Department of Industry, Innovation and Science (AGDIIS), which regularly publishes detailed analysis. This estimate, which includes land movements but is mostly comprised of seaborne shipments, is shown in the summary table above. It suggests that 2017 growth was minimal, with coal trade volume increasing by only 7mt (million tonnes) or under 1% from the previous year, to 1,366mt.

Alternative estimates by reputable forecasters, all of which are very provisional because comprehensive data for the final part of the year is not yet available, show a larger annual increase. For example, according to mid-January reports, the German coal importers association

estimates that world seaborne coal trade during 2017 grew by 1.5%. Other analysts point to a likely 2% to 5% growth range. These figures seem to be more in line with specific indicators and market observations than the alternative assessment depicting no significant increase.

Both steam coal and coking coal trade sub-groups appear to have seen higher volumes in 2017. The smaller category, coking coal trade, comprising around one-fifth of overall coal movements, was supported by a pickup in steel production in many large producing countries. In the dominant category, steam coal trade, comprising the remaining four-fifths, additional electricity generation in coal-fired power stations using imported fuel was a feature.

Higher imports into China and South Korea provided a sizeable boost for the world total last year. China's overall coal imports including low-grade lignite rose by 16mt or 6% to reach 271mt, although the positive impact on seaborne trade was limited by a 7mt rise in overland shipments from Mongolia. South Korea reportedly saw a large 13mt (11%) increase to more than 131mt.

Among other prominent buyers, a limited extra volume apparently was seen in Taiwan. Several other key importers, including Japan, India and European Union members as a group, are estimated to have recorded similar volumes to those received in the previous twelve months.

Changes among suppliers affected the geographical pattern of global coal trade. Early-reported figures available reveal that number two supplier Indonesia raised its annual export volume in 2017 by 24mt (7%) from the preceding year, to 371mt. In South Africa, another of the world's key suppliers, exports from the Richards Bay port which comprise most of the country's foreign sales increased by 5%, to a record high 76.5mt level. Four-fifths of that quantity was sent to customers in the Asian region.

Australia is the number one coal supplier and the 2017 export total is estimated to have fallen to around 370mt. The coking coal element, contributing the dominant part of global trade in that sector, weakened sharply. This outcome resulted from disrupted movements and loading delays, caused by Cyclone Debbie in late March. By contrast, US coal exports which previously had been receding, abruptly revived last year, with seaborne volumes estimated to have jumped by more than 60% from the 50mt seen in 2016.

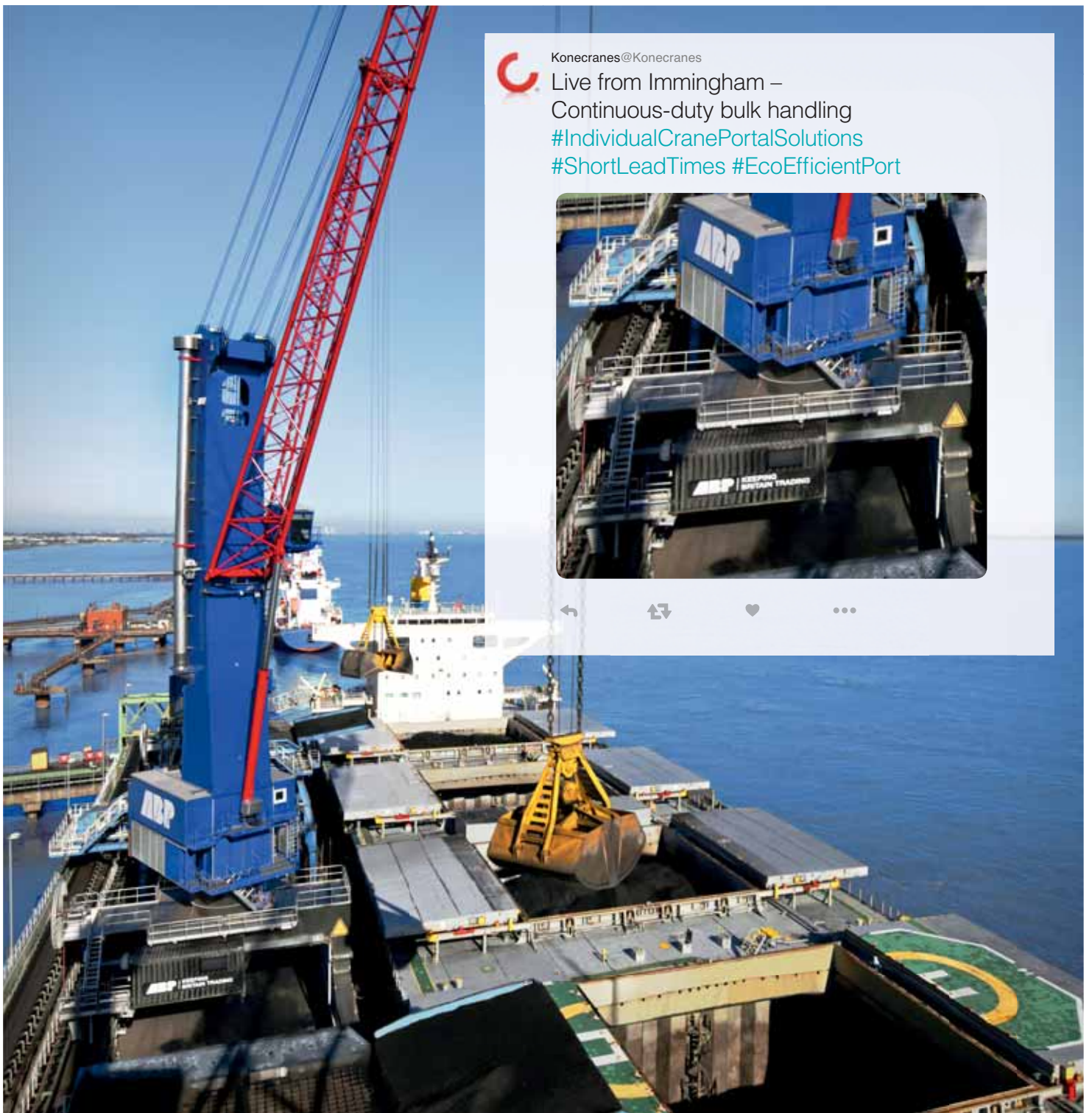
#### FURTHER GROWTH IN 2018?

After the upturn unfolding last year, and amid continuing signs of positive influences which may persist through 2018, coal trade prospects could be broadly assessed as encouraging. Another sizeable increase in the global total seems possible, as import demand strengthens further.

But great imponderables are visible. There is sufficient uncertainty — exacerbated by a few perhaps completely unpredictable aspects — suggesting that precise predictions, especially of growth, are difficult to justify. One key aspect is the influence of government policy, which is subject to unforeseen changes and often has negative effects, in several large importing countries. In particular China and India, jointly comprising over one-third of world import demand, amplify this aspect. In these countries, commercial influences are widely modified by policy decisions affecting energy markets.

Consequently there is scope for noticeably varying forecasts. Some are based on more positive assumptions or guesswork, pointing to a sustained upwards trend in global coal trade this year, at a moderate growth rate. Other predictions suggest that either a flat performance or a downwards change is more likely, given the underlying potential for reinforced negative influences to become more prominent eventually.

The AGDIIS forecast for 2018 and next



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year, shown in the accompanying table, is an illustration of how trade could develop, based on a pessimistic view. World trade in steam and coking coal (including land movements, but mostly comprising seaborne shipments, as already mentioned) is forecast to decrease by 13mt or 1% in 2018, to 1,353mt. A further slight reduction to 1,335mt is expected in 2019.

Weakness over the next two years is expected to be concentrated in China and the European Union, where large annual declines in the 5–8% range are envisaged. In the other countries listed individually in the table, annual volumes are expected to show only limited changes. Japan's volumes could actually rise on this view, while India and South Korea see small decreases. Within the large residual category labelled 'other importers', many of which are Asian countries, a strengthening trend is seen as persisting.

Focusing on prospects for the year ahead, 2018, a breakdown (which is not shown in the table) of trade movements into the two elements steam coal and coking coal, reveals that negative changes foreseen are concentrated in the steam coal sector. Coking coal trade is forecast to rise this year, by over 2% to reach 315mt. Conversely, steam coal trade is expected to decline by 20mt or 2% to 1,038mt, resulting in the overall reduction highlighted.

Within that forecast for this year, a large 12mt or 17% fall in China's coking coal imports to 59mt — which could be more than offset by other importers' stronger volumes — is estimated. Steam coal imports into China this year are put at 198mt, only a minimal 1% decrease. Declining Chinese steel production levels are envisaged, partly explaining the reduced need for imported coking coal. Another reason implied is enhanced coal availability from domestic mines, although signs suggest this improvement might prove difficult to achieve.

Reduced European import demand is another negative expectation. AGDIIS analysts predict a flat trend for coking coal imports into the EU, totalling 41mt in 2018, but steam coal could see a substantial 11mt (7%) fall this year, down to 144mt. Reasons are not elaborated

in the latest commentary. However, it can be assumed that among considerations is the sustained pressure to reduce coal-fired power generation, a priority for environmental policy. Accompanying promotion of alternative cleaner fuel use, especially natural gas, and the heavy emphasis on renewable energy sources particularly wind power generation, is prominent.

India is another country where potential for reduced coal imports is clearly visible, although the forecast shown incorporates only a minor decline of 3mt (2%) in 2018, to 187mt. Coking coal purchases from foreign suppliers could remain buoyant, raising the total for that coal type by one million tonnes (2%) to 50mt, assuming rising steel production and a shortage of good quality coking coal from domestic mines. By contrast, continued weakening of steam coal imports may result this year in a 3% reduction to 137mt, reflecting buoyant domestic coal production and some other influences.

#### LIMITATIONS ON OPTIMISM

Despite the evident potential for unfavourable effects from government policy changes and other influences, a number of forecasters predict rising, albeit slowly rising, global coal trade at least in the next twelve months ahead. A 1% or 2% increase in 2018 has been suggested as a realistic possibility. Policy changes may not necessarily actually reduce import demand in the near future, while several perhaps only short-term factors could provide additional support.

One favourable trend still seems likely to endure in 2018. Assuming that the world economy's performance remains fairly vigorous, steel production could be buoyant, assisted by a pickup in capital investment spending which tends to be steel-intensive. Among countries relying on imported steelmaking raw materials, coking coal purchases may be strengthened. Buoyant steel output almost automatically implies a corresponding trend in coking coal consumption, since the majority of steel mills use the blast furnace method of production.

Also, looking around the world, there are countries mostly in Asia where coal-fired electricity generation remains the preferred option. Reliable, economical extra power supplies are needed to satisfy rapidly rising demand for energy as economic development progresses and living standards improve. Additional coal imports into countries including Pakistan, Bangladesh, Vietnam and Thailand are foreseeable in the years ahead.

Increasing imports by smaller buyers together are unlikely to offset big reductions in some of the larger importing countries in all future years, however. Nevertheless, enough potentially positive changes may assist in slowing the rate of decline in global seaborne coal trade. Moreover, policy changes having negative effects are often temporarily reversed or eased, especially when power shortages arise and coal, often imported, is the most or one of the most immediately available alternative resources. DCi



*Fuchs material handler moving coal for the Makoya Group in South Africa.*

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## Underwater seal repairs avoid drydock and off-hire costs



*Hydrex can carry out repairs to stern tube seals during a ship's routine port visit.*

Following a spate of stern tube seal failures, Antwerp-based Hydrex has reiterated its capability in carrying out repairs to stern tube seals during a ship's routine port visit, saving the expense and loss of revenue of unscheduled drydocking.

Stern tube seals can suffer undue wear or damage due to a variety of causes, causing water ingress and oil leaks. With ever-tightening environmental regulations resulting in heavy penalties for oil pollution, rapid and timely repairs are essential.

The company's flexible Mobdock repair method allows seals to be repaired or replaced while the ship is afloat in harbour, allowing shipowners to keep vessels earning revenue by avoiding extra visits to drydock.

A recent stern tube repair was carried out to a tanker berthed in Antwerp. "Although this was very close to our headquarters, we can undertake similar work anywhere," says Hydrex CEO Boud van Rompay. "Our well stocked fast response centre can deliver the necessary equipment anywhere in the world without delay. All of our offices are equipped with the latest facilities, lightweight equipment

and tools, and our network of skilled technicians can be mobilized to be ready to start work as soon as the ship arrives at its next port of call."

It is not always straightforward to replace seals. There can be considerable variation in the size of the stern tube itself and the liners can be worn down and show ruts. In the case of the tanker in Antwerp, a thorough underwater inspection of the stern tube seal assembly revealed that a rope and a fishing net had become entangled. Hydrex divers removed both, and the flexible Mobdock was installed to allow the repair work to be undertaken in dry conditions.

Hydrex technicians removed three damaged seals and replaced them with new ones. Hydrex worked in close co-operation with the seal manufacturer, which allowed the company to provide the client with original spare parts, thus guaranteeing a sound repair using the best quality material. To help ensure this, a technician from the seal manufacturer was in attendance during the repair.

Van Rompay said: "Taking advantage of the Hydrex flexible Mobdock technique the

team was able to carry out the entire repair on-site and underwater. Because all the required equipment is ready to be transported at any time, there is no wasted time making preparations and it is possible to carry out the entire job without delays to the vessel's schedule."

Antwerp-headquartered Hydrex is renowned for bringing drydock-like conditions to ships and offshore units. This helps owners to extend their vessel's drydock interval and eliminates the loss of time and production brought about by drydocking.

Using its patented Mobdock concept (mobile mini drydock), Hydrex diver/technicians can perform permanent repairs to all parts of the underwater ship propulsion system, as well as steel work or crack repairs in drydock-like conditions.

Because of the nature of repair work, it is often necessary for solutions to difficult problems to be worked out in a short time period, sometimes even after an operation has already started. Through a worldwide network of offices and service stations, Hydrex can provide start-to-finish solutions economically at any location.

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## U-Ming of Taiwan signs its largest-ever contract of affreightment deal

### U-MING ORDERS TWO VLOCs FROM CHINA YARD

U-Ming Marine Transport (Singapore) Private Limited, a subsidiary of U-Ming Marine Transport Corporation (2606), has signed a 25-year contract of affreightment (COA) with Vale International SA of Switzerland. The COA is the biggest and longest commitment in U-Ming's history and the total contract value is anticipated to be more than US\$600 million with a bunker adjustment clause.

The owner has also ordered two 325,000dwt Very Large Ore Carriers (VLOC) from China's Qingdao Beihai Shipbuilding Heavy Industry Co. Ltd. to facilitate the contract.

A U-Ming spokesman said today: "U-Ming Marine Transport has long-term relationships with major mining companies around the world and its proven track record of providing reliable transportation services is evident among its international customer base. The signing of this long-term contract has further enhanced the cooperation and relationship between Vale International SA and U-Ming. The COA will commence in 2020 until 2045 for transporting Brazilian iron ore to China. We have been able to secure a bigger portion of long term charters with stabilized revenue and profit for the company."

As part of its aspiration to be a leading eco-friendly shipping company, U-Ming has

ordered two VLOC ships (325,000dwt) with an LNG-ready design for retrofitting to 'dual fuel' in the future. The vessels are expected to be delivered in 2020. Each vessel will be equipped with a state-of-the-art eco-efficient main engine, SO<sub>2</sub> scrubber features, digital optimization systems, and comply with the International Maritime Organization's 2020 sulphur cap of 0.5% with effect from 2020. These environmentally responsible vessels adhere to the latest international maritime regulations which provide green shipping to customers with significantly reduced greenhouse emissions.

U-Ming notes that the dry bulk shipping market recovered significantly in 2017. The overall Baltic Dry Index (BDI) achieved an annual growth of 70% to 1,145 points.

U-Ming also said China's economy grew by about 6.9% last year and overall the performance was better than expected in 2017. China's value-added industrial output maintained by more than 6% steady growth and the annual growth of total profits earned by Chinese industrial enterprises exceeded 20%. China imported about 1.0814 billion tonnes of iron ore, a growth of 5.5% year-on-year, in 2017.

China's iron ore demand has been rising and its import hit a record high in 2017; of which 60% was from Australia and 20% from Brazil. Major mining companies have

been increasing their iron ore production capacity to meet China's demand.

According to Australia official estimates, the world iron ore total export in 2019 will reach 1.378 billion tonnes, a 7% growth as compared to 2017, of which Vale's new S11D mine will reach a nominal capacity of 90 million tonnes per annum by 2020 with an iron content of up to 66.7%. The total iron ore export from Brazil in 2019 is expected to be 10% more than in 2017.

The U-Ming spokesman added: "This COA is contracted to meet the iron ore demand growth especially in China and other developing countries; and with U-Ming's prudent management and customer service oriented vision to create a win-win for both parties."

### ABOUT U-MING :

U-Ming currently owns and operates VLOC, Capesize, Post-Panamax, Kamsar-max, Panamax, Ultramax, Supramax, cement carriers, Very Large Crude Carriers (VLCC) and LRI tankers — amounting to 50 vessels (including vessels that are in operation, under construction, joint ventures and ship management service); with a total deadweight of 6.82 million tonnes. With subsidiaries in Hong Kong, Singapore and China Xiamen, U-Ming is the largest publicly-listed bulk carrier company in Taiwan in terms of gross tonnage.

## ABS achieves industry-leading safety milestone

On 31 January, ABS announced it had zero work-related lost time incidents during 2017. The corresponding Lost Time Incident Rate (LTIR) of 0.00 represents a significant milestone in the organization's continuing journey to safety excellence.

"Safety is the heart of our mission and remains at the core of all we do, so we are thrilled to realize this exceptional safety record result," said ABS Chairman, President and CEO, Christopher J. Wiernicki. "This achievement adds to our already strong industry-recognized safety leadership. At the same time, we continue to promote safety excellence through ongoing training and process improvements that enable and empower employees to recognize and control hazards in their daily work environment."

ABS has an ongoing safety excellence programme which incorporates strong

occupational health and safety processes and policies, including its Stop Work Obligation rule authorizing all employees



to intervene if safety is in question in any aspect of their work.

"A world-class safety culture requires attention and consistent actions to drive positive behaviour and change. Globally, ABS employees are mission-focused and passionate about being leaders in safety excellence," said Wiernicki.

ABS continues to strengthen its global Health, Safety, Quality and Environmental (HSQE) record with

increasing engagement of several leading safety behaviours, including timely reporting of potential incidents or hazards and documenting near misses. ABS also holds a leading position in safety with all major Port State Control areas while maintaining its focus on exceptional client service delivery.

### ABOUT ABS

ABS, a major global provider of classification and technical advisory services to the marine and offshore industries, is committed to setting standards for safety and excellence in design, construction and operation. Focused on safe and practical application of advanced technologies and digital solutions, ABS works with industry and clients to develop accurate and cost-effective compliance, optimized performance and operational efficiency for marine and offshore assets.



## Bahri Dry Bulk wins SAR 360m financing from Bank Albilad to purchase four new bulk carriers

Bahri Dry Bulk, a business unit of global transportation and logistics provider Bahri, has announced that it has secured a Sharia-compliant funding of SAR 360 million (US\$95m) from Bank Albilad, one of the fast-growing banks in Saudi Arabia, to finance the purchase of four new bulk carriers as part of an agreement signed by the company in 2017 with Hyundai Mipo Dockyard (HMD), a member of Hyundai Heavy Industries (HHI) Group, the world's largest shipbuilding company based in South Korea.

The credit facility, to be paid over six months, and has a tenure of 13 years including a three-year grace period, will be used to finance 80% of the agreement concluded on 27 August last year. The company has provided all the necessary guarantees for obtaining the loan, including a pledge of the four carriers upon delivery from the shipbuilding yard.

"We are pleased to collaborate with Bank Albilad to obtain this Sharia-compliant credit facility for purchasing the four carriers, which we signed in the fourth quarter of 2017 with Hyundai Heavy Industries (HHI) Group, to enable us to cater to the growing demand for the import of essential grains into KSA," said Ali Al-Harbi, CFO of Bahri.

"It also makes us proud that the financing deal with Bank Albilad, which is known for its initiatives to support the Kingdom's business development and economic growth, contributes toward the concerted efforts made by different sectors in the country to help meet its wide-ranging needs and further cement its pre-eminent position as a global economic powerhouse," added Al-Harbi.

For his part, Nezar Banabeela, President of Bahri Dry Bulk, said, "The new funding from Bank Albilad is a major

milestone for Bahri Dry Bulk as we are keen on expanding our business into new markets in the region and globally, to explore new horizons of growth and play a key role in supporting the Kingdom in achieving the national goals and strategic directions of the government. Moreover, with the addition of four new carriers to our fleet, we will be fully equipped to cater to the increasing demand for essential grains, such as barley, wheat, and corn, in the country."

Established in 2010 as a 60/40 joint venture between Bahri and Arabian Agricultural Services Company (ARASCO), Bahri Dry Bulk is a leading bulk carrier in Saudi Arabia specializing in the transportation of grain, coal and other dry bulk cargoes. The company currently owns and operates a state-of-the-art, large capacity, fuel-efficient fleet of five dry bulk vessels.

## SEA\LNG launches LNG bunker navigator tool

### NEW TOOL PROVIDES EVOLVING OVERVIEW OF THE RAPID DEVELOPMENT OF LNG BUNKERING INFRASTRUCTURE

On 30 January, SEA\LNG, the multi-sector industry coalition aiming to accelerate the widespread adoption of liquefied natural gas (LNG) as a marine fuel, announced that it has launched a new free-to-access online tool to improve understanding of the current, and rapidly evolving, LNG bunkering infrastructure landscape.

Launched from the 6th LNG Bunkering Summit, the new Bunker Navigator Tool utilizes member, marine information services, and publicly available data to provide easy access to the latest developments in the global LNG bunkering infrastructure.

SEA\LNG's map-based tool, provides an overview of key LNG bunkering developments and how this growing infrastructure relates to major global shipping routes, traditional oil bunkering ports, and the bulk LNG infrastructure which will provide the foundation for future bunkering services.

As the 2020 0.5% global sulphur cap edges ever closer, shipowners must make decisions that remain viable into the future — and choose between a limited number of options; LNG, scrubbers, or low sulphur fuels. SEA\LNG believes that demonstrat-

ing — through the newly launched Bunker Navigator Tool — that LNG bunkering infrastructure is available globally and is continually developing will support ship owners' investments in LNG-fuelled ships.

Peter Keller, SEA\LNG chairman and executive vice president, Tote said: "The coalition's mission since inception has been to further the shipping industry's knowledge of the viability and sustainability of LNG as a marine fuel. A key barrier has been a general lack of understanding of current and forthcoming LNG bunkering infrastructure.

"What we sought to achieve with the Bunker Navigator Tool is a quick, easy-to-access platform that includes relevant, up-to-date, and free-to-access information on LNG infrastructure and bunker development."

Today, LNG is readily available in bulk at circa 150 locations worldwide, and there is a huge bulk LNG infrastructure of regasification terminals and liquefaction plants globally. Of the world's top oil-bunkering ports, nine of the top ten offer LNG bunkering, or will do so by 2020. However, it is the movement of LNG from bulk facilities to the ships, more commonly known as the 'last mile', where efforts are being concentrated to enable easy access to LNG as a marine fuel.

As well as an overview of key LNG bunkering developments, the map-based tool enables access to case studies which describe the bunkering projects being developed by SEA\LNG members at specific locations, with more added as they become available.

By addressing the core compliance issue for owners — the fuel their vessels are burning — LNG provides a viable solution for the long term. LNG emits zero SO<sub>x</sub>, virtually zero particulate matter, and — depending on the technology used — 90% fewer NO<sub>x</sub> emissions. LNG's greenhouse gas (GHG) performance represents a major step forward when compared with traditional marine fuels. Utilizing best practices and appropriate technologies can result in realistic reductions of GHG by about 20%.

Keller concluded: "A collaborative approach to understanding the opportunities — and then tackling the associated commercial barriers — to LNG is crucial to fulfil its potential as an alternative to traditional bunker fuels. The reality is that LNG bunkering infrastructure is expanding at pace, and with the launch of the Bunker Navigator Tool, SEA\LNG hopes to raise awareness of, and build industry confidence in, the rapidly growing global availability of LNG bunkering."



# Ship agents

## taking on board the importance of proper representation



Louise Dodds-Ely

### Wilhelmsen Ships Service: 'Your Ship, is My Ship'

Wilhelmsen Ships Service is a major presence in the ships' agency market. Here, *Michael Buchanan, the company's Ships Agency Director, Oceania & Singapore*, explains the importance of his company's work to the bulk market.

#### **1) What do you consider the role of a ships' agent to be in dry bulk?**

Our role as Ships Agents is to represent our customer in port, as described in the saying that 'Your Ship, is My Ship.' We as agents are the eyes and the ears of the ship and its cargo, where we see, and we hear everything during transport, and at port. In the context of a dry bulk agent, we need to ensure we have a full understanding of the requirements of the cargo being loaded or discharged. It is essential we also have a full understanding of the role we will take on as agents, based on the governance structure i.e. the charter party and how we are appointed by the owner/operator

and in what capacity we will serve as the agent. The experience and competence of the agent makes a huge difference when it comes to port operations. Quality agents help reduce the risk of delays and ensure transparency and efficiency for all parties.

#### **OPERATIONALLY**

The role of ships' agency in the dry bulk industry has significantly changed over time. Traditionally ships agents were seen as the vessel's only communication point through the port. Vessels would spend many days in port for loading/discharge developing a very close relationship with the port agent. Due to this legacy, ships agents were the vessel's 'go-to' person for everything and anything that was required.

These days, with advances in technology (i.e. email, internet, sat phone and shore-based equipment) vessels have a wide range of information and contacts at their fingertips. Vessels are less isolated from

communication than they once were and are spending significantly less time in port for loading and discharging. As such, the modern role of a ships agent is to proactively provide relevant port and terminal information, ensuring compliance with local regulations and providing specialized commodity experience.

#### **GOVERNANCE AND COMPLIANCE**

The role of an agent is also very strongly influenced by governance and compliance. We have to ensure that our principals adhere to all local regulations. Ultimately the agent is employed to help ensure everything is done correctly, even if that means having to re-refresh the principal on what is important and legally necessary.

#### **2) At what ports are you represented; and who are your major clients?**

Today we are represented in 2,000+ ports around the world. Our major customers

are among the largest traders on the planet e.g. cargo owners within the mining industry or trading houses in the dry bulk segment, as well as the larger shippers and receivers.

### 3) Who are your major competitors?

We believe in excellence in local port operations, thus local ships agencies that have local operational expertise, port knowledge with specialist commodity experience and the ability to act upon it would be considered competitors.

### 4) How much of your business relates to dry bulk?

Around 39% of our port calls relate to dry bulk.

### 5) What are your main challenges?

#### OPERATIONS

Reducing the potential for delays in the vessel coming in to load is essential. It is why we focus on training our agents to have specialized knowledge on the characteristics of cargo. This helps ensure the requirements on the conditions of the cargo holds are clearly communicated, not only to the Master of vessel, but to the owner and operator we are working for. A vessel failing a hold cleanliness survey is a major challenge, particularly if the vessel is calling at a port that does not have shore side capabilities to rectify the situation. However, prevention of a hold failure, by communicating the requirements to customers well before the port call is a far more effective way than being faced with a potentially costly cleaning operations and delays.

Weather is also a major issue with rain



*Ship agent with Master.*

affecting dry bulk loadings/discharges at port and cyclones impacting ports and delaying the maritime traffic, which is a major concern for most due to port congestion. Our responsibility is to ensure that everything is well prepared in advance in port for the delayed vessels that are affected and are under time constraints (berths, pilots, tugs, documents, fresh water/provisions, medical assistance, bunkers and repairs, handling of the goods, stevedores and freight/cargo collection). We make sure that this is clearly communicated with the shippers and receivers of the goods. That way they can rest assured that we are handling their vessel and cargo in challenging moments to avoid port congestion as much as possible. Furthermore, we have a #PortNews webpage on LinkedIn dedicated to reporting on the latest local port operational updates globally.

#### DIGITALIZATION AND INNOVATIONS

Another key challenge is to innovate, implement and excel in the many new

technologies that are in the market. Increasingly, our customers expect the same level of efficiency and simplicity as they have come to experience in their daily lives within the B2C space. Catering to this means we need to think of fresh ways for ships' agency to create value for its customers. It is why we are collaborating with our customers to pilot new innovation projects, such as drone delivery of parcels and creating digital dashboards with port call information.

#### COMPLIANCE

Another challenge we constantly face is that of compliance — the maritime industry is still one where corruption is still evident. In some countries, we have seen practices of bribery or improper facilitation. This is particularly challenging for us since we have a very stringent compliance policy for everyone in our team to fight against such practices. To support this, we chose to take a proactive stance by being an active member of MACN and to become TRACE certified in many of these countries.



*Ship agent by vessel gangway.*

#### ABOUT WILHELMSSEN SHIPS SERVICE

With offices in 125 countries, supporting our non-stop operations in more than 2000 port locations across the globe Wilhelmsen Ships Service (WSS) has the largest maritime services network in the world. Supplying a wide portfolio of maritime products and ships agency services worldwide to every conceivable vessel type, in every market and region, if it floats it has probably benefitted from WSS's expertise in port, on board or offshore.

## Jadroagent: Croatian ship agent for 71 years – and counting!

Jadroagent – International Shipping and Freight Agency d.d., Rijeka is a shares company listed on the Zagreb Stock Exchange, write *Vlatko Margan, Operations Department Director, and Ante Sabalic, general manager.*

Jadroagent has just celebrated the company's 71st birthday (est. 20 January 1947). As always it was another reminder of the strong duty to maintain the company's leading role among Croatian shipping and forwarding agencies and in the best way possible steer its future growth and development in the quickly changing field of international shipping and transport.

Good foundations were built in the past. Company predecessors selected younger co-workers whom they considered had both the education and prior experience which would enable and facilitate the 'next generation' to grow quickly and learn the specifics of the company business. Much care was put into educating, guiding and mentoring and wide opportunity was provided for hands-on experience in doing the actual jobs.

Of course the basic requirements from comfortable office space to latest software and communications equipment were understood, provided, maintained or updated throughout the past decades.

All of that and more is good, and Jadroagent continues doing it. It also, with a measure of pride, considers that those who are turning the wheels now, have developed and expanded the professional

and quality service the company always provided. Jadroagent has also accommodated to a much more competitive modern environment by both expanding the services it provides and by offering very reasonable prices.

Established initially as a clearance agency, Jadroagent first added chartering and booking services and later a full scope forwarding and a tourist agency department. From the year 2000, it has maintained an ISO 9001 Quality Management System now certified by DNV-GL. It has been awarded the FONASBA Quality Standard for Shipbrokers and Agents in 2010. The Croatian awards to both employees and the company are too many to mention, the last was received a few months ago from the Croatian Chamber of Commerce. Jadroagent is a member of FIATA and MarcoPoloLine Group, Lloyds agents and P&I Correspondents for numerous clubs.

In addition to its head office in Rijeka, Jadroagent maintains branch offices in all Croatian ports as well as in the country's capital Zagreb, now staffed by 155 colleagues, all professionals fully dedicated to their work and customers. The specific needs and requirements of agency clients are heard and respected; this not only ensures the clients' satisfaction but provides Jadroagent with constant opportunity to widen its awareness and gain more specific and in-depth knowledge of its field. Its highest satisfaction is to see its clients returning with new engagements.

Jadroagent's mission is to provide professional service, good quality and competitive value in all our activities:

- ❖ **forwarding:** as its largest sector, Jadroagent provides logistics solutions and customs clearance for all modes of transport, dry and liquid cargo, project cargo, containers and livestock;
- ❖ **port agency:** last year, Jadroagent covered 55% of total Croatian traffic in all ports, 1,985 vessels' calls of which 707 cruise vessels serving Costa Crociere, Crystal Cruises, Aida Cruises, Carnival UK and many others, numerous tankers (crude, products, LNG), dry cargo vessels from coasters to Panamax size, livestock carriers etc.;
- ❖ **chartering:** acts as ship/cargo brokers for voyage and t/c fixtures for dry and liquid cargoes and brokers for bunkering in Croatian ports; and
- ❖ **tourist agency:** highly specialized for cruise and ferry (preferred sales agents for Costa Cruises, also serving other principals such as Grimaldi Lines and Minoan Lines), incoming tour operating and managing a tourist complex of 33 apartments on the North Adriatic island Krk.

As a respected shipping agency in Croatia, Jadroagent serves the needs of its customers with a professional approach and deep understanding, good local knowledge and relationships. It is always ready to consider and recognize its customers' specific priorities and act as a friendly and co-operative partner.



## Adding value in port: efficiency is key, says WaterFront Maritime Services

Terry Gidlow, Chief Executive Officer of global port agency company WaterFront Maritime Services, explains why cargo expertise is key to adding value in port

The ship agency business is undergoing a period of significant evolution. Software systems designed specifically to enhance the operational capabilities of these very important service providers means that agents can now work with greater autonomy and control, with the ability to manage their work whilst on the move, and with greater accuracy than ever before. Supported with a wide range of automated systems in port and onboard, which provide a wealth of granular data and detailed information from across bulk supply chains, a good ship agent should be in a very strong position to add value to ship owners, operators, managers and charterers.

Unfortunately, however, not all ship agents have thus far embraced technological advancement in the same way, and far fewer are applying information and resources intelligently to the counsel that they can provide customers, or the way in which they deliver their services. The consequence is that many agency companies are operating inefficiently and out of sync with their principals and the customers that they serve. This is a great shame, given that the work undertaken by the agent in port is absolutely integral to the shipping supply chain, and significantly influences the ability to move cargoes in the safest and most cost-effective manner.

Yet, despite the increased focus on compliance and transparency across shipping operations, there is often a noticeable lack of due diligence exercised by some owners and charterers in appointing their agents in port. While, thankfully, this is the exception rather than the norm, the main problem here is the lack of consideration sometimes taken in ensuring that the ship agent has the relevant and proven local or commodity experience, and qualified staff in individual ports.

Of course, this is not to tar either side with a wide brush. By and large, most ship agency businesses are very respectable, highly capable and reliable outfits, which have built solid reputations based on their service excellence. But where there is an exception, there is a danger. And given the value of bulk commodities, the financial risk is also considerable.

For this reason, it is in the ship owner's,

manager's or charterer's best interests to carefully consider the agent that they appoint as part of their due diligence and compliance processes. In particular, they should thoroughly investigate the agents' access to market and port intelligence, as well as their cargo expertise and the operational resources and infrastructure that they have available to them in specific local ports.

It is precisely because commodity expertise and access to consistent granular data from ports and terminals worldwide is so important that our shareholders Sharaf Shipping Agency and Ben Line Agencies felt the need to collaborate and form WaterFront Maritime Services (WaterFront). They wanted to build a network designed to address the chasm between the depth of service and proven bulk commodity expertise provided by regional ship agency businesses with the breadth of service and geographic footprint that global ship agency businesses can offer.

More so, we wanted to marry the physical infrastructure of a global network with a robust data management system that would provide a level of insight and intelligence to deliver tangible savings to customers. To make sure that we had both, we designed and built our own workflow and data management system that is unrivalled in the agency market. As a global ship agency company comprised of a network of 413 offices across 66 countries, WaterFront provides the full range of ship agency services for the dry and liquid bulk trades and between its shareholders and Network Partners local offices handles upwards of 46,000 port calls per year.

The WaterFront network operates by using its own tailor-made hub system, whereby all operations are controlled through a global intelligence centre, and delivered by our Network offices in local ports. This means that customers are provided with a single contact for all their requirements, tasked with processing, aggregating and sanitizing big data to provide solutions to reduce specific efficiencies in port against carefully controlled workflow systems. Importantly, this IT system gives our regional and global hub offices as well as our clients full transparency across the entire workflow process.

It is capable of being integrated with our clients own internal systems to ensure a seamless transfer of data from the source at a port level, which other regional or global ship agency companies generally

cannot offer. For bulk cargoes, this foresight translates into considerable value and the ability to mitigate risk.

Within an increasingly digitized and automated shipping industry, we are certainly not shy of data or information. However, it is all redundant if it is not used properly. The challenge for dry bulk ship or cargo operators — or their ship agent — is in unearthing the clues that these complex digital imprints can offer about how to preempt change, or to make calculated assumptions about what we might encounter in future. Ultimately, in our increasingly digital world, those ship agency businesses able to use a critical approach to analysing supply chain data and translate the findings into innovative or 'actionable' solutions, can add significant value for their customers.

As a ship agent, being able to demonstrate you have all of the required attributes to deliver what your customer needs in port and the ability to solve specific problems in port or within their supply chain is central to delivering value, and mitigating against risk. This is particularly true when it comes to handling bulk cargoes; each of which has very particular handling requirements, safety considerations and particularities that must be tended to. Often it is the smallest mistake or oversight that can cost the most. Knowing who you are getting involved with can go a long way towards making sure your interests are looked after.

### WATERFRONT MARITIME SERVICES

WaterFront Maritime Services is a full service global ship agency business providing tailor-made solutions that deliver tangible value to its clients. Its service provision is expedited by utilizing its proprietary network of local offices and network of stringently vetted Network Partners across hundreds of ports spanning every continent.

WaterFront was founded by Ben Line Agencies and Sharaf Shipping Agency, two leading regional agency companies with unparalleled regional expertise, presence and pedigree in the provision of high quality agency services and market expertise. The 413-office network consists of 299 proprietary offices owned by the shareholders and 114 local offices owned by the Network Partners. A network of stringently vetted, carefully selected and continuously monitored Network Partners specialize in the provision of local services for dry and liquid cargoes.

**BEN LINE AGENCIES**

Ben Line Agencies (BLA) offers a wide range of maritime services in Asia. Through an extensive network of offices covering the region, BLA provides first-class marine agency and logistics services to many of the best-known names in the maritime sector. With over 150 years of experience in the shipping industry in Asia, BLA has established an extensive network of over 122 offices across 16 countries and has built a solid reputation based on integrity, consistency and competence.

**SHARAF SHIPPING AGENCY**

Sharaf Shipping Agency, established in 1976, is a major marine services provider offering ship agency services, ship supply services, cruise and naval services, chartering and broking, freight forwarding, logistics and warehousing, anti-piracy security services and P&I correspondents. Sharaf Shipping Agency has 177 offices in 32 countries across the Middle East, Africa and Indian Subcontinent region.

Forty years of experience has put Sharaf

Shipping Agency in a position to pioneer award winning, reliable and transparent maritime services in the shipping, marine and logistics arenas.

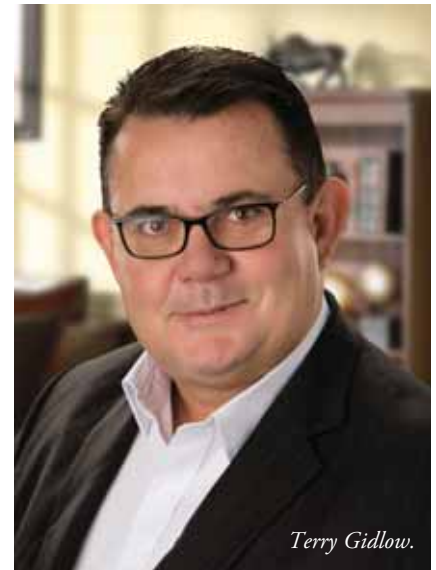
**EXECUTIVE PROFILE****Chief Executive Officer, WaterFront Maritime Services – Terry Gidlow.**

Terry Gidlow is responsible to the WaterFront Board and Shareholders for development and execution of the WaterFront Vision, Mission and Strategy. His personal ambition is to develop WaterFront into the benchmark for quality and value as a key business partner to the leading charterers, owners, operators, pool and ship managers.

Gidlow is a fellow of the Institute of Chartered Ship Brokers, and takes the helm of WaterFront having amassed 25 years of experience in the shipping and commodities markets.

Prior to joining WaterFront, Gidlow has held top management positions with global port agency businesses LBH Group (co-CEO), Inchcape Shipping Services

(Executive Vice President – Group Strategy / Mergers and Acquisition and EXCO Member), and Inchcape Shipping Services (Regional Managing Director – Asia). Gidlow also served as Vice President of Business Development for publicly-listed Chemoil Energy Limited.



*Terry Gidlow.*

## Ship agents – the value of quality

Ship agents have been employed for centuries to provide professional services to promote and protect the interests of those moving goods by ship at ports of loading and discharge.

Here's how the process begins: a ship Charterer hires the vessel from a ship owner, who agrees to carry the cargo. Many other parties are needed to facilitate and support these shipments such as ship brokers (bringing the parties together to form the charter), ship operators (commercially operate the vessel for the owner), ship managers (supporting the crewing and technical management of ships), and bunker brokers (arranging for the fuel to propel the vessels), to name a few.

Once the contract, or charter party, is 'fixed' and a vessel starts to perform the voyage, many more parties are employed in the ports such as the pilots, tug boats, line handlers, terminals, stevedores, surveyors, ship chandlers, security firms, repair firms, doctors, dentists and the like. Also engaged are the regulating governmental authorities. Who can provide the invaluable service to pull this all together to insure that the port call is carried out in the most timely and cost effective manner? The ship agent.

The phases of a shipment can be broken down into pre-fixture, post-fixture (loading and discharging) and settlement. The

charterer is the party that drives this process from their initial contemplation of satisfying their cargo needs to supply their factory, stores or that of their customers.

Once their inventory needs are determined, their next step is to charter a vessel to pick up and deliver their goods. This process is begun by accessing the vessel markets through their ship broker, who sends inquiries to the different owners and operators suitable to bid on the business.

Further inquiries are then made to the load and discharge ports to assess the myriad of items such as port costs, dimensions of the port and terminal, terminal load and discharge rates and so on to add to the other voyage costs in order to form a bid for the charterer. Who is contacted to provide timely and accurate information used for their bids to the charterer? The ship agent.

Which ship agent is contacted to provide the information needed? Depending on the type of charter party used, the charterer may 'nominate' the ship agent or the ship owners may have this right. The ship owner typically will have the right to 'appoint' the nominated ship agent to confirm his agreement to use the nominated agent. Of greatest importance, which ship agent has the most experience with the type of cargo, terminals and vessel? Will they provide an honest and accurate

picture of the port, congestion and costs or will they paint a rosy picture by underestimating costs to win my business? This is why the parties should be committed to identifying a quality ship agent.

A principal should select a ship agent who is committed to providing information accurately and in a timely manner, with the experience and commitment to execute the port call efficiently.

As with any product or service, it is important to identify differentiators to aid in your decision making. Look for a quality ship agency by starting with the fundamentals. Ownership, are the owners committed and capable to run their business? Do the company's owners and their managers show leadership in their industry by promoting it while remaining current on all of the rules, regulations and customs? Does the company have depth in personnel and are they committed to hiring the best people? Does the company support their employees by providing them with training and equipping them with the best tools to enable them to provide great service to their principals? Is the company fiscally responsible by exercising their fiduciary responsibility for their principal's advanced funds by employing proper accounting practices? Are they prepared to protect their risk and yours with proper insurance coverage, licences and permits?

Of these differentiators, which company



is willing and able to attain the highest standard in the industry by gaining the prestigious title of the Association of Ship Brokers and Agents (ASBA) Certified Quality Agent which is recognized by the Federation of National Associations of Ship Brokers & Agents (FONASBA) who awards ASBA agent members their Quality Standard (FQS)? The ASBA website provides details of the standards that must be met annually to earn this qualification. Why risk your valuable ship and cargo to anyone who is unable or unwilling to meet these standards?

Throughout the different phases of a shipment, the ship agent is involved from beginning to end. The agency company's average involvement from pre-fixture inquiries to final settlement of a disbursement account averages around 90 days on foreign flag ships (30 days pre-fixture/arrival, four days in port, three weeks to collect bills and send final D/A and 30 days to collect). This involves many man hours at all levels of the organization, 24/7. Let's also not forget that the ship agent's actions frequently result in time savings for the principal (time to make vessel arrange-

ments, identifying the quality vendors at the most reasonable prices, track down missing invoices, consolidating all invoices into one agent invoice, issuing payments to the vendors, etc). The ship agent's documents are also used by the principals and the ship brokers for the final freight settlement and well into the future if needed to settle disputes.

To be prepared for all scenarios of a port call, a quality ship agency must invest heavily in personnel, information technology and training to provide significant value to their principals. Through the actions or inactions of a ship agent, the cost of a port call can be highly affected, positively or negatively. Port expenses per port call in US ports can average between \$30–350,000 depending on the number of berths called, days in port, delays due to berth congestion, cargo delays and weather.

Who knows the port well enough to work with the different parties to establish the best arrival, docking, loading/discharge scenarios? Who is looking for the cost effective port based service providers? In today's low freight markets, a single day of dockage or savings gained by using one tug versus two can be the equivalent of a full days' charter hire. Have you selected the ship agent with knowledge who continually works to secure these savings for you?

Having invested in your cargo, ship and port expenses and vetted them all, make sure you equally vet and invest in a quality ship agent, easily identified as ASBA Certified or FONASBA Quality Standard, for your port calls.

## ASBA-certified ship agents

### ASBA CERTIFIED SHIP AGENTS

- ❖ A.R. Savage & Son, Inc.
- ❖ ACGI Shipping, Inc.
- ❖ American Shipping & Chartering
- ❖ Basden Agencies, Inc.
- ❖ Biehl & Co., L.P.
- ❖ Blue Water Shipping Company
- ❖ Bulkship Maritime Agency, Inc.
- ❖ Cascade Marine Agencies
- ❖ Fillette, Green Shipping Services
- ❖ GAC
- ❖ General Steamship Agencies
- ❖ Host Agency
- ❖ Inchcape Shipping Services
- ❖ John S. Connor, Inc.
- ❖ Lott Ship Agency, Inc.
- ❖ Luis A. Ayala Colon Sucrs., Inc.
- ❖ Max Shipping, Inc.
- ❖ Mentz Maritime Agency, Inc.
- ❖ Mid-Gulf Shipping Company
- ❖ Moran Shipping Agencies, Inc.
- ❖ Moran-Gulf Ship Agencies, Inc.
- ❖ Newship
- ❖ Nord-Sud Shipping Inc.
- ❖ North American Shipping Agencies
- ❖ Norton Lilly International
- ❖ Peabody & Lane Corp.
- ❖ Riley-Sherman Shipping Agency
- ❖ SMK Tanker Agency
- ❖ Southport Agencies, Inc.
- ❖ Tormar, Inc.
- ❖ Transmarine Navigation Corp.
- ❖ Valls Ship Agencies LP
- ❖ Gulf Harbor Shipping\*

\* New Member Certification Pending

## Host Agency offers over 90 years of experience to the US ship agency market

Host is committed to providing total solutions for customers' terminal, stevedoring, marine asset, and agency needs.

Host Agency has 16 offices along the US East and Gulf Coasts. While it is the largest dry bulk agent in the US, it handles a variety of commodities, including breakbulk, liquids, containers, and yachts. With each being so diverse, the agents ensure customers have personalized service to reach their goals.

### THE ROLE OF AN AGENT

An agent's role is to ensure each ship has a smooth experience at the port. Host's Vice President of Agency Operations, Bobby Scott, summed up the role of agents in three categories: "Money, time, and local knowledge":

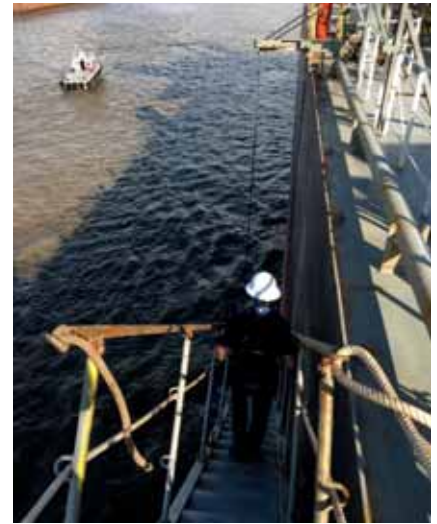
- ❖ **Money:** Agents are responsible for handling the payments for all services while the ship is in port.
- ❖ **Time:** Time is money. Agents want to provide customers with the fastest turnaround possible.
- ❖ **Knowledge:** Agents are the local 'eyes and ears' for their customers, providing local knowledge about what is going on at each port, whether that is port developments or issues that could affect their ship and/or cargo,

including unexpected weather or port restrictions.

At Host, each agent receives thorough training, and they follow carefully-developed operating procedures to ensure they are both knowledgeable and safe when helping clients. "We invest much of our time into developing our people and offering them opportunities for growth, and the exceptional service they provide is a direct reflection of that," says Scott. The agents are trained to understand the goals of each party involved in a port call so they can provide them with the best service, tailored specifically to the customer. They are also encouraged to continue education courses, technical classes, and certificate programmes to further their understanding of the industry.

In addition to being informed and experienced, agents are present from start to finish of every task. "One of our agents personally performs each port call," says Executive Vice President Finn Host. "They provide leadership onboard each vessel and are in constant communication with our clients to keep them up-to-date."

Host Agency collects data and works with clients to determine key performance indicators for agents to measure, track, and



report. Additionally, all of their clients receive free access to Host's industry-leading commodity research reports and up-to-date port news. A special division of Host Agency, the Cargo Services department, offers expertise in US and foreign regulations for the preparation and issuance of all relative cargo documents. They can also provide on-site supervision to ensure the quality of the operation.

"Host Agency is equipped with over 90 years of experience, giving us an extensive knowledge of the industry, and a worldwide network of relationships," says Host.

### HOST AGENCY'S 2017 YEAR IN REVIEW

The year 2017 was a big one for Host Agency. The company handled almost 4,000 vessels and many of their offices broke monthly ship count records.

- ❖ Their New Orleans office handled over 100 ships in March, setting an all-time record for the most ships handled by one office in one month at Host.
- ❖ The Baltimore office had its busiest month ever in August with 45 vessels. They also served as the agent for the largest sugar shipment ever received East of the Mississippi River.
- ❖ Due to the start of yacht season and with the hurricanes affecting the Gulf, October was a busy month for Host Agency with many of their other offices making all-time ship count records as well, including:
  - ❑ Houston (47 ships);
  - ❑ South Florida (31 ships);
  - ❑ Sabine (25 ships); and
  - ❑ South Carolina (15 ships).
- ❖ Additionally, an increase in coal exports led to Host's Norfolk office setting a record for the most vessels in a month in over a decade by handling 71 ships in October.





## TSL NAXCO: serving ports throughout Thailand



TSL NAXCO is fully owned by NAXCO Group which is composed of 24 affiliates worldwide, all active in shipping, port agency services, forwarding and logistics and NVOCC.

Headquartered in Bangkok, TSL NAXCO is one of the largest shipping agencies based in Thailand with a range of branch offices spanning across various locations, namely Sriracha, Maptaphut, Phuket and Songkhla, covering ports throughout Thailand.

TSL NAXCO's team of marine specialist has extensive experience handling all types of vessels (dry bulk, tankers, cruises etc).

It is a member of two international networks – Multiport and Naxco Port Agency – enabling it to provide its port agency services worldwide.

### SERVICES

TSL NAXCO's teams are available 24/7 and manage all aspects of port agency and marine services:

- ❖ crew change;

- ❖ dry-dock and repair supervision;
- ❖ husbandry;
- ❖ offshore support;
- ❖ port information;
- ❖ project cargo and any handling;
- ❖ protective agent;
- ❖ ship agent;
- ❖ ship supply;
- ❖ spare parts delivery.

### CURRENT ACTIVITIES

TSL NAXCO serves a diverse range of principals — commodities traders, charterers, shipowners, managers and handles a wide spectrum of vessels, from tankers, bulk carriers, heavylift vessels to cruise ships.

Actively involved in the dry bulk segment, the TSL NAXCO team deals with cargoes such as fertilizer, rice, coal, tapioca chips, cement in bulk, clinker etc.

Besides dry bulk, other core activities include the passenger cruise segment in which TSL NAXCO holds a significant market share.

Other than conventional vessels, the

team also possesses the expertise in handling specialized cable laying/repair ships.

### SHIP AGENT ROLE

A ship agent is responsible for safeguarding the interests of its principals prior to, during and after a vessel's departure from port.

The general port agency services offered by an agent include inward/outward port clearance formalities, supervision during cargo operations, vessel and crew husbandry matters and more.

TSL NAXCO is committed to provide the highest standard of service and maintains a set of KPIs — proactive reporting, fast turnaround time for vessels, reliable cash management and timely disbursements.

With decades of experience in the shipping industry, TSL NAXCO has developed strong relationships with local authorities and suppliers, from which principals can benefit.

## World Marine Corporation: ship agent since 1985

World Marine, headquartered in Glyfada, Athens, has been serving the shipping industry since 1985. The company, headed by Alexios Arnokouros, offers ship agency and representation services in Egyptian ports, along the Suez Canal, in the People's Republic of China and in Hong Kong.

### WORLD MARINE EGYPT:

- ❖ maintains its own offices in Port Said, Suez and in Cairo;
- ❖ has been awarded with ISO 9001 certification, offering better services at lower cost;
- ❖ specializes in the Suez Canal Tolls Reduction Scheme, in case of Alternative Route;
- ❖ services security teams embarkation/disembarkation service at a competitive cost;
- ❖ offers round-the-clock ship agency solutions for vessels calling in Egypt, transiting the Suez Canal, loading or discharging, attending husbandry matters in all ports of Egypt.

### WORLD MARINE CHINA:

- ❖ has representative offices in the heart of operations at Shanghai, Shenzhen and Dalian, provides customized services in all Chinese ports in Central, South and North China as well in Hong Kong;
- ❖ its personnel are always standing by the principal's locally attending Superintendents and facilitating their requirements round the clock.
- ❖ services vessels calling in China or Hong Kong, that are in need of ship agency solutions for cargo operations, dry dock, repairs, delivery (S&P) and husbandry matters.

A ship agent like World Marine Corp., represents a vital part in shipping operations, usually servicing charterers, ship owners, and operators when the ship is in port.

The main duty and role of a ship agent is to be principal's office extension, where the ship calls and a reliable party in front of local authorities.

As it is not feasible for any party to be represented globally, with its own office in every port, a ship owner/charterer (or other party interested on a ship's prospective port call) chooses during a port call, a local ship agent, the most suitable to physical attend his vessel, ensuring its smooth operation at port.

A ship agent's role includes carrying out all ship formalities and settlements with

*In 2017 alone, World Marine Egypt negotiated a total of \$6,000,000 of rebates for clients using the Suez Canal.*



local authorities before, during and after the ship's port call.

The agent must provide up-to-date detailed information on port restrictions, conditions and tariffs, as well cargo-specific information, export documents, receipts, OBL — issuance for loading operation-availability — copies, receivers arrangements to receive cargo-unloading operations.

Additional duties include dealing with crew changes, cash to master — CTM, spares clearance/collection/delivery, repairs, provisions, water, bunkers, medical, underwater inspection, and ship's delivery.

All activities require an experienced agent's co-ordination for a professional and timely attendance, as every process involves several parties interaction with local and international interests.

### WORLD MARINE CORP. IS REPRESENTED

- ❖ in Egypt: all ports of Egypt and with own offices in Port Said, Suez, Cairo; and
- ❖ in PR China: all ports over China and with own basis in Shanghai, Shenzhen, and Dalian.

World Marine's main competitors in Egypt and China are all major public and private owned shipping agency companies.

According to World Marine's Department Heads of the Egypt and China operations desk, where it offers its agency services, businesses relates:

- ❖ Egypt 60% in total and China 40% in total operations;
- ❖ in Egyptian ports 60% to dry bulk and 40% to tankers (transits).
- ❖ in Chinese ports 40% dry dock services and 60% owner's matters handling.

The main challenges of World Marine are:

- ❖ to keep its clientèle satisfied and

working exclusive with World Marine;

- ❖ increase its clientèle with new introductions as owners, charterers, operators, as well cargo owners-shippers and receivers in both countries, as well within countries exporting to Egypt and China.
- ❖ adapt to steadily changing environmental, legal and operational requirements of global shipping (IMO, etc); and
- ❖ to remain open to possible joint ventures, synergies and strategic alliances with local and global shipping services providers.

### SUEZ CANAL REBATES

The Suez Canal Authority (SCA) offers rebates on tolls whenever there is an alternative route (via Cape of Good Hope or Panama) in order to attract ships to pass via Suez Canal. SCA policy is not fixed, as it studies each case individually; taking into consideration various factors, i.e. present freight market, bunkers cost, vessels consumption and speed, duration of voyage, etc.

World Marine Egypt has extensive experience with the SCA rebates policy and, in 2017 alone, it was able to negotiate a total of \$6,000,000 of rebates for its clients. World Marine:

- ❖ has a successful rebate record with over 600 applications yearly;
- ❖ ensures prompt SCA toll reduction estimation and application; and
- ❖ assists with, and co-ordinates during vessels' discounted voyage

As rebates offered by SCA are calculated by various factors, the best way to know is to submit an application through World Marine and wait for the reply of Suez Canal Authority. All details about information needed to proceed are available by communicating with World Marine's staff. DCi



# Self-unloaders: staying connected

*The CSL Donnacona transshipping vessel, featuring an EMS-Tech Inc. self-unloading system, has entered into service in Cape Preston, Western Australia.*



## EMS-Tech Inc – a self-unloader market update

In the ever expanding global marketplace, there is an increasing desire to keep systems ‘plugged in’ to valuable resources that ensure efficient operation and reliability. For this reason, during the past decade, EMS-Tech Inc. has placed an emphasis on installing ‘Remote Assistance’ capabilities on many of its systems. Using this readily available and proven technology allows EMS-Tech Inc. to remotely log into a system’s computer by means of a standard internet connection, enabling monitoring, diagnostics, and troubleshooting from an offsite location. This eliminates the need to fly personnel half way around the world simply to perform basic assistance.

The greatest benefit realized by this modern technology has been the direct link between system operator and system designer. With obstacles such as geography and time zones previously hindering the ability for immediate assistance, ‘Remote Assistance’ makes these obstacles a thing of the past. The ability to log in from any

location, day or night allows for instantaneous assistance resulting in reduced downtime and loss of productivity.

There is no better example of the

success of such a system than with a set of three ships which entered into operation starting in 2009. Operating primarily in Northern Europe, all feature identical





Ireland, the first of two scheduled high-capacity self-unloading systems for Vulica Shipping.

self-unloading systems. In the early years of operation, several onsite visits to perform a variety of services, such as system upgrades and basic troubleshooting were made. These trips often meant that a resolution to an inquiry could not be realized for multiple days, simply due to travel time constraints.

With the adoption of the 'Remote Assistance' technology, service trips to these vessels became a rarity, occurring once every couple of years at most. Instead, 'Remote Assistance' sessions allowed an immediate response on countless occasions with no delays and an increase in efficiency.

The benefits associated with 'Remote Assistance' sessions are immeasurable, encouraging system operators to initiate assistance requests more often, which promotes a better familiarity between system owners, the system support team, and the system itself.

### EMS-TECH INC. PROJECT UPDATE

**Vulica Ireland:** EMS-Tech Inc. has delivered the first of two scheduled high capacity Panamax self-unloading systems to Vulica Shipping's vessel *Ireland*. The system is scheduled to enter into service early in 2018. This system is designed to discharge aggregate at 4,500tph (tonnes per hour) and is comprised of two tunnel conveyors fitted with EMS-Tech Inc. patented feeder

gates, a 27-metre 'C' Loop lift conveyor and an 80-metre long discharge boom. The second vessel, named the *Donald M. James*, is set to deliver early in 2018.

**Algoma Innovator:** The *Algoma Innovator*, the first of two scheduled River class Equinox 650 vessels built in Rijeka, Croatia, features a high capacity self-unloading system delivered by EMS-Tech Inc. The vessel will make its voyage back to Canada early this year and is scheduled to join the Algoma fleet in the 2018 trading season. The self-unloading system is designed to discharge aggregate and salt at a rate of 5,450tph and is comprised of two tunnel conveyors fitted with EMS-Tech Inc. patented Feeder Gates, two transfer conveyors, a 21-metre 'C' Loop lift conveyor, and an 80-metre discharge boom. The second vessel, named *Algoma Endurance* is scheduled to deliver later in 2018.

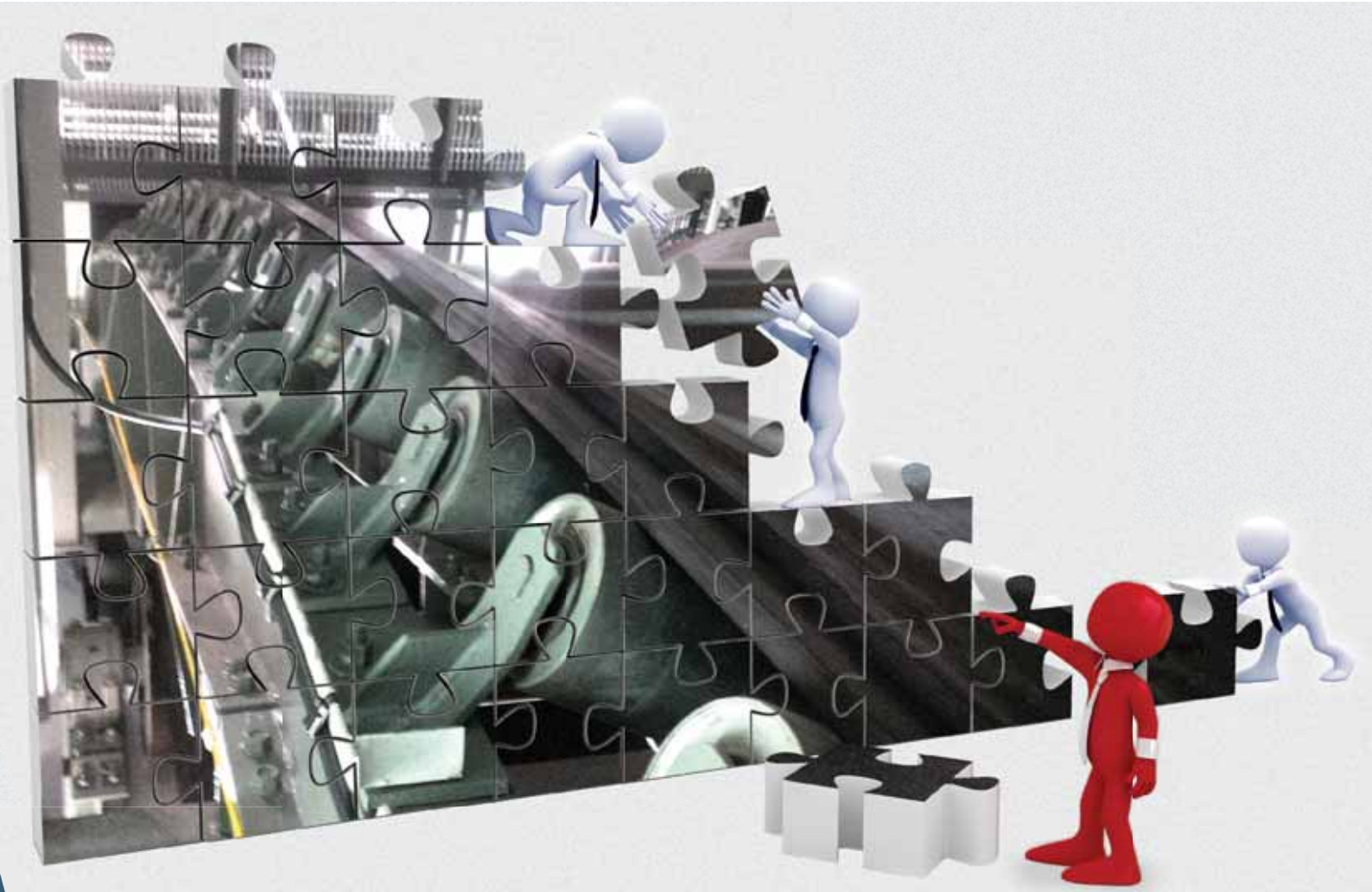
**CSL Donnacona:** The CSL *Donnacona* transshipping vessel, featuring an EMS-Tech Inc. self-unloading system, has entered into service in Cape Preston, Western Australia. The system was a retrofit of an existing traditional self-unloading system which featured a tunnel conveyor fitted with EMS-Tech Inc. patented Feeder Gates, a 34-metre 'C' Loop lift conveyor and a traditional 80-metre discharge boom. EMS-Tech Inc. designed a modification to the system to facilitate the discharge of

magnetite at a rate of 4,200tph. The primary change to the design of the system was the addition of a new telescoping shiploader elevated such that it allows loading of Panamax vessels. The existing 80-metre boom acts as a transfer conveyor in this new configuration loading the shiploader at an elevated transfer tower.

**Alliance Grain Terminal Shiploader:** EMS-Tech Inc. continues its success in the Port of Vancouver with yet another shiploader scheduled to deliver later in 2018 at Alliance Grain Terminal. The system is designed to discharge grain at a capacity of 2,000tph loading vessels up to Panamax size. Along with a dock conveyor allowing 160-metre of travel, the system features a bi-directional shiploader conveyor which allows discharging from one of two spouts located on either side of the Pier for convenience of operation.

### EMS-TECH INC. 30TH ANNIVERSARY

A milestone year for EMS-Tech Inc., 2018 marks its thirtieth year in business. It is sincerely thankful to its customers, staff and suppliers who have motivated and supported it through its first 30 years. In an ever-changing world, EMS-Tech Inc. continues to adapt by focusing on the building of meaningful relationships and advancing exciting R&D initiatives, all while maintaining its prime objective – producing smart and innovative solutions that work.



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## Canada Steamship Lines makes waves



*Whitefish Bay has reached a historic safety milestone.  
(Photo: Pete Markham: Whitefish Bay Approaches Duluth Ship Canal - April 2016".  
CC BY-SA 2.0 (<https://creativecommons.org/licenses/by-sa/2.0/legalcode>))*

Over the past few months, CSL has made numerous breakthroughs, all of which are worthy of celebration. These include:

### **'THUNDER BAY' CELEBRATES FOUR YEARS WITHOUT A LOST TIME INJURY**

The extreme icy conditions on the Great Lakes and St. Lawrence River did not stop Canada Steamship Lines' *Thunder Bay* from achieving four operational years without a single lost-time incident (LTI) on 2 January 2018.

The 34,500dwt Trillium-class self-unloading Laker has not had an LTI since the day she started sailing. The vessel joins her sister ship, *Whitefish Bay*, in reaching the milestone and earning a platinum SafePartners pennant.

"This remarkable accomplishment is testimony to the vigilance and safety mindset of the seafarers onboard *Thunder Bay*," said Louis Martel, President and CEO of The CSL Group. "We commend the leadership onboard the vessel that prioritizes the health and safety of all crew members, as well as the teamwork that has created a zero harm work environment."

*CSL's Thunder Bay has not had a Lost Time Injury since the day she started sailing four years ago.  
Photo: Terry Sechen*



According to Captain Jason Church, a little planning goes a long way. "Our use of risk assessment and job safety analysis tools, and our open forums for discussions have proven to be the keys to our success."

CSL places the health and safety of its crews and employees as its highest priority. Through the collaborative and inclusive

SafePartners programme, CSL fosters a positive safety culture with the ultimate goal of achieving zero harm.

### **'WHITEFISH' BAY ACHIEVES RECORD SAFETY MILESTONE**

Canada Steamship Lines' *Whitefish Bay* has reached a historic safety milestone,



# Delivering Advanced Dry Cargo Handling Solutions Worldwide.

By combining state-of-the-art cargo-handling technology with over 100 years of operating experience, CSL offers customised solutions that feature the highest standards in operational and energy efficiency, reliability, safety and environmental protection.

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 **CSL** GROUP

*The first inbound dry cargo transshipment from a CSL Panamax self-unloader to a CSL self-unloading Laker was performed this past September in Sept-Îles, Québec.*



achieving an unprecedented four operational years in the Great Lakes–St. Lawrence Seaway system without a single lost-time incident (LTI).

On December 10th, 2017, the 34,500 DWT Trillium-class self-unloading Laker became the first in CSL's Canadian fleet to earn a platinum SafePartners pennant. Since the vessel's delivery and maiden voyage in 2013, not a single crew member has suffered an LTI in the line of duty.

"Congratulations to the crew for this outstanding accomplishment that speaks volumes about the exceptional safety culture and leadership onboard *Whitefish Bay*," said Louis Martel, President and CEO of The CSL Group.

"It also demonstrates that achieving our goal of zero harm fleet-wide is attainable when we work as a team and accept no compromises when it comes to health and safety."

Since the introduction of CSL's homegrown SafePartners programme in 2012, the safety performance of the Canada Steamship Lines fleet has improved by a remarkable 86% and transformed the safety mindset throughout the company.

"Receiving the platinum pennant shows that the SafePartners Program is working

to improve our safety culture," said *Whitefish Bay* Captain Kenny Thorne. "When everyone both onboard and ashore share the same goal of promoting world-class safety, that's when start seeing concrete results."

CSL places the health and safety of its crews and employees as its highest priority. Through the collaborative and inclusive SafePartners programme, CSL fosters a positive safety culture with the ultimate goal of achieving zero harm.

#### **CSL TRANSSHIPMENT OPERATION IN SEPT-ÎLES, QUEBEC**

The first inbound dry cargo transshipment from a CSL Panamax self-unloader to a CSL self-unloading Laker was performed this past September in Sept-Îles, Québec.

Carrying a 56,500 metric tonne split cargo of anhydrite and gypsum loaded in Spain, *CSL Metis* sailed to the bay of Sept-Îles where the Great lakes-bound cargo was transferred to *Thunder Bay* and *Whitefish Bay*.

The transshipment operation, which opens up the availability of international raw materials to Great Lakes customers, was the first such a collaboration between CSL's Americas and Canadian fleets.

#### **IRON ORE LOADING AND DISCHARGE OPERATION – 'BAIE COMEAU' – SUPERIOR, WISCONSIN TO QUEBEC CITY**

In August 2017, CSL filmed the voyage of *Baie Comeau*, a Trillium-class, 34,500dwt self-unloading Laker, from Superior, Wisconsin, to Quebec City, Quebec in Canada.

Over the course of this 24/7 operation, the vessel loaded iron ore pellets in Superior at a rate of 3,500tph (tonnes per hour), and transited through confined waters and lock systems including the Soo Locks, the Welland Canal and the Montreal/Lake Ontario lock system. From Lake Superior to the St. Lawrence River, the ship experienced a drop in elevation of 177 metres (581 feet).

The cargo of iron ore pellets was discharged in Quebec City at an unload rate of 3,500tph. The pellets were then transferred to an ocean-going vessel bound for export markets.

#### **CSL SELF-UNLOADERS**

CSL's self-unloaders offer exceptional value, speed, versatility and efficiency, resulting in reduced shore infrastructure and labour requirements, and minimum environmental impact.



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# Port of Ghent and Zeeland Seaports merge to form North Sea Port

## CROSS-BORDER MERGER LEADS TO NEW EUROPEAN TOP-10-PLAYER

The merger agreement between Zeeland Seaports and the Ghent Port Company was signed on Friday 8 December. All eight shareholders of both ports agreed with the merger in the preceding weeks. The signing took place on a ship that symbolically sailed from Ghent across the Dutch border in the direction of Terneuzen. The name of the cross-border merger port will be North Sea Port. This merger port represents the 60km-long cross-border port area of Flushing, Borsele and Terneuzen in the Netherlands up to Ghent in Belgium.

Many dignitaries were present at the signing, including the Flemish Prime Minister Geert Bourgeois, the Dutch Minister of Infrastructure and Water management Cora van Nieuwenhuizen and the shareholders, directors, clients, relations and staff of both ports.

## ALL SHAREHOLDERS AGREED WITH THE MERGER

Between September and December, the eight shareholders approved with the merger agreement. In Flanders, these were the city of Ghent and the municipalities of Evergem and Zelzate and the province of East-Flanders, and in the Netherlands the province of Zeeland and the municipalities of Borsele, Terneuzen and Flushing.

## NORTH SEA PORT: TOGETHER. SMARTER.

Immediately after the signing of the merger agreement, the name of the port was

announced: North Sea Port. A new name was chosen, which expresses innovation and ambition, with a hint of bravado, since 'North Sea Port' goes beyond the former 'Ghent' and 'Zeeland'. North Sea Port represents the North Sea region. The international name is intentional and offers the new port company and port area a unique position in the heart of Europe.

The addition 'Together. Smarter.' emphasizes the importance of close co-operation with and among clients, partners and stakeholders on the one hand and the focus on innovation and a smarter way of working on the other hand.

## REGISTERED OFFICE IN THE NETHERLANDS, PORT HOUSE AS INTERNATIONAL SIGN BOARD IN GHENT

In early 2018, the European public limited liability company will be established as holding of the two subsidiary companies Zeeland Seaports and Ghent Port Company for which, *inter alia*, a supervisory body will be installed.

Moreover, there will be a Shareholders Committee with all elected representatives of the municipal councils, councils and state and provincial councils — the shareholders. In addition, there will be structural and bilateral meetings with the shareholders. A participation body for the staff will also be set up for the holding.

By maintaining offices at various locations and the setting up of a business consultancy body, the 'short lines of communication', much appreciated by the

companies, are guaranteed.

The holding will be established in the former town hall of Sas van Gent, in the heart of the port area, just on the border of the Netherlands and Belgium. The future Port House in Ghent — the House of the Free Skippers at the Graslei — will function as an international sign board.

## IN THE EUROPEAN TOP 10

North Sea Port immediately positions itself among the top of European sea ports: it is the number three in added value and the number ten in cargo transshipment. By the year 2022, North Sea Port wants to be a leading brand in the international port world.

By then, it wants to increase the added value by 10%, the maritime transshipment to 70mt [million tonnes] (currently 62mt) and inland transshipment to 60mt (currently 55mt). Employment is expected to grow to 100,000 jobs (direct and indirect, currently rounded off 97,000). North Sea Port has almost 1,000 hectares allocatable land.

## ADVANTAGES FOR COMPANIES

By means of efficiency, economy of scale, and preventing overlapping activities, North Sea Port offers opportunities to decrease operational costs. These savings may also be beneficial to companies, such as lower rates or a lower increase of rates, for example. In addition, the larger scale will offer a bigger chance of combining cargo flows.

## ANNEX — KEY FIGURES

	Zeeland Seaports	Ghent Port Company	Merger port
Operating income	€61.2 million	€43.5 million	€104.5 million
of which turnover	€51.6 million	€36.2 million	€87.8 million
Profit	€13 million	€16.6 million	€29.6 million
Land to be allocated	600 hectares	300 hectares	900
Number of companies	225	300	525
Added value	€5.1 billion	€7.9 billion	€13 billion
Maritime transshipment	33.2mt	29.1mt	62.3mt
Inland navigation transshipment	33.2mt	21.9mt	55.1mt
Sea-going vessels	5,800	2,900	8,700
Inland vessels	22,500	14,000	36,500
Port area size	4,600 hectares	4,700 hectares	9,300 hectares
Draught	16.5 m (Flushing) 12.5 m (Terneuzen)	12.5 m	
Shareholders	Province of Zeeland Flushing Borsele Terneuzen	City of Ghent Province of Oost-Vlaanderen Evergem Zelzate	

## Commission makes expansion of infrastructure key priority for 2018

### 2018 BUDGET CAPITALIZES ON MOMENTUM FROM PAST YEARS

The Port of Longview's Board of Commissioners has unanimously approved the 2018 Budget, which includes significant investments in the expansion of the port's Industrial Rail Corridor (IRC) and infrastructure development at Barlow Point. These investments capitalize on previous year's momentum of multi-year projects that will bring increased economic growth to our industry and new opportunities for customers.

Connecting mainline rail with the port, the IRC plays a key role in port operations. The expansion project includes adding seven additional tracks to the system, bringing the IRC to a total of nine tracks. This additional capacity will allow trains to move simultaneously, add storage for unit trains on sidings and accommodate the

growing length of trains. In 2018, the port plans to invest \$952,000 towards the planning and engineering of this project.

In addition to the IRC expansion, the port has earmarked \$300,000 towards the planning of a new entrance at Barlow Point, a 280+ acre parcel available for development. Directly on the deep-draught navigation channel of the Columbia River, Barlow Point holds incredible potential for business opportunities in the Pacific Northwest.

"In 2017, we focused on laying the ground work for major infrastructure improvements," said Commission President Doug Averett. "This year, we are capitalizing on that momentum and continuing to move forward on these key projects. My fellow Commissioners and I want to emphasize the importance of continued growth and expansion for our

industry and customers."

Overall, the port's 2018 General Fund Operating Budget is \$31.1 million and the Capital Projects Budget is set at \$5.1 million.

### ABOUT THE PORT OF LONGVIEW

The Port of Longview is the first full-service operating port with strategic transportation connections on the deep-draught Columbia River shipping channel in southwest Washington State. The port is located just 66 river miles from the Pacific Ocean, 120 driving miles from Seattle, Washington, and 40 driving miles from Portland, Oregon. Port facilities include eight marine terminals and waterfront industrial property with direct connections to main-line rail and interstate highway. Cargo handling specialties include bulk cargoes and breakbulk commodities.



## Ergransa concession extended until 2031

In the Spanish Port of Barcelona, Ergransa, a dry bulk handling terminal operator, has renewed its concession, which will now expire in June 2031. This has been done to allow it to consolidate significant traffic it has in cereals and soya beans.

Within the new concession, Ergransa has also been awarded part of the area currently occupied by the adjoining

Tramer terminal on Contradique Quay. When Tramer moves operations to Álvarez de la Campa quay, in 2019, Ergransa will expand its existing 21,419m<sup>2</sup> square metre operating area by a further 8,000m<sup>2</sup>.

The new concession comes into effect on 15 January 2018, after which Ergransa will undertake investment of €5.1 million. Part of this will go towards

improving environmental aspects of silo operation and the efficiency of the pneumatic discharge equipment. Furthermore, upgrades will be made to both the rail sidings and HGV access. Ergransa is also to upgrade operations and environmental aspects of its existing warehouse. The Tramer warehouse will be refurbished to enable it to handle agribulk.

*Barry Cross*

# Russian grain tops port traffic increases

In 2017, Russian grain handled by its port network posted the highest growth rate of any cargo type. This was due to a record-breaking harvest. The Federal Marine and River Transport Agency (Rosmorrechflot) says this totalled 47.87mt (million tonnes), equivalent to an increase of 34.7%.

Of this, 42.608mt was dispatched by sea, which was 29.5% more than the previous year.

Coal and coke shipments were the second fastest growth commodities, increasing by 13.4% to 154.47mt, including 152.58mt of exports.

In third place, oil handled went up 11.1% to 253.22mt.

*Barry Cross*



## North Sea Port starts with record figure

On 8 December last year, a new milestone was reached in the rich port history of the Low Countries. That day marks the official launch of the company formed by the merger between Ghent Port Company (Flanders) and Zeeland Seaports (the Netherlands). Appropriately, it is now known as: North Sea Port.

Eight publicly-owned shareholders agreed to this cross-border merger. On behalf of Zeeland Seaports in the Netherlands, incorporating the ports of Vlissingen and Terneuzen, they are the province of Zeeland and the municipalities of Borsele, Terneuzen and Vlissingen. On behalf of the port of Ghent, they are the city of Ghent, the municipalities of Evergem and Zelzate and the province of East Flanders.

### CONFIDENT START

With 66.6mt (million tonnes) of seaborne cargo traffic, North Sea Port is making a confident start to operations. The new merger port can already boast a range of record figures as a specialist in bulk and general cargo traffic.

North Sea Port's seaborne cargo traffic for the year 2017 amounts to 66.6mt with a 71% import share and a 29% export share. If the merged cross-border port had already existed before, then this would have been the best result ever (+6.9%). Inland navigation cargo traffic accounts for 56.5mt, which would equally have been a record. Consequently, seagoing as well as inland navigation together experienced a record start, which can be found back in the total cargo traffic figure for seagoing and inland navigation: 123.1mt.

### SPECIALIST IN BULK AND GENERAL CARGO

Handling bulk cargo is North Sea Port's absolute speciality with — among other goods — iron ore, coal, foodstuffs, grains and fertilizers. Its additional handling of general cargo (steel, paper, wood, fruit and project cargo) means that North Sea Port is at the forefront of European ports.

Dry bulk represents about half of the seaborne cargo traffic (47%). Liquid bulk takes up almost one third (29%). Practically one-fifth of the volume is conventional general cargo (17%). Ro/ro (6%) and container traffic (2%) complete the picture.

### TRANSATLANTIC AND EUROPEAN COASTAL NAVIGATION

North Sea Port aims at both transatlantic navigation and at European coastal navigation. As for the division according to the continents, Europe takes up 61%. The South and North American navigational areas represent 15% and 14% respectively. Africa takes up 5%, Asia 3% and finally Oceania 2%.

### ZEELAND AND GHENT

In 2017, the Zeeland port area registered seaborne cargo traffic of 34.1mt thanks to a strong second half of the year. This is 2.7% more than in 2016, the third best result ever. The increase is especially noticeable in liquid bulk, containers and dry bulk. Inland navigation traffic was 33.5mt, the best result ever.

This brings total cargo traffic to the highest level ever reached, at 67.6mt. A long shutdown of a big company did influence the traffic figures. However, the total figures do not include all activities. To these

figures, the approximately 10mt of liquid bulk in the form of crude oil that enter the port by pipeline can be added — traditionally, these amounts are not included. Moreover, Zeeland has experienced a strong increase in non-tonnage-related activities such as the offshore sector. As a rule, this is also not included in traffic figures.

In 2017, with 32.5mt the Ghent port area achieved the best result ever and a second record in a row for its seaborne cargo traffic. This is an increase of no less than 11.7%, mainly because of the record growth in dry bulk traffic. Inland navigation traffic there totals 23mt, which is 5.1% better than in 2016 — or the second-best result ever. Overall seaborne and inland navigation traffic together come in at 55.5mt, or 4.5mt more than in 2016.

### GRANTING OF LAND

In 2017, North Sea Port granted 44.6 hectares of land. In Zeeland a total of 19.5 hectares of land was granted, 11.2 hectares of which on a long lease and another 8.3 hectares were sold. In Ghent, a total of 25.1 hectares was granted. Of that surface area, 9.4 hectares were given in concession and 15.7 hectares were expansions of existing concessions.

At this moment, North Sea Port has 1,000 hectares of land available that can be granted to investors.

### ADDED VALUE AND EMPLOYMENT

North Sea Port represents an added value of €13.3 billion. A total of 98,680 people are working in the cross-border 60km-long port area.

## Riga introduces bulk container technology



Riga Universal Terminals Ltd (RUT) has introduced new containerized dry bulk handling technology, and is the first port in Europe to do so. RUT uses this for the movement of wood pellets on large dry bulk ships.

In effect, pellets are moved from the warehouse to the quay in special-purpose open-top 20-foot containers. Using portal-frame container lift equipped with a revolver system, the entire contents of a container are delivered onto the ship by turning the container over, thereby tipping the contents into the hold.

Atis Šulte, RUT Trade and Business Development Director, says, "The main benefit from introducing the new technology is a significant optimization of terminal expenses and an increase in performance. Now, we can perform dry bulk handling operations involving a significantly smaller number of machines and human resources." Savings on resources amount to almost 50%, he added.

"By introducing containerized cargo handling, we have become more competitive and can better adjust to customer requirements. Following the general tendency in cargo carriage, dry bulk ships handled at our terminal are becoming even larger. By means of the new technology, we are able to ensure fast and effective loading of these large ships."

By applying the new technology, RUT is able to load dry bulk and containers at the same pier, using one portal-frame lift. It allows it to quickly organize its work at the terminal and quickly handle any type of ship. Because consignments are poured into the holds, rather than above them, the amount of dust that ends up in the air is reduced. Similarly, the spread of dust and cargo losses are reduced by handling a great amount of cargo within one lifting operation.

This containerized dry bulk handling technology is already used in ports across Australia and South America, where it is used mainly with iron ore and coal, as well as with grain. By using closed standardized containers, dry bulk can be transported from a remote loading point, then stored at the terminal without having to unload the container and then move to the ship using the same container. This means that no investment is needed in warehouses and the entire logistics chain from extraction to ship loading can be optimized, using standardized container technology.

For more information on the technologies involved, please see 'Port of Riga moves towards containerized bulk handling solutions, on p91 of the November issue of *Dry Cargo International*. *Barry Cross*

Shipping, port operations, inland waterways, logistics, shipping agents, shipbuilding and engineering.

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# New sugar terminal to be built at the Port of Gdansk

The Port of Gdansk Authority SA and Krajowa Spolka Cukrowa S.A. signed an agreement on a lease of property for the construction of a new transshipment and shipping terminal along with access infrastructure intended for handling the transport of sugar. The new facility will be located right next to the Nabrzeze Wislane, which will enable entry and loading of ships with a large carrying capacity.

As part of the investment, within the area leased from the PGA, Krajowa Spolka Cukrowa will build a transshipment and shipping terminal, including a silo with a capacity of 50,000 tonnes, a sugar packing floor, and a logistics warehouse for finished product with a capacity of about 10,000 tonnes. The investment will also involve the construction of logistics infrastructure along with the necessary storage base.

“One of the greatest strategic advantages of the Port of Gdansk is its versatility. As opposed to our numerous highly specialized competitors from the Baltic Sea region, we provide operators with the opportunity to handle a broad range of cargo types. In 2017, the Port of Gdansk already handled nearly three million tonnes of bulk cargo — excluding fuels, coal and cereals. Thanks to the new sugar terminal, we will quickly improve these statistics,” says Lukasz Greinke, President of the Board of the Port of Gdansk Authority SA.

“The construction of the first sugar terminal in Poland gives us the opportunity for export sales during a campaign at the level of about 75,000 tonnes of sugar, thanks to which we will be able to limit the need to rent space in external warehouses and the silo at the Port will be used efficiently. All these aspects translate into handling, transport, warehousing, material, and workforce cost reductions, as well as a reduction in quantitative losses of sugar during transport between sugar factory, external warehouse, and port. The investment will make it possible for KSC S.A. to export shipments outside the EU via the Port at a level of about 300,000 tonnes of sugar a year,” says Henryk Wnorowski, President of the Board of

KSC S.A.

The new sugar terminal of Krajowa Spolka Cukrowa S.A. will enable the unloading of sugar delivered in rail containers and silo trucks. Its adjacent, modern transshipment and shipping infrastructure will make it possible to sell sugar in polypropylene bags which can be stacked both in containers and the cargo holds of conventional ships.

A car park for 37 trucks is planned



within the area of the investment, designed so as to eliminate the crossing of truck and passenger car routes. In its immediate proximity, there will also be a container depot able to hold nearly 130 containers. Certain elements of railway infrastructure, needed to enable transport via the terminal, will also be expanded and modernized.

## THE PORT OF GDANSK AUTHORITY

The Port of Gdansk Authority SA (PGA) is the entity administering the seaport in Gdansk, the key communication hub in the region. The company was established in 1998 and operates on the basis of the Act on ports and harbours and the Commercial Companies Code.

The PGA's primary tasks include administration of port property and infrastructure, including eight quays with a total length of over 20 km. The company is also responsible for forecasting, programming, and planning the port's development, which involves the modernization of the existing infrastructure and obtaining new property for development purposes.

The Port of Gdansk Authority is divided into two parts: the Inner Port situated along the Martwa Wisla and the port canal and the Outer Port with

direct access to the open basin of the Gulf of Gdansk.

The Inner Port includes: a container terminal, a base and terminal for passenger ferries and Ro-Ro vessels, a passenger car and citrus fruit transshipment base, a base for handling sulphur and other bulk cargo, and a base for the transshipment of phosphorites. The Outer Port is made up of specialist bases for the transshipment of energy raw materials: liquid fuels, coal, and liquid gas. The modern deepwater container terminal, the DCT, is also located within this part.

## KRAJOWA SPOLKA CUKROWA S.A.

Krajowa Spolka Cukrowa S.A. (KSC S.A.) is the largest manufacturer of sugar in Poland and the eighth-largest in Europe. The concern owns seven sugar factories (Dobrzelin, Kluczewo, Krasnystaw, Kruszwica, Malbork, Naklo, Werbkowice) located in five different regions and the 'Polskie Przetwory' fruit and vegetable processing plant located in Wloclawek.

The primary activity of Krajowa Spolka Cukrowa S.A. is centred around the production and sale of sugar, trade in by-products derived from the manufacturing process, and fruit and vegetable processing.

The company's products, sold under the 'Polski Cukier' brand, are delivered both to recognized Polish companies and renowned international concerns. Built and developed over the years, the Krajowa Spolka Cukrowa S.A. Group of Companies now operates in five sectors of the agricultural and food market. The sugar industry remains the group's primary sector. The four others include the confectionery industry, the fruit and vegetable processing industry, the grain and milling industry, and the potato industry. Apart from KSC S.A., the KSC S.A. Group of Companies includes four manufacturing subsidiary companies:

- ❖ Przedsiębiorstwo Zbozowo-Młynarskie "PZZ" w Stoislawiu S.A.;
- ❖ Fabryka Cukierkow "Pszczolka" Sp. z o.o.;
- ❖ Przedsiębiorstwo Przemysłu Ziemniaczanego Trzemeszno Sp. z o.o.; and
- ❖ Î.C.S. Moldova Zah r S.R.L. located in the Republic of Moldova.

# Coal terminal developments



Jay Venter

## World's largest coal export port to 'urgently' diversify, says new chairman

### PROFESSOR ROY GREEN APPOINTED PORT OF NEWCASTLE CHAIRMAN

Respected business and academic leader Professor (Emeritus) Roy Green has been appointed Chairman of the Port of Newcastle Board.

Professor Green has worked in universities, business and government in Australia and overseas, including most recently as Dean of the UTS Business School at the University of Technology Sydney.

Port of Newcastle's CEO, Geoff Crowe, said Professor Green's national and international experience will add significant value to the port in its strategy to grow and diversify its trade.

Professor Green previously chaired the Australian Government's Innovative Regions Centre, CSIRO Manufacturing Sector Advisory Council and NSW Manufacturing Industries Advisory Council, and he is currently Chair of the Queensland Competition Authority.

"Professor Green also has a strong understanding of the Hunter region's

competitive advantages, having worked at the University of Newcastle through the 1990s, including close engagement with the BHP Newcastle Steelworks transition and Hunter economic development bodies," said Crowe.

"It's a great honour to be appointed to Port of Newcastle at such a pivotal moment in its evolution. Coal has been at the heart of the Hunter's economy for the better part of two centuries, and it will continue to be central to the prosperity of the region and Port of Newcastle for some time to come. However, there is also an urgent need to diversify the Hunter economy and the port's business," said Professor Green.

"Port of Newcastle has already started diversifying, through investments in a new cruise terminal and non-coal freight facilities. But we must build significantly on this platform and create world-class port facilities that are able to meet the needs of a rapidly changing Hunter and NSW economy. With a 98-year lease, the Port of Newcastle is obliged to think long term,

and it will. Most people in the Hunter understand that the fortunes of the port and the Hunter economy are inextricably linked, as it is impossible to have a thriving port without a thriving regional economy.

Anything that is good for the Hunter economy is good for the Port of Newcastle. We are all in this together.

"Clearly the long term outlook for coal is a threat to the Port and Hunter region, but it is also a huge opportunity. While the world's demand for our coal is beyond our control, our ability to invest in new sources of growth and innovation is not. Among our challenges will be ensuring a level playing field for the development of a viable and competitive container terminal.

"I look forward to working with Port of Newcastle's Board, CEO, management and staff to meet these challenges. As Chairman, I will stand up for the interests of the Hunter and regional NSW and work tirelessly with those who share our vision of a growing, diversified and innovative Hunter economy," concluded Professor Green.

## Lighthouse Resources files federal lawsuit against Washington State for violating constitutional, federal law

**BLOCKING INTERSTATE COMMERCE, TRADE OF COAL A CLEAR VIOLATION OF COMMERCE CLAUSE**

On 3 January this year, Lighthouse Resources, Inc. filed a federal lawsuit against Washington state Governor Jay Inslee and members of his administration for blocking coal mined in Wyoming, Montana and other western sister states from being exported through a terminal in Washington state, in violation of the US Constitution's Commerce Clause and other federal statutes.

The complaint, filed in US District Court in Tacoma, Washington details how State of Washington officials violated the US Constitution and Federal law by unreasonably denying and refusing to process permits to redevelop a brownfield site on the Columbia River where an existing Washington State lease allows coal exports.

Lighthouse Resources is an energy supply chain company whose subsidiaries own and operate coal mines in Montana and Wyoming. Lighthouse Resources is also the corporate parent of Millennium Bulk Terminals-Longview (MBTLongview), which is redeveloping a brownfield site for coal export on the Columbia River. The site currently receives coal for local use and is ready to receive other bulk commodities.

"It's no secret that Washington state officials are philosophically opposed to coal," said Everett King, President and CEO of Lighthouse Resources. "But that does not give them legal authority to discriminate against this project and block foreign trade and interstate commerce."

### LEGAL OVERVIEW

Lighthouse's complaint outlines how the defendants violated the dormant foreign commerce clause by unilaterally imposing an embargo on new coal exports and by discriminating against Lighthouse's efforts to transport into Washington coal that is being mined in Montana and Wyoming and other western states.

The complaint also alleges that the



*Wyoming coal mine.*

State's actions are preempted by both the ICC Termination Act, which gives the federal government jurisdiction over the regulation of railroad operations, as well as the Ports and Waterways Safety Act (PWSA), which allows for the operation of vessels in US harbours.

In its complaint, Lighthouse seeks, among other things, a declaration by the court that the denial by the State is unlawful and an order directing the State to continue processing any and all current and future permit applications.

### BACKGROUND ON THE PROJECT

Although several Asian countries, including Japan and South Korea, are almost entirely reliant on imported sources of energy, the United States historically has accounted for less than 5% of coal imports into the region. If the permits were to be approved, the new export facility could help boost annual US coal exports by 44 million metric tonnes and increase the annual value of US exports by more than \$2.5 billion.

This, in turn, would significantly reduce the US trade deficit with these nations and provide our allies and trading partners with a reliable, diverse, and secure supply of energy.

Additionally, the expanded port facility will add more than 1,300 construction jobs and 135 family-wage jobs in the local community and support thousands of other direct and indirect jobs across the coal supply chain in neighbouring states

and throughout the country.

Increased US exports of coal also would provide environmental benefits. Japan and South Korea, both of which have signed the Paris Climate Accord, have some of the most advanced coal technology in the world. The environmental qualities of the coal mined in the Powder River Basin in the US, as well as the advanced coal-combustion technologies used in Asia, would lead to a reduction in global carbon emissions.

As stated in the complaint, Washington officials ignored their own Greenhouse Gas Emissions Report that found that sourcing coal from US mines has a net reduction on global greenhouse gas emissions by displacing mining performed in other parts of the world with more environmentally friendly US mining conditions.

"This export facility will create US jobs, shrink the US trade deficit, and reduce carbon emissions," said King. "Unfortunately, these benefits will never be realized if Washington state continues to obstruct and block approval of this energy infrastructure project."

### ABOUT LIGHTHOUSE RESOURCES INC.

Lighthouse Resources, Inc. delivers product, infrastructure and logistics solutions for its customers. Its flagship project is the development of a trade route for coal from the Rocky Mountain region of the United States to demand centres in Asia.



## Joint entry EMO B.V. and JERA Trading to supply speciality coal for silicon metal enabling the production of solar panels

Europees Massagoed Overslagbedrijf (EMO) B.V., a Rotterdam based 100% subsidiary of HES International B.V. and JERA Trading, a Singapore based major coal trader, have signed a five-year contract to jointly enter the speciality coal market for the production of silicon metal. This product is used as a source for photovoltaics (solar panels) and computer integrated circuits (chips).

Within the co-operation to produce, market and sell these speciality coals JERA Trading will provide the coal sourcing, transport and marketing & sales expertise. EMO will provide the transshipment, storage and manufacturing facilities and expertise at its location in the Rotterdam port.

EMO has a strong and successful position in the iron ore and coking coal market and is further diversifying its product portfolio of dry bulk commodities. Entering the speciality coal market for the production of silicon metal already matches the competence and technical equipment of EMO.

A major part of the high purity reducing agent is provided by speciality coals. Speciality coals are produced by purifying and selecting a specific surface area for reactivity control raw coal needs to be screened and washed. The coal purification will be performed in a recently refurbished washing and screening facility at a 10-hectare area on the EMO terminal in the Rotterdam port. The manufacturing process is operated with a closed water circuit and has negligible emissions.

Mathijs Pelsma, Managing Director of EMO said: "Smartly diversifying our product portfolio of dry bulk commodities is our answer in the current energy transition, where we respond to the demand of our clients. We very much welcome the five-year contract with JERA Trading, as this underscores our strong position in the market."

As one of the leading physical coal trader JERA Trading is keen to develop this segment of its customer portfolio by offering its sourcing and trading skills to this specialized customer segment.

Ronan Lory, JERA Trading Managing Director indicated that "JERA Trading is

very happy to partner with EMO a trusted and recognized expert in the handling and technical processing of coal to provide new sourcing opportunities for the growing silicon metal industry. We look forward to a very profitable co-operation."

### ABOUT EMO

Europees Massagoed Overslagbedrijf (EMO) B.V. is the largest transshipment terminal in Western Europe for iron ore and coking coal for the European steel



industry and steam coal for the European power generation plants. Services for the silicon metal industry supplying amongst other photovoltaic cells are now added to the customer base.

Modern and multifunctional, the EMO terminal is strategically located at the Maasvlakte in Rotterdam. The terminal has grown rapidly since 1973 and has an excellent track record in storage and transshipment. The quayside, with a draught of 23 metres, makes it possible for the world's largest vessels to unload at EMO. State-of-the-art facilities unload seagoing vessels fast and efficiently. In addition to loading and unloading vessels, rail cars and barges, the EMO terminal offers added-value services such as screening, blending and washing coal (for instance for the silicon metal industry). EMO has ample access to the hinterland by means of rail links and inland waterways.

### ABOUT JERA TRADING

JERA Trading (JERAT) is a jointly owned company two third by JERA Co. Inc., an equal joint venture between two major

Japanese electric companies, Tokyo Electric Power Company (Tepco) and Chubu Electric Power Company (Chubu) and one third by EDF Trading, the trading arm of EDF, the French leading low carbon power producer in Europe.

JERAT is responsible for the global coal procurement of Chubu, Tepco and EDF. It operates an integrated coal and freight supply chain and has benefited from EDF Trading's expertise in energy commodity trading and risk management to minimize the costs and optimize the revenues associated with the delivery of coal requirements of its shareholders and third party customers. JERAT operates in all major coal and freight markets (Europe, Asia, North and South America) and trade both physical and financial products. JERAT is headquartered in Singapore with offices in London and in Maryland.

### ABOUT HES

HES International B.V., is one of Europe's largest independent providers of storage and transshipment capacity in dry and liquid bulk. Its terminals are situated at the best locations at

Europe's most important ports. Its aim is to also become one of the market leaders on the European tank terminal market. It aspires to achieve this mainly by enlarging and revamping its existing terminals, as well as by developing projects at new locations, taking over other existing terminals and converting former oil terminals and refineries into tank terminals.

HES International B.V. is developing a tank terminal for the storage and transshipment of petroleum products and biofuels at Hartelstroom, on the south side of the Mississippi harbour at Maasvlakte I. This terminal is expected to be operational at the end of 2019. Terminals of HES International B.V. in the port of Rotterdam are:

- ❖ Europees Massagoed Overslagbedrijf (EMO);
- ❖ European Bulk Services (EBS) B.V.;
- ❖ HES Botlek Tank Terminal B.V.;
- ❖ HES Botlek Tank Terminal – Bitumen B.V.;
- ❖ HES Hartel Tank Terminal; and
- ❖ Rotterdam Bulk Terminal (RBT) B.V. (50% joint venture).

## 2017 traffic: Dunkirk beats 50mt records

**ANNUAL TRAFFIC FOR 2017 WAS OVER 50.4MT, AN INCREASE OF 3% COMPARED WITH 2016**

**Solid bulks:** Traffic in 2017 was helped by heavy bulks and reached 24.55mt (million tonnes), an increase of 11%. ArcelorMittal's Dunkirk factory operated at full power, after the shutdowns for maintenance of Blast Furnace 2 (BF2) in 2015 and then Blast Furnace 4 (BF4) in 2016. Ore also benefited from the high volumes of transshipment at the Western Bulk Terminal for the group's other steelworks, setting a new record with a tonnage of 14.5mt, a rise

of 24%. Coal traffic recovered a good level of activity with 6mt, up 11%. Grain experienced contrasting results. Imports set a new record with more than 350,000 tonnes and growth of 31%.

However, as for all French ports, exports were affected by the very poor harvest in 2016 and the delay in shipments of the 2017 harvest. Export traffic was limited to 950,000 tonnes, a drop of 63% compared with 2016. The traffic in "small" solid bulks performed very well at 2.8mt, an increase of 28%.

### ABOUT DUNKERQUE-PORT:

The largest French port complex (Calais-Dunkirk); the ninth port of the Channel and North Sea Range and France's third-largest port, Dunkirk has built a reputation in many sectors: it is the largest passenger port in Europe; France's largest energy hub; the country's largest LNG terminal; the largest French port for ore and coal imports; France's largest rail port; the region's largest waterway port; and the third-ranking French port for grain. It is also a sustainable port. Traffic in 2017 was 50.4mt.

## Essar signs concession agreement in Mozambique

Indian terminal operator Essar Ports has signed an agreement with the Mozambique government for a 30-year concession to handle coal at the Port of Beira, writes Barry Cross. The contract, which comes in the form of a public-private partnership, involving an entirely new company, New Coal Terminal Beira (NCTB), is a design, build, own, operate and transfer concession.

Essar Ports holds a 70% stake in NCTB, with the other 30% held by the state-controlled Portos e Caminhos de Ferro de Moçambique (CFM).

"We would like to congratulate the Government of Mozambique for this initiative and for collaborating with Essar on such a prestigious project at a national level. It will not only leverage coal exports from Mozambique and strengthen the economy, but will also bring significant direct and indirect benefits," said Essar Ports CEO Rajiv Agarwal.

The new terminal will have a capacity of 20mtpa (million tonnes per annum), although this will be developed over two distinct phases. In its initial \$275 million phase, capacity will be limited to 10mt

(million tonnes), being doubled in size as part of a second phase.

Mozambique currently has estimated coal reserves totalling 23 billion tonnes, making it one of the world's largest exporters of this commodity, which it ships to markets in countries such as India, China, Japan and South Korea.

Shipments of coal to Beira from Tete province will be moved by rail thanks to recent improvements undertaken by CFM, which will allow up to 20mt of coal to eventually be moved at the new terminal on an annual basis.

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## Liebherr planning new development and demonstration centre in Kirchdorf



*The planned development and demonstration centre by Liebherr in Kirchdorf.*

Liebherr-Hydraulikbagger GmbH will invest over €30 million in a new development and demonstration centre at the site in Kirchdorf over the next five years. Construction work started in 2017 and is expected to be completed by 2021.

A testing hall with administration building, a large test site and a demonstration area are to be built on a total area of 12.68 hectares. The key component is the 19.2m-high testing hall. All prototypes will be built, commissioned and optimized here in the future. Doors with a height of 13m also make it possible to drive the fully-assembled machines, also large port and harbour material handlers, out of the hall.

A test environment is also being constructed in order to improve the components installed in the machines. The administration building will offer space for up to 100 modern workstations on four levels. The practical tests and inspections to be implemented will be prepared, evaluated and documented at these workstations. The design of the test site also includes — in addition to various digging facilities for earthmoving and industrial machines — a noise measurement site for evaluating and optimizing the noise emissions, as well as an approximately 900m-long testing track with slope and various poor-quality roads for road tests.

In order to give potential new customers, as well as existing customers, a better understanding of the operating principle of the machines within the framework of practical tests, an area for customer demonstrations, training and sales and marketing tests is planned.

The existing area for the expansion and the proximity to the existing site were decisive in the choice of location. “With the new development and demonstration centre we are making ourselves fit for the future. It enables us to optimize development and test operations. For instance, today we can already develop future machine technologies and test them out extensively according to market requirements”, states Werner Seifried, Head of Technology at Liebherr-Hydraulikbagger GmbH.

Liebherr-Hydraulikbagger GmbH develops and produces a comprehensive range of high-quality hydraulic excavators, material handlers and articulated dump trucks in Kirchdorf.

In order to meet the requirements for an increasing number of different machine types, as well as size and complexity, with ever shorter product development cycles, the company is planning a new development and demonstration centre.

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## Teufelberger and Redaelli unite their brands after merger

In the past few months, Teufelberger and Redaelli, two historic companies of the ropes business, have completed a merger for the steel wire ropes sector. They will now be present on the market with the commercial brand 'Teufelberger-Redaelli'.

The newly created brand 'Teufelberger-Redaelli' follows the positive trend of integration, conceived to create a centre of excellence in the design and production of high-performance steel wire ropes thanks to a perfectly complementary product portfolio. At a visual level, the new brand Teufelberger-Redaelli is a natural evolution of the path that started last January with the announcement of the acquisition and continued with the closing in April. This design will allow the two brands to keep their distinctive signs unaltered, as well as to unite the values of the two brands in order to give to the market greater and immediate evidence of the size and the value of the wire rope

group. But, even more importantly, customers will still be able to immediately recognize the brand which they have trusted for decades.

At the same time, as Teufelberger-Redaelli strengthens its appearance internationally, on the domestic market, TECI, the Redaelli division, that markets steel wire ropes on the Italian market, widens its products portfolio with the distribution in Italy of Teufelberger ropes and personal protection systems. Redaelli established itself very well in the segment of tenso structures, but is has not been served by Teufelberger. Therefore, it will continue to work with the brand name Redaelli in that specific market.

Teufelberger-Redaelli which together account for over 400 years of expertise, offers an exceptional range of highly developed special steel wire ropes. The extended product portfolio can satisfy a wide range of applications for offshore

and onshore oil & gas activities, for passenger and material transport, mining, industrial lifting in construction and harbors, personal protection as well as for development and production of innovative systems for lifting.

### ABOUT TEUFELBERGER-REDAELLI

Teufelberger-Redaelli is a major global brand that specializes in the development, design, manufacture and distribution of high performance steel wire ropes with locations in Austria, Italy and China. Teufelberger-Redaelli is part of Teufelberger group, an internationally successful family enterprise focusing not only on wire rope, but also on fibre rope and strapping in Austria, Czech Republic, USA, Thailand and Sweden. In 2016, the Teufelberger group — together with Redaelli — generated €240 million in sales, 90% of which is generated abroad with a workforce of 1,300 members worldwide.

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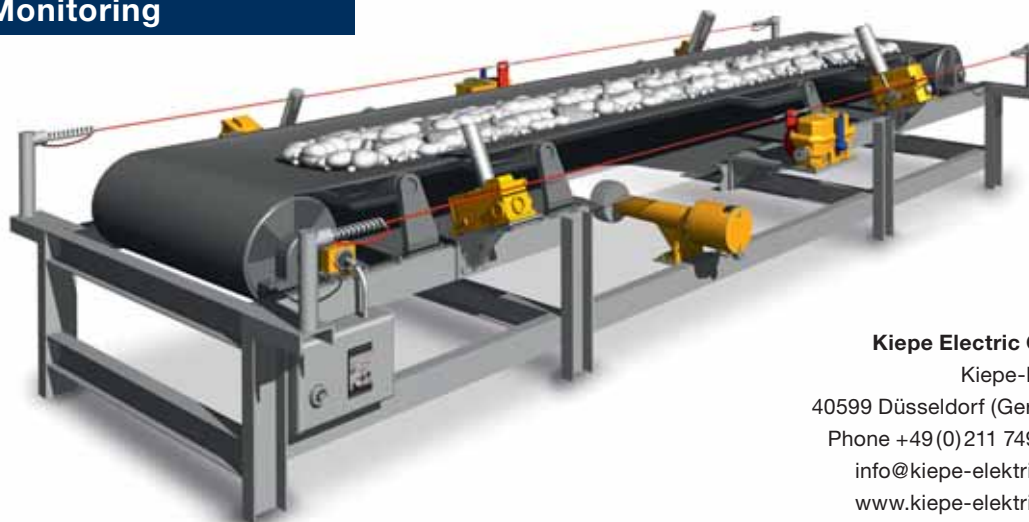


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## The world's largest hydraulic crane starts work at Vuosaari Harbour in Finland

A new era for Vuosaari Harbour in Helsinki began in December 2017, when the world's largest hydraulic crane, the Mantsinen 300, started operation there. The buyer of the crane, which weighs 373 tonnes and has a reach of 36 metres, is the logistics company Adolf Lahti Yxpila Ab, which is part of the KWH Group. The crane will be used in Vuosaari by Adolf Lahti's affiliate, Oy M. Rauanheimo Ab.

The first major pulp shipment left Vuosaari in December 2017. The pulps are delivered to Vuosaari Harbour from Äänekoski, central Finland, by rail; the fully loaded cargo train had 22 carriages. The estimated annual amount of cargo handled by the crane is about 800,000 tonnes.

"This project will increase our volume of freight traffic by about 10%, which will really put the Mantsinen 300 to the test," says Port of Helsinki Ltd CEO Kimmo Mäki.

According to Rauanheimo area sales manager Niko Orpana and Adolf Lahti operative director Niko Miettinen, the Mantsinen 300 takes work efficiency at the port to an entirely new level. The Mantsinen 300 can efficiently load six pulp bundles at a time into ships of 40,000dwt.



Orpana and Miettinen have faith in the Mantsinen 300 crane. In their view, among the benefits of the crane, in addition to efficiency, are speed, good handling, and the HybriLift® system, which provides as much as half of the energy needed for the work through an innovative energy recovery system.

"With Mantsinen we made a conscious decision to invest resources in top class technology. It'll be interesting to see how much this saves on costs compared to traditional, counterweighted tower cranes,"

Miettinen says.

The Mantsinen 300 has gained a strong foothold on international markets as well. Earlier this year, two Mantsinen cranes similar to the one in Vuosaari were put into operation in Belgium, at the Port of Antwerp and the Port of Ghent. According to Mantsinen Group's vice president of the material handling division Tapio Pirinen, the Mantsinen 300 is the future of cargo handling.

"The possibilities offered by the Mantsinen 300 will transform how companies in the logistics sector think and operate. This is especially so when it comes to Handysize and Panamax vessels. So we're actually leading the renewal of the entire field.

According to Kimmo Mäki, the Mantsinen 300 further enhances the international standing of Vuosaari Harbour, and creates opportunities to serve an extensive range of needs.

"I'm confident that this will lead to excellent growth in traffic volumes over the coming years," Miettinen says.

"Mantsinen Group certainly deserves full praise for holding its own so impressively against the giant international firms. This innovative company from eastern Finland is still the only operator capable of manufacturing such a monster machine," says Miettinen.





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## Spanish scrap metal recycling company relies on SENNEBOGEN

As a family enterprise, the Spanish scrap metal recycling company Toferla S.L. has been growing steadily since 1953 by buying and selling scrap and metal. For its material handling, the company utilizes two SENNEBOGEN 825.

During the founding period of the company, scrap had to be collected by hand and had to be transported in a wheelbarrow. Today, the second generation of the Toferla family enterprise has developed into a state-of-the-art scrap recycling operation.

Two SENNEBOGEN material handlers with 13m reach and a 0.6m<sup>3</sup> multi-shell grab, manage the loading and sorting tasks at the site of suburban Madrid. Both SENNEBOGEN 825, which were delivered by the sales and service partner Mycsa in 2005 and 2007, are used for the sorting, charging of the scrap metal shears as well as the loading of trucks. One machine can be loaded with scrap metal shears in order to dismantle larger components on-site. The height-adjustable and comfortable Maxcab places the operator at an eye level of approximately 5m, which is a quintessential criterion when it comes to comfort and safety. The SENNEBOGEN machines also set the benchmark regarding maintenance and service. The central lubrication points and an uppercarriage that is easily accessible make any service task simple and straightforward. The robust design guarantees a long service life and reliability during demanding continuous operation.

The machines are driven by a powerful 129kW diesel engine. Thanks to the 2-axle mobile undercarriage with all-wheel drive, the machines are flexible enough to move on the company's grounds.

*Photos: Two SENNEBOGEN 825 material handlers are used by Toferla S. L. to sort and load scrap near Madrid. Right: dealer Dino Consolini (Mycsa Mulder) and Tomas Fernandez (Toferla S.L.) are all smiles about their long-standing business relationship.*





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## Efficiency in material handling with the LH 26 M Industry Litronic

The LH 26 M Industry Litronic mobile material handling machine meets the requirements of the Stage IV/Tier 4f emissions standards and represents the Liebherr series of small material handling machines. It is extremely robust and powerful, making it ideal for use in material recycling and scrap recycling.

The LH 26 M combines comfort, performance and reliability. The machine also boasts trend-setting fuel efficiency whilst simultaneously offering high load bearing capacities and large working ranges.

The operating weight of the material handling machine is between 24,200 and 24,500kg, while the turbo-charged four-cylinder diesel engine with charge air cooler delivers power of 115kW/156HP at 1,800rpm to ensure lower consumption and greater efficiency. In combination with a higher pump delivery volume, the increased engine power (in comparison with the predecessor model) results in a greater material handling output. This is also positively influenced by the load-sensing control system, as this makes it possible to easily overlap movements.

A maintenance-free oxidation catalyst combined with Liebherr SCR technology takes care of exhaust gas treatment. A diesel particle filter is not needed in order to meet the Stage IV/Tier 4f emissions standards but is available as an option if

desired. The generator system is driven via a double belt for high operational reliability. The direct transfer of force of the engine torque thus achieves a higher level of efficiency. The optimized belt guidance ensures a long service life.

Intelligent machine management with Liebherr Power Efficiency (LPE) ensures the perfect interplay of the drive components in terms of efficiency. This enables machine operation in the range of the lowest specific fuel usage for lower consumption and greater efficiency with the same performance.

The service-oriented layout of the machine guarantees short maintenance periods and minimises the associated maintenance costs thanks to the saving in time. The daily maintenance points can be conveniently accessed from the ground and are easy to reach thanks to the large and wide-opening service doors. In addition, with change intervals of 1,000 hours for the engine oil and up to 8,000 hours for the hydraulic oil, maintenance costs are significantly reduced and thus the productivity of the handling machine is increased.

The large radiator with large meshes ensures optimum cooling performance even when being used in recycling processes that generate high volumes of dust. For quick and easy cleaning, the

closely meshed safety guard can be pulled out and the fan can be removed. The machine can also be fitted with the new recycling package, which ensures high machine availability even with extremely high levels of dust. The recycling package includes the reversible fan, the air pre-filter with dust discharge and the separate position of the air-conditioning condenser.

Precise work and maximum material handling output require the machine to be secure and fixed in position. The large support width and the lever geometry between the mono boom and lift cylinder on the LH 26 M Industry Litronic enable high load bearing capacities and are perfectly adapted for handling, unloading and sorting all types of materials, general cargo and bulk goods.

The newly developed Liebherr operator's cab boasts added comfort. It is impressively spacious and features an ergonomic design, therefore offering the best conditions for healthy, concentrated and productive working.

Large glass panels, standard joystick steering, various types of cab elevation systems plus rear- and side-area monitoring give the operator an optimum view over working area and the area around the machine at all times. This perfect overview ensures the operator's safety and efficient handling of the machine.



*The LH 26 M Industry Litronic material handling machine is a powerful yet economic machine specially designed for use in material recycling and scrap recycling.*



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## Kinshofer acquires Doherty

On 19 December last year, Kinshofer GmbH from Germany and the in New Zealand based Doherty Group signed a definite agreement to merge. Under the terms of the agreement, Kinshofer has acquired 100% of the Doherty Group.

For over 45 years, Kinshofer has been a renowned manufacturer of attachments for truck mounted cranes, excavators and skid steer loaders, consistently developing its product range in both, the crane and excavator markets, to become a competent partner for OEMs and OEDs. Today it is a producer of huge high quality attachments for re-handling cargo or sorting and processing scrap, too. Previous acquisitions of Liftall Inc. (Canada), Demarec B.V. (Holland), RF System AB (Sweden), Auger Torque Group (UK/ Australia/China) and Solesbee's LLC (USA) were other important milestones of this development.

The acquisition of Doherty is significant for Kinshofer in two ways: first it adds additional product segments such as quick couplers, buckets and other excavator products to Kinshofer's already very comprehensive offering. And secondly, it improves Kinshofer's distribution channel in New Zealand and Australia. But not only that, Kinshofer has now enhanced local manufacturing with its Tauranga (NZ) and Brisbane (AUS) based facilities, customers will be served much quicker and with a much larger product range. With this move,



*Two men – one goal on the global market: Thomas Friedrich (MD Kinshofer Group) and Jeremy Doherty (MD Doherty Group). Below, left: Jeremy Doherty (MD Doherty Group), Thomas Friedrich (MD Kinshofer Group), Stefan Sparwel (Global Product Line Manager Quick Couplers & Buckets, Kinshofer Group) and Bevan Zachan (GM Doherty Group).*

Kinshofer further demonstrates its commitment to being the global leader in attachments to the crane and excavator industry.

Doherty, a 2001 established family business, puts its focus on the development and marketing of tools and equipment which make carriers such as excavators more effective and versatile, particularly important for small and mid-size contracting businesses seeking high utilization of its machinery. With an extremely committed and well-educated workforce, Doherty will continue to develop and sell its products globally. In order to meet the current market requirements, Doherty and Kinshofer will recruit more staff to ensure a swift and professional market launch of the companies' products within either sales organization.

Thomas Friedrich, President & CEO of Kinshofer Group, said: "Kinshofer continues its strategy to provide the industry with a 'one-stop-shop' solution of outstandingly engineered products to

increase efficiency and, more importantly, profitability of our customers. The acquisition of the Doherty Group was the next step in our approach to be a local manufacturer in New Zealand and Australia".

Jeremy Doherty, Co-Owner and Managing Director of the Doherty Group, commented: "The concentration of knowledge and competence will form a powerful centre for future developments of which customers can only benefit from. In particular, the combination of both product ranges will create more ground breaking innovations for the industry. The whole Doherty management team, which will remain completely, is very excited to be part of this mutual future."

Kinshofer's and Doherty's employees are working on the rapid integration to provide customers worldwide with their comprehensive range of products and services. Jeremy Doherty will remain Doherty's Managing Director in the Kinshofer Group.

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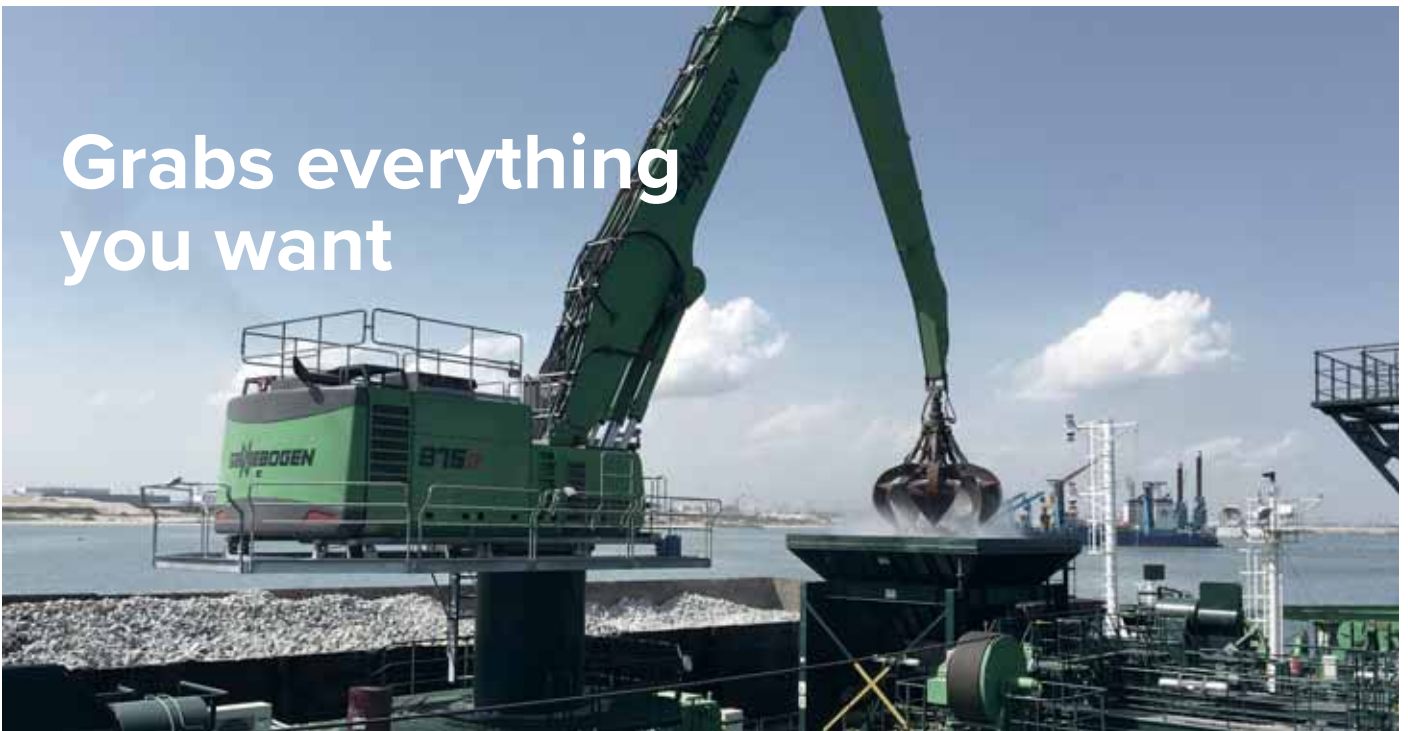


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# Coal handling equipment

## coping with the challenges



*GraviLoad coal chute in South Korea.*

Louise Dodds-Ely

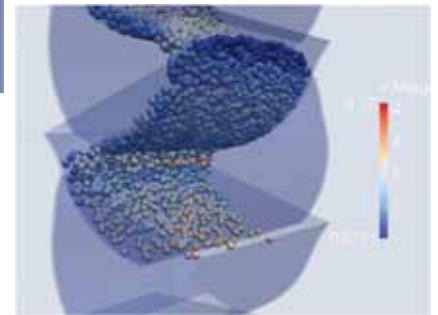
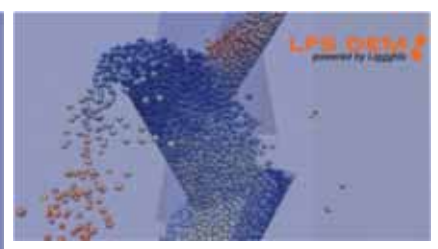
### GraviLoad uses DEM to develop optimum handling solutions

According to *Dry Cargo International*, coal represents a major proportion of all dry bulk, writes *Malcolm Gresty*, sales director of *GraviLoad*. Despite the movement away from coal-fired power stations in the United Kingdom, there is still considerable global interest in coal-related products and services. The first opportunities for GraviLoad in 2018 came from coal-based installations in Latin America and the Far East.

GraviLoad Limited is the new name for LoadFast Systems bulk material handling division which purpose designs, manufactures, installs and commissions free-fall and control flow chutes, transfer points, fixed ladder chutes and control valves. Not only does GraviLoad provide UK-manufactured products, it also analyses problem installations and undertakes design development using its own in-house Discrete Element Method (DEM) Modelling.

Coal is often considered to be a robust

material that can take plenty of abuse whilst being handled. However this is not always the case. The value and performance of a coal product is based on maintaining the lump size (similar to dealing with biomass pellets), therefore coal needs to be treated very carefully in order to maintain its value. Free-fall chutes may be an option in some circumstance. However, the GraviLoad Controlled Flow Spoon Chute — in conjunction with a purpose-designed head chute that maintains low velocity throughout the chute, without going into free-fall or choking — will minimize damage and dust generation. For decades it seems, bulk materials have left the linear



flow of a conveyor belt only to be disrupted into going down the plug-hole of a circular head chute and into conical chutes! The GraviLoad philosophy of back to first principles maintains the linear flow

of material from the conveyor and throughout the head chute and cones in the chute.

Minimizing dust not only maintains the value of the material being handled, but also eliminates the need for extract and filtration systems that are expensive to buy, maintain and run.

GraviLoad remains competitive in the market through innovation, listening to customers, challenging the norm and providing a cost effective bespoke service, rather than off-the-shelf solutions. The quoting system can turn around responses in as little as 24 hours. Design development is achieved by adopting DEM, 3D design and rapid prototyping techniques. Whilst specialist out-sourced manufacturers are



*Four chute outlet assemblies with skirt petals and pre-wired.*



*Head chute assembly with gate valve mounted on chute inlet with structural support frame.*

used to deliver the right materials and quality for a project whilst maintaining a competitive price.

Clarifying the customer brief is often the most complex problem to solve. The end user may not be familiar with the environmental or health issues, which could result in damaged bulk material, excessive wear in the material handling equipment or risk to life should ATEX measures not be adopted. Co-ordinating interfaces with

with energy companies or with equipment manufacturers of hoppers, silos, truck and shiploaders, who do not manufacture their own chutes. Enquiries can be from anywhere in the world resulting in strong export potential, whilst maintaining and creating UK jobs.

other suppliers can also be a challenge to ensure an integrated solution. The fast turn round for quoting allows many issues to be considered at the bidding stage, rather than during design development.

The majority of GraviLoad clients are either direct

From the first coal chutes delivered to South Korea through to a recent delivery for Africa, GraviLoad now has experience across all five continents.

Recent technological developments include an inclined slalom chute that can transfer material from one location to another whilst maintaining a steady speed without damage to the material being handled or generating dust. An open ladder version of this chute can be used in silos to control flow. Customers have asked for



*Maintenance access panels to head chute and gate valve sub-assembly.*



*Shut-off valve sub-assembly.*

shut off valves either with high capacity of simply to close off the end of chute. GraviLoad can design, manufacture and install fully integrated solutions to suit any requirement.

GraviLoad is so committed to the use of DEM modelling as a fundamental part of design development for new installations and the analysis of existing systems, it is offering up to £5,000 worth of free DEM analysis where the appropriate 3D files are available. This analysis would take the geometry and material flow and visualize performance. It is then possible to re-model and test to achieve the best performance without incurring the high re-work costs associated with traditional make/test routes.



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## HKD Blue adapts its ski slope technology to the coal handling market

HKD Blue engineers, manufactures and services water-atomizing equipment for a variety of applications and industries. Parent company, HKD Snowmakers, was founded in 1991 bringing a revolutionary low-energy snow gun to the ski industry. HKD snowmakers continues to be a national leader in durable, efficient, and user friendly snowmaking technology sold at ski resorts worldwide. Snowmaking, like dust-suppression, requires pressurized water, water-atomization, long-throw, but most importantly, reliability on site.

Over the last decade, HKD has expanded its product line for environmental purposes. The company's HKD Blue technology is used primarily for dust control, but other uses have been found in evaporation, environmental snowmaking, and irrigation. The core industries include demolition, mining, metal recycling, agriculture, and dry bulk handling and storage.

HKD has corporate offices in the United States and Canada. The US office is in Natick, Massachusetts, and the Canadian office, based in Quebec City, is where all engineering, manufacturing, and assembly takes place.

HKD's dust control technology works by generating and projecting fine water droplets that are more likely to catch the dust than the oversized droplets from traditional dust suppression watering systems. Large droplets generate a small yet significant airstream around themselves which can cause dust to glide past the droplet and remain in the atmosphere. Smaller atomized droplets stay in the air longer to create a 'wall of water'; these smaller drops have more total surface area to catch and corral fugitive dust. This phenomenon is known as the 'slipstream effect'.



Over the last several years, emerging environmental and health concerns relating to fugitive dust emissions have made HKD's equipment an integral component for eco-friendly bulk handling systems. Coal can be dusty at different points in the supply-chain, it is most problematic at the ports, transfer stations, and storage piles because of their location in urban settings with increased regulations or public pressure.

Coal storage piles are very dusty in dry windy conditions. Excessive dust emissions can force stevedores to shut down loading operations to adhere to local air quality standards and regulations. For these fixed dust-emitting locations, HKD's tower-mounted V-500 FX is an excellent option for dust suppression and continuous operation. The unit boasts a 25HP fan motor, a 25HP booster pump, and is available on 15, 20, or 30ft steel towers. This machine can achieve 300ft (91m) of throw, and with 330 degrees of programmable oscillation, the unit provides 260,123ft<sup>2</sup> (24,166m<sup>2</sup>) of misting coverage. The largest installation of V-500 FX towers is at the Port of Quebec, Canada, where HKD Blue provided 19 fully automated V-500 FX units to control dust from nickel, iron ore, and coal. These machines are controlled in a centralized control room, and can calibrate their direction for optimal throw based on the current wind conditions.

HKD Blue stands apart from the competition with its proprietary dual-nozzle technology. All of its machines have

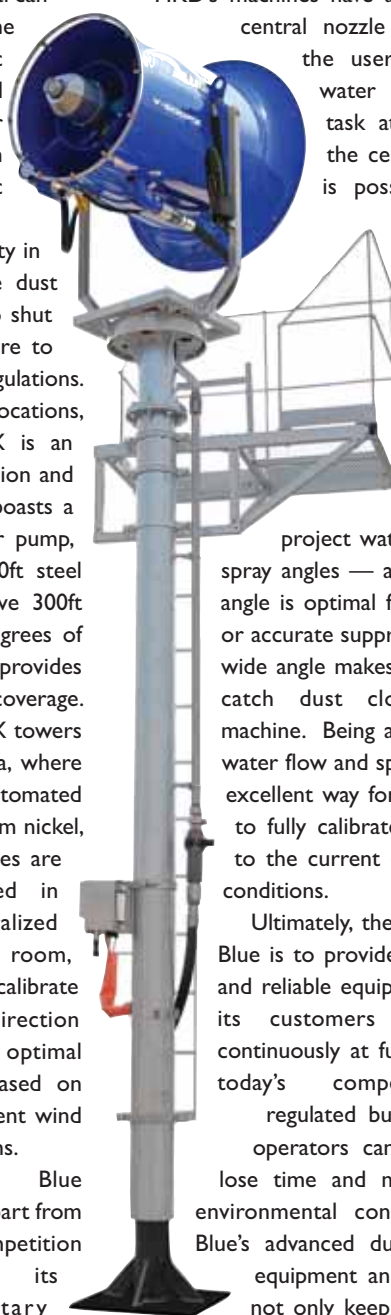
an outer misting ring of nozzles with fixed water flow and very small droplets for short range suppression. Additionally, unlike traditional dust control cannons,

HKD's machines have a variable flow central nozzle which allows the user to optimize water usage for the task at hand. With the central nozzle, it is possible — with a remote control —

to vary the flow from 5 to 100 gallons per minute. Additionally, this nozzle can

project water at different spray angles — a narrow spray angle is optimal for long throw or accurate suppression, while a wide angle makes it possible to catch dust closer to the machine. Being able to control water flow and spray angle is an excellent way for the operator to fully calibrate the machine to the current dust and wind conditions.

Ultimately, the goal of HKD Blue is to provide intuitive, safe and reliable equipment to allow its customers to operate continuously at full capacity. In today's competitive and regulated business climate, operators cannot afford to lose time and money due to environmental concerns. HKD Blue's advanced dust-suppression equipment and systems will not only keep its customers at the forefront of environmental stewardship, but are also efficient and profitable.



## Dust-free coal handling with Wuvio



*Wuvio deals with dust caused in coal handling operations.*

Wuvio makes dealing with dust easier, cost effective and allows implementation with minimized down time. Its solutions are in use wherever fugitive dust is an issue, and are ideal for the coal handling market. Wuvio uses innovative proprietary additives, developed in-house, to combat dust. Various techniques can be used to either suppress or control dust. Wuvio's foaming, crust forming, agglomerating and moistening additives are used to reduce mass loss, lower (or maintain) moisture levels and lower water consumption.

### **DUST MEASUREMENT? IS IT NECESSARY?**

*Dust is always present, even when it's invisible.*

### **WHAT IS DUST?**

Dust is a common air pollutant generated by many different sources and activities. Examples in the industry of dust polluting areas are mainly loading and unloading, screening, shredding, crushing facilities and excavation of different kind of materials such as coal, iron ore, minerals, fertilizers but also from materials you do not expect such as cereals, flower and corn.

Dust particles vary in size from visible to invisible. The smaller the particle, the longer it stays in the air and the further it can travel. The larger particles that can be breathed in are called inhalable or inspirable dust particles. Inhalable dust particles are visible to the naked eye and are deposited in the nose, throat and upper respiratory tract. Respirable dust contains dust particles so small they are invisible to the naked eye and reach deep into the lungs and can be absorbed directly into the blood stream. Anyone who is exposed to

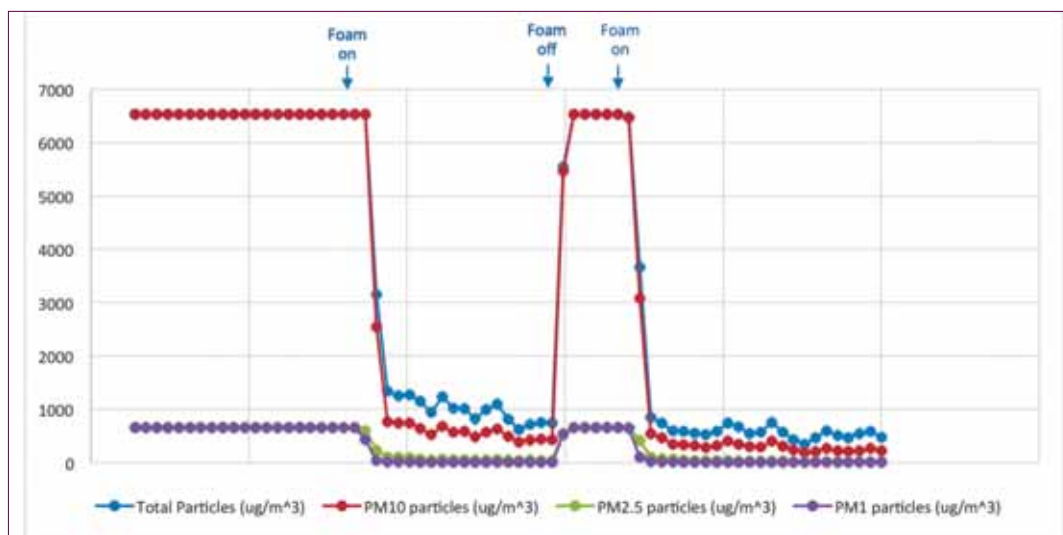


high levels of dust may be affected — the longer you breathe in the dust, then the greater the chance that it will affect your health.

### HOW CAN WE MEASURE DUST?

There is a wide variety of different instruments either fixed or mobile. The instruments will continuously indicate the concentration of thoracic, inhalable and respirable particles down to 0.1 micro-

grams per cubic metre. The dust monitors use a light scattering technique to measure different dust particle sizes simultaneously, recording TSP, PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1</sub> fractions.



### HOW CAN WUVIO DECREASE DUST ISSUES?

Wuvio is a company that specializes in dust suppression and control in industrial environments. It uses unique, in-house developed solutions. By using innovative solutions, Wuvio is able to create optimal working conditions for its customers. The company's products are used in a variety of sectors. Products for dust control find their way to companies in waste treatment, recycling, bulk transshipment, energy producers, mining industry and feed and food sector. Besides the product, Wuvio also provides the necessary equipment.

### TOTAL DUST SURVEY

As an option, Wuvio can perform a total dust survey which includes a total approach, measurements before and after implementation of its recommendations. Wuvio's reports can be used for the local authorities and/or internal use. It guides its customers through the whole process.

### CASE STUDY

One of Wuvio's latest projects for a major steel company was to reduce dust on its conveyor belts for cokes from  $>6,000\mu\text{g}/\text{m}^3$  to  $<1,000\mu\text{g}/\text{m}^3$ . With its foam unit and specialized foam, Wuvio succeeded in reducing dust to the levels required by the steel company and the local authorities. Its dust measurement equipment was used to measure the below results. The dust particles, PM<sub>2.5</sub> and PM<sub>1</sub>, which are the most harmful to people, have been reduced almost to zero. By creating a professional report (see graph, above), the customer could show the local authorities that it is complying with its licence to operate.



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## TTS's mobile link conveyor system facilitates coal handling at a low cost

Today's rapidly changing world requires fast reactions to many factors which influence business strategy every day. Following those rules, stevedoring companies choose a flexible approach to port operations, making them technically adaptable, economically favourable and environmentally friendly.

Combining a modern approach to material handling with extensive experience in the manufacture of coal transshipping equipment, engineers of Latvian company TTS have created a machine which aims to maximize material handling performance at seaports, production locations and process plants.

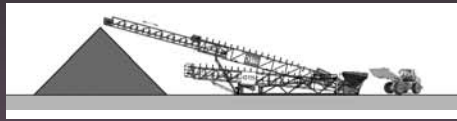
TTS's mobile link conveyor system makes it possible to create a highly productive transfer facility for bulk cargo without major construction works, in the shortest time, with optimum investments.

### WHAT CUSTOMERS GAIN

- ❖ durable and simplified design, which minimizes maintenance costs and ensures a long operational life;
- ❖ configuration of the equipment according to the individual requirements of the customer;
- ❖ energy efficiency — saving energy resources;
- ❖ simplicity of operation and ergonomics — minimizing staff training costs;
- ❖ environmentally friendly equipment that uses electric and hydraulic motors; and
- ❖ optimization of storage areas for bulk materials — due to mobility and high efficiency.

Using TTS mobile material handling equipment, it is possible to build a bulk cargo handling complex, which can be adjusted and modified according to actual operational needs.

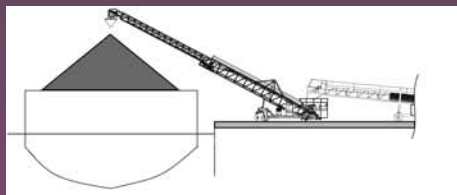
## Layout options



- ❖ formation of open longitudinal and radial stacks in a warehouse
- ❖ bulk cargo feeding with the front end bucket loader



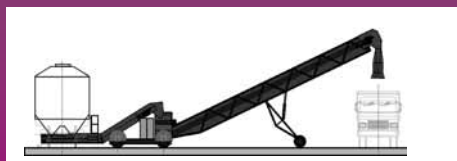
- ❖ automotive transport's direct unloading
- ❖ the filling up of covered warehouse or ground storage



- ❖ the loading of marine, sea and river transport
- ❖ the combination of several units in a line



- ❖ the loading of railway transport
- ❖ the loading of containers



- ❖ the unloading of railway transport



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## Coal market served by high-quality grabs from CFS Handling

Civettini talo & c sas — under the brand name CFS Handling — is a major designer and manufacturer of grabs for the handling of bulk commodities, including coal. The company's product range includes mechanical, hydraulic and electro-hydraulic buckets as well as hydraulic and electro-hydraulic grabs.

CFS Handling grabs are widely used in the coal handling market. Its grabs are precise, and prevent spillage from between their blades.

CFS Handling has 30 years of experience, so it is able to guarantee high quality, good prices, excellent design quality and customer focus. It operates worldwide, and its equipment can be found in countries from Brazil to Russia, for large production machines with buckets from 18m<sup>3</sup> to 40m<sup>3</sup>,

with hydraulic Bosch Rexroth special applications for faster closure and optimized landing costs and boarding.

CFS Handling uses wear-resistant building materials which characterize its machines, such as Hardox 500 for the blades or automatic



greasing systems on the bucket. This enhances the grab's features and decreases maintenance time, prolonging bucket life.

CFS Handling recently delivered three 40m<sup>3</sup> electro-hydraulic buckets for handling coal in Ukraine, as illustrated here.

Civettini Italo & c sas continues to research materials and components of increasing sophistication and high-performance, such as hydraulic grabs fitted with diesel engines of 60kW and the ability to lift 20m<sup>3</sup> with a remote control for use with the cranes used by its customers who have not yet adopted the use of port cranes such as those supplied by Terex Gottwald or Liebherr.



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## Bedeschi transshipping system for the HUBCO project in Pakistan

Bedeschi Spa — founded in 1908 — is one of the oldest companies in Europe supplying machinery and services for bulk handling, crushing, shiploading and transshipment systems.

Thanks to its very long experience, Bedeschi has successfully applied its expertise to a wide variety of applications and the company's technology is now known all over the world. Bedeschi has wide knowledge in handling difficult materials in any part of the world and in any environment. It offers the customer problem-solving solutions to work with:

- ❖ sticky material;
- ❖ abrasive material;
- ❖ extremely hard material;
- ❖ dry materials; and
- ❖ grain and feedstuffs.

In its main facilities in Italy, Bedeschi has a highly qualified and skilled engineering workshops (70,000m<sup>2</sup> of factory space), well equipped with modern, up-to-date, state-of-the-art machinery, where it designs and manufactures all the key components of the machines it supplies. This allows the company to control the complete quality chain and to have any spare parts available for its customers, which include:

- ❖ cement factories;
- ❖ mining companies;
- ❖ power utilities;
- ❖ steel industry;
- ❖ chemical and fertilizers industry;
- ❖ port authorities;
- ❖ shipping industry;
- ❖ terminal operators;
- ❖ ship owners; and
- ❖ port engineering.

Bedeschi offers a wide product range, including:

- ❖ stackers;
- ❖ reclaimers;
- ❖ combined bucketwheel stacker/reclaimers;
- ❖ apron feeders;
- ❖ crushers;
- ❖ shiploaders;
- ❖ ship-unloaders;
- ❖ belt and pipe conveying systems; and
- ❖ de-dusting and gas cleaning equipment

A new 2 × 660MW coal-fired power plant (HPP) is to be built, and will be located slightly to the north of the estuary of the Hab River (Baluchistan province, Pakistan). The site selected for the project is to the east of Karachi, slightly to the north of the existing HUB power plant at the mouth of the Hab River .

To feed the power station, an effective supply chain for coal transportation from various sources has to be devised and developed. This barging system will be used to handle the required approximately 3.8mt (million tonnes) per annum of coal. The coal will be transshipped and transported from the anchorage to the shore terminal. The shore terminal foresees the construction of a feeder receiving berth connected to shore by a bridge.

Transshipment operations are carried out by dedicated self-propelled, self-loading/-unloading barges (SLUB), collecting the cargo from gearless OGV (oceangoing vessel) holds and delivering it to shore.

### MAIN CHARACTERISTICS OF MATERIALS TO BE CONSIDERED

Material	Repose angle (deg)	Size (mm)	Percentage max size (%)	Max bulk density (t/m <sup>3</sup> )	Maximum moisture (%)
Coal	37–39	0 to 75	80	0.9	10–30



*An example of a coal transshipment hub. The operation involves three vessels — 400,000dwt, 280,000dwt and 170,000dwt respectively — moored together, operating successful in Subic Bay in the Philippines. All three vessels are reliant on the largest vessel's anchor.*



# BEDESCHI



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BEDESCHI product range covers a wide variety of equipment for Heavy Clay Industry, Bulk Materials Handling, Marine Logistics and Mining.

BEDESCHI services range from feasibility studies and basic engineering to complete green field, turn key installations. All design activities are performed in house in BEDESCHI technical centers in Italy and United States, while all manufacturing is carried out in the Company state-of-art workshop in Italy.

BEDESCHI has followed this way of operation for more than 100 years, resulting in complete quality control and the highest product reliability.

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A dominant factor in coal supply costs for most of the new coal-fired power stations is the cost of ocean transportation, especially where the material has to be transported over long distances from producer to consumer.

The new coal-fired plant will be built adjacent to the existing oil-fired plant. A jetty and coal transshipment facilities are under construction, which will ensure uninterrupted coal supply to the power plant.

The coal power plant had been declared a priority project under the China-Pakistan Economic Corridor (CPEC). The company is supposed to use superior technology and produce clean energy.

Bedeschi designs and manufactures safe and environmentally sensitive solutions and due to these excellent skills, Bedeschi was awarded the supply of No 2 barge loader for the handling of coal. The whole system will be installed on a Panamax ship, able to self-store as a warehouse in order to reduce the unloading operations during the barges' downtime.

The scope of supply is one conveyor belt handling system, including all its components, briefly described below:

- ❖ two double receiving hoppers, capacity of approximately 200m<sup>3</sup>;

BASIC DATA FOR THE DESIGN OF THE CHS	
<b>Nominal conveying capacity:</b>	
❑ Hoppers, feeder belts FB1, FB2, FB3 & FB4 and belt conveyors BCI, BC2:	1,500tph
❑ Cross conveyors BC3 and barge loader BGLI will be calculated for coal handling, with specific density	2,500tph 0.8–0.9t/m <sup>3</sup>
Max. heel for the base pontoon	±5°
Max transverse acceleration	1g
Max trim for the base pontoon	±2°
Max longitudinal acceleration	0.5g
Max vertical acceleration	0.7g
Max air temperature	45°
Max. admissible air humidity	95%
Max. admissible wind speed for operation	20m/s (72km/h)
Max. wind speed (not operating)	41.6m/s (150km/h)
Max. wave height during operation	2m
Fatigue analysis for the structures at ± 2° heel with 8 sec cycle	
Expected life-time for the handling system components > 50.000 working hours	

- ❖ four feeder belts;
- ❖ one fixed conveyor belt system (three belts);
- ❖ one automatic sampling system;
- ❖ one slewing/luffing bargeloader;
- ❖ one trimming chute, slewing and tilting, located at the barge loader discharge end;
- ❖ one weighing device (belt scale); and
- ❖ two metal separators.

The design and fabrication of the machines and equipment will benefit from Bedeschi's experience as a fourth-generation supplier of transshipment facilities, as well as the 108 years of experience — and expertise — that Bedeschi has in the bulk material handling sector.

The conveyor system will be designed for continuous heavy duty operations.

Coal is the main commodity to be handled by the conveyor system.

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## Dry cargoes need windfences!



32m high fence for mountainside port storage

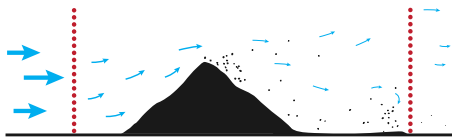


Fence integrated with doors and conveyors



Fence with roof for easily blown dust

A windfence is a porous screen upwind and/or downwind of the stockpile that filters the wind and controls your valuable dust



Fence incorporated with retaining wall



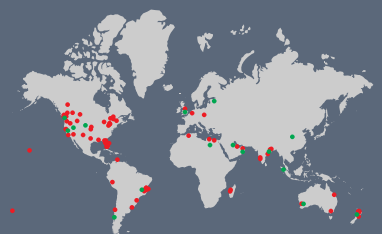
Hopper fence in conjunction with fog system



1.5km fence in marine environment



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## Innovative dust suppression for coal handling & storage from INSTRAL

During production, handling, transloading and transportation of coal, a lot of dust is generated and escapes into the environment. This dust can cause great damage to workers, the environment and surroundings. It also results in unnecessary wear to equipment, as well as resulting in significant losses of raw material. The dust control agent C-Force® Industry has been specially developed by Netherlands-based INSTRAL to solve this problem. INSTRAL specializes in innovative dust control solutions that aim to achieve the highest standards for companies, people and the environment.

### TIME TO KICK DUST

Because of the serious threats posed by fugitive dust, companies involved in coal production, storage, handling and transport make considerable efforts to control it. A range of methods are already in use to control dust, but these could be improved.

Regardless of whether coal is stacked or transported by belt, vehicle, train or vessel, INSTRAL's C-Force® Industry coating can be applied in any conditions under any circumstances. This is due to the wide temperature range at which it can be applied — starting from as low as -35°C. Also, coal that remains in empty storage areas or left behind on (un)paved roads during hauling operations can be treated easily. C-Force® Industry gives a long-lasting dust protection.

C-Force® is the name of INSTRAL's

unique chemical product line. It focuses on quality improvement, untroubled process continuation and environmental care. C-Force® Industry enables dust protection and control during bulk storage and transshipment (coal, sand, iron ore pellets etc.) and at mining sites.

For decades companies involved in coal have been searching for suitable and efficient solutions to control dust. Dust control is currently still viewed as an 'extra cost' rather than as an inherent link in the dry bulk handling chain. When C-Force® Industry is used as a dust control agent, the treatment generates immediate benefits. These include:

- ❖ **less production loss** by binding dust: when C-Force® Industry is used, dust that would otherwise be blown away is



bound and saved. Other secondary savings are made, as there is no need to remove dust from unwanted places. Furthermore, it will be less of a nuisance to the workforce, environment, surrounding areas and will cause less wear to equipment;

- ❖ **less energy** to remove the water from the coal: the unique savings for the end-user will be substantial when C-Force® Industry is used;

- ❖ **less ballast water** to transport: another unique beneficial feature of C-Force® Industry is that it gives coal a moisture-repellent film, which shields the materials from taking up moisture during rainfall. Less ballast water in the coal means major savings further in the process, when the water has to be removed;

- ❖ **fewer flowability problems:** furthermore, with the use of C-Force® Industry, coal is less likely to freeze together and form lumps in the train wagon/ship, giving an substantial advantage



during unloading operations;

- ❖ **less leaching:** large amounts of rain may leach out smaller particles and water-soluble components that may give rise to pollution of soil and ground water; and

- ❖ **less spontaneous combustion:** there are a number of factors that contribute to the process of spontaneous combustion of coal. One of the most important parameters involved in the process of spontaneous combustion is moisture content. C-Force® Industry forms a water-repellent film that minimizes/blocks the penetration of rain in the bulk, but allows the moisture in the coal to evaporate.

C-Force® Industry products are non-hazardous and burn ashless. Instral has specially developed this dust control treatment programme for coal to reduce the amount of moisture and controls dust.

C-Force® Industry will give producers, traders and end-users of coal substantial benefits and an immediate return on investment.

INSTRAL is an ideal point of entry for innovative and sophisticated dust and moisture control solutions.



### C-FORCE® INDUSTRY AT A GLANCE

#### BENEFITS

- ❖ effective dust control
- ❖ long-term performance — up to six months
- ❖ all weatherproof
- ❖ moisture repellent
- ❖ easy to apply, even at
- ❖ cold (-35°C) temperatures
- ❖ less leaching
- ❖ lower risk of spontaneous combustion
- ❖ environmentally friendly

#### SAVINGS

- ❖ saving on water use
- ❖ saving on environmental penalties
- ❖ saving on energy
- ❖ saving on transport & shipping costs
- ❖ better flowability
- ❖ less production loss
- ❖ lower cleanup costs

## Coal handling: an easy task for Turkish grab company Calim



*Calim's grabs are widely used in coal handling applications, as well as many other situations.*

Calim was founded in 1970 as an engineering office and consulting company, specializing in the construction of grabs (main business) as well as nearly all kind of bulk handling equipment.

The company founded its own workshop in 1973, and since then, it has been known as Calim Manufacturing. In early 1975, it developed the first grabs with 100% enclosed buckets, to protect the environment, and these became available on the market.

Calim's grabs are ideal for a wide range of dry bulk products, including coal. The company's main customers are shipping companies, where the grabs need to withstand the rough conditions on sea-going vessels, charging and discharging the vessel in every corner of the world.



Calim also regularly carries out repairs on grabs made by other manufacturers.

In terms of lifetime costs, grabs from Calim are extremely economical and, due to their high quality, are well worth the price of investment. They have proven to be reliable, efficient, able to handle a high payload, powerful and requiring few spare parts.

Calim's product range is suitable for much more than just coal, and includes:

- ❖ mechanical rope grabs (single rope, two-rope, three-rope, four-rope systems);



- ❖ electro-hydraulic grabs;
- ❖ remote controlled hydraulic grabs;
- ❖ wood grabs (for wood bundles or logs); dredger grabs;
- ❖ salvage grabs;
- ❖ crane equipment for operating electro-hydraulic grabs;
- ❖ cargo-turners;
- ❖ heavy-lift beams (maximum load 100 tonnes); and flat traverse frames.

## AMECO expertise serves the coal handling market

AMECO was founded in 1932 in Alsace, a French region that lies in between the Vosges Mountains and the Rhine River, bordering both Germany and Switzerland.

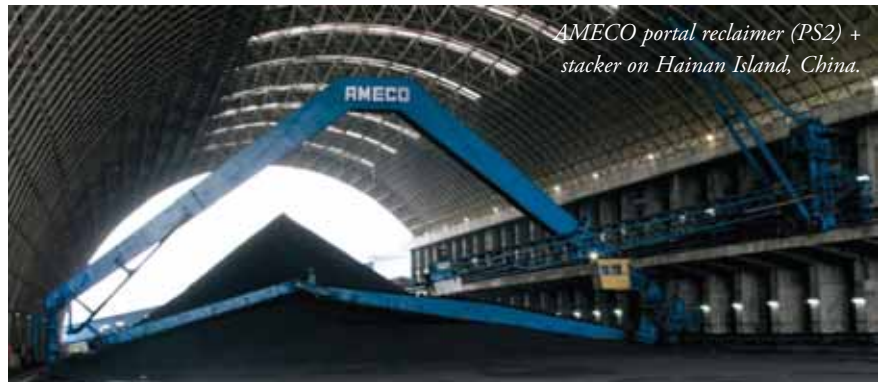
Having worked closely with the Alsatian potash mines, AMECO went from providing maintenance services, to the supply of conveyors, to delivering all types of equipment to fulfill their material handling needs.

AMECO delivers the latest technologies and robust quality bulk handling equipment — stackers, reclaimers, and shiploaders. Manufacturing in Europe, the company has over 380 references on every continent in the cement, commodity food, fertilizer, mining, power generation as well as pulp and paper industry.

### COAL HANDLING SYSTEMS IN ASIA

AMECO has a strong global presence in the coal industry due to its early mining expertise. Many power plants in the world run on hard coal and lignite. These power stations employ strategic bulk material storage facilities, in which coal of different origins and diverse quality levels is temporarily stored. AMECO's main customers that require these specific coal-handling solutions are representative of the Asian market.

The Asian market has always been of interest to AMECO with references in India, Pakistan, China, Thailand, Taiwan, South Korea, Indonesia, and the Philippines. The five biggest coal importers in Asia are India, China, Japan, South Korea, and Taiwan,



AMECO portal reclaimer (PS2) + stacker on Hainan Island, China.

with Indonesia being the biggest coal exporter. Coal continually increases its share in power generation and with today's urbanization in the developing Asian countries, there is a soaring energy demand. This is a significant factor as to why coal continues to power the world.

### AMECO'S MACHINES

Portal reclaimers have been historically the star product of AMECO since 1932 and rests at the heart of the cement and mining industry for coal handling systems. AMECO has extensive knowledge in this type of longitudinal stockyard and its reclaimers are handling a broad range of bulk materials including woodchips, urea, ammonium nitrates, gypsum, and iron ore.

AMECO reclaimers can be combined with a stacker, creating a full storage system. Its stackers also combine slewing, luffing and travelling movements to create piles with the lowest possible dust emissions.

AMECO also offers blending beds that homogenize the coal. This ensures that the product has a consistent quality, which in turn increases the efficiency of the power production process.

### AMECO PORTAL RECLAIMER (PS2) + STACKER ON HAINAN ISLAND, CHINA

One of Asia's leading paper and pulp companies decided to build a pulp mill on Hainan Island in China's southernmost province due to the increasing global consumption of paper and thus demand for mills with high production capacities. AMECO supplied the engineering for a stacker and reclaimer in 2004 to a power plant, which was part of the construction of this project. AMECO supplied the design and the machine was manufactured locally, handling coal at a capacity of 750tph (tonnes per hour).

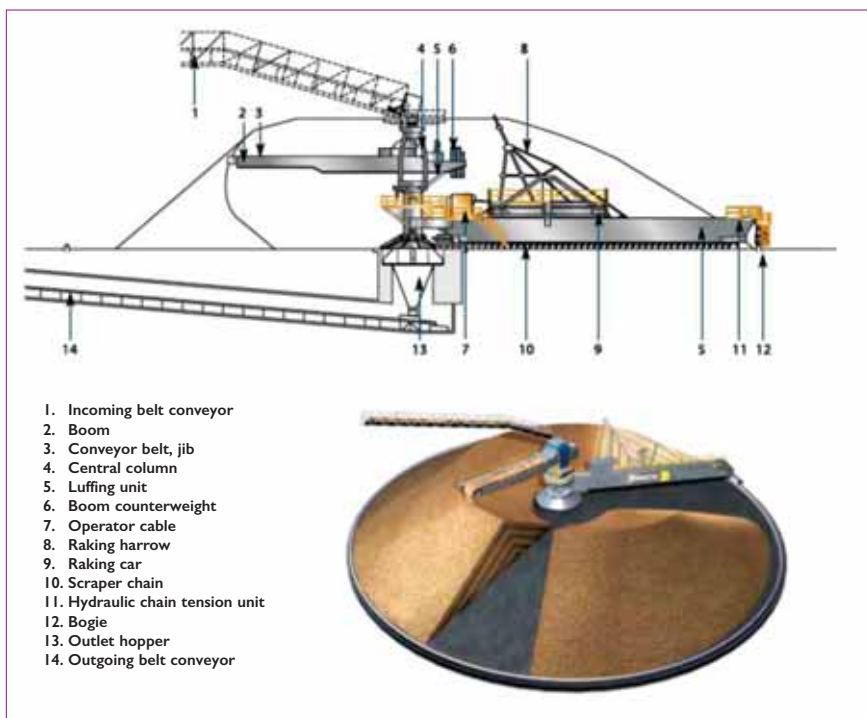
### AMECO PORTAL RECLAIMER (PS2) IN BUKIT ASAM, INDONESIA

One of AMECO's portal reclaimers has been in operation at a state-owned steam power plant in Indonesia since 1991. In line with the national energy security development programme in the early 1990s, the company was assigned by the government to develop into the coal briquette business. During this time AMECO worked in conjunction with the EPC Alstom and supplied the design for the machine.

AMECO has followed the customer through the lifecycle of the portal reclaimer, having replaced parts such as a reclaimer arm in 2016.

### AMECO CIRCULAR STACKER HOMOGENIZING RECLAIMERS (CHO) IN RAMAKRISHNAPURAM, ANDHRA PRADESH, INDIA

AMECO successfully supplied the engineering for two circular stacker homogenizing reclaimers in 1996 for handling coal and limestone to a power plant in Ramakrishnapuram, India. This



1. Incoming belt conveyor
2. Boom
3. Conveyor belt, jib
4. Central column
5. Luffing unit
6. Boom counterweight
7. Operator cable
8. Raking harrow
9. Raking car
10. Scraper chain
11. Hydraulic chain tension unit
12. Bogie
13. Outlet hopper
14. Outgoing belt conveyor



power plant is part of a 75-year-old diversified business group, which has interests in cement, heavy engineering, sugar, power and IT. It has nine manufacturing locations in various areas in India and Vietnam.

“Bed blending is important to optimizing plant performance and controlling product quality. It is used to reduce of the random variability of raw materials by implementing stockpile management techniques (*Coal Fired Power Generation Handbook* by James G Speight, Scrivener Publishing, 2013)

The circular homogenizing stacker reclaimer system (CHO) offers this solution as well as reclaiming the material. The CHO stacks the bulk material in one ring-shaped pile. The circular stacker is located on the centre column, allowing rotation and luffing motion hence building of chevron or cone shell method. Its height above the top of the pile is kept at a minimum distance to reduce dust emission.

The reclaimer bridge rotates around the central column and reclaims the bulk material. Sweeping movements of the harrow homogenizes the bulk material as well as causing the bulk material to slide on the pile base. It is then reclaimed to an output conveyor via the reclaiming arm located below the bridge structure.

### AMECO'S SERVICES

Design, engineering and manufacturing for customers are at the heart of AMECO's operations. The company is committed to supplying its clients with excellent after-sales services, wherever they may be in the world. Its service offering includes the following:

- ❖ overseeing, organizing and co-ordinating the erection, commissioning and/or start-up of AMECO supplied equipment by a third party contractor;
- ❖ completing erection, installation, and commissioning of equipment from unpacking to the handover;
- ❖ providing maintenance services by a



*AMECO portal reclaimer (PS2) in Bukit Asam, Indonesia.*

multilingual team of inspectors and engineers, covering all customers worldwide including inspections, refurbishment, preventative maintenance and repairs;

- ❖ ensuring clients always have the right spare parts available, not only at the right time and place, but also at the right price; and
- ❖ keeping long lead items in its storage facility for emergency parts.

### STAYING COMPETITIVE

Close collaboration with customers and feedback on their experience is crucial to AMECO and helps it to improve design based on what customers have to say. It values its customers' expertise and opinions in order to enhance its operations and services. AMECO follows the customer through the journey from the initial installation phase to the lifecycle of the machine.



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## Dustcruster®: keeping coal under control

Den Bakker Dustcrusting technology b.v., (dbd global) specializes in dust control and prevention. The company originally started in 1948 and is now successfully active with Dustcruster® technology on many a site and all over the world. It is very popular at coal handling installations, but is also suitable for use with other commodities, such as petcoke, iron ore and similar products.

Den Bakker Dustcrusting technology b.v. specializes in the control of dust, not only by cleaning areas that are already dusty, but also, and most importantly, by preventing dust from becoming a problem in the first place.

Being heavily involved in this matter as a contractor for some 30 years, the company has developed several solutions to help with dust control and prevention, including a range of specially designed spraying vehicles, each having particular capacities and performances to suit the needs of a specific site or condition.

The constant desire to improve led to the development of a very effective method to control dust, far better than continuously spraying — and wasting — pure water: the Dustcruster® technology.

### SOLUTION

DBD global has a solution for tackling dust problems commonly connected to storage and handling of large stockpiles of coal.

The product is called Dustcruster dry® and consists of a selected blend of several types of cellulose fibres pressed into pellets. The advantage of using pellets instead of ready-mixing product is that it can easily and cost effectively be transported and stored as dry bulk or in FIBCs (big bags) to the actual site where it is needed.

Once on site, Dustcruster dry® can then be dissolved into the sprayable product and transforms into Dustcruster liquid® by adding water and using dbd global's special mixing installation.

The next step is to spray Dustcruster liquid® employing purpose made spraying trucks to cover the coal stockpiles, hence creating a tough and long-lasting and clearly visible white crust which will last for a long time, even in tough atmospheric conditions

One FIBC contains approximately 800kg of Dustcruster dry® which, once blended with the required amount of water, translates into 3,200 litres of Dustcruster liquid®. The maximum effective solution is three litres of



*Picture after very heavy rainfall (more than 100mm in one night).*

Dustcruster liquid® per m<sup>2</sup> for crusting petcoke, but for crusting less dusty materials the company recommends only two litres per m<sup>2</sup>.

As mentioned, the purpose built spraying trucks are required to successfully cover the coal stockpiles creating a tough and long-lasting and visible crust.

Dustcruster® is an inexpensive and environmentally friendly and natural product, not requiring special precautions to store or use and not affecting fauna or flora. Normal rain does not affect its effectiveness whatsoever. Even with very heavy rainfall (that is more than 100mm in one night) there is still a tough and long lasting crust of Dustcruster®.

Only after digging or disrupting the stockpiles is it necessary to repair the crust by spraying on a new layer at the clearly visible disrupted area.

Dustcruster liquid® is also used in near zero temperature conditions. In these circumstances, electric heaters are installed in the mixing tank to allow the spraying process to be performed in winter conditions. The company sells and rents the mixing containers, depending on geographical location and need.

For the spraying of Dustcruster liquid®



*The DBD global Demo team is always ready to perform a live demo.*

the purpose made spraying trucks are required, mostly agri-tractor towed.

### IT IS CLEARLY VISIBLE

A major feature of Dustcruster® is the fact that it is clearly visible. It is white so it can be seen miles away. Environmental Inspectors are able to easily judge the efforts a terminal has undertaken.

### DBD GLOBAL DUSTCRUSTING DEMO TEAM

DBD global has a team, always at the ready to come over to prospective customers' sites, with everything required to perform a live demo on the stacks of their choice.

For this purpose dbd global has two options and will select either the fully autonomous system, which it brings on its



*Not the Swiss Alps in winter time, but a major bulk terminal in a seaport in Western Europe in the summer time.*

Wagoncruster®



semi-trailer lowloader, or, for overseas destinations, the company can despatch its containerized kit. In both cases the demo is performed by its specialized team.

### WAGONCRUSTER®: CONTROLLING DUST COAL TRAINS

Dust creation during transport of coal and similar products by train is also a matter of concern. Using Dustcruster® at the loading station solves this problem. The crust safeguards the dust particles from being lifted by the wind during transport. This automatic system which is called Wagoncruster® was developed as far back as 2007 and is still successfully used to full satisfaction of the customers, without interference of the filling process.

### CONTROLLING DUST WITH FOAM DBD FO 312®

With some dust-prone products, it is not



With foam dbd FO 312®

appropriate to use water as this may affect the product quality or hurt the further processing. For such applications, dbd FO 312® was created.

In a special foam generator, with 2 litres of dbd FO 312® and 98 litres of water a staggering 5,000 litres of foam is created.

Foam, having a larger surface will envelop around the dust particles more easily and keep the area free of dust.

Depending on the actual activities performed the foam can last anything from three to 12 days.

An additional benefit is that huge savings on water is achieved.

### COMPETITIVE PRODUCTS

Typical products proposed by other companies are polymer based, but most of The customers of DBD Global, after first having tried the polymer products and then trying Dustcruster® are sufficiently satisfied to continue using Dustcruster®



Without foam dbd FO 312®

exclusively. Several comparative tests have shown that Dustcruster® contains the dust, is long-lasting, clearly visible, environmentally friendly and price worthy.

### EXTENSIVE EXPERIENCE

Den Bakker Dustcrusting technology b.v. has gained vast experience in the control of outdoor dust. The company uses very advanced systems, stationary as well as mobile, which can operate under the most severe conditions. Frost and strong winds present no problems for the company's equipment.

Den Bakker Dustcrusting technology knows that each environmental problem needs its own approach and solution, and it enjoys the challenge of developing appropriate solutions for its customers, round the clock, seven days a week.

This commitment is fuelled by the company's belief that there is a solution to each and every dust problem.

DC:

# DUST!

The headache of each terminal operator!

We have the solution:

# Dustcruster®!

For more details, contact:

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# Covering all the bases

## enclosed storage solutions



*View of the interior of the storage facility built for Pontotoc Sands by Legacy Building Solutions.*

Louise Dodds-Ely

### Time is money in fracking — and storage: Legacy has the solution

The booming fracking industry requires players to be first on site, and ready to work on day one. When business needs and regulations require frac sand to be kept under cover, storage buildings are a vital part of the operation — and a storage building that is ready sooner can make the difference between a business boom or a bust. Any fast-moving industry can learn a lesson from fracking on how to simplify operations and keep them moving when time is money. And the fracking industry consistently turns to a fabric structure with turnkey construction for bulk material storage.

#### **SAVE TIME UPFRONT: EXPEDITED CONSTRUCTION**

“Construction is always a large capital outlay,” said Brend King of EMW Industrial,

a turnkey construction company offering services to the bulk storage industry. “The quicker it generates revenue, the faster you realize your ROI, the less you pay in interest, and the better value you get from your project.”

A single-source building supplier helps the project stay on a strict timeline. One construction manager will oversee the schedule for component manufacturing, installation, travel and subcontractors. If one aspect of the project is facing a current or projected delay, the construction manager may be able to allocate more resources to that aspect of the project or reschedule other parts of the project to meet the timeline.

Fabric cladding is installed faster than steel sheeting. Depending on the size of the building, this can mean the building is

ready to use weeks sooner.

Pontotoc Sands Company in Oklahoma learned this lesson well. After making an initial query to Legacy Building Solutions on December 28, the company was using a new, custom engineered 8,000ft<sup>2</sup> building within six weeks. Josh Lehde, owner at Pontotoc Sands, worked with Legacy on the building design. “We made some changes to the building design during construction, and it wasn’t an issue,” said Lehde. “We had clear expectations, and the process was very simplistic.”

#### **SAVE TIME DURING CONSTRUCTION: TURNKEY SOLUTION**

When you’re running a business, you don’t have time to deal with every aspect of construction. With a turnkey solution, you have one point of contact who handles

everything — from securing permits to building design and installation to supervising HVAC and lighting systems to landscaping around the finished product.

“Turnkey construction really allows the customer to focus on what they do best: running their business,” said King. “Then we focus on what we do best, which includes integrating the building and equipment, putting the pieces together and handing off a ready-to-use structure.”

The convenience of hands-off construction was an important advantage for Pontotoc Sands. With a thriving sand storage business to run, it did not have



*Front view of Pontotoc Sands storage building.*



*Exterior of Pontotoc Sands storage building.*

Pontotoc Sands customized its flat storage building with cast-in-place concrete panel walls that will withstand the pressure of bulk storage and equipment use in and around the building. One overhead door allows access to the building for personnel, machinery and equipment.

Architectural fabric, including PVC fabrics like Legacy’s exclusive ExxoTec™, also allow natural light into the building. Using natural light rather than artificial lighting saves on ongoing energy costs — and is especially important in areas where there may not be adequate infrastructure to support a complete power system. The Pontotoc Sands building does not have electric lighting inside, which saved on both construction time and future maintenance costs.

time to oversee all aspects of construction. “We prepped the site, there were a few days before it shipped, and once your guys arrived we were pretty hands off, said Lehde. “We went about our business and the crew handled all the installation.”

customizations may have a lower initial cost, but the inefficiencies of dealing with a poorly designed building will cost money and time every day the building is in use.

When time is money (and it usually is), investing time and money in a flat storage building will save both — in the near-term and over the lifespan of the building.

### SAVE TIME DAILY: EFFICIENT DESIGN

A custom building engineered around the customer’s specification saves time and energy daily. It is possible to customize the size of the building to optimize pile heights and create space for operations, equipment and storage. With a storage space built to spec, customers have plenty of space to run their businesses without wasted square footage.

Engineered buildings also allow for features including conveyors, bridge cranes, overhead doors and loading docks — features that make it easier to load and reclaim product. A building without these



## Going green with domes: Geometrica's Freedomes® safeguard the environment

*In Chile, a second Freedom will soon be covering another coal stockpile.*



Are open bulk storage yards a thing of the past? With an increasing need for environmental compliance, uncovered stockpiles need to be enclosed sooner rather than later. It's no surprise that mines, ports, power and cement plants seek a storage solution that avoids downtime and high cost. Yet many face additional hurdles, such as:

- ❖ location is remote and rugged with a sloping terrain;
- ❖ climate is adverse with a weather window;
- ❖ stockpile is an irregular shape;
- ❖ site is in a confined area.

### ALL PURPOSE, ALL TERRAIN

It takes more than conventional building construction to overcome all obstacles. Traditional building solutions with joists, for example, are limited to planar trusses in an array and work in only one direction on level ground. Solutions with machined joints, such as ball-joint systems, are expensive and must minimize the number of nodes.

Geometrica solves all of these issues with a freestyle, geodesic dome that can enclose irregularly-shaped stockpiles on any terrain. In fact, its solution is even trademarked — Freedom®. This incredibly strong superstructure can span 300m without any interior columns. All of the constraints from any conventional building method are surpassed.

Geometrica Freedomes accommodate:

- ❖ brutal locations with sloping terrain;
- ❖ typhoon-force winds and rain;
- ❖ punishing snow loads;
- ❖ corrosive marine environments;
- ❖ caustic bulk materials; and
- ❖ irregularly-shaped, confined storage yards.

### CUSTOM DESIGN

Geometrica's technology evolved from gridshell innovations originally developed by our forefathers in the 1960s — today, its domes can be designed with a non-circular plan in varying curvatures for complete design freedom. This expertise, refined over decades, now covers some of the world's largest stockpiles.

There is literally an infinite number of possible design plans for a Freedom structure. For instance, just like Geometrica's circular domes, Freedomes may have lamella, keiwitt or combination patterns with a single or double structural layer. Once the geometry and support requirements are defined, Geometrica's engineers can propose the most efficient patterns and layer options for an enclosure.

Whether rock fill, sand, clay, gravel, bauxite, coal or mineral, all of Geometrica's designs accommodate

existing operations seamlessly. Clearances needed for vehicles or equipment, personnel access, and maintenance requirements are readily accommodated during our design work.

### ENVIRONMENTAL FOOTPRINT

Planet-friendly Freedomes have transformed bulk materials handling in rainforests, ports, coastal strips, gravel plains, sandy deserts, high dunes, mountains and salt flats. These no-truss, clear span superstructures make full use of space and protect bulk materials from the elements — and the surrounding environment from the stockpiles — helping industry secure a smaller environmental footprint. Extra operational efficiencies and benefits include:

- ❖ fugitive dust, runoff and noise are contained;
- ❖ translucent panelling provides natural interior light;



*Edo Cement, Nigeria: installation begins in Nigeria with locally-sourced manpower.*



*Interior view: this Freedom spans over 200m, without any interior columns.*

- ❖ structure components are packed into recyclable, metal containers; and
- ❖ no special equipment is required on site
- ❖ locally-sourced labour installs the structures from Geometrica.

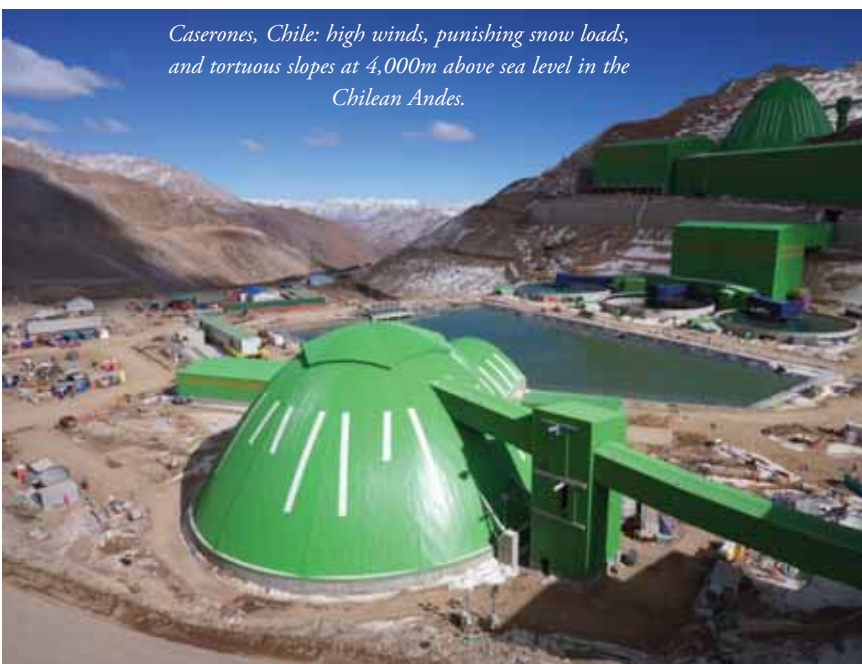
### ZERO DOWNTIME

Excellent strength-to-weight ratios make Geometrica's domes the go-to solution for storing bulk materials, especially in the most challenging locales worldwide. And, Geometrica understands that many stockpiles must remain in operation while being covered, too.

Geometrica offers three different



*Zero downtime: this stockpile did not stop operations during Freedom installation.*



*Caserones, Chile: high winds, punishing snow loads, and tortuous slopes at 4,000m above sea level in the Chilean Andes.*

assembly methods — lift-in-place; perimeter self-supporting; and centre-out. The option ultimately utilized is determined by the specific site requirements, operational requirements, as well as the structure's design.

Stockpiles can remain in operation while being covered and this can be accomplished safely, rapidly and economically without heavy machinery, scaffolding or welding. Reduced time, labour and equipment also equates to a lower total cost of installation.

Hundreds of uncovered stockpiles still exist worldwide and can benefit from Freedom technology.

Regardless of geography or climate, Geometrica designs domes that deliver both business- and eco-friendly solutions. The company believes that industry and nature can coexist on some of the largest scales imaginable.





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Golfetto Sangati is an Italian company designing, building and installing turnkey equipment for grain handling and milling. This strong industrial reality is born from the merger of three historic Italian brands: Golfetto, Sangati and Berga. The company fulfills the market demand in a competitive way and with state-of-the-art technologies based on research, experience and in-depth technical knowledge.

Golfetto Sangati is a reference point for the design and construction of complete port systems for loading and unloading ships. The company designed and built more than 50 port systems all over the world and plays a primary role in technological advancement from the first pneumatic ship unloader to the more advanced mechanical loaders and unloaders.

The company supplies a large range of handling, processing and storage, loading and unloading systems on tires or rail with a capacity of 50 to 2,000 tons per hour implementing the best technical principles.

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## Silo plants in modular design – flexible and cost saving



Due to the continuously growing need for safe food and feed, the demand for silo storage space is rising accordingly, writes Tobias Stark. To be prepared for this growth and in line with the Bühler strategy to reduce food losses and waste by 30% until 2020, the Business Segment Grain Quality & Supply has developed simple, but effectively usable standard quotations for silo plants. The quotations cover storage capacities from 10,000 t up to 100,000 t.

The basis is a standardized, preconfigured grain silo plant, which can be extended by additional modules according to the customer's request. Owing to its modular construction, each plant combines high-quality, well established and proven components with a high degree of flexibility obtained by optionally combinable modules. Some of the main process steps are as follows:

### INTAKE

Depending on customer's needs, Bühler offers various system options. Thus, the intake pit of the basic plant can be purchased for example with the dimensions 4 x 4m (end-dump trucks) or 16 x 3m (sideways-dump trucks) and, if necessary, can be extended by additional sub-options.

In order to prevent dust emission during the unloading process, Bühler uses either centralized or decentralized

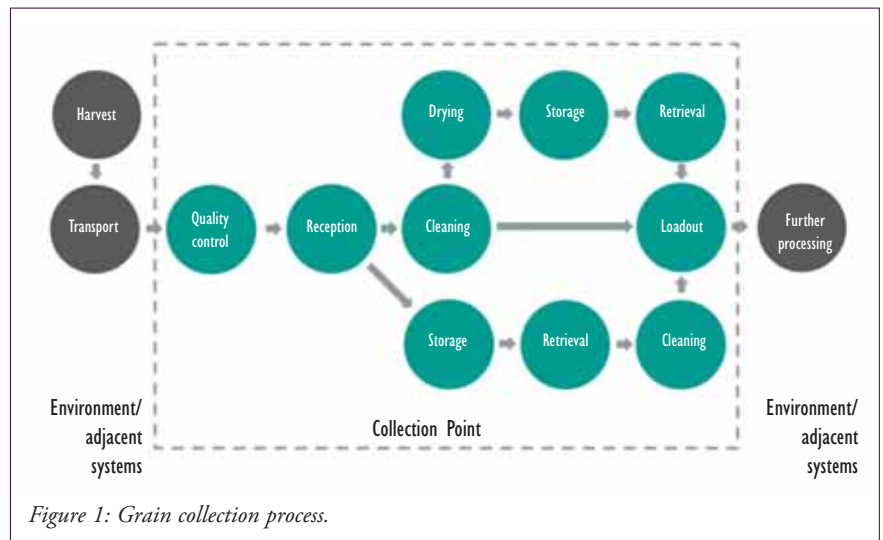


Figure 1: Grain collection process.

aspiration systems. These systems are classified as aspiration above and aspiration below the grating. The aspiration systems have a modular structure, which is appropriate for each type of intake pit, so they will always perfectly meet the respective requirements.

### CLEANING

Due to different products as well as variable conditions in different regions, the cleaning requirements of the silo plant vary. A variety of requirements can be handled with the basic plant, which includes two different cleaning systems.



Figure 2: Dust aspiration in a truck intake pit.



Figure 3: Bühler drum sieve LAKA.

#### STEP 1: DRUM SIEVE LAKA/RCDA – COARSE CLEANING

The drum sieve with direct drive is especially suitable for coarse pre-cleaning to reduce wear to the downstream equipment in the production process. It reliably eliminates coarse particles, lumps, wood chips or corncobs at a high throughput rate of up to 800tph (tonnes per hour).

Advantages at a glance:

- ❖ efficient coarse cleaning for high reception capacities;
- ❖ reliable protection of downstream machines for high plant uptime;
- ❖ long service life and easy maintenance thanks to robust and optimized design

#### STEP 2: TAS INTAKE CLEANING – READY FOR STORAGE

To make the product storable and to be able to further process different types of grain into high-quality products, the TAS universal cleaning machines are installed as second cleaning step. With up to 48m<sup>2</sup> sieve area on less than 12m<sup>2</sup> footprint, the TAS cleaning machine can achieve precise cleaning results for capacities up to 250tph.

Advantages at a glance:

- ❖ first-class cleaning and grading quality;
- ❖ high throughput rate thanks to high screen density on a small footprint with integrated inlet and outlet aspiration;
- ❖ low operating costs due to intelligent air flow and optimized design; and
- ❖ flexible configuration and valuable options.

The cleaning module also includes the

Figure 4:  
Bühler TAS.



necessary conveying elements, pipework, change-over flaps as well as other parts perfectly adapted for the machines. Additionally the cleaning machines can be offered with cyclone aspiration or filter aspiration system depending on the customer's needs.

### DRYING

The possible need for drying the grain right after harvesting is also considered in the standard quotation. In consequence the basic plant can be individually extended by



Figure 5: Silo plant in Germany.

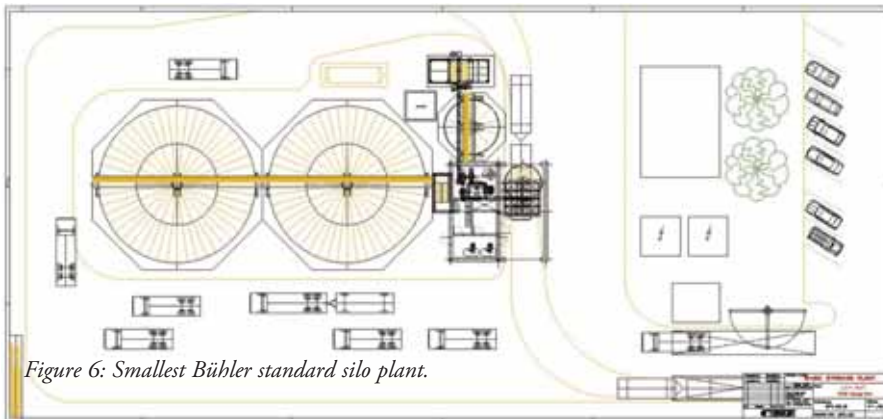


Figure 6: Smallest Bühler standard silo plant.

a dryer. For this purpose, Bühler offers 14 different standard dryer types, each of them with further optional features and capacities from 5 up to 220tph.

### STORAGE

The standard quotation is designed for silo plants with storage capacities of 10,000 tonnes up to 100,000 tonnes. The silo cells of the plant are limited to 12,000 tonnes each. Discharge from the cells is effected by gravity. In order to guarantee the best possible storage of the product and to maintain the grain quality, the cells are equipped with level indicators, temperature measuring cables and a residue unloading screw. In addition, the respective product can be aerated or refrigerated by an optimized floor aeration system.

### PROCESSING

Just as to complement the plant with a dryer, it is also possible to extend the basic plant with an additional processing module: when it comes to the reliable and precise grading of grain, especially brewing barley, the specifically designed TAS processing machines have a great reputation. For the further separation according to grain length or for seed processing, the Bühler Ultra-trieur plants are used.

### DISCHARGE

In most cases, the product is directly

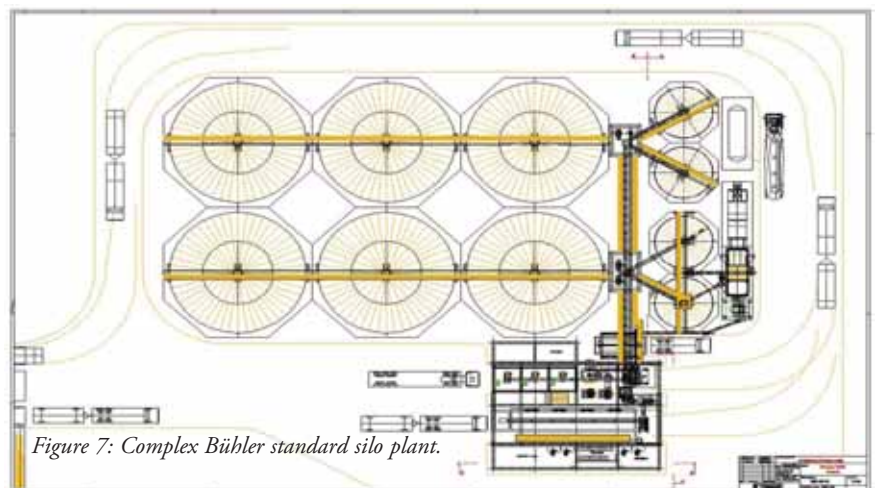


Figure 7: Complex Bühler standard silo plant.

discharged on trucks. In order to respond to the respective requirements with flexibility and promptness, Bühler offers a wide range of different discharge modules. For perfect transportation, the products can be directly loaded from the silo via a transfer screw conveyor to a loading pipe or via a buffer cell onto the truck.

To summarize, the Bühler standard quotations offer the following advantages through their modular design:

- ❖ market and customer requirements are met at the best thanks to the modular extension of the standard plant;
- ❖ quick and easy planning, manufacturing and installation owing to a standardized construction and the use of identical plant layouts, concrete and formwork

- plans as well as similar control systems;
- ❖ quick and more precise assessment of necessary investments; and
- ❖ reduced delivery times and reduced overall costs.

### ABOUT BÜHLER

Every day, billions of people come into contact with Bühler technologies to cover their basic needs for food and mobility. The company strive for innovations for a better world, with a special focus on

healthy, safe, and sustainable solutions. Bühler is an industrial process and technologies provider for the food and feed manufacturing industries.

The company significantly contributes to safely feeding the world's population as a front-runner in the global production and processing of wheat, maize, rice, pasta, cereals, cocoa, and coffee. Also, it is a solution provider of die-casting, wet-grinding, and thin-film technologies for high-volume application areas, including the automotive industry, precision optics, ophthalmics, electronics, paints, packaging, and inks. Bühler Group operates in over 140 countries. In 2017, around 11,000 employees from all regions generated a turnover of CHF 2.7 billion.

## Eurosilos potato starch project leads to a further order

ESI Eurosilos is a solution provider in storage facilities for non-free flowing bulk solids and large quantities. Its highly automated silos offer maximum control in material handling, up to 100,000m<sup>3</sup>, while saving operational costs and valuable space.

### CASE STUDY: AGRIBULK INDUSTRY

#### THE CUSTOMER

KMC, with its company headquarters in Brande Denmark, was established as a co-operative society in 1933. The company supplies potato-based ingredients — of the highest quality and with documented provenance — to food industry clients throughout the world, exporting to over 80 countries.

KMC's main basic product is potato starch which is a seasonal product. The starch being produced during a period lasting approximately four months after harvesting, starting in September. The native potato starch needs to be stored for the rest of the year or even longer, depending on the market developments.

#### THE CAUSE

Since EU regulations have changed, KMC's production is expanding and so, therefore, is the need for storage. Therefore, the existing set of silos, with various storage volumes, had to be extended. After evaluating the market and logistic options, KMC decided to build the biggest starch silo so far with a storage volume of 86,500m<sup>3</sup>, containing approximately 60,000

tonnes. This new potato starch storage silo was to be located within the existing production plant site at Karup.

#### THE SOLUTION

Due to the minimal footprint and the logistic flexibility, it appeared that the large volume Eurosilos system offered the most space-efficient storage option. As a result, in February 2015 KMC placed the order with ESI Eurosilos for the design, delivery, site supervision and start-up of the new potato starch silo at its plant in Karup.

#### THE PROJECT

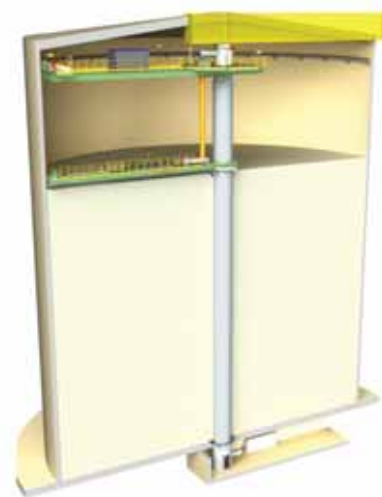
Following the tight planning for this project, ESI Eurosilos designed, produced and installed the internal machinery to handle 88,500m<sup>3</sup> of potato starch. After placing a 50m-tall central shutter column to output the very fine starch, the slewing bridge and the auger frame were hoisted into the silo.

This was the final stage before closing the silo with a 50m overarching roof. After that, a team of engineers completed the installation and testing of all the equipment and software tools that needed to be ready for flawless operation. The deadline for the first starch was December 2015, just nine months after placing the order!

#### RESULT

Within one year after starting the project the first starch was stored in the new silo.

Since then, operations have run smoothly and KMC is very satisfied.

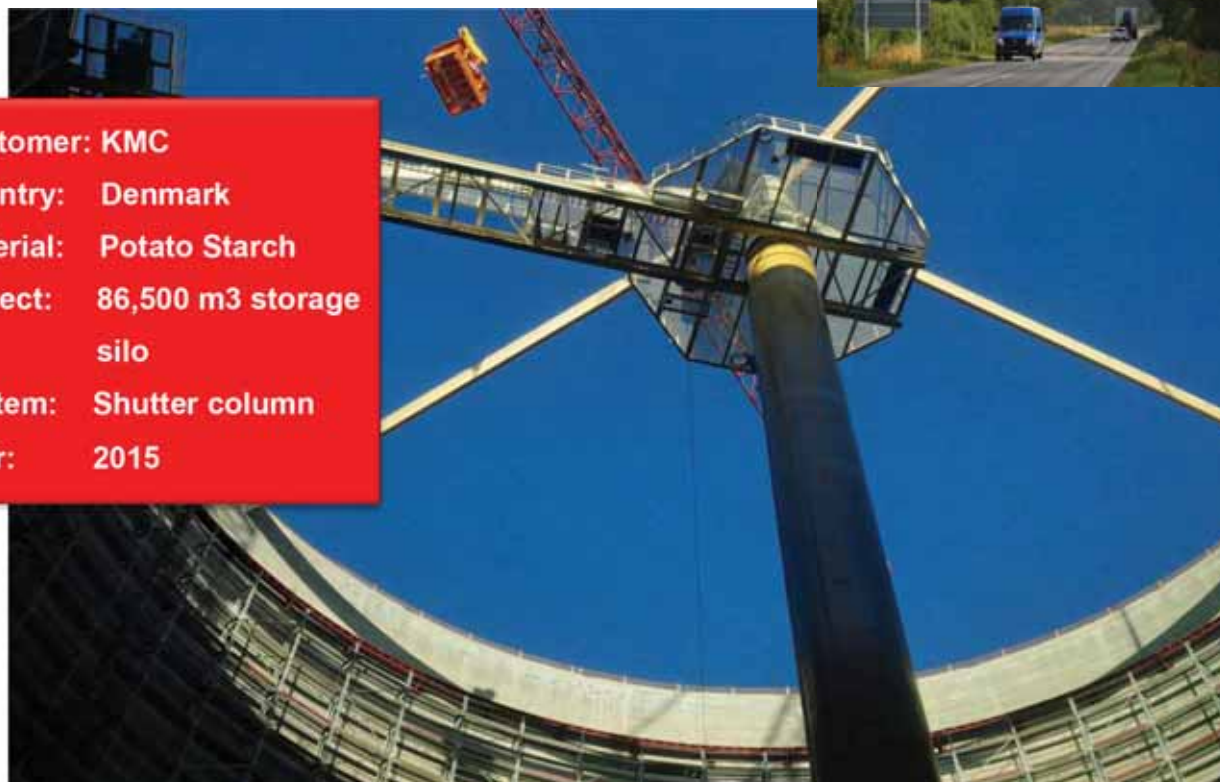


The silo complies with the latest design codes especially on food regulations and safety. It has an internal diameter of 50m, and a maximum storage level of 44m. The infeed and outfeed rates amount to 50 tonnes per hour.

#### NEW ORDER FOR ANOTHER SILO

According to Jesper Jensen, Technical Director of KMC, the silo project was executed professionally and according to the project planning.

This satisfaction has been underlined by KMC's new order in 2017 for another Eurosilos at its plant in Brande!



**Customer:** KMC  
**Country:** Denmark  
**Material:** Potato Starch  
**Project:** 86,500 m<sup>3</sup> storage silo  
**System:** Shutter column  
**Year:** 2015

# HIGH QUALITY EQUIPMENT FOR DRY BULK CONVEYING

## CIMBRIA CONVEYING EQUIPMENT

Cimbria develops and manufactures an entire range of conveying equipment for handling a vast variety of bulk materials, ranging from agricultural products to industrial commodities and raw materials.

The Cimbria equipment are delivered worldwide as singular supplied equipment or as a part of a total solution where they link key machines to form smoothly running industrial plants.



**SOLUTIONS.  
TOGETHER.**

CIMBRIA UNIGRAIN A/S

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## Proper storage protects valuable harvest: Cimbria shows the way

*The 60,000-tonne silo plant for TNK in Kazakhstan.*



Cimbria has a long history of supplying tailor made silo plants for optimum storage and handling of agricultural products. Also this season, Cimbria has supplied a row of silo plants to clients from a wide geographical area meeting their needs for closed storage, processing and handling of multiple seeds and grains.

### FIRST BIG CIMBRIA SILO FOOD PRINT IN KAZAKHSTAN

After repeated orders from Agrocompany TNK from Kazakhstan, the degree of mutual confidence has risen to the next level in the form of a 60,000-tonne silo plant, mainly for wheat. Cimbria's numerous references in terms of silo plants all over the world have thus been extended to the Aqmola region in the heart of Kazakhstan. After several meetings with TNK regarding design, selection of the correct equipment at the right capacities, etc., it ended up with a very modern configuration of Cimbria equipment.

Two 200tph (tonnes per hour) truck receptions feed two lines, each equipped with Cimbria's drum scalper for rough cleaning, followed by Cimbria's well-proven Combi Delta Cleaner 159 to refine the product to an industrial level. TNK has gained very good experience with its Cimbria continuous flow dryers that were installed two years ago. Once again equipped with Cimbria's highly efficient indirect heating system fired by diesel, this time two similar dryers ensure a total drying capacity of 100tph (19–15%).

TNK's recognition of energy-saving effects from working with its existing Cimbria dryers helped to focus meetings and consultations on other issues, such as designing the perfect configuration of the silo plant: 12 flat-bottom silos (diameter 21.92m and eave height of 17.69m) represent an overall storage capacity of 60,000 tonnes of wheat.

The silos are fed by Cimbria chain conveyors and unloaded by Cimbria belt conveyors. The attached railway and truck loading station achieves 130tph. Furthermore, at the same location Cimbria provided an 80tph reception section with five commercial hopper silos, each of 625 tonnes, for a brand new grits plant.

The silo plant is the latest in a long line of other interesting projects supplied to

TNK. This year, TNK also built a new milling plant with all necessary transport equipment manufactured by Cimbria in Thisted. A preliminary start-up is planned by the end of this year. This year, and in time for the new season, Cimbria likewise commissioned the sixth 10tph seed processing plant for TNK in Belasch. This consisted of a proven successful working concept with a Cimbria combi cleaner for pre-cleaning 100tph on wheat and seed cleaning with declined screens, followed by a Cimbria indent cylinder and Cimbria gravity separator.

### SILO PLANT FOR RAIFFEISEN IN AUSTRIA

Raiffeisen Lagerhaus (RLG) is the major player in the Austrian grain business. It strives constantly for improvement in



*Official opening of the Raiffeisen silo project in Austria.*



*Nighttime views (and below) of the Mayachny project for the 'Sigma' Group in Russia.*

terms of economic efficiency and increased vigour for grain handling and storage. This led to it merging two sites in southeast Austria that were getting a bit long in the tooth to create a brand new greenfield installation right in the heart of the relevant catchment area. The first section of the plant consists of two parallel reception lines, each with intake pit and pre-cleaning unit. One Delta 146 and one conical wind-sifter have been installed inside the pre-cleaning tower. The product is subsequently transported to the silos by Cimbria chain conveyors and bucket elevators at a capacity of 100tph, corresponding to a reception capacity of four trucks per line per hour. Automatic foot cleaning systems at the elevator boot help the customer keep the plant clean and prevent cross-

contamination of crops. Within the silo section with a total holding capacity of 7,750 tonnes, there are four blocks with the following configuration:

- ❖ two hopper silos with a holding capacity of 125 tonnes each, mainly used as wet cells prior to drying or as load-out bins for the bulk loading unit;
- ❖ six hopper silos, 250 tonnes each, for storage of smaller batches or as load-out bins;
- ❖ four hopper silos, 500 tonnes each; and
- ❖ four flat-bottom silos, 1,000 tonnes each.

The drying section consists of a continuous dryer for indirect heating with oil, as well as a box dryer for smaller quantities of niche products. Cimbria has mastered the rather

unusual surrounding conditions — which include a relatively high earthquake zone in the area and strict levels for noise emissions — in a supreme manner, providing the customer with a plant ready for full operation just in time for this year's harvest, which coincided with an opening ceremony attended by more than 400 guests.

#### **SECOND HUGE SILO PROJECT FOR 'SIGMA' GROUP, RUSSIA**

In 2017, Cimbria completed the second major silo plant for the Russian 'Sigma' Group. The new 162,000m<sup>3</sup> silo plant is located in Mayachny, 250km south of Ufa in the Republic of Bashkortostan, and acts as a storage facility for its new 1,500 tonne per day sunflower oil extraction plant.







*Mayachny project for the 'Sigma' Group in Russia.*

The first stage of the plant, consisting of intake & pre-cleaning, drying and the first four silos, was installed in 2016, with another 14 silos being supplied and installed during the course of 2017. The complex is equipped with Cimbria chain conveyors and bucket elevators, two pre-cleaning lines, each with a Cimbria drum scalper and Mega screen cleaner, and two continuous flow dryers.

The entire facility is operated from a Cimbria PLC and PC control and automation system, in addition to which

the silos are equipped with a Cimbria Unitest system for monitoring seed quality during storage. Cimbria has provided design and engineering of mechanical and electrical works, as well as supervision of installation. Cimbria began co-operation with 'Sigma' Group in 2012, with the supply of a Cimbria ECO master dryer, a drum scalper and two Mega cleaners. In 2014, a 90,000m<sup>3</sup> silo facility was commissioned and handed over to 'Sigma' Group.

Cimbria was established in 1947 and is today an international organization with

900 employees in 30 companies throughout the world. Since 2016, Cimbria has been a part of AGCO corp. Cimbria offers storage, equipment and processing plants for the grain and seed industry and transport and conveying equipment for bulk handling. The company has an experienced, highly qualified workforce, its own development and construction department and modern production facilities, which enable it to construct and manufacture all of the solutions in accordance with the individual requirements of each client.

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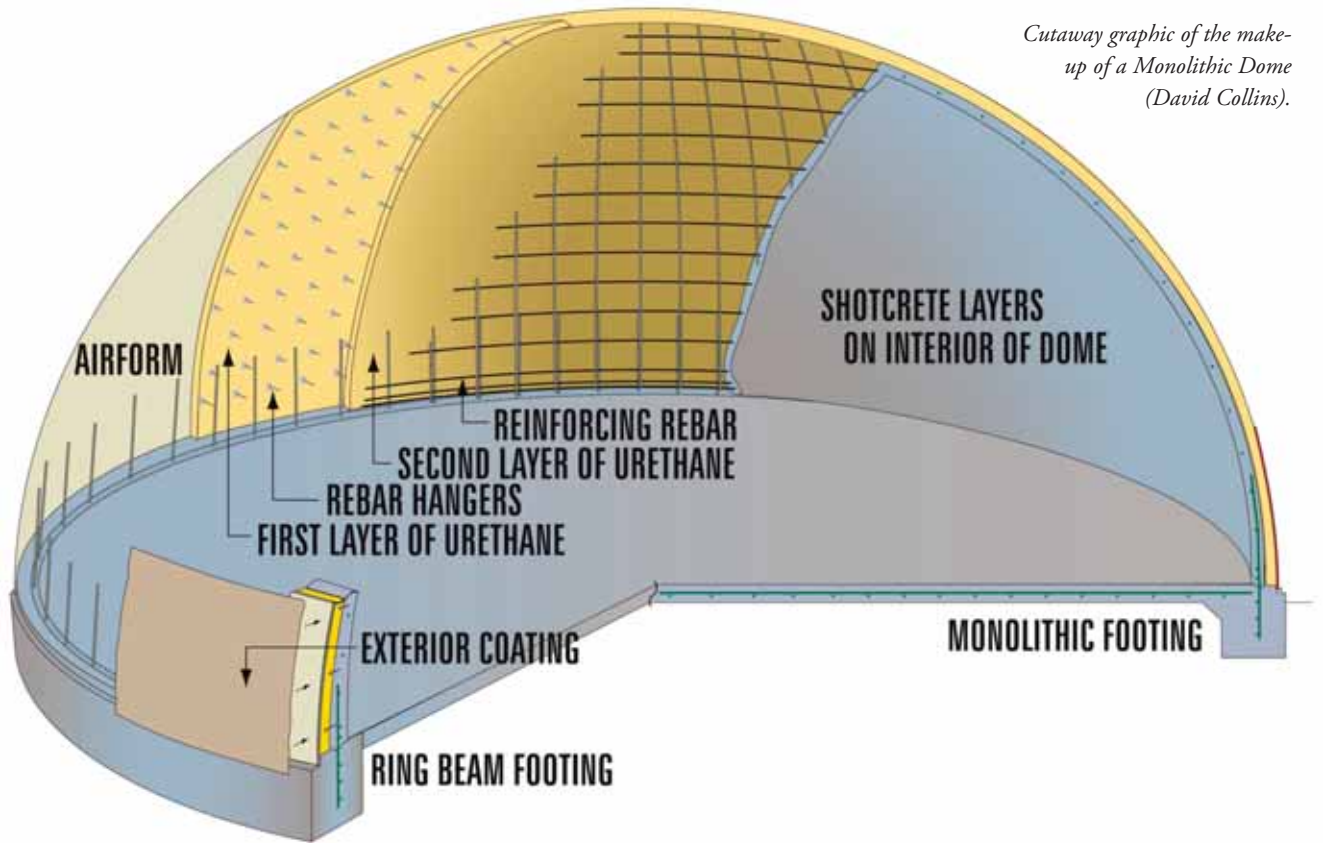
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## Superb storage in Monolithic Domes



*Cutaway graphic of the make-up of a Monolithic Dome (David Collins).*

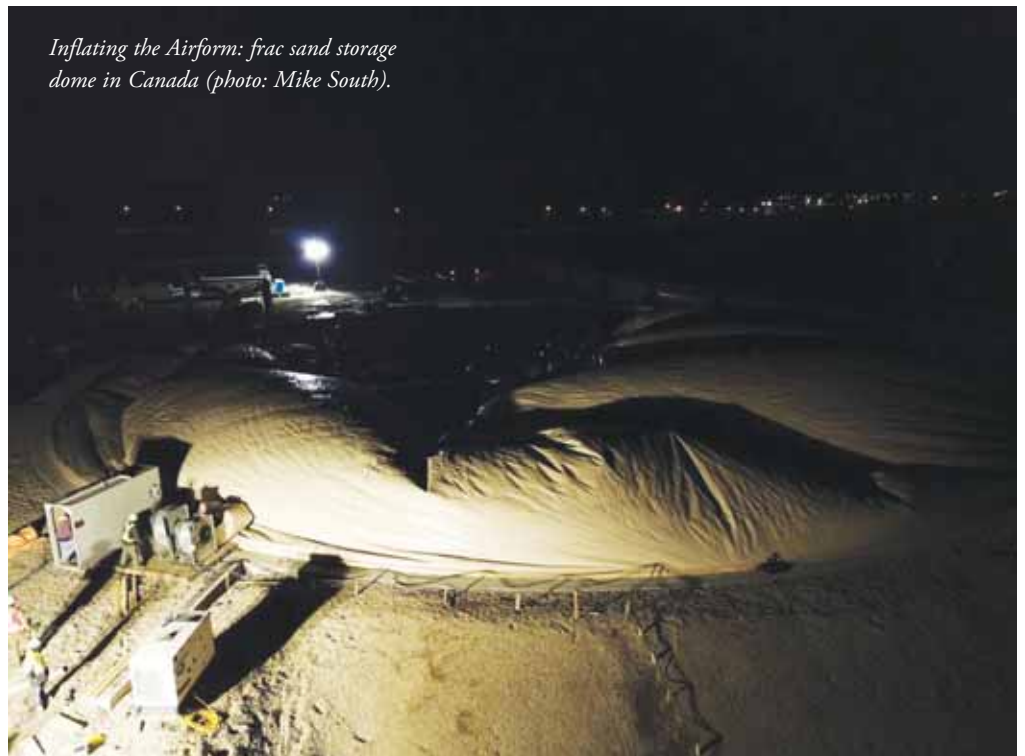
The dry bulk storage industry is a thriving global business, charged with shipping and storing commodities around the globe, writes *Stewart Ulrich*. The vitality of this sector rests largely upon the stability and sustainability of the storage structures and associated equipment. Should these components fail, it could create costly setbacks for storage companies. As a home protects its residents, the job of a storage structure is to protect the commodities inside.

There is a structure in the industry that is creating a safe and secure storage environment: the Monolithic Dome. These are foam-insulated, rebar-reinforced concrete structures. Monolithic domes serve as storage facilities around the world and hold a variety of commodities such as grain, coal, fertilizer, ammonium nitrate, cement, coal, fruits, vegetables, pesticides, and more. Each commodity is safely stored inside the dome, protected from exterior elements. Due to their round design, these structures are free of corners and able to minimize dead space inside.

There is a special construction method for the Monolithic Domes that gives them their unique properties and makes them ideal storage structures. The first step to a Monolithic Dome is a concrete ring foundation reinforced with steel rebar. After the foundation is in place, a large membrane called an Airform is placed over the foundation and inflated using large

blower fans. After the inflation is complete, two to three inches of polyurethane foam is sprayed to the interior of the Airform. After the foam is sprayed, a special layout of steel reinforcing rebar is attached to the foam. The final step to build a Monolithic Dome is to spray a special spray mixture of concrete called shotcrete to the interior surface of the dome.

*Inflating the Airform: frac sand storage dome in Canada (photo: Mike South).*



One advantage of building a Monolithic storage dome is its strength. Monolithic domes protect against natural disasters and have been proven to withstand tornadoes, hurricanes, earthquakes, and fires. Due to this quality, many schools in the midwestern United States, where tornadoes are prevalent, have built Monolithic Domes to protect their students. If a dome keeps students safe, it can keep storage commodities safe as well.

One of the most recent Monolithic Domes designed for storage was built in Canada to store frac sand, used in the oil extraction process known as hydraulic fracturing. This 182ft-diameter, 70ft-tall structure will be able to hold up to 40,000 metric tonnes of frac sand.

One sector of the dry storage industry where Monolithic Domes are keeping not only the commodity but the community safe is with ammonium nitrate. Ammonium nitrate is a colourless, crystalline substance that is often used in fertilizers and explosives. This commodity can be highly explosive if it comes in contact with an open flame. Thus it makes tricky for storing such a substance.

One quality of a Monolithic Dome that makes it an ideal storing structure for ammonium nitrate is fire resistance and explosion protection. "The dome structure is one of the very few that can do that," stated Michael South, board member of the Monolithic Dome Institute. "They are completely fire safe." One Monolithic Dome blending plant that was built in Texas, United States was sought after for this very purpose. The old structure caught fire and burned down, which became a

*Aerial view of the Canadian frac sand storage facility (and below). (photo: Mike South)*



liability for the company and can cause "millions of dollars in damages," according to South. Due to the Monolithic Dome being concrete and steel, there is no wood used. "It is one of the most cost-efficient buildings that does not use any wood in construction," South stated.

One example of the protection a dome can provide is when buildings around it catch on fire. As mentioned earlier, due to the construction design, there is no risk of the building catching fire and burning down. "You could burn every building around the dome," South offered, "and the dome will not get hot. It will completely protect what is inside."

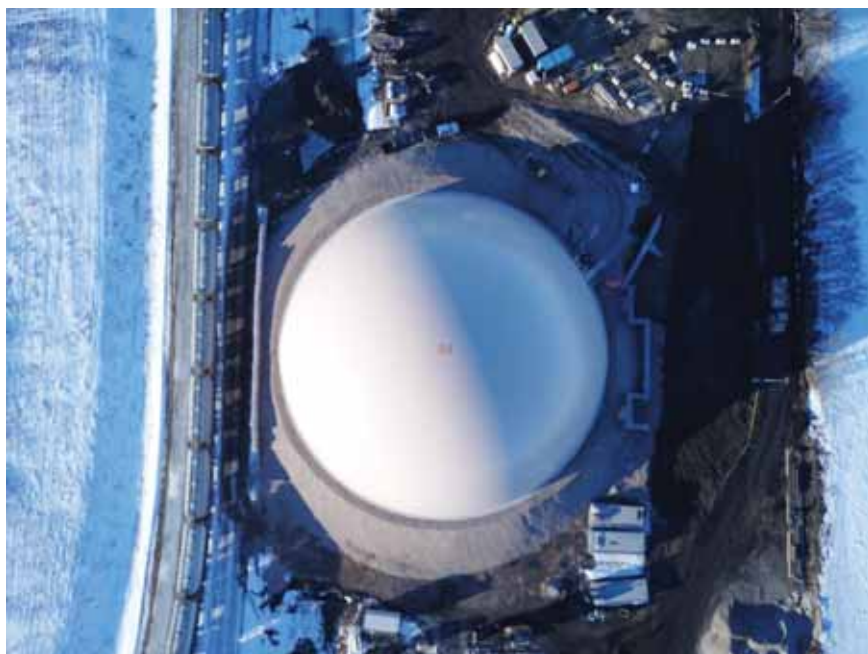
Fertilizer storage can also corrode handling and other equipment used. Here a Monolithic Dome can also come in handy,

"When you store in a typical storage building," South stated, "you lose material to the moisture. In a Monolithic Dome, you do not lose any material." This is because the dome is temperature controlled and keeps the storing environment at a moderate level. "One company was replacing equipment every several years," said South. "In a Monolithic Dome you do not have those problems."

Monolithic Domes have long been used for storages and are a common use for the structures. In fact, the first Monolithic Dome was a storage dome built in 1976 to hold potatoes. Since then, more than 500 storage domes have been built and more are under construction. They are located in nearly every state in the United States and more than 20 countries around the world.

David B. South, co-inventor of the Monolithic Dome, started his interest in dome building more than 40 years ago. By 1976, he and his brothers Barry and Randy built their first dome. That project resulted in a patent for the process and launched an innovative construction system for Monolithic Domes. Several domes have been built around the world, and the uses include homes, schools, churches, sports, and storage facilities.

The Monolithic Dome Institute was founded to promote the dome building industry as a whole. Its purpose is to educate about and promote Monolithic Domes around the world. Headquartered in Italy, Texas, United States, it holds twice-yearly workshops on how to build domes. The organization also offers concept evaluations and feasibility studies for those interested in building a Monolithic Dome.



## UK port plans to build on investment for the future



*A Rubb Buildings' structure at Belfast Harbour.*

Throughout the UK, from the Port of Tyne to the Port of Tilbury, plans are in place to invest and expand infrastructure and new warehouse space to accommodate growing business to UK shores.

Port of Blyth is set to make a £12m investment in new warehouses and port infrastructure after a second consecutive year of record financial figures. Through the fast-growing development of offshore energy related activities, the port is now viewed as 'one of the UK's fastest-growing Trust Ports'.

Adapting to the changing environment of growing business is going to be key for the Port of Blyth expansion, with new warehousing a hot topic.

Further south Tilbury2, which is well on course to being operational in the summer of 2020, a new large storage area will be designed for a fast-paced changing logistical environment. To support the expansion, national rail and road connections will be developed to the port. The Port of Tilbury has said that the warehouse expansion is needed to be able to handle the demand of construction materials and an increase in ferry traffic carrying consumer goods, food and drink and steel between Europe and the UK.

As well as a warehouse for Amazon UK, which is set to be operational by autumn 2018, other warehouses are needed at the port's second extension site. Planning for the future, and the type of warehouse

selected is very important. Many companies that will be using these facilities require great flexibility to support any changes to their business and operational needs. Under these circumstances, traditional fixed warehouses often aren't as cost-effective in the long term.

An alternative and sustainable forward planning solution to this ever-changing environment is a long-term, semi-permanent fabric structure. This type of warehouse helps save on costs and is able to adapt to the changing requirements of the end user.

Port warehouse specialist Rubb Buildings has been working alongside Belfast Harbour for many years and the harbour has found that, when costing against a traditional shed, that a Rubb fabric warehouses easily has a 30+ years life span and that this modular designed fabric building is easily relocatable and extendable.

The driving demand is for #AlternativeSolutions: cost effective, large span buildings that will accommodate materials storage and handling, while meeting the highest of standards with regard to materials used. There is also a high demand for custom designed structures to suit onsite requirements.

Benefits of fabric clad port and marine buildings include flexibility of design, speed of project completion and low running costs due to the virtually maintenance free

nature of the structure and naturally bright interior.

Structural Engineer Dale Robinson explains: "Rubb fabric port buildings are manufactured using the highest quality steel, hot dip galvanized to strengthen and protect the frame from corrosion. They are clad with a PVDF coated fabric which offers a high resistance to algae and fungal growth, with excellent self-cleaning properties, ensuring minimal maintenance is required. These facilities can be used to store a wide range of materials."

### RUBB BUILDINGS

Rubb Buildings Ltd is a globally renowned company specializing in the design and manufacture of custom-made relocatable engineered fabric structures.

Highlights include ground-breaking military buildings (aircraft hangars, shelters, storage facilities), specialist sports buildings and structures for a variety of sectors including aviation, ports, construction, bulk storage and environmental (waste and recycling).

All products are designed and manufactured at Rubb's UK plant at the Team Valley Trading Estate in Gateshead, Tyne and Wear. The company was founded in 1977 and has a proud history of delivering innovative and quality structures to a wide range of clients.

The Rubb Group also has plants in the USA and Norway.

## Storing and handling coal using a dome structure from PIRS

Dome storage specialist PIRS offers high-quality bulk storage solutions and design-build expertise to its customers. The company has been a renowned provider in the field of dome storage facilities — which can out-perform traditional silos and flat storage — for over 30 years.

In recent years, coal storage has become a major issue for the coal industry. As the commodity has an explosive nature, spontaneous combustion and explosion are the main problems of coal storage. Charcoal ignites easily and produces flammable dust, even from simple vibrations.

Today, concrete domes have turned out to be highly efficient storage structures, as they offer excellent conditions for the stored products while keeping the environment safe. Simultaneously, negative developments have been observed in various characteristics of coal and important problems may emerge as a result of long-term storage in open areas.

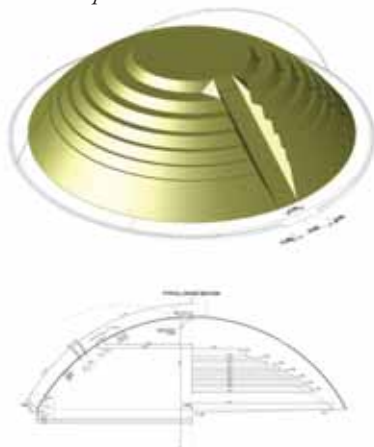
It is important to be knowledgeable before making any coal storage decisions, and these must be made while respecting basic rules. Knowing the challenge of storing coal in enclosed structures — mainly due to the self-ignition of the product, but also to difficulties in reclaiming it in safe way — PIRS's research engineers have designed optimal solutions. They have adapted the company's structures to accommodate all types of customers' and partners' equipment to offer different alternatives — from the most basic storage, to the most advanced systems.

To meet the many constraints and specific conditions required by each project in terms of efficiency, safety, and cost, PIRS has developed further handling solutions listed below.

### THE DOME STOCKPILE COVER

The most basic system is the dome coal pile cover. In this form, the dome shell acts

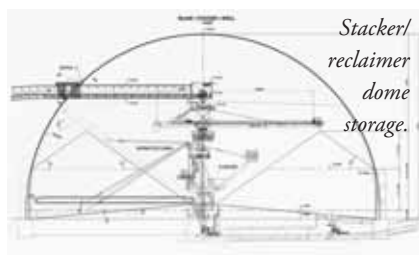
*Dome stockpile cover.*



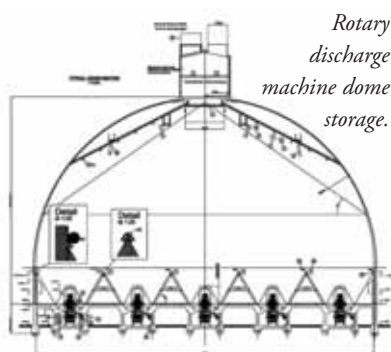
as a simple cover for the coal pile.

Loading and unloading are done using belt conveyors and/or front wheel loaders. In this type of storage system, the customer is free to install conveying equipment or just use the dome storage as a warehouse, handling the product using only front wheel loaders, depending on their process needs

### STACKER/RECLAIMER DOME STORAGE



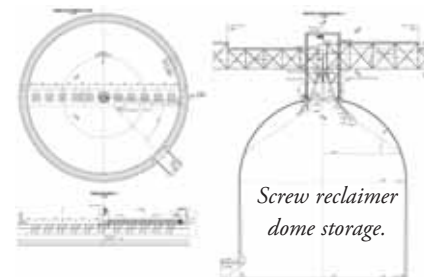
PIRS has adapted the dome shell to accommodate the stacker/reclaimer where it works perfectly due to the spherical shape of the dome and the process operation of the stacker/reclaimer. The stacker/reclaimer is used to load and unload the product from the dome.



### THE ROTARY DISCHARGE MACHINE DOME STORAGE

The rotary discharge machines associated with the dome shell storage allow for a fully automatic unloading process and 100% product reclaiming. The system is based on

a few rotary discharge reclaimers installed over the reclaiming tunnels. The rotary discharge machines move in a linear way along the tunnels by rotating 360°. This system is the most complex system and the most expensive in terms of equipment and civil works. However, it is really efficient and can be justified when no other options are suitable for technical reasons.



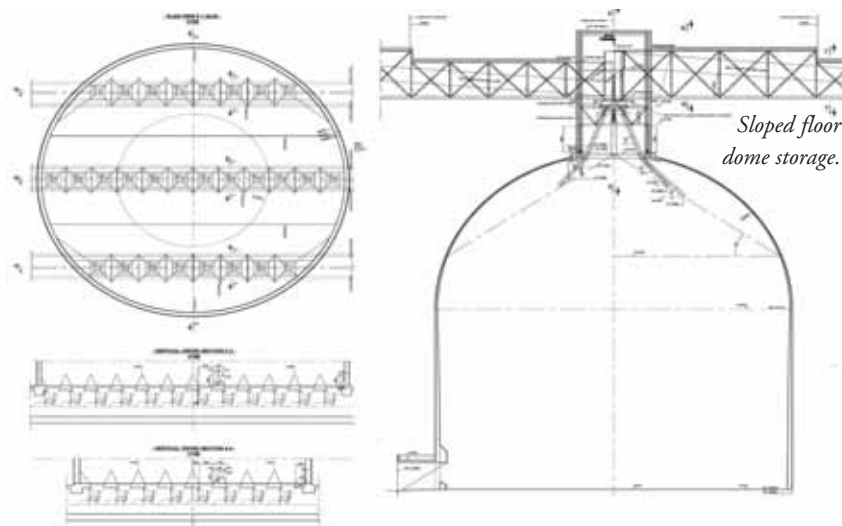
### SCREW RECLAIMER DOME STORAGE

This solution is based on using a rotating screw reclaimer within a dome shell. The screw reclaimer inside the dome is used only to empty the residual pile of coal that did not flow down by gravity. This solution is very efficient and has low costs compared with any other option. The screw reclaimer is installed on the dome floor and rotates 360° to bring the product to the central hopper then to the belt conveyors down in the reclaiming tunnels under the dome.

### SLOPED FLOOR DOME STORAGE

The sloped floor dome is based on concrete chevrons installed inside the dome between hoppers inclined at 60° that make it possible to reclaim the coal from the dome without any mechanical equipment; the system is based on tunnels under the dome equipped with vibrating hoppers.

The advantage of this system is that it allows for very high reclaiming capacities — over 2,000 tonnes per hour — without any mechanical system, just by using the gravity unloading.



## More storage and ideal conditions are key benefits of the DomeSilo™

Grain companies looking to increase storage at existing sites can maximize their investment by selecting a DomeSilo™ from Dome Technology. By building a new structure on an existing footprint, companies gain greater storage capacity as the dome is built upward, not outward, requiring no additional land.

Dome Technology pioneered the reinforced-concrete dome concept 40 years ago. A DomeSilo is essentially a cylinder-shaped reinforced-concrete structure with a dome-shaped roof. Based on innovative construction methods, no seams are present.

These domes are designed to store more product in a smaller footprint, even when compared to silos. A silo's traditional conical roof cannot support product, so the entire interior cannot be used for storage. Because the hemispherical geometry of a dome renders strength at all points of the structure, the entire interior can be used to contain product. In addition, the curved design can double or triple the capacity of any existing circle ground pile with the same footprint or be designed with tall sidewalls to replace or add bin space to an upright facility.

"The DomeSilo is a reinforced-concrete structure that provides great grain protection. Domes provide ideal conditions for grain, safeguarding against insects, birds, pests, and weather to ensure top-level food-grade storage," Dome Technology Vice President of Marketing Jason Miller said.

### OPTIMAL STORAGE CONDITIONS

Since wheat, corn, canola, soybeans, and the like are sensitive to moisture and temperature changes, an airtight structure that wards off water and controls the interior environment is the best way to



ensure quality control. That level of protection is made possible by the seamless or monolithic dome shell.

A dome staves off boundary issues other structures face thanks to its construction materials. First, the airform covering the entire dome prevents water and moisture from seeping in. Secondly, the combination of waterproof membrane, reinforced concrete shell, and continuous layer of polyurethane foam prevents extreme interior temperature fluctuation; these features reduce heating and cooling of the walls and air inside, preventing condensation.

To complement the protection provided by the shell, grain domes are commonly equipped with monitors and sensors for detecting temperature changes and the presence of carbon dioxide. Blowers near the apex and at the ground level provide aeration for optimal storage conditions.

### RECLAIM SYSTEMS AND HIGH THROUGHPUT

Dome Technology provides more than the

storage structure itself. The team offers a turnkey storage solution that can include identifying and building the ideal material-handling system. Sometimes companies want to incorporate existing conveyance systems into the new storage dome, and engineers determine ways to make this possible. Dome Technology works closely with engineering firm ES<sup>2</sup>, a collaborative design team that shares the same campus and specializes in customized dome structures. When a company selects Dome Technology for a project, it also gets the engineering expertise of ES<sup>2</sup>.

For the sake of longevity, grain structures should be robust enough for frequent loading and unloading. A dome can tolerate the loads associated with high throughput because of its structural integrity, compared with steel bins built with fasteners or welded seams. Frequent loading and unloading cycles fatigue the bin at bolt holes or weld imperfections until a crack develops. A reinforced-concrete dome structure outperforms steel bins in many areas, especially when considering fatigue.

### QUICK, COST-EFFECTIVE CONSTRUCTION

Costs are reduced as domes are built with locally available concrete and steel, and the dome's double curvature requires fewer construction materials with significantly less waste. A DomeSilo can also be built quickly; once the outer weatherproofing membrane is in place, materials and construction equipment move inside, so construction can continue regardless of the weather.

A DomeSilo can be built to store almost any amount of grain, whether 50,000 or two million bushels or more.

*Grain domes built by Dome Technology for Parrish & Heimbecker in Hamilton, Ontario, Canada.*



## Keeping stored product moving freely with help from AIRCHOC® air cannons

Since 1978, Standard Industrie International has specialized in the design and manufacture of equipment to facilitate the handling of powdery bulk products safely and with respect for the environment. Its equipment makes it possible to optimize operations while reducing operating and maintenance costs.

The company offers four main services:

- ❖ blockage & build-up removal
- ❖ industrial vacuum cleaning;
- ❖ conveyor belt optimization; and
- ❖ silo & hopper cleaning services.

This article will focus on the company's expertise in blockage and build-up removal, which it tackles with its Airchoc® wireless air cannon & MACSYS wireless multi-output air cannon.

In a recent installation, Standard Industrie has fitted its Airchoc products to a bauxite hopper in a plant based at the San Ciprian port in Spain. This hopper is used to receive only bauxite, which is then used to produce alumina at the factory outlet, either back to the port or to the aluminium plant.

The loading and recovery of the product from the storage area takes place via conveyors to warehouses or storage yards. Thereafter, the product is conveyed to different departments within the plant, namely: trituration, digestion, filtration, precipitation and calcination.

In another project (see pictures, right), the Airchoc® has been installed on other bauxite-receiving hoppers in Limerick in Ireland. The customer's hoppers, being located by the sea, are subject to severe weather conditions, and kept getting blocked. This issue was exacerbated by the intrinsic nature of bauxite.

The customer asked that equipment be installed to remove the build-ups located on the inner walls and that can be remotely controlled.

The solution involved the installation of six AC515SJEVD5 Airchoc® cannons and, thanks to regular firings operated every 30 minutes, the customer is now free from dangerous cleaning constraints.

The results of this installation are that



*Bauxite hopper at the San Ciprian port, before installation. Below, left, schematic of the Airchoc® installation.*

the customer:

- ❖ can ensure continuous management of its raw material;
- ❖ can control and optimize the management of its storage capacity;
- ❖ can eliminate the risk and danger associated with cleaning operations; and

- ❖ has reduced installation costs by opting for the wireless version.

*Installation of the Airchoc® air cannons in Limerick, Ireland.*



## MegaDome® building: an ideal bulk storage solution



Storing bulk goods can be a challenge. It requires a building with maximum storage capacity that is easily accessible year-round and that keeps products dry and protected from the elements, all while respecting local building codes.

MegaDome® buildings are a trusted and proven solution for all bulk storage needs. Harnois' in-house engineering team designs and manufactures fabric buildings that are

quick to install, cost-effective and built to perform, season after season.

### STORAGE SOLUTIONS FOR EVERY SECTOR

MegaDome® structures are specially designed to meet the needs of the agricultural, industrial and municipal sectors. They are built to store and protect bulk materials like coal, ore, cereals, wood, salt and manure, keeping them dry and

accessible all year long — even in the cold winter months.

### FLEXIBLE STRUCTURES CUSTOMIZED TO MEET SPECIFIC REQUIREMENT

MegaDome® buildings are designed to adapt to intensive use in industrial environments. The dome covers and protects bulk industrial goods, making sure they are stored in dry conditions and are







easy to access even in winter.

Harnois' in-house engineers design buildings that can fit entirely in one container (or a couple of containers depending on the size), allowing for fast delivery and efficient installation wherever its customers' sites are located.

MegaDome® structures also help with inventory management by limiting product loss and damage, saving invaluable time and resources throughout the seasons.

### CONSTRUCTION CHALLENGES, SOLVED

MegaDome® structures are designed to comply with municipal standards and regulations. Harnois' engineers officially stamp building plans, making it easier to get quick approvals for projects of every scope and size, while ensuring sure that all necessary documents are available and well presented.

The company's dedicated experts are there to support its customers at every step, from the initial planning and approval stages all the way through to final installation and follow-ups.

### INNOVATIVE DESIGN FOR OPTIMIZED STORAGE

MegaDome®'s innovative buildings don't require a central column and offer large wall clearance to maximize bulk storage space, allowing users to easily access and manoeuvre machinery.

The structures are built with oval tubing, making them more resistant than round or rectangular tubes with similar dimensions. They can also be adapted to specific loading equipment and conveyors, such as airtight openings for equipment

that needs to pass through the membrane.

The lower section of the structure's arches (the area most exposed to dirt and corrosive elements) is always hot dipped after welding to ensure the protection of the steel and the durability of the structure. The structure itself can also be hot dipped for extra protection. Also, MegaDome® fabric buildings can be easily extended after installation to keep up with the growth of the client's operation.

MegaDome® buildings can be customized with various industrial options, like single or double roll-up openings, side garage doors and ventilation systems, which are extremely useful when storing bulk goods. With over 50 years of experience in the greenhouse industry with Harnois Greenhouses, the company has developed high-performance ventilations systems that are adapted to its buildings, allowing it to meet specific ventilation needs to ensure that products stay dry in all conditions.

Finally, the structures are covered by a PowerShield® membrane that allows natural light to penetrate the building year-round. This reduces the need for artificial lighting, which can add up to significant energy savings. This durable, waterproof and fire-resistant membrane is assembled at the MegaDome® factory to ensure the highest quality standards.

### ADAPTED PORT STORAGE — A CASE STUDY

One of MegaDome®'s clients, Oshawa Stevedoring on the Ontario Harbour in Canada, was looking for a structure with an opening large enough to store a conveyor and 30,000 tonnes of salt. To answer this



*Oshawa Stevedoring's MegaDome.*

challenge, Harnois installed an 80ft x 360ft structure with a large storage area and front opening option. The client can now store its materials in a dry, protected environment and is able to access them easily all year round.

### EXPERTISE TO RELY ON

Harnois Industries Inc. has been a Canadian manufacturer of steel structures for over 50 years. Its trusted experts design innovative engineering structures for the agricultural, industrial and municipal sectors that meet the operational needs and financial objectives of its clients.

Known in the industry for its innovation, dedicated team and extremely high quality of its service and products, Harnois' integrated offering ensures its clients always find the right solution for their unique needs. Looking to the future, Harnois will continue to push the boundaries of engineering to deliver solid, scalable, durable and cost-effective solutions that ensure the success of its clients.

DCi

# Liebherr participates in floating pier project



## LIEBHERR MACHINES FORM PART OF WEST ARGYLL FLOATING PIER PROJECT

The Ardcastle floating pier project is part of a strategy for sustainable transport planning initiated by Scotland's £1bn timber industry sector. It will allow c£10m worth of timber reserves to be unlocked in West Argyll. The new pier has been commissioned by JST Floating Piers Ltd and is open to all users that want to transport timber from the region. An arched back linkspan connects the floating barge to the shore and the large barge accommodates JST's new Liebherr LH 40 C material handler. On the land-based side is a wheeled A 934 C material handler from JST's fleet. Building of the new pier underpins a long-term contract between Forest Enterprise Scotland and wood processing company Norbord.

With approximately nine million tonnes of timber harvested every year, Scotland's timber industry has a significant positive impact on the region's economy and community. This £1bn sector has recognized the need for sustainable transport planning with the west of Scotland's proximity to the Irish sea and associated lochs and waterways making a modal shift to sea the obvious choice. The Ardcastle floating pier project is part of this strategy and will enable approximately £10m worth of timber reserves to be unlocked in West Argyll. The new pier will handle an estimated 250,000 tonnes from the local forests over the next ten years.

Situated on the banks of Loch Fyne, the new pier has been commissioned by one of the UK's largest cargo handling specialists,

JST Services (Scotland) Ltd, through its sub-division JST Floating Piers Ltd. Its piers are uniquely engineered pieces of mobile marine equipment that enable the company to deliver timber between the shore and a depth of water suitable for the mooring and loading of vessels of up to 3,000 tonnes in capacity. Where there is a suitably developed infrastructure on the landward side, JST Floating Piers can set up a pier from delivery to working condition in a 12-hour shift.

The floating pier is open to all users transporting timber from the region and has a storage/handling area of up to 8,000 tonnes in capacity. The pier will reduce the impact on infrastructure by more than three million lorry miles over the course of harvesting the area. Some development

costs were met with grant assistance from the Scottish Strategic Timber Transport Scheme. John Scott of JST Services commented, "I am delighted to be steering this project, which will help improve the flow of timber from the forests of Argyll to processors and help to increase the volume of timber transported in a sustainable manner."

An arched back linkspan connects the floating barge to the shore and the large barge accommodates the company's latest purchase: a 40 tonne Liebherr LH 40 C-EW. JST has a long history of purchasing Liebherr machines but, unusually, this new material handler has a crawler undercarriage.

JST has opted for a hydraulically-elevating cab mounted with a fixed 1.2m riser that, with its theoretical eye level view of over 6m from the ground, is ideal for looking into the hold of the coasters being loaded. Precise attachment control makes positioning logs within the ship hold easier and with a 1.5m<sup>3</sup> HSP timber grab, the Liebherr can empty a full 28-tonne load in under three minutes. JST has specified the curved main boom option at 8.6m and a 7.5m flat angled stick, which gives a maximum reach of over 15m, and a choice of position for the lift cylinders enables a

deeper reach into cargo holds.

The land-based side of the operation is catered for by another Liebherr material handler from the JST fleet: a wheeled A 934 C. With a similar specification to the LH 40 C-EW, it unloads incoming vehicles and loads the two 8 x 4 rigid Volvo trucks used to carry timber from the stock yard to the floating dock. Neil Stoddart, General Manager of JST Services (Scotland) Ltd, commented, "Once again, our close working relationship with Liebherr has resulted in a solution that increases productivity and reliability for both JST and our customers."

The building of the new pier will underpin a long-term contract between Forest Enterprise Scotland and wood processing company Norbord. Kevin Thomas, UK Wood Supply Manager at Norbord, said, "We are delighted to be able to offer our support for this project. The opening of this pier is aligned with our investment plans at Inverness and the subsequent increase in raw material demand that follows. Norbord is committed to modal shift on both raw material and finished product wherever practicable and the opening of this facility allows us to do this on volumes purchased from Argyll." **DCi**



# COKING COAL MARKET TO REMAIN UNSETTLED IN 2018

*By Thorsten Schier, NA steel and ferrous scrap editor, American Metal Market*

The coking coal market could again be in for a volatile ride in 2018 after a helter-skelter 2017 that saw massive price volatility caused by weather events and Chinese policy decisions.

Last year also saw a significant shift in the way coal was priced, with indices provided by price reporting agencies instead of one-on-one negotiations being used for the first time by Japanese steelmakers to settle quarterly benchmarks.

And pricing volatility was again the name of the game, after 2016 was also a rollercoaster.

Metal Bulletin's premium hard coking coal index closed 2017 at around \$260 per tonne fob Australia, started the year at \$223 per tonne, hit a low of around \$145 per tonne in late March and a high of nearly \$300 per tonne in mid-April.

That is exceptional volatility, except if seen in the context of 2016. That year, prices rose from around \$77 per tonne at the beginning of the year all the way to \$309 per tonne, where they plateaued.

One has to go back to 2015 to find a year where normalcy reigned. Prices then swung 'only' between \$110 and \$134 per tonne, according to Metal Bulletin's index.

With China in the game however, normalcy could be difficult to attain. The country's spot buyers are keenly aware of price changes and hold off when

they sense prices are too high, as currently seems to be the case.

Chinese demand should remain healthy given the country's reliance on blast furnace steelmaking, but an environmental crackdown could mean a reduction in overall output.

The Australian government expects an easing of coking coal prices in early 2018 and throughout the year because of a winter steel mill shutdown in China, according to the country's Office of the Chief Economist. But supply concerns remain, because of possible labor actions and weather disruptions.

Australia's metallurgical coal exports are expected to rise to 193 million tonnes in 2018-2019, up 4.2% from 2016-2017. China is their biggest customer. US exports also climbed, by 11 to 12 million tonnes, to 46 million tonnes, but that number is unlikely to grow further in 2018 as struggling miners might find access to capital blocked again after a relatively prosperous 2017 where they filled global supply gaps, according to Australia's chief economist office.

Japanese steelmakers for the first time are using index pricing to set quarterly contracts, because of severe price volatility. But it remains to be seen whether this reliance on indices will continue, and which index providers will be used.

So 2018 could again be a volatile year, with possible supply disruptions, pricing changes and Chinese policy all things to watch out for.

You can find out more about China's coal market at the 16th Coaltrans China on 9-11 April 2018.

We're offering Dry Cargo readers a 10% discount off their tickets.

Book your place at [coaltrans.com/china](http://coaltrans.com/china) using the code **DryCargo10** to redeem your discount.



# Telestack provides an ideal solution for 'multi-cargo' berths



Capital investment is a serious issue for any company and making the right equipment selection is critical. Performance, innovative features, low maintenance and running costs as well as high residual value are all important factors but the multi-faceted nature of Telestack equipment is proving to be a major purchasing motive. The ability to use the same Telestack equipment along several parts of the logistics chain from pit to port, is a key driver for many port and terminal operators who are able to keep capital investment low by making the right equipment choice!

Telestack recently commissioned a range of equipment in the Philippines for Seasia Nectar Port Services Inc. (SNPSI) — a joint venture between Seasia Logistics Philippines Inc. and Nectar Group Ltd — at its US\$18.5 million dry bulk terminal in Bataan. Consisting of a TCL 331R, 2 x TL318 Radial and 6 x TL318 link conveyors,

the same equipment is used for shiploading, ship unloading as well as stockpiling in the multi-cargo berth in the Philippines. The new terminal is able to handle a range of shipments including coal, clinker, silica sand and cement raw materials, as well as steel, fertilizer and other dry bulk cargoes and has an annual capacity of at least three million tonnes.

In any multi-cargo berth, the ability to move equipment quickly and easily to accommodate other processes is essential and that's where the true benefits of mobile equipment is evident

In this multi-cargo berth called Mariveles Multipurpose Terminal, there are several processes happening and it is essential that the equipment can be moved quickly and easily. For the ship-unloading part of the process, cement clinker is fed from mobile cranes onto a mobile Dockside Unloading Hopper which feeds

into a range of mobile link conveyors transferring material to the rear of the quayside. Here the cement clinker is stockpiled using Telestack mobile radial stackers. The use of two separate Telestack systems has resulted in an increase in production rates and flexibility on-site with each system producing in excess of 400tph (tonnes per hour) each.

Another key motive for the purchase of the Telestack equipment was the ability to customize the equipment to meet the needs of the customer, application and site conditions. When handling a dusty material such as cement clinker, it was necessary to introduce dust containment features such as a fully integrated dust extraction pulse jet filter system on all material transfer points. Other features included dust covers and sealing, ensuring minimal dust emissions during the unloading process. The Telestack equipment was also fitted



with a fully electrical/power system to ensure the cables were fully and safely integrated and was painted in 250 micron marine grade paint in the customer's customized colours.

In addition to the ship-unloading and stacking processes, Nectar also used the same equipment to reclaim coal and load up to 2,000-tonne barges for shiploading. The flexibility of the Telestack equipment ensured that the same equipment could be used to load and unload the vessel ensuring capital expenditure was kept as low as possible.

Carl Donnelly, International Sales

Manager with Telestack explains the benefits of using the Telestack equipment, "to be able to use the same equipment in the loading, unloading and stockpiling processes was a big advantage to Nectar and their overall capital investment. The mobility and flexibility of the equipment was paramount and the involvement of the Telestack team from the initial stages of the project was vital. They were delighted with our understanding of their business priorities and we felt that their contribution was critical in the overall success of the project."

Telestack specializes in the complete

design, manufacture, installation and commissioning of mobile, bulk material handling systems for the inland ports and terminals, aggregates and mining sectors. Its range of shiploading equipment encompasses radial telescopic shiploaders, shiploading direct from trucks, direct feed shiploaders, rail mounted shiploaders, cambered boom shiploaders and dockside unloading hoppers.

Telestack's Commercial Director Malachy Gribben explains some of the reasons for Telestack's success in the Port and Terminal industry, "Our equipment is synonymous with mobility and flexibility





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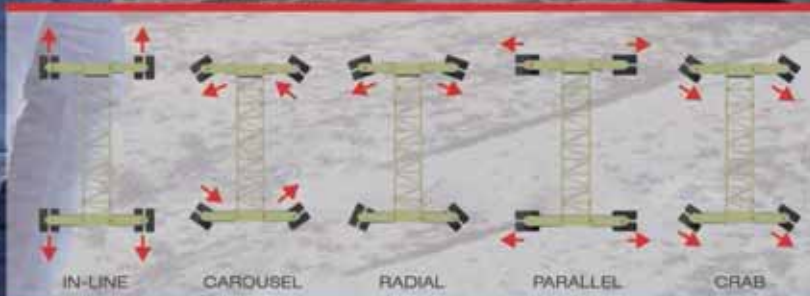
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and the fact that a typical project can be operational in less than six months with no or limited civil requirements or planning permissions are all key factors. With capacities up to 3,000tph, our equipment can load up to Handymax/Baby Capesize vessels and the customer can customize their equipment to suit their specific application and their quayside conditions. Telestack has over 30 years of experience and has a global list of application references and our enviable client list is ever growing.”

Telestack is a specialist in the complete design, manufacture, installation and commissioning of mobile, bulk material handling systems. It has a global proven record in a range of applications including mining and quarrying, stockyard management, ports & inland terminals, power

stations, rail yards, steel mills, cement kilns and many other bulk material handling industries. Telestack has matured into two clear divisions — Telestack Aggregates and

Mining and Telestack Ports and Inland Terminals. It offers a range of solutions and reference sites along the logistics chain from pit, to port to plant. **DCi**



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