



# PORTS & HARBORS

Official Journal of the International Association of Ports and Harbors

## Boxes' weighty problem

Laws needed to enforce container safety

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Port hopes for Hyperloop cargo moves

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Nigerian Ports Authority MD Hadiza Bala Usman is keen to eradicate corruption and incorporate new technology to future-proof the port

Photo: Getty Images/AFP

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# PORTS & HARBORS

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## PORTS & HARBORS

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# The big boil

The hottest weather recorded recently should serve as a reminder to act now on climate change



**Susumu Naruse**

Secretary General – The International Association of Ports and Harbors



This summer was extremely hot in Tokyo. Almost every day the media reported a record-breaking temperature somewhere in the area, and warnings about heatstroke were quite common. The situation seemed to be the same in other parts of the world: it was reported that temperatures well over 45°C were observed in regions such as the Middle East and southwest Asia. Some say this is simply within the usual range of weather fluctuations, but many scientists warn that this kind of extreme weather has been caused by global warming created by human activities.

It is uncomfortable to live in extreme temperatures, but if this hot weather reminds ordinary people of the importance of battling against global warming, it will have served a valuable purpose as we seriously consider the future of the planet.

The International Monetary Fund (IMF) in its July World Economic Outlook announced that, with the United States imposing higher tariffs on a variety of imports and prompting retaliatory measures from trading partners, “higher trade barriers would make tradable goods less affordable, disrupt

global supply chains, and slow the spread of new technologies, thus lowering productivity”.

Although it upheld its previous prediction on global economic growth – 3.9% for 2018 and 2019 – the future course might face a lot of uncertainty and challenges. It was reported that port throughput had seen few repercussions because many shippers had rushed to import goods before tariff escalation.

Guangzhou Port in China, the host of the IAPH World Ports Conference next year, is one of those ports that has seen a remarkable increase in throughput in the first half of this year. When visiting the port, officials showed no concerns about trade wars as they had seen a 10% increase in throughput during the period. They said they would continue to expand container terminals and develop cruise terminals in keeping with the projected high demand growth.

The IAPH World Ports Conference 2019 will take place at the Baiyun Conference Center in Guangzhou City from 6–10 May. In keeping with the new format, the duration of the business programme will be three days, plus one day for port tours. It is taking place in the port where ‘Belt and Road’ begins. **PH**

“This kind of extreme weather has been caused by global warming created by human activities”

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## Port updates

### ► INDONESIA TERMINAL

The Indonesian government has assigned the construction and business development of the Kijing Terminal at Pontianak Port in West Kalimantan to Pelabuhan Indonesia II (Persero), the state-owned port operations and development enterprise. The agreement was signed in July. IPC has appointed Indonesia investment and construction company Wijaya Karya Tbk (WIKA), as the contractor for the project, which is worth IDR2.74 trillion (USD 187.54 million).

### ► ANTWERP BARGE TRIAL

Port of Antwerp is to embark on a two-to-three month barge management pilot project on 5 November. Barges carrying 30 or more containers to be unloaded and/or loaded can continue to call at the container terminals. However, during the trial, barges carrying fewer than 30 containers will be required to collaborate to consolidate their loads. Hubs are being made available for this purpose and a tariff for its use will be charged.



### ► GRAIN GAIN AT MEDWAY

Peel Ports London Medway has upgraded its grain facilities at the port of Sheerness in the UK's southeast, at a cost of EUR5.4 million (USD7 million). This includes updated handling and storage facilities, warehouse refurbishment, the installation of a state-of-the-art elevator/conveyor, and the purchase of Liebherr LHM 280 cranes.



Getty Images: 5077305

Major port Jawaharlal Nehru Port in Mumbai, India, is one of 12 of the country's ports being introduced to the PCS

# India rolls out port community system at major terminals

The 12 Indian government-operated 'major' ports will start operating a much-needed port community system (PCS) by December, as the world's fastest-growing major economy takes another big step towards improving its logistics competitiveness index.

The government has tasked Portall, a logistics management application developed by Mumbai-based logistics conglomerate JM Baxi Group, to roll out a cloud-based, blockchain-ready, pan-India PCS that reduces paperwork and cuts transaction time and costs.

A PCS is a neutral and open electronic platform that enables secure exchange of information between public and private stakeholders to improve the competitive of the seaport communities. It optimises, manages, and automates port and logistics processes based on a single submission of data and connections with transport and logistics chains.

"It has to be done; it's a must," said Ramesh Singhal, chief executive officer of Mumbai-based consultancy i-maritime. "Ports in India are lagging behind

global peers that are using data analytics and artificial intelligence to get ahead of the curve. The world has moved very heavily into these new frontiers of information processing. India is still at the level of paper documentation," he said.

Portall is building the PCS in partnership with Germany's dbh Logistics IT, which operates PCSs across Germany. "We also have a technology tie-up with IBM and [it] created a very strong consortium between ourselves and dbh to bid for the PCS tender," said Dhruv Kotak, joint managing director of JM Baxi Group.

Portall's association with IBM has a greater context. It has signed up as one of the 22 members that form the founding team for a blockchain platform called Global Trade Digitization, which is promoted by Maersk Line and IBM.

"By December, we are hoping to see a very different India, a very differently connected India. This is a mission to try to see if we can improve the competitiveness India can have globally by improving transparency and documentation exchange in export-import trade," said Kotak.

"For us, the mission is much

greater because we are talking about 12 major ports connecting and integrating all their port operating systems, bringing in different types of user all over the country. We are talking about millions of different stakeholders who will be users of this facility, managing a cloud-based data system, making sure that we create an open platform because the government has opted for an open platform to promote competition."

Along with the initiatives taken by Indian customs on standardising documents for entry to the systems, the PCS will see less duplication of data entry and more transparency in the overall process.

The 12 government-owned Indian ports that will be covered by the PCS are Jawaharlal Nehru Port Trust, Deendayal Port Trust, Mumbai Port Trust, New Mangalore Port Trust, Mormugao Port Trust, Cochin Port Trust, Chennai Port Trust, VO Chidambaram Port Trust, Kamarajar Port, Visakhapatnam Port Trust, Paradip Port Trust, and Kolkata Port Trust.

These ports account for some 52% of India's external trade

shipped by sea every year.

For importers and exporters in India, the entire supply chain is complicated because of the different windows they need to approach. There are 21 different government departments involved in the exim chain. It takes about 8–10 days to complete the documentation – 7 for exports and 10 for imports. These agencies have different ways of interpreting procedures, leading to litigation that takes years to be decided, according to India's shipping ministry.

"The PCS will lead to simplification, which will also lead to a reduction in malpractice by middlemen. This will again lead to quicker turnarounds and clearances and simplify document exchange. There will be a lot of savings in this process," Kotak said.

Shipping and port industry executives reckon the planned PCS will enable paperless transactions, making data more reliable.

"It brings more transparency and visibility of movement. The role of the intermediaries will be redefined. You can get customs data, shipping data, shipping movements, transport movements, location of boxes – everything can be done through the PCS. It's a necessity. It will lead to integrity of data, which is the intent," said Sandeep Mehta, president of Adani Ports and Special Economic Zone, the country's largest private port operator.

The government is also pushing private ports such as Mundra, Pipavav, and Krishnapatnam to become a part of the PCS.

In its efforts to make it easier to do business, the government earlier allowed pre-approved importers to take delivery of their boxes at the port itself rather than wait for clearance in a container freight station located outside. The scheme, known as direct port delivery, has cut cargo dwell time and costs for shippers.



An interstate in California. The state's ports of Los Angeles and Long Beach will require visiting trucks to have modern, cleaner engines

## San Pedro Bay ports push for zero-emissions trucks

The US ports of Long Beach and Los Angeles were one step closer to achieving their goal of being emissions-neutral when, in July, they approved measures that require new trucks visiting the port to meet the cleanest engine standards.

As of 1 October, any trucks that are introduced to the marine terminals must have a marine engine of 2014 model year or newer, the ports said in a statement. Final approval of the measure was expected shortly before *P&H* went to press.

The requirement forms part of the San Pedro Bay Ports Clean Air Action Plan (CAAP) that wants to see trucks that call at the port emission-free by 2035. CAAP is a broader strategy that includes goals for terminals, cargo handling equipment, and ships alongside to operate with zero emissions by 2030.

About 17,000 trucks are registered to work in the San Pedro Bay port complex and all trucks in port service are required to be 2007 model year or newer, the ports said in a joint statement. "Reducing pollution from heavy-duty trucks

has played a major role in the dramatic clean air progress at the San Pedro Bay ports. Since 2005, the ports have reduced overall emissions of diesel particulate matter by 87%, sulphur dioxide by 97%, and nitrogen oxides by 56 %, according to the most recent air emissions inventories.

However, according to the Journal of Commerce, the measures concern beneficial cargo owners, as the cost of retiring trucks could be pushed down the chain and result in higher freight rates.

Speaking to *P&H* sister publication *Fairplay* last year, Rick Cameron, managing director of planning and environmental affairs at Port of Long Beach, said the timelines for achieving zero and near-zero emissions from cargo-handling equipment by 2030 and trucks by 2035 were not requirements. Rather, they are target dates that the ports hope to achieve by working with government regulatory agencies, motor carriers, terminal operators, and equipment manufacturers for developing, testing, and implementing the latest pollution-reduction technologies.

## Port updates

### ► CONGO UPGRADE

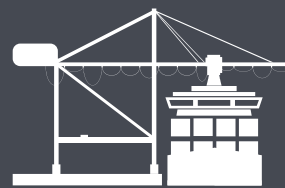
Congo Terminal at Port of Pointe-Noire, Republic of the Congo, has signed an agreement with Navis, to implement its flagship N4 terminal operating system. The terminal will migrate from its current operating system to N4 3.5. The 600,000 teu/year-capacity terminal has been under the management of Bolloré Ports since 2009. Bolloré has to date invested EUR360 million (USD409 million) for equipment and infrastructure improvements to service the oceanic gateway to the Congo Basin, according to Navis.

### ► PMAESA HEAD

The Port Management Association of Eastern & Southern Africa (PMAESA) board of directors has appointed Col Andre Didace Ciseau of the Seychelles as acting secretary-general. Ciseau said, "It is vital to ensure that key action points derived from PMAESA fora are taken to the highest level so as to achieve maximum buy-in from the membership and from strategic partners."

### ► KPCT ELECTRIC CRANES

Krishnapatnam Port Container Terminal (KPCT) on India's east coast has commissioned five electric rubber-tyred gantry (RTG) cranes to support container handling capacity growth as seen in container volume growth of 88% in FY 2017/18, said the port. The new cranes are said to have the potential to reduce energy costs by 80% and operating noise by 65% while emitting 1,400 tonnes less of greenhouse gas emissions than the traditional diesel-run RTGs.





## Port updates

### ► COLOMBO TEU UP

Port of Colombo, Sri Lanka, saw growth of 19.8% in container transshipment throughput, totalling 2,733,906 teu, in the first half of 2018, against the same period in 2017, Sri Lanka Ports Authority has reported. It hopes to handle 7 million teu by the end of this year. The authority has signed a memorandum of understanding with terminals at Port of Colombo to operate collectively to promote the port. These include state-owned Jaya Container Terminal, South Asia Gateway Terminals, and Colombo International Container Terminals.

### ► ALL-WEATHER GHENT

The Euroports terminal at Port of Ghent, Belgium, now has an 'all-weather' terminal, complete with roofed loading bay and warehouse. The facility follows a more than EUR50 million (USD57 million) investment by steel company ArcelorMittal Gent, Euroports, and North Sea Port. "The new multifunctional terminal will be built next to ArcelorMittal's existing mixed cargo bay ... including breakbulk transshipment activities and warehousing activities," said Europort. The warehouse has a storage capacity of 60,000 tonnes, is 240 m long, 60 m wide, and has three unloading quays for trucks.

### ► MALAGA PREPARES

Noatum Terminal Malaga in June received three over super post-Panamax cranes to meet its 200,000 teu/year target. The cranes, manufactured by Noell, can operate on container ships of up to 16,000 teu. "Both Noatum Maritime and Malaga Port Authority hope that [with] gradual economic recovery and with the support of Malaga industry and the Andalusia hinterland, the port of Malaga can become a gateway for regional industry and trade," it said.

# China plans for LNG bunkers

China's transport ministry announced plans on 10 August to promote liquefied natural gas (LNG) as a clean, marine fuel.

It is currently gathering feedback from stakeholders, including state-owned energy and shipping companies PetroChina, Sinopec, CNOOC, and COSCO, trade groups such as China Port Association and China Shipowners' Association, as well as China Merchants Group. It was to collect feedback until 20 August.

The plan aims to prevent pollution at ports, promote green shipping, and incorporate the use of clean fuel into China's energy mix. Broadly, China aims to create an efficient LNG transport service system, improve on supply capacity and infrastructure, promote the use of LNG vessels, and LNG use in ports.

The ministry did not provide specific details, but hopes to have developed standards and a basic network for LNG transport by water by 2020.

By 2025, it aims to develop a comprehensive and technologically advanced water transport system for LNG. At that time, it hopes to increase LNG use as bunker fuels significantly, including a targeted 15% use by government newbuildings and 10% by river ships along major channels, with plans to expand into coastal ships and oceangoing vessels.

The ministry said it would facilitate construction and operation of LNG refuelling stations along inland waterways. It will also promote the construction of LNG terminals along inland waterways and coastal regions, especially in the Bohai Bay area. These would ensure a long-term, steady supply of LNG.

Bohai Bay is a fast-growing economic region in northern China. Port assets in the area



Tianjin Port in Bohai Bay, a region that could see LNG terminal developments

were consolidated in a single entity, Shangdong Bohai Bay Port Group, established in March.

Within a shorter timeframe, the ministry outlined plans to develop safety and management guidelines by June 2019 and regulatory standards by the end of 2019 for the refuelling and transport of LNG.

Last year, the National Development and Reform Commission (NDRC) pledged to build more LNG import terminals and infrastructure across the country, as it aims to use cleaner energy to combat pollution. It aimed to raise imports from 43.8 million tonnes in 2015 to 100 million tonnes by 2025.

Last May, Guangzhou Gas Group announced plans to build an LNG import terminal with annual capacity of 2 million tonnes by 2020. In July 2017, Ningbo-Zhoushan was the first Chinese port to join an international focus group to collaborate on offering LNG bunkering.

China currently has LNG bunkering capabilities at ENN's 3 million tonnes/year Zhoushan terminal, which started up this year. A second and third phase could increase terminal capacity by 15 million tonnes/year.

China's ENN is a private city

gas distributor and the first private terminal to receive government approval.

As well as China, other Asian nations have championed LNG bunkering ahead of the International Maritime Organization's global sulphur cap on marine fuels from 2020.

Japan's government is subsidising the construction of its first LNG bunkering tankers. South Korea too is providing financial assistance for the construction of LNG-fuelled vessels as part of a five-year plan.

While Singapore is not a major LNG consumer, it aims to establish itself as a key LNG bunkering and trading hub, with initiatives such as truck-to-ship (TTS) LNG bunkering trials and grants for the construction of LNG bunkering vessels.

China's advantage lies in the size of its natural gas consumption, which has grown rapidly in recent years. Having imported a record 39.5 million tonnes in 2017, it surpassed South Korea as the second-largest LNG market after Japan.

If China is successful in promoting the use of LNG as a bunker fuel, this could mean a significant increase in its gas demand and, therefore, LNG imports.



## Yang Ming eyes ASEAN port investments

More port infrastructure investments in southeast Asia are being planned by Yang Ming Marine Transport. The Taiwanese liner operator hopes to reduce its operating costs by having more container terminals and storage depots in the region.

At a recent press briefing during Yang Ming's annual general meeting on 22 June, the company's chairman Bronson Hsieh said that an all-out effort was being made to make Yang Ming more competitive, after it entered a joint venture, PT Formosa Sejati Logistics, with Taiwan International Ports Corporation and Indonesian partners, to provide container storage and logistics services in Surabaya.

Hsieh said, "In the long run, this joint venture would have capital of USD50 million as we're quite optimistic about the growth of the market in southeast Asia. Yang Ming lacks container terminal assets in southeast Asia, which we predict will generate more cargo volumes in future.

"Ports and terminals are being developed in many places in southeast Asia and,

because of this, Yang Ming had, in 2017, begun planning investments proactively."

Indonesia, Thailand, Singapore, Malaysia, Vietnam, and the Philippines are currently upgrading or building port facilities.

Yang Ming is planning to operate a container depot in Jakarta, Indonesia, and is assessing the feasibility of developing port facilities in Malaysia, Thailand, and Vietnam. Such investments are capital-intensive, so Yang Ming will have to pool its resources to raise funds.

"Cargo growth in southeast Asia has exceeded our expectations and our terminals in the US and Europe are fully utilised. Southeast Asia is an emerging market and the demand for container terminals there is promising. Once we have our own terminals in southeast Asia, these will be used for loading and unloading our vessels and serve third-party customers.

"Investing in container terminals will reduce the company's operating costs and will benefit Yang Ming's long-term growth," said Hsieh.

## Port updates

### ► POLYNESIA GETS SMART

Papeete Port Authority in French Polynesia has appointed MGI to support its move into the smart port era. It will install a C15 'cargo intelligent system' for goods flow management. The aim is to create "a single window used by the entire port community for goods handling. This approach avoids multiple and redundant paper declarations to speed up goods' transit through the port," MGI said.



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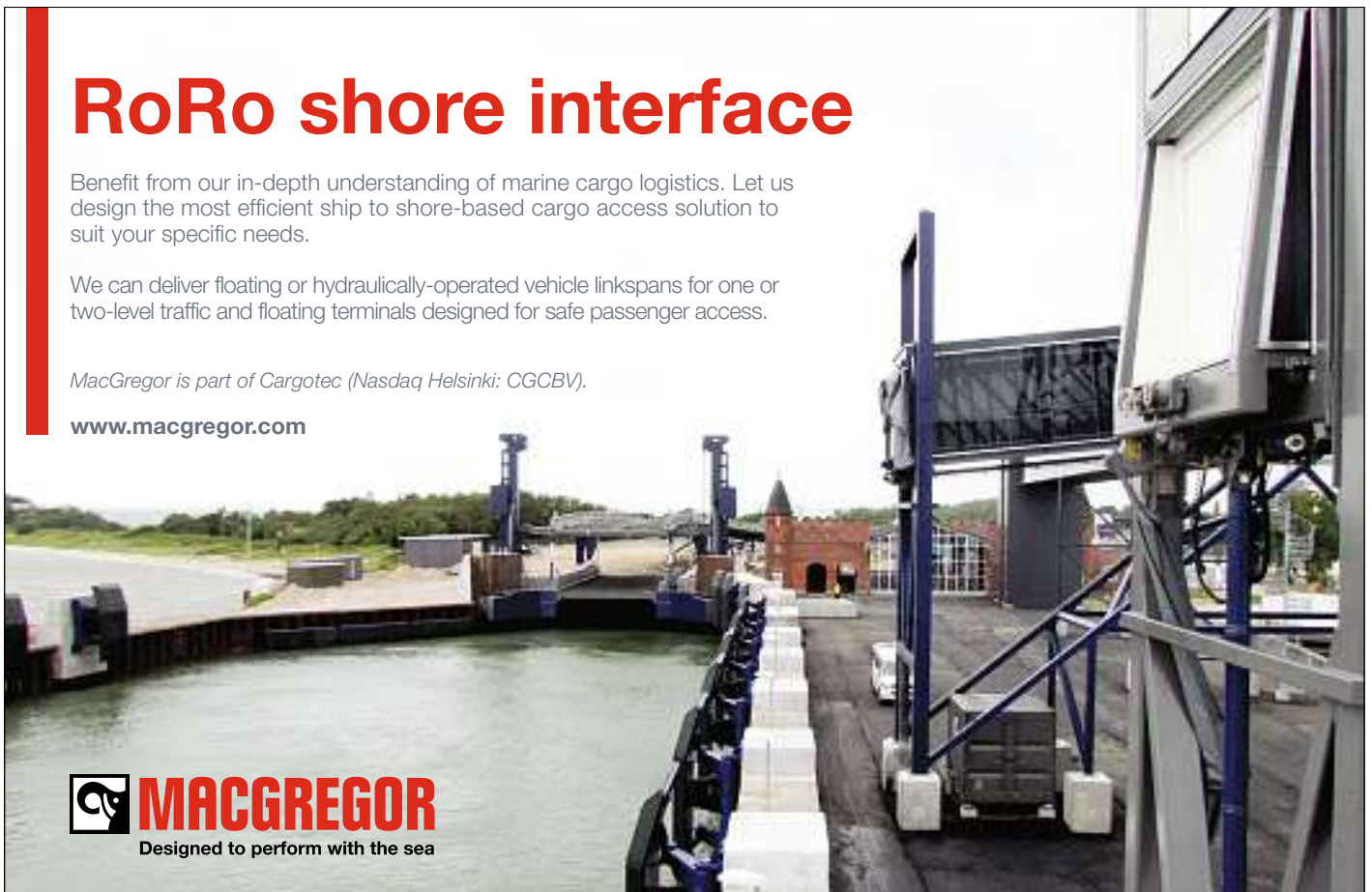
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# Shedding light on box weighing

It is time for nations to bring the verified gross mass regulation into their own legislation and for accurate declared weights to be the industry norm, says **Richard Brough**, technical adviser at the International Cargo Handling Coordination Association (ICHCA)

**M**ore than a year has passed since mandatory requirements for verifying the gross mass of a packed container came into being internationally.

The so-called verified gross mass (VGM) rules under the International Convention for the Safety of Life at Sea (SOLAS) were brought in on 1 July 2017 to improve safety ashore and afloat and to help prevent the loss of containers into the sea. In a typical year, about 600 units are lost but of course extraordinary events can dramatically increase the figure.

It took a number of years for the measures to be agreed at the International Maritime Organization (IMO) and quite a lot of debate about the two methods that were eventually settled on – methods 1 and 2. The former is simple and requires that the container, once packed, is weighed in its entirety to produce a valid VGM. The latter is more complex, especially for groupage containers, as all the contents need to be weighed, including packaging, dunnage, and lashing materials, added to the tare

weight of the container to obtain the VGM.

This is causing a headache for groupage operators and others who do not have all the information they need to hand and rely on others in their contractual chain to supply the VGM. The legal entity responsible for procuring VGM remains the named person or company on the bill of lading, regardless of whether they are involved in the VGM process or not.

However, this new regulation is only going to work if national competent authorities bring it into their own legislation and then audit and check whether the VGM is being properly obtained.

Because the IMO cannot stipulate what individual nations should do, International Cargo Handling Coordination Association (ICHCA) members are faced with a wide disparity of measures across the globe. Many nations have not yet brought this measure into their own legislation and for some that have, there is no criminal or financial penalty for non-compliance.

To date, we have no statistical evidence to

see how things are progressing but we are aware anecdotally that where ports are actually physically weighing containers, discrepancies are being found between the declared VGM and the actual gross mass of the unit. Another contentious issue is the tare weight of the container, with large variance being found between the tare weight on the container marking and the actual weight. This is because of variances in the manufacture of each batch of containers, subsequent repairs, and, in the case of reefer containers, swapped out machinery units and moisture absorption in the insulation material.

Shippers also complain that sometimes they do not actually see the unit, so France-based non-governmental container organisation BIC has made a searchable database of tare weights available on its website. Other companies such as INNTRA, the e-commerce platform for container shipping, have made it easier to transmit VGM data internationally.

It was always stressed by the IMO that ports and terminals had a key role to play in the



VGM chain, as all packed containers must eventually pass through a terminal. The terminal operator is duty bound by international law not to load a container to a vessel unless it has the VGM. In anticipation of this, many terminals have installed weighing devices on their equipment. This simple measure alone has taken the industry a step closer to improving safety, as vessel planners no longer have to 'guesstimate' the weights for ship loading and stability purposes.

While the regulation was being developed, ICHCA's research with its terminal operator members revealed that although terminals accepted that they might have to carry out the weighing, they did not want to take responsibility for the weight. The terminal operators argued that the container should be weighed at the shippers' premises, as it would have to come to the terminal via road, rail, or inland waterway and, if the declared VGM was in error, then the law may have been broken already. For seriously overloaded units there may well be safety considerations



“The current lack of national enforcement means that some shippers are bending the rules”

**Richard Brough**  
*ICHCA International technical adviser*

Capt Richard MA Brough OBE 5094256

on the inland leg. Germany, for example, is complaining of damage and deterioration to its roads and bridges because of overloaded units.

While this law applies only to containers, we know that road trailers are routinely heavier than the maximum allowed on Europe's road network. As an additional measure, Europe has now imposed new legislation that requires shippers to provide hauliers with a certificate declaring the weight of the unit. We have yet to see what difference this will make.

Arguably weighing in the port is the easiest solution. One challenge, though, was meeting the certification requirements. Most port equipment, such as rubber-tired gantry (RTG) cranes, rail-mounted gantry (RMG) cranes, and ship-to-shore (STS) cranes do have load cells fitted, but these are to protect the equipment from overloading and were generally set to about 5% accuracy. For VGM we need accurate readings.

Many have challenged what this means, for example, to within 1% or 0.5%. Newly installed load cells, many of which are fitted to the container spreader, can achieve accuracies of 0.5% and this is more than sufficient.

Other terminals are relying on weighbridges, which already meet the national metrology requirements, but increasingly port systems are receiving their certification from the International Organization of Legal Metrology (OIML).

The current lack of national enforcement means some shippers are bending the rules and doing what they always did, saying the weights they always produced by whatever method they employed are now the VGM. In that regard nothing has changed and until competent authorities start checking, this will remain the case.

Of particular concern is Method 2, where an aggregate gross mass is produced. If the

current scale of container losses does not diminish, or if we continue to find large discrepancies between actual and declared VGMs, then there will be a call to the IMO for Method 2 to be abolished. ICHCA argued strongly for both methods initially because it knew that not all terminals would be ready by the enforcement deadline. However, we have moved on now and most terminals have some sort of capability for weighing.

Ports have a strong role to play here in checking how compliance is going and reporting back through the supply chain to ensure that shippers and others involved are taking their responsibility seriously. Only then we will truly move towards a safer supply chain.

Another great concern for ICHCA is how the cargo is packed and secured inside the unit. There is still a huge lack of knowledge about how to do this safely, despite the revised Code of Practice for Packing of Cargo Transport Units (CTU Code) being published several years ago. Of all the units moving around the world, at least one-third of them could be insufficiently packed. Consider that a possible 12% of them will be carrying declared dangerous goods and an unknown quantity contain undeclared dangerous goods, and it makes for a sobering thought.

TT Club estimates that there is a fire on board a container vessel on average every 60 days and it can be difficult to extinguish and even more problematic to find a port that can deal with the vessel as *MSC Flaminia* found out. The most recent example is the container fire on *Maersk Honam*, which limped to the Gulf of Oman to be anchored off Jebel Ali. It caused five crew members to lose their lives.

ICHCA is embarking on a major awareness campaign about the CTU Code. **PH**

**i MORE INFO:** [ichca.com](http://ichca.com)



# Setting standards for change

**Penny Thomas** asks Hadiza Bala Usman, MD of the Nigerian Ports Authority, and Patrick Verhoeven, IAPH MD of policy and strategy, about corruption, technology, and what it means to stand tall in a historically male-dominated industry



**H**adiza Bala Usman is setting an example, says Patrick Verhoeven, by hosting a bespoke IAPH regional meeting in the Africa region. In recent years, regional meetings for African members have formed part of the yearly global IAPH meeting, or have been on the sidelines of regional organisations' events. This event, however, stands on its own as 'IAPH Africa' and represents the realigned regional breakdown of the organisation that was agreed in 2017.

The Nigerian Ports Authority is expecting to welcome 400 delegates to Abuja from 17–19 September to discuss hinterland connectivity and economic development. "It is great that Africa is setting the example, with the first IAPH regional conference to be held in Nigeria this September. We can only encourage other regions to follow suit," said Verhoeven, IAPH's managing director of policy and strategy. Noting that regions have different challenges and needs, he said a dedicated regional event like this provided "so much more opportunity to engage and discuss with local members and provide input for our own agenda. We should not be afraid to differentiate and cater for regional needs". However, he added that, at the same time, regional events should be open to members from other regions, "so that we can have healthy interaction and foster synergies".

Bala Usman, managing director of the Nigerian Ports Authority also sees the value in identifying synergies and encouraging collaboration. She identifies this as a important role of IAPH. "As the IAPH vice-president for Africa, I plan to visit nations and identify areas of challenge and ways of improving port operations."

The pioneering attitude shown by Bala Usman on a global and regional scale is reflected on a country level. She became MD of Nigeria's port authority in July 2016 and one of her key tasks is to eradicate corruption in the country's port sector. She said that "in a bid to tackle this menace" the Nigerian Ports Authority was automating its processes, especially for payment for operational services. Initiatives include a virtual private network, automation of ship entry notices via Nigeria's E-Sen (Electronic Ship Entry Notice) system, revenue invoice management system (RIMS), and management application, Oracle Financials, among others. "These processes have removed the human interface, which in the past aided corruption," she noted.

"The authority has in place an anti-corruption unit

that has been consistent in creating awareness for the entire workforce involved in port operations to ensure transparency, which is a cardinal focus of the present Buhari government."

In addition to this work, she acknowledged the benefits of projects rolled out by the Maritime Anti-Corruption Network (MACN), which raised concerns over corruption at the IMO Facilitation (FAL 42) Committee meeting in June. The meeting called for proposals on how to tackle corruption for consideration at FAL 43.

"Considering that shipping is a global business, what affects one nation affects another," said Bala Usman. "As the umbrella body co-ordinating all maritime activities, the adoption of this submission by IMO will ensure a more cohesive approach and synergy by nations. Exchange of information about prohibited cargoes and other corrupt practices can easily be shared so that each nation can serve as a watchdog to tackle corruption in the industry."

Verhoeven drew attention to a MACN report released in July 2018 on the work it has undertaken in Nigeria since 2012. The report describes the milestones of the project, including the development of a government training programme on ethics and integrity that was successfully rolled out in Nigerian ports in 2015. "The project was held in partnership with the United Nations Development Programme (UNDP) and involved stakeholders such as the Nigerian Ports Authority, the maritime industry, and the customs service. Working with local authorities since 2012, MACN strengthened integrity across six Nigerian ports and the project has delivered and contributed to a number of key achievements since its inception," he said.

Nigeria is also preparing to meet the FAL amendment requiring the electronic exchange of information between ship and shore that comes into force in January 2018.

In addition to this, IMO is calling on member states to take the regulation one step further to the 'single window' concept and "to enable all the information required by public authorities in connection with the arrival, stay, and departure of ships, persons, and cargo, to be submitted via a single portal, without duplication," Verhoeven noted.

The Nigerian Ports Authority is taking this further and is implementing a port community system (PCS),

“We shouldn’t be afraid to differentiate and cater for regional needs”

**Patrick Verhoeven**  
Managing director of policy & strategy



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many women historically have not been taken seriously or given an opportunity to take leadership roles in the country, especially in male-dominated sectors, so there are tendencies for women to be undermined until you prove them wrong by your achievements,” she said.

She also drew attention to the fact that the authority had overhauled its maternity leave policy. Previously, time spent at home after having a baby had to be taken out of annual leave. “Both leave periods [annual leave and maternity leave] are now to be enjoyed separately, with no discrimination on marital status for maternity leave,” she said.

Women, she said, “are built to multitask” and have proved themselves to be “reliable and able to deliver on their mandate”. She said that a woman does not have to behave differently to be taken seriously “but it is important for every woman to focus and deliver on all tasks given to her and have proper behaviour that will command respect”.

In response, Verhoeven noted that IMO had selected ‘Empowering women in the maritime community’ as the theme for the 2019 World Maritime Day. He sees it as an excellent opportunity for the IAPH Women’s Forum to showcase its work, such as its scholarship programme, which helps female employees of member ports to follow a port or maritime-related course at a college or university or port-related training institute. “A closer relationship with the Women in Shipping and Trade Association (WISTA) is also timely,” he said, “especially now that WISTA has obtained official NGO status at IMO”.

Bala Usman is also a lead campaigner for the return of the schoolgirls kidnapped by Boko Haram in 2014. She said, “I have, over the years, continued to champion this cause but, most importantly, the major initiative that I have implemented was to be an example and to show that hard work and commitment will make you stand out, even in a male-dominated environment.” **PH**

which, Bala Usman said, “will serve as an interface with other agencies”. The national single window platform is being rolled out in collaboration with the Nigerian customs service, she explained, and “is aimed at simplifying and harmonising formalities, procedures, and the related exchange of information and documents between the various partakers in a supply chain”.

Verhoeven is a big supporter of the FAL amendment and knows that ports and shipping share his view, but he also sees differing priorities between the two parties. “Shipping companies are keen to have the ‘reporting once’ principle adopted so that ship crews can be relieved of a considerable administrative burden. The priority for ports is to simplify administrative procedures and harmonise different reporting data formats so that the same data elements can be reported to each competent authority in the same way,” he told *P&H*.

He said that while the needs of both the ship and shore side must be addressed, “we should not lose sight of the big picture”. He looks to technology to resolve many of the differences. “Today’s innovative digital technologies often offer far more advanced, more interoperable, safer, and cheaper solutions for many of the perceived challenges. Think again about the potential of blockchain technology, data pipelines, and application programming interfaces,” he urged.

Bala Usman is meeting the challenge of corruption head on and is leading the authority through a time of technological change. However, she said that being a woman in a leadership position in Nigeria came with both challenges and advantages. “The challenge is that

“There are tendencies for women to be undermined until you prove them wrong by your achievements”

**Hadiza Bala Usman**, managing director of Nigerian Ports Authority

Nigerian Ports Authority: 5056883



# Nigerian investment takes off

The west African country is attracting finance to improve efficiency and accessibility at its key ports, writes **Peter Shaw-Smith**

**N**igeria's unyielding efforts to expand its infrastructure have made it one of Africa's biggest economies, but much work remains to be done for further growth.

"Nigeria is west Africa's unrivalled economic powerhouse. With a population of over 190 million people and a gross domestic product of over USD380 billion, Nigeria is Africa's most populous country and second-largest economy," multinational accountant and consultancy business Deloitte said in July 2018. "President Muhammadu Buhari, of the APC, currently governs the country, while the next elections are due to be held in early 2019."

Nigeria has been hit hard by falling oil prices in recent years, and it was not until 2017 that it emerged from recession, according to the African Development Bank. After hitting highs of about USD120 billion in 2012, oil revenues crashed to about the USD40 billion mark in 2015–17. GDP growth in west Africa rose from 0.4% in 2016 to 2.7% in 2017 on the back of strong performance in several countries, the bank said.

"Nigeria's economy grew at 0.9% [last year], up from a contraction of 1.6% in 2016, due to increased

oil production and growth of agricultural output. The region's fastest-growing economies – Burkina Faso, Côte d'Ivoire, Guinea, and Senegal – maintained their strong showing, growing above 6%, while growth improved in other countries, such as Benin and Ghana."

As ever in Nigeria, the government is striving to improve the country's roads, rail, ports, and airports. All are the focus of myriad projects to improve countrywide transport and logistics networks. *P&H* understands that at least USD21 billion-worth of mega-projects are ongoing in Nigeria (see 2018 infrastructure projects table, p16). The Export-Import Bank of India estimated Nigeria's budget allocation for infrastructure spending at USD2.75 billion in 2016.

Chinese finance has become an important source of funding for the programme. Estimates vary, but in citing research by Baker McKenzie and IJ Global, Nigeria's *Business Post* estimated in July that "loans from Chinese lenders to energy and infrastructure projects in Africa almost trebled between 2016 and 2017, from USD3 billion to USD8.8 billion, with policy lenders China Development Bank and China Exim particularly active in helping bridge Africa's infrastructure gap."

"The African countries seeing most Chinese lending are Kenya and Nigeria, which alone have swallowed up almost 40% of the USD19 billion of lending to projects in sub-Saharan Africa since 2014," the publication said.

According to *China Daily*, trade between Nigeria and China reached USD18.1 billion in 2014 before falling to USD11.1 billion in 2016. The *Africa Investment Report 2017* said foreign direct investment into Nigeria totalled USD6.2 billion in 2016, a fall of 25% on 2015, putting it on a par with Mozambique, Ethiopia, South Africa, and

“Nigeria is Africa’s most populous country and second-largest economy”

**Deloitte**, Multinational accountant and consultancy business





Nigeria is Africa's leading oil producer. The country's soccer team is known as the Super Eagles

## West African countries' container port traffic (teu 000s)

	2010	2011	2012	2013	2014	2015	2016
Benin	317	335	348	388	314	346	333
Côte d'Ivoire	639	664	880	772	803	697	705
Ghana	643	813	885	894	757	817	926
Nigeria	1,232	1,559	1,810	1,696	1,893	1,559	1,335
Senegal	349	369	384	428	384	486	497
Sierra Leone	50	75	83	86	88	90	89
Togo	340	353	288	311	248	253	238

Source: Export-Import Bank of India

Algeria, which all saw figures in excess of Nigeria's, up to USD7.4 billion in the same year.

The Economic Recovery and Growth Plan of the Buhari administration has made road development and rehabilitation a priority in infrastructure, in order to "complete the road sector reforms to establish a road authority and a road fund to enhance best world practice in the administration of road network development and management in the country".

In 2017, the federal government announced a NGN100 billion (USD275 million) sukuk (sharia-compliant bond) programme to finance 25 new road and bridge projects. In November, the Debt Management Office, a unit in the president's office, announced it would raise USD5.5 billion on international financial markets: USD2.5 billion in new borrowing and USD3 billion for refinancing of existing domestic debt.

"The USD2.5 billion proposed capital raising, will be used to finance critical road and rail projects, including [rail connections from] Lagos-Kano, Calabar-Lagos, Kano-Kaduna, Ajaokuta-Itakpe-Warri, Kaduna-Idu, and the Bodo-Bonny road with a bridge across the Opobo Channel. These infrastructural facilities will lead to job creation and improve the climate for business, thereby contributing to economic growth," the Debt Management Office said.

International roads linking Nigeria with its neighbours are also being upgraded. "Improvements in infrastructure connections are likely to help with [trade flows], for example the Trans-Saharan Highway that connects Algiers to Lagos in Nigeria via Mali and Niger is due to enter service in 2018, following the completion of a final 220 km stretch in Niger," a PricewaterhouseCoopers *Algeria 2017* report said.

In August 2017, Bloomberg said Nigeria had embarked on a USD41 billion plan to modernise its railways. "Key projects include building a second railway line connecting the nation's two biggest cities, the commercial capital, Lagos, and Kano in the north. The 1,100km line will carry freight and passengers. The government also wants to construct a coastal railway that connects Lagos to the eastern city of Calabar," the news agency said in an August 2017 report.

"The Nigerian government has designated CRCC [China Rail Construction Company] to be responsible for the construction of the Lagos-Calabar Railway, the Lagos-Kano Railway, and the Abuja Rail Mass Transit, with a total value of over USD20 billion," according to a report by Singapore's DBS Bank published in July 2017.

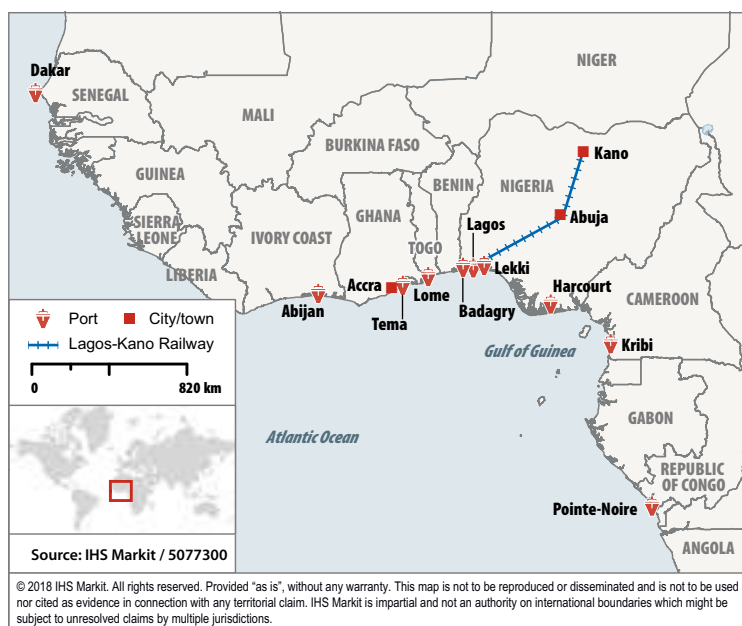
"China Railway Construction President Zhang Zongyan says the Calabar line is the largest overseas Chinese construction project ever contracted. The Lagos-Kano link is 1,300 km and will cost USD8.3 billion. The 186 km segment from Abuja to Kaduna was just completed," it said.

General Electric Co was leading a group to rehabilitate Nigeria's 3,505 km of century-old, narrow-gauge railways linking the coastal cities of Port Harcourt and Lagos with the north, Bloomberg also reported. "The group, including SinoHydro of China, South Africa's Transnet SOC. and the Netherlands' APM Terminals will fund, revamp and operate the railways for a period to be decided in negotiations with the government, the minister said. They won the concession in May."

Nigeria's ports have faced many legacy issues. When APM Terminals came in to manage Apapa Terminal in Lagos, it claimed a USD176 million infrastructure investment resulted in a reduction in bureaucracy and corruption, reducing waiting times for vessels from 28 days in 2006, to less than one day in 2009, saving Nigeria's economy about USD200 million a year in congestion fees alone.

Expansion of the ports network serving Lagos is imperative. Apapa Terminal and Tin Can Island, both situated inside the channels serving the city, are congested, while plans are in place for two new ports: Lekki, 65 km to the east of Lagos, and Badagry, 50 km to the west of the business capital.

CMA Terminals, the port development subsidiary of France's CMA CGM, is to develop a Lekki Deep Sea Port sub-concession. "Upon completion, [Lekki's] container terminal will be equipped with a 1,200m-long quay as well as 13 quay cranes and will have a capacity of 2.5 million teu," CMA CGM said in a statement in April. "With its 16m depth, it will allow the group to deploy



ships with a capacity of up to 14,000 teu. Operations are planned to start at the end of 2020."

The federal government also approved the USD2.6 billion Badagry project last year. "Badagry is a very comparable project to Lekki, to the southwest of Lagos. The plan is for multipurpose activity, and, of course, with a sponsor like APM Terminals, it should be a certain bet," Michel Donner, associate, Drewry Shipping Consultants, told *P&H*.

"However, after making some noise about where they wanted to be on the map as a competitor to Lekki, in practice, it seems nothing has happened for three years. As competition for Lekki, they are way behind in terms of actual progress: work has not started in Badagry."

ICTSI terminated its sub-concession in Lekki International Container Terminal in Nigeria in 2017. The Manila-based operator said at the time that the agreement had been terminated with the Nigerian

Ports Authority by mutual consent because of delays in the execution of the project at Lekki Port.

However, Lekki's prospects remain bright. "Apart from Lagos, the port of Onne is close to Cameroon. It is much smaller and at a significant distance from Lagos, with poor communications. There are roads, obviously, but it doesn't make sense to bet [on] Onne. It is the oil region, and there is some local traffic .... It is not small in terms of population. Onne is close to Port Harcourt, but is really dwarfed by Lagos," Donner said.

The federal government, together with the Akwa Ibom state government, also plans to develop Ibom Deep Sea Port, located in the free-trade zone in the southeast of Akwa Ibom State.

Other countries' ports in the region include Lomé, in Togo, which has facilities for bigger ships. Container throughput handled by Lomé Container Terminal increased significantly by 67.5% year-on-year to 0.89 million teu, the 2017 annual report of China Merchants Port Holding Company stated. "Container throughput handled by Tin-Can Island Container Terminal in Nigeria was 0.47 million teu, representing an increase of 14% year on year."

Lomé is operated by MSC and, according to Donner, is the only line that brings in 13,000 teu ships, which is big for the area. "There is a lot of transshipment, which will surely go into other ports. It is the only line deploying such big ships," he said.

"Otherwise, average vessel size is 5,000 teu at places like Tema in Ghana, which is working very actively on an ongoing project. In practice in Tema, the new terminal will be run with Bolloré. The first phase is probably going to be commissioned in 2019. Abidjan, Côte d'Ivoire, is another port being developed. These are the people you have to watch."

As Nigeria's economy and the economies of its neighbours continue to grow, these developments will be there to support the growing trade requirements for the region. The investment seen in the hinterland will be vital to support this developing supply chain. **PH**

## Nigeria's infrastructure improvement mega-projects 2018

Type	Status	Line	Date	Size	Investment (USD million)	Contractor
Rail	Completed	Abuja-Kaduna Railway	2016	187 km	850	CRCC
Rail	Ongoing	Lagos-Calabar Railway	2014	1,402 km	11,100	CRCC
Rail	Ongoing	Lagos-Kano Railway	2006	1,315 km	8,300	CRCC
Rail	Ongoing	Abuja Rail Mass Transit Phase II	2017	33 km	1,473	CRCC
Road	Ongoing	25 Domestic Road Projects	2017	78 km	275	Various
Road	Ongoing	Lagos-Ibadan Expressway	2017	120 km	N/A	N/A
Port	Ongoing	Lekki Free Trade Zone, Lagos	2017	2,500 teu	1,000	CMA Terminals
Port	Start-up	Badagry Seaport	2017	N/A	2,600	APM Terminals
<b>Total</b>					<b>21,998</b>	

Source: Business Day (Nigeria), National Railway Administration of PRC, Deloitte, NITR, IHS Markit



# Namibian challenger for regional trade

Southern African ports are readying themselves for an increase in container throughput fuelled by a developing middle class.

**Peter Shaw-Smith** considers Namibia's place in the transition



Getty Images/5086382

**R**apid economic development is taking place in southern Africa due to growing connectivity, mining, and the rapid evolution of industry. Served by the 15-member Southern Africa Development Community (SADC), the region is understood to serve 300 million consumers, and an emerging middle class is keen to obtain access to global consumer goods, meaning that development of new supply chains is critical.

The port of Walvis Bay, situated 265 km east of the Namibian capital, Windhoek, claims to be one of Africa's most efficient ports and is touting its status as a logistics hub in order to attract volumes away from neighbouring

ports in South Africa, Mozambique, and elsewhere. Walvis Bay is located halfway down the Namibian coast, about 700 km from the Angolan border.

Africa is about 2,160 km wide at the latitude of Windhoek and hinterland logistics pose major problems for a number of SADC members, particularly the landlocked countries of Zambia, Botswana, Zimbabwe, and Malawi.

The Namibian Ports Authority (Namport) seeks to "contribute to the competitiveness of the SADC region's trade through the efficient, reliable and cost-effective supply of port services". It said port capacity at Walvis Bay was set to more than double before original



**Walvis Bay with flamingos feeding in the mud flats. The port is showcasing itself as a well-connected port and is positioning itself to attract business to its logistics hub**

plans changed as volumes grew. Namport originally planned for an increase in capacity from 350,000 teu to 750,000 teu/year.

However, "With a capacity of 350,000 teu, throughput has been 150,000–250,000 teu [a year] in the past four years," Clive M Smith, logistics hub project manager at the Walvis Bay Corridor Group, told *P&H* on the sidelines of the IQPC Global Infrastructure Summit in Dubai in April, adding that operations at the new terminal would commence in the second quarter of 2019. "We are increasing capacity to 1 million teu," he added.

Construction of a new 40 ha container terminal began in 2014, with contractor, China Harbour Engineering Co,

## Walvis Bay corridors

Corridor	Countries served (Time to market in number of days)
Trans-Kalahari	Botswana (2), South Africa (2), Zimbabwe (3–4)
Walvis Bay-Ndola-Lubumbashi **	Zambia (3–4), Zimbabwe (3–4), DRC (5–6), Malawi (5–6)
Trans-Cunene	Angola (3–5)
Trans-Oranje	Northern Cape Province (South Africa) (2)

\*\* aka Trans-Caprivi Corridor

Source: WBCG

carrying out piling work. Planned additional annual capacity is 650,000 teu, thanks to 600m of new quay. The project also includes a cruise terminal.

Smith said a new operator was being sought for the port of Walvis Bay, and that DP World, APM Terminals, and Hutchison Ports were among the options being considered. Namibia's second port, Lüderitz, is located 420km south of Walvis Bay and mainly serves the bulk and breakbulk sectors, Smith said, particularly manganese and iron ore exports. "It does around 100,000 teu a year. It will expand [in future] to a capacity of 300,000 teu," he said.

Logistics corridors serving neighbouring landlocked countries lie at the heart of the rationale behind the Walvis Bay proposition. The Trans-Kalahari Corridor, the Walvis Bay-Ndola-Lubumbashi Development Corridor, previously known as the Trans-Caprivi Corridor, the Trans-Cunene Corridor, and the Trans-Oranje Corridor are all designed to feed cargoes into the Walvis Bay port complex.

Walvis Bay Corridor Group (WBCG) is targeting boxes from Zambia, Botswana, and Zimbabwe. Malawi is also a possibility, but is better placed to be served by Mozambique's Nacala Port.

The Export-Import Bank of India estimated Namibia's budget allocation for infrastructure spending at USD240 million in 2016. Competitors with Walvis Bay include ports on South Africa's seaboard, including Durban, Cape Town, Port Elizabeth, and East London, as well as Maputo in Mozambique.

Smith said minimal clearance times at Walvis Bay had caused many logistics players located in southern Africa to consider using it for containerised consignments. "This is one of our benefits. We have seen quite a bit of volume shift to the port of Walvis Bay," Smith said.

"Durban, South Africa, and Dar es Salaam, Tanzania, are the two ports we are – I don't like the word – 'competing' with, because we are only creating an alternative for the region," he said.

"Our focus is on inland. Currently we have cargo going to Zimbabwe, Zambia, and Botswana. We can even go as far as Malawi. All boxes are coming by road or rail. Our only connection to Angola is by rail. Rail to

## Liner shipping connectivity index

Economy	2006	2011	2015	2016	2006–16
Morocco	9	55	68	60	51
Djibouti	7	21	21	33	26
Mauritius	12	15	30	32	20
Togo	11	14	20	29	18
Angola	9	11	20	27	18
Congo	9	11	20	26	17
Namibia	9	12	18	23	14
Egypt	50	51	61	59	9
South Africa	26	36	41	35	9
Nigeria	13	20	21	21	8

The index is computed by UNCTAD and suggests how well countries are connected to shipping networks

Source: UNCTAD

Zambia is under study. Most of the cargo going into Zambia and DRC [Democratic Republic of the Congo] is going by road."

Smith said Walvis Bay's goal was to be an efficient alternative as a logistics hub. "The first cargo started moving in 2004. We are certain we have the potential to carry more and that is why we are creating the capacity at the container terminal. We also know we are a small country: we will never be able to compete with Durban or even Dar es Salaam the traditional way. A lot of the trade is to the Far East, and Dar es Salaam makes sense as a first port of call; even Durban makes more sense."

Petroleum imports form the biggest share of commodities landed at the Port of Walvis Bay (34% of

“It’s strategically positioned to service the landlocked countries in the north and east”

**Mike Fitzmaurice**, CEO of Transport Logistics Consultants

freight tonnes landed), Namport said. Construction of a new petroleum liquid bulk terminal further north will see imports move there.

Analysts see in the Walvis Bay experiment a case of dissatisfied customers looking for alternatives. "It is very ambitious. It seems to make sense, but major distances are involved. As long as Durban [fails to] get its act together and a new, reliable and well situated port [fails to come] to life [elsewhere] in South Africa, there is hope for Walvis Bay. If one of those comes on stream, however, the distance to Walvis Bay will become a great disadvantage," Michel Donner, associate, Drewry Shipping Consultants, told *P&H*.

"Zimbabwe is far on the other side [of southern

Africa] and much more anchored to the east coast. Zambia can also choose Angola, Mozambique, Tanzania, or Kenya outlets."

Donner said he saw in the Walvis Bay situation similarities with the US west coast. "At some stage, when recurring congestion in the US west coast ports became too great, high hopes arose for a port called Ensenada in the northwest of Mexico, where Hutchison obtained the concession for a container terminal," he said.

"Every time there were strikes or congestion in the Los Angeles region or the US west coast, [optimism] revived in Ensenada, but the west coast ports would then eventually sort [themselves] out .... Ensenada never became a very steady [or] big alternative. It's doing well but nothing like what some had [anticipated]."

Mike Fitzmaurice, CEO of South Africa's Transport Logistics Consultants group, which focuses on cross-border and corridor monitoring, takes a different view on Walvis Bay. "It is strategically positioned to service the landlocked countries in the north and east, namely Zambia, DRC, Zimbabwe, and Botswana." He said Walvis Bay had already "established itself as a force to be reckoned with" and that the Walvis Bay Corridor Group had done a very good job of marketing itself globally.

Fitzmaurice said the Walvis Bay corridors had risen to the regional logistics challenge. "The Trans-Caprivi [Corridor] is already proving very successful and efficient, as the volumes along this corridor servicing Zambia and DRC are increasing rapidly. The Trans-Kalahari Corridor is servicing Gauteng in South Africa and Zimbabwe through the Plumtree border post between Botswana and Zimbabwe."

He said South Africa was facing a major crisis with regard to heavy goods vehicle height restrictions for high-cube containers, as the department of transport was refusing to change legislation on commercial vehicle height restrictions. "This is going to create a huge opportunity for other ports from neighbouring countries to pick up that work and move high-cube containers to the hinterland via ports such as Walvis Bay, Beira, Dar es Salaam, and others."

Smith remains optimistic that the alternative offered by Walvis Bay can be attractive. "We have seen shipping shifting all the way around the coast to Walvis Bay because of the efficiencies we created on our corridors, in moving cargo to our port. We are confident we will attract the volumes."

According to the World Bank, in 2017 Namport registered a 1% contraction in economic activity. However, it projected GDP would reach 1.5% this year, and 3% in 2020. As Namibia and its neighbours jostle for trade and grapple with their limitations, such as finance and legislation, there may well be movement of cargoes between routes. Looking forward, improved ports and connectivity will support trade and in return underpin the development of Africa's middle class, with the potential for yet more capacity. It is unlikely that Namport's efforts now will be wasted in the future. **PH**



# New home for marine wildlife

Qatar Ports Management Company tells *P&H* about the environmental relocation programme it rolled out during the construction of Hamad mega port

**S**ituated in the Persian Gulf, the peninsular country of Qatar has completed a mega port project in order to be self-sufficient and receive direct calls from mother ships. Hamad Port is situated just short of 30km from the capital, Doha, and opened in December 2016.

Prior to its opening, the country's main port was Doha. This is now being developed as a cruise hub. Together, Doha, Hamad, and a third port, Al Ruwais to the north of the country, fall under the jurisdiction of Qatar Ports Management Company (Mwani Qatar), established in 2009.

The USD7.4 billion port forms part of the government's National Vision 2030 and offers a 15 m depth in order to attract the biggest ships in the region, a port representative told *P&H*.

It has three container terminals with a combined capacity of 7 million teu, a general cargo terminal, and a multiuse terminal. All were developed inland by digging basins and channels and then flooding the excavated areas.

The masterplan for Hamad port goes beyond the port and extends to a logistics hub, offering storage, warehousing activities, and a container freight station. "The adjoining areas will be developed into zones for different industries to set up their business, specially geared towards value addition and re-export," said the port. Built on a greenfield site, it also includes a naval base and in total covers 26.5 km<sup>2</sup>.

Further phases are planned, including a railway that would connect to the country's industrial zones.

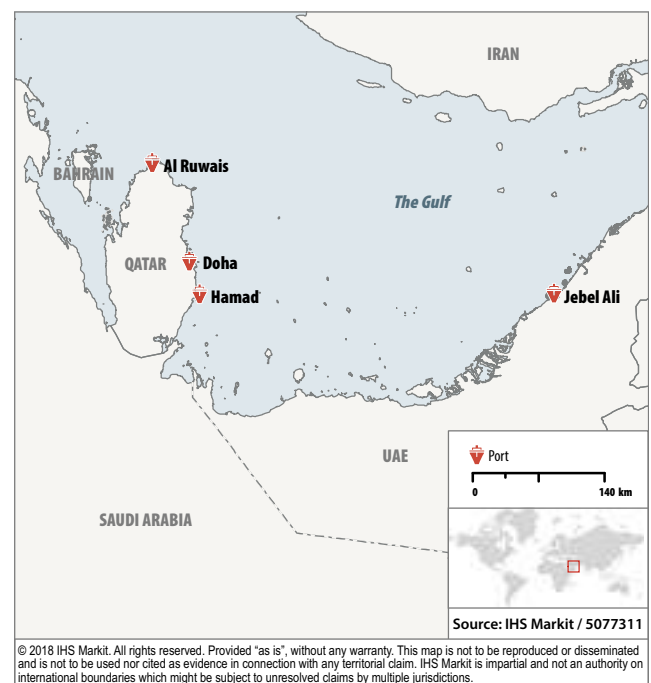
The port appointed WorleyParsons as engineering and design consultant, Aecom as programme management consultant, and Cowi as environmental consultant. The port told *P&H* that when identifying Hamad Port's location the planners were clearly briefed to minimise the impact on marine wildlife. "The presence of mangroves, seagrass, and corals made this goal very challenging. Working in co-operation with Qatar's Ministry of Environment, the project team set ambitious goals to relocate the marine life to selected sites and reduce the impact of construction on the environment and make it sustainable," it said.

The relocation work complete, the project team began monitoring programmes to assess the health status of the relocated corals and the mangroves over a three-year period. Marine life was checked to ensure it was thriving and would sustain itself over a longer period without external intervention. "During

the monitoring period, it was noticed that around 80% of transported marine life had settled in the new environment and had started to grow. The biggest success was the mangroves, which were doing extremely well, and associated marine life colonies were thriving there," said the port.

Alternate sites were chosen for the relocation of marine life from the project site to mitigate and offset the environmental impact to the coast. After surveys and evaluation of the area, different species of mangrove, hard and soft corals, and different types of seagrass were identified for relocation.

The project saw 4,257 m<sup>2</sup> of seagrass relocated to the north of the project site. During the construction period, 139,117 mangroves were planted at suitable 'receiving sites', in three separate relocation efforts. Further, 11,595 directly threatened hard coral colonies have been relocated, along with 121 m<sup>3</sup> of existing reef habitat, "to provide a complex habitat for resident fish and preserve its ecosystem functionality", the port explained. In addition, to partially mitigate the loss of habitat for a variety of juvenile fish species caused by the port development, 803 m<sup>3</sup> of concrete artificial reef units were deployed. **PH**



# Ports square up to trade wars

US ports are using data to predict the potential impact of tariffs being placed on the country's imports and exports. **Bill Mongelluzzo** and **Hugh Morley**, *Journal of Commerce* senior editors, report

**T**he Trump administration's tariffs on USD250 billion on Chinese imports to the United States, chiefly comprising steel and vehicles, as well as potential tariffs on imports from other countries, have sparked a trade war for which US ports are readying themselves, as uncertainties over imports and exports loom.

The industry is already feeling the effects. A dry bulk vessel with a load of Asian steel had, at the time of writing, been stranded for a month outside Port of Long Beach in California while it awaited resolution of a dispute over who has to pay the added tariff.

The hundreds of billions of dollars in proposed tariffs, while reducing imports in the long term, could result initially in a surge as US retailers and manufacturers fast-forward shipments ahead of the normal 90- to 120-day purchase order cycle, according to Gene Seroka, Port of Long Beach executive director.

"For the Port of Los Angeles, it is having the visibility and a level of preparedness. Be overprepared," he said at a seminar in June, adding that being prepared meant having terminal labour and inland transport resources primed to handle a sudden spike in traffic.

The port has analysed its import and export data and its initial findings reveal that 15% of the port's cargo volume is subject to possible disruption due to tariffs.

China, one of the major targets of Trump administration tariffs, accounts for 60% of the port's trade.

The ports of Los Angeles and Long Beach are using technology to project cargo volumes up to 38 days before vessels from foreign countries arrive. Seroka said 'port optimiser' software gave stakeholders sufficient time to marshal their resources for a sudden increase or decrease in cargo volumes. "We have a line of sight and an added level of preparedness," he said.

On the export side, with soyabeans and specialty crops likely targets for retaliatory tariffs, Port of Oakland and the Pacific Northwest Seaport Alliance of Seattle and Tacoma are helping the agricultural sector prepare for disruption of trade flows when the crops are harvested later this year. As a manufacturer of aircraft, as well as exporter of agricultural products, "Washington is one of the most trade-dependent states in the country", said Dustin Stoker, chief operations officer of the Northwest Seaport Alliance.

The port is using technology and data to project cargo flows and the impact on port tenants and transport providers during possible surges or drops in cargo flows due to the tariffs, said Eric Napralla, senior maritime projects administrator at Port of Oakland.

On the east coast, trade in Port of New York and New Jersey is increasing as the cargoes it handles

## Expecting reduced cargo flows

The THE Alliance has suspended one of its trans-Pacific services in preparation for reduced cargo flows as a result of the US-China trade dispute.

Vincent Lin, Yang Ming Marine Transport's general manager, said the THE Alliance, to which his company belongs, had acted pre-emptively by cutting one trans-Pacific loop because of the ongoing US-China trade dispute. THE Alliance, which also includes Hapag-Lloyd and Ocean Network Express, announced its PS8 trans-Pacific service would be suspended from July.

"Cargo flows could be affected by the trade war, even though the demand for consumer goods would not remain high. We still see room for growth in the usual peak season in the third quarter," Lin said.

The third quarter of the year tends to be the best period for container shipping, as retailers in the United States and Europe stock up ahead of Thanksgiving and Christmas.

"I believe the trade war is caused by President Trump's wish to reduce the US trade deficit with China. If China can compromise by increasing imports from the United States, this will benefit two-way cargo flows," Lin said.

are less exposed to tariffs. It saw a 4.8% increase in exports through the port in 2017 to 1.4 million teu, although the port's export volume is still below the peak of 1.6 million teu in 2011. This increase has been attributed to the elevation of the Bayonne Bridge,

completed in 2017, and the opening of the expanded Panama Canal in 2016.

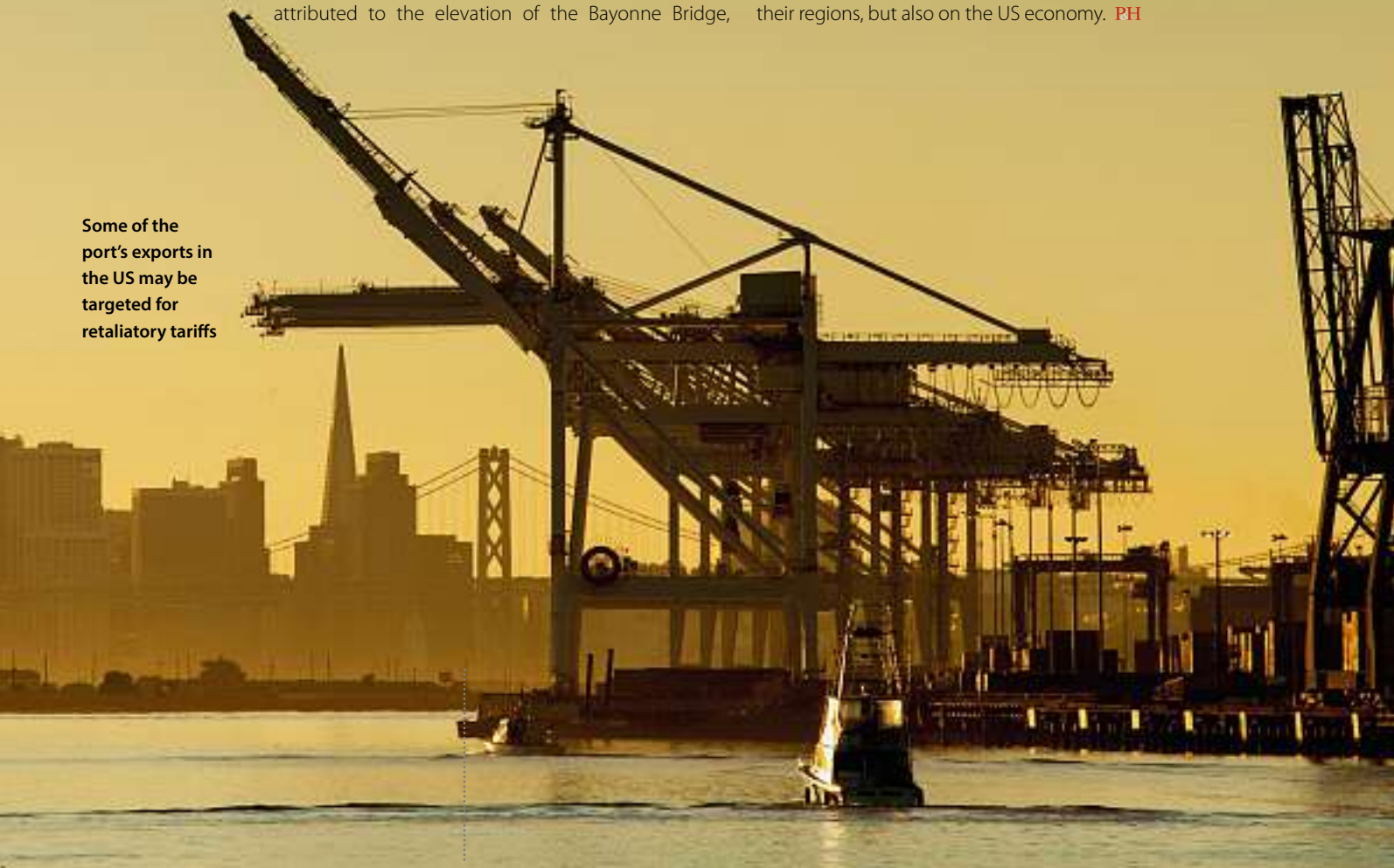
The export rise could be short-lived, however, depending on what tariffs are placed on US goods in retaliation for the tariffs placed on foreign goods by the Trump administration. So far China has imposed USD34 billion in tariffs from July and the European Union and India have retaliated against US tariffs placed on steel and aluminium. New York-New Jersey's export exposure to goods affected represents just 1% of the overall export volume.

But while the cargoes it handles are less exposed to tariffs, the port has already seen a dramatic decline in exports of waste paper and plastic scrap to China, which restricted their importation. Dan Pastore, manager of market research for Port Authority of New York and New Jersey, said that given the volatility of the international trade situation, it was tough to know how the port's export picture would play out.

"It's such a changing landscape, that we just don't know what the final outcome is going to be yet," he said.

Stoker pointed out, however, that port managers could play a leading role in educating the US Congress on the significant impact that tariffs have, not only on their regions, but also on the US economy. **PH**

Some of the port's exports in the US may be targeted for retaliatory tariffs





# Creating greater advantage

Inland Port Dillon is said to offer another competitive advantage for South Carolina Ports Authority following its successful facility in Greer, writes **Scott Berman**

**T**he US state of South Carolina's second inland port opened in April in Dillon and it is hoped it will help to optimise the region's supply chains. According to South Carolina Ports Authority (SCPA), Inland Port Dillon will provide much-needed infrastructure in the interior of the state, support an increase in rail cargo, and expand Port of Charleston's reach into the northeast and Midwest of the country.

The USD50.5 million facility is situated 190km from Port of Charleston on a property with a 1,376ha industrial park and is near a major highway and adjacent to an CSX rail mainline. CSX will provide a daily overnight rail service for double-stacked import and export boxes and other freight between Charleston and Dillon.

Trucking in the hinterland region, rather than hauling freight all the way to and from Charleston, therefore offers a shorter-haul option – with fewer hours on the road for truckers – as well as easier access and faster turnaround times. Enabling shorter hauls for trucks is also more sustainable, SCPA corporate communications and community affairs manager Erin Dhand said.

The dry port, which has 3 km of working rail track, container storage, and chassis yards, two RTG cranes, and two empty container handlers, follows on the heels of South Carolina Inland Port at Greer, SCPA's first dry port, which opened in 2013 and is situated about 338 km west of Dillon.

SCPA sees the dry port model as another competitive advantage for Port of Charleston, where a long-awaited project deepening it to 15.8m, began in February.

A new, USD762 million container terminal at Charleston – the first phase of construction recently started and the facility is due to open in 2020 – will feature super post-Panamax cranes able to service 13,000 teu ships. The port handled 2.2 million teu in 2017, a 9% increase over the previous year, and sees even more potential, so has turned inland to reach it.

SCPA's first inland port, at Greer, has amplified a pre-existing trend at Port of Charleston: a boost in its intermodal rail, which moved 12% of its cargo in 2011 and almost 25% in 2017. Last year, there were 124,817 rail moves at Greer, a 20% growth over 2016. "The growth at Greer has been surprising," said Dhand. "We didn't know we'd see that kind of growth."

Other US inland ports can be found in Georgetown, Kentucky, Joliet in Illinois, Columbus, Ohio, and Front Royal, Virginia.

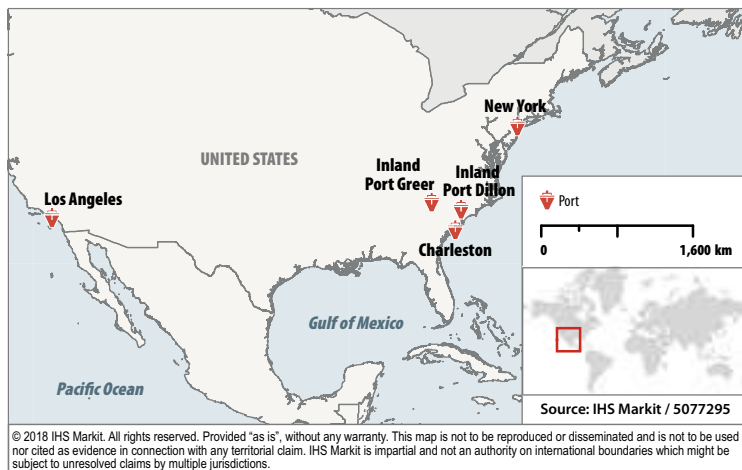
In South Carolina, there are various customer bases and markets, but Dillon is building on the Greer model in key ways, such as in local buy-in for such a facility, rail and highway access, and nearby companies with large distribution needs.

Dhand and Jim Van Ness, SCPA's director of engineering and permitting, explained that carmaker BMW has a plant near Greer and is a key client, while Dillon's biggest client is retailer Harbor Freight Tools, which for 17 years has had a distribution centre abutting what is now the inland port property.

Dillon has reportedly attracted at least two tenants to the industrial park, KB Biotech Solutions and International Paper, and is seeking export consolidation, import distribution, and manufacturing tenants for the industrial park.

SCPA is projecting a capacity of 45,000 rail moves for phase one at Dillon, about 36% of Greer's total, but with the potential at the new site for a market-driven second phase that could eventually bring rail moves up to 116,000, approaching Greer's 124,817. Conversely, Dillon will have more than three times the track length than the tighter Greer property.

Much remains to be done in order to bring the facility to its full potential. Yet, given the track record at Greer, port officials seem sanguine. So much so, in fact, that a third SCPA dry port somewhere in South Carolina is not out of the question. "All options are open," said Van Ness, "I wouldn't say a third one is planned, and I wouldn't say a third one is out of the question." **PH**



**MORE INFO:** [www.scpa.com](http://www.scpa.com)



# Vancouver in the fast lane

The northwest Canadian port is investing for expected future growth and is seeing government investment to improve rail and road access from the hinterland

**Cargo handling and city life sit side by side at Port of Vancouver**

**T**he Canadian ports of Vancouver and Prince Rupert and US ports of Tacoma and Seattle are competing to be the most efficient gateways in the Pacific Northwest in order to capture market share.

Since two-thirds of North America's population lives in the east, west coast ports rely upon speedy, reliable, and cost-effective intermodal rail services to attract time-sensitive, high-value imports from Asia.

The Canadian ports' Pacific Northwest regional market share grew from 58.2% in May 2014 to 63% in May 2018, while the Seattle-Tacoma regional market share declined from 41.8% in 2014 to 37% in 2018, according to analysis from *P&H* sister publication, *JOC.com*.

Vancouver has 27 terminals, four of which are container terminals. According to the port's figures, movement of cargo through Vancouver reached a record high in 2017, of 142.1 million tonnes, an increase of 5% over 2016. Container traffic increase stood at 11%, with 3.3 million teu handled at the port.

It is, however, the most space-constrained of the Pacific Northwest gateways and is investing in two expansion plans. The Centerm Expansion Project includes improvements to the terminal, port roads, and access areas. On the terminal side, it will increase container handling capacity from 900,000 teu to 1.5 million teu. The terminal is currently operated by DP World Vancouver and has two berths, six gantry cranes, and on-dock rail facilities.

The Roberts Bank Terminal 2 Project is a proposed new three-berth container terminal next to the GCT

Delta terminal. It would create 2.4 million in container capacity. It is hoped that if the project is approved it will be operational by the mid-to late 2020s. Vancouver Fraser Port Authority and private investors will fund the project.

This proposed additional capacity will be supported by investment in road and rail infrastructure. In June Transport Canada announced it would invest CAD167 million (USD12.8 million) in road and infrastructure access to the port. The programme includes updating existing road and rail infrastructure, plus the design and build of a 4.2 km rail track that runs parallel to an existing track. Transport Canada said in a press statement that "These projects will increase the efficiency and capacity of the rail network servicing the north and south shores of the port of Vancouver, while also facilitating the movement of goods."

This funding follows an additional CAD55.8 million for four other critical infrastructure projects. These investments have been made available through the National Trade Corridors Fund, which forms part of Transport Canada's 'Transportation 2030' vision. About 20 projects were chosen to be submitted for funding "culminating in an infrastructure strategy called Greater Vancouver Gateway 2030 designed to ensure the roads and railways that lead to the port of Vancouver are ready to manage Canada's growing trade", the port operator said. Additionally, at the end of July, PSA acquired a 60% stake in Ashcroft Terminal, 300 km east of Port Vancouver. **PH**





Port Everglades 5085510

# Overseeing US dredging

Time and attention to the environment can result in myriad benefits for habitats and infrastructure, writes **Scott Berman**

**U**S stakeholders, including ports and governmental agencies, are using dredging in creative campaigns that are simultaneously helping to keep waterways economically viable while protecting natural environments and valuable landside assets.

There are various such projects in the United States, and the outcomes of five recent ones at: Florida's Port Everglades; the Blackwater National Wildlife Reserve in Maryland; Cat Islands in Green Bay, Wisconsin; and Harpers Slough on the Upper Mississippi River, are all notable cases in point. While quantifiable environmental

results are still being compiled, full assessments for which will likely take years, stakeholders are clearly encouraged by what they are seeing.

At Port Everglades, a county-owned operation that straddles the border of Fort Lauderdale and Hollywood on Florida's east coast, state environmental regulations stipulated that a multifaceted port project include creating 6.6 ha (66,000 m<sup>2</sup>) of mangroves. The natural habitat that resulted from the USD15.8 million initiative is double in size to a mangrove parcel that was subsequently removed. State environmental officials





**Port Everglades' Mangrove project included growing and placing 100,000 seedlings**

in 2016 gave the go-ahead for the removal once they found that the new habitat to replace it was successfully growing. Technicians removed the smaller parcel in order to make way for an extended turning notch and berth project built to accommodate larger container vessels. Getting the green light to do so required a painstaking effort by the port, port users, the state, and environmentalists that included growing and placing 100,000 seedlings and careful monitoring.

The approach appears to have worked well. The mangrove initiative received a 2018 award from the National Association of Counties, which cited, among other positive results, sightings of diverse fish, manatees, and birds, as well as "enhanced existing water flows," "removal of silt build up," and "shoreline stabilisation".

A precision restoration operation at the Blackwater National Wildlife Refuge in Maryland, is another example. Completed in 2017, the project, by the United States Fish and Wildlife Service (USFWS) and the non-profit Conservation Fund, is described by the project's contractor Dredge America as "a thin layer deposition method of dredging." The contractor explained that spraying dredged material "raised the existing marsh platform, which provided plant resiliency to combat sea level rise".

During the work, some 21,407m<sup>3</sup> of shoaling material was cast thinly across the 16 ha marsh, raising its elevation by 15cm, just enough to fortify marsh vegetation and create a foundation for new growth, which poked through the layer of dredged material, explained Matt Whitbeck of USFWS. "It was amazing how fast native vegetation appeared," he said. That was a welcoming sign indeed for stakeholders, because the thin casting layer, as intended, initially covered and obscured green areas: perhaps a disconcerting sight for a casual observer.

As much as 75% of the resulting plant growth was passively vegetated, or sprouted on its own, with the remainder from planting thousands of seedlings by hand. Whitbeck said that marsh birds are returning in greater numbers, adding that while the overall results at Blackwater will take years to study and monitor, "things are looking very good".

Another campaign is bringing environmental and navigational benefits: the Cat Island Chain project on Lake Michigan's Green Bay in Wisconsin. The USD20 million project at the formerly dwindling islands is now enlarging those islands with a 7km wave barrier, constructed by Michels Foundations, and the continuing depositing of materials dredged by various contractors

from the nearby navigation channel, which serves the Port of Green Bay. The rejuvenated Cat Islands are and will be a deposit site for clean dredged material until roughly 2034. The projected capacity is 1.75 million m<sup>3</sup>.

The barrier construction has been completed, with ancillary work and annual dredging continuing. In all this, the islands create 109ha of habitat for fish, plants and migrating birds, and protect another 566.5ha of nurturing backwater. Among the reported results at this early stage are the presence of endangered piping plover birds, which are nesting at the site.

According to Daniel Wiesner, the Corps' chief of construction, Great Lakes Dock & Materials recently dredged there, depositing 29,435m<sup>3</sup> into the project's centre cell in 2017. Great Lakes technicians also constructed a gabion wall to help further fortify the project, Wiesner reports. In the wake of that work, 191,138m<sup>3</sup> of material is expected to be dredged and deposited in 2018, continuing the process of returning the island chain and its habitats to the bay.

Elsewhere, another creative project, part of a river restoration programme under way for years, has unfolded since 2015 at Harpers Slough on the Upper Mississippi River near the border of Wisconsin and Iowa. It involves fortifying five existing river islands and creating seven new ones in a section of river that has been long impacted by the region's 2.7m-deep navigation channel and system of locks and dams, which were constructed about 80 years ago. The locks and dams regulate water levels and enable commercial traffic, mostly barges carrying grain, coal, petroleum, and fertiliser, by creating pools. The system has a side effect of wave and flow dynamics that have depleted natural islands. These islands and their backwater areas enable diverse natural habitats.

The USD12 million Harpers Slough work, completed by general contractor Newt Marine Services in 2017, follows the general model of region's USD8 million Capoli Slough Habitat Rehabilitation and Restoration Project, which opened in 2016. The projects use material hydraulically and mechanically dredged, including some amounts from the navigation channel, as well as planting and protective rock to craft and fortify islands and side channels.

George Stringham, spokesman for the Corps St Paul District, said that while it is early in the habitat recovery and establishment and recovery process, those on the scene have reported greater numbers of waterfowl and fish to the completed sites. The approach is deemed successful, clearly, because technicians now are gearing up for another similar project, on the Mississippi near Lansing, Iowa, in 2019. The goal for that project, which will include dredging, is to restore backwater and overwintering habitat for fish.

These projects fortify not only marine habitats but also ports navigable waterways. They are also consolidating the vital, evolving applications of dredging on the coasts and inland waterways of the United States. **PH**

“These projects fortify not only marine habitats but also ports navigatable waterways”

# Dredging strengthens Seine port's strategy

A four-year river deepening project was completed this year and will enable heavily loaded vessels to call at Rouen's terminals, writes **Bert Visser**

**O**fficially known as Grand Port Maritime de Rouen in France, Port of Rouen views 2018 as a highly important year as it marks the completion of a major maritime project to deepen the River Seine. The project is expected to have a major impact on the region as the Seine is the sole maritime access point for the harbors and facilities of Port of Rouen, which are scattered over a distance of about 120 km along the river from Le Havre at the river's estuary to the city of Rouen.

Dredging for the first stage of the Seine deepening project began in early 2012, with the project having secured final confirmation and authorisation from the authorities in November 2011. The work consists of deepening the navigation channel from 10.3 m to 11.3 m to allow vessels to benefit from extra draught during the tidal window.

Philippe Aujoulet, project manager at Port of Rouen, told *P&H* that this operation would benefit a variety of vessels, as, although ships up to 300 m long could call at the port, the restricted draught has meant that they could not be fully loaded. The deeper channel will resolve this. Additionally, smaller vessels will benefit

from the increased duration of the tidal window.

The deepening project aimed to dredge about 7 million m<sup>3</sup> of material from the river in four phases, between 2012 and 2018. Aujoulet explained that the stages were divided according to the type of material to be dredged and its eventual destination.

Phase one, which was the least technically challenging and was carried out in 2012, saw about 3.5 million m<sup>3</sup> of material removed from the downstream part of the river. This material could be easily dredged by trailing suction hopper dredgers (TSHDs) and relocated at sea. Although stage one accounted for half of the total material dredged for the entire project, it was notable that it represented less than 10% of total project costs.

The second phase of the project, carried out in 2014–15 in a section of the river near Courval, saw dredging of 350,000 m<sup>3</sup> of very hard and abrasive material that was ideal for reuse in the building and public works sector. It was later brought to onshore facilities along the river for handling.

The third stage, carried out in 2016, consisted of dredging some 700,000 m<sup>3</sup> of material from the river section between Courval and Duclair. This material

**Dredger Volvox Olympia sailing to the gravel pit at Yville-sur-Seine. The deepened river will enable heavily laden cargo ship to access Rouen's terminals**



was also brought ashore for reuse by the building and public works sector.

Stage four, which is due for completion this year, is considered the most challenging for a number of reasons. First, the remaining spots to be dredged, which are spread between Caudebec and Rouen over a distance of about 50 km, consist of a heterogeneous mixture of materials that are very hard to dredge. The soil types comprise gravel, including coarse stones, highly cohesive clay, and limestone.

Furthermore, the spots are widely spread, making the dredging operation akin to that of search-and-find mission. This means that no bulk dredging is possible. Additionally, the varied character of the soil makes it largely unsuitable for reuse in building and public works, which prefer homogenous material.

Port of Rouen awarded the contract for this stage to a joint venture made up of the subsidiaries of DEME group and Van Oord – Société de Dragages International and Sodranord, respectively – which successfully completed the dredging in June.

Joint venture project manager Clémence Ringlet, deputy project manager Joffrey Cary, and project engineer Nicolas Nancy outlined the efforts that went into dredging some 765,000 m<sup>3</sup> of material.

Although 320,000 m<sup>3</sup> of dredged material was brought ashore at Moulineaux near Rouen and 45,000 m<sup>3</sup> at Saint Wandrille near Caudebec for use by the building industry, this material accounts for less than half of the total sediment to be dredged.

The other 400,000 m<sup>3</sup> was deemed unsuitable for the building industry and was relocated in a former gravel pit at Yville-sur-Seine. As this pit was restored to its original state and the dredged material from the Seine used as fill material, this part of the project adhered to the principle of 'beneficial reuse'.

The joint venture mobilised three dredgers for the project: one cutter suction dredger (CSD) and two TSHDs. From 10 April to 26 April 2018 work involved crushing operations at spots with the hardest to dredge materials. This was then transported to the gravel pits about 1.2 km away from the moored dredgers.

The hardness and cohesion of material at the dredge sites meant that, at many spots, dredging consisted of scraping away the material centimetre by centimetre. The joint venture successfully completed the contract at the end of June 2018.

The completion of the Seine deepening project has primed Port of Rouen for a robust future in which it can accommodate greater amounts of cargo. It is therefore unsurprising that it has made a number of other investments for the extension and modernisation of port infrastructure and port installations.

Important work was recently carried out at the grain terminals of former Magasins de Rouen Maritime (MRM), now Sénalia, in Grand Couronne, and there have been investments at Grand Quevilly, where Rubis Terminal is located. The terminal, which is managed by a subsidiary of the Rubis Group, is dedicated to the storage of petroleum products, chemicals, agricultural products, and fertilisers.

The deepening work, along with the infrastructure investment, puts the port in a position of strength to play its part in HAROPA, the alliance that was created in 2012 by the ports of Le Havre, Rouen, and Paris. This alliance focuses on common interests of the three ports – strategy, commercial development, quality of hinterland connection services, and communication – and has a sound strategy for development until 2030, which can be found at [www.haropaports.com](http://www.haropaports.com).

Dredging complete, the French port is awaiting the payoff from its hard work. **PH**





# Port transport benefits come vacuum-packed

Hyperloop transport technology is seeing interest from ports and could disrupt the traditional port infrastructure model, writes **Namrata Nadkarni**

**P**orts have shown a considerable amount of interest in a new type of technology that offers a fast and efficient way to remove cargo off-site and one that could transform port infrastructure.

Investor and business magnate Elon Musk's Hyperloop transport technology, which was unveiled in 2012, enables the rapid point-to-point transfer of passengers or cargo using pods in a vacuum tunnel. It offers a fifth mode of transport – supplementing aircraft, road vehicles, rail, and ships.

The technology is still in its infancy, with companies, including dredging and engineering company Royal IHC, still at the drawing board to deliver the system.

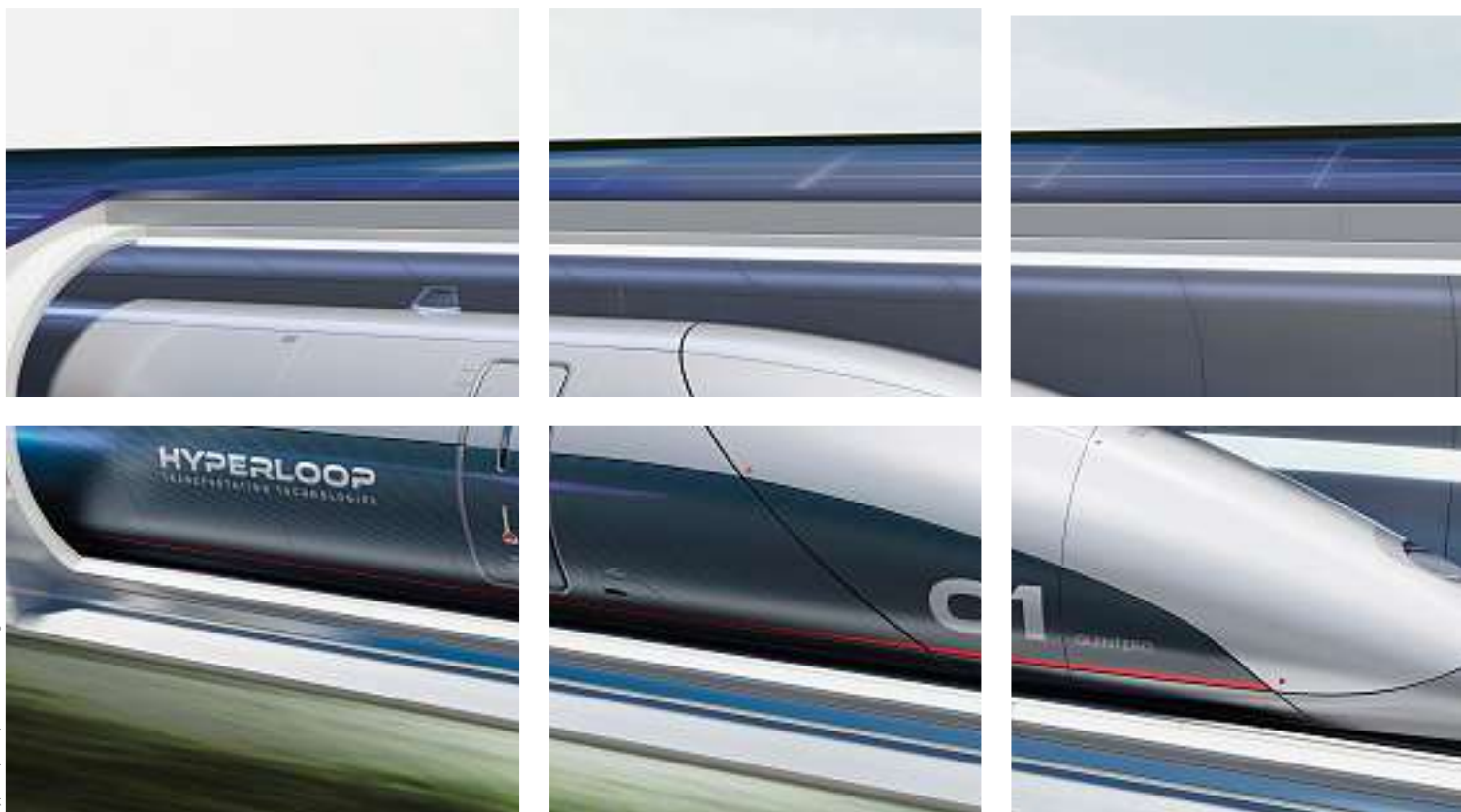
Nevertheless, the possibilities for Hyperloop are already clear and include the rapid transport of cargo directly from the port to various inland hubs and

warehouses, or even to other port cities that have Hyperloop stations, thereby replacing rail, trucks, and, possibly, feeder vessels.

There are numerous Hyperloop projects scattered all over the globe, with cities in the United States, Russia, India, China, the United Arab Emirates, and Europe all on the map for local networks. And significant money and technological know-how is being invested by multinational project partners.

DP World is the first operator to concretely express its interest, signing an agreement with Virgin Hyperloop One to form a company dedicated to the technology. DP World Cargospeed aims to build Hyperloop-enabled cargo systems that can transport palletised cargo.

The terminal operator, which was an existing investor in Hyperloop One, is confident of demand for the fast



transit network and has calculated that a four-day truck journey for cargo could be reduced to just 16 hours by Hyperloop. This compares with 23 hours by aeroplane. While expense will, of course, play a part in this, the companies estimate that Hyperloop will cost just 1.5 times as much as truck transport – far cheaper than air freight, which costs eight times more than trucking.

Additionally, cargo is less susceptible to being transported in inhospitable conditions or being exposed to vibrations, meaning that this is an aspect that will see early development.

“Traveling at top speeds of 1,000 km/h, DP World Cargospeed systems, enabled by Virgin Hyperloop One technology, will transport high-priority, time-sensitive goods, including fresh food, medical supplies, electronics, and more,” Rob Lloyd, Hyperloop One CEO, wrote in a blog post, adding that express delivery for high-priority shipments was expected to be a USD516 billion industry by 2025.

“[Hyperloop] will expand freight transportation capacity by connecting with existing modes of road, rail, ports, and air transport. Additionally, the Virgin Hyperloop One system powering DP World Cargospeed is unique in that it doesn’t need to be passenger-only or cargo-only. Rather, it is a mixed-use system that fully utilises system capacity and maximises economic and social benefits,” he added.

The biggest benefit for ports investing in Hyperloop is that cargo can be moved off site extremely quickly and inventory lead times could shrink considerably. Additionally, ports could reduce the amount of space allocated to warehouses that house cargo waiting to be moved, which is a big benefit where ports have been fenced in by existing infrastructure or cities. Overall, the DP World Cargospeed system is expected to lead to a 25% reduction in space and costs, which will beef up a port’s bottom line.

“DP World Cargospeed networks can also enable just-in-time, agile manufacturing practices. These savings and benefits can add up to far more than the savings in transportation costs, especially for high-value, time-sensitive goods,” Lloyd wrote.

In theory, a port that links itself into a Hyperloop system with multiple cities could compete with ports in other countries on the same mainland (and potentially even through small water bodies) as it would be able to easily transport the cargo to Hyperloop stations between locations.

The case for European ports to invest in Hyperloop is particularly strong, given the investments that many cities are already making in the new technology and the geographical proximity of heavily populated cities. Thus, it is no surprise that Port of Rotterdam has begun collaborating with the European Hyperloop project to examine the technical and financial feasibility of connecting the port to the transport system.

There are many questions yet to be answered, Michiel Nijdam, corporate strategist at Port of

“One of the reasons [Royal IHC] joined the Hyperloop programme is that it is a sustainable project”

**Hans Greve**

*Product line director for tunnelling at Royal IHC Mission Equipment Nederland*

Rotterdam Authority, pointed out. “How sustainable will transportation by Hyperloop be? How much investment is needed? How much are people willing to pay for faster transport?”

However, it is keen to set itself up as a gateway to Europe via Hyperloop and is open to the idea that the new system may replace inland shipping in the medium term. “[Hyperloop] is initially being designed for use on land,” said Tim Houter, project leader of Hyperloop Delft. “Look at it as an addition to the current transport sector. The distances that ships cover at sea are not what a Hyperloop would initially take on; rather, we’re thinking of distances covered by, say, inland vessels.”

A major consideration ahead of commercial construction is the infrastructure impact, given that tunnels and their stations will be located in heavily populated areas.

Joti Hakkert, director of IHC Mission Equipment Nederland, said Royal IHC would be able to “construct the required infrastructure for the Hyperloop in an extremely efficient manner that will cause as little nuisance for the surroundings as possible”.

Hans Greve, product line director for tunnelling at Royal IHC Mission Equipment Nederland, pointed out that his employer was also keen on the environmental benefits of the project, which fall into place within the wider Royal IHC ethos. “One of the reasons [Royal IHC] joined the Hyperloop programme is that it is a sustainable project,” he said. “The target is to replace short continental flights, such as those from Amsterdam to Paris. You wouldn’t take the plane anymore, just hop in the Hyperloop. If you look at the CO<sub>2</sub> footprint of the Hyperloop compared with a plane, there is a lot to be gained.”

As the technology matures, the network will develop, with ports seeking to invest in Hyperloop stations and tunnels to connect up to each other and offer ship and cargo owners a more robust business proposal.

Construction and marine engineering companies can expect to see growing demand for Hyperloop infrastructure consultations in the next decade, while port authorities gather information on the newest means to keep their businesses in the loop. **PH**

**MORE INFO:** [hyperloop-one.com](http://hyperloop-one.com)

DP World has invested in Hyperloop technology





Kalmar 5086309

## Drones in the danger zones

Drones are not just nifty gadgets for covert surveillance or futuristic package deliveries, ports are also waking up to the benefits for crane surveys, jetty inspections and planning reconstruction work, **Stephen Cousins** reports

**D**rones have been used by historians to map ancient sites from the air, by filmmakers to reinvent the chase scene, and most recently for an apparent assassination attempt in Venezuela.

Now the high-tech machines are helping terminal operators in ports carry out inspections of jetties, cranes, or other structures, without the need for humans, or even to map structures in 3D as part of critical construction or refurbishment work.

Unmanned aerial vehicles (UAVs) can prove a safer alternative to using human surveyors or inspectors because they avoid the risks associated with working at height, for example standing in the basket of a cherry-picker to inspect a crane boom or on tall scaffolding in

enclosed spaces such as large chemical storage tanks.

Drones are fast to deploy, cutting the costs associated with labour, equipment downtime, or the need to divert shipping traffic while the work is completed.

Cargo handling equipment supplier Kalmar currently offers a certified drone inspection service for ship-to-shore cranes, in partnership aerial survey and inspection firm Skeye. Its drones are able to assess damaged or underperforming cranes and, in the event of an equipment collapse, collision, or other serious incident, check the stability of a crane and identify and inspect critical structural members and components. Current customers for the service include APM Terminals at Maasvlakte II, ECT Delta





**A drone used by Kalmar to inspect ship-to-shore cranes**

Terminal, and Euromax Terminal Rotterdam.

In a typical scenario, a drone operator flies the UAV, which is fitted with a high-resolution camera, around a crane, while an inspector monitors the live footage on a tablet screen. This initial survey is intended to check for any 'hotspots' of damage, such as a missing bolt, a crack, or structure out of alignment. Any issues are then referred for further close-up investigation by a human on a mobile crane.

"The entire process normally takes just one day, depending on the size of the crane and its state of disrepair," said Sjaak Timmermans, project engineer for EMEA at Kalmar. "It's a more time-efficient solution than human-only inspections, which typically take four to five days." The technology is constantly innovating, he added. Two years ago the unit had to fly close to the structure, now a very sharp zoom lens allows it to pick up detailed images from 20m away.

"Previously batteries had a tendency to run out quite fast, but we now use a slim power line attached to the drone so it can fly constantly for about two hours, although this has to be detached to reach the crane boom," said Timmermans.

Kalmar is examining the possibility of using drones while cranes are still in operation to slash downtime, the only caveat being that the drone is likely to have to keep to a distance of 30 to 40m for safety reasons.

If the future is a place where the sky is peppered with small buzzing craft, then it may be similar in the oceans, where 'sailing drones' will carry out varied inspection duties in ports and harbors.

At Vopak Terminal Botlek in Port of Rotterdam, a five-yearly legal requirement to inspect the concrete quality of jetties has historically been hampered by the relative inaccessibility of the undersides of structures.

Areas where inspections are needed are often hard to access and require human inspectors to pass underneath in a small boat, which introduces a safety hazard.

In an effort to come up with a more practical and less risky solution, Vopak asked two of its suppliers, inspection companies Ronik Inspectioneering and AquaSmartXL, to work together to develop a new type of sailing drone.

The device they came up with resembles a large remote-controlled boat with an enclosed white top, fitted with a professional digital camera able to capture high-resolution images. An initial project on one jetty involved the capture of about 7,000 images using the drone. With further manipulation of the images in Reality Capture software, a comprehensive 3D model of the jetty structure was built to be used as the basis for planned reconstruction work.

The process of capturing the images on-site took just one day and subsequent data processing took roughly a week. Vopak said, "The advantage of using a sailing drone is that we can shorten the inspection time and thus the total maintenance time, and that means our clients can moor their ships earlier."

**“We recognise the need for a standard for companies that operate drones”**

**James Henton, Lloyd's Register**

According to Ronik Inspectioneering, the combination of photos with 3D modelling delivers a level of quality not possible with regular human inspections and can provide additional benefits when planning reconstruction work.

A second 3D model the firm built, of Jetty 10 at Odfjell Terminals Rotterdam, was so accurate it revealed that original 'as built' drawings of the jetty did not reflect the reality – they were out by as much as 0.5m in some places – probably due to gradual movement over time.

As a result, designs by engineering company Royal Haskoning to expand the jetty to accommodate larger vessels were changed to include additional piles.

"We brought some real added value to the project. If the client had relied on the original drawings they would have had a real problem," Marien van den Hoek, business development and marketing director at Ronik Inspectioneering told *P&H*.

Drones have certainly grabbed the headlines in recent months, but as with any nascent technology they bring benefits and limitations. Despite the obvious safety benefits, they do not rule out the need for humans entirely and in certain situations or potentially explosive environments their use will be prohibited entirely.

The quality of the UAVs and UAV manufacturers also varies, said James Henton, global head of technology for survey and inspection at Lloyd's Register. "There are thousands of drone solutions available, but that introduces the problem of how to separate the poor systems from the better ones. One system currently in widespread use displays a camera image that is very difficult to follow on screen. It is not really 'man enough' to do the big jobs. We also recognise the need for a standard for companies that operate drones. It is vital that shipping can rely on professional companies."

According to Van den Hoek, a critical factor when deciding which drone inspection firm to appoint is its ability to tackle the work from a procedural point of view. "Ports have numerous procedures and requirements in terms of compliance with different rules and regulations," he noted. "Some clients need help with the 'change management' aspect of implementing an unfamiliar technology such as sailing drones."

In other words, the latest flashy technology is always going to be attractive, but it will only be effective if it is able to sufficiently align with existing processes. **PH**

# ESI builds momentum



Nearly 7,000 ships were registered with the Environmental Ship Index (ESI) as of 1 July 2018, with the three months from the start of April to the start of July seeing the biggest leap in newcomers joining the scheme in two years.

At the time of writing, 6,895 ships were registered, giving an overall increase of 529 since 1 April 2018. Ships with a high ESI score of 40–50 points represented more than half of those new ships – 336.

The data also reveal another encouraging sign: the number of low-scoring ships (less than 20 points) dropped by 55, suggesting that these ships had managed to improve their scores.

The ESI is a voluntary tool that rewards and incentivises ships that meet and exceed emissions standards. It includes a formula-based evaluation of vessels' nitrogen oxide (NO<sub>x</sub>) and sulphur oxide (SO<sub>x</sub>) emissions. The calculation also rewards vessels that are equipped to use available onshore power and that demonstrate fuel efficiency improvements over time, reducing carbon dioxide (CO<sub>2</sub>) and particulate matter (PM) emissions. Ships are then given a points score in several bands: less than 20 (0 being basic compliance with international regulations), 20–30, 30–40, 40–50, and the highest score of 50–100 points. Ships with 100 points are among the best-performing vessels currently

at sea. A total of 95 ships joined the scheme with a score of 50–100 in the April–July period.

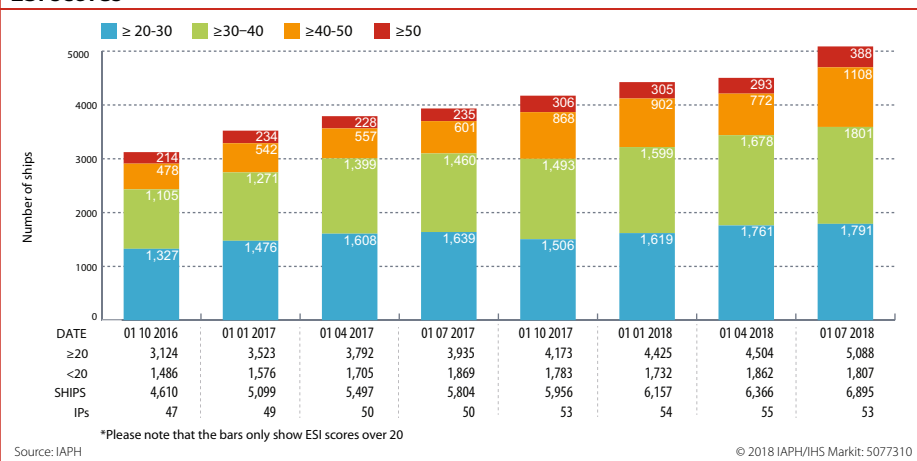
The scheme has more than 50 incentive providers, including ports authorities and class societies.

ESI working group chairman Eric van der Schans, environmental management director at Port of Rotterdam, said, "It is great to see the steep increase in number of ships and incentive providers within ESI. It brings the responsibility to ensure that the ESI organisation is strengthening and able to deal with the increasing responsibility."

It was agreed at an ESI working group meeting in Marseille in June 2018 that investments would be made in the IT system, including the database of registered vessels and online portal.

The technology powering the initiative will become increasingly important as the ESI's scope expands. ESI administrator Manfred Lebmeier said that the index had to be prepared to have its formula adapted "to reflect IMO developments. These include the 2020 sulphur cap and the 50% reduction target in CO<sub>2</sub> emissions by 2050."

## ESI scores



## Vale opts for scrubbers

Brazilian miner Vale will install scrubbers on all 48 very large ore carriers (VLOCs) being built at various shipyards.

Vale thinks scrubbers are the best means to comply with the IMO's global sulphur limit of 0.5%

in marine fuels from 2020. Solutions include scrubbers and burning low-sulphur fuel oil, such as liquefied natural gas (LNG).

The Brazilian mining giant disclosed its decision in its earnings report for the first half of

2018, for which it reported USD1.67 billion net profit.

Vale has altered its shipping strategy in recent years, moving from the being owner of a fleet of Valemaxes to obtaining competitive freight rates through long-term contracts of affreightment (COAs) with major ship operators. Vale said the

COAs stipulate that shipments must be made by vessels that are not only equipped with scrubbers, but are also LNG-ready, granting further options to comply with future regulations.

The new 325,000 dwt VLOCs will have more flexibility than the 400,000 dwt Valemaxes to dock at smaller berths.

## Notable numbers



6,895

Ships registered with ESI

48

Vale's new VLOCs to have scrubbers

# LNG group expands remit



IAPH's liquefied natural gas (LNG) Working Group is supporting ports that make the transition to offering low-sulphur bunkers rather than conventional heavy fuel oil.

The working group has, over the past 18 months, been developing an audit and accreditation tool to recognise good LNG bunker facility operators and deter possible malpractice. It was officially presented in May at the IAPH World Ports Conference in Baku and is now available on the lngbunkering.org website.

However, the working group recognises that LNG is only one type of low-sulphur fuel that will be available to shipowners. And so it was decided at its meeting in Bremen, Germany, in June 2018, that the scheme must be expanded so it becomes a

blueprint not only for LNG bunker suppliers but also for suppliers of upcoming clean marine fuels such as hydrogen and methanol. The tool may even be used for future accreditation of conventional bunker suppliers offering low-sulphur oil-based fuels.

As such, after work on the LNG tools has been completed, hopefully by October 2018, the working group will start focusing on a wide spectrum of clean marine fuels. Peter Alkema, who chairs the group, told *P&H* that on 1 October 2018, it would therefore be renamed the IAPH Working Group on Clean Marine Fuels.

Meanwhile, ports are encouraged to visit the site and make use of the LNG fuel tool. It includes a bunker facility operators audit checklist that is based on industry standards, guidelines, and best

practice, from, for example, the International Organization for Standardization (ISO), the Society for Gas as a Marine Fuel (SGMF), and the International Association of Classification Societies (IACS). Using the audit tool, any bunker facility operator's quality management system may be audited based on eight safety criteria.

Once audited and accredited, ports may issue a licence to the bunker facility operator to operate in their port area.

Participating ports may share their audit results and information on the safety performance of a bunker facility operator with each other. With this system, there is no need for a port to go through the entire audit process individually once an operator has already been audited by a participating port. And an

operator, once fully audited, does not necessarily need to go through such an intensive process again at a different port.

The tool is a first step towards an accreditation scheme in which a third-party accreditator would perform the audit, although the working group wants to assess results and experience from the use of the audit tool before a third-party accreditator is introduced.

**Peter Alkema,**  
chair of the  
LNG Working  
Group and  
adviser at Port  
of Amsterdam

Port of Amsterdam: 5074887



## NYK Line steps up investment

NYK Line is expanding its LNG bunkering portfolio. The Japanese shipping group announced on 2 August that it had signed an agreement with compatriot utility groups Saibu Gas, Kyushu Electric Power, and Chugoku Electric Power to supply LNG bunkers in the Kyushu and Setouchi areas in Japan.

This is NYK Line's second engagement in an LNG bunkering project. It previously invested in an LNG bunkering vessel with "K" Line, Chubu Electric, and Toyota Tsusho Corporation. This vessel, ordered from Kawasaki Heavy Industries on 6 July, will

be Japan's first LNG bunkering vessel.

"The demand for LNG as a marine fuel, a practical alternative to heavy fuel oil because of its relatively low emission of pollutants and greenhouse gases, is expected to increase after the global sulphur cap is introduced in 2020. Therefore, NYK and the three companies have decided to examine the commercialisation of an LNG bunkering business in the Setouchi and Kyushu areas of Japan," the company said.

NYK Line has made sustainable shipping and LNG businesses the focus of its

medium-term management plan.

Mitsui OSK Lines recently announced plans to construct LNG-fuelled vessels.

Along with several other Asian nations, Japan is looking to launch LNG bunkering in order to comply with the upcoming IMO regulations.

The main challenges on Asia's road to LNG bunkering are the higher prices of LNG-fuelled ships and the lack of infrastructure, which has necessitated government assistance. As such, the government and several Japanese shipping groups have a plan to develop Yokohama, one of Japan's busiest ports, into an LNG bunkering centre. Bunkering operations will also be rolled out in the port of Nagoya.

**USD21 billion** Value of mega-projects ongoing in Nigeria



**12**

Indian ports to operate with PCS





Busan Port Authority-5064991

Busan Port in South Korea is developing a floating LNG bunker terminal

## Busan may offer LNG fuel

Busan, South Korea's busiest port, could offer liquefied natural gas (LNG)-based marine fuels from a floating terminal. On 5 July, Busan Port Authority (BPA) and Korea Gas Corporation (KOGAS) signed an agreement to develop the terminal. The organisations' respective presidents, Woo Ye-jong and

Chung Seung-il, were the signatories.

The infrastructure development aims to make LNG fuel available by the time the IMO caps sulphur content in bunkers at 0.5% in 2020. LNG is seen as a suitable alternative to conventional heavy fuel oil, reducing CO<sub>2</sub> emissions by about 30% and

nitrogen oxides by about 80%, while there are nearly no emissions of sulphur oxides.

Busan is the world's sixth-busiest port and second-largest transshipment hub. Under the BPA/KOGAS agreement, the parties will explore and research ways in which LNG bunkers can be efficiently delivered to ships calling at Busan.

Although publicly listed on the Korea Exchange, KOGAS remains controlled by the government and is the world's single-largest LNG importing company. KOGAS operates four regasification terminals and a 4,790 km gas pipeline in South Korea.

No timeframe has been given for the conceptualisation and completion of the floating terminal. Meanwhile, because of the long lead time expected, BPA is considering initialising an LNG bunkering network with Tongyeong LNG Terminal, which is near Busan, as a stop-gap measure.

KOGAS is spending USD9 million to develop ship-to-ship (STS) LNG bunkering infrastructure in Tongyeong in South Gyeongsang Province. The Tongyeong terminal is set to be completed by 2019. The new facility would facilitate LNG bunkering for small ships less than 100 m long.

## MOUs plan to issue sulphur cap warning

Regional port state control organisations are planning a 'letter of warning' information campaign aimed at shipowners to underline that compliance with the sulphur cap must take place from 1 January 2020, Hideo Kubota, secretary of the Tokyo MOU, the Asia-Pacific port state control organisation, has said.

"This will be a signal to the industry that port state control will take enforcement of the new sulphur limits seriously from day one," he said. The Paris MoU has

already agreed to launch the campaign from 1 January 2019, while the Tokyo MOU secretariat will propose joining this campaign at a meeting of its governing committee in November.

IMO rules will limit sulphur pollution from vessels to 0.5% of mass from the start of 2020, down from the current level of 3.5%. Vessels that do not comply with the regulation face detentions and increased inspections.

While procedures for verifying vessel compliance are still being

worked out at the IMO, Kubota said that, in principle, bunker delivery notes and oil record books should be examined.

"Considering the impact to the marine environment, non-compliance with the sulphur cap should be serious," Kubota said, adding that those that comply with the regulation would be put at a commercial disadvantage by those that do not.

Regional MOUs operate under international agreements that harmonise how ports monitor

vessels for compliance with regulations and sanction those found to be substandard.

MOUs give vessels a ship risk profile that determines how frequently the ship is inspected and how detailed the inspection will be.

"Currently, the Tokyo MOU shares information with the Paris MoU, Indian Ocean MOU, Vina del Mar Agreement, and Black Sea MOU. The hyperlink with the Caribbean MOU is in the process of development," Kubota said.

Of the nine regional MOUs operating globally, only the Paris MoU is legally binding.

## Notable numbers



7,000

Images captured during drone inspection

0.5%

Sufficient accuracy needed for VGM

## Blockchain makes its shipping debut

A consortium led by a subsidiary of Blockchain Labs for Open Collaboration (BLOC) has launched the first industry-wide and industry-led blockchain application in the shipping sector, in a move that could transform the bunkering process.

BLOC subsidiary Maritime Blockchain Labs (MBL) and its industry partners unveiled a bunkering application on 26 July that will link fuel oil suppliers with barge operators and shipping lines and provide links to fuel quality assurance testing agencies and local regulatory authorities.

In the initial testing phase of the project, BLOC will have

administrative access to the system, but this function can be devolved to a steering group that will decide how the administrative rights will be shared.

This solution will shift the quality assurance element upstream to fuel suppliers so vessel operators can make more informed purchase decisions, based on validated and trusted data, before they load fuel. This extends the responsibility to the fuel suppliers, as well as the buyers, to provide consistent and traceable data on the quality of fuel provided and received.

Fuel quality data will be gathered from laboratory tests

carried out by suppliers and buyers and will then be linked together in an immutable chain of custody within the blockchain. This offers a more uniform, tamper-evident, and accessible data point on the sulphur limits of marine fuel to be used in the bunker delivery note.

BLOC said, "The proposed system will make test result data pertaining to the content of a given bunkering barge available to the chief engineer of the vessel purchasing the bunker oil prior to connecting with this barge for bunkering." Essentially the system will offer transparency and accountability

in a bunkering supply chain that owners often see as opaque.

BLOC CEO and co-founder Deanna MacDonald said, "This will inform the reputation system, which eventually, after enough data inputs and aggregation, will serve to give a better overview of compliant and trusted providers and encourage providers to find alternative fuel sources to become compliant."

The solution is being built and tested in Singapore, as it is a port that regulates fuel oil suppliers, said MacDonald. However, the consortium's strategy could link ports globally to share fuel quality information and best practice for enforcement of IMO regulations once the blockchain system is up and running, she added.

## Ferries switch to gas engines

Baleària, a Spanish ferry operator and liquefied natural gas (LNG) fuelling pioneer, is investing EUR60 million (USD70.1 million) to convert five of its existing car ferries to LNG use over the next two years.

The company, which is already having two LNG-enabled car ferries built in Italy, said it would start to replace the engines on the five vessels this winter.

It also revealed that it was considering another two LNG-enabled vessels as part of its plans to have nine vessels powered by LNG within three years.

The company, which claims to be the market leader on services



Dietmar Hasenpusch: 5077568

**Martin i Soler is one of five Baleària vessels to get an LNG-enabled engine**

to the Balearic Islands and which operates services between Spain and north Africa and between Fort Lauderdale in Florida and

Grand Bahama, said the first of the five vessels to be re-engined would be 2002-built, 24,409 gt *Nápoles*, one of two vessels it

bought from Sweden's Stena group earlier this year. It said that the operation would be carried out during the vessel's planned winter lay-up.

The other vessels to receive fresh LNG-enabled engines will be 2010-built, 29,670 gt *Abel Matutes*, 2002-built, 24,409 gt *Sicilia*, 2009-built, 20,238 gt *Bahama Mama*, and 2008-built, 24,760 gt *Martin i Soler*.

Baleària, which is currently engaged in a major fleet renewal programme, is also having two LNG-enabled vessels built at Italy's Visentini shipyard. The first of these is set to come into service in February 2019.

The company, which is based in Denia, Spain, has been working on natural gas-related projects since 2012.



# 1 Oct

IAPH working group's scope widens to include all clean fuels

## 650,000 teu

Planned additional capacity at Walvis Bay

# The team behind WPSP



The World Ports Sustainability Program (WPSP) is supported by a four-strong team of professionals who work with the IAPH working groups, partner organisations, and ports, to promote its aims and manage and administer the projects and supporting website and knowledge bank



ECSA: 5086240



Victor Shieh: 5086241



David Pinters: 5076069



Antonis Michail: 5086239



Fabienne is the administrator of WPSP and started in the position on 1 September 2018.

Her role includes the administrative and financial management of WPSP projects, preparation and co-ordination of project and partner meetings and seminars, and other events.

Besides that, Fabienne is responsible for publications promoting the programme, including the annual *World Ports Sustainability Report*, the first of which is scheduled to be published in September 2019. She also keeps the promotional tools up-to-date, including the project webpages and social media.

Fabienne is the general point of contact for WPSP-related enquiries.

Email: [fabienne.vanloo@sustainableworldports.org](mailto:fabienne.vanloo@sustainableworldports.org)



Victor focuses on externally communicating WPSP's activities and ensuring its profile is raised internationally in line with IAPH's vision as the 'Global Ports' Forum for Industry Collaboration and Excellence'.

Victor has more than 30 years of experience in global shipping, ports, and logistics enterprises, including more than 10 years as global PR and communications executive for Safmarine Container Lines.

In 2012, Victor established his own agency and now advises shipowners, ship management, and offshore companies, supply chain providers, freight forwarders and international terminal port operators on internal and external communications.

Email: [victor.shieh@sustainableworldports.org](mailto:victor.shieh@sustainableworldports.org)



Patrick is the managing director for policy and strategy and one of his primary objectives is to advocate and drive the aims of WPSP on behalf of IAPH members. He also fosters partnerships with other organisations to develop and expand the programme. He is supported by a team of three.

Patrick has more than 20 years of experience in leading international port and shipping organisations.

Before joining IAPH in 2017 he was secretary general of the European Community Shipowners' Associations (ECSA). Previously he was secretary general of the Federation of European Private Port Operators (FEPORT) and secretary general of the European Sea Ports Organisation (ESPO).

Email: [patrick.verhoeven@iaphworldports.org](mailto:patrick.verhoeven@iaphworldports.org)



Antonis is responsible for the technical content of the programme. He manages the content of the WPSP website, including the port and partner projects. He is the first point of contact for ports that want to contribute their projects and share their experiences through the online form ([sustainableworldports.org/submit-your-project](http://sustainableworldports.org/submit-your-project)). Antonis will edit and approve the submissions before publication.

He is active in the co-ordination of the IAPH technical working groups and will be part of all IAPH projects and initiatives. He also provides technical advice to the IAPH managing director on matters related to technical developments at the IMO.

Email: [antonis.michail@sustainableworldports.org](mailto:antonis.michail@sustainableworldports.org)





Shutterstock-5088336

The IAPH World Ports Conference will be held in Guangzhou. Pictured: the city's opera house and CTF Finance Centre

# Official dates for Guangzhou announced



The 2019 IAPH World Ports Conference to be hosted by Guangzhou Port Authority

will take place from 6–11 May 2019, a week earlier than previously announced. It will

be held at the Guangzhou Baiyun International Convention Center in Guangzhou, China.

**Monday 6 May:**  
Early bird reception

**Tuesday 7 May:**  
Board and council meeting, technical committee meetings, welcoming reception

**Wednesday 8 May:**  
Opening ceremony, working sessions, welcoming dinner

**Thursday 9 May:**  
Working sessions, annual general meeting (AGM), board meeting, closing ceremony, gala dinner

**Friday 10 May:**  
Port tour

More details will be shared in the coming months, but see the provisional programme above.

The 2019 conference will have a new format and will consist of a three-day business programme and one-day port tour. Please mark your calendar and save the new date for the 2019 IAPH Conference in Guangzhou, China.

## Projects in the WPSP portfolio



The WPSP portfolio aims to be the most coherent and up-to-date global database of port-related projects on sustainable development.

The following projects are examples of the

work carried out by ports and shared through the website. Ports worldwide are encouraged to raise awareness of their ongoing work on sustainability, share their experiences and provide inspiration. Projects can be

submitted through the online web form or by contacting Antonis Michail, who manages the online knowledge bank (see p36).

**More info:** [www.sustainableworldports.org](http://www.sustainableworldports.org)

### NEPTUNES

#### Project on noise from ships


 Website: [sustainableworldports.org/project/port-consortium-neptunes-project](http://sustainableworldports.org/project/port-consortium-neptunes-project)

Ports from Europe, Australia, and Canada look at community outreach and port-city dialogue.

Justification: Noise is high on ports' environmental agenda. This project is innovative as little has been done to date on ship noise and it involves international port co-operation.

### MIT Panama

#### Gender equity initiatives


 Website: [sustainableworldports.org/project/gender-equity-initiatives](http://sustainableworldports.org/project/gender-equity-initiatives)

A good example of a project that falls under governance and ethics.

Justification: the projects offers geographical variety and showcases MIT Panama's drive to diversify its workforce. It employs female crane operators and 41% of its managers are women.

### Port of Auckland

#### Direct current micro-grid project

 Website: [sustainableworldports.org/project/port-of-auckland-dc-microgrid-research-project](http://sustainableworldports.org/project/port-of-auckland-dc-microgrid-research-project)

A project that falls within the climate and energy sphere that harnesses the power of technology.

Justification: An innovative project using solar energy while avoiding energy losses.

### Amsterdam – MISA project

#### Security software application

 Website: [sustainableworldports.org/project/port-of-amsterdam-misa-software-application](http://sustainableworldports.org/project/port-of-amsterdam-misa-software-application)

This safety and security project draws on IT.

Justification: Using IT to facilitate processes and enhance safety and security.

# IMO/IAPH port emissions workshops further their reach



Participants in GloMEEP training being rolled out in Malaysia



around the globe and recently hosted events in Casablanca, Morocco; Buenos Aires, Argentina; and Bintulu, Malaysia.

The three-day workshops were attended by national port authorities, terminals, environmental agencies, and the local maritime authority, thereby ensuring that a multiplicity of stakeholders were able to share their views and create a robust method of operations.

Participants at the workshops were taught about a number of measures and strategies to quantify emissions in ports through the development of assessments that span both ocean and land and include emissions from cargo handling equipment, trucks, and rail. They also received training in how to conduct cost-benefit analysis to assess the feasibility of these strategies.

The workshops were designed to include a port visit, which helped to further consolidate understanding of how each port operates and participants were encouraged to identify the means by which ports could potentially improve or optimise energy efficiency.

**i MORE INFO:** [glomeep.imo.org](http://glomeep.imo.org)

IAPH is a strategic partner in the Global Maritime Energy Efficiency Partnerships (GloMEEP) project, which is executed by the International Maritime Organization (IMO).

It aims to contribute to significant reduction of

greenhouse gas emissions from international shipping.

In July 2011, mandatory energy efficiency measures were adopted by parties to MARPOL Annex VI and these came into force on 1 January 2013. These regulations made mandatory both the

Energy Efficiency Design Index for certain types of new ship, and the Ship Energy Efficiency Management Plan for all ships.

GloMEEP is running a series of national workshops entitled 'Prevention and control of shipping and port air emissions'

## Membership notes

The IAPH Secretariat is pleased to announce that the following have joined the association

### Regular members

#### Kuwait Ports Authority

**Address** PO Box 3874, PC 13039 Safat State, Kuwait  
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**Representative** Sheikh Yousef AS N Al-Sabah, director general

#### Ningbo Zhoushan Port Group

**Address** No 269 Ningdong Road, Yinzhou District, Ningbo Zhejiang Province 315040, China  
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#### Abu Dhabi Ports

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# IAPH Annual Report 2017-2018

The 2017/18 *IAPH Annual Report* will be published in digital format. There will be some changes in terms of the format to ensure that the report is informative.

Readers will not only be given an overview of the successful launch of IAPH's World Ports Sustainability Program (WPSP) in March 2018, but also be privy to

the intense discussions about Belt and Road at IAPH's World Ports Conference 2018.

The report will have information about the association's efforts to collaborate with other industry bodies and ensure that IAPH is best placed to serve as the bridge between ports and shipping.

**MORE INFO:** [info@iaphworldports.org](mailto:info@iaphworldports.org)



2018

2019

2020

## Dates for your diary

A selection of forthcoming maritime courses and conferences



### September

**17-19:** IAPH Regional Meeting (Africa Region)  
Abuja, Nigeria  
[iaphabuja2018.com](http://iaphabuja2018.com)

**18-20:** JOC Events – Container Trade Europe Conference  
Hamburg, Germany  
[events.joc.com](http://events.joc.com)

**18-28:** World Maritime Day 2018  
London, UK  
[www.imo.org](http://www.imo.org)

### October

**1-5:** Malta Maritime Summit  
Valetta, Malta  
[maltamaritimesummit.com](http://maltamaritimesummit.com)

**1-12:** APEC Seminar: Port environmental policy and technology  
Antwerp, Belgium  
[apecporttraining.com](http://apecporttraining.com)

**7-10:** AAPA 107th Annual Convention  
Valparaiso, Chile  
[www.aapavalparaiso2018.com](http://www.aapavalparaiso2018.com)

**8-19:** PSA Institute: Port Management and Operations Course  
Singapore  
[www.psa-institute.com](http://www.psa-institute.com)

**8-22:** TTPM: Strategic Maritime Policy Management in Ports & Maritime Trade  
London, UK  
[www.ttpminternational.co.uk](http://www.ttpminternational.co.uk)

**9-12:** BPA Conference 2018  
Newcastle, UK  
[www.britishports.org.uk](http://www.britishports.org.uk)

**15-19:** IMO Intersessional Working Group on Greenhouse Gases  
London, UK  
[www.imo.org](http://www.imo.org)

**16-19:** The 14th GreenPort Cruise & Congress  
Valencia, Spain  
[www.greenport.com](http://www.greenport.com)

**17-19:** PIANC Med Days 2018  
Seville, Spain  
[www.atpyc2018.com](http://www.atpyc2018.com)

**22-26:** IMO Marine Environment Protection Committee (MEPC)  
London, UK  
[www.imo.org](http://www.imo.org)

**23-25:** 15th Trans Middle East 2018  
Aqaba, Jordan  
[www.transportevents.com](http://www.transportevents.com)

**25-26:** 5th Citizen Port Meeting of the AIV  
Genoa, Italy  
[www.aivp.org](http://www.aivp.org)

### November

**6-8:** IPER seminar: Escale commerciale du navire  
Le Havre, France  
[www.ecole-management-normandie.fr](http://www.ecole-management-normandie.fr)

**13-15:** TOC Americas  
Panama City, Panama  
[www.tocevents-americas.com](http://www.tocevents-americas.com)





Port of Vancouver: 5086298

# Collaboration is core to sustainability

As an industry we must work together to understand, acknowledge, and address concerns about the impact of our industry, says Port of Vancouver's **Duncan Wilson**, vice-president of corporate social responsibility

Located in a naturally beautiful setting on Canada's west coast, the port of Vancouver is the country's largest port, supporting trade with more than 170 economies around the world, making it a dynamic gateway for domestic and international trade and tourism and a major economic force that strengthens the Canadian economy.

Vancouver Fraser Port Authority is the managing organisation of Port of Vancouver. It is responsible for the stewardship of the port lands and waters in and around Vancouver, British Columbia, and has a government mandate to facilitate Canada's trade objectives while protecting the environment and considering local communities.

Sustainability has long been a core value of the port authority, and in 2016 we formally set our vision to be the world's most sustainable port. We have defined a sustainable port as one that delivers economic prosperity through trade, maintains a healthy environment, and enables thriving communities through meaningful dialogue, shared aspirations, and collective accountability.

Our sustainability efforts focus heavily on the preservation of the marine environment. To this end, in 2014, we launched a world-leading programme aimed at better understanding and managing the impact of shipping activities on at-risk whales throughout the southern coast of British Columbia. Led by the port authority with input from First Nations individuals (Canada's indigenous people), as well as environmental, industry, and government

stakeholders, the Enhancing Cetacean Habitat and Observation (ECHO) Program joins a variety of other Vancouver Fraser Port Authority programmes that focus on stimulating the marine environment.

Last summer, the ECHO Program team launched a first-of-its-kind vessel slowdown trial to better understand and measure the level of noise reduction that is achieved through reduced vessel speed and the potential benefits of reduced noise to the region's at-risk killer whales in increasing their ability to hunt, navigate, and communicate.

Similarly, we extended our EcoAction programme, launched in 2007, which provides discounted harbour dues to vessels meeting best environmental practice. Adding to incentives for reduced air emissions, discounts were introduced in 2017 for quieter ships, making Canada the first country in the world with a marine noise reduction incentive and setting the stage for an international standard for incentive programmes.

Collaboration is essential for moving towards a sustainable port. We must continue to understand, acknowledge, and address concerns about the impact of our industry on the marine environment and continue fostering collaboration among key groups, including local communities, aboriginal groups, as well as industry and government, to align an approach that will protect our oceans and prosperity for generations to come. **RH**

**Duncan Wilson**

“ In 2017, Port of Vancouver introduced discounts for quieter ships, making Canada the first country in the world with a marine noise reduction incentive ”



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