



# PORTS HARBORS

Official Journal of the International Association of Ports and Harbors

## India's 12 port plan

Shipping minister drives green agenda

## Eyes on overseas markets

South Korea eases investment hurdles

## Planning priorities

Australia's east coast looks to inland ports

# Looking east to west

Indonesia ports support shipping highway plan



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## container handling and port equipment



D3512  
Liebherr LRS645  
Year of manufacture: 2012



D3533  
Kalmar DRF400-60CS  
Year of manufacture: 2013



D3463  
Kalmar DRF420-60S5  
Year of manufacture: 2009



D3540  
Kalmar DRF450-60S5  
Year of manufacture: 2007



D3478  
Kalmar DRF450-60CSX  
Year of manufacture: 2005



D3490  
Kalmar DRS4531S5  
Year of manufacture: 2004



D3528  
Kalmar DRF400-60CS  
Year of manufacture: 2003



D3543  
Kalmar DRF100-54-S6  
Year of manufacture: 2010



D3541  
Kalmar DRF100-54-S6  
Year of manufacture: 2009



DK071  
Linde C4540  
Year of manufacture: 2008



D3546  
Linde C4026CH  
Year of manufacture: 2008



D3552  
Linde C4531TL  
Year of manufacture: 2010



D3551  
Fantuzzi CS45KL  
Year of manufacture: 2004



D3549  
SMV SC4531TB5  
Year of manufacture: 2011



D3537  
SMV SC2016CA  
Year of manufacture: 2004



DK112  
CVS Ferrari F478  
Year of manufacture: 2012



D3510  
CVS Ferrari F178  
Year of manufacture: 1996



ML5012  
Meclift ML5012RC  
Year of manufacture: 2017



ML4212RC  
Meclift ML4212RC  
Year of manufacture: 2017



ML3012  
Meclift ML3012RC  
Year of manufacture: 2017



ML1812Rb  
Meclift ML1812R  
Year of manufacture: 2017



ML36CM  
Meclift ML36CM  
Year of manufacture: 2017



D3550  
SMV 5/6 ECB100DS  
Year of manufacture: 2011



DK089  
SMV 5/6 ECB90  
Year of manufacture: 2007



DK111  
Kalmar DCF100-45E7  
Year of manufacture: 2011



D3491  
Kalmar DCF100-45E7  
Year of manufacture: 2010



D3519  
Kalmar DCF70-40E5  
Year of manufacture: 2010



D3525  
Linde C80/6  
Year of manufacture: 2001



D3514  
Hyster H22.00XM-12EC  
Year of manufacture: 2013



D3436  
Valmet TD4212  
Year of manufacture: 1994



D3453  
Steinbock Boss G4212CH/MKIVA-2  
Year of manufacture: 1990



D3503  
Valmet TD3012  
Year of manufacture: 1985



D3535  
SMV SL-22-1200A  
Year of manufacture: 2005



D3534  
Svetruck 13,6-120-32  
Year of manufacture: 2013



D3397  
Svetruck 13,6-120-32  
Year of manufacture: 2008



D3442  
Svetruck 1260-30  
Year of manufacture: 2011

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# 12

President Joko Widodo's vision is to create an east to west maritime highway across Indonesia's archipelago

Photo: iStock / Getty Images Plus: 5043999

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# PORTS & HARBORS

Official Journal of the International Association of Ports and Harbors

## PORTS & HARBORS

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# Awards insight

Papers for the IAPH awards represent the  
trends and challenges of today's ports



**Susumu Naruse**

Secretary General – The International  
Association of Ports and Harbors



The winners of the IAPH awards – IT, Environment, Communications, Bali Open, and Akiyama Award – will be announced at the 30th World Ports Conference in Bali. I am delighted that 37 entries were put forward for this year's awards. Each was evaluated by the chair of the relevant technical committee. The themes of the entries are no doubt a good indicator of the issues that IAPH members are interested in at the moment.

The IT Award attracted 12 entries that covered not only traditional IT-related areas such as port community systems, but also how IT is now used in other areas in port management. Some ports use IT for facility maintenance and disaster prevention, others use it to improve the safety/security level of their ports. One port developed a system to forecast real-time met-ocean conditions at its terminals; another a touch screen application for maps that enables the port to use updated sea-charts on a screen rather than enormous paper charts. These award entries show that IT is being introduced into virtually every corner of port

activities, and that it can dramatically improve efficiency in each step of port management. IAPH definitely needs to put more energy into its research on the digitisation of port management.

Four out of 10 entries for the Environment Award discuss their experiences in restoration and/or creation of wetland, estuary, and dunes at coastal sites impacted by port developments. Most focus on

preservation of flora and fauna, in particular nesting and breeding of specific birds because they are thought to indicate a satisfactory environment. Of course, air quality is a popular topic, including measures to reduce truck trips to and from the port, and the evaluation of the results of clean air programmes and where these programmes will lead. It is intriguing that one port discusses methodologies to control noise problems in the vicinity of the port.

For the Communications Award, publishing port newspapers for stakeholders and the general public, teaching in schools, and providing healthcare devices to the local communities are discussed in detail. Many entries to the Bali Open Award and the Akiyama Award discuss port development policies in developing economies.

The winners of the awards will be announced and certificates awarded to them at the Annual General Meeting in Bali on 12 May. The recipients of the IAPH Women's Forum scholarships for the next two years are also to be announced at the meeting. **PH**

“These award entries show IT being introduced to virtually every corner of port activities”



## Port updates

### ► QATARI ORDER

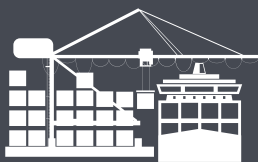
Cargotec's Kalmar has started delivering its large Q3 2016 order to Hamad Port, part of Qatar's New Port Project. The order was for 21 forklifts, 5 empty container handlers, and 4 reachstackers, and training in port operations and equipment handling. "The new Kalmar fleet will help us to reach our cargo-handling goals at Hamad Port, and expert training will help ensure best use of reliable equipment" said Nabil Al-Khaldi, engineering director of Qatar Ports Management Company MWANI

### ► SABETTA FIRST

*Christophe de Margerie*, the world's first icebreaking liquefied natural gas (LNG) vessel, is also the first vessel to successfully berth at the gas terminal at Sabetta Port in Russia, PAO Sovcomflot said. Successful ice trials and the first mooring of the vessel took place on 30 March. Both the vessel and Sabetta port are part of Russia's Yamal LNG project, which was launched at the end of 2013 to tap the vast natural gas reserves deep in the Russian Arctic. The region is ice-bound for seven to nine months each year, and the port and an airport were built to facilitate the project.

### ► SMART AWARD

The Port of Melbourne's Victoria International Container Terminal (VICT) at Webb Dock East has been named Smart Infrastructure Project of the year at the Infrastructure Partnerships Australia's national infrastructure awards dinner in Sydney. The role of automation in improving operational capacity and efficiency was recognised as a significant factor in VICT's win.



Port of Sohar-947266

Port of Sohar in Oman. Its CEO believes that Gulf ports will see some consolidation

# Smaller Gulf ports set for consolidation

Smaller ports in the Gulf region of the Middle East are likely to undergo a round of consolidation that will leave only five or six major players to compete in the market, according to Mark Geilenkirchen, CEO of Oman's Sohar port and freezone.

Competition among ports in the region is heating up as operators chase larger shares of the Gulf's growing logistics sector, he said.

"The Gulf region's logistics market has reached a value of more than USD70 billion and is continuing to expand," said Geilenkirchen. "The UAE [United Arab Emirates], for instance, has overtaken countries such as the UK, Germany, Italy, Spain, and Belgium, with more than 20 million teu of container traffic."

Large-scale infrastructure projects, a booming retail sector, and ongoing efforts by the Gulf countries to diversify from dependence on oil are key drivers of logistics growth. The region's location in the middle of the

Asia-Europe trade lane and its high reliance on international trade are important additional drivers of port throughput and infrastructure projects.

Dubai's Jebel Ali is the largest container facility in a region that is brimming with large-scale port projects. Jebel Ali's capacity is set to rise to more than 21 million teu by 2018 following completion of its Terminal 3 and phase-one of its container Terminal 4 projects.

In nearby Qatar, the new Hamad port plans to offer capacity of 6 million teu a year. The port is being built on a 20 km<sup>2</sup> site at Mesaieed, an industrial city in Al Wakrah municipality about 50 km south of Doha. In addition to container facilities, the project includes terminals for general cargo, grain, roll-on/roll-off (ro-ro), and livestock.

Other major Gulf region projects include expansion at Oman's Duqm port and its associated economic zone and at Saudi Arabia's King Abdullah Economic City, where projects are

under way to expand container capacity to 10.7 million teu, and new ro-ro and bulk terminals.

Elsewhere there are big plans for expansion at the Iranian port of Chabahar that sits just across the Gulf of Oman, where India has committed to invest. Movement on the project is slow and subject to the constant risk of a stall in sanctions relief, should the US administration take a harder line on Iran than its predecessor.

According to Geilenkirchen, Sohar is likely to add USD1 billion worth of new projects this year between its port and free zone, increasing its perception as an upstart rival to dominant players.

When the dust from projects and consolidation settles, a half-dozen or so large players will be left standing to serve the growing Gulf market, he said.

"Sohar is really positioning itself as a challenger brand to the region's more established set-ups.

"We do believe the region's smaller ports will still go through a round of consolidation leaving maybe five or six major players in the market," Geilenkirchen added.

An equal-share joint venture with the Port of Rotterdam, Sohar port has enjoyed a run of double-digit throughput growth for more than a decade

and figures for the early part of 2017 indicate that this will likely continue this year. Dry bulk volumes through the terminal operated by Brazilian mining giant Vale, for instance, are up by 40% so far this year compared with the same period in 2016.

One of the largest expansion projects currently under way is a major land reclamation known as Sohar Port South.

Oman's national refining and petrochemicals company, Orpic, started building a USD6 billion polyethylene and polypropylene plant that is expected to help position the port as a large supply chain hub for downstream plastics industries.

Perhaps the most high-profile project is the Innovation Zone, being developed in conjunction with Port of Rotterdam. The focus of the zone is on innovative ways to solve logistical problems, such as including new ways to track containers, the use of 3D metal printing for creation of high-quality industrial parts, and reducing energy consumption and waste in supply-chain operations.

The zone will not be connected to the national power grid and will draw all of its electricity needs from renewable sources and all waste will be recycled.

In an era of rapidly rising competition, the goal of the project is to find competitive edge through innovation and application of new technologies.

"Instead of being really good at doing just one particular thing as a company, today it's more important that we become really good at learning how to do new things, and doing that faster and better than ever before," said Geilenkirchen.

## Singapore launches LNG truck-loading facility

Singapore launched its first LNG truck-loading facility on 12 April, Singapore LNG Corporation (SLNG) and the Maritime and Port Authority of Singapore (MPA) said in a joint press release on 13 April.

The single-bay facility is within SLNG's terminal in Jurong Island and paves the way for developing LNG trucking business in Singapore. Besides facilitating truck-to-ship LNG bunkering, it can also transport small quantities of LNG by land.

End-users who are not connected to the gas pipeline network or are farther from the port can now also access natural gas. This might include industrial plants that use natural gas for furnaces and burners.

SLNG worked with the MPA, Singapore's maritime regulator, to construct the facility. Both parties signed a memorandum of understanding on 5 October 2016 at the Singapore International Bunkering Conference and Exhibition (SIBCON) 2016.

Government-owned SLNG owns and operates Singapore's first open-access, multiuser LNG terminal. The terminal began commercial operations in May 2013 with an initial capacity of 6 million tonnes/year, which is expected to rise to 11 million tonnes/year in early 2017.

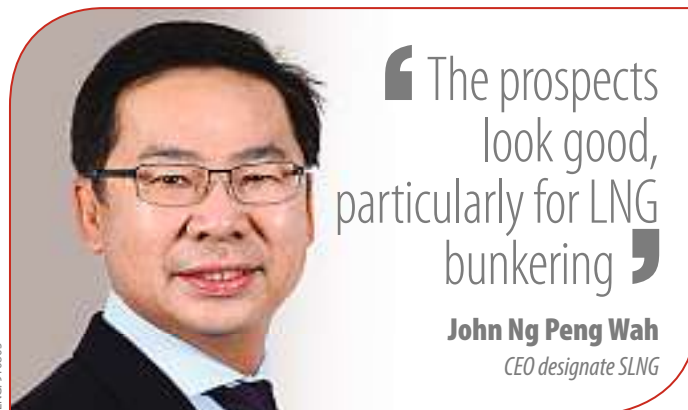
The SLNG terminal's primary aim is to service the city-state's domestic market. It also provides ancillary services, such as vessel cool-down, storage, and reload, as well as the new LNG trucking services.

SLNG's chief executive officer, John Ng, believes the launch will help to kick-start both LNG trucking and LNG bunkering in Singapore.

"While it is still too early to tell how fast or how far these businesses will grow, the prospects look good, particularly for LNG bunkering," he said, adding that depending on demand, the SLNG terminal could accommodate "at least another four truck-loading bays".

While Singapore's domestic consumption of natural gas remains small, it has set its sights on becoming an LNG bunkering hub, having launched an LNG bunkering pilot programme early this year. MPA has been working with industry partners and stakeholders to establish a framework for LNG bunkering standards and procedures.

Its chief executive, Andrew Tan, reiterated the need for Singapore to be early in the game, even though "it may take time for LNG to take off as a marine fuel globally".



## Port updates

### ► STRONG START TO 2017

Antwerp started 2017 strongly, handling 54,324,303 tonnes of freight during the first three months, up 1.5% on last year. With its "best ever" first quarter, both for total overseas freight and for containers, CEO Jacques Vermeiren said, "The port authority is very satisfied with these growth figures. It is important to see the volumes continuing to steadily increase in the container segment. This positive trend confirms the demand for additional container capacity in the Antwerp port area."

### ► DEPTHS RESTORED

Transnet National Ports Authority (TNPA)'s dredging services division has embarked on a USD1.1 million maintenance dredging campaign at the Port of Cape Town to restore the design depths inside Duncan dock. The campaign began on 8 March 2017 using trailing suction hopper dredger *Isandlwana*, and grab hopper dredger *Italeni*, and was scheduled for completion by the end of April. TNPA's fleet renewal programme has boosted the dredging division's capacity to remove approximately 4 million m<sup>3</sup> of excess material from the seabed every year from South Africa's eight commercial ports.

### ► CHINA MERCHANTS UP

China Merchants Port Holdings' profit at its core port operations rose by 24.6% to HKD5.6 billion (USD720 million) in 2016 on the back of a 14% rise in port revenues to HKD24.5 billion. The Hong Kong-listed company said volumes handled at its mainland China and overseas container terminals rose by 14.5% to 95.8 million teu, while bulk throughput expanded by more than 30% to 460 million tonnes.

**24% ↑**



## Port updates

### ► US PORT CO-OPERATION

The USA's Federal Maritime Commission has approved a proposal by Georgia Ports Authority and Virginia Port Authority to create an East Coast Gateway Terminal agreement. The deal "encourages voluntary co-operation in the areas of operational and supply chain efficiencies, safety, communications, and customer service" and co-operation on "acquisition and utilisation of joint marketing materials and sharing best practice in areas, such as terminal operating systems, training, cargo handling, access, turn-times, and infrastructure".

### ► STRADDLING DPW

DP World Southampton has taken delivery of eight new straddle carriers, part of its investment and modernisation programme at the container terminal. The carriers will be able to perform twin lifts and be more fuel efficient, allowing the company to retire older machines. Nick Loader, DP World Southampton CEO, said, "These machines are greener and more efficient and this is important because, like all responsible businesses, we are always looking to reduce our energy consumption and carbon footprint."

### ► CHAIRMAN-ELECT

At its 2017 Spring Conference, the American Association of Port Authorities (AAPA) elected Steve Cernak, chief executive and port director for Broward County, Florida's Port Everglades, as association chairman of the board for the 2017/18 activity year that begins in October. Cernak will be installed as chairman for a one-year term from 4 October, taking over from Mark McAndrews, Port of Pascagoula port director.



APM Terminals CEO, Kim Fejfer (standing, centre), visits APM Terminals Lázaro Cardenas, Mexico

# Mexican president eyes growth of overseas markets

Expanding port capacity is an important part of Mexico's commitment to free trade and increasing the reach of its products to overseas markets, according to President Enrique Peña Nieto.

Speaking at the launch of the new USD525 million APM Terminals-operated facility at Lázaro Cardenas, President Peña Nieto noted the country was well on its way to doubling throughput from the 260 million tonnes a year handled at its ports when he took office in 2012.

"If we are betting on free trade, on opening up more to the world — so goods made in Mexico can conquer other markets and world products, we had to expand the capacity of our ports," said Peña Nieto at the inauguration ceremony.

In April 2015, the government said it would invest USD5 billion

to increase capacity and improve infrastructure and operations at the country's ports, in a move primarily aimed at supporting expected growth in its automotive manufacturing and energy sectors.

With a large portion of automotive industry growth over the past two decades tied to the North American Free Trade Agreement (NAFTA), there are concerns over some of the rhetoric related to the trade deal that has been coming from the US president, Donald Trump.

The new semi-automated terminal in Michoacan State can handle vessels of up to 15,000 teu capacity and 1.2 million teu/year. When building is completed, it will be capable of handling more than 4 million teu/year.

Søren Skou, CEO of AP Møller-Mærsk, the parent of APM Terminals, said the giant

Danish shipping group was committed to Mexico. "Markets with strong trade alliances tend to outperform global growth and Mexico alone has signed more than 45 free trade agreements, making it one of the world's most important economies," he said.

"The terminal's strong geographic position on the coast and its connection with our inland terminal at Cuautitlan Izcalli in the industrial zone of Mexico City ensures our customers have easy access to inland distribution centres and a consumer market of over 120 million people," said APM Terminals CCO, Henrik Lundgaard Pedersen.

APM Terminals has a second terminal in Mexico, at Yucatan. Mexico was the third-largest container market in Latin America in 2016, handling some 5.66 million teu.



## US Delfin Deepwater Port gets green light

Delfin LNG's proposed offshore LNG export facility about 80 km off the coast of Louisiana in the Gulf of Mexico, has been authorised by the US Maritime Administration (MarAd). Operations could begin as early as July 2019.

Delfin Deepwater Port, which applied to MarAd in 2015, will be supported by an onshore LNG liquefaction facility located in Cameron Parish, Louisiana.

The offshore port will include four self-propelled, semi-permanently moored floating liquefied natural gas vessel (FLNGV) newbuildings with a total capacity of 12 million tonnes of LNG per year. Delfin LNG signed a joint development agreement with Höegh LNG in 2015 to supply the FLNGVs, which would be the

first such vessels to operate in the United States.

According to Delfin LNG's application, an offloading mooring system will be provided on each FLNGV to moor an LNG carrier side-by-side for transferring LNG through loading arms or cryogenic hoses using ship-to-ship transfer. The offloading system will be capable of accommodating LNG carriers with capacities up to 170,000 m<sup>3</sup>.

About 31 LNG carriers are expected to call at each of the four FLNGVs per year for a total of up to 124 cargo transfers.

"Construction and operation of the port to be in the national interest because Delfin LNG will have a beneficial effect on economic growth, both on the

local level and the national level," said Joel Szabat, MarAd's executive director. "It will provide a reliable source of clean energy to US allies in the event of market disruption, and it will have a low impact on the availability and cost of natural gas in the US domestic market."

Szabat said he would encourage Delfin LNG to use US-flagged vessels crewed with US seafarers. In addition, by using air-cooled rather than water-cooled liquefaction trains, "Delfin LNG will reduce the amount of water each FLNGV requires for its industrial processes and minimise the impact on the marine environment," Szabat added.

Delfin told MarAd that full buildout of the facility was contingent on the company's

ability to obtain all remaining state and federal permits, as well as secure its remaining financial commitments. Last year Korea Development Bank (KDB) agreed a USD1.5 billion loan for the project, covering more than 70% of the estimated USD2.1 billion cost.

Despite the vote of confidence from KDB, LNG export facilities in the United States have been taking years to get off the ground.

"The LNG liquefaction business is jam-packed full of hopeful participants with compelling stories, but no one seems to be able to cross the finish line," noted investment bank Stifel Nicolaus in a 27 March research note. "Once the first contract is signed, however, 'there will be a wave of activity which will enable a surge of [final investment decisions] for project startups in 2021–23'."



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## Port updates

### ► JONES ACT CHANGES

The International Marine Contractors Association (IMCA) has issued its report into the potential impact of the Jones Act proposals published by the US Customs and Border Protection Agency on 18 January. It is available on IMCA's website – [www.imca-int.com](http://www.imca-int.com). The association conducted a detailed analysis of the technical requirements of conducting various operations in deepwater and concluded that the US coastwise fleet was unable, on its own, to support activities in the deepwater market.

### ► PSA PROFITS FALL

PSA International announced a 7.5% drop in net profit to SGD1.17 billion (USD837 million) in 2016, despite rising volumes and revenues at its global operations. The global terminal operator handled 67.63 million teu last year, an increase of 5.5% in 2015, with non-Singapore operations contributing more than 37 million teu, up to 10.6% last year. Group revenue expanded 3% to SGD3.68 billion and profit from operations fell by 5.4%. PSA's profit and revenue fell by 9.5% and 3.6%, respectively, in 2015.

### ► HAMBANTOTA DEAL

Sri Lanka's government on 22 March announced a deal with CMPort to give it exclusive rights to the southern Hambantota port and to set and change tariffs with an 80% stake in a joint-venture entity that will operate the facility. The agreement gives CMPort the right to use the multipurpose berth and oil berth already built, together with 500 ha of land contiguous with the port, and to undertake expansion in a proposed third phase. According to documents released by the government, CMPort's operations at Hambantota will be strictly dedicated to commercial activities, with any kind of military use "specifically prohibited".

# Taiwan's 'Southbound Policy' drives trade with Philippines

Taiwan's Southbound Policy is opening doors for the Philippines to capture investment from a wide range of Taiwanese business sectors, according to International Container Terminal Services (ICTSI).

The Manila-based container terminal operator (see p16–17) said the policy represented a paradigm shift in Taiwan's economic growth strategy with the potential to drive growth in logistics and transshipment, high-value manufacturing, renewable energy, e-commerce, and other industrial sectors in the southeast Asian island nation.

Taiwan's Evergreen Marine in April launched a service linking Subic Bay, Batangas, and Manila with Kaohsiung in Taiwan, as well as Incheon and Kwangyang in South Korea.

In a statement announcing details of the service, ICTSI said the direct links with Taiwan and South Korea would boost the economies of northern and central Luzon, the largest and most populous island in the Philippines.

"Our inclusion in the [Korea-Taiwan-Philippines] service is a

clear indication that the markets of central and northern Luzon are growing and will benefit from another large global carrier participating in this growth," said Roberto Locsin, general manager of ICTSI subsidiary Subic Bay International Terminal Corporation, which operates the container terminal at Subic Bay Freeport.

The launch of the service follows discussions between the Taiwan Maritime and Port Bureau and the Subic Bay Metropolitan Authority on increasing container transshipment traffic between ports in Taiwan and Subic Bay and is seen as resulting from the so-called Southbound Policy.

The Southbound Policy aims to position Taiwan as a more important player in Asia's major growth markets by strengthening trade and investment ties with Australia, New Zealand, and south and southeast Asia.

The policy has a strong focus on integrating with the trade and supply chains of, and connecting with, domestic markets in the target countries, as well as co-operating on infrastructure

projects. "The Philippines is capitalising on Taiwan's Southbound Policy, which aims to strengthen trade and investment relationship between Taiwan and countries south of the latter's territory," ICTSI said.

Taiwan is the sixth-largest trading partner of the Philippines, with USD7.85 billion worth of bilateral trade in 2015. A total of 52 Taiwanese companies have invested about USD500 million in the Subic Bay Freeport Zone.

South Korea is the fifth-largest trading partner of the Philippines and the number of South Korean companies investing in the country, particularly in the construction, cosmetics, and food sectors, is rising rapidly.

ICTSI is a mid-sized global terminal operator. It has benefited from economic and trade growth in its home country, as well as successful investment in terminals in emerging markets. It reported revenue from port operations of USD1.1 billion in 2016, 7% higher than the USD1.05 billion of a year earlier. Net income attributable to shareholders was USD180.0 million, up 207% in 2015.

ICTSI handled 8.7 million teu at its global terminal operations last year, 12% up on the previous year. This was driven by a continuing rise in volumes at its terminal in Umm Qasr in Iraq, the addition of services at terminals in Ecuador, Indonesia, and Mexico, and stronger trade volumes in Croatia, Madagascar, and at most of the terminals in its home country.

ICTSI opened a USD550 million multiuser container and bulk handling facility at Port of Buenaventura, Colombia, in March in joint venture with PSA International of Singapore.



Evergreen Marine's service links Philippines with Taiwan and South Korea

Southern Cross Maritime: 679936





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# Big data success lies in granular detail

Nisomar's **Captain Claus Hyldager**, tells *P&H* that a port's competitive edge hinges in part on providing its customers with the data they need

**S**hipping is a relatively archaic sector when compared with other parts of the economy, but there are signals that this is changing. One of the key elements accelerating the pace of change is better data, and the use of analytical technologies.

How might ports create and leverage this data to become more efficient? Should enhanced port information and analytics be seen as an opportunity or a threat? How can data help ports fit into the shifting supply chain landscape and serve their customers more efficiently?

The shipping environment is as tough as anyone can remember and there's no end in sight. For ports, as well as shipowners, managers, brokers, and charterers, there are many threats to their financial health and ongoing viability. Recent news from

Amazon, Walmart and Alibaba, which may be looking into chartering their own ships and leasing their own terminals, suggests that structural change is on the way.

It's uncomfortable that the traditional shipowner faces such challenges but, overall, these changes are inevitable.

More than 90 % of world trade goes through ports, yet the last significant innovation in the maritime sector was the introduction of the ISO container in the 1950s. For too long the industry has opted to wait out the storm, with competitors nervously switching their gaze to any movement others might make. Unsatisfactory margins and many organisations' inability to respond quickly enough to an ever-changing world is for everyone an unsatisfactory status quo. Cathartic change is needed.

Shipping remains a remarkably inefficient business model, with hugely expensive assets and massive running costs. Owners and operators aim to achieve a modest return, yet their long-term success is almost entirely dependent on world economic trends. The industry is frustrated by cost inefficiencies and leakages throughout the supply chain.

Ports and their operations are part of that chain, and perhaps often unfairly are seen as a barrier to trade as much as an enabler. Some would argue that port operators need to recognise the pressures and to find ways to evolve their role. Ports proactively finding ways to better service their customers' needs, especially in respect of information supply, offer a huge competitive advantage.

In a sector steeped in history, we still retain centuries-old processes and practice. Despite the market risks and the knife-edge economics wrought by significant vessel oversupply, many owners, operators, and charterers are working without access to the necessary information, not least a full understanding and visibility of all the key data points allowing full optimisation of the entire value chain.

As a cargo superintendent in the early part of my career, whenever I came into port, I borrowed the stevedore's bicycle to ride up and down the quayside. I was looking to see what other ships were in port, what cargoes were being loaded and discharged, and chattered with folk to see what the local

Data gathered at today's busy ports can support shipper business choices and help leverage a competitive advantage

E+/Getty Images: 5044000





customs, pilot, transport, labour, and crew issues were. I would report this back to head office, as many other cargo superintendents would have done. Based on this highly granular information, albeit a snapshot in time, important decisions about competition and future trade opportunities were made.

New technology gives the maritime sector access to a wealth of such critical data, including vessel location, trade flow and cargo availability, port congestion, vessel line up, and turnaround efficiency. When innovative data analytics is coupled with insightful, strategic thinking and in-depth experience of logistics management, it's clear that powerful new tools and methodologies will start to change the face of port and shipping operations.

From a port looking to improve its efficiency, to anyone in the maritime sector wanting to streamline operations, for example, by having key data covering a voyage rather than last-minute 'adjustments' shortly before arrival or departure, the benefits of this technology are enormous. We believe there is now a demonstrable opportunity to leapfrog the evolution in other sectors, to make innovative use of global shipping data, and to bring about wholesale reform.

It's all about the entire value chain, not only the port, yet the granularity of port data is incredibly important to your customers. We've all been on the plane from Copenhagen or Oslo, waiting to get back to London Heathrow, only to be told we can't

“It's all about the entire value chain, not only the port, yet the granularity of port data is incredibly important”

**Captain Claus Hyldager**

*CEO, Nisomar*



Nisomar/SPS390

take off because we've lost our landing slot. Why should it be any different in shipping, where customers send a ship at full steam, only to be held at anchor for days or to suddenly have to slow steam, because of port congestion that could have been predicted many days beforehand?

The success of this data-led approach to operations is, however, based on the quality of the information that is fed into the system. Many shipping companies currently rely on an already extremely busy port agent or others at the quayside to tap things into a tablet device, at the same time as doing a million other things, and in all weathers. Those of us with any practical experience of working in a port will realise that this is fraught with difficulties. We are therefore now developing ways to collect port

information automatically, rather than solely relying on human input.

Amid this rapid change, ports are, of course, looking to understand their own capacity and how to maximise it. More data means greater transparency and, for progressive and efficient ports, there is great competitive advantage to be gained. It's time for new thinking and radical transformation. **PH**

**About the author:** Claus Hyldager is the group chief executive officer of Nisomar, a new entrant to the maritime services market that uses big data to empower port operators, shipowners, operators, brokers and charterers, and financial institutions.

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



# The tiger reawakens

Indonesia has notched up more than 90 new ports in three years as it strives to regain a foothold as a maritime nation in the region, reports **Zoe Reynolds**

Indonesia is improving the efficacy of its transport network to win back trade. In 2014 when President Joko Widodo came into office his vision was to turn Indonesia into a global maritime fulcrum, and since then the government announced in 2016 that it aimed to transform Indonesia into a maritime nation with about 100 new ports along east-west ocean highway.

The *State of Logistics Indonesia 2015* report stated that 90% of Indonesia's imports and exports were transhipped through international hub ports in neighbouring countries.

The country's aim is to build an integrated port chain to link the archipelago's more than 10,000 islands and strengthen Jakarta's role as a domestic and international hub for its more than 1,000-strong merchant fleet, with a hub-and-spoke port model replacing the old point-to-point, or direct-route operation (see 'Axis for trade', p14).

"We could win back cargo from Singapore, but that depends on the cargo volume and commodity," head of the Indonesian Shipowners' Association (INSA) Carmelita Hartoto told *P&H*. "More exports and imports could go direct to and from China, Japan, and Korea. However we would still need transshipment via Singapore for smaller cargo volumes through mainline operators."

The transport ministry has anticipated a 11.1% surge in freight traffic in the country's ports to 929.8 million tonnes by 2020, from 836.5 million tonnes in 2015. The figure is expected to jump to 1.1 billion tonnes by 2030.

State-owned Indonesian Port Corporation (IPC) Pelindo 1 director Elvyn G Masassya told *P&H* that the idea was to link the ports by sea, but also by land to new adjacent industrial zones. These development opportunities are attracting investment. World Bank president Jim Yong Kim visited Jakarta in May 2015, pledging USD12 billion in finance for maritime logistics and connectivity. In 2016 a joint venture with four shareholders – Indonesia's Pelindo II, Mitsui & Co,

PSA International, and NYK Line – saw the opening of Priok Baru container terminal, with a 1.5 million teu capacity and plans for further expansion.

It sits alongside Tanjung Priok, Indonesia's biggest port, handling about 90% of total IPC container throughput in 2016 and about 38% of Indonesian container throughput in 2015, according to IPC. "As [the] largest hub port in Indonesia, it is vital the port can be upgraded and modernised," Masassya told *P&H*. New Priok Container Terminal, also known as Kalibaru Port, is "being developed so the new generation container vessels will be able to call at the port" Masassya said.

Road access to the Jakarta ports has been replaced by overpass roadways, high above the flood waters and congested highways. A new strategic IPC project will have a 24 km-long canal connecting the port to a 1.5–3 million teu inland terminal.

Port of Rotterdam Authority in November signed a joint venture agreement for the development of Kuala Tanjung Port, strategically located in North Sumatra on the Strait of Malacca.

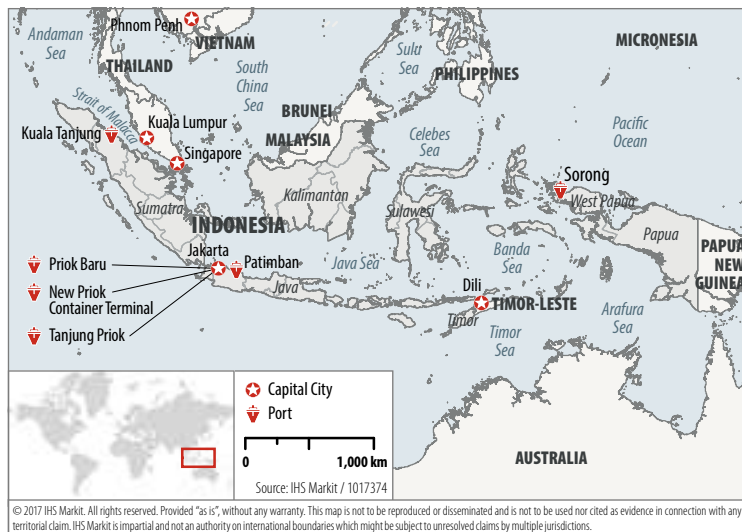
In May 2016, President Widodo, also known as Jokowi, announced the completion of 91 new ports – 80 in the eastern provinces and 11 in the west. An IDR1.5 trillion project (USD112.5 million) has seen 17 new ports for Sulawesi alone.

At the same time Indonesia won Japanese backing to develop a deepwater terminal at Patimban in Subang, West Java, 70km, from Jakarta's Tanjung Priok. It lies adjacent to the Karawang Industry Estate and Bekasi, where Mitsubishi Corp and many Japanese firms, including automotive manufacturers, operate.

Patimban has been earmarked as a national strategic project by presidential decree. IPC Pelindo II will maintain a 51% share in port. The masterplan prepared by the Directorate General of Sea Transportation in November 2016 outlines a container capacity of 1.5 million teu by 2019, reaching 7.5 million teu, equal to Tanjung Priok, by its completion in 2027. It is predicted that vehicle exports will tip 63,000 by 2020.







The joint venture between IPC and the Japan International Cooperation Agency will also include private companies, with Mitsubishi and Indonesia's Astra having reportedly expressed interest. Construction of the USD3 billion port is scheduled to commence in 2018, with a 'soft opening' in 2019 and full port infrastructure planned to be in place by 2027.

Other major port developments IPC is managing include Sorong port and industrial zone in West Papua, Kijing, West Kalimantan, and Cikarang Dry Port in West Java. "The Jokowi government is aware Singapore is a small nation that regulates the Indonesian economy and shipping," Hanafi Rustandi, Maritime Council member and Asia Pacific chair of the International Transport Workers' Federation, told *P&H*.

"Tanjung Priok will be able to compete with Singapore within the next decade," he said. "The economy is progressing. All the big stevedoring players now operate at Indonesian ports."

Ports are now at the top of the government agenda and Hartoto is pleased with government pronouncements of remaking Indonesia as one of the world's biggest maritime nations, but warns it will not happen overnight. "Port development is only one part in exploring sea resources in making Indonesia a maritime nation," she said. "It has to be done concurrently with developing shipyards, cold storage, power plants, and industrial estates. It will not be easy."

Kinks in the port plan still need to be ironed out by the government, including dwell time, and IPC is developing a new national port information technology system to help reach this goal.

Indonesia still has a long way to go to reclaim its preeminent place in the region. However, the prospects are looking good and the Jokowi government is making great strides building ports to connect the nation as a maritime powerhouse, global maritime fulcrum, and, potentially, one of the next Asian tigers. **PH**

# Axis for trade

President Joko Widodo wants to develop Indonesia into a global maritime axis, reports **Turloch Mooney**

Indonesia aims to reduce its logistics costs through the Sea Tollway reform concept, an integrated container shipping network that aims to fully reform maritime logistics infrastructure and operations across the vast country.

A record USD30 billion is allocated to infrastructure development in Indonesia's national budget for 2017. However, funding from sources other than the state will be needed to raise the USD345 billion required for infrastructure projects under the National Medium Term Development Plan (RPJMN) 2015–19 of which Sea Tollway is a central component.

Sea Tollway aims to develop a high-capacity and low-unit-cost container shipping network between west and east Indonesia, linking five hub ports and supported by 19 feeder ports. As well as expansion of capacity at the 24 designated ports, the programme calls for the development of regular cargo routes linking the ports in order to improve connectivity between the different regions of the 10,000-island nation. Related projects and campaigns to address land-side congestion problems and reduce cargo dwell times are also taking place.

The broad requirements of Sea Tollway are already well defined, but it is expected to move forward in a more holistic fashion once a technical study by Asian Development Bank (ADB) is completed and recommendations are handed to the government at the end of 2017. According to ADB, the study will advise on the shape of the port network and provide recommendations on a policy framework as well as a practical plan for implementation, including an investment project pipeline.

It is hoped that the improvement in maritime connectivity and its integration with other transport modes promised by Sea Tollway will help to reduce logistics costs as a percentage of GDP from the 24% currently estimated by the World Bank to 19% by 2020.

In the meantime, reduction of cargo dwell times continues to be a key focus of the administration of President Widodo. By the end of 2016, average dwell times at Tanjung Priok were down to between 3.7 and 4.2 days from more than one week previously.

According to the government, state-owned port operators have been told to make operations more efficient, increase berth productivity, and improve intermodal linkages and cargo tracking. They have also been told to find ways to reduce their handling and clearance fees. **PH**





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# Port boom fuelled by LNG export caps

Indonesia is preparing for an increase in domestic gas usage, reports **Zoe Reynolds**

**In the pipeline:**  
Indonesia is  
developing LNG  
terminals and  
liquefaction plants

Indonesia's shift from gas exporter to importer is creating a port construction boom as investors team up with government corporations to provide facilities to fuel the nation's growing energy needs.

As domestic demand for gas increases and the government caps exports, port infrastructure has become paramount. Since 2002, Indonesia has required 25% of LNG to be retained for the domestic market for both domestic and industrial use.

Once the world's second-biggest gas exporter, the nation has slipped to 10th place and must now import

LNG to meet demand. To do this, Jakarta has had to attract investment in new terminals and liquefaction plants. The 20-plus ports and plants coming into play include the 22.5 million tonnes/year plant in Kalimantan, Borneo, the 2 million tonnes/year Donggi Senoro plant in Sulawesi, and the 7.6 million tonnes/year Tangguh plant in West Papua. A second plant in Sulawesi is expected to come soon. Other new terminals include the Kalla Group LNG regasification terminal in Banten, Java, and a mini LNG terminal in Benoa, Bali.

China Machinery Engineering Corporation (CMEC) will help to build a USD980 million LNG receiving terminal and plant in Banteng, Sulawesi. Two import terminals are to operate in Sumatra – the 1.6 million tonnes/year Arun LNG terminal, and the floating storage and regasification unit in Lampung. State-owned oil and gas giant Pertamina has opened tenders for a third terminal in Cilacap, Central Java, with the fourth terminal proposed for Cilamaya in West Java.

In November, Pertamina and Tokyo Gas announced a USD810 million LNG receiving terminal at Bojonegara in West Java. Other terminals are planned for Nunukan in Sulawesi, Porong in East Java, Salawati in West Papua, and Simenggaris in North Kalimantan. Indonesia is starting its first mini-scale floating LNG terminal for Bali shipments to power the tourist industry in Makassar, Bosowa. State Port Corporation Pelindo Indonesia III signed the contract with Jaya Samudra Karunia (JSK) Group to operate the terminal, which comprises a floating regasification unit and a floating storage unit.

Port Energy Logistics director Gembon Primajaya, told *The Jakarta Post* that the floating terminal concept was ideal for an archipelagic country. Bosowa was a pilot project in Indonesia for LNG infrastructure in line with Jakarta's 'mini LNG strategy', which will see coastal LNG carriers of about 10,000 m<sup>3</sup> capacity delivering gas to local ports.

Pertamina has also signed a memorandum of understanding with Osaka Gas to develop LNG import terminals and port infrastructure.

Indonesia's export cap policy, however, is not without problems. In October 2016, *Kompas* newspaper reported the country's director-general of oil and gas as saying that more than 17 LNG cargoes were without buyers and, if domestic buyers were not sourced, these cargoes would have to be exported.

Edi Saputra, senior energy analyst for Wood MacKenzie, told *The Jakarta Post* that infrastructure was the key to the government policy working. He added that "a mismatch between the pace of policy implementation and market readiness" led to lost export revenues in the gas sector. Saputra also said domestically allocated LNG cargoes in 2014 became stranded, leading to production shutdowns at Mahakam and Sanga Sanga in East Kalimantan and Vorwata in West Papua.

Port and power infrastructure are crucial to making Indonesia's energy transition go smoothly, as is a plan to ensure that LNG cargoes find domestic buyers. **PH**



ICTSI: 937052

# Lines look to Philippines for eastern transshipment

Container shipping lines believe the port of Manila has the potential to be developed into a regional transshipment hub if it can boost capacity and reduce tariffs, writes **Mike King**

**T**he port of Manila has been the gateway to the Philippines archipelago for centuries. Its location on Luzon, the country's largest and most populous island and its business and political heart, gives direct access to one of Asia's fastest growing economies.

The port sits on Manila Bay and hinterland access to its piers comes via the teeming urban chaos that is commonly known as Metro Manila – no blessing back in 2014 when hinterland deadlock provoked major delays at the port and prompted many lines to re-route cargoes to alternative ports in Luzon, including Batangas and Subic Bay. Since then International Container Terminal Services Inc (ICTSI), Asian Terminals Inc (ATI), and Philippine Ports Authority (PPA) have successfully

taken steps to improve productivity, capacity, and hinterland access by barge, road, and rail.

Container volumes handled at the port's leading international box terminals – MICT and South Harbor operated by ICTSI and ATI, respectively – rose to 3.22 million teu last year, up from 2.84 million teu in 2015.

Further investment in infrastructure by the administration of President Rodrigo Duterte is expected to further boost performance. But liner company executives believe Manila has the potential to become more than just an entrance point to the Philippines. They claim that if more container capacity can be added so larger vessels can be received – the present maximum draught for container vessels is 14 m at Manila International Container Terminal's (MICT) berth 6 and 13.7 m at berths 1–5 – then the port can develop into a regional transshipment hub, which in turn would reduce costs for importers and exporters as more direct calls came to Manila.

Daniel Ventanilla, general manager for NYK Line in the Philippines, told *P&H* that Manila had, until now, primarily been a gateway port for national imports and



**Industry commentators believe Manila is in a good location to be a hub and spoke port**

exports. However, a new co-loading law, which allows foreign shipping companies to move import and export boxes both laden and empty between Philippine ports, has opened up new opportunities. "This has enabled international shipping companies to effectively handle both laden and empties of import/export cargoes when transshipment is made between Philippine Ports" he said.

To make a hub concept successful and fully realise the benefits of the new cabotage rules, Ventanilla said PPA, terminal operators, and government authorities would need to work together to reduce transshipment tariffs.

"Manila has a strategic position within Asia and the Pacific as proven during previous centuries when the Galleon Trade connected Manila to Acapulco in Mexico for around 250 years from the 16th century," said Ventanilla. "The only thing the Philippines government needs to work on to realise this opportunity is to introduce stevedore tariffs that are comparable with other transshipments ports like Kaohsiung, Singapore, and Port Klang in Malaysia.

"Manila volume continues to grow and the ships being used today have grown in size and efficiency. NYK, for its part, has connected Manila to north Asia – Japan, Taiwan, and [South] Korea soon – and Manila to south Asia – Singapore, Malaysia, Indonesia, Thailand, Vietnam – using our ME1 and ME2 services.

"Transshipment continues in Manila, connecting both north and south Asia. There are more opportunities that could connect Manila to China and other countries.

"Post-Panamax ships will come to Manila and it will just be a matter of time before more transshipment opportunities can be realised, both for local and international shipments."

His views were echoed by Tim Wickmann, CEO of MCC Transport, AP Møller-Mærsk's intra-Asia operator. At the 9th Philippines Ports and Shipping 2017 conference in Manila in February, he said that while the Philippines' gateway port could not compete with hubs in southeast Asia such as Singapore, Tanjung Pelepas, and Port Klang for east-west containerised cargo, it was well-placed to become a transshipment centre for eastern Asia, offering direct links to major trades.

"The Philippines is geographically perfect," he said. "It's in the middle of lots of big flows on intra-Asia lanes, which means it is perfect for hub and spoke. If you take eastern Indonesia as an example, which is not far from the Philippines, at the moment cargo heading to destinations in the east or north must first be shipped west to Singapore and then back east/north again. Why not connect to intra-Asia strings at Manila or Davao instead and reduce the transit time considerably?"

Wickmann said that if more cargo was enticed to Manila via hub and spoke operations, this would build a critical mass of cargo, which could potentially enable non-intra-Asia services to call at the port.

"If Manila can attract transshipment operations, then there are more reasons for direct mainliner services beyond the present intra-Asia services to call," he told P&H. "Today, due to the imbalance of cargo in the Philippines, where imports outweigh exports by around three to one, services need to be sustained more or less purely by the import cargo flow. If transshipment cargo from surrounding countries like Indonesia, east Malaysia, Vietnam, and even Oceania could be attracted, it would change the network considerations for shipping lines considerably. So it's a mistake to eliminate the transshipment notion for the Philippines."

Hector Miolo, PPA assistant general manager, told P&H that, thus far, Manila had been unable to develop into a regional transshipment centre, in part because lines had been unable to add additional port calls to east-west services. "Manila does not at present have the traffic volume of cargoes that can attract the bigger main liner services," he explained. "For the existing cargo volume that Manila is able to generate, stiff competition exists among small international lines.

"We have to build bigger and high-capacity ports to compete with the regional ports such as Singapore and Kaohsiung. However, any decision to do this should be supported by a market study that establishes demand.

"The Cabotage or Co-Loading Act may offer opportunities for transshipment traffic to develop, but this can be best discussed by the Bureau of Customs."

PPA did not comment on its transshipment tariffs.

Wickmann said that current transshipment charges in the Philippines were among the highest in Asia. "Today when you do transshipment in China, southeast Asia etc, it's less than half the cost of the Philippines," added Wickmann. "So if the Philippines wants to attract transshipments, then you need a totally different tariff.

"At the moment it's not remotely linked to the cost of labour in the Philippines – only Japanese ports are more expensive. And who pays for this? It's not the lines, it's the customers – receivers and exporters – and in such cases, other transshipment ports will be chosen."

In studies of future prospects and port development, "it's very important to focus on cost," said Wickmann. "It's not enough to have these plans if they are too expensive compared with other Asian countries looking to do the same things but at a cheaper cost." **PH**

**“We have to build bigger and high-capacity ports”**

**Hector E Miolo**  
Philippine Ports Authority





# Masterplan paves way for Australia's sixth terminal

Preparations are under way for a new container terminal at Port Kembla, reports **Zoe Reynolds**

Col/Douch: 5042703

**D**igging deeper and going inland are the two big priorities of Australian ports. Dredging, to allow entry by bigger ships and building intermodal terminals to avoid land-side congestion are at the top of port masterplans, not least that of the recently privatised ports on Australia's east coast.

NSW (New South Wales) Ports holds a 99-year lease, which began in mid-2013, on two of the state's three commercial ports, Port Botany and Port Kembla. It has made planning a top priority and so much progress was made on its first (2014) five-year port development plan that it has already embarked on a 30-year masterplan entitled *Navigating the Future* (2015). Both plans focus on the key issue of port interface.

NSW Ports operates two inland intermodal terminals, Enfield and Cooks River. It aims to shift 40% of containers by rail, from an unacceptably low base of 14%, over the next 30 years. It is also progressing with channel dredging in preparation for the larger 10,000 teu container vessels expected in the coming years, with 8,540 teu Maersk vessel *Seroja Enam* visiting Port Botany in 2016.

"The largest container vessels currently calling at Port Botany usually have a capacity of 6,500 teu. We expect this to increase to 8,000 teu by 2025, with vessels of 10,000 teu capacity or larger," a port representative told *P&H*. "The timing for the arrival of larger vessels could be earlier than indicated where there is further

consolidation of shipping line consortia, reduction of calling frequency, increase of transshipment, or use of partial loading of vessels."

At present ships of this size are able to access the port using tidal windows for shipping channel movements. "With targeted dredging within Brotherson Dock and at isolated locations in the channel, Port Botany could accommodate 10,000 teu vessels or larger, and long-range (LR) 2 tankers, without tidal restrictions," she said.

Implementation of a dynamic under-keel clearance system would enable further operational shipping improvements at Port Botany. "This could delay the need for dredging or reduce the volume of dredging required."

NSW Ports is a consortium made up of IFM Investors, Australian Super, Tawreed Investments Limited, Q Super, Cbus, Hesta, and Hostplus. Hastings Funds Management and China Merchants hold the lease on Newcastle coal port.

But port privatisation has come at a cost and not without controversy, with competition watchdog the Australian Competition and Consumer Commission (ACCC) and Shipping Australia, representing international shipping trading with Australia, complaining of price rises. But outgoing Ports Australia CEO David Anderson fiercely defends the private operators for their efficiency, pointing the finger at cartel misconduct among shipping lines instead.





**Australia's Port Botany container terminal, Sydney**

"Shipping Australia should look closer to home," he said. "I think the ports under the new privatised model have managed very well. NSW Ports has been very proactive in managing land-side logistics. They've done very good work on their masterplan."

Defending increases in port charges in both Sydney and Newcastle, Anderson maintained ports were just playing catch-up. Pricings for channel services were too low, he told *P&H*. "We have to value our assets as commercial enterprises."

Sydney's Port Botany terminal, with capacity of 2.3 million teu, is already vying with Melbourne for top port status. It is New South Wales' only container terminal hosting DP World, Patrick, and Hutchison Stevedores – all largely automated operations. It is also the state's largest bulk liquid and gas port. But while Newcastle's bulk coal and the Pilbara's bulk iron ore

export ports are the world's biggest, Port Botany is one of the nation's biggest import ports, mainly shipping out empty containers (66%). While container volumes could more than triple from 2.3 million teu to 8.4 million by 2045, empties are projected to grow to 74% in that time. The port believes there will be a growing demand, as part of its supply chain, for empty container parks where containers can either be reused for export or sent empty overseas. Port Botany handles 98% of the state's LPG imports and 90% of bulk chemical imports. Both are forecast to double from 5.1 million to 10.8 million kilolitres over the same time.

The NSW Ports masterplan has an eye on both increasing numbers of containers moved by rail to and from Port Botany and channel deepening to allow entry by bigger ships.

Two milestones were passed in 2016. In May, rail freight operations at the Enfield Intermodal Logistics Centre officially opened, with terminal operator Aurizon, Australia's largest rail freight operator, welcoming its first train to the port. In August, the port shuttle service began, directly linking Enfield to Port Botany.

Intermodal terminals are critical to the logistics chain and essential for achieving the target of moving 3 million teu/year by rail by 2045, according to the port masterplan. The start of operations at Enfield is just one step in the process.

Opening of the Moorebank intermodal terminal, developed and run by the Sydney Intermodal Terminal Alliance in 2017, will be the next step.

Despite sluggish market conditions, the forecast average annual growth rate of 6.2% for containers at Port Botany is still on track to hit 2.9 million teu by 2018.

In anticipation, NSW Ports is already preparing for a second container terminal at Port Kembla. Left off the five-year plan, the Port Kembla terminal is now earmarked to go ahead in the next 20–30 years once Port Botany nears capacity. Planning for the development of the Outer Harbour in preparation for the terminal is well under way. Just under 100 km south of Sydney, Port Kembla is the state's largest grain export terminal, its biggest motor vehicle import hub, and second-largest coal export port.

In Port Kembla, an AUD75 million (USD56.8 million) upgrade of its grain facilities will see the port double its grain exports in coming years. The new Quattro Ports facility loaded its first grain ship in March 2016. It is expected to have capacity to handle up to 1.2 million tonnes of grain annually. Meanwhile, completion of stage-one dredging and the Outer Harbour expansion has provided 7 ha of additional port land for the Cement Australia storage facility.

On current projects, total vessel visits at Port Botany and Port Kembla combined could grow from 2,280 to 3,300 by 2045, container volumes would triple, with bulk liquid volumes and car imports doubling. With meticulous planning, however, NSW Ports is well prepared to meet all future demands. **PH**

“NSW Ports has been very proactive in managing land-side logistics. They’ve done good work on their masterplan”

**David Anderson**, *outgoing Ports Australia CEO*

# India's ports embark on sustainability agenda

India's ports – both old and new – have begun taking steps to address climate change and sustainability, which are becoming the cornerstones of all development activities, reports **Manoj Venunath**

**W**hile decades-old 'major' ports in India – those owned by the central government – have prepared a blueprint on sustainability, it is the new-generation private ports that have become the torchbearers of such action.

Mundra Port, India's largest commercial port in the northwestern state of Gujarat, has taken the lead in sustainability efforts among Indian ports. Adani Ports and Special Economic Zone (APSEZ), the port operating company owned by billionaire Gautam Adani, has become the first in India to calculate its carbon footprint.

"As a pilot project, we have recently calculated the carbon footprint of Mundra and Hazira ports and are in the process of calculating the carbon footprint of all our other operating ports," said Karan Adani, the CEO of APSEZ.

APSEZ, he said, is committed to reducing its carbon footprint per tonne of cargo handling in a progressive manner, to be achieved mainly through standard operating processes, new technology, shifts in energy sources, and in-house innovation. For green energy adoption, APSEZ is installing solar and wind farms at its ports.

Mundra has already begun the move towards a green energy future by installing a 1.5 MW rooftop solar power plant. Its vision is to achieve 100% green energy for its port operations.

For APSEZ, energy management is a key area of focus. Various strategic initiatives are being implemented, such as reducing fossil fuel consumption (for example, electricity and LNG to power its port-side equipment) and switching to cleaner fuels. It is achieving energy conservation through the slow steaming of tugs,

running of conveyors at optimum speed, installing LED lighting, and modifying port equipment.

"Initiatives like electricity supply to tugs, conversion of diesel-based rubber-tyred gantry cranes [RTGs] into E-RTG, [and] conversion of mobile harbor cranes from diesel mode to electrical mode have added substantial value to organisation and environment in the form of emission control and reduction in operating expenses," said Karan, who is also the son of Gautam Adani.

To improve efficiency and reduce emissions from mobile equipment at its flagship Mundra Port, APSEZ replaced diesel-operated reach stackers with electric-powered rail-mounted gantry cranes to facilitate rail operations. Mundra also switched the powering of other equipment from furnace oil to diesel, and from diesel to electricity as part of its efforts to move towards cleaner fuel.

APSEZ is also focusing on water conservation and waste management. For this purpose, it is using modified operating processes such as sophisticated remotely operated valves, as well as new products such as water-free urinals. At the ports, water is mostly used for liquid bulk cargo tank cleaning, dust suppressions, and other domestic activities. APSEZ has developed a series of effluent treatment plants to treat waste-water and reuse the reclaimed water for horticulture and other applications.

The port operator has installed wind screens at West Port Mundra, the world's largest coal importing port, to control natural fires, since coal has self-ignition property. This has halved water consumption from 5 million litres of water per day to 2.5 million litres of water per day. "Our vision is to become a zero-water-discharge port," said Adani.

At India's state-owned ports, shipping minister Nitin Gadkari is leading the drive towards green ports.

Under the green port initiative, the ministry has identified 12 activities, including preparation of environment management and monitoring plans (EMMP), equipment to monitor environmental pollution, acquisition of mechanical dust suppression systems, constructing sewage or wastewater treatment and garbage disposal plants, establishing projects for energy generation from renewable energy sources,

“We have recently calculated the carbon footprint of Mundra and Hazira Ports and are in the process of calculating the carbon footprint of all our other ports”

**Karan Adani**, chief executive of APSEZ





APSEZ 906658

**Four vessels are berthed alongside at both Adani Mundra Container Terminal and Mundra International Container Terminal. Adani is putting a number of green solutions in place at its ports**

such as solar and wind power, containment of sea garbage, improving the quality of harbor water, improving collection and disposal of sludge from ships, ballast-water management, and promoting the use of bio-diesel fuels.

India's state-owned Haldia Port, located near Kolkata, has already started using bio-diesel, while Chennai, Ennore, and Tuticorin Ports use solar and wind power to reduce logistics costs.

Emami Agrotech, which has a bio-diesel refinery at Haldia Port, produces 300,000 litres/day of bio-diesel from palm oil residue generated from its edible oil refinery. Haldia purchases the alternative green fuel from Emami and uses it to operate railway engines and trucks inside the port, one of the 12 major ports owned by the Indian government.

"Bio-diesel is cost-effective and we are looking at the possibility of buying bio-diesel for all major ports at a price much lower than the petroleum diesel price," Gadkari said.

State-owned VO Chidambaranar Port in Tuticorin is the first Indian port to provide shore-side power to ships docked at the port.

"Being one of the fastest growing ports in India, the port is fully aware of its environment responsibility, as maritime CO<sub>2</sub> emissions are projected to increase significantly in the coming decades. Taking action on

efficiency and emissions can mitigate the associated growth in emissions," the port said.

The shore power at VO Chidambaranar Port is expected to reduce carbon emissions by about 6 tonnes/day and 1,500 tonnes of carbon emissions in a year, which is 5% of the total CO<sub>2</sub> emission at the port. The facility will also benefit port users through savings in fuel costs.

Shore power, also known as alternative maritime power, enables ships at dock or in drydock to use shore-side electricity to power onboard electrical systems, such as lighting, ventilation, communication, cargo pumps, and other critical equipment, while turning off their auxiliary engines. The electricity is drawn from the local power grid through a substation at the port.

The technology helps reduce low-frequency noise and vibration and allows the crew to maintain the ship's diesel engines while berthed.

Shore power is considered an important way to cut emissions and save costs for shipping companies. It is also a quick and cheap short-term solution to allow shipping companies to achieve emissions targets – particularly those related to emission control areas.

"Emissions from ships at berth have been estimated to be approximately 10 times greater than those from the ports' own operations, so there is a greater potential to reduce greenhouse-gas emissions from ships in port than from port activities on the land side," the port said. **PH**



Eduardo Epifanio: 5043544

# Sensitive by nature

Green and growth can go together, as shown by Port of Gothenburg through its programme of environment-sensitive development protects, writes **Scott Berman**

**A** diverse range of projects shows how Port of Gothenburg, Scandinavia's largest container and foreign trade operation, is expanding in environment-sensitive ways under the direction of the Gothenburg Port Authority (GPA).

The city of Gothenburg itself, which owns the port, is also expanding, and an environmental mitigation project now under way at the port is benefiting from a city infrastructure initiative: the Sweden Transport Administration's mammoth Marieholm Connection project. This includes the construction of a tunnel that is generating excess, pristine, clay material.

The port is using 200,000m<sup>3</sup> of that clay in a USD3.3million project to cap an old dredged material

disposal site near the port at Torsviken and create a wetland on top, the port's project manager, Eduardo Epifanio, explained. The tunnel contractor, Züblin, is trucking the material to Torsviken, where a green space for waterfowl is due to be completed this year.

Meanwhile, a USD3.5million project at the port's Arendal site signals a large change. The project includes a new terminal to be sited on land created from material dredged during the next four years.

To test the idea, Finland-based marine construction company Terramare, part of Boskalis, and Swedish construction company Peab, have come together in a joint venture and are conducting a pilot project, to measure the stability of the dredged material, which contains legacy pollutants. About 15,000m<sup>3</sup> of material will be pumped into a sheet pile and earthen dike enclosure constructed by another contractor, NCC. Eventually, an "estimated 600,000m<sup>3</sup> of stabilised and solidified sediment enclosed by rock dikes" will be needed for 22ha of new terminal land, Epifanio said.

The terminal, whose ultimate use has yet to be determined, got the green light in an environmental court ruling in 2016. The port is operating in accord with Sweden's strict environmental rules, including those requiring mitigation for construction.

GPA's environmental manager Edvard Molitor said the overall green approach was right at the core of





Spreading clay material to create a wetland at Torsviken near Gothenburg

Rendering of the planned wetland at under development at Torsviken



Port of Gothenburg: 5043543

port business. He said, "We are trying to find strategic ways to make the port as sustainable as possible. Our goal is make Gothenburg the most sustainable port in the world."

Projects include a new environmental programme, adopted in 2015, that is linked to the city's green programme. The scheme centres on minimising climatic and environmental impacts and resource consumption. Additionally, GPA has an ISO-14001-certified environmental management system.

The port has also worked with the city to enhance upland habitat near the port's logistics park. There are other green moves at Gothenburg, such as on-shore power supply (see [wpci.iaphworldports.org](http://wpci.iaphworldports.org) for more information), and the use of solar cells, offsets, district heating, and other steps that cut carbon dioxide emissions by 50% between 2012 and 2015.

GPA also reports that shipping emissions met a key target, but, as its *Sustainability Report 2015* states, this was "largely as a result of a reduction in traffic" rather than taking proactive steps.

Railport Scandinavia, organised by the port, city, and other authorities, is a network that offers 25 daily rail shuttles, moving containers as well as steel and

forestry products for export between the port, cities, and towns in southern and eastern Sweden, as well as Oslo, Norway. It cuts carbon emissions by about 60,000 tonnes annually, according to the port. The move to rail is also evident in more and longer track at the container terminal. This is mainly an investment by operator APMT, Molitor explained.

The port is also providing LNG bunkering in order to reduce emissions. In an incentive scheme introduced in 2015, the port is slashing port charges by 30% based on the gross tonnage of vessels using LNG. The port is offering a 10% port duty discount for vessels without LNG but that score well (30 points or more) on IAPH's Environmental Ship Index and on the Clean Shipping Index. The port indicated that 28% of vessels that called in 2015 got a discount.

Tying in with this momentum to reduce emission, a 20,000 m<sup>3</sup>-capacity LNG import terminal is being developed. It will be operated by Swedegas, which owns the nation's gas grid. GPA reports that it is considering an incentive scheme for greener truck transport as well.

Port officials are evaluating potential locations for a significant replanting of eelgrass in city-controlled expanses of water near the port to mitigate the loss of the plant, which fights erosion and constitutes an important habitat for fish, from the imminent construction of the new terminal at Arendal.

According to GPA, technicians will assess potential sites—Sweden's Agency for Marine and Water Management and county officials are involved as well—to make test plantings and evaluate various areas this year, with results to be measured in 2019 to determine the best site for a complete planting.

There are often complexities in projects with environmental benefits, including navigating the laws on green requirements. For example, the Swedish Agency for Marine and Water Management legally stipulated the size—1.7 ha—of the eelgrass mitigation project. Molitor explained that the ruling may be a landmark case for similar future projects in Sweden.

Yet, there are ancillary advantages to green leadership, such as getting a leg up in competitive applications nationwide for state support for infrastructure projects. Molitor said, "We can achieve a higher status internationally" by being environmentally proactive and by sharing ideas and best practice with the industry.

Also, port officials "make sure that environmental authorities understand that we are proactive," said Molitor. "If we can prove that we are proactive and engaged in our environmental responsibilities, then it is easier for us to fulfil the requirements needed to get permits and the trust of authorities." Resulting permits over the years "have enabled us to grow," he said. "Historically we gained a lot from being a trustworthy proponent of the environment." Port authorities are looking to do more of the same. PH

Our goal is to make Gothenburg the most sustainable port in the world

Edvard Molitor

Gothenburg Port Authority's environmental manager



Port of Gothenburg: 5043542

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

# Costing out clean air

The Los Angeles and Long Beach Clean Air Action Plan has led terminal operators to query the additional cost of replacing standard port equipment with greener options, reports **Bill Mongelluzzo**



Cavotec 883273

**A mobile shoreside power unit: one of the initiatives at Port of Los Angeles to reduce emissions**

**A**s the ports of Los Angeles and Long Beach finalise updates to their massive plan to reduce pollution further over the next decade, container lines and terminal operators are straining to ensure that the ports' standards are economically and technologically feasible.

Terminal operators and carriers say the original version of the ports' joint Clean Air Action Plan (CAAP) in 2006, and a later update in 2010, were effective because all three factors came together: environmental benefits, economical viability, and technological feasibility. The Pacific Merchant Shipping Association (PMSA), which represents terminal operators and carriers, said the plan, which slashed port pollution by more than 80%, aligned the ports' business goals of delivering modern container terminals with their environmental goals.

But the PMSA claims the latest update is too heavy on emissions reductions and does not adequately address the costs of stricter standards.

The latest effort to update and improve the CAAP is still evolving, and the final version will go before the ports' respective harbor commissions this summer. In a 3 March letter to the ports, the PMSA charged that the latest environmental strategy was to drive a single technology option, the electrification of cargo-handling equipment, to achieve zero or near-zero-emission goals. Furthermore, the draft document under consideration does not align the ports' goal to reduce pollution with their business goal of remaining competitive and growing market share in a competitive industry.

Rick Cameron, managing director of planning and environmental affairs at Port of Long Beach, said that





was not the case at all. The ports' intention is to set longer-term standards for emissions reductions from vessels, cargo-handling equipment, drayage trucks, and other sources of port pollution, but the ports are committed to working with stakeholders on achieving these goals. The ports are not – and will not – dictate specific types of equipment that the 13 container terminals in the largest US port complex must deploy. "We are fuel neutral and technology neutral," Cameron said.

Cameron emphasised that the document being addressed by the PMSA was a draft. The ports have held stakeholder meetings since late last year and they are analysing comments filed by the PMSA and more than a dozen other industry groups. They will release another draft in late April that incorporates those views and includes cost estimates and feasibility studies of

emerging technologies. The ports intend to submit the final version to their respective boards by early July. Since they unveiled the original CAAP in 2006, the ports have maintained a position of flexibility in choosing methods that will be deployed to reduce pollution. "We have not changed that position," he said.

The PMSA's argument is that in the marine terminal portion of the CAAP, the ports' latest goal is to achieve zero or near-zero pollution, and the only feasible way to achieve that stretch goal is to eventually replace all diesel-powered cargo-handling equipment with machines that are run on batteries or electricity. "They're pushing electrification," John McLaurin, president of the PMSA, said. He emphasised that for some types of equipment, such as top-handlers that lift containers from yard tractors and place them in container stacks, there is no commercially-available battery-powered technology. In cases where electrified equipment is technologically feasible, electrifying the equipment could cost each terminal operator millions of dollars.

The current draft document does not calculate costs or the feasibility of various technologies, nor is it supposed to, Cameron said. Those measures will be addressed in the next version of the document to come out in late April.

PMSA, however, refers to a study on the costs of electrifying cargo-handling equipment that was performed last year by Moffatt & Nichol. That study concludes that the ports of Los Angeles, Long Beach, and Oakland will have to spend billions of dollars over the next 30 years to upgrade the more than 2,700 pieces of cargo-handling equipment they deploy, but Larry Nye, who is in charge of port planning at Moffatt & Nichol, urged caution in jumping to conclusions about the cost of upgrading equipment.

All of the terminals will have to replace their cargo-handling equipment as it ages during the normal course of business over the planning period, which is 30 years. Terminal operators will have three options, Nye said. One is to replace existing diesel-powered equipment with the same machinery. A second option, which PMSA fears is being forced on the terminals, would be to maintain the same type of operation and replace equipment with similar machines powered by electricity or batteries. The third option is to reconfigure the terminal and replace existing equipment with electrified high-density stacking equipment, such as TraPac in Los Angeles and Middle Harbor in Long Beach are doing.

The Moffatt & Nichol study determined that the terminals in Southern and Northern California would have to spend at least USD7 billion in the current planning cycle just to replace existing equipment with the same type of equipment. However, if the terminals, in order to comply with stricter emissions requirements, must use the latest battery and electrification technologies, the estimated cost would be USD23 billion, or USD16 billion more than replacing existing equipment with similar diesel-powered equipment, according to Moffatt & Nichol.

PMSA pointed out however, that if the terminals were forced to strive for zero emissions through the use of costly electrified equipment, the ports could be at a competitive disadvantage. Furthermore, the timeline suggested by the ports is even more ambitious than state regulators' proposals through the California Sustainable Freight Action Plan, PMSA said.

Cameron said that 'doomsday' scenario should not play out because the CAAP update is still in the discussion stage and there are no firm dates for implementation of its various parts. Also, the ports do not intend to tell the terminals what specific types of equipment they will have to deploy to meet the agreed-upon standards. Meanwhile, the ports have access to state grants that they intend to secure, with the help of terminal operators who volunteer to test emerging technologies for electrified cargo-handling equipment at their facilities, so outside money should become part of the process, he said.

Nye added that terminal operators had a third option, which TraPac and Middle Harbor had already embarked upon, which was to develop automated facilities with electrified high-density stacking equipment. That option is the costliest in terms of upfront investment. If all of the terminals choose to be fully automated like TraPac and Middle Harbor, the total cost would be USD35 billion, or USD28 billion more than the baseline USD7 billion cost of replacing equipment with conventional machines. On the other hand, the automated terminal replaces dozens of human-operated pieces of equipment with autonomous vehicles, so annual operating costs are much lower. In the long run the total upfront investment and annual operating costs turn out to be more favourable than operating under current procedures, Nye said.

Nevertheless, the PMSA remains sceptical that the ports will force terminals to take on added costs in their attempt to reach zero emissions, which would produce only incremental gains in emission reductions. "We're past the low-hanging fruit stage. What's the environmental benefit?" McLaurin said.

Cameron "fundamentally agrees" that the low-hanging fruit has been picked, and the task of achieving future gains will be daunting, but through a combination of grants, incentives, technology advancements, and properly measuring costs and benefits, the port community will be able to replace existing equipment with cleaner machines while maintaining the competitiveness of the ports.

Also, if container volumes in southern California continue to increase at a modest rate of 3–5%/year, Nye said, some terminals would have to double their capacity, as TraPac and Middle Harbor are doing through automation, or they will not be able to handle cargo volumes in the next 10 years. For those terminals, the decision to automate will be commercially driven, and the environmental benefits in terms of an almost fully-electrified operation will be a residual by-product. **PH**

# Digital future

Automation within all areas of the supply chain is an irresistible force

**T**wo years ago at the 29th World Ports Conference, IAPH delegates were warned by futuristic thinker Gerd Leonhard, CEO of Futures Agency, about the coming surge in automation over the next few years. He told delegates, "There will be faster technological change in the next 20 years than in the past 300 years."

"Everything that can be automated will be automated."

Ports need to look outside their operations and look at which aspects are "digitally contestable", he said. "If you do not get ahead of the curve in the digital revolution, someone from outside the ports sector who is better qualified will take those parts from you."

Slowly the port automation story is unfolding, with many new terminals having at least part of their land-side logistics automated. Digitalisation and automation is creeping into more elements of the supply chain and pioneering companies such as APM Terminals, DP World, and ICTSI are leading the conversation.

When Maersk Line and IBM announced a collaboration that will see the carrier develop a digital system allowing transparency to customers and cutting costs while reducing fraud and errors, the company's chief digital officer, Ibrahim Gokcen, told *Fairplay* that it was his job to change Maersk from "a shipping company that does a little IT, into an IT company that does a bit of shipping".

Known as Blockchain (see Maritime Update p32), the solution developed by IBM and Maersk for exchanging data and information, will enable the Danish carrier to develop a digital network that will manage all the transactions associated with shipping cargo from one country to another. Saqr Ereqat, Blockchain evangelist and management consultant at technology provider IBM, told the InsurTech Integrated Conference in April that the cargo sector had the ability to save billions if it simply moved its manifests and documentation online. It is planned to be up and running this year.

This shows that the supply chain landscape is now changing. Amazon, Alibaba, and Walmart are taking over the logistics chain and will soon be chartering their own ships and leasing terminals. The increase in digitisation and automation in shipping, coined as Shipping 4.0 and its land-side equivalent, Industry 4.0, are being realised through automation at ports, data sharing, port and logistics software, satellite communications at sea, and the notion of automated or autonomous ships.

It is an uncertain landscape with few, if any, certainties but two years on, Leonhard's theory seems even more likely, with automation of the entire logistics chain just around the corner. **PH**





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# Busan and beyond

South Korea puts greater focus on overseas port investment as it looks to secure its place in the global maritime value chain, **Xiaolin Zeng** reports



Port of Busan: 984657

South Korea is taking measures to accelerate its interests in overseas port assets in a strategy that the government and key public and private sector players see as increasingly important to the future health of its commercial maritime sector and the economy as a whole.

The country's Ministry of Oceans and Fisheries (MOF) hopes a recently established support centre for overseas port development will help to smooth out some of the significant challenges inherent in undertaking port investment and development projects outside the domestic economy.

Set up about one year ago, the Korea Port Development Support Center assists state and private-sector stakeholders to better handle the complexities of overseas investment deals. Among other things, this includes identifying and selecting the right opportunities, gaining a better understanding of local market conditions, securing funding for projects, navigating regulatory requirements at home and abroad, and making sure deals and projects get completed.

Although accelerating investment in overseas facilities has been on the radar for some time, last year's collapse of Hanjin Shipping has given it additional urgency. In the wake of the failure of its

largest container shipping line, building a bigger port presence globally is widely considered an important means to maintain South Korea's important position in the global maritime value chain.

Investment in overseas port assets, with either direct or indirect support of national governments, has become more high-profile in recent years, with several major global economies stepping up the practice. This is most notable in the case of China, where the high-level and government-directed Belt and Road programme is resulting in Chinese-invested ports and terminals appearing in many places around the world.

For South Korea, overseas port investment, particularly in high-growth emerging markets, is seen as important to support the competitiveness of its large export sector. Port asset ownership can help secure and facilitate access to lower-cost labour and raw materials as well as provide easier access to new and growing demand markets. A further direct benefit for the national economy is the potential creation of markets for its construction sector and industries that support the development of infrastructure.

It is also hoped that overseas projects can help to breathe new life into the relatively mature domestic port sector. While there are several large port projects





**South Korea is investing and developing both at home and overseas**

under way in South Korea, including the USD8 billion Busan North Port redevelopment, and there is good throughput growth at some facilities such as Incheon on the west coast, the perception is that opportunities in the domestic sector will be increasingly limited going forward. Investment overseas has the potential to both drive more business to home ports where growth may be slowing and to create commercial opportunities for South Korean state and private-sector shipping and logistics concerns.

As the largest port in South Korea and the sixth-largest container port in the world, Busan is leading the charge for overseas expansion among South Korean operators. According to Busan Port Authority (BPA) CEO Woo Ye Jong, this is a strategy that will play a major part in defining the future of the port.

"We want to pass on our know-how in the operation and development of Busan Port to developing countries that need port infrastructure for their economic growth," said Woo, a former deputy minister for planning and co-ordination at the MOF.

As part of efforts to sustain its position as one of the world's largest container transshipment hubs, Busan has already made significant forays overseas. One project worth highlighting is its USD1.3 billion investment in a wholly owned logistics centre in the reclaimed Maasvlakte area of Port of Rotterdam. Here BPA leases space to South Korean and other exporters, with the immediate objective of boosting the volume of parts and products currently shipped between the two hubs.

BPA is known to be looking at several other high-profile overseas investments, including a possible stake in a terminal in Spain's Algeciras port and a potential build-operate-transfer project in Iran under phase three of the redevelopment of Shahid Rajaei port.

BPA's involvement in the Iranian project came with the signing of a memorandum of understanding on port development between the MOF and the Iran Road Development Organization.

While the relationship between the Trump administration in the United States and Iran may have an ultimate impact on the extent and nature of South Korean involvement in port projects in Iran, the government is optimistic about progress made so far.

"With the feasibility study of port development in Iran currently in progress, we have a stepping stone to enter the Iranian market," said Choi Myung-yong, ports director of the MOF following a seminar in Tehran on bilateral co-operation on port projects in Iran held at the end of 2016.

As initiatives progress, mechanisms to fund projects are becoming more critical. A significant challenge in this respect is convincing conservative domestic financial institutions of the investment potential in maritime assets. This is no easy task, particularly in light of the recent and high-profile financial problems among key players in the country's maritime sector.

According to Kwon Joon-Young, head of port investment at the MOF, this is one of the reasons the Korea Port Development Support Center was set up.

"We will help banks, which are known to be conservative, to understand the characteristics of the port industry," Kwon said at a March seminar in Seoul that brought together port industry stakeholders, construction companies, and financial institutions.

The government hopes South Korea's large multinational exporters, which stand to benefit from the overseas investment drive, will also contribute funds. Under a recovery and financing plan for the shipping industry released last year, South Korean beneficial cargo owners (BCOs) are permitted and encouraged to expand investment in shipping and logistics assets and infrastructure, including the acquisition of terminals.

Due to competition concerns, BCOs were previously only permitted to invest in shipping and logistics assets on a limited basis, and generally passed up opportunities to invest in the sector. But as major stakeholders responsible for much of the economic value in supply chains, their support is now seen as an important element in the development of a stable and competitive international seaborne cargo transport sector.

"The idea is that by jointly investing in vessels and terminals with the industry, shippers can secure more stable capacity and reduce export costs through the creation of a more competitive global shipping network," said Chang Ho Yang, the president of the Korea Maritime Institute (KMI), a national maritime policy research body and industry think-tank.

The China-led Asian Infrastructure Investment Bank (AIIB) has also been touted as a potential source of funding. The 52-member multilateral investment bank, in which South Korea holds 3.8% of shares, was set up to support the building of infrastructure in Asia Pacific. At the seminar in March, Seoul City University professor Kang Myung-gu said the bank's business-oriented approach could make it a useful source of funding for overseas investments by South Korean port authorities and terminal operators.

Beyond funding, industry stakeholders have noted that there are aspects of the South Korean regulatory regime at present that continue to make overseas port investments a challenge. For instance, while port authorities are permitted under the Port Construction Act to build and manage overseas ports, they need to obtain approval for this from the ministry of strategy and finance, regardless of the investment amount.

It was this requirement, together with other bureaucratic procedures, that is believed to have hamstrung an attempt by Busan Port Authority to acquire Hyundai Merchant Marine's (HMM's) stake in Hyundai Pusan New Port when the shipping line put it up for sale as it was battling a liquidity crisis in early 2016. Because of the paperwork and approvals that were required, HMM eventually sold the stake in the terminal to PSA International. **PH**



E+/Getty Images: 5043998

## New dawn for US ports

Under the Obama administration, federal funding and government programmes led to a mostly positive eight years for US ports. Now, with a new president in the White House and a changing logistics landscape, past IAPH president, **Geraldine Knatz**, considers the changing role of port collaborations

**D**uring the period from 2007–16, increased competition faced by seaports, resulting from the consolidation of the ocean carrier industry, a slower forecast for US container trade growth, port congestion on the US west coast and the potential for shifting trading lanes from an expanded Panama Canal became the predominant force driving change in the US port industry.

The response to this increase in competition has come from actions at federal, state, and local government level, including the ports themselves. The US federal government responded through increased funding through programmes such as TIGER (Transportation Investment Generating Economic Recovery) grants, greater agency engagement, including that of the Federal Maritime Commission, modest reform of the harbor maintenance tax, and legislation regarding the establishment and reporting of port performance metrics. State governments invested and took steps to position their ports to withstand increased competition. At local level, ports responded through strategic

collaborations and by shifting from traditional landlord roles to more active roles in facilitating the supply chain.

The evidence of a heightened competitive environment, and greater risks, for seaports in the US has taken several forms. Inter-port competition has intensified as improved inland freight infrastructure provided port users with the ability to substitute ports to reach hinterland markets. The Panama Canal expansion, completed in 2016, intensified competition between coastlines; on the US east and Gulf coasts, the expansion of the Panama Canal, viewed as an economic opportunity for port cities, stimulated port facility development to handle a potential increase in cargo. The potential for federal funding was a further impetus for 'canal fever' as some east coast seaports pursued speculative investments in anticipation of increased cargo volumes. Economists with Boston Consulting Group had predicted a 10% shift in market share from the west coast to the east coast with the opening of the expanded canal but that has not materialised.

The actions taken by ocean carriers to restore



**West coast Port  
of Los Angeles.  
Economists  
forecast a 10 %  
cargo shift from  
west to east ports**

profitability, besides restructuring their own debt or seeking government subsidies, have major implications for ports. As container alliances rationalise their assets, they are motivated to call at the most efficient port terminals that can handle the larger container ships. The alliance carriers now engage in a process of near continual evaluation of their terminal selection. When coupled with ocean carriers divested of their obligations to call at specific terminals, ports and their terminal customers face greater challenges in trying to bind an ocean carrier's volume for the long term.

These industry dynamics, therefore, make investments in port infrastructure riskier. For large container ports, the traditional landlord port business model of building for a customer and recouping investment over the period of a long-term lease may no longer be viable.

The response by US ports to protect their markets and mitigate risk has taken many forms, including regionalisation, self-regulation, and role modification. There is increased collaboration among seaports, including those that have traditionally been competitors, and between ports and their state governments. An example is the 2015 merger of cargo operations in Seattle and Tacoma to create the Northwest Seaport Alliance, the most dramatic governance change in the US port industry in decades. The creation of the alliance was a strategic step to address market uncertainties created by changes in the ocean shipping industry. The governance change at the seaports of Seattle and Tacoma resulted from their own managements' analysis of market conditions and, significantly, were not imposed by an outside authority.

Separately, landlord seaports are beginning to move beyond their traditional roles and inject themselves directly into the business of their customer. US ports are undertaking activities that have not commonly been done by landlord ports without fundamentally changing their status as landlord ports. In this regard, they are not moving beyond landlord port status as much as changing the definition of services that landlord ports provide. An example of this was the greater use of the Los Angeles and Long Beach seaports'

regulatory powers being employed in 2006 to effect uniform and consistent environmental changes in port and terminal operations. In response to the congestion issues that began in 2014, both ports have sought to become supply chain participants. For example, at the height of the 2014/15 congestion at San Pedro Bay, Port of Long Beach made a significant effort to expand its role by announcing plans to purchase and supply container chassis. Its efforts to enter the marketplace were unsuccessful, however, when a request for proposals attracted no response. The action, however, reflected the port's intent to consider non-traditional services or activities when necessary to improve cargo flow.

State governments have stepped in in a much larger way in some cases. Florida, the third most populous US state, has engaged in unprecedented state support to enhance the competitiveness of its 15 ports. From 2010 to 2015, the state committed more than USD850 million to improving infrastructure serving its ports. A USD220 million investment was made at Port of Miami to dredge a deepwater channel, completed in 2015, and another USD1 billion to construct a tunnel to improve port access, completed in 2014. Florida's financial support of its seaports is unprecedented among the US states and reflects its view that its seaports are an integral part of economic development and job growth strategy. The state aimed to position its seaports as a global gateway to handle cargo growth anticipated from an expanded Panama Canal.

Where are these developments leading as port continue to experience greater competitive pressures? Consolidation of terminals within container ports is the next logical step to reducing intra-port competition. Landlord ports with multiple smaller container terminals could consider changes in their traditional leasing practices to facilitate collaboration among terminals within their port jurisdiction. This may include devising solutions to address the existing framework of long-term leases to facilitate the merger of terminal operations between different private operators. Seattle and Tacoma chose a change in governance as a mechanism to become more competitive. Where political conditions make a port governance change infeasible, terminal mergers and alliances within a port or port region might be a collaborative strategy to consider.

The outlook for the future is a continued trend toward greater integration among seaports and their terminal operators. Loss of business and cargo volumes tends to bring greater political scrutiny of a public port's operation or administration. Should over-investment and market conditions lead to stranded assets in seaports, empty terminals, or financial downgrades, there are likely to be more calls for regional solutions, regional collaborations and governance changes. Overall, the static governance among US ports of previous decades is likely to be replaced by continually evolving strategies to address market dynamics. **PH**

**Consolidation of  
terminals within  
ports is the next  
logical step**

**Geraldine Knatz**  
*Former IAPH president*



IAPH 1609904



Eir/Getty Images: xxxxxxx

Blockchain will see each stage of the shipment of a container digitised and visible to the users of the supply chain

## Blockchain set to revolutionise supply chain

After 50 years of paper-trails that stretch across the globe, the container shipping industry has finally entered the electronic age following Maersk's announcement that the group is to launch Blockchain, an electronic documentation and tracking software development that is set to revolutionise the industry.

Blockchain is a secure system that allows shippers and other supply-chain stakeholders, such as regulatory and customs authorities, to track cargo and its documents, which are visible and transmitted electronically.

According to Ibrahim Gokcen, who was appointed chief digital officer at Maersk in January, the

cultural and technological challenges the industry will need to embrace will bring great changes. "The culture will change, the skill sets will change, collaboration will change, there will be lots of change and it is all driven by customer expectation," said Gokcen.

Those changes come in the form of digitalisation that will not only cut costs but, more

importantly, increase efficiencies for both shippers and operators alike. Maersk's chief financial officer, Pierre Danet, pointed out that the company had achieved vessel utilisation of 93% last year on the headhaul legs of their services. "We cannot afford to let utilisation fall to below 90%; we are not going back to 88%," he said.

Achieving those high utilisation

figures will be down to steady volume growth, being disciplined on capacity deployment with partners in the 2M Alliance and, crucially, leveraging the digital tools available.

Danet believes the greater visibility afforded by the digital transfer of cargo information will allow the line to plan capacity more efficiently and adjust capacity accordingly. It is these operational efficiencies that Danet says will realise the bulk of cost savings.

Fewer people will be employed as a result of digitalisation, Danet admitted, but added, "We had revenues of USD20.7 billion last year and costs of USD21 billion. While costs for SG&A [selling and general administration], the back office work, were less than USD2 billion, the operational expenses, including vessel deployment, operations at logistics centres, terminal fees, crew transshipment fees were USD18 billion. We are in an asset-heavy world and that is where we can deliver value and optimise the bottom line."

Roll-out of the Blockchain software will come later this year, Gokcen said, after the pilot studies, which Maersk conducted with Schneider Electric, proved the technology worked. "The next set of pilot projects with entities within the supply system will let us understand which companies would benefit from the system," he explained. "It's a typical software development project: prove it works and expand to broader availability."

Each stage of the shipment of a container needs to be digitised in order to eliminate the paper chain and each stage needs to be visible to the users of the supply chain,

### Maersk pilot studies

IBM and Maersk have already piloted the Blockchain system using a number of partners, including shippers, the ports of Rotterdam and Newark, the US Department of Homeland Security Science and Technology Directorate, and US Customs and Border Protection under the auspices of a European Union research project.

## Notable numbers

103

LNG-fuelled ships, with 97 on order



6

tonnes: daily carbon reduction expected at VO Chidambaram Port though on-shore power



but people “need to be comfortable that others in the Blockchain eco-system are an authentic party,” Gokcen added. However, he noted that Maersk needed to identify the “pain-points” where difficulties are experienced with Blockchain and iron out these problems so inefficiencies are reduced.

“Shippers are often keen to know where a box is, for example, and if you imagine that as a box enters a port and each time it moves through the port it must get a stamp, this slows the documentation process and in some cases documents are flown by plane to the destination port, so this is a pain-point,” he said.

Every year shippers pay for this paper trail and the cost globally amounts to trillions of dollars, so with the new system the efficiencies will see the costs for shippers significantly reduced.

However, Gokcen, who joined Maersk in April 2016 as head of analytics, also pointed out that Blockchain was not the end of the digitalisation process, but rather just a part of the process, which would see the company take on more partners, such as those already announced, including Alibaba in China and Microsoft.

Big data will be a key element for the efficient use of the company’s assets and the cloud-based systems that will provide Maersk with greater insights into the operations of its key assets – more than 300 owned vessels – will be a key element to the company continuing to drive down costs and make further efficiencies.

## US endorses armed guards in wake of Aris 13 attack

The United States’ top maritime safety regulator has advised commercial shipowners that their best defence against a pirate attack is to continue to invest in a private security force on board vessels.

Speaking to the media following prepared remarks on the state of the coastguard at the National Press Club in Washington, DC, on 16 March, US Coast Guard commandant Paul Zukunft told reporters that while hiring armed guards was expensive, “there has yet to be a successful attack by pirates against a ship with private security teams.

“Meanwhile [pirates] have demanded [multimillion dollar] ransoms, and the crew taken hostage often suffer human rights abuses. So when you look at it from that standpoint it’s a modest investment.”

Zukunft’s comments were made following the attack in March by Somali pirates on Sri Lankan-flagged bunkering tanker *Aris 13*. It was believed to be the first seizure by pirates of a commercial vessel since 2012.

The EU Naval Force (Navfor), which is currently operating the Somali coast, received confirmation from the master of the vessel shortly after the attack on 14 March that his ship and crew were being held captive in an anchorage off the Somali state of Puntland.

According to reports on

16 March, the pirates had released the ship and its crew without conditions after local officials opened negotiations. The pirates were not arrested and were allowed to leave, according to the *New York Times*.

The attack rekindled fears of new threats against commercial shipping in the northern Indian Ocean, particularly in the Gulf of Aden, which was a piracy hotbed five years ago.

As commercial operators began using guidelines approved by the International Maritime Organization (IMO) and other agencies, attacks dissipated in the region while picking up elsewhere, including the Gulf of Guinea in west Africa.

Nautilus International, a UK-based trade union representing 22,000 ship masters and other officers, expressed concern that the absence of attacks leading up to this week’s seizure had lulled anti-pirate security forces, as well as shipowners, into complacency.

In a 15 March letter sent to British foreign secretary Boris Johnson, Nautilus stated that it had “made repeated warnings about the need to maintain the EU Navfor presence in the face of evidence showing the continuing potential risk to shipping in the Indian Ocean and Red Sea”.

Nautilus official Andrew Lington cited a failed pirate attack in November against

UK-flagged chemical tanker *CPO Korea* as evidence that piracy could reappear. “The piracy threat off Somalia never really went away, we just had a lid put on it pretty well,” he said.

“I think generally there’s a worry that the shipping industry may have become a bit relaxed given the lack for so long of successful attacks, and so [the *Aris 13* attack] is a bit of wake-up call for everyone.”

With NATO ending its Operation Ocean Shield counter-piracy effort in December, citing no successful pirate attacks since 2012, Lington said Nautilus was concerned about UK’s vote to withdraw from the European Union and what it would mean for the protection of commercial shipping.

“The International Maritime Bureau said it only takes one successful incident to rekindle the whole thing, so right now, it’s wait and see as to how this pans out,” he said. “But if tangible evidence emerges that the situation is deteriorating again, measures such as recommending our members to use armed guards need to be revisited.”

In a separate incident, in April Indian dhow, *Al Kausar*, was captured by pirates. Somali security forces recaptured the vessel and two of the crew. The remaining nine crew members were used as a bargaining chip to get 117 jailed pirates released by Indian authorities.



# 8,000

teu: Port Botany's  
2025 target for  
container ship size



# 2

New regular  
members join IAPH



# More ships sign up to ESI

The number of shipping companies and port incentive schemes to register with IAPH's Environmental Ship Index (ESI) continues to rise, with nearly 400 joining since the beginning of the year.

This year has seen 269 vessels with a score of 20 or more join the ESI. A further 129 with a score of less than 20 joined, along with one incentive provider.

The most notable increases were seen in the score brackets of 20–30 with a further 132 vessels, and 30–40, with 128 ships. The 40–50 bracket saw a more

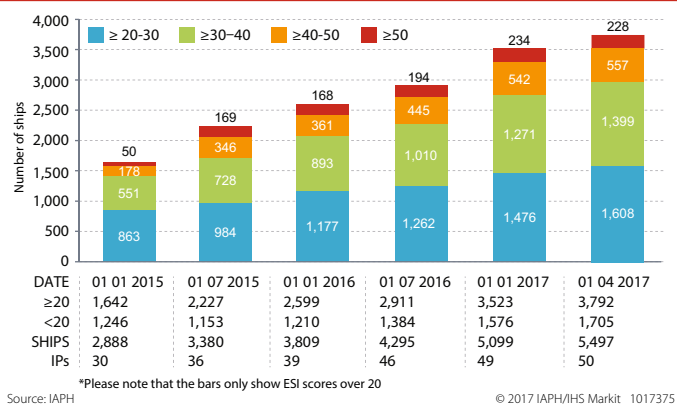
modest growth of 15, with 50 and above losing 7 vessels.

The ESI system scores ships according to their emissions of CO<sub>2</sub>, SO<sub>x</sub> and NO<sub>x</sub>, with a score of 0 denoting a ship that is just compliant with regulations to 100 for those that perform exceedingly well. The ESI was developed as part of the World Ports Climate Initiative, whose other projects include LNG-fuelled vessels and on-shore power.

**MORE INFO:**

[wpci.iaphworldports.org](http://wpci.iaphworldports.org)

## ESI scores



## IMO to lead on cuts to EU shipping emissions

European Union transport ministers have come out in favour of letting the International Maritime Organization (IMO) take the lead on the reduction of greenhouse gas emissions in the shipping industry.

The ministers, who met in Valletta, Malta, at the end of March, have called on EU member states and the European Commission to work with the IMO to produce an ambitious greenhouse gas emission strategy in 2018, as provided for by the roadmap drawn up by the IMO Marine Environment Protection Committee in October.

The European Parliament recently adopted draft legislation providing for shipping to be included in the EU emissions trading scheme in 2023 in the absence of an acceptable IMO alternative by 2021.

This measure is under discussion between the parliament, the European Council, and the European Commission but the transport ministers have come out clearly in favour of giving priority to global measures from the IMO.

Once a global system has been established, they say, EU regulations on emissions monitoring, reporting, and verification should be amended to bring them into line with it.

The ministers' recommendation is contained in the Valletta Declaration, a text adopted at their meeting, which sets out what they consider should be the priorities of EU shipping policy up to 2020.

The document should form the basis for EU shipping policy for longer than that, however, following the expiry next year of the existing strategy, which was initiated in 2009.

Apart from "decarbonisation", the declaration gives priority to maintaining and improving the competitiveness of the EU shipping industry and the promotion of digitalisation. It also calls for the establishment of an efficient internal market and a world-class maritime cluster.

The 26-point document stressed the need for continuing progress on port and multimodal efficiency and swift implementation of such 'Blue Belt' measures as the harmonised electronic cargo manifest and the single window for ship reporting.

Although the declaration is essentially a statement of good intentions rather than an announcement of concrete measures, it has been welcomed by the European Community Shipowners' Associations.

Its president, Niels Smedegaard, who addressed a video message to ministers and stakeholders in Valletta, said it represented "an important foundation to prepare the EU shipping strategy for the next decade". He called for the EU to take a more globally minded approach to shipping, however, going beyond the demands of the EU market itself.

"The good news is that EU shipping policy as outlined in the current maritime strategy provides an excellent basis," he said.

Private port operators' organisation FEPORT welcomed the emphasis in the declaration on the need for efficient port operations. It drew attention particularly to work in progress at the European Commission on the General Block Exemption Regulation, notably with a view to applying it to certain types of port investment.

**This is an important foundation for EU shipping strategy**

**Niels Smedegaard**  
ECSCA president





# HMM cautious of investing in ultra-large container ships

South Korean integrated logistics and containerised freight transport company. Hyundai Merchant Marine (HMM) has taken a cautious approach to ultra-large container ships (ULCCs), as it announced an order for very large container ships (VLCCs).

Company CEO Yoo Chang-keun told an industry conference on 5 April that the company would order VLCCs that month, and would order five smaller container ships, with capacities ranging from 2,500 to 3,000 teu.

Yoo had said that because of HMM's co-operation with the 2M alliance, comprising Maersk Line and Mediterranean Shipping Company, the company could not order ULCCs.



**An HMM vessel with an MOL vessel at Los Angeles. HMM announced in April it would order very-large as opposed to ultra-large container carriers**

Clarifying Yoo's comments, a company representative said, "HMM has plans to order small to

medium-sized container vessels and VLCCs in 2017 by using the South Korean government's

newbuilding funding programme, but would not be engaged in overly active fleet expansion." Instead, HMM will focus on enhancing its internal stability and rebuilding trust with customers.

"However, HMM expects to improve its cost competitiveness by using 2M's mega vessels through strategic co-operation."

The representative added that HMM would use another government support programme, the Global Shipping Fund, which has USD870 million, to acquire more terminals or port equipment to expand the company's port network and strengthen sales competitiveness by reducing handling costs.

## United States outlines cyber risk management path

Fast-approaching governance over maritime cyber risk management by US regulators took centre stage on the first day of the Connecticut Maritime Association (CMA) annual shipping conference in Stamford, Connecticut.

Speaking during CMA's opening session on 20 March, Paul Thomas, the US Coast Guard's (USCG's) assistant commandant for prevention policy, told delegates his agency would shortly publish highly anticipated policy guidance that would begin moving USCG oversight of cyber risk from awareness and recommendations to actual regulations.

"This new phase beyond awareness is focused on the basic components of governance that we can all use to get at the risks associated with the operations and maintenance of existing cyber systems, and can help mitigate the risks inherent in these systems because of how they were designed and integrated into your ships before you were focused on cyber," Thomas said.

The policy, which will be published in the form of a Navigation and Vessel Inspection Circular (NVIC), will provide guidelines for cyber risk management and for the installation of governance at regulated port facilities, Thomas said. "Our intention is to require that the basic components of governance,

including the identification of critical cyber systems that are used today to meet coastguard regulatory requirements, are addressed in the next facilities security plan for our highest-risk facilities," he explained.

An NVIC does not have the force of law. However, not complying with an NVIC could mean that vessel operators are not complying with a related law or regulation.

Thomas pointed out that while the impending cyber NVIC would not apply directly to vessels, "it will be a useful reference for ship operators who are looking to install governance over cyber risk management particularly through a safety management system".

Guidance over cyber management in the maritime sector has increased significantly in the past two years, both at international level through the IMO and domestically within federal administrations.

Earlier this year the USCG issued a directive exerting more pressure on vessels and terminal operators in the United States to report suspicious cyber threat activity to the agency's National Response Center.

Charles Ray, the USCG's deputy commandant for operations, said during his keynote address earlier in the day that "few challenges present more complexity than

cyber risk management" for shipowners. Ray predicted that the industry could see enacted within the current US Congress legislation a requirement for the development of guidelines for voluntary reporting of maritime-related cyber security risks and incidents.

The USCG, which leads the United States delegation at the IMO, will be increasing its cyber oversight internationally as well. Thomas revealed that the United States would be submitting a paper for consideration at the IMO's 98th Maritime Safety Committee session in June. This will make the case for installing governance over cyber risk as part of the safety management systems that are already required by the International Safety Management (ISM) Code.

"Our paper will suggest a timeline for port state control officers to begin asking how cyber risks are managed within a safety management system, as required by ISM [Code]."

Thomas said that the next step in the USCG's cyber oversight regime would be to mitigate the inherent risk in cyber systems "by putting in place standards for the design and construction and integration of shipboard cyber systems, in the same way that we currently set standards for the design and construction of propulsion and electrical systems."

Port of Rotterdam: 941713



**Excilibur at Rotterdam's Gate Terminal, where Sovcomflot's LNG-fuelled vessels will get their bunkers**

## LNG-fuelled tankers arrive in 2018

Shell Western LNG, part of the Anglo-Dutch energy giant Shell, is to supply liquefied natural gas (LNG) to fuel four Aframax newbuildings for Sovcomflot, the Russian state-owned tanker company. They will be the world's first crude oil tankers to use LNG, Sovcomflot said in a statement.

"The agreement calls for Shell to provide the LNG fuel for the

new generation of Sovcomflot Group's 114,000 dwt ice-classed Aframax tankers that are scheduled to come into operation beginning in the third quarter of 2018. They will be the first LNG-fuelled Aframax tankers and will operate primarily between the Baltic and northern Europe transporting crude oil and petroleum products."

Shell will fuel the vessels from a LNG bunker vessel at the Gas Access to Europe or Gate terminal in Rotterdam and other supply points in the Baltic. Each LNG-fuelled tanker will have an ice-class 1A hull, enabling year-round export operations from the Russian ports on the Baltic. "The signing of this milestone agreement marks the fulfilment of an memorandum of understanding signed between Shell and Sovcomflot in September 2015 to develop marine LNG fuelling for large-capacity tankers," Sovcomflot said.

Engines running on LNG reduce sulphur oxide (SO<sub>x</sub>) emissions by more than 90%, those of nitrogen oxide (NO<sub>x</sub>) by more than 80%, and cut carbon dioxide (CO<sub>2</sub>) emissions by 15% compared with engines burning standard marine fuels. "In addition, the selection of the low-pressure X-DF dual-fuel engine for these tankers will minimise particulate matter emissions. Further, the engines will be fitted with selective catalytic reduction technology to comply with Tier III regulations governing NO<sub>x</sub> emissions when in fuel model," Sovcomflot said.

The news came after LNG World Shipping reported on its website on 21 March that the number of seagoing merchant vessels in service and on order

with LNG fuel had reached 200, comprising 103 ships in service and 97 on order. The figures a year earlier had stood at 162 in all, with 74 in service, and 88 on order.

Passenger vessels led the way in the use of LNG, with 32 vessels in service and 23 on order. These range from small ferries to very large cruise vessels. Scandinavian owners such as Alvtank, Furetank, and Thun Tankers have introduced LNG-powered product tankers.

LNG has proven most popular for vessels that call at the same ports on each voyage, such as ferries, because then the supply of the fuel has been easy to arrange. However, the Shell-Sovcomflot news suggests that fuel suppliers are becoming increasingly flexible to deliver LNG at a widening number of ports.

However, an offshore supply vessel (OSV) industry speaker at a presentation in Alesund in Norway in September said OSV owners that had fitted newbuildings with LNG power had faced a higher capital expenditure than with the traditional fuel option. Charterers had not compensated owners for this in a market that is severely oversupplied with OSV tonnage. As the charterer pays for the fuel, any cost savings had become the benefit of the charterer.

## Maersk calls for improved recycling standards

Maersk sustainability, strategy and shared value projects head John Kornerup Bang has called on the group's fellow shipowners to join it in helping to raise environmental, safety and social standards in India's Alang ship recycling zone.

Maersk group caused controversy when it

announced a year ago that it planned to send some of its ships for recycling in Alang despite concerns about the standards applied by companies operating there.

It is currently close to completing the recycling of two Panamax vessels it sent to

Shree Ram in Alang last year and, in recent months, has sent four more vessels, two to Shree Ram and two to Lucky Group.

Maersk is waiting to find out if any Alang recyclers succeed in being included on the latest approved list of the European Union.

### Notable numbers



# 397

Ships continue to join the ESI



# 37

Entries for this year's IAPH awards



# US closes in on ballast-water tipping point

Maritime interests have much to gain – or lose – from US government proposals affecting how ships comply with ballast water treatment regulations.

How quickly these schemes can be shaken loose from a Congress dealing with weightier issues such as tax reform, or a presidential administration still drafting blueprints for domestic and foreign policy, is unclear.

As far as vessel operators are concerned, the most important provision of the Commercial Vessel Incidental Discharge Act (VIDA), introduced in the US Senate earlier this year, would allow the federal government to block states from enforcing their own more restrictive ballast water discharge standards. VIDA would also eliminate dual US Coast Guard (USCG)-Environmental Protection Agency (EPA) oversight, instead giving the USCG sole authority to enforce the regulation.

“We think this is the way to go,” Paul Thomas, the USCG’s highest-ranking official on environmental safety, told Congress last year. Much of the shipping industry thinks so too, especially since the regulation is expected to cost shipowners billions of dollars in ballast water treatment equipment.

But the environmental lobby, and states such as California, Michigan, and New York, do not agree with Thomas. They contend that invasive species introduced through ballast water are disrupting ecosystems, in

addition to costing hundreds of millions of dollars every year in lost fishing and recreational business. They want to maintain the ability to impose tougher restrictions and penalties.

Some ballast water equipment manufacturers, particularly those that use ultraviolet (UV) radiation to treat ballast water, see a potential windfall in VIDA. The proposal contains a provision that requires the USCG to use a “most probable number” method when determining the number of organisms present in ballast water during type-approval testing, as against the current “live-or-dead” testing regime.

The change could open the door wider for more type-approved treatment systems that employ UV disinfection technology, because UV systems are less economically efficient at treating ballast using the live-or-dead testing than chemical-based systems.

If it makes it on to President Trump’s desk for signing into law, VIDA will have a major effect on another ballast water proposal that maritime interests are watching closely: the drafting by EPA of its new Vessel General Permit (VGP).

The VGP regulates all kinds of discharges, including ballast water, through the landmark Clean Water Act.

The new VGP is expected to be published sometime between July and September, and scheduled to go into effect in December 2018. It will replace

the expiring 2013 VGP, but with a major potential caveat: it could require US ports and marine terminals to provide on-shore ballast water treatment.

Filtering ballast water through onshore treatment is one of the ways shipowners are allowed to comply with US ballast water regulations. But on-shore treatment is considered far less practical than installing ballast water equipment on board ship, because there are practically no such on-shore treatment facilities available in the US.

Incorporating an on-shore provision into the VGP would be a costly added headache for ports and terminals in the United States, which, like other maritime industry groups, support a uniform federal ballast water scheme that is allowed to preempt state laws.

Some in the industry have argued that the Trump administration, even with regulation-buster Scott Pruitt heading the EPA, would have limited ability to alter the new VGP. And that, they say, makes passing VIDA, which strips the EPA of its ballast water oversight, that much more urgent.

Lawmakers, notably Florida senator Marco Rubio, have proposed legislation similar to VIDA as far back as 2008. Previous attempts have all died before making it out of committee.

S.168 however, the latest version of the legislation, is further along the legislative pipeline towards enactment into

law than previous attempts. It has been voted through committee and, as of mid-April, was awaiting a floor vote in the Senate. Sources on Capitol Hill say that once that happens, Republicans in the House of Representatives are “ready to go” in approving the Senate bill, or drawing up and rubber-stamping a companion version.

The US is notoriously hands-off on policy directly affecting its maritime interests, but with significant money at stake for the vessel operators, shippers, and ports that support US imports and exports, a Congress and administration that has made international trade a rallying point may now be paying much closer attention.

A US government proposal that could effectively ban foreign-flagged vessels from operating in the American offshore oil and gas sector would cost that industry billions of dollars in investment each year, an energy industry-backed study has concluded.

The study, conducted by oil and gas consultancy Calash for the American Petroleum Institute (API), concludes that a big reason for the hit would be the inability to use foreign-flagged heavy-lift and subsea construction vessels to develop US offshore oil and natural gas projects, leading to project shortfalls and delays.

Backers of the proposed changes are adamant that they would bolster, not damage, the US offshore sector.



## 2017

Blockchain will roll out this year, Maersk says

## 5

HMM orders new VLCCs, but shuns ULCCs



## IAPH Membership Directory 2017 published

The *IAPH Membership Directory 2017* has been published and sent out to members. Big thanks to all the IAPH members who assisted us in keeping the contents up-to-date, as well as advertisers who kindly placed impressive adverts.

For free additional copies or any inquiries, please contact IAPH Secretariat at [directory@iaphworldports.org](mailto:directory@iaphworldports.org).

## Entries close for 2017 IAPH Awards

The IAPH Awards 2017 closed to entries on 31 January and we have received a total of 37 entries from IAPH members.

The screening process is now under way by a panel of judges established by and within the technical committees responsible for administering the awards: the Communication & Community Relations Committee (Akiyama, Bali Open and Port Communications

Awards); the Port Environment Committee (Environment Award); and the Trade Facilitation & Port Community System Committee (Information Technology Award).

The award will be presented during the upcoming 30th IAPH World Ports Conference in Bali, Indonesia, on May 7–12.

Please contact the IAPH Secretariat [info@iaphworldports.org](mailto:info@iaphworldports.org) if you require confirmation of



the receipt of your entry. Thank you for your active participation in the awards.

## Welcome to new members

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

### Regular members

#### Guangzhou Port Authority

**Address:** No 406 Yanjiang East Road, Port Center Yuexiu District, Guangzhou, China  
**Telephone:** +86-20-8305-0395  
**Fax:** +86-20-8305-0201  
**Email:** [djq@gzport.gov.cn](mailto:djq@gzport.gov.cn)  
**Website:** [www.gzport.gov.cn](http://www.gzport.gov.cn)  
**Representative:** Chang Min, director-general

#### Adani Petronet (Dahej) Port

**Address:** AT&PO Lakhigam, Taluka Vagra Via Dahej Bharuch 392130, Gujarat, India  
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**Email:** [anilk.singh@adani.com](mailto:anilk.singh@adani.com)  
**Website:** [www.adaniports.com](http://www.adaniports.com)  
**Representative:** Capt Anil Kishore Singh, chief executive officer

### Associate Member

#### Saab Technologies

**Address:** 300–3500 Gilmore Way, Burnaby BC, V5G 4W7, Canada  
**Telephone:** +1-604 689 7117  
**Fax:** +1-604 689 7117  
**Email:** [info@kleinsystems.com](mailto:info@kleinsystems.com)  
**Website:** [saab.com/maritime](http://saab.com/maritime)  
**Representative:** David Dagert, director of business development  
**Nature of business activities:** Supplier of port management information systems and terminal operating systems

#### Sealand Marine Inspection and Testing (M)

**Address:** 22A, Jalan Tiara 2C/KU1 Bandar Baru Klang 41150 Klang Selangor, Malaysia  
**Telephone:** +60-3-3341-8003/8503  
**Fax:** +60-3-3342-4203  
**Email:** [finance@sealandmarine-asia.com](mailto:finance@sealandmarine-asia.com)  
**Website:** [www.sealandmarine-asia.com](http://www.sealandmarine-asia.com)  
**Representative:** Sathiaselalan T Vijayantran, CEO  
**Nature of business activities:** Established as an independent surveying company, involved in all kinds of surveying and investigation, particularly container/cargo surveys, bunker surveys, cargo tally/damage surveys, special project cargo supervision surveys.

#### WaterGasRenew

**Address:** PO Box 1225 Newcastle NSW 2300, Australia  
**Telephone:** +61 2 4927 5511  
**Fax:** +61 2 4927 5522  
**Email:** [bdixon@palaris.com.au](mailto:bdixon@palaris.com.au)  
**Representative:** Bob Dixon, chief executive officer  
**Nature of business activities:** We design and manufacture products for operation in Australian ports and used primarily for the prevention and detection of, and intervention in, chemical and hazardous materials spills at ports and harbors.



2017

2018

2019

# Dates for your diary

A selection of forthcoming maritime courses and conferences



## May

- 7-12:** 30th IAPH World Ports Conference, Nusa Dua, Bali, Indonesia  
[www.iaphbali2017.com](http://www.iaphbali2017.com)
- 8-19:** APEC Seminar on port engineering, Antwerp, Belgium  
[www.portofantwerp.com/apec](http://www.portofantwerp.com/apec)
- 15-26:** Port Congestion & Strategic Container Traffic Management, London, United Kingdom  
[www.ttpminternational.co.uk](http://www.ttpminternational.co.uk)
- 18-19:** 6th Black Sea Ports & Shipping (\*20% discount for IAPH members), Batumi, Georgia  
[www.transporevents.com](http://www.transporevents.com)
- 29-30:** World Waterworks –International Exhibition & Conference in Coastal Waterway and Port Developments, Amsterdam, Netherlands  
[www.worldwaterworks.eu](http://www.worldwaterworks.eu)
- 29 May–9 June:** APEC Seminar on Intermodality: rail and inland navigation, Antwerp, Belgium  
[apecporttraining.com/port-courses](http://apecporttraining.com/port-courses)
- 31 May–2 June:** International Transport Forum, Leipzig, Germany  
[www.itf-oecd.org/summit-events/2017](http://www.itf-oecd.org/summit-events/2017)

## June

- 1-2:** 14th ESPO 2017 Annual Conference, Barcelona, Spain  
[www.espo-conference.com](http://www.espo-conference.com)
- 5-16:** Strategic Customer Relationship Management in Ports and Maritime, London, United Kingdom  
[www.ttpminternational.co.uk](http://www.ttpminternational.co.uk)
- Commences 6:** Certificate in container terminal operations and management, distance learning  
[www.lloydsmaritimeacademy.com](http://www.lloydsmaritimeacademy.com)
- 7-8:** European Environmental Ports Conference 2017, Antwerp, Belgium  
[www.wplgroup.com/aci/events](http://www.wplgroup.com/aci/events)

- 12-23:** APEC Seminar on Container terminal management, Antwerp, Belgium  
[apecporttraining.com/port-courses](http://apecporttraining.com/port-courses)

- Commences 13:** Certificate in Supply Chain Management, distance learning  
[www.lloydsmaritimeacademy.com](http://www.lloydsmaritimeacademy.com)

- 13-14:** AAPA Communications & Economic Development Seminar, Portland, Oregon, United States  
[www.aapa-ports.org](http://www.aapa-ports.org)

- 18-21:** PIANC AGA 2017 & Coasts and Ports Conference, Cairns, Australia  
[www.coastsandports2017.com.au](http://www.coastsandports2017.com.au)

- 19-30:** APEC seminar on dredging technologies, Antwerp, Belgium  
[apecporttraining.com/port-courses](http://apecporttraining.com/port-courses)

- 19-30:** Strategic Port Logistics & Global Supply Chain Management, London, United Kingdom  
[www.ttpminternational.co.uk](http://www.ttpminternational.co.uk)

- 26-30:** Seminar on dredging and reclamation (the Netherlands), Delft, Netherlands  
[www.iadc-dredging.com](http://www.iadc-dredging.com)

- 27-29:** TOC Europe, Amsterdam, Netherlands  
[www.tocevents-europe.com](http://www.tocevents-europe.com)

- 29-30:** The AIVP Days, Le Havre, France  
[www.aivp.org/lehavre2017/en](http://www.aivp.org/lehavre2017/en)

## July

- 3-7:** Managing Strategic Marketing and Competition in Ports & Maritime Trade, London, United Kingdom  
[www.ttpminternational.co.uk](http://www.ttpminternational.co.uk)

- 6-7:** 15th ASEAN Ports and Shipping (\*20% discount for IAPH members), Yangon, Myanmar  
[www.transporevents.com](http://www.transporevents.com)



## We value your opinions

Do you have strong views about any of the articles in *Ports & Harbors*?

Are there other industry issues you feel strongly about?

Email your views to [ph@iaphworldports.org](mailto:ph@iaphworldports.org) and we'll be happy to include them



Bambang Eka Cahyana



Elvyn G Masassya



Orias P Moedak



Doso Agung

# It's time to build business and friendships in Bali

The four hosts of IAPH 2017 – president directors **Bambang Eka Cahyana** of Pelindo I, **Elvyn G Masassya** of Pelindo II, **Orias P Moedak** of Pelindo III, and **Doso Agung** of Pelindo IV – welcome members to the port world's biggest event of the year

As the hosts of the 30th IAPH World Ports Conference (IAPH 2017), we are delighted to welcome members from across the globe. Indonesia has played an active role as a member country of this prestigious organisation. We believe that through this important event we will be able to share with you many of the experiences we have learned through the development and management of our country's port and maritime business.

As many members gather at the Bali Nusa Dua Convention Center (BNDCC) we will consider the port topics of the day through the lens of the conference motif: 'Enabling trade, energising the world'.

Our impressive speakers highlight the international relevance of IAPH and suggest that while every port may be different, many of the challenges remain the same. Topics include the evolution of the shipping industry and how this is and will continue to affect ports, green port

projects, technology, and the benefits of special economic zones. We will also take a closer look at how Indonesia is evolving its maritime sector to meet future demands.

We encourage you to look around the exhibition, which runs alongside the conference. Exhibitors are showcasing their technological innovations, products, and services related to the development of port and maritime industries.

The island of Bali was chosen to host the conference not just because of its reputation as a tourist destination, but also because of its proven track record of

hosting successful international events. It is also an opportunity to enjoy Bali's boundless and unique scenery, as well as its tradition and cultural heritage.

We also hope you enjoy the social programme, which has been created to offer you an excellent space for networking, business, and entertainment.

We believe the time you spend with us in Bali will be most rewarding and will lead to many positive experiences and friendships.

Welcome again and we hope that your participation will be productive and memorable. **I&H**

“We believe the time you spend with us in Bali will be most rewarding and will lead to many positive experiences and friendships”





**Taiwan International Ports CORP.,LTD**

# *Green Ports in Taiwan*



## *The First **Eco-Port** in Asia*

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# IHC CONGRATULATES ADANI ON THE LAUNCH OF THE FIRST BEAGLE® 8 TSHD



For Adani Ports, India's largest private multi-port operator, the development of this standardised series of trailing suction hopper dredgers came at the right time. They were looking for a lean, highly productive and reliable dredger. The launch ceremony of the 8,000m<sup>3</sup> TSHD SHANTI SAGAR 17 took place on 31 March. The second, SHANTI SAGAR 18, is scheduled to be launched in July 2017.



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