January/February 2017 Vol 62 No 1

PORTS HARBORS

Official Journal of the International Association of Ports and Harbors



Tapping Trump's trillionAAPA puts forward ports' perspective

LNG's long-term outlook Partnerships are key to building network

Robot roll-out Melbourne's fully automated terminal opens

Taking flight

Fresh investment sees west Africa's ports leave cities

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container handling and port equipment



D3513 Liebherr LRS645 Year of manufacture: 2012



D3479 Linde C4531TL Year of manufacture: 2009



D3478 Kalmar DRF450-60C5X Year of manufacture: 2005



D3514 Hyster H22.00XM-12EC Year of manufacture: 2012



D3515 SMV SL42-1200A Year of manufacture: 2002



D3509 Still R70-80 Year of manufacture: 2004



D3511 Liebherr LRS645 Year of manufacture: 2011



D3458 Linde C4535TL Year of manufacture: 2008



D3490 Kalmar DRS4531S5 Year of manufacture: 2004



D3491 Kalmar DCF100-45E7 Year of manufacture: 2010



D3362 Svetruck 32120-47 Year of manufacture: 1999



D3472 Linde H70D-01 Year of manufacture: 2010



Linde H50D-02 Year of manufacture: 2013



DK102

SMV SC4542TA5

Year of manufacture: 2004

D3510

CVS Ferrari F178

Year of manufacture: 1996

DK089

SMV 5/6 ECB90

Year of manufacture: 2007

D3464

Hyster H18.00XM-12

E4620

Hubtex EKS110

Year of manufacture: 2000



D3504 Linde C4535TL Year of manufacture: 2011

D3507

Kalmar DRF450-60S5

Year of manufacture: 2012

D3436

Valmet TD4212

Year of manufacture: 1994



Linde C4234TL Year of manufacture: 2011



D3494 Kalmar DRF450-65S5L Year of manufacture: 2012



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



DK038 Herbst - ATAIR HFH ATAIR IX D620 Year of manufacture: 2008



D3397 Svetruck 13.6-120-32 Year of manufacture: 2008



D3313 Manitou MRT1850 Year of manufacture: 2001



D3454 Kalmar DCF420-1200 Year of manufacture: 2008



D3442 Svetruck 1260-30 Year of manufacture: 2011



EL4785 Combilift ESL6000 Year of manufacture: 2010

Pics. details and video: www. ifts.com



D3512

Liebherr LRS645

Year of manufacture: 2012

D3508

SMV SC4542TB5

Year of manufacture: 2012

D3493

Kalmar DRD450-70C5X

Year of manufacture: 1998

Kalmar DCF100-45E7 Year of manufacture: 2008



D3503 Valmet TD3012 Year of manufacture: 1985





Flamingos on the move. As west Africa's ports outgrow their urban locations, deeperdraught facilities are being developed

Photo: Shutterstock

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COMMENT

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Precycle

New beginnings

A slow economy has to mean a different way of working for ports in 2017



Susumu Naruse Secretary General – The International Association of Ports and Harbors

Approximate the second second

World trade volume has grown a little more than 3%/year since 2012, less than half the average rate over the prior three decades. The International Monetary Fund reported that between 1985 and 2007, real world trade grew on average twice as fast as global GDP, whereas over the past five years, it has barely kept pace.

I have learned from experience a rule of thumb that an elasticity coefficient between growth in a rate of trade and of an economy will usually fall into a range 1.5–3.0, depending on the

■ I think the advantages and disadvantages of port alliances should be thoroughly studied ■ country. In fact, in the early 2000s, container throughput of Chinese major ports grew nearly 30% annually, with national economic growth of about 10%. But it cannot be applied any more. Moreover, it seems that anti-free trade movements have been prevailing all over the world. The WTO reported that in the five months to mid-October 2016, members of the world's 20 major economies

implemented an average of 17 trade constraints a month.

In these circumstances, the port industry needs to evolve old ideas and build a new industry norm. In order to survive this new era, it might be an idea to form an alliance of ports, like many shipping companies have. We have seen some good examples of port alliances such as GIE HAROPA of Le Havre, Rouen, and Paris and the Northwest Seaport Alliance of Seattle and Tacoma.

I think the advantages and disadvantages of port alliances should be thoroughly studied at one of our technical committees. We also need to formulate strategies on how ports should respond to the Paris Agreement and a variety of rules and regulations that the IMO has recently issued on the environment and safety.

It took a while, but now all the six IAPH vice-presidents are in office. A new position of managing director – policy and strategy is now being recruited. With these important positions being filled, we will be able to have a fruitful conference in Bali, Indonesia, this May. Please come and join us! PH



Port updates

ESPO CHAIR

Eamonn O'Reilly, chief executive of Dublin Port Company, was elected as chairman of the European Sea Ports Organisation (ESPO) at its general assembly. He succeeds IAPH president Santiago Garcia-Mila, who chaired the organisation for the past four years. The general assembly also elected Annaleena Mäkilä, executive director of the Finnish Ports Association, and Bernard Mazuel, managing director of the French Ports Association, as vice-chairs.

AZOV EXPANDS

The Russian seaport of Azov is to be expanded through land creation and the building of a new terminal. It will have three berths – two for grain shipments, one for general cargo – a 50,000-tonne elevator, a 700,000 tonne/year capacity, and will be able to accommodate vessels of up to 5,000 dwt.

WHARF REOPENED

A protected wharf in London, UK, is to go back into operation following its acquisition by Port of London Authority. Peruvian Wharf in Newham will be developed as a centre for lowcarbon transport of building materials in east London. The wharf has been protected since 1997 under official policy to safeguard strategically placed wharves for cargo handling.

GPA NUMBERS UP

Georgia Ports Authority in November reported a fiscal year-to-date growth of 4% for loaded container traffic, moving 1.01 million teu, an increase of 40,545 teu on the same period at the end of 2015. In October, the GPA handled 251,566 loaded teu, an increase of 5,876 teu on 2015, representing a rise of 2.4% and an all-time record for the authority. In December four new super post-Panamax ship-to-shore cranes arrived.



The Sri Lankan port of Hambantota will be majority owned by China

China buys into Sri Lanka port

Chinese state-controlled China Merchants has signed a deal with the government of Sri Lanka to buy an 80% stake in the south Asian country's Hambantota deepsea port.

In a deal expected to be finalised early this year, China Merchants Port Holdings (CMPH) will pay USD1.1 billion for the majority stake in the port, with the remaining 20% held by Sri Lanka Ports Authority.

"It is a genuine task aimed at sustainable economic development of the country. It is not an attempt to sell the Hambantota Port to a foreign country or a betrayal of the country, as some allege," government minister Malik Samarawickrema said in a statement confirming the deal.

Hambantota is located about 250 km southeast of the port of Colombo. China Exim Bank provided a loan of more than USD1 billion for the port project, which is being carried out by China Communications Construction Co (CCCC).

The statement said the deal was needed because the ongoing maintenance expenses of the port, as well as debt instalments and interest payments, were eating up about one-third of the total annual revenue of the Sri Lanka ports authority and adding too much to the national debt of the country.

The Hambantota project was started by former president Mahinda Rajapaksa, who forged diplomatic and commercial ties with China. It is the largest of several Chinese investments in Sri Lankan ports and infrastructure, and the largest current foreigninvested project in the country.

Together with the Chinainvested nearby Mattala airport, which is built to handle A380 aircraft, the project has been dubbed a 'white elephant' by critics, who claim it was overpriced and under-planned. It was suspended on two occasions over the past two years as the new government investigated the terms of the awarding of the contract and pledged to shift away from too much reliance on Chinese investment.

The government said the new agreement with China on the project would help transform Hambantota port into a "commercial centre of the economy".

The deal will increase China's influence in the Indian Ocean region and supports a key objective of the One Belt One Road strategy. The port is strategically located close to the key east-west shipping trade route and complements another major China-invested port under development at Gwadar in Pakistan on the other side of India.

Although struggling to generate revenue, Hambantota port has had success attracting car carriers from congested ro-ro facilities in Colombo and Chennai and is considered a transport hub for the southern India's small car manufacturing industry. Hyundai Glovis, which ships Hyundai vehicles, 'K' Line, NYK, and MOL all use the Hambantota port for vehicle shipments.

Cosco Shipyard Group and China Habour Engineering (CHEC) have submitted a proposal to build and operate a shipyard at Hambantota, while CMHI is in the process of building a container terminal in joint venture with CHEC and the Sri Lanka ports authority.

CMHI already holds an 85% share in Colombo International Container Terminal (CICT), which is also a joint venture with the Sri Lanka ports authority. CICT invested USD500 million to construct and operate the terminal for 35 years, after which it will be handed over to the Sri Lanka Ports Authority. Its first four berths have a total capacity of 2.4 million teu, with another two 2.4 million teu phases to come.

Malacca Strait develops apace

The Malacca Strait is probably the busiest region in the world for port development at the moment, with five major projects under way on the strategic waterway.

Together with Singapore's massive Tuas development, there are expansion projects at Malaysia's two main international ports of Tanjung Pelepas (PTP) and Port Klang as well as two large Chinese investment projects in the works.

In November, China said it was investing USD1.9 billion to build the Melaka Gateway port on reclaimed land off the coast of Malacca City. This is one of several projects China is undertaking to decrease risk related to its energy and trade shipments through the strait. The project is being undertaken by a joint venture of Malaysian state-owned company KAJ Development, Shenzhen Yantian Port Group, and Rizhao Port Group and is due for completion by 2019.

China is also investing in Tanjung Sauh Port on Indonesia's Batam Island, at the mouth of the strait, close to Singapore. This is planned as a container-focused facility and its first phase is to offer 4 million teu of capacity.

"There is a lot going on in Singapore and Malaysia right now, particularly on the Strait of Malacca," said Jonathan Beard, head of transportation and logistics consulting in Asia at engineering and management consultancy Arcadis.

"In Singapore, the older terms of the leases are expiring so it made sense to relocate the port at this time. Typically, the government is taking a long-term view that this is the last time it will redevelop the port, and demonstrating to lines and alliances a serious commitment to capacity. The developments at PTP and Klang are largely driven by the key customers: Maersk Line in the case of the former and CMA-CGM in the case of the latter."

According to Beard, it is difficult to see the other ports planned for the strait successfully competing for transhipment business with the big three established players.

"They may turn out to be more focused on niche business, such as petrochemicals or palm oil. There is clearly a geopolitical element as well, with China ensuring access to alternative ports in Malacca."

Elsewhere in Malaysia, facilities under development include the Chinese-invested Kuantan Port on the east side of peninsular Malaysia facing the South China Sea, and Samalaju Industrial Port, also on the South China Sea, with a focus on dry bulk business.

Beard said the nature of projects under way in Singapore and Malaysia could signal a rise in state support for the region's ports.

"In Singapore the government currently has the lead on the Tuas development and we will need to wait and see what the final lease terms turn out to be.

"It is not clear what the funding arrangements are for the Chineseinvested projects, whether they are sovereign loans from China or investment by private Chinese companies, but it could mean higher levels of state subsidy in port development in this part of the world."

Beard said other parts of southeast Asia, including Indonesia and the Philippines, presented significant opportunities for port development, particularly in terms of smaller facilities. "There is a huge need for facilities in the eastern side of Indonesia and for the Philippines," he said.

A factor that will influence the nature of port development in the region is the development of the container carrier alliances, in particular their increasing size, according to Beard. "The alliance structure puts a premium on hubs that can offer the benefits of scale, connectivity, better productivity, competitive rates, and, in some cases, equity stakes for liner companies in terminal facilities.

"For smaller gateway players, this could mean some reduction in the number of direct calls. Even if they have the right infrastructure to serve major alliance customers, they may not offer enough box exchange, so the lines may ultimately prefer to serve them through hubs."



APM Termina, Tanjung Pelepas: an expansion project is under way at the port

Port updates

TRANSNET ORDER

Cargotec subsidiary Kalmar has won an order to supply 23 ESC 440 diesel-electric straddle carriers to Transnet Port Terminals' Durban Pier 2 in South Africa. Deliveries are scheduled for completion this year and the contract includes a straddle carrier simulator that will be used for training at the site.

BAKU SET FOR 2017

The first stage construction of the Baku International Sea Trade Port in Azerbaijan will be completed late this year, according to port director-general Taleh Ziyadov. "Work is under way at the ro-ro and dry cargo transhipment terminals, [as is] construction of a 650 m quay for five ships," he said.



ULSAN UPGRADES

A POSCO engineering and construction joint venture has won an order to build two breakwaters at Ulsan New Port. The 1,420 m main breakwater and a smaller 21 m one are intended to create calmer waters around the new port ahead of second-phase construction there.

► ANTWERP TERMINAL

The Port of Antwerp in November 2016 announced expansion projects with a total investment value of about EUR650 million (USD677 million). Antwerp Port Authority has approved the SEA-Invest Group's plan to build a 750,000 m³ tank terminal for a major world player on a 465,342 m² site at the Delwaide Dock. The port authority has called for proposals. It will have a 1,250 m-long quay, create 50 permanent jobs, and take two years to build over two phases.

Port updates

CRUISE CUTS

A new capacity deployment analysis by Farley suggests that global cruise supply will increase by 1.4% this year, below the 3% growth seen over the previous three years and the 10-year compound average growth rate of 4%. Cruise capacity in the Caribbean region will rise at 5–6% in 2017, following growth of 2–3% this year, no growth in 2015, and a 12–13% surge in 2014. According to Farley, cruise capacity in Europe will fall by 4–5% in 2017, with Mediterranean capacity dropping by 11%.

BUSAN TRANSHIPMENT

Transhipment volumes at the port of Busan shrank 6.5% year on year in October last year as the collapse of Hanjin Shipping continued to take its toll on South Korea's largest port. Government figures show transhipment volumes dropped to 817,000 teu out of a total throughput of 1.65 million teu. Stronger gateway traffic largely offset the decline in transhipment business and the port booked a slight increase in overall container throughput compared with October 2015.

ICTSI IN IRAN

International Container Terminal Services Inc (ICTSI) formally opened the USD130 million first phase of its Basra Gateway Terminal in North Port, Umm Qasr, Iraq, in October 2016. A greenfield development, it is the first entirely foreign-financed new port infrastructure in the country. It has 600 m of quay served by two Terex STS cranes, 50 ha of yard space, and is capable of berthing vessels up to 300 m long and with a 12 m draught.





Still under construction: Saemangeum New Port. The development has been allocated further funds

South Korean maritime boost

South Korea's Ministry of Oceans and Fisheries has been granted an all-time high budget of KRW4.96 trillion (USD4.25 billion) for 2017. This up from the KRW4.88 trillion the ministry was granted in 2016.

Among budgets that have been fixed, KRW2.12 trillion will go towards South Korea's fishery industry, and KRW1.76 trillion has been set aside for ports and shipping. The marine environment sector will get KRW227 billion, the science and technology sector will get KRW193.7 billion, while KRW674.1 billion has been allotted to the general marine sector.

During a parliamentary review, it was decided that the shipping and port sectors would get KRW19 billion more than the amount the government had put forward.

Construction of Saemangeum New Port will get KRW41.4 billion, up KRW10 billion from what the government initially scheduled.

Busan port, now undergoing expansion and upgrading, will be given KRW90.4 billion, while Gwangyang, South Korea's second-largest container port, will get KRW20.9 billion.

The port of Gunjang, currently undergoing capital dredging, gets KRW16 billion, while Mokpo port was allotted KRW9.7 billion. The budget for the construction of a cruise terminal in Seogwipo, Jeju island, was set at KRW13.3 billion, up from the KRW9.3 billion the government tabled.

In addition, KRW17.5 billion was allocated for strengthening the capabilities of South Korean ports to provide better protection against floods and tsunamis.

The Ministry of Oceans and Fisheries' budget also provided for KRW400 million in the form of government subsidies for the salvage of the *Sewol* ferry, which capsized in the Yellow Sea in April 2014, leaving 304 people dead or missing. The salvage has been hampered by rough seas and weather, and the difficulties of hoisting the ferry intact. As a result of this, the scheduled completion of the salvage work has been pushed back from July 2016 to some time in 2017.

A total of KRW7.6 billion was allotted to marine tourism projects, including the restoration of tidal flats in Suncheon Bay and the construction of Pohang Lighthouse Museum.

A ministry official said, "As the budget for 2017 has been set at the highest level in such difficult financial conditions, we'll ... strive to create growth for the oceans and fisheries sector to stimulate the economy."

Lines urged not to push terminals too far

London-based shipping consultancy Drewry has warned that pressure on terminals from shipping lines to reduce handling charges could result in a lack of investment in terminal facilities. In a report it says shipping lines should take careful steps when applying pressure to terminals for reduced charges.

"The financial results of listed port and terminal operators reveal a weakness in organic earnings amid escalating debt levels. Stricter cost rationalisation and financial risk reduction would be necessary to retain investment interest," the report notes.

Weak global trade demand and structural changes in the industry make it increasingly difficult for terminal operators to maintain strong margins, Drewry notes, while slowing global trade liberalisation and, the restructuring of China's economy are leading to sluggish trade growth, while larger vessels and alliances are driving up costs for operators.

Durban port tender set to be released

South Africa's national ports authority, Transnet, said in late 2016 that it would release a multibillion rand tender for maritime construction works at the country's primary container handling facility.

The work entails deepening and lengthening the berths at Durban Container Terminal, which handles about 65% of South Africa's total container throughput.

Environmental approval was granted for the marine and landside works that will improve the overall productivity of the port by reducing waiting times because vessels will no longer have to wait for high tide to enter the port, the authority said in a statement.

"The increased size of container vessels calling the Port of Durban has resulted in Pier 2 berths now operating beyond their original design specification in regards to water depth," it added.

The full project will cost about ZAR7 billion (USD500 million), which includes dredging the approach channel and basin to a depth of 16.5 m from 12.8 m now. About 300 m is being added to the length of container berths.

"Super post-Panamax vessels take up two berths on the North Quay, which decreases port capacity. In addition, vessels requiring a deeper draught than 12.2 m can only enter the channel at high tide, resulting in delays,"Transnet said.

Durban, Cape Town, Port Elizabeth, and the Port of Ngqura are South Africa's container gateways. The project at Durban is the country's biggest container project but there is also work going on at Cape Town and Port Elizabeth. The four ports handled a combined national total of about 5 million teu in 2015, a figure forecast to grow to 6.4 million by 2022 and 13.9 million by 2046.

Elsewhere, local media reported that Oiltanking Grindrod Calulo was selected to part-fund, construct, and operate a large new liquid storage facility at the port of Ngqura.

The ZAR6 billion facility, co-funded by Transnet, will serve as a local and global re-export distribution hub for petroleum, diesel, jet fuel, and LPG and will be operational by mid-2019.

The port authority said earlier that port projects under the government's Operation Phaksia initiative, could be delayed because of the economic climate.

Port **updates**

CHINA GROWTH

Throughput at China's main ports in October was 4.3% hjigher than a year earlier. The top eight ports handled 12.98 million teu in October, taking year-to-date volumes to 127.5 million teu, a rise of 2.8% on the first 10 months of 2015.

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LNG Hybrid Concepts

Port **updates**

ADP CONNECTIVITY

Abu Dhabi is investing heavily in digital information systems to support ambitious plans to grow its port facilities. Abu Dhabi Ports, the developer and operator of the emirate's ports and Khalifa Industrial Zone, has implemented a new vessel management system to boost efficiency through the automation of vessel management processes and services. The system facilitates electronic processing of formalities for vessels arriving at the commercial ports of Khalifa, Musaffah and Zayed.

WESTPORT PROFITS

Malaysia's Westports Holdings said net profit rose 16% year-on-year in the third quarter of 2016 on the back of strong revenue growth resulting from higher throughput and tariffs. Net profit rose to MYR151 million (USD34.4 million) on revenue of MYR474 million, up 18% on the third quarter of 2015.

OMAN PLANS CAPACITY

The government of Oman is planning a 5 million teu automated container terminal at the port of Sohar, Oman International Container Terminal director Mahdi Al Lawatia told the Port Development Middle East Conference in Muscat in October. He said construction would probably take 30 months after plans were finalised, but did not give a definite start date, although work could begin in 2017.

CAR COUNT

The largest port in the Nordic countries, Port of Gothenburg on Sweden's North Sea coast, saw vastly improved volumes in two sectors – cars and oil products – in the third quarter of 2016. The total for cars was up 15% on a year earlier but rose 24% for the first nine months of the year. Exports are mainly from Volvo's nearby Torslanda factory



The European Parliament has finally agreed on a port services directive

EU port regulation gets go-ahead

The European Union is poised to adopt a historic regulation on port services following the approval of a draft text on 14 December by the European Parliament.

The draft regulation is the latest of several attempts over the past 15 years to introduce greater financial transparency and more open competition among port services at European Union ports.

The much fought-over regulation has satisfied the aspirations of no one, but is being hailed as a victory simply because it has now reached the stage of final adoption.

German member of the European Parliament (MEP) Knut Fleckenstein has piloted the regulation through the complex EU decision-making process and has put particular emphasis on the improvement he believes the regulation will bring to port financial management.

Competition between ports has been distorted by not-always-transparent public sector involvement in infrastructure investment and often opaque charging systems for their use. According to the European Commission, this has held back investment, whereas the new rules will make EU ports more efficient and attractive to investors.

"Financial transparency is at the core of the agreement, which should facilitate the work of the Commission on a coherent state aid regime and trigger investment into ports," said Fleckenstein.

He added that the regulation also sought to establish good working conditions in the more than 300 seaports in the trans-European transport network. These played a key role in ports' competitiveness, he said, and were non-negotiable.

Port services reform has proved a particularly elusive goal. The draft regulation does not impose a specific management model for EU ports but does provide guidelines for ports wishing to introduce minimum requirements for such services as towage, mooring, bunkering, and the collection of waste from ships.

It does not impose the liberalisation of cargo-handling and port services, however, as the European shipping sector always hoped it would.

European Community Shipowners' Associations (ECSA) secretary-general Patrick Verhoeven said, "ECSA has deplored, throughout the discussions, that this proposal does not address some of the market access problems shipowners face. However, after 15 years of discussions, we finally have a first law on EU ports."

He said that the maritime sector should build on the new regulation, treating it as a first step, notably towards the establishment of a real European sea motorway network, in which the role of ports was of key importance.

The regulation now needs to be given final approval by the Council of the European Union, which represents member governments, before being adopted as law.

Controversial CEBU container port agreed

The Philippines government has given approval to the start of work on the proposed PHP9.2 billion (USD186 million) container port in Cebu.

The project, at Consolacion, is a controversial topic in Cebu after the municipal government said it had a separate agreement with a private developer for the construction of a container port in the town.

Construction of the port is scheduled to start in the third quarter of 2017 after detailed engineering designs, preparatory works, and the bidding process are completed. The port is scheduled to begin operations in 2020.

Philippines enhances training

The Philippine Ports Authority (PPA) has taken further steps in two training and development programmes. In 2016 it started the second cycle of the UNCTAT TrainForTrade port training programme on modern port management. Now in the third module of this second cycle, the programme is being attended by 24 participants from government agencies, including PPA, Cebu Port Authority, and the Authority of the Freeport Area of Bataan, and from the terminal and cargo handling operators, specifically Manila North Harbour Port and Davao Integrated Port and Stevedoring Services.

The port authority explained in a statement that the modern port management course consisted of 240 hours of instruction over a two-year period. Participants must successfully complete eight modules and defend a final dissertation in order to obtain the UNCTAD Certificate in Modern Port Management. The course content is adapted to local contexts and the final dissertation identifies challenges within the participants' respective ports and proposes concrete management solutions.

Also, on 19 October last year PPA signed a memorandum of understanding with the Port of



Belgian and Philippines delegates join force: centre left, PPA general manager Jay Daniel R Santiago, and, right, PAI managing director Kristof Waterschoot

Antwerp International (PAI) and APEC-Antwerp/Flanders (APEC) on capacity building and Philippines port development. This is an offshoot of the ongoing seminar on logistics, supply chain management and ports master planning currently conducted by PPA in co-ordination with representatives of PAI and APEC.

PPA general manager Jay Daniel R Santiago said the signing of the agreement came at a perfect time considering the complexities in the country's supply chain that have impaired the delivery of goods in and out of the country the past couple of years. "This agreement will give us the edge to further simplify and reduce the complexities in our overall supply chain, considering that it is a challenge for a country composed of more than 7,000 islands," he explained.

"This is in line with the thrust of the current administration in streamlining government processes to trim down the cost of doing business in the Philippines through faster delivery of government services".

The Belgian delegates, led by APEC-Antwerp/Flanders and PAI managing director Kristof Waterschoot, said the agreement would help to identify possible opportunities to collaborate.

Port updates

EMISSIONS COUNT

Maersk Line and the largest US container port complex plan to track pollution emissions from 12 box ships in a scheme aimed at producing fuelefficiency data. The three-year project, in partnership with the ports of Los Angeles and Long Beach, will measure the environmental benefits of 12 Maersk vessels that regularly call at the two California ports, which were recently part of a USD125 million retrofit programme to reduce fuel use and increase cargo capacity.



APMT PROFIT DIP

Weak market conditions and liner network changes contributed to a 28% year-on-year fall in the underlying profit of APM Terminals, the terminal operating arm of AP Møller-Maersk, to USD126 million in the third quarter of 2016. Throughput at its 72 global terminals expanded to 9.5 million teu as a result of the acquisition of Grup Maritim TCG. Like-for-like throughput expanded 1.5% as a result of growth at its terminals in Salalah, Oman, and Maasvlakte II in Rotterdam.

EGYPT EXPANSION

Port of Damietta Authority (PDA) has signed a memorandum of understanding with China Harbor Engineering Co (CHEC) for the construction of a second container terminal. In November, PDA was preparing to launch an international tender process to select an operator for the terminal. The Chinese government will provide 85% of the investment and CHEC will build a 2,225 m-long quay with 17 m alongside depth, and 700,000 m² of yard space. Construction is expected to take 24 months.

DP World partners with pension fund

DP World has set up an investment fund in partnership with Canada's Caisse de dépôt et placement du Québec (CDPQ), one of North America's largest pension fund managers, to invest in the ports of investment-grade countries.

DP World will hold 55% of the USD3.7 billion investment platform, of which up to 25% will be allocated to greenfield projects, with CDPQ holding the rest. "Through this platform, DP World will share new investment opportunities and CDPQ will have the option of co-investing alongside DP World," it said.

Two of DP World's Canadian container terminals, at Vancouver and Prince Rupert on the

Pacific coast, will form the basis of the vehicle, with CDPQ acquiring a 45% stake in the two ports' combined assets for USD640 million.

Sultan Bin Sulayem, DP World Group chairman and CEO, DP World, said, "In CDPQ we have found a partner with shared vision who is willing to participate in the risk and reward of investing throughout the lifecycle of trade-enabling assets across the globe.

"The opportunity landscape in the port and terminal sector remains significant and this partnership offers us greater flexibility to capitalise on these opportunities while maintaining a strong balance sheet and retaining control."

Ways to make US ports **great again**

American Association of Port Authorities president and CEO *Kurt Nagle* considers the future of US ports under the Trump administration

n the US, November was focused mostly on the presidential election and the American Association of Port Authorities (AAPA) has been working hard to analyse the impact it may have on seaports. Investing up to USD1 trillion in the infrastructure of the United States is central to the Trump administration's goal of building a better economic future for the country. In the same way, strategic investments in freight-related transport assets are also among the top priorities for US ports.

So what is President-elect Trump calling for that would affect US ports? Of his priorities to see early action, Trump's infrastructure plan presents opportunities for our nation's ports. AAPA is closely analysing the call for infrastructure investment and tax reform. Ports also could be affected by trade, energy independence, and environment policies.

More recently it was announced that the Trump administration planned to nominate Elaine Chao for Secretary of Transportation and we are particularly pleased to see a nominee who has experience with the maritime industry since Chao has also served as deputy administrator for the US Department of Transportation's (DOT's) Maritime Administration and as chair of the Federal Maritime Commission in the 1980s.

This nomination and Trump's infrastructure plan present opportunities for the nation's

ports. In the plan, he states that Americans deserve a reliable and efficient transport network, and the Trump-Pence Transition website states that Trump's administration will seek USD1 trillion in infrastructure investment, of which USD550 billion is to ensure America can export its goods and move its people faster and more safely. "Our roads, bridges, airports, transit systems and ports will be the envy of the world and enhance the lives of all Americans," the website says.

Trump's infrastructure plan is focused on incentivising private investment through infrastructure tax credits and involves increasing bonds. He also hopes to incentivise more investments through regulatory reform and quicker approval of projects, especially energy projects. This could result in greater energy exports through ports, as well as more energy equipment imports.

His trade positions are also something AAPA is closely watching. The president-elect's website says, "Free trade is good as long as it is fair trade." He has already announced that he will withdraw from the Trans-Pacific Partnership and work to renegotiate other trade deals, such as the North American Free Trade Agreement.

The AAPA sent Trump's transition team the US port industry's key policy recommendations in November. These include land- and waterside transport infrastructure investment, along with recommendations for port security and environment enhancement programmes.

AAPA's policy document includes ways to relieve traffic bottlenecks and expand freighthandling capacity, modernise and fully maintain the nation's federal navigation channels, provide tax fairness and equity, secure America's ports and waterside borders, and help protect the environment and build resilience.

With regard to improving the freighthandling capacity of the country's roadways, railways, and waterways, with particular emphasis on connections with US seaports, AAPA recommends:

 Providing additional Fixing America's Surface Transportation (FAST) Act investments and a sustainable freight trust fund to plan and build multimodal projects;

• Establishing a properly funded and staffed Office of Multimodal Freight Transportation within the USDOT Office of the Secretary;

• Supporting funding for a robust Strong Ports programme under the USDOT Administration to help ports plan for their 21st century infrastructure needs;

• Increasing investments for authorised marine highway projects to ensure transport alternatives alongside congested landside transport corridors; and,

• Increasing funding for transport infrastructure grants to USD1.25 billion/year.



On the topic of modernising and fully maintaining America's deep-draught navigation channels, AAPA recommends:

- Making Harbour Maintenance
- Tax (HMT) spending a priority;
- Continuing the goal of full use of the HMT;
- Ensuring equity and fairness
- of HMT distributions;

• Increasing funding for HMT maintenance spending in the 2018 fiscal year president's budget request, including funding for donor and energy transfer ports;

- Devising a permanent solution as part of tax reform or other legislation for ensuring all annual HMT revenues are spent;
- Increasing federal investment in navigation channel deepening and widening;
- Improving efficiencies in the deep-
- draught study and construction process; • Continuing progress to finish navigation

and tax reform

Kurt Nagle

CEO, AAPA

projects in a timely manner to better

compete in world markets; and, • Providing operations and maintenance funding for the National Oceanic and Atmospheric Administration's Physical Oceanic Real-Time System (PORTS) to help mariners navigate safely.

To help secure America's ports and waterside borders from crime and terrorism, AAPA recommends:

 Increasing the Federal Emergency Management Administration's Port Security Grant Program (PSGP) funding level to at least USD100 million/year;

- Directing grant funding to ports rather than to other entities with very low commercial seaport threats;
- Continuing the management and control of the PSGP at federal level;
- Providing 500 additional Customs and Border Protection (CBP) maritime staff to US seaports to meet trade needs and ensure

cargo is safe and moves efficiently; and Securing adequate federal funding to purchase, install and maintain radiation portal monitors (RPM) within ports throughout the US.

To help protect the environment and build environmental resilience, AAPA recommends:

- Increasing funding for the Environmental Protection Agency's Diesel Emissions Reduction Act (DERA) programme;
- Creating a 21st century port portfolio within the Department of Energy (DOE) that allows ports and the DOE to partner on new technologies that reduce air emissions, connect ports to the grid, provide electrification opportunities for port operations, and provide support and expertise for new clean energy terminal designs and build-outs; and

• Ensuring that federal agency programmes that address natural disasters and coastal erosion include assistance to seaports to help predict, plan, and adopt mitigation strategies.

AAPA supports a multi-layered approach to funding freight infrastructure programmes. This includes direct spending, grants, and alternative financing such as bonds, infrastructure banks, and the Transportation Infrastructure Finance and Innovation Act (TIFIA) programme.

We will closely monitor how the Trump administration plans to fund its transport infrastructure initiatives, which may be part of the larger federal tax reform effort. PH

MORE INFO: www.aapa-ports.org

AAPA is closely analysing President-elect Trump's call for infrastructure investments

West African ports head for deep water

The second wave of port privatisation around the Gulf of Guinea will see deeper ports outside cities, reports **Andrew Spurrier**

he economic difficulties currently experienced by many west Africa countries and the slump in container volumes they have engendered have not brought terminal development in the region to a halt.

Maersk Line, the leading carrier in the west African container trades, indicated recently that west African container import volumes, which had been growing at an annual rate of 5–10% between 2010 and 2014, had fallen by 9% in 2015 and were likely to contract by a further 5–6% in 2016, with no recovery expected in 2017.

This is bound to have an impact on the many new terminals under construction or planned in the region, according to Michel Donner, senior adviser at Drewry Maritime Consultants. "As far as I know, everybody has slowed down construction," he told *P&H*. "They have not

cancelled so far but, should all projects be completed within the initially advertised schedules, there is a risk of overcapacity in the region."

However, terminal development is not governed solely by the vagaries of the container trades. Peder Sondergaard, APM Terminals (APMT) vice president for Asia, the Middle East, and Africa, told *P&H* that trading performances on a country by country basis were much more varied than the freight volume figures suggest.

He agreed that oil-producing countries such as Nigeria and Angola had been hard hit in recent months and that others had been affected to differing degrees by developments on other international commodity markets. But, he said that some west African countries, including, notably, Ghana and Côte d'Ivoire, were nevertheless continuing to perform relatively well. "Sub-Saharan Africa is not one economy," he argued. "It's really a sum of all the economies and the amount of trade and economic interaction between individual countries is relatively low compared with international averages."

In the longer term, he said, the high population growth expected in Africa over the next three decades was likely to be another strong driver of trade growth. In addition, Africa also has the potential to become the world's greatest reserve of land with agricultural opportunities, as a source of future food production to benefit its growing population.

In the meantime, he said, terminal development in west Africa is moving into a new phase. The region's traditional shallow water, city-based ports are starting to reach their limits after having benefited from the upgrading process, which followed the first round of terminal privatisations and concession awards in the past 10 years or so.

"The medicine is that at some point you make a reset and then simply build a complete, new infrastructure away from the city, with ample infrastructure for rail and road and ample space for industrial and logistics activities," said Sondergaard.

Drewry's Donner estimated in 2015 that nine deepwater container terminal projects planned or already under construction could bring the region more than 12 million teu in additional handling capacity by 2020.

One of the nine is already in service in the Togolese port of Lomé. Operated by MSC group's Terminal Investment Ltd (TIL) and China Merchants, Lomé Container Terminal (LCT) has been in operation since October 2014 and is served by ships of 9,000 teu and more operating on Asia-west Africa services.

LCT is taking advantage of the natural deepwater location offered by the port of Lomé and, currently, is the only west African port able to offer a water depth of more than 15 m. Others are on the way, however.

Work has just begun on a major extension of the Ghanaian port of Tema, which involves the construction of a container terminal offering four large container ship berths along a 1.4 km quay with a water depth of 17 m.

The 1 million teu project was officially launched on 16 November and is due to be completed by mid-2019. It is being carried out under a publicprivate partnership between Ghana Ports & Harbours Authority and Meridian Port Services, a joint venture between the Maersk group's APMT and Bolloré Transport & Logistics of France.

APMT, which claims to be the largest port and terminal operating company on the African continent, is also working with Bolloré, its principal rival in west Africa, on a 1.4 million teu terminal at the port of Abidjan in Côte d'Ivoire.

This terminal involves the construction of a 1.1 km quay with a water depth of 18 m. Work is already under way but, in this instance, the port of Abidjan authority is

Lekki Port is waiting to be built



constructing the quay wall and carrying out associated dredging work, while APMT and Bolloré are responsible for the superstructure.

Given the fact that the terminal operators are not responsible for the infrastructure work, Sondergaard was unable to predict when the project would be completed, but told *P&H* that dredging and infrastructure work was already under way. "It is happening," he said.

Prospects are less clear in Nigeria, where Port of Lagos arguably presents the most urgent case in the region for a 'reset'. Two major new port projects are planned to the east and west of the existing city centre port, which is plagued by serious landside congestion problems.

APMT is involved in the Badagry new port project, 55 km west of Lagos, where it is partnered by TIL and the Macquarie infrastructure group. Together, they plan to develop a 2 million teu container terminal offering a quayline of 2.5 km and a water depth of 16 m.

Work has not yet started on this project, which is still at the 'review and approval' stage. APMT is nevertheless optimistic that it will proceed, noting that, in August, it received a federal government approval, which it said had been an "important milestone in the life of the project".

However, the project is running late. Work on the project has missed its first quarter 2016 start date and the start of operations, originally scheduled for 2018, now looks unlikely.

Lekki Port, 65 km east of Lagos, seems to be in a comparable situation. There, the container terminal is being developed by Philippines-based International Container Terminal Services Inc (ICTSI) and French container line operator CMA CGM. It had been thought that work on the 1 million teu first phase of the terminal

would begin in about July last year for completion by mid-2020, but ICTSI told *P&H* that it now expected construction work to start in the first quarter of 2017.

ICTSI senior vice-president Hans-Ole Madsen said the construction of the first phase of the new terminal would take 36 months, but that it was hoped that a 'soft' opening would be possible after 24 months.

The first phase will comprise a 600 m quay with an annual handling capacity of 1 million teu. In the longer term, capacity is scheduled to be increased to 2.5 million teu and the terminal will have a 1.2 km quay and 14 post-Panamax gantries. Madsen said the cause of the latest delay in the start of construction of the terminal was the need for additional time to obtain all the necessary permits and agreements. However, he declined to say whether further delays could be expected.

Other projects are under way in the region. DP World, which has the concession for the terminal in Port of Dakar, is currently developing the new deepwater Port du Futur, some 30 km from the Senegalese capital.

In Central Africa, the Bolloré group, CMA CGM, and China Harbour Engineering Company, were awarded the concession for operation of the new container terminal at Port of Kribi in Cameroon, which, when completed will have a 1.4 million teu annual capacity, a 700 m quayline, and a water depth of 16 m.

Bolloré is also investing with APTM and local group Socotrans at Port of Pointe Noire in the Republic of the Congo. Work is in progress to extend quay length and water depth alongside the Congo Terminal.

All these terminals are equipped to accommodate very large container carriers and, beyond serving their national markets and immediate neighbours, could stake a claim to a share in a transhipment market, which looks ripe for development.

Apart from the Asia-west Africa trade, where vessels in the 8,500-plus teu category are already in service, the emergence of these new terminals opens up other possibilities. The Europe-west Africa trade is already to a large extent a transhipment trade, using mainly 2,500–3,000 teu vessels shipping cargo to west Africa not only from Europe, but also from Asia and the Americas via main line hubs in the Mediterranean. However, any new deepwater ports in Africa could result in that trade being radically reconfigured in favour of new hubs.

Asked how likely that prospect was and which ports he thought could emerge as new hubs, APMT's Sondergaard preferred not to speculate, arguing that it was not for a terminal operator like APMT to decide which ports could or should play such a role. "Ultimately, it is for the customers to decide whether they want to change the way they serve the market," he said. "We are the enabler of the infrastructure." **PH**

MORE INFO: www.apmterminals.com www.bollore.com.

Namport sees demand ahead

Two development projects are under way at Walvis Bay to offer increased capacity and double Namibia's container throughput, *Shem Oirere* reports

> amibia Port Authority (Namport) is developing a new terminal at Walvis Bay as part of programme that include a new deepsea port and increased capacity at the country's second port, Luderitz.

> Persistent congestion and inefficiency at some of the ports in eastern and southern Africa means the expansion will enable Namport to double container numbers at both the Walvis Bay and Luderitz and reverse declining general cargo transhipment volumes. These have halved in three years, from slightly over 200,000 teu in 2012 to 100,000 teu in 2015.

> According Namport CEO Bisey Uirab, this fall is due to the loss of business to other ports and a reduction in secondhand vehicle imports because of restrictive policies in some of Namibia's neighbouring countries.

> "We want to provide capacity ahead of demand and ensure Namport maintains a competitive edge in the Southern African Development Community (SADC) region," he said.

> Construction of the USD287 million container terminal at Walvis Bay under a contract with China Harbour Engineering Company (CHEC) started in 2014, is now 56% complete, and is "on schedule to commission by 2018", according to Uirab.

"By 2017, the volume in cargo handling and railtransported cargo will double that of 2012 and the port of Walvis Bay will become the preferred African west coast port and logistics corridor for southern and central Africa logistics operations," he said.

Namport is also constructing the new four-phase Port of Walvis Bay SADC Gateway, just 5 km north of



the existing port. "Phase 1 is being implemented by the Ministry of Mines and Energy. [It] commenced on 30 March 2015 and will be ready for commissioning by 2017," said Uirab.

Project works at the port include dredging a new 180 m-wide by 16.5 m-deep entrance channel and turning basin and construction of a tanker berth to accommodate two 60,000 dwt tankers simultaneously.

This phase has been part of a long-term plan to move operations away from their current location, which is close to hot work ship repair areas. The authority opted to construct a new port instead of expanding the existing one because of land constraints at the current facility, which is surrounded by Walvis Bay lagoon, Walvis Bay city, and a thriving fishing industry. **PH**

MORE INFO: www.namport.com.na

Transnet responds to slowing economy

South Africa's national ports authority, Transnet National Port Authority (TNPA), hinted in November last year that planned investment in port projects could be slowed as a result of the current economic climate, and particularly the low price of oil.

The authority said it remained committed to advancing the country's key projects but needed to ensure its expectations were properly aligned with those of investors in the current market.

"The global economic slowdown and lower oil price has had implications for new facilities being built by TNPA under the government's Operation Phakisa initiative," said Ricky Bhikraj, executive manager for capacity and enablement at the port authority.

"We remain committed to advancing these projects but will continue to realign our expectations with the expectations of investors in order to come up with collaborative solutions that are matched with market risk."

Operation Phakisa is a government programme centred on growing the economy through investment in the marine transport and manufacturing sectors.

It includes projects at the major ports of Saldanha, Richards Bay, and East London to create additional capacity. TNPA said all these projects would be fully operational by December 2019.



No time to dwell

East African ports are moving to reduce waiting times and meet increasing trade demands through investment and expansion, reports **Shem Oirere**

> conomic growth in east Africa has created huge demand for additional capacity at the ports of Mombasa and Dar es Salaam and put more pressure on the region's inadequate transport infrastructure, as increasing trade volumes are reported in Burundi, Democratic Republic of the Congo (DRC), Kenya, Malawi, Rwanda, Tanzania, Uganda, and Zambia.

> Two key capacity expansion projects, at Mombasa and Dar es Salaam ports, financed by international agencies led by Japan International Cooperation Agency (JICA), the United Kingdom's Department for International Development (DFID), and the World Bank, are expected to address the anticipated demand.

> In 2015, the African Development Bank said economic growth "continued to be highest in east Africa, followed by west Africa, and central Africa, and remained lowest in southern Africa and north Africa.

"East Africa was again the continent's fastest growing region [more than 5% growth in 2015 in countries like Djibouti, Ethiopia, Kenya, Rwanda, Tanzania, and Uganda] and is expected to continue its high growth path in 2016/17," the bank said, adding that the trend was driven by "large foreign direct investment".

This economic growth has attracted huge trade volumes to the two ports, triggering an expansion programme by Kenya Ports Authority (KPA) and Tanzania Ports Authority (TPA) to improve the efficiency in ship waiting times, ship loading/offloading, yard handling, customs clearance times, and cargo off-take capacity at the ports' facilities.

Increasing cargo volumes through the ports of Mombasa and Dar es Salaam have been blamed for congestion along the Northern Corridor, the Central Corridor, and Southern Corridor causing delays in delivery of cargo to the ports. The Northern Corridor links landlocked Burundi, Rwanda, and Mombasa port, while the Central Corridor links the same countries, plus DRC to the Port of Dar es Salaam. This port also serves Angola, Malawi, and even Zambia through the Southern Transport Corridor.

In 2015, cargo volumes through the Port of Mombasa destined to go through the Northern Corridor increased to 26.7 million tonnes, from 24.88 million tonnes in 2014. The 2015 cargo volumes included 22.68 million tonnes of imports and 3.53 million tonnes of exports.

Mombasa port's transit traffic to Burundi, eastern DRC, Rwanda, Uganda, and Juba, the capital of South Sudan, increased from 7.2 million tonnes in 2014 to 7.7 million tonnes in 2015 according to KPA, an expansion of 8.2%.

To accommodate the increasing cargo volumes, KPA commissioned phase one of the USD294 million JICA-funded Mombasa Container Terminal in September



after its completion in February. The terminal will have capacity to berth four ships, including vessels in excess of 6,000 teu, simultaneously. The completed phase has increased Mombasa port's capacity from 1.05 million teu to 1.6 million teu. KPA expects the capacity to hit 2.5 million teu when the second phase of the terminal is completed. JICA has agreed to provide an additional USD314 million financing for this phase.

Northern Corridor Transit and Transport Coordination Authority (NCTTCA), a regional organisation mandated to ensure efficient flow of trade and services along the Northern Corridor, said that, even before the the new terminal opened, overall logistics costs for cargo passing through Mombasa had been falling despite the capacity constraints on road and rail transport.

"From the end of 2009 to 2014, the overall transportation logistics costs have reduced by 56% from Mombasa to Nairobi," said Donat Bagula, NCTTCA executive secretary. He said that in the same period logistics costs between Mombasa and Kampala fell by 26%, between Mombasa and Kigali by 28%, and between Mombasa and Bujumbura by 23%. "Similar costs between Mombasa and Goma [DRC] and Mombasa-Juba have reduced by 38% and 37% respectively."

Bagula said, Port of Mombasa vessel waiting time was now less than 10 hours, whereas prior to 2014 vessels waited for 2.5 days and sometimes up to 7 days.

The ongoing construction of a Chinese-funded 609 km standard-gauge railway line between Mombasa and Nairobi, with plans to extend it to Kigali, is expected to transform cargo transport along the Northern Corridor. However, inefficiencies and delayed expansion plans for Tanzania's Dar es Salaam port, the second-largest in east Africa after Mombasa, is proving expensive for shippers.

The Department for International Development (DFID), which is providing USD60.7 million over three years to finance the preparatory phase of the Dar es Salaam Port Improvement Programme (DPIP), said that cumulative delays at the port could exceed 20 days.

"This compounds problems of corruption, rent seeking, and official and non-official payments," DFID said. It added that the long delays "translate into monetary losses for shippers as they increase their freight costs. "Port inefficiency, unreliability, inconveniences, and delay also increases inventory costs for high-value commodities in the local and regional mining, manufacturing, and processing industries, driving up operational expenses, deterring foreign direct investment," said DFID.

The DPIP is a key component in Rapid Results Now, a government initiative to achieve faster economic growth, and is expected to improve the efficiency and handling capacity of the port, to enable it compete effectively with others such as Durban and Mombasa.

The DFID-financed DPIP phase is associated with a USD150 million World Bank investment phase to improve movement of cargo for shippers in Burundi, DRC, Malawi, Rwanda, Tanzania, Uganda, and Zambia. The World Bank phase entails an intermodal rail project and widening of Nelson Mandela and Kilwa roads to improve access between the port and Dar es Salaam city.

The DFID-funded phase entails removing and relocating old and obstructive sheds on berths 1 to 7 to improve berth productivity, traffic circulation, and enhance safety. It also involves upgrading and widening port access gates and immediate access roads.

DFID is undertaking pre-investment and preparatory bathymetric and geotechnical surveys and a dredging feasibility study to deepen the port to receive larger ships and will purchase and install two electronic scanners to improve cargo clearance times and throughput. DFID explained that once this phase was completed, up to 4.5 ha of usable space would be freed, truck turnaround time would reduce from six to two hours, and gate capacity would increase from 40 to 90 trucks/hour.

The planned installation of two USD1.5 million electronic scanners close to the gates will reconfigure and "improve traffic flow, scanning transparency, and security". DFID is also supporting the deployment of an electronic single window system "to improve efficiency and transparency of cargo clearance". "The system will link all agencies working at the port with all port users on a single digital information platform, reducing total processing time by up to a day," DFID said.

It said the preparation phase "will help to drastically improve the efficiency of port operations [and] it will also lay the necessary foundations for the investment phase, which, together with the preparation phase, aims to reduce cargo dwell times from nine to four days".

The Dar es Salaam port expansion project is also expected to increase the port's annual throughput capacity from its current 14 million tonnes to 28 million tonnes by 2020. Completion of efficiency improvement projects at Mombasa and Dar es Salaam will not only help meet increasing regional trade demands, but also boost the competitiveness of the two ports. **PH**

MORE INFO: www.kpa.co.ke; www.tanzaniaports.com

Cracking the LNG bunker landscape

ans Engliners / Shutterstock

LNG will play a small role in the 2020 low-sulphur fuel landscape but its long-term market share is more promising, *Unni Einemo*, the International Bunker Industry Association's IMO representative and media and communications manager, predicts

hich came first, the chicken or the egg? Actually, it doesn't matter; what matters is that one is not viable without the other. The same principle applies to developing LNG as a marine fuel. LNG-fuelled ships need readily available LNG supply infrastructure, while providers of LNG bunkering facilities need regular customers. Like chickens and eggs, they are co-dependent and what needs to happen is for both to come into existence concurrently.

In many cases, this is exactly what is happening. When plans are hatched to put one, or several, LNGfuelled ship into service, owners begin to look at LNG bunkering options. If there aren't any, we have seen several owners actively engaging in ensuring LNG fuelling options will be there in time through dedicated partnerships.

NSTREAM

One example is cruise ferry *Viking Grace*, which operates between Sweden and Finland. Before the vessel came into service, Viking Line signed an agreement with AGA Gas for delivery of LNG. As a result, a dedicated LNG bunker tanker, *Seagas*, refuels *Viking Grace* on an almost daily basis in Stockholm. Another example is American container ship company TOTE, which has entered partnerships to develop LNG bunkering in the US ports of Jacksonville and Tacoma. In both of these cases, success is almost guaranteed



LNG-powered tanker *Greenstream* on the Waal River, the Netherlands and they lay the foundation for potentially greater future wins as they have put the supply infrastructure in place and have given a clear signal to potential new customers that they are open for business.

Norway has already got past the 'chicken and egg' conundrum. As the world's first mature market, with a fleet of ferries and offshore supply vessels fuelled by LNG, Norway can give us a good idea of how the market for LNG will evolve. Initially, because LNG can be supplied by truck, it can be made available almost anywhere that port authorities allow it. Then, as end user demand grows, the supply infrastructure evolves.

In Norway, a small company took just three years to establish a network of LNG supply terminals, and this suggests LNG bunker facilities could be made available throughout Europe within a shorter time than it takes to plan and build new LNG-fuelled vessels.

The experience so far, therefore, suggests that once there is a known market, LNG supply infrastructure, including terminals, will come quickly. This should reassure owners considering LNG-fuelled ships. Besides, their assets are ships, which can be moved to somewhere with reliable supply. Suppliers potentially take a bigger risk in setting up LNG bunkering facilities if they have no guarantee that there will be a market. Yet this has been the approach taken by the oil major Shell, and by several ports, because they have faith – especially now that we know the global 0.5% sulphur cap is coming in 2020 – that demand will materialise.

We heard several examples of plans to put in place LNG supply to ships at the International Bunker Industry Association (IBIA) annual convention in early November. Arjan Stavast, LNG global business development manager (marine) for Shell, said the company intended to set up LNG bunkering facilities in locations where it was already active in LNG supply to domestic users, including Norway, Rotterdam, Gibraltar, Middle East locations, Singapore, and Houston.

In Rotterdam, for example, Shell is planning to put an LNG bunker vessel into service in 2017.

Shell has also signed an agreement with Port of Gibraltar, the busiest bunkering port in the Mediterranean, to look into developing LNG bunkering in conjunction with providing supply to a natural gaspowered electricity plant being built there.

Singapore is also going to introduce LNG bunkering. "Our aim is to provide all types of fuel the market needs," Md Elfian Harun, assistant director of bunker services at the Maritime and Port Authority of Singapore (MPA), told the IBIA annual convention. This is a recurring theme: major bunkering hubs are all planning to introduce LNG bunkering facilities because they believe in providing a full range of fuels and services, and local authorities are actively supporting it.

Singapore has already awarded two LNG bunker supply licences, one of them to Pavilion Gas and the other to a Shell/Keppel partnership. Singapore is also supporting vessels adapting to use LNG as fuel with funding, and developing LNG bunkering standards and procedures (see p22).

In Europe, several ports have been making use of European Union (EU) funding aimed at encouraging the uptake of LNG as a transport fuel, including on Tenerife. The Spanish island in the Atlantic, just off the northwest coast of Africa, will soon be offering LNG bunkering, Airam Diaz, commercial director of Ports of Tenerife, told the IBIA annual convention. A regasification plant is being built at a new port, Granadilla, to provide power for Tenerife, and there are plans to fuel vehicles and ships. This is yet another example of the 'chicken and egg' coming into existence concurrently; the new facility is already slated to provide LNG to two new AIDA cruise vessels, starting in 2017. Diaz stressed that LNG bunkering would also be available for other ships and said Tenerife could become "an ideal LNG hub" for the region, highlighting that the area has big potential to attract passing trade.

In October, the International Maritime Organization's

(IMO's) Marine Environment Protection Committee (MEPC) decided that ships must burn fuel with a sulphur content of no more that 0.5% from 2020. With that deadline in place, owners now have a clear date to consider their compliance strategies, but there isn't much time, so it seems unlikely that the uptake of LNG will be huge already by that date.

According to Mark Bell, general manager of Society for Gas as a Marine Fuel (SGMF), a non-governmental organisation promoting safety and industry best practice in the use of gas as a marine fuel, the current gas-fuelled fleet comprises just 0.14% of the total global fleet of 5,500 ships above 500 gt. There are some 80 LNG-fuelled ships in operation today and another 80 on order, he told the IBIA annual convention. That number may be expected to grow to about 1,500 ships, accounting for 2.75% of the world fleet over the next 7–10 years.

Meanwhile, the official availability of low-sulphur fuel commissioned by the IMO, suggests that LNG will account for 3.75% of global marine fuel consumption by 2020, including LNG carriers that use the cargo boil-off.

Whatever the figure turns out to be, it is clear that there won't be LNG supply available in every port by 2020, but we can expect it to be available in major hubs, where LNG bunkering providers could, initially, see a poor return on investment. They will, however, be ahead of the curve, alongside providers in ports where LNG supply has been made available to cater to specific companies, such as TOTE in the United States and various ferry and cruise operators in European ports.

For shortsea operators and potential LNG suppliers in Europe, the signal to consider LNG has been amplified by European Union support and, from the 'chicken and egg' perspective, every time someone announces a plan to put a new LNG-fuelled vessel into service, you can place your bets that plans are already being hatched to provide that ship with fuel.

The majority of the world fleet will count on procuring oil-based marine fuels with no more than 0.5% sulphur in 2020, and there are likely to be many more ships with scrubbers that can use cheap high-sulphur fuel oil than ships with LNG-fuel systems. The reason is simple: investment barriers.

Converting a ship to run on LNG is prohibitively expensive and LNG-ready newbuildings are said to cost about one-third more than ships with conventional fuel systems. Setting up effective LNG bunkering options also requires huge investment. Scrubbers, meanwhile, are expected to have a payback time of about two years for newbuildings and three years for retrofits.

Longer term, however, LNG is expected to gain market share as supply infrastructure improves and owners look to 'future-proof' their ships to meet current and potential future IMO limits for sulphur, nitrogen oxides, particulate matter, and CO₂. PH

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The battle for bunkers

Since the International Maritime Organization capped the sulphur content of marine fuel at 0.5% by 2020, shipping companies have been looking at their options. One is LNG, but Asia will take several years to fully embrace this, reports **Zeng Xiaolin**

> en years after liquefied natural gas (LNG) bunkering began in Europe, Asia is catching up, amid growing awareness of the need to reduce emissions. This was evident at the recent biennial SIBCON conference in Singapore.

> At SIBCON, the maritime and port authorities of South Korea, Singapore, Japan, Rotterdam (Netherlands), Antwerp (Belgium), Zeebrugge (Belgium), Jacksonville (USA), and Norway signed a memorandum of understanding to collaborate in the introduction and promotion of LNG bunkering.

> LNG bunkering is gaining impetus worldwide because of growing awareness of the need to reduce

emissions of greenhouse gases, and ports in China, South Korea, Australia, Singapore, and Japan plan to roll out LNG bunkering in the short term.

Singapore has issued LNG bunkering licences to a joint venture between BG Group (now part of Shell) and Keppel Corporation, as well as Pavilion Energy, which is controlled by government investment company Temasek Holdings. The city-state hopes to introduce LNG bunkering this year.

Europe embraced LNG bunkering much earlier because of the implementation of emission control areas (ECAs) in the North Sea and the Baltic Sea. Rotterdam, Europe's busiest port, carried out its first LNG bunkering operation last August, and aims to be the LNG hub of the continent. Neighbouring Antwerp appointed French energy group Engie to build and operate an LNG bunkering station that began operations on 1 October, while Zeebrugge is due to host Europe's first multi-user LNG bunkering vessel by year-end.

South Korea's Ulsan port, which aims to be the oil hub of northeast Asia, has signed an agreement with public institutions and private companies in a bid to become the country's first LNG bunkering port. Nevertheless, the



Port of Yokohama: Japan is collaborating with other nations to look at the feasibility of offering LNG bunkers country's Ministry of Oceans and Fisheries recognises that LNG bunkering infrastructure and expertise is generally lacking in the Asia-Pacific region.

"LNG bunkering is fuelling [take-up of] LNG propulsion in ships, but the operation of LNG bunkering vessels is very much limited to European ports. However, from 2020, LNG bunkering is expected to strengthen worldwide due to more stringent international ship emission regulations," the ministry said.

The lack of Asian knowledge and infrastructure related to LNG bunkering, led to the collaboration between South Korea, Singapore, Rotterdam, Japan, Antwerp and Zeebrugge.

The Ministry of Oceans and Fisheries' manager for port policy, Nam Jae-hun, said, "Worldwide, competition between ports is intensifying. Through the signing of the memorandum of understanding, there will be more concrete discussions with regard to developing LNG bunkering and new port businesses."

Accordingly, the South Korean government is planning to launch incentives such as lower harbor facilities fees, tax benefits for locally flagged LNGpowered vessels, and subsidies to build LNG-fuelled vessels. Such a move is a win-win solution for the country's shipbuilders, which have been suffering from a drought of ship orders.

Also pushing for low-sulphur fuel is Hong Kong, which is going one step further than the IMO by targeting a sulphur cap of 0.1% by 2019. Speaking at SIBCON, Hong Kong Shipowners Association managing director Arthur Bowring said the special administrative region had been working with China, which is implementing domestic emissions control areas from 2015 to 2020.

Despite the push by Asian maritime authorities to adopt LNG bunkering, it has been acknowledged that full-scale acceptance will take place only after 2020. Singapore's Maritime & Port Authority (MPA) chief executive Andrew Tan noted that while 48 ports around the world were LNG-ready, or planned to be in the short term, Asia was still way behind other regions in this aspect.

Tan said, "The high costs involved in building or retrofitting LNG-fuelled vessels and the need for further development of LNG bunkering infrastructure in ports necessitates governmental intervention to make LNG widely adopted as a marine fuel. For example, the European Union [EU] is providing significant funding under its Trans-European Transport Network, which has [supported] various LNG-fuel related projects. Looking to the east, countries such as China, South Korea, and Singapore have made commitments to further develop LNG bunkering infrastructure and/or support the building of LNG-fuelled vessels."

LNG bunkering is likely to take off for shortsea voyages in its initial stages, but Tan said MPA hoped to promote co-operation among global hub ports interested in providing it for shortsea and oceangoing vessels.

He pointed out that Singapore had started planning for its Next Generation Port 2030, or NGP 2030, initiative. This plan has four key thrusts, including developing Singapore into a green port that offers LNG bunkering. Singapore is the world's largest bunkering port by sales volume, with more than 45 million tonnes of fuel sold in 2015.

Despite the lack of LNG bunkering infrastructure, the higher price of LNG relative to Europe and the Americas is another factor that could discourage its uptake in the region. Lloyd's Register's global strategic marketing manager, Luis Benito, told *P&H* that fuel oil was likely to account for 50% of marine fuels by as soon as 2030.

He said, "LNG bunkering has just started to take off. Gas is available, but not everywhere. As we speak, many ports are looking at how to make gas available, but this is only in the planning phase. Even if the worldwide fleet were to convert to run on LNG, there aren't enough LNG bunkers to go around."

A representative of Shell, which is one of two pioneer suppliers of LNG bunkers in Singapore, told *P&H* that the oil major was optimistic that by 2030 take-up of LNG bunkering would reach a decent level, although the growth would be gradual.

She said, "Demand for liquefied natural gas (LNG) in the transport sector will increase over the next 20 years. In fact, the use of LNG as a fuel in the shipping industry is already increasing due to emissions reduction requirements that came into force in January 2015."

North America, including most of the US and Canadian coast, and key countries in northwest Europe and the Baltic Sea area have recognised the impact of shipping emissions on air quality, she added.

"LNG fuel is a new alternative for ship and vessel operators responding to these new sulphur and nitrogen oxide emissions regulations that are part of the emission control areas. LNG is already used as a fuel for vessels on inland waterways, such as ferries in Norway, where Shell company Gasnor is a leading supplier of LNG to industrial and marine operators.

"With our global LNG portfolio and as a LNG import licence holder in Singapore, Shell is well placed to help provide security of supply of LNG for marine customers in Singapore."

Shell's global LNG portfolio has been boosted by the recent acquisition of UK-based LNG trading corporation BG Group, which is the appointed supplier of seaborne LNG imports to Singapore.

Still, LNG bunkering is not without its cynics. The International Bunkering Industry Association's Asia regional manager, Simon Neo, told *P&H*, "There is a lot of hype over LNG bunkering because oil majors want to sell it. However, this would involve expensive retrofitting of expensive vessels and, as such, many shipowners are adopting a wait-and-see attitude. The picture will probably become clearer as the 2020 deadline nears. Besides, LNG bunkers are not the only answer to the global sulphur cap. Low-sulphur marine gasoil and low-sulphur marine diesel oil are also compliant with the 0.5% cap." PH

Capitalising on **port depths**

Offering access to real-time hydrographic data to ships could enable ports to receive vessels with deeper draughts. But, whereas ships are obliged to install ECDIS under SOLAS regulations, ports are free to choose whether to join in the e-navigation revolution or not. *Malcolm Latarche* reports

Sounder and safer: sensors on buoys could provide more accurate real-time information to ECDIS he past 25 years have witnessed a leap in navigational technology, with GPS now mandatory on all vessels since 1995 and ECDIS (electronic chart display and information systems) now approaching the final stages of a mandatory rollout programme.

One of the main reasons given for making ECDIS mandatory was that, unlike paper navigation charts, it would allow for a degree of interaction that would make navigation safer and less error prone. Most accept that this is the case, although, as with any new technology, there are bound to be teething problems and the frequency of ECDIS-induced incidents has shown this to be the case.

Where ECDIS comes into its own is the fact that it can be set up to operate in real time, giving navigators advice and warnings of hazards incorporated into the electronic navigation chart (ENC) being used and based on the current position of the ship as reported by GPS and other navigational systems. When navigating using only paper charts, this does not happen and it is left to the navigator to recall or recognise hazards shown on the charts.

Of course the navigator does have other tools available, including radar sonar and AIS, giving real time information, but this can be interpreted wrongly and, if there are conflicts between what is being displayed and what is expected, the resulting confusion can lead to accidents.

Despite the potential of ECDIS, it has limitations. The biggest is that the data contained in an ENC is no more than a snapshot in time dating to when the hydrographic survey was done. While some ECDIS have more functionality, the performance standards do not require that they interact with any systems not located on the ship. There may be a tide and weather overlay on the ECDIS but, if not, then the navigators are obliged to resort to consulting tide tables and weather forecasts.

Ports are a dynamic environment where the water depths, navigation channels, and weather conditions are constantly changing. Nothing can stop the forces of nature, so silting will be a perennial problem needing regular dredging and storms and floods can reshape the seabed, affecting navigation channels and leading to groundings that could, in the worsecase scenarios, bring a port to a complete halt.

Depth, or more precisely under-keel clearance, is important to ports and ships alike. Ports use different means to determine safe clearance and invariably err on the side of caution. For large ships such as bulk carriers and tankers this cautionary approach could mean that cargo intake is reduced by several thousand tonnes, with all that implies for vessel earnings.

One company that recognised this in the last decade of the 20th century was Australia-based OMC International. OMC's first Dynamic Under Keel Clearance (DUKC) system was supplied to Hay Point in Queensland as long ago as 1993 and since then other ports in Australia and elsewhere have begun to make use of it. The original DUKC did not use real-time data but was a sophisticated method of interpreting existing data, although improved computing power and technology have allowed the concept to be enhanced at regular intervals. In the iron ore exporting terminals of Port Hedland, sailing draughts were improved by as much as 2 m and operating windows extended.

In November last year, OMC announced an alliance with maritime weather specialist MetOcean and simultaneously launched three new products to help

HYDROGRAPHICS

ports and harbors manage under-keel clearance, the mooring of berthed ships, and weather-related risks.

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Already, to meet the needs of ever larger vessels, ports have been obliged to invest in new quays and cargo handling equipment, but there are less expensive outlays involving new technology that can improve the way ports manage traffic, improve safety, and reduce incidents. For most ports there is usually a single tidal reference point, which may not be in the port itself, so local changes to the seabed can mean the information being displayed on ECDIS screens could be far from accurate. However, accurate real-time measuring can be done using more sophisticated sensor equipment on buoys and at other fixed locations. This would allow ships to operate more efficiently and means dredging work need only be done when necessary, rather than at scheduled dates.

Beyond OMC, there are numerous companies and organisations involved in developing the technologies for capturing and disseminating data, including all the big names in hydrographics. E-navigation is being pursued by the European Union as a tool for vessel traffic services and there are various projects such as Mona Lisa and Sea Traffic Management (STM) in progress. In the United States, government agency the National Oceanic and Atmospheric Administration (NOAA), through the National Ocean Service (NOS), is responsible for providing real-time oceanographic data and other navigation products to promote safe and efficient navigation within US waters. The organisation points out that between 1995 and 2000, commercial vessels in the US were involved in nearly 12,000 collisions, contacts, and groundings.

To this end, the NOAA has developed a system

called Physical Oceanographic Real-Time System (PORTS), which provides real-time information on water levels, currents, meteorological conditions, under-bridge clearances, and other information at several US ports. The system can be accessed online and by other means. From the NOAA website, information is available for almost 30 ports.

On a global scale, only a relatively small number of ports are taking advantage of real-time hydrographic data but, with ECDIS now fitted to a large number of ships, the possibility to combine information presents some exciting opportunities. In some ports, pilots are already using portable pilot units that can do this by drawing together real-time information from shore and ship. But there are no universal standards that apply to their performance or abilities.

As e-navigation evolves, that situation is likely to change and, as familiarity with ECDIS grows among navigators, the desire to add functionality will probably increase. The technology is already available to allow for many enhancements but there are good reasons why evolution may be a slow process. First, not all ships are required to use ECDIS, so, even after the rollout is complete, cargo ships below 3,000 gt need not be equipped. Second, there needs to be recognition of the fact that not all systems will be backwardly compatible with new technology. Finally, there is the cost to both ports and ships.

The International Maritime Organization does have a roadmap for e-navigation. Meeting some target dates will need the real-time data situation to be resolved to the satisfaction of the industry and regulators. The ports that are now beginning to make use of real-time data are the pioneers, blazing a trail for others to follow.

25

Machine talk

All eyes are on Melbourne's Webb Dock, as Australia's first fully automated container terminal is ready to robot and roll. **Zoe Reynolds** reports

t is Australia's first sci-fi container terminal, complete with all the latest in futuristic science and technology. The wharves will be people-less and paperless, home to darting robotic machines. The only human interaction will be by computer and smartphone apps.

Victoria International Container Terminal (VICT), was poised at the end of 2016 to roll out operations as Australia's first fully automated stevedoring operation. It is 100% owned by International Container Terminal Services Inc of the Philippines (ICTSI), which won the bid in May 2014 to become Melbourne's third stevedore alongside DP World and Patrick Stevedores.

While both its competitors have extensively automated their terminals in Sydney and Brisbane, VICT will be the first to bring automation on to the Melbourne waterfront. "What we've done here that's so different to anywhere else in the world is we only have machines talking to machines," CEO Anders Dømmestrup told *P&H.* "There's no interface between humans and machines. Humans don't talk to the machines. That's where things can go wrong from a safety perspective and that's why we went fully automated."

Dømmestrup claimed the holistic service the terminal provides makes it the most advanced in the world. While the Webb Dock terminal largely follows the models of other international terminals, it has put two missing pieces of the automation jigsaw in place. Quayside automatic twistlock handling systems eliminate the need to have labour on the wharf under the crane. A completely automated truck interface operates land-side. Operators of the new-Panamax ship-to-shore (STS) cranes have only a moment's input from a remote central control tower. "The STS controller has a different role to a traditional crane driver, but no less important," said Dømmestrup.

"As soon as the box is lifted, automation will take over completely. It means that our skilled employees can focus on other high-value work that is much safer." Lashings on board the ship are still done by hand.

The robotic cranes, manufactured by China's ZPMC, are capable of 65-tonne twin-lifts and can service vessels of more than 10,000 teu. Automated Kalmar Auto Shuttles load the containers on to a rail-mounted system running to and from the stacks. Giant gantry cranes do all the work in between.

"The automated stacking cranes are 30m wide with plenty of room to park five trucks between the legs of the gantry all at one time," said Dømmestrup.

At the gates there are purpose-built traffic analytic solutions and optical character recognition, and licence plate recognition systems. These identify and validate transactions, as well as notify truck drivers where to proceed. The drivers use a phone app to access the maritime security identification card (MSIC).



In line with SOLAS, the terminal provides an automated box weighing service for arrivals and departures.

Phase 1 of the new AUD560 million (USD415 million) Webb Dock terminal will have one berth of 330 m and three New Panamax STS cranes. The terminal stretches over 23.7 ha, providing a 350,000-box capacity. Alongside sits a 10 ha empty container park with a working capacity of about 200,000 standard containers annually.

When fully operational in December 2017, the terminal will have six auto STS cranes, with additional container storage swelling terminal capacity to 1.4 million standard containers plus a 280,000 empty container park capacity.

Ship-to-shore automated cranes alongside automated gantry cranes at the VICT Webb Dock Terminal Melbourne VICT is situated downstream from Melbourne's West Gate Bridge at the mouth of the River Yarra, and is designed to handle 8,000–12,500 teu vessels, almost twice the size of vessels loading at the other terminals, upstream, said Dømmestrup. The company has invested in the latest technology and robotics, including AUD77 million in equipment and IT systems,



made up of AUD21 million on control systems for its 35.4 ha superstructure and AUD56 million for automated stacking cranes and shuttle carriers that ferry the containers from 'buffer zones' beside the cranes to the stack.

Cargotec subsidiary Kalmar is supplying all the automated equipment and terminal logistic systems port-side, and the automated truck-handling system land-side. The Navis operating system is also a Cargotec product. Australia's BMD is behind the construction works, including light emitting plasma (LEP) technology operated by a BLMS (battery load monitoring system) app accessible from any smartphone, tablet, or computer.

VICT is ahead of schedule and on budget, but the project has not been without hitches. An Australian Competition and Consumer Commission report has raised questions as to whether automation delivers the productivity outcomes that stevedoring companies (and manufacturers of port automation) have been touting. Figures of elapsed labour rates at each of Australia's five container terminals put Melbourne, currently a fully manual port, in first place with more than 50 boxes/hour, whereas at the heavily automated Sydney elapsed labour rate came in at less than 50 boxes/hour. Brisbane, Australia's first automated terminal, scored under 40 boxes/hour elapsed rate.

This was also reflected in the net crane rates with all three manual terminals of Adelaide, Fremantle, and Melbourne outpacing the two automated terminals of Brisbane and Sydney, with more than 30 moves/hour, according to Bureau of Infrastructure, Transport, and Regional Economics (BITRE) data.

DP World has told *P&H* it has no plans to automate its Melbourne terminal because manual productivity is high. In Auckland, New Zealand, management told *P&H* while they were introducing Autostrads land-side that they believed automation could not compete with their skilled labour quayside.

Dømmestrup said, however, that retrofitting existing terminals with automation was not ideal. "Integrating small pieces introduces manual auto interface which is not good," he stressed. "For us it was an either/or situation. Manual interface with automation creates major risk areas. As a greenfield site we have a set up with a blank sheet." He is confident the VICT auto terminal will be competitive. "It's not the automation itself that leads to productivity," he told *P&H*. "Automation is about replacing unsafe jobs and this is the way forward in such a dangerous industry."

Dømmestrup said VICT's landslide innovation was where the biggest gains would be seen. "Melbourne's biggest problem today is congestion," he said. "Developing a terminal to operate within a congested area by optimising landside facilities – that will be the advantage going forward." PH

MORE INFO: www.vict.com.au

Benefits for Baltimore and bay ecosystem

ott Berm.

P&H visited Poplar Island in Maryland for a firsthand look at an award winning project that makes good use of locally sourced dredged sediment. *Scott Berman* reports

Poplar completed manmade wetland with tidal channels oplar Island, an ecological restoration and navigation project visible when just a few minutes out into Chesapeake Bay on the US Atlantic Coast, is on the verge of a major expansion project.

The project uses material dredged from regional navigation channels in annual maintenance projects and has been implemented by the US Army Corps of Engineers (USACE) Baltimore District, the Maryland Port Administration, and other state and federal agencies. The average yearly amount of sediment removed from the channels is 1.5–2 million m³ in dredging that is vital to the Port of Baltimore, about 48 km north of the island. This project will keep those channels navigable, while recreating depleted bay habitat.

The island was known to Spanish explorers in the 16th century, but by the the late 19th century had eroded and split into three. In 1998, dredging technicians started using the site for placement of dredged material, restoring is landmass and constructing what is now a 461 ha island.

Remnants of the original islands are still visible in certain places on today's Poplar, which is now a similar size to when it was first documented.

Stakeholders see the island facility as a national model for proactively managing dredged material. Various sites are used beneficially before being closed and the dredged material moves on to the next site. One pioneering example is Hart-Miller Island, also in Chesapeake Bay, which was completed in 2009.

Poplar Island is now covered in vegetation and is home to thousands of birds and about 300 deer – they either swam to or walked on bay ice to get to the island.

The USACE project manager at Poplar, Justin Callahan, explained how the dredged material was moved from Port of Baltimore's approach channels to create the island. Mechanical dredging in the channel is carried out using a clamshell bucket and then moved to Poplar using a tug and scow. The material is then turned back into slurry and hydraulically pumped into containment cells.

Half of the cells that comprise Poplar are uplands,



with the other half wetlands. When *P&H* visited in July 2016, 121 ha of wetlands had been created out of a planned total of 230 ha.

Several projects are in the pipeline to expand Poplar vertical and horizontally.

Dredging technicians will first raise the height of a weir and spillway structure at the north end of Poplar, close to where horizontal expansion of the island will unfold at a later date.

Norfolk Dredging in July 2016 won a USD 7.1 million contract to stockpile 1 million m³ of sand on the island, pumped from nearby borrow areas. The sand will be used in part to raise a number of containment cell dikes, creating an additional 4.6 million m³ of capacity.

Another project will boost Poplar's size from its current 460 ha to 695 ha. That will increase dredged material capacity from the current 30 million m³ to 52 million m³ and will be completed in 2029 or 2030, said Callahan.

Many people have seen the island over the years. It has about 2,000 visitors annually and has been visited by officials from 40 or more countries, including Iran, China, Japan, and nations in Africa. Local schoolchildren visit too, with the team at Poplar seeing much educational potential in the ecosystem restoration.

The stakeholders' work has attracted attention in other quarters. In 2015, the American Society of Civil Engineers (ASCE) recognised the Poplar project with its Innovation in Sustainable Engineering Award. ASCE called the project "a stellar example of ... vision, collaboration, and creativity". This helps explain why the project is being called, at least by USACE, "a national model for beneficial use of dredged material".

The continuing success at Poplar, coupled with the continuing need to dredge Baltmore's access channel, have led officials to continue preparations for Chesapeake's Mid-Bay Islands. Authorised by the federal government in 2014 legislation, this project will eventually cover 810 ha, giving it 57%



more containment space than the current Poplar site, providing another 69 million m³ site, and years of capacity for harbor and channel maintenance dredging sediment, according to Callahan.

Officials and stakeholders are working to secure funding for the design of Mid-Bay, with the USACE and the state of Maryland in the "very early stages of hammering out an agreement" for that design.

Callaghan said of the entire approach at Poplar Island, "Yes, I know the metrics are about how many acres are created and how many cubic yards of dredged material are placed, but the big thing, the fundamental reason for this project, is to restore ecosystem services to Chesapeake Bay."

And that is what the advancing project is doing, in addition to enabling a major port to continue operating. "I'm pretty excited about this stuff," he said. "I'm just glad to be a part of this." PH









Croatia revitalises cruise industry

Dubbed the Jewel of the Adriatic, Dubrovnik in Croatia is optimistic that a new development will turn around its passenger throughput, reports *John Pagni*

ort Authority of Dubrovnik (PAD) hopes to turn around its fortunes with the help of a EUR90 million (USD100 million) development plan to transform its main waterfront into a commercial complex.

If the plan is approved by the Croatian government in Zagreb, it is hoped the two-year project will reverse a recent trend that has seen passenger throughput drop in all three sectors it caters for: cruise, local, and international ferries.

Until 2013, Dubrovnik had experienced an increase



in passengers. That year set records as a total of 942,909 set foot ashore from 553 cruise ship calls – that was 63% of total passenger throughput. Since that peak, however, cruise numbers have declined, with 743,087 coming ashore in 2015 out of 1.22 million passengers that went through the port.

The new development includes extending the Batahovina 1 berth. Stage two of the plan will add another 400m of quayside on the other side of the Franjo Tudjman Bridge, freeing the deepwater (11 m) berths along the main Gruž Bay front for cruise-only use. A new terminal will be built there. Following these developments, local ferries, mainly operated by state-owned Jadrolinja, which operates all along the coast up to Rijeka and has a summer service to Bari in Italy, will dock at Betahovina and will be served by multimodal transport.

If this plan goes ahead, the new cruise terminal at Gruž Bay will be the centrepiece, with France's Bouygues Batiment International the main builder. It will eventually be operated as a joint-venture with Global Port Holdings (GPA) of Turkey under the name Dubrovnik International Cruise Port Investment (DICPI). It is tentatively scheduled for completion in 2019 and requires demolition of all the current dockside buildings and replacement with a shopping mall, bus



A cruise ship at Batahovina 1 berth (left) below Franjo Tudjman Bridge, with a coastal ferry and two cruise ships at Gruž Bay quay and coach stations, as well as a multi-storey car park with ample space set aside for excursion coaches to handle cruise passengers.

"The Mediterranean as a cruise market has decreased slightly in the past couple of years," explained Kristijan Pavić, who at the time of writing was Dubrovnik's port director but was due to be seconded to the yacht marina in Opatija. He knows the sector well, having been on MedCruise's board for years and assumed its presidency in December 2015. He told *P&H* he felt this was due to "the Chinese challenge, with more ships deploying in Asia and achieving higher yields there. It's a new market and a test for us."

Croatia's accession to the European Union in July 2013 has not affected passenger throughput, as Dubrovnik does not have the advantage of being either a freeport or value added tax (VAT)-free. So adherence to European Union VAT regulations resulted in companies incurring extra costs. Additionally, Croatia is not in the Schengen area – a group of European states that have officially abolished passport and other controls at mutual boundaries – adding passport procedures to passenger disembarkation and boarding time. On the plus side, it is a 'must see' cruise port of call, as defined by the European Sea Ports Organisation (ESPO).

Pavić indicated that there was much to be optimistic about, as in 2015, Dubrovnik became a turnaround port for cruise ship *Thomson Celebration*. The ship calls 26 times a year, each with a maximum of 1,254 passengers, representing potentially more than 32,000 passengers a year. "And, on the busiest days, we can have five or even six ships a day, although not simultaneously, just some hours each," he said.

In 1996, Dubrovnik was designated a passengeronly port, with Ploče, 100 km to the north, acting as a maritime cargo conduit for southern Croatia and Bosnia-Herzegovina. The other four state-controlled ports are Rijeka, Split, Šibenik, and Zadar. "It was decided to develop Dubrovnik to serve the capacity and sizes of future generations of ships calling here," explained Pavić.

Croatia's political situation deteriorated and another general election – this was the ninth since 1990 – was held on 11 September 2016. The same coalition government was re-elected, but with a new prime minister, and the new cruise terminal deal was due to be signed shortly after this issue went to press.

Dubrovnik port began upgrading after the turn of the millennium and the first project reconstructed the main Gruž Bay berthing docks – 11 to14 – to a length of 810m, for priority use by up to three large cruise ships and small Croatian coastline cruise vessels at the city end. It was completed in 2009 at a cost of EUR40 million (USD44.3 million) and financed by the port authority using loans from the European Bank of Reconstruction and Development (EBRD) and its own resources on a 3:1 basis.

This was followed in 2010/11 by the building of the USD8 million Batahovina I berth, which requires ships to dock under the Tudjman Bridge. At 220 m long and with a 9 m draught, its purpose is to receive smaller vessels – either international or domestic ferries – that can manage the 47 m height limit between the bridge and the sea surface.

Pavić explained that the six state Croatian ports were landowners in charge of infrastructure only. "Commercial operators are decided by tender and given a concession". It this case it was 40 years, he revealed. "It's easy to work in the cruise market when we have an attraction such as Dubrovnik Old City." **PH**

MORE INFO: www.portdubrovnik.hr

Rotterdam opens LNG bunkers berth

WPCI

A dedicated berth for LNG bunker vessels was formally opened on 24 November at the port of Rotterdam. It has been under construction since January 2015.

This LNG facility is an initiative of Royal Vopak, a global tank storage provider, and Dutch gas infrastructure company Gasunie. Together they are the main shareholders in the Gate terminal, with a combined share of 95%.

The terminal that was built between 2008 and 2011, was originally set up for the largescale import of LNG. It has a present capacity of 12 million m³/ year and is where regasification of imported LNG takes place. The gas is then integrated into the European gas network.

Since 2010, Vopak and Gasunie have felt that, as a result of tighter emissions regulations, there was a growing demand for LNG as a fuel for ships and large trucks, hence the need for a smaller-scale breakbulk distribution circuit.



Coral Methane takes on LNG bunkers at the Gate terminal, Rotterdam

The two companies believed that the Gate terminal could serve this market and deliver LNG as a product in breakbulk quantities in parallel with its existing large-scale process.

In 2013, it was decided to modify the terminal's existing two

jetties, originally only meant for large LNG carriers of between 60,000 and 200,000 m³, to handle smaller ships of about 6,000 m³, enabling LNG transhipment to the European market.

However, with the 1 January 2015 implementation of a

reduction of the sulphur limit for ships' fuel emissions from 1% to 0.1% in sulphur emission control areas (SECAs), demand for LNG was expected to rise.

With busy shipping areas in Europe, including the Baltic Sea English Channel, and the North Sea, having been defined as SECAs, the impact on European shipping traffic was substantial. To serve this growing market, the Gate shareholders considered it vital to establish a third dedicated loading point for small LNG carriers and bunker vessels.

Port of Rotterdam Authority awarded a contract to a Dutch joint venture of Hakkers of Werkendam and Van Oord Nederland, a subsidiary of dredging and marine engineering company Van Oord, to realise the berth's maritime infrastructure. It has been dredged to an initial depth of 10 m, but the quay wall of the terminal is designed for a depth of 13 m, which would allow future deepening if there is demand for larger ships with deeper draughts.

Shell is the main user of the facility. Its chartered LNG tanker *Coral Methane* was the first vessel to be handled there, in September 2016.

MEPC 70 sticks to 2020 for sulphur cap

The IMO's Marine Environment Protection Committee (MEPC) announced at MEPC 70 on 28 October that it had approved a 2017–23 "road map" for developing a comprehensive strategy on reducing greenhouse gas (GHG) emissions from ships, with an initial GHG strategy to be adopted in 2018.

The MEPC also adopted new fuel-data collection requirements for vessels 5,000 gt and over, which account

for an estimated 85% of carbon emissions from international shipping. The data will be used to make decisions on additional measures related to curbing GHG emissions from ships.

The decision came in the middle of other major decisions at the IMO affecting shipowner costs at MEPC 70, including a global cap on sulphur in marine fuel by 2020. "The adoption of the road map is a significant decision by IMO member states that will give further impetus to the substantial CO₂ reductions that are already being delivered by technical and operational measures, and the binding global CO₂ reduction regulations for shipping adopted by IMO in 2011, four years before the Paris Agreement," commented International Chamber of Shipping secretary general Peter Hinchliffe on 31 October.

Notable numbers

Global emissions by 2050 from shipping projects – Transport & Environment report



Ballast water management systems currently approved by US

US states free to adopt tighter ballast water standards

A last-ditch effort in the United States to pass a bill that would have kept individual states from adopting tighter ballast water discharge standards has failed.

The Vessel Incidental Discharge Act (VIDA), legislation, which shipowners have been attempting to enact for years, would have eliminated the US Environmental Protection Agency's (EPA's) authority from regulating ballast water discharges in US waters, handing over sole authority to the US Coast Guard (USCG).

Under EPA oversight, individual states are currently allowed to pre-empt federal regulations with laws that can be more restrictive. Ballast water regulations on the books in California and New York, for example, are considered to be 100 times more strict than federal standards.

Elise Stefanik, a US representative from New York, had worked to eliminate the bill from the National Defense Authorization Act, which was finalised on 2 December.

Supporters of VIDA then attempted to have it included in a short-term budget package. But that package, which funds federal operations through April 2017, was approved by the US Congress on 9 December without the VIDA legislation included.

"This has been important for us for the last 15 years, and we still have the state pre-emption issue, where individual states can do their own thing when it comes to regulating ballast water discharges," said Chamber of Shipping of America president Kathy Metcalf.



The ballast water debate has picked up pace as the United States finally approved a system in December

Metcalf, whose organisation represents US-based companies that own, operate, or charter commercial vessels in both domestic and international trades, said not giving the USCG sole authority over ballast water regulations could undermine the agency's ballast water equipment type-approval regime. Earlier this month, Optimarin, a Norwegian equipment manufacturer became the first vendor to receive USCG typeapproval [see box]. The agency is expected to certify more systems, possibly by the end of the year.

However, "no matter how many US-type approved ballast water systems there are, compliance will always be an issue because states can put in more stringent regulations," Metcalf warned.

VIDA is expected to be reintroduced by the next Congress, which is scheduled to convene on 3 January. A Capitol Hill source familiar with VIDA said that while the legislation didn't pass in 2016, "we're going to keep going."

Optimarin is first in with US-certified BWTS

A milestone for ballast water equipment compliance was reached on 2 December when regulators certified equipment for shipowners looking to trade in the United States.

The US Coast Guard has given its stamp of approval to the Optimarin Ballast System (OBS) manufactured by Oslo-based Optimarin, thereby making available the only ballast water management

----3.75%

system (BWMS) so far that meets the regulatory requirements of flag states that are a party to the International Maritime Organization's (IMO's) Ballast Water Management Convention, which was ratified in September, and stricter testing standards of the United States.

The US Ballast Water regulation has been in effect since June 2012. The IMO convention goes into effect on 8 September

0.1%

2017, after meeting the threshold for ratification in September 2016.

While shipowners who want to trade in the United States can continue to apply for an extension that will last up to five years, extension applications will require more documentation explaining why a vessel cannot comply with US regulations now that a US-certified system is available, the USCG stated on 2 December.

> Hong Kong sulphur cap target by 201

Shippers indifferent to scrubbers

Shipowners remain lukewarm about the option of fitting exhaust gas scrubbers to vessels to meet new marine fuel sulphur limits of 0.5% by 2020 while continuing to use heavy fuel oil.

The maritime regulations limiting emissions of SO_x and particulate matter (PM) has forced the shipping industry to weigh its options. Some high-profile owners are taking options on dual-fuelled LNG-capable newbuildings, while others are looking to install SO_x abatement units or scrubbers.

However, Jack Hsu managing director of Oak Maritime (Hong



A Wärtsilä scrubber destined for aWilhelmsen car carrier

Kong), said, from an owner's perspective, he would rather delay installing scrubbers as a solution to the emissions regulations."In 2020, the 0.5% sulphur cap comes in and that 0.5% is basically a distillate," he told the Asian Logistic and Maritime Conference in Hong Kong. "We are talking about bunker oil that is around USD270/ tonne against distillate that is roughly USD400/tonne." It is a matter of time until prices reach equilibrium, he said "so from an owner's perspective I would rather delay installing scrubbers as a way to take care of the SO_x problem."

Henrik Hartzell, managing director Far East for global tanker operator Heidmar, agreed that fuel pricing was a key area that would influence any decision to fit scrubber technology to a vessel. "Investing in scrubbers costs more than USD1 million per scrubber to install, so we need to see a higher differential in the gas versus oil price to justify that," he said.

Anthony Gurnee, CEO of Ardmore Shipping Corporation, also said it was unlikely that many shipowners would be investing in scrubber technology.

Report slams shipping's commitment to emissions cuts

The growth in emissions from shipping and aviation will undo nearly half of the savings expected to be made by the rest of transport in Europe through to 2030 based on a study by sustainable transport campaign group Transport & Environment (T&E).

The findings show that 43% of the emissions savings expected to be made in land transport across the continent in the next 13 years will be cancelled out by those emitted by ships and planes.

Bill Hemmings, aviation and shipping director at T&E, placed the blame squarely on the shipping and aviation industries.

"Planes and ships are free riding at the expense of land transport's already insufficient efforts to cut emissions," he said. "This is not only unfair but a roadblock to Europe meeting its own climate



Report says shipping will account for 17% of global emissions by 2050

commitments. Governments need to think again and include shipping in the emissions trading system and strengthen its aviation provisions." he continued.

The European Parliament will consider a proposal to regulate shipping emissions through the creation of a Maritime Climate Fund and by including ship emissions in the EU's emissions trading system (ETS). In January, the European Commission will make a proposal on aviation's future in the ETS.

The T&E report said shipping was likely to account for 17% of global emissions by 2050, yet the IMO had decided to delay by at least seven years any agreement on introducing a global measure to reduce greenhouse gases in the sector by then. Aviation is expected to account for 22% of all CO_2 emitted by 2050.

Cleaning up emissions is a major focus area of the world's shipping industry and delegates at the Marine Environment Protection Committee (MEPC) 70 meeting in October agreed to meet marine fuel sulphur limits of 0.5% by 2020.

However, one of the chief concerns to shipowners is the cost of compliance. The rule will add an estimated USD15,000– 30,000 in daily operating costs for ships that burn 100 tonnes of fuel or more per day, and it comes at a time when the global shipping industry is struggling for survival.



Boxes/hour at Brisbane fully automated port – lower than Melbourne's manual terminal



Growth seen by many east Africar ports in 2015



MSC 97 in November, where mandatory cyber security requirements were postponed

IMO holds off on mandatory cyber rules

Avoiding another layer of costs for shipowners was part of the rationale for postponing mandatory requirements on cyber risk management at the IMO. The agency's Maritime Security Committee (MSC) earlier this year approved 'Interim guidelines on maritime cyber risk management,' considered a new benchmark for maritime cyber-security standards.

At its 97th meeting (MSC 97) in 21–25 November, the Iranian delegation proposed developing those guidelines into "a mandatory instrument to ensure consistent application of cyber-security measures and procedures on board ships and on shore-based systems interfacing with ships".

However, "while all delegations that spoke recognised the importance of implementing the high-level recommendations on maritime cyber-risk management" approved by the IMO, "a careful assessment should be conducted before developing any mandatory provisions on maritime cyber-risk management to avoid additional administrative burdens", said the IMO.

The IMO also pointed out that, as stated in the interim guidelines,

maritime cyber-risk management should be addressed through existing management practices set out in the International Ship and Port Facility Security (ISPS) Code and the International Safety Management (ISM) Code.

The MSC also agreed to wait until the next meeting of the IMO's Convention on Facilitation of International Maritime Traffic (FAL) in April to "complete the work on facilitation aspects" of maritime cyber security before further considering possible mandatory cybermanagement requirements. Despite the IMO delaying for the prospect of mandatory requirements, Kate Belmont, a cybersecurity expert at the law firm Blank Rome in New York, noted that the attention paid to cyber risk at MSC 97 signals the likelihood that cyber security will eventually be taken to another level.

"It appears the IMO is committed to creating a mandatory instrument to ensure consistent application of cyber-security measures and procedures on board ships and on shore-based systems interfacing with ships, but the IMO is taking a cautious approach," Belmont said.

"Although maritime cyber-risk management continues to be voluntary, its critical importance should not be underestimated. Requirements are on the horizon and it is advisable that all players in the maritime industry invest in effective cyber-risk management."

As the maritime sector looks to limit potentially costly cyber regulations through self-imposed guidelines – such as those issued jointly earlier this year by several shipowner groups – the damage that can be done by cyber hackers is becoming increasingly evident.

Cyber risk profile scheme unveiled

Oil and gas vessel and terminal operators can now access a voluntary cyber-security prototype for use in planning against a cyber attack.

The Cybersecurity Framework Profile, unveiled on 10 November at the American Petroleum Institute's Cybersecurity Conference in Houston, is the first of its kind for maritime transport, according to the US Coast Guard (USCG). The 150-page document was created by the USCG and the National Institute of Standards and Technology (NIST), with input from private companies.

The profile works in combination with NIST's Cybersecurity Framework, developed in 2014 to address and manage cyber-security risk based on business needs without the burden of costly new regulatory requirements. The profile gives maritime liquid bulk transfer (MBLT) facilities a way to integrate the NIST cyber framework into their operations.

"This first Cybersecurity Framework Profile for the maritime transportation sector is the culmination of hard work from industry stakeholders, the coastguard, and NIST to provide guidance to the MBLT industry to adapt their risk management processes to include cyber risk management," said Ryan Manning, head of the USCG's Office of Port & Facilities Compliance.

"While these profiles are voluntary in nature, I highly encourage industry to consider using this to achieve optimal cyber security for their respective organisation."

The USCG said it planned to work with NIST to build four additional profiles that would include passenger vessels, cargo vessels, navigation, and offshore facilities.



LNG-fuelled vessels under construction that are passenger ships



Amount Trump administration will see for US infrastructure investments





– head to Bali in May

Indonesia's port corporations invite you to join them in Bali this year for the IAPH 2017 World Ports Conference

Indonesia Port Corporations (Pelindo 1 to 4) will be hosting the 30th IAPH World Ports Conference from 7–12 May. The event will take place at Bali Nusa Dua Convention Center (BNDCC). Under the banner, 'Enabling trade - energising the world', the port authority hopes to share with IAPH members and port professionals its experiences to date as it develops and manages its port and maritime business.

For many years Indonesia has played an active role as a regular member of the prestigious organisation that is IAPH. It very much believes in the benefits of bringing the world's port community together for this biennial event.

The event will be attended by some 1,000 delegates, including government officials, operators, and associations, who are experts in the fields of ports, logistics, and maritime.

The event is an excellent opportunity to share experiences and discuss issues faced by port officials globally, including green ports and port technology, and port development across the globe.

Bali was chosen not only because of its reputation as a tourist destination, but also for its proven track record of hosting international events. "It is an opportunity to see its boundless variety of unique sceneries as well as countless traditional and cultural heritages," said the port authority.

In May 2017, the port authority hopes to receive you in Bali and share with all of you its natural and cultural icons."An

IAPH welcomes its vice-president for Asia-1

In November, IAPH officially elected its new vice-president for the Asia, South/West, East & Middle East (Asia-1) region through a vote of confidence.

Masaharu Shinohara, executive officer, Kobe-Osaka International Port Corporation, Japan, was the single successful candidate who applied for the position, responding to a call for nominations in September.

The voting was conducted by

36

way of email ballot of all regular and honorary members in the region in October.

VP Shinohara continues to chair the IAPH Port Operations & Logistics Committee.

Commenting on his appointment, Shinohara noted that he was in charge of productivity improvement for container terminal operations, the application of information and communication technologies,



Masanaru Shinonara Kobe-Osaka International Port Corporation

market analysis of container trades, and international exchange activities at Kobe-Osaka International Port Corporation. In his role as VP he hopes to exploit his past experience and



excellence programme awaits that will introduce the business culture of Indonesia" and how it sees itself within the global maritime scene.

The conference programme has five main themes:

Greenfield port project: challenges and opportunities

The new administration of President Joko Widodo aims to transform Indonesia into a 'global maritime axis'. To do this, he aims to roll out a priority programme for infrastructure and economic development including the construction of a sea highway, a deepsea port, land development of the country's logistics and maritime tourism. In line with this vision, the programme requires the construction of many greenfield ports along the Indonesian archipelago.

While the opportunities presented by this development programme are considerable, the challenges are also massive, notes the port authority. "As such, this programme needs to be addressed through meticulous planning in order to provide a wholesome and lasting contribution to the country's maritime infrastructure."

Port hinterland connectivity and multimodal logistics

Connectivity between a port and its hinterland is vital to ensure the success of a port. Connectivity usually consists of roads, tolls, inland waterways, and railways. Indonesia will develop alternative transport modes from its ports to its hinterland by using inland waterway and trains, to reduce its dependence on roads and tolls.

The port authority hopes these alternative transport routes will alleviate congestion on the roads and tolls connecting ports and Indonesia's hinterlands. It is also hoped that it will decrease logistics costs, transport time, and eventually may support the reduction of air pollution.

The evolution of the global shipping industry and shipping routes

The increase of the size of vessels has been very rapid over the past 10 years and it is often beyond the comprehension of those outside the industry. Shipping companies are changing their routes to accommodate these increasingly large vessels, but do these bigger ships and new routes provide the most effective and efficient logistics chains?

The effect of a special economic zone on the growth of ports

The Indonesian government is committed to increasing economic growth and equitable development through the construction of special economic zones (SEZs) in several parts of the country. The SEZs will be connected with international ports to provide economies of scale and reduce logistics costs. The synergy between SEZs and the ports will deliver multiple effects, both for traffic generation in the ports and industrial development in the SEZ areas.

Indonesia maritime transformation

The first step required to transform Indonesia's maritime industry is

the modernisation of existing ports and the construction of modern ports. This will standardise the level of service that Indonesia's ports can offer and will enable them to offer facilities for large vessels. Many programmes could be implemented to support this step. Hopefully, transformation in the maritime field will bring positive impacts to the country's economic growth and equitable development.

A three-day exhibition will run concurrently with the conference and the social programme promises to be an excellent space for networking, business, and entertainment.

MORE INFO:

www.iaphbali2017.com

Early bird port visit

Those early birds that arrive on Sunday 7 May will get the chance to visit the largest port project in Indonesia, the New Priok Terminal, projectport of Tanjung Priok, and a Jakarta city tour. Technical committee meetings begin the following Tuesday.



professional knowledge of port operations and logistics.

He said, "I would like to do my best to enlarge the participation of member organisations in the Asia-1 region as well as activate lively discussion among the regional members.

Furthermore, considering the vast diversity of the Asia-1 region members, ranging from the Far East to the Middle East, the first thing I am going to tackle is to understand the general situation and major issues of the regional member ports."

Meet the IAPH management team

Vice-president Shinohara's appointment completes the board for the current term. Below is the current line-up of IAPH president and vicepresidents, who compose the board, as defined by the new IAPH constitution, in other words, the new IAPH management team.

President

Santiago Garcia-Milà, deputy managing director, Autoritat Portuària de Barcelona, Spain

Vice-president: Africa region

Hien Sié, managing director, Abidjan Port Authority, Côte d'Ivoire

Vice-president: America,

Central and South region

Mauricio Suárez Ramirez, former CEO, Port of Santa Marta, Colombia

Vice-president: America, North region

Molly Campbell, director, Port Department, Port Authority of New York and New Jersey, USA

Vice-president: Asia, South/West, East and Middle East region

Masaharu Shinohara, executive officer, Kobe-Osaka International Port Corporation, Japan

Vice-president: Asia, South East and Oceania region

Martin Byrne, CEO, Port Nelson, New Zealand

Vice-president: Europe region

Peter Mollema, senior manager and strategy adviser, Port of Rotterdam Authority, the Netherlands



Membership notes

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

Regular members

Lyttelton Port Company

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🔇 Telephone	+64 3 328 7932
🕚 Email	peter.davie@lpc.co.nz
🛞 Website	www.lpc.co.nz
\delta Representative	Peter Davie, chief executive

Associate members

Marine and Coastal Construction Service (MACCS)

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9	Telephone	+44 2070 60 3000
8	Fax	+44 2070 60 3099
0	Email	accounts@maccs.co.uk
	Website	www.maccs.co.uk
	Representative	Paul Borrowman,
		business development manager
Θ	Nature of business ac	tivities Maritime publishing

Nishal Sooredoo (Royal Haskoning)

	Address	Flat 11, 291 Boardwa	alk Place London, E14 5GE, UK
C	Telephone		+44-7818060263
0	Email		nishal.sooredoo@gmail.com
Θ	Nature of busi	ness activities	Individual membership

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 We'll be happy to include them

Environment Committee chair

Further to the resignation from the Environment Committee of Dato' Capt David Padman, Port Klang Authority's general manager, in October, a new chair of the committee has been appointed. He is Henri van der Weide, policy adviser, safety, security and environment, Port of Amsterdam, the Netherlands. Previously he was the committee's vice-chair.

"The Port Environment Committee has been very busy and actively participating in major issues concerning the environment, but also in a wider perspective of sustainability," said Van der Weide in his remarks as incoming chair. "The main focus of our topics lies of course within ports, but we also discuss environmental issues in the whole maritime chain."

He highlighted the fact that IAPH had NGO (nongovernmental organisation) status at the International Maritime Organization and International Labour Organization, and that the managing director (the IAPH representative) shared relevant developments from these forums with the committee.

"The World Ports Climate Initiative (WPCI) is part of our discussed actions within the Port Environment committee. Success-stories of the WPCI are, for example, the Environmental Ship Index, a toolbox for carbon footprinting, guidelines on onshore power supply, and the safety and environmental issues around LNG-bunkering."

He said that, together with other organisations such as PIANC and ESPO, in between meetings the committee worked on relevant projects, such as sustainability reporting for ports. He concluded his remarks to the organisation as a whole by saying, "I look forward to your active participation in this committee at our meetings and also via our committee chat

rooms or working together on one of our projects or WPCI-topics. Please feel free to reach out to us with comments and suggestions."

MORE INFO:

For more information on the Port Environment Committee, including activities and details on becoming a member, please contact the chair: www.bit.ly/iaph-committee

> Henri van der Weide, Port of Amsterdam, the Netherlands



Dionysia Avgerinopoulou at the IAPH office in Tokyo in October

Visitors welcomed to the secretariat

The IAPH secretariat has welcomed two guests to the Tokyo office over the past two months. Dionysia Avgerinopoulou, a Greek politician who is a specialist attorney in international and environmental law at both domestic and international level, visited the IAPH head office on 21 October. She visited IAPH en route to the World Forum on Sport and Culture held in Tokyo, Japan.

Avgerinopoulou and Secretary General Susumu Naruse exchanged views on international topics such as the environment.

More recently, Robert Gilchrist, from associate member SafeSTS, visited with Soka Kikuchi, an IAPH life supporting member on 11 November. Headquartered in Norfolk, UK, SafeSTS conducts ship-to-shore transfer of oil and LPG around the globe, 24 hours a day, 365 days a year.

Secretary General Naruse took the opportunity to highlight recent IAPH activities, including the last IAPH Women's Forum in Panama City.



Left to right: Soka Kikuchi, Narumasa Tonda (IAPH), Robert Gilchrist, Hiroyuki Nagai (IAPH), and Susumu Naruse met at the secretariat in November

2018

2019

Dates for your diary

A selection of forthcoming maritime courses and conferences

January

- 24–25 International Conference on Maritime Energy Management-MARENER 2017, Malmö, Sweden conferences.wmu.se/marener2017
- 24–25 14th Trans Middle East, Tehran, Iran *www.transportevents.com*
- From 26 Certificate in Container Shipping (*15% discount for IAPH members) Distance learning www.lloydsmaritimeacademy.com/FLA2828AA

February

- 6–10 Strategic Port Logistics and Global Supply Chain Management, London, UK www.ttpminternational.co.uk
- **6–17** APEC Seminar on Port Security, Antwerp, Belgium *www.portofantwerp.com/apec*
- 13-24 Strategic Port Concession Policy, Operations and Management, London, UK www.ttpminternational.co.uk
- 14–15 AAPA Cruise Seminar, San Diego, California, USA *www.aapa-ports.org*
- 23–24 9th Philippine Ports and Shipping 2017 Exhibition and Conference, Manila, Philippines *www.transportevents.com*

March

- 6 ICHCA Dangerous Goods Seminar, London, UK *www.ichca.com*
- 6-17 APEC seminar on IT and EDI in port business, Antwerp, Belgium www.portofantwerp.com/apec
- **6–17** 'Dry Port' Planning, Operations and Management, London, UK *www.ttpminternational.co.uk*
- **6–24** Coastal and Port Structures, Delft, Netherlands *www.unesco-ihe.org/short-courses*
- 20–31 APEC seminar on legal aspects of port operations and trade, Antwerp, Belgium www.portofantwerp.com/apec

May

7-12 The 30th IAPH World Ports Conference, Nusa Dua, Bali, Indonesia www.iaphbali2017.com



Ports and the respective industry stakeholders are going to need to work together to increase the speed, consistency, and reliability of cargo flow

The last mile **matters**

Molly Campbell, director of the port department at Port Authority of New York & New Jersey, gives her perspective on a big trend for 2017

Looking ahead to 2017, it may be challenging to highlight just one or two changes impacting the port industry. In reality, this sector has been evolving and responding to change for decades. Nevertheless, both the speed and magnitude of the changes we are witnessing today is consequential.

If you were to look at the storage space in any urban home, you would see firsthand the growth in e-commerce package delivery. These online retailers have clearly emerged as one of the consumer's primary methods for purchasing goods.

Boxes from these retailers are arriving at least six days a week and in some cases multiple times per day. The retail experience is rapidly evolving to time-definite delivery windows as standard practice. This last mile of service delivery is notable in that it is also becoming a supply chain service differentiator among retailers.

Individual shipment lots are becoming smaller, faster, and on demand. The sheer range of products, including perishables, has expanded significantly. This retail trend is not unique to urban centres; it is a national and global trend too.

It is interesting that the container industry is simultaneously morphing to 'larger and fewer'. This trend is not incompatible with the evolving retail landscape. Nevertheless, it implies a new set of conditions that ports must increasingly be responsive to.

The last mile is no longer someone else's sole responsibility. Ports and the respective industry stakeholders are going to need to work together to increase the speed, consistency, and reliability of cargo flow.

The customer is speaking and we need to both listen and respond. №H

Nolly Compbeel



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