



PORTS HARBORS

Official Journal of the International Association of Ports and Harbors

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Decision time for Australia's ports



Kalmar DRF420-60S5
DK122 Year 2014



Kalmar DRF450-60S5
D3616 Year 2013



Kalmar DRF450-70S5XS
D3579 Year 2007



Kalmar DRF450-60C5X
D3478 Year 2005



Kalmar DRF420-60S5
D3578 Year 2003



Kalmar DRF100-54S6
D3650 Year 2012



Kalmar DRF100-54S6
D3576 Year 2011



Kalmar DRF100-54S6
D3617 Year 2011



Kalmar DRF100-54S6
D3586 Year 2010



Kalmar DRF100-54S6
D3577 Year 2009



SMV SC4531TB5
D3657 Year 2008



SMV SC4531TB5
D3653 Year 2006



SMV SC2016CA
D3637 Year 2004



Linde C4535TL
D3645 Year 2011



Linde C4535TL
D3644 Year 2011



Linde C4535TL
D3643 Year 2010



Linde C4545TL
DK071 Year 2008



Linde C4535TL
D3555 Year 2006



Fantuzzi CS45KL
D3551 Year 2004



CVS Ferrari F478.5S
D3597 Year 2007



CVS Ferrari F379.5
D3553 Year 2003



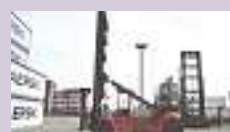
CVS Ferrari F278.5PB
D3649 Year 2001



Kalmar DCF100-45E7
D3572 Year 2011



SMV SC5/6 ECB100DS
D3550 Year 2011



Hyster H22XM-12EC
D3637 Year 2011



Valmet TD3012
D3503 Year 1985



SMV SL22-1200A
D3535 Year 2005



Meclift ML1812
ML001 Year 2017



CVS Ferrari F16W
D3565 Year 2007



Svetruck 1612035
D3651 Year 2004



Kalmar DCE160-12
D3652 Year 2003



Kalmar DCE120-12
D3635 Year 2008



Kalmar DCE120-12
D3571 Year 2006



Hyster H12XM-6
D3595 Year 2012



Terberg RT222 4x4
D3631 Year 2006



Kalmar TR618i
D3606 Year 2010





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Australia's port industry is in flux as it considers how to best position itself to cater for increasingly large vessels

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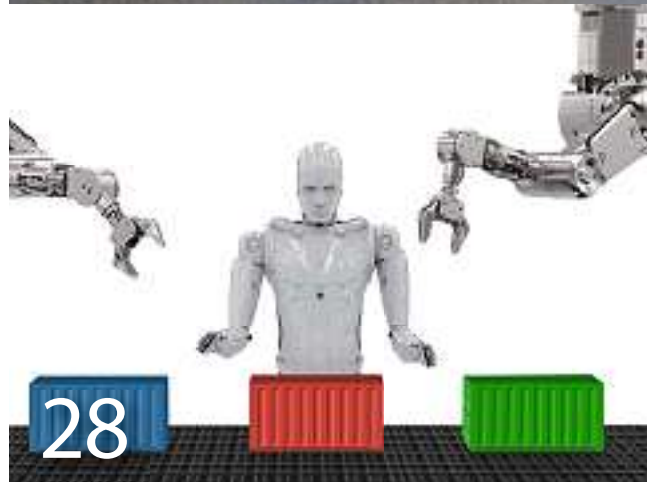
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Future choices

WPSP will underpin the technical committees' work to help put ports on a sustainable path



Susumu Naruse

Secretary General – The International
Association of Ports and Harbors



The IAPH World Ports Conference in Baku, Azerbaijan, was a great success, with more than 400 participants from 65 countries. Baku, known as the Pearl of the Caspian, is situated at one of nodal points of the ancient Silk Road, and now has become the largest city on the Caspian Sea.

During the conference, I was honoured to meet the president of Azerbaijan, Dr Ilham Aliyev, and was very impressed. Unlike politicians in general, he knows a great deal about how transport and logistics can contribute to national and regional economies. He claimed that his country had made transport and port development a top priority and he viewed the IAPH conference as a good opportunity for people in the region to network with the officials of major ports from across the globe.

It was the first IAPH event organised within the new conference format: for example, technical committee meetings were incorporated into the main working sessions, not run independently as was the case previously. We'll decide the future course by evaluating the results of a post-conference questionnaire.

At the IAPH Council meeting in Baku we discussed the variety of challenges facing the association. One priority is the work programmes of the World Ports Sustainability Program (WPSP). This is a huge body of work, with far-reaching scope that needs to be carried out by the IAPH technical committees. The first thing we will do is restructure

the committee membership, ask dormant members to leave and recruit new members with sufficient relevant expertise.

Meanwhile, this April, IMO officially committed to reducing international shipping's total annual greenhouse gas emissions by at least 50% by 2050, which may be replaced in 2023 by a long-term strategy based on data collected between 2019 and 2021.

Now that IMO's policy is clear, in order to retain sustainability in shipping, ports, as an interface between sea and land transport, must adopt these goals into their strategic plans. IAPH will look at ways to support their endeavours through the WPSP work programmes.

With protectionism on the rise, the future of the global economy, in particular international trade, is difficult to predict, although I believe healthy global development heavily relies on global trade. Under these circumstances, ports need to keep a close eye on both economic and technical trends to realise a sustainable society. **PH**

“IAPH will look at ways to support ports' endeavours to reduce their emissions”



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Port updates

► KHALIFA INVESTMENT

Mediterranean Shipping Company (MSC) is to make a USD1.1 billion investment at Khalifa Port Container Terminal (KPCT) in Abu Dhabi through its port development arm, Terminal Investment Limited, to build a container terminal with capacity of about 2.5 million teu. Abu Dhabi Ports Company, the port's landlord, which signed the 30-year concession with MSC in May, said the investment would bring Khalifa's capacity to 8.5 million teu by 2023.

► CEO FOR US OPERATOR

Marine terminal operator Ports America has appointed Mark Montgomery to replace Michael Hassing as president and CEO. Montgomery currently serves as a senior adviser at distressed-debt investor Oaktree Capital Management. He was previously president and CEO of Ports America Chesapeake, which operates the Seagirt container terminal at Port of Baltimore.

► PEEL PROVIDES CAREERS

Liverpool's Peel Ports has hired 25 full time staff to work at the UK port as part of a local recruitment drive. Ten staff started at the port in May, and additional groups were due to start work in June and July. They will be employed on a full-time and permanent basis, initially training as a port operatives, then moving into specialised roles including tug drivers and gantry crane operators. The operator has also recruited 11 member new members of staff at its Dublin terminal.



Kitack Lim, centre, with Santiago Garcia Milà (right) and Yuri Melenasat at an IMO special ports event in June

Industry urged to engage with single windows

In just a few months, amendments to IMO's Facilitation of Maritime Traffic (FAL) Convention came into force and will require ships' port arrival forms, security-related information, advance electronic cargo information, and advance notification for waste delivery to port reception facilities, to be transmitted to the relevant authorities in digital format via a maritime single window.

The manner in which ports will facilitate this data exchange was one of the themes at an IMO special ports event in London in June. Secretary General Kitack Lim said in his opening address that his priority was to open up IMO to other stakeholders and for it to be involved in all aspects of the maritime industry. The introduction of the FAL amendments is a perfect example of close industry collaboration between ports, shipping, and customs.

IAPH President Santiago Garcia Milà addressed IMO delegates – a first for IAPH – and, picking up on Lim's theme, said it was IAPH's role "to find a way for innovation to

become available to the entire port community".

Sharing of best practice will be vital as ports work towards the 1 January 2019 deadline for full electronic data exchange. Despite flexibility for compliance within the convention's wording, with extensions of up to 36 months available, many ports will still find it a tight deadline.

Pascal Ollivier, director of corporate development at Soget, a port community systems provider, told *P&H* that for some ports or states, implementation of a single window was not a priority right now. However, many major ports, such as Barcelona, Rotterdam, and Los Angeles, have established systems and others are looking at options as the deadline draws closer.

Nigeria is one country that has yet to implement a system, a situation that Nigeria Ports Authority managing director Hadiza Bala Usman intends to address. Bala Usman, who is also IAPH's vice-president for Africa, sees single windows as "critical" to ensuring ports meet their primary mandate of facilitating trade.

Case studies presented at the event suggested that the implementation of single-window platforms was a people-focused, time consuming process. Stakeholder engagement and involvement emerged as a key success factor in presentations by Morocco, Hamburg, and Norway.

Jalal Benhayoun, general manager at Portnet, the Moroccan port community system implemented in 2008, said, "A single window should be in the interests of real customers and not only in the interests of some communities or stakeholders". He highlighted the importance of co-operation between the public and private sectors.

Phanthian Zuesongdham spoke of the importance of communication and clear messaging surrounding the implementation of Germany's National Single Window. She showed a YouTube video (to be found at info.national-single-window.de) explaining that it took three and a half years of discussion before the port was happy with the wording. "Communication is a must," she said.

Productivity falls as ship sizes grow

Global port productivity fell further in 2017, indicating that container terminals continue to be challenged in their bid to keep pace with increasing vessel sizes and higher numbers of boxes exchanged on single calls.

The IHS Markit/Journal of Commerce (JOC) Port Productivity Database shows a 3% average drop in weighted port productivity globally in 2017 compared with 2016. Port productivity is defined as the number of container moves per hour spent by vessels in port.

Since the quantity of containers exchanged on a single call is a key determinant of how many cranes a terminal will deploy on a vessel, the port productivity metric is weighted for call size to allow for a more realistic comparison of productivity performance.

Most world regions saw a decline in port productivity in 2017, but at 12%, the decline was steepest in Africa. This is bleak news for the continent, where container volumes are expected to grow by about 8% this year and ocean carriers and terminal operators have been calling for urgent investment in port infrastructure.

Port productivity also declined sharply in Latin America (8%) and the Middle East and India (7%) in 2017. There was a 3% drop in the number of container moves per hour for vessels in port in northern Europe and North America.

"Southeast Asia was the only region where port productivity increased at a higher rate than call size for a relative net 1% improvement," said Singapore-based port productivity expert Andy Lane, who conducted the data analysis for IHS Markit/JOC.

Among major ports, the greatest declines in port productivity were recorded at Manila in the Philippines (-21%);



Geddy Images/5082538

Antwerp was among the top container ports for call size growth in 2017

Dalian on northern China's Bohai Rim, and Laem Chabang in Bangkok, Thailand (both down by 16%). Ports that improved productivity in 2017 included Long Beach in California (+16%) and Chiwan in Shenzhen (+19%).

The IHS Markit/JOC Port Productivity Database for 2017 includes more than 215 million moves at 798 terminals in 451 ports, representing about 54% of global moves.

The data show that call sizes – the average number of boxes exchanged per call – increased by an average of 9% globally in 2017.

Ports in northern Europe posted the greatest increase in average call size to 1,362 boxes, 20% higher year on year. Ports in southeast Asia and Latin America also experienced significant growth in average call sizes in 2017, rising to 1,220 and 890 – in both cases, 11% higher than in 2016.

Among top container ports, the highest levels of call size growth in 2017 were registered in Antwerp, Belgium (29%), Yangshan, China (27%), and Manila, Philippines (22%).

While the number of moves per hour spent by vessels in port declined, the data show a drop in

the time vessels waited for berth allocation by an average of 12 minutes, or 6%, on a global level.

"The northern European ports collectively reduced this time by 1.3 hours. In Africa, a 20-minute increase occurred. The Middle East and India also showed a deterioration, with vessels in the region waiting about 5% longer to get on to berth than in 2016," Lane said.

The world's 30 largest ports reduced port-to-berth time by 24 minutes on average. Top improvers were Antwerp and Hamburg. Manila and Shekou were the worst performers, with wait time rising sharply by 131% and 43%, respectively.

Major global transshipment hubs are relatively even in terms of the waiting time for vessels before getting access to berths. During the year, the average wait time at Jebel Ali in Dubai was 2.7 hours, while Hong Kong, Busan, and Singapore all averaged about 2.4 hours.

Elsewhere in southeast Asia, Port of Tanjung Pelepas and Port Klang in Malaysia posting wait times of 2.2 hours and 2.4 hours, respectively. Average wait time at Tanjung Priok in Jakarta was also 2.4 hours.

Port updates

► HYBRID PILOT BOAT

Port of London Authority has ordered the UK's first hybrid pilot boat. This comes as it published the final version of its Air Quality Strategy for the tidal River Thames. The order is said to represent the authority's commitment to encourage the installation of green technology, one of 18 proposals for action in the strategy. The new pilot cutter is expected to deliver dramatic improvements in the authority's overall environmental performance.



► ROTTERDAM BOX UPLIFT

Port of Rotterdam saw a 1.2 % year-on-year drop in freight in the first quarter of 2018. In total, 117.8 million tonnes were handled against 119.3 million tonnes in 2017. The port attributed this mainly to a drop in throughput of coal, iron ore, scrap, and crude oil. "In contrast, the growth in container throughput [this was up by 6.1 %] continued to increase significantly," it said.

► CHIEF FOR ABP

Associated British Ports has appointed Henrik I. Pedersen as its new chief executive. Previously at APM Terminals, he was chief commercial officer since January 2017. He will take up the role in August. Company chairman Phil Nolan said, "Henrik brings with him a wealth of experience and we are confident that under his leadership ABP will continue to go from strength to strength."

Port updates

► ALL-ELECTRIC CRANE

Liebherr has launched a fully electric port crane, with electric motor engines and “continuous drive characteristics”. All movements, such as luffing, hoisting, slewing and travelling, are done by electric motors, the company said. It is a modular crane and so is an all-rounder in terms of cargoes, handling anything from containers to bulk, general cargo, and heavy lifts up to 124 tonnes. It is designed for ports and terminals with an electrical infrastructure.



► PUERTO RICO EFFICIENCY

Luis A Ayala Colón Sucrs' terminal in San Juan, Puerto-Rico, is to implement Navis' N4 terminal operating system. At the same time it is using Navis professional services and training services. The terminal hopes the system will help to improve operations. The Luis Ayala Colón terminal is one of the largest in Puerto Rico, with an annual throughput of 230,000 teu. Navis will support it to efficiently handle cargo as the island recovers from the effects of Hurricane Maria and help to reach its goals for increased terminal production and efficiencies.

► CHAIR FOR BPA

British Ports Association has elected Alec Don as its new chairman. Don is chief executive of the Port of Milford Haven. His vision as chairman of BPA is for ports to be able to grow and support a new 'global Britain' and he calls for ports to be at centre of new development and enterprise zones.



The weather-impacted port of Salalah in Oman employs more than 2,200 people

Port of Salalah's task made harder by long-wave effect

Officials at the Port of Salalah in Oman are feeling the impact of seasonal squalls caused by the 'long-wave effect'. This has led to a reduction in lines calling at the port and millions of dollars in extra costs, as seasonal weather comes into play over its three summer months.

As evidence of the changeable weather conditions, Cyclone Mekunu in May left more than 12 people dead and scores injured or missing in Oman, where Salalah was deluged with three years' worth of rainfall in a single day, and Yemen, notably the island of Socotra.

Port of Salalah closed for a week and invoked *force majeure* clauses on contracts after ceasing operations on 24 May as the storm approached.

Long-duration waves are causing shipping lines to think twice before including Salalah in their strings.

Today, Maersk and MSC, which form the 2M alliance, and Qatar Navigation, are understood to be the only lines calling at

the port. Throughput hit 3.63 million teu in 2012, a figure not bettered until 2017, when it reached 3.95 million teu.

The phenomenon causes waves lasting 10 minutes from peak to peak. It particularly came into effect with the creation of Berths 30 and 31 at the far end of the main container basin in 2002. These act as a buffer off which the waves rebound.

"Harbor resonance is a forced oscillation of a confined water body [such as a harbor basin or a lagoon] connected to a larger water body [the sea]. If long-period oscillations are present in the sea, large oscillations at the natural frequency of the water body may occur," explained Sukhdev Singh, the port's general manager, marine.

Salalah's outward-facing position on the Indian Ocean caused the long-wave effect, he said. "It is unique to Salalah and some ports in South Africa. It happens nowhere else in the world."

Although Oman is 82% desert,

maximum average temperatures rarely exceed 37°C. The city's outskirts turn verdant during the khareef season, which coincides with the monsoons. A tough operating environment for the port already features difficulties in obtaining transshipment business due to increasing regional overcapacity and competition for scarce liner calls with Saudi Arabia's King Abdullah port and India's Mundra.

Surges causing vessels to move back and forth when alongside can mean mooring times of 20, instead of 6, minutes, leading to problems in container handling, as near-millimetric precision is required to drop containers from cranes into their respective slots.

The port has managed to calm the fears of shipping lines with mooring devices installed by Switzerland-based Cavotec, and officials stressed that they were very happy with the solution.

"MoorMaster is a vacuum-based automated mooring technology that eliminates the need for conventional mooring

lines. Remote-controlled vacuum pads recessed in, or mounted on, the quayside or pontoons, moor and release vessels in seconds," an internal Port of Salalah memo said.

Singh hinted that construction of a northern breakwater could be one way to reduce the effect and make customers more comfortable during the monsoon season. "Our concern remains on the remaining container terminal and other general cargo berths, as they are also affected by the long-wave effect. We are still on the lookout for a long-term solution for all berths." He stressed that the liner transshipment business at Salalah was very volatile at the moment, and that any additional inducement for the lines to pull out was a worry.

Managed by APM Terminals, the port was set up in 1998 under a 30-year concession agreement with the government of Oman. Port of Salalah has more than 2,200 employees, is 10km² in size, has a quay length of 5.6 km, and operates 25 STS cranes. Capacity is 5 million teu. Container traffic at the port is 96% transshipment. General cargo accounted for 13.6 million tonnes in 2017, a figure expected to rise to 20 million tonnes by 2020.

"This was one of the reasons why our customers were afraid [to come]. If a container business cannot operate year-round, it's not going to come. MSC [could] pull out for any reason. We have a captive customer, Maersk, because they are in the same group," Singh said.

"When did the pressure of competition come through? In 2010 onwards, when Jebel Ali started to grow. That's when we really had to perform to keep the business, otherwise [shipping lines] were going away," he said.

"Right now there is an overall slump. The problem is not over. We have found a solution. It's an expensive way of keeping customers happy. That's the way I look at it."

Thais aim to future-proof

Work to build Thailand's first container terminal equipped with quay and yard cranes operated by remote control at Laem Chabang is well under way. It represents a USD600 million investment by Hutchison Ports Thailand (HPT)

Laem Chabang is the largest port in Thailand and is the world's 22nd largest port. It is located some 130 km southeast of Bangkok in the coastal province of Chonburi. "After completion of Terminal D, HPT will be able to handle an additional 3.5 million teu, bringing our total capacity [at the port] to more than 6 million teu, [making us] by far the largest terminal operator in Thailand," Stephen Ashworth, managing director for Thailand and southeast Asia at Hutchison Ports, said.

HPT currently operates Terminals A2, A3 (at the port's Basin 1), C1, and C2 (Basin 2) at Laem Chabang, and is now developing Terminals D1, D2, and D3 (Basin 2). Current capacity at the port is approximately 9 million teu and completion of Terminal D will bring an additional 3.5 million teu to the port. HPT's existing terminal facilities in Thailand achieved a throughput of 2.8 million teu in 2017, 16.7% more than the previous year.

Construction of terminals D1, D2, and D3 began in 2016. When completed, a total of 17 remote-control quay cranes and 43 remote-control electric rubber-tyred gantry cranes will be deployed. "D1A phase [400 m] will be ready for operation this year. Full Phase 1 will be ready for operation by mid-2019. Full completion of Terminal D will be around 2023–24," he said.

Terminal D's initial phase (D1A) comprises 400 m of deepwater berths, three super post-Panamax quay cranes, and

10 supporting electric rubber-tyred gantry cranes, and should be operational by mid-2018. By mid-2019, all first-phase work will be completed, with a combined total of 1,000 m of berth, six quay cranes, and 20 supporting electric RTG cranes.

On full completion of all phases, Terminal D will be one of the world's largest remote-control-operated terminals, with total quay length of 1,700 m. "Terminal D will be designed and equipped to handle some of the largest oceangoing vessels," Ashworth said.

The quay and yard cranes will be operated from remote-control workstations. "Using remote-control cranes can enhance operational productivity and efficiency and improve port competitiveness. Workers operate the equipment remotely in an office, improving safety and allowing a better work environment," Ashworth said. "As a member of Hutchison Ports ... from which we are able to leverage global expertise in port management and the sharing of best practice, we are confident in our decision to choose remote control," he said.

Draught at Terminal D is 16 m, the same as at Terminal C, while Terminal A has a draught of 14 m.

Laem Chabang's Phase 1 serves container, passenger, ro-ro, multipurpose, agribulk cargo, and a shipyard, while Phase 2 is container, with a terminal for general cargo and ro-ro. Future blueprints envisage a Phase 3 Basin 3, bringing on five new terminals – four containers and one ro-ro – and total container capacity from 11.1 million to 18.1 million teu.

In addition to HPT, several other operators are involved at Laem Chabang, including APM Terminals, DP World, and PSA International.

Port updates

► LNG FUEL FIRST

Newly built chemical tanker *Fure Vinga* bunkered LNG for the first time in Europe in May. In total, the vessel received 120 tonnes of the fuel in a truck-to-ship operation in the port of Cartagena, Spain. In total, six trucks of LNG were brought alongside and transferred to the vessel. LNG experts from Hamburg-based Nauticor and Madrid-based Gas Natural Fenosa joined forces for the operation, adding further evidence of the Europe-wide availability of LNG as marine fuel, said a company statement.

► KPCL NUMBERS UP

Krishnapatnam Port Company Limited in India has announced that it has handled 45 million tonnes of cargo in the 2018 financial year, representing a 25% growth over the 36.1 million tonnes handled in the previous year. The company handled 88% more containers: 481,408 teu. Total bulk cargo handled by the port was 37 million tonnes.



► GOTHENBURG LNG

Swedegas, which is currently constructing a permanent LNG facility at Port of Gothenburg Energy Port, has entered an agreement with gas supplier Barents NaturGass, which will enable the facility to offer pipe-to-vessel bunkers. It will become operational in August. Skangas already offers ship-to-ship bunkering at the port. From January to April this year, LNG was bunkered 44 times.

Port updates

► CARBON CAPTURE

Port of Antwerp and gas infrastructure operator Fluxys are teaming up to explore the opportunities of carbon capture, storage, and reuse at the port. This activity supports Belgian's plans to reduce its CO₂ emissions by 35% by 2030. The first step would be to capture CO₂ from industries in the port, transporting it by pipeline or ship, and finally reusing or storing it. If the results of the feasibility study are positive then the aim is to jointly promote practical projects.

► CASABLANCA PLAN

The Moroccan port of Casablanca will receive a USD653 million investment for a five-year mega-project. It will gain a fishing port, cruise terminal, and shipyard, along with offices, hotels, a science library, and an aquarium. This is part of the Wessal Casablanca Port Project, initially launched in 2014 by King Mohammed VI as part of the government's Halieutis Plan, which aims to boost the fishing industry and exploit Morocco's geographical position to develop tourism and shipbuilding.

► GOTHENBURG Q1

Port of Gothenburg in Sweden saw box handling rise by 3 % during the first quarter of 2018, from 184,000 to 188,000 teu. In that time the number of cars handled rose by 20% against the same period last year, intra-European ro-ro units rose by 5%, and energy products by 3%.

3%



Qatar expands ties with Iran

Far from isolating Qatar, an embargo imposed by four Arab countries last year is spurring the peninsula's inhabitants to a new sense of self-sufficiency, even prompting it to boost ties to Iran. It is as if, in the face of the 'siege', as it is referred to locally, self-reliance has become a national mantra.

Hamad port, the 2 million teu facility that opened in late 2016, announced in April that it had handled 1 million teu and that 22 services with 120 calls now served the port. South Korea's Hyundai Merchant Marine initiated a direct service to Hamad in January. According to official figures, vessel calls to Qatari ports were up by 35% in the first quarter of 2018 compared with a year earlier, to 1,611.

"The shipping routes that have been launched between Hamad and regional and international ports have provided additional reliable options and solutions for customers, playing a significant role in enhancing

container-handling operations and boosting trade via the port," said Qatar Ports Management Company CEO Abdulla Al-Khanji.

With 69 vessels in its fleet, Qatar Gas Transport Company (Nakilat) recently said that Qatar's liquefied natural gas (LNG) supply was expected to increase by almost 30% over the next decade and that it planned to provide solutions to meet the associated demand for vessels, floating storage and regasification units, and maritime services.

Qatar has even announced that it will establish a body by the end of the year for settling maritime and trade disputes under the aegis of the Qatar International Centre for Conciliation and Arbitration, a clear dig at the Dubai-based Emirates Maritime Arbitration Centre, which was formed in 2016 but has yet to hear its first case. Earlier this year, Qatar Ports Management also announced plans to invest USD4 billion to upgrade the Sudanese Port of Suakin.

It has also organised a Qatar Self-Sufficiency Exhibition in Doha at the beginning of April. Earlier this year, Qatar said it had achieved 98% self-sufficiency in poultry and would become entirely self-reliant in dairy products by the beginning of Ramadan on 17 May, after more than 7,000 cattle were imported from the United States and Europe in the past year.

"If Qatar has learned one thing from the ongoing, nine-month-old illegal blockade, it is to never give up and prepare itself to stand on its own two feet," lifestyle guide *Qatar Living* said in an editorial at the launch of the 2018–22 National Development Plan.

Bahrain, Egypt, Saudi Arabia, and the United Arab Emirates were among several nations to impose a boycott on Qatar on 5 June 2017 for its alleged links to the support and financing of terrorism.

The extent of Qatar's self-reliance inevitably raises the question of who its friends are today. It has moved closer to the United States, as a result of the US presence on its soil through the Al Udeid Air Base, is moving closer to Turkey, and is looking to extend a hand to Iran, after it benefited from Iranian vessel calls last year. Now the time may have come for the Qataris to return the favour.

Several shipping lines announced they would discontinue Iran calls in response to the US pullout from the Joint Comprehensive Plan of Action (JCPOA) on its nuclear programme. MSC said it was ceasing access to services to and from Iran. "While MSC is not accepting bookings for shipments originating from Iran, or destined to Iran, we will continue to carry certain legally acceptable cargoes during the



The Iranian port of Shahid Rajaei, 20 km from Bandar Abbas

wind-down period, notably for importation of foodstuffs," it said.

Maersk said, "Our presence in Iran is limited. Maersk Line is serving its customers in the Iranian market via a feeder service using third-party vessels [slot purchase agreements] from Jebel Ali [UAE] to Bandar Abbas and Bushehr. Maersk Line has offices in Tehran, Bandar Abbas, and Bushehr, employing a total staff of 12".

Germany's Hapag-Lloyd and China's COSCO Shipping did not respond to requests for comment on the future of their Iran operations.

In April, a Qatari delegation visited a number of facilities on Iran's southern seaboard, including Bushehr, Khorramshahr, Imam Khomeini, and Shahid Rajaei ports.

"Qatar has long-term plans to increase trade ties with Iran and invest in its southern ports, which have an economic advantage for both countries. We firmly seek expansion of bilateral relations and nothing can change our strategic decision to expand ties with Iran," Qatari official Mohammad Al-Khanji was quoted as saying by Iran's Ports and Maritime Organization's website.

Trade between Iran and Qatar reached USD275 million in the Iranian fiscal year 2017/18, running March to March, a 137% increase on a year earlier, while Iran's exports to Qatar reached USD248 million, a growth of 140%, it said.

Qatari and Iranian coastguard officials met in April to discuss coastal security.

Experts do not rule out the possibility of increased Qatari-Iranian co-operation in the ports and shipping spheres as a result of their joint isolation. Asked if Qatar could flout US sanctions to cement ties with Iran, one US-based Middle East security expert said, "Yes. If Qatar continues to tie itself to the emerging bloc of sanction-rejection companies."

Zhuhai looks to set up financial leasing unit

China's Zhuhai port is investing CNY300 million (USD47.2 million) to set up a financial leasing company in a bid to improve its cashflow by leasing existing port infrastructure and equipment.

It also aims to use leasing as a tool to acquire businesses ranging from shipping assets to harbor infrastructure, such as new cargo-handling equipment.

Commentating on the launch of its new financial leasing business, Zhuhai port said, "Our current core segments, including terminal operation, logistics, and supply chain service, and port city infrastructure service, are capital-intensive businesses. We are desperate for new capital to fund the expansion of our facilities and fund R&D activities in order to remain competitive."

Zhuhai port will raise CNY150 million for investments

in areas such as upgrading port equipment, new buildings, and the secondhand purchase of 55 vessels via new share issuances in late 2018. This is the latest sign that the port is adding integrated logistics provision to its portfolio.

In 2017, Zhuhai Port saw significant growth in both profit and cargo volume. The port grew its profit by 34.9% from a year earlier to CNY140 million. Total cargo volume was up by 30% year on year to 4.64 million tonnes, while container volume reached 0.23 million teu, representing a growth of 40% year on year.

Zhuhai port-affiliated Yunfu New Port dominated the imported stone market, handling 58% of all imported stone in the harbor area of China's Guangdong Province.

CMPort enters Australia

China Merchants Port Holdings (CMPort) has entered the ports scene in Oceania for the first time with the purchase of a stake in the Port of Newcastle, the largest port on Australia's east coast.

CMPort, the Hong Kong-listed arm of the state-controlled Chinese group, paid AUD608 million (USD450 million) for a 50% stake in the world's largest coal port, which has ambitions to become a major container port serving shippers in New South Wales.

"Port of Newcastle will complement the current trading network covered by the company's port portfolio and will further generate synergies and positive long-term financial returns for the company," CMPort said.

The deal comes amid mounting political tensions between China and Australia that have soured the two countries' trading relationship.

Exporters in Australia's highly successful wine sector have complained of heavy delays at Chinese customs that could jeopardise forecasts for Australian wine exports to top AUD1 billion in value for the first time in 2018. They are pressing the Australian government to resolve its issues with China in order to protect trade with, and revenues from, one of its key export destinations.

The Newcastle deal extends CMPort's global port footprint to six continents, following its February purchase of a 90% stake in TCP Participações, the operator of Brazil's Port of Paranaguá.

Port updates

▶ IINO LOOKS TO LNG

Japanese shipping company Iino Lines has revealed that it is exploring entering the LNG bunkering sector by converting coastal LNG vessels, which run on heavy fuel oil, to LNG-powered vessels. Simultaneously, the company is considering building an LNG bunkering vessel to fuel the LNG-powered ships. Iino is mainly regarded as a chemical tanker operator. It is working on the project with Hokkaido Gas, which supplies gas and electricity in Hokkaido, Japan's northernmost island, and is one of Iino Lines' major clients.



▶ YINGKOU DEBT

China's Port of Yingkou in Liaoning province has told its debt issuer that it is unable to pay the principal amount plus interest for an insurance-related investment product. In the default notice, the port is asking for approval to delay the payment. The seven-year product, which has an approximate 5.7% rate of return, was issued in November 2012 by China's Sun Life Everbright Asset Management in order to raise funds for the construction of improved port facilities. Yingkou was expected to pay CNY530 million (USD83 million) from its total investment of CNY2 billion.

▶ MONTREAL BOARD

Wolfgang Freese is to take on a board member position at Canada's Montreal Gateway Terminals Partnership (MGTP) in August, an official at MGTP confirmed. Freese was previously North America president at Hapag-Lloyd. He announced his retirement from Hapag-Lloyd in January after almost five decades with the company.



LADOL: 5079927

Unlocking potential

Amy Jadesimi, CEO of Lagos Deep Offshore Logistics Base, believes investment in Africa should be driven by data and a dispassionate evaluation of market needs

Achieving global sustainable development that encompasses a sustainable maritime industry requires radical change in the way individuals and organisations in the public and private sectors live and work. However, there is a lack of consensus among the international community about who or what will be the real driver of that change, both from national or regional and private or public perspectives.

There is unequivocal economic and socio-political evidence that high-growth, low-income countries, known as emerging markets, are best placed to lead this, for a number of obvious reasons. These markets are largely green fields, so building any

infrastructure and facilities for the first time can be done from scratch and, therefore, in a sustainable way. These markets also have significant local political and social momentum driving rapid changes that deliver equitable local prosperity.

In addition, the private companies in this market have more access than ever before to new technologies and a growing number of financial solutions through which they can build local infrastructure. Sadly, however, the current level of access is not nearly enough. These low-income markets need access to an estimated USD2.3 trillion per year to achieve the United Nations sustainable development goals.

On the other hand, many high-income, low-growth markets have well-established infrastructure, powerful large companies, and governments that are facing serious headwinds to change and are struggling to make even incremental progress. Changing global demographics and advancing technology mean that over the next decade the global economy will be driven more by local consumption in parts of the world with growing populations that trade in technology and innovation, rather than by raw materials. Raw materials will increasingly be processed in their countries of origin.

Clearly there is a natural and formidable partnership that should take place between high- and low-growth countries to expedite global growth. This is particularly true for the maritime industry, which has significant potential to scale-up and pursue dynamic commercial enterprises in high-growth markets in Africa, where half of the world's population will be concentrated by 2050, according to UN data.

Major barriers to progress include the pervasive, often false, negative perceptions,



Lagos Deep Offshore Logistics Base in Nigeria serves the west African oil and gas industries

and deep biases against investment in Africa. Such biases lead to miscalculation of risk, further concentration of wealth in the wrong hands in less developed markets, and leave vast opportunities for equitable wealth creation untapped, for example, in the area of infrastructure investment, including in ports and harbors.

The World Bank estimates that Africa's infrastructure requires USD75 billion per year. However, there is already a deficit of USD35 billion each year. Filling this gap could increase African GDP by 2.2% to 2.6% – about USD15 billion – each year, making this an attractive value proposition.

Investing in countries such as Nigeria yields even higher returns owing to the country's large population and ideal geographic location to act as a hub for the entire west African region. Nigeria has the longest coastline in west Africa but does not yet have even one deepsea port.

Maritime investments in Nigeria would yield significant returns from a number of near-term opportunities, where there is a well-established but underserved and expensive

“There is now an almost universal acceptance that sustainable business is the only viable business model there is”

Amy Jadesimi

CEO of Lagos Deep Offshore Logistics Base



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market. Maritime developments could also bring innovation, as was the case with DP World in Dubai, which now runs one of the most efficient systems in the world. Using automation and other technologies could rapidly improve the local provision of services, engineering, manufacturing, movement of goods and people, and build stronger, cheaper connections between more African countries.

To unlock the potential of Africa's maritime economy, progress is dependent on overcoming biases against the continent and focusing on the reality, so international stakeholders can invest in and partner with the right local companies and thereby take leadership positions in the world's new economy. There is now a wealth of data that local and international companies can use in assessing each other as partners and investors.

Collaborations must be made on clear-eyed assessments of the real market needs and opportunities and focused on channelling investment into local companies that fill those needs, for example companies that will deliver value and market growth. A strictly dispassionate scientific approach to investment will include expanding the criteria for 'bankability' to include factors that identify companies that will build sustainable businesses, which should be given preferential financing, particularly when adding value to established markets by building local solutions. Organisations can use similar criteria to select which local companies to partner with.

Another factor to consider is the level of real, wholly private investment that has been made by the local company. Local companies that make significant long-term investments in a transparent and compliant manner have usually done so in the face of significant barriers and opposition and can therefore show a great deal of

resilience and innovation as partners and strong returns as investment vehicles.

Africa's young people offer an unmatched opportunity for prosperity, not just as an eager workforce but also as what will be the fastest growing consumer market in the world. Approximately 60% of Africa's population is under 25 compared with 42% in Latin America and the Caribbean, the second-highest region.

As Africa's population booms, investing in the skills gap will be an attractive business opportunity and will create a pool of human capital that will ensure a high return from local investments in infrastructure and facilities. The 'lowest hanging fruit' for closing the skills gap is the transfer of critical skills and integrating this knowledge into a company's core operations. Many of the companies that have been bold enough to invest in training local talent to reduce dependence on expatriate labour have reaped enormous benefits, both social and financial. Local companies will also need to share best practice among themselves, particularly as local standards exceed or innovate away from international norms.

As agreements such as the African Continental Free Trade Area come into effect, it is apparent that regional collaboration and trade within Africa, targeting local markets and encouraging local manufacturing, will soar. Our success as a continent will come faster and be more sustainable with the right international partnerships and investments. There is now an almost universal acceptance that sustainable business is the only viable business model there is. Stakeholders in the maritime sector in high-growth and low-growth markets should be focusing on building strong partnerships that will drive quicker global growth and prosperity. **PH**

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The risks and rewards of building a vision

Penny Thomas talks to Patrick Verhoeven and Parag Khanna about Chinese investment and Baku's plans to connect east with west

Belt and Road was a running theme at the IAPH World Ports Conference in Baku in May, and Baku's place within that initiative was not far behind. Both Patrick Verhoeven, IAPH managing director - policy and strategy, and Parag Khanna, an international relations specialist and author, see the benefits in allowing Chinese capital, skills, and knowledge into the supply chain, but to different degrees and in varying circumstances.

One session that Verhoeven was enlightened by featured IHS Markit's Turloch Mooney and James Jixian Wang, a professor from City University of Hong Kong. They showed how many definitions of Belt and Road there are, how its routes have evolved and, as Verhoeven stressed, that even within the Chinese system it's not a particularly uniform plan yet. He thinks investment in ports, rail, and infrastructure is important, but has concerns over control.

Khanna takes a holistic view and looks to the tangible benefits that investment brings. "Belt and Road increases the optionality for all trading countries using infrastructure in that geographic space to choose

what modes of transport and what routes they want." He pointed out that infrastructure serves this very neutral function in the medium and long term "which is to increase the resilience of the system" – especially important in times of conflict and war.

"So China is actually making a net public good contribution," he argued. "We had the same conversation exactly 10 years ago when China was trying to lock-up upstream oil production in Sudan and elsewhere. What we didn't appreciate and what China didn't appreciate is that it doesn't have to own upstream energy assets; it just has to increase production of those assets and by doing so it lowers prices for everyone."

He acknowledges that China is investing in Belt and Road projects for its own very narrow self-interest, but winds up being for the global public good. "It is absolutely inadvertent."

Verhoeven does not dispute the value of the infrastructure but believes it's not a level playing field. He drew attention to a comment made at an ESPO event that if you are a landlord port allowing overseas investment and debt, as is the case in Belt and Road, the risks are not as great as if you still have control under a concession or agreement.

"That's fine," he said, "but how powerful are you as a port authority or government in enforcing the terms of a concession agreement? I think that is what it's really about. Not just having a concession, but also about being an equal partner in such an agreement."

Rotterdam, for example, is a strong player, Verhoeven noted, and will have strong bargaining power. But if you're a smaller player that's strapped for cash and needs the investment, "you have to think about the terms of the agreement and how much control you would retain in the end".

Debt is another form of control, but Khanna asserted that "not all debt is created equal" and has turned around the fortunes of many nations.

"If you look today at Kazakhstan, if you look especially at Pakistan, you see the whole world wants to go there and it did not want to go there until precisely two years ago. So you can thank China for making these markets attractive by issuing debt to those countries that they were not being offered by the international financial system. So there's no way



IHS Markit: 5081297

“How powerful are you as a port authority or government in enforcing the terms of a concession agreement?”

Patrick Verhoeven, IAPH managing director - policy and strategy



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Baku, which Parag Khanna and Patrick Verhoeven (below left) agree 'has something special going on'

around the fact that you have to have debt but you have to use debt wisely as a platform for growth and for attracting international investment."

Both Khanna and Verhoeven are in agreement that Baku has something very special going on. "I've been coming here for 15 years and I am mesmerised by how they are getting it right," said Khanna. "The playbook is more than just copying Dubai; the playbook is lots of things. It's infrastructure spending, more broadly, social investment in affordable housing and improving the educational system".

Verhoeven agrees. He pointed out that Baku is building an entirely new neighbourhood for expats to settle in and is building health services around it. "The new laws around the free trade zone are apparently the most developed in the world and take into account digital innovation in trade, such as blockchain. It's not just the hardware that they're building; it's the whole thing around it, including the business-friendly climate for companies to establish themselves. That's exactly the model that Dubai and, to some extent, Singapore also adopted years ago."

The idea that Baku could be the new Dubai was often mooted at the conference. The CEO of DP World, Sultan Ahmed Bin Sulayem, alluded to the similarities during the event, saying no one believed in Dubai's vision when it developed the port and free trade zone. But Khanna does not believe that Baku should try to be like Dubai. Baku, he said, "is one of the few major inland ports in the

whole world. So Baku is always going to be unique.

"But that doesn't mean you can't learn from Dubai. Obviously Dubai is here [in Baku] because Dubai is sharing lessons around how to do intermodality, how to do the regulation around free trade zones, how to do the blockchain sort of stuff. So I think that Baku should aggressively try to adopt all the lessons from Dubai. But it's become a cliché and a sort of a parody of itself to say that something is the Dubai of ..., and everyone is trying to do that".

Verhoeven noted that it was easier for somewhere like Azerbaijan, Singapore, or Dubai to stand strong in the face of their vision. In other parts of the world such as Europe and North America it's a different story. Taking Germany as an example, he pointed out that if someone were to invest in Hamburg, there would be many other ports also calling for investment, with many other private and public players involved. For Dubai and the other countries it's a more narrow set of choices that can be made more freely and with less planning required.

Verhoeven admits that Baku's vision and determination has been underestimated and was amazed by the level of investment and planning going into the city as it positions itself away from its oil-based economy.

Khanna concluded that both Azerbaijan and Dubai "have the most important things I look for when predicting success in a country: that is national solidarity around the vision and the mission". **PH**



Australia's port dilemma

Australian ports are struggling to cater for the cascade of bigger container vessels and the coastal shipping needed to connect them. **Zoe Reynolds** reports

Getty Images: 5080725

Australia's container ports have been making news recently for all the wrong reasons. Melbourne's decision last year to postpone development of a deepwater container terminal until 2055 and block bigger vessels cascading into Australian ports caused uproar in international shipping circles. Meanwhile, in Newcastle the uncovering of a "secret deal" during the privatisation of state ports has prompted an investigation by the nation's competition watchdog.

The New South Wales privatisation deal put a 30,000 teu cap on container exports out of Port of Newcastle. When the port's teu exports exceeds 30,000 it will have to compensate its competitor, Port Botony by about AUD1 million (USD760,000) per ship. This would make Newcastle port's plan to invest in a container terminal unviable.

The Australian Competition and Consumer Commission contends that Australia needs more

competition between ports. Privatisation has led to price hikes and the physical distance between Australian ports and high domestic transport costs is creating monopolies.

Others, however, note that economies of scale require hub and feeder ports, with ports complementing, not competing with each other.

Teresa Lloyd, CEO of Maritime Industry Australia Limited (MIAL), is a proponent of coastal shipping. One visionary strategy being explored by MIAL is a 'motorway of the sea'.

"Glorified roll-on-roll-off vessels that need little land-side infrastructure would become coastal feeders," Lloyd said. "The ro-ro system would move heaps of cargo and do away with the need for two lifts [on and off of two ships]. That's where the big cost lies."

Mike Gallacher, CEO of Ports Australia, is also focused on coastal shipping. However, he is not a supporter



Port of Melbourne's location on the Yarra River limits vessel size to 7,500 teu

of the national flag fleet. He believes that Australian shipping should make way for international shipping on the coast.

While 99% of Australia's international trade by weight goes by sea, shipping only carries 15% of Australian domestic freight. Gallacher envisages fleets of vessels sailing 'blue highways' between Australian ports. "Right around the country we have a massive network of ports. Why aren't we using shipping better?" he asked. "The freight task is doubling by 2030. A freight tsunami is on its way and we as a country need to be ready."

In support of his argument, he pointed to a report by the Inquiry into National Freight and Supply Chain Priorities, released in May, which recommends lifting restrictions on international vessels.

The container trade in Australia is already solely the preserve of international liner services. They operate on a loop system, with ships calling at three eastern ports, Brisbane, Sydney, and Melbourne, often topping up with coastal cargo en route. Terminals also operate in Adelaide and Fremantle.

The Australian box trade – as opposed to bulk coal and iron ore – is 'thin'. To be economically viable, container vessels need to call at all three terminals, according to Rod Nairn, CEO of Shipping Australia.

Ships entering the trade are getting bigger and the industry has long lobbied for a new deepwater container port to cater for them. However, last year, Infrastructure Victoria, an independent authority, advised the state government to delay a new USD4.6 billion international container terminal at Bayside near Geelong until 2055.

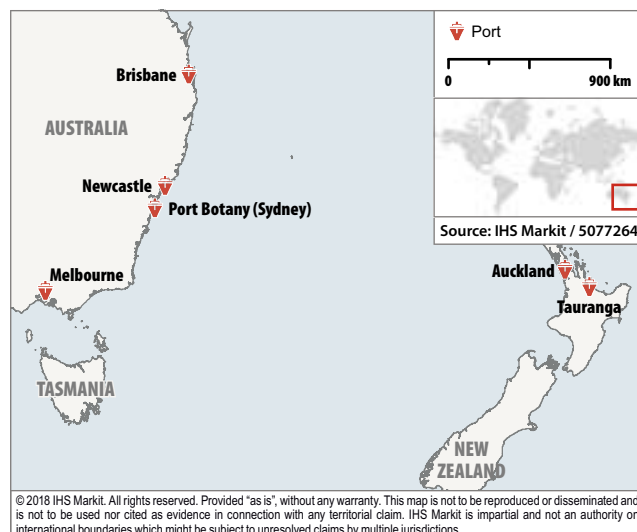
While the report acknowledges "shipping lines want to bring in larger ships, up to 10,000 teu capacity, to Australia now if possible", it recommends "Victoria doesn't necessarily need to respond to shipping company requests."

"We've got it the wrong way around by looking at what we need rather than what we need to do," said Gallacher. "It's a worldwide phenomenon. We can't expect trade to change to meet our needs."

A 2014 New Zealand report put out by the department of transport came to very different conclusion to the Australian study. 'Future Freight Scenarios' foresees the redeployment of larger ships of more than 12,000 teu into the New Zealand trade before the end of the decade. It highlighted the need for consolidation of major ports. The study also recognised that the redeployment of ships would be supply driven, not demand driven.

"This trend arose from global service commitments and the operating economics of shipping lines," it said. The study recommended a partial hub and spoke system for New Zealand, with feeder ports complementing four major ports.

Within two years, Port of Tauranga had invested in channel deepening and won global hub status. Maersk Lines now runs a direct service from north Asia to the



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“Right around the country we have a massive network of ports. Why aren't we using shipping better?”

Michael Gallacher, Ports Australia

west coast of South America via Tauranga. It is the only port in New Zealand and Australia catering for ships up to 11,500 teu. In the first half of 2018, transshipments at the port increased by 47.6%.

At the same time there has been a resurgence in New Zealand's coastal shipping since the July 2017 earthquake in Auckland, which cut road and rail links to the port.

Out of the ashes, shipping took over most of the freight task, New Zealand Shipping Federation executive director Annabel Young told *P&H*. "Road and rail are now reinstated," she said. "We expected everyone to shift back to land freight, but they haven't."

Australia's northern neighbour, Indonesia, is well on the way of creating its vision of 'tol laut', or ocean highway, linking regional feeder ports throughout its sprawling archipelago to four main hub ports. Despite stevedoring companies investing in cutting-edge technology in recent years, Australia is increasingly out of step with world best practice.

Blue highways and ocean motorways would solve Australia's ports dilemma. While vessels greater than 7,500 teu could never get up Melbourne's Yarra River, Sydney or Brisbane could, with modest investment, cater for the larger vessels of up to 12,000 teu. **PH**

Flag restriction sparks hostile reaction

While Jakarta's controversial plans to restrict key exports to Indonesian-flagged vessels have been postponed, Indonesian shipowners are adamant it is still on the agenda. **Zoe Reynolds** reports

After a concerted outcry, Indonesia's government has put back controversial plans to reserve key imports and exports for Indonesian-flagged vessels. But the policy, long in gestation, is unlikely to be abandoned. Indonesia has had a resurgence of economic nationalism in recent years, with bans on exports of metal ores to encourage local smelters and a push for value-added manufacturing.

European shipowners have called the move "discriminatory" and "a violation of free trade principles". But the Indonesian National Shipowners' Association (INSA) is determined to make its play on the world stage.

"We can understand that the regulation might get a negative response from foreign shipping bodies, including the International Chamber of Shipping," INSA chair Carmelita Hartoto told *P&H*. "Business-wise it might reduce their coverage.

However, the regulation is limited to prime export commodities, which the government needs to control." The regulation had ignited fierce criticism and concern about whether it would have a negative effect on Indonesia's export industry as domestic shipping capacity remains insufficient.

By ministerial decree, Indonesia announced in October last year that it would restrict coal and crude palm oil exports to ships that are owned by local sea shipping companies. Likewise imports of rice and goods for government procurement.

International Chamber of Shipping secretary-

general Peter Hinchliffe promptly wrote to the Indonesian government urging it to reconsider. "The global shipping industry, which ICS represents, is very concerned," he said. "This would appear to be a form of discriminatory cargo reservation, which would be contrary to accepted international practice and maritime free trade principles."

Hinchliffe warned that the policy was "likely to have damaging impacts" on the wider Indonesian economy, limit competition "and almost certainly lead to an increase in shipping costs".

He also warned that the "unwelcome precedent" could lead to "retaliatory measures against Indonesian vessels engaged in international trade".

The European Community Shipowners' Associations (ECSA) went further. "At a time when the European Union and Indonesia are negotiating a free trade agreement, the adoption by the Indonesian authorities of such a law is unacceptable," said its secretary-general, Martin Dorsman.

Concerns were raised in industry circles that there were not enough Indonesian-flagged vessels to support the policy and that coal sales would need to switch from CFR (cost and freight) to FOB (free on board).

INSA, however, appears unruffled. "As long as the road maps to harmonise demand and supply are fully respected, we are quite confident the decree will be implemented in 2019," Hartoto told *P&H*.

Hartoto has long been determined to propel the Indonesian national fleet into international waters. She told *P&H* sister title *Fairplay* in September 2012, "In the first five years after the cabotage principle was enacted in 2005, the Indonesian-flagged fleet grew by 54.1% to 11,313 vessels."

The new date for the latest policy's implementation is April next year. That is when the next presidential elections are due. While political pundits are not expecting a change of government, Hartoto says she is confident that whoever wins, the policy is here to stay.

"I believe that any elected government should stay focused on building and developing a maritime economy," she said. "We need to earn back foreign exchange income from freight services that for so long foreign shipping has enjoyed obtaining from Indonesian export commodities." **PH**



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Singapore banks on LNG bunkering

Xiaolin Zeng reports on the city-state's efforts to be LNG-ready by 2020

With just over a year to go before the International Maritime Organization's mandated use of cleaner fuels, Singapore is working towards becoming an LNG-ready port.

The southeast Asian city-state is the world's largest bunkering port by sales volume, with 50.6 million tonnes of marine fuel sold in 2017.

The Maritime and Port Authority of Singapore (MPA), which works to develop Singapore as an international maritime centre, has set aside a total of SGD24 million (USD18 million) for schemes to ensure that LNG bunkers can, and, will be supplied in the port.

The first SGD12 million of authority funding was announced in September 2015, with the aim of subsidising the construction of LNG-powered vessels. Up to SGD2 million per vessel was granted, capped at two successful funding applications per company.

Five companies – Keppel SMIT Towage, Maju

Maritime, Harley Marine Asia, Sinanju Tankers, and PSA Marine – were given the subsidies.

On the back of this, local tug operators Keppel SMIT Towage and Maju Maritime each placed orders for an LNG-fuelled tug from Keppel Corporation unit Keppel Offshore & Marine in October 2016. Both were for delivery this year. *KST Liberty*, the tug commissioned by Keppel SMIT Towage, was launched on 25 April.

In both vessels, the LNG fuel is carried in containerised, type-C ISO-certified tanks on the main deck, and the tugs can be refuelled by truck-to-ship operations or by replacing the empty tanks with replenished ones. They are equipped with an innovative and patented LNG vaporiser, which is compact and cost-effective.

Keppel SMIT Towage's managing director Romi Kaushal said, "*KST Liberty* will increase our capabilities as the fitted LNG tanks will allow for extended harbor operations without the need for refuelling, enhancing operational efficiency. It is also more compact, compared with tugs of the same bollard pull, providing enhanced manoeuvrability."

PSA Marine, the tug operating arm of Singapore-based terminal operator PSA International, has ordered two LNG-fuelled tugs from PaxOcean Shipyard, for delivery in 2019. Finnish engine maker Wärtsilä is designing and equipping them.

In December 2017, the MPA offered another SGD12 million of funding. Of this, SGD6 million was to co-fund the construction of new LNG bunker vessels to facilitate development of ship-to-ship (STS) LNG



Singapore is the biggest bunkering port in the world

bunkering in Singapore waters. Successful applicants will receive up to SGD3 million per vessel.

To be eligible, the companies applying for the funds must be registered in Singapore, while the vessels have to be flagged in Singapore. The same vessels must also be licensed for bunkering activity in Singapore for at least five years.

Applications closed on 31 March 2018. Interested companies had to submit their business plan for the proposed vessel and work with MPA's existing LNG bunker supply licensees, where applicable.

In April 2018, Sinanju Tankers Holdings, the shipowning arm of local physical bunker supplier Sinanju Marine Services, in partnership with Japanese trading group Mitsui & Co, received the subsidy to build Singapore's first LNG-fuelled bunkering tanker. It will be constructed by Keppel Singmarine, with delivery scheduled for the second half of 2019.

The contract includes an option for another vessel, exercisable within six months of the effective date of the first contract.

The 7,990dwt dual-fuelled tanker, 103m long and 19m wide, will be equipped with a 55 m³ LNG tank that has a fuel gas supply system on deck to supply gas to the engine. Its fitted pipelines and tanks enable it to carry multiple grades of marine fuel cargo.

Sinanju's managing director, Ju Kai Meng, said, "Sinanju aims to kickstart a green initiative for bunker tankers operating in Singapore: for our vessels to emit less air pollution while boosting the local use of LNG as a bunker fuel.

"Operating a dual-fuel-powered bunker tanker will also add impetus for our staff and crew to familiarise themselves with the [Singapore] Technical Reference for LNG Bunkering (TR56:2017), and be skilled with the safe and efficient handling of LNG when refuelling this vessel. We will be in good stead when embarking on ship-to-ship LNG bunkering as our next milestone."

Classed by Bureau Veritas and designed by Singapore ship design and consultancy firm SeaTech Solutions International, the bunkering tanker will deliver marine fuels to oceangoing vessels within Singapore waters.

There are two LNG bunker supplier licensees in Singapore. FuelNG is a joint venture between Keppel Corporation and Anglo Dutch Shell, while Pavilion Gas is an LNG trading group backed by the Singapore government's investment firm, Temasek Holdings. Each was awarded a bunker supplier licence in January 2016 and both are participating in an LNG bunkering pilot programme launched by the MPA in the first quarter of this year.

Singapore has been developing itself as an LNG trading and bunkering hub. So far, LNG bunkering trials have focused on truck-to-ship delivery methods, with plans to progress to STS operations.

FuelNG completed the first commercial LNG bunkering in Singapore last September. This was done via truck-to-ship deliveries for Golar LNG's *Hilli Episeyo*,

“We will be in good stead when embarking on ship-to-ship LNG bunkering as our next milestone”

Ju Kai Meng, *managing director, Sinanju*

the world's first converted floating liquefaction vessel.

Pavilion Gas has an agreement whereby it will supply French oil major TOTAL with LNG-based marine fuels, with the possibility of future collaboration relating to logistics for LNG bunkering.

FuelNG has been contracted to supply LNG bunkers to the tugs owned by Keppel SMIT Towage and Maju Marine, while PSA Marine has designated Pavilion Gas as its supplier of LNG bunkers.

Notwithstanding the push by Asian maritime authorities to launch LNG bunkering, it has been acknowledged that full-scale acceptance will take place only after 2020.

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 far behind other regions in this respect. "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," he said.

"For example, the European Union is providing significant funding under its Trans-European Transport Network that has seen support of 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."

Also in the region, Japan is investing in infrastructure to support LNG as a marine fuel.

As a fuel, however, LNG necessitates the expensive retrofitting of vessels built to run on fuel oil. For this reason, many shipowners are leaning towards the use of low-sulphur fuel oil (LSFO) or marine gasoil (MGO), which are also compliant with the IMO's global sulphur cap.

During Moore Stephens' Singapore Shipping Forum in April 2018, Precious Shipping's managing director, Khalid Hashim, said his fleet would be burning LSFO and MGO. He said, "With such a low number of potential clients, we don't think that any of the oil majors will continue to produce high-sulphur fuel oil when the prospects for its sale are going to be so limited." **PH**



Carnival Corp. 5080813

Cruise in line for LNG

There has been a flurry of activity on the cruise newbuilding scene over the past 12 months with major players getting ready for LNG fuel, writes **Catherine Austin**

AIDAnova, pictured here in Hamburg, will go into service at the end of 2018 and will be fuelled by LNG

As the cruise fleet sails towards the landmark 1 January 2020 cap on sulphur levels in marine fuel, the anticipated seismic shift towards the use of low-sulphur fuels by the sector is fast becoming a reality. Under the new rules, cruise ships, like all vessels, will have to use fuel oil with a sulphur content of less than 0.5%.

The favoured options are switching to low-sulphur fuel oils or liquefied natural gas (LNG), or using heavy fuel oil (HFO) in tandem with installed exhaust gas cleaning systems, known as scrubbers.

Many cruise lines have opted to install scrubbers to allow for continued use of HFO in compliance with the 2020 sulphur cap. Cruise giant Carnival invested more than USD400 million to develop

and install scrubbers on more than 60% of its fleet. Royal Caribbean has also made a strong commitment to this technology. MSC Cruises' new ships have scrubbers installed and its existing fleet is being retrofitted. By the end of 2020, 13 of MSC's 18 ships will be equipped with scrubbers.

Others have chosen to bunker low-sulphur fuel oils such as marine gasoil and marine diesel oil.

However, distillate fuels, including marine gasoil and marine diesel oil command a higher price than HFO. As the 2020 deadline looms, analysts are predicting that the price of low-sulphur fuel could spike in line with increased demand and this could make it a less favourable option for cruise lines from 2020 onwards.



Most cruise ships in service favour low-sulphur fuels. Cruise Lines International Association (CLIA) data released in August 2017 show there are 152 cruise vessels capable of using alternative fuels and ready to switch when the time comes.

For cruise ships operating vessels in emission control areas, the use of LNG had been one of the least attractive options, but the 2020 cap has made its use more popular as a compliance option, particularly for new ships.

In fact, the cruise sector became one of the early adopters of LNG, ahead of other ship types. Of 105 new cruise ships on shipyards' order books, 17 will be fuelled by LNG, IHS Markit statistics reveal.

Carnival Corporation has agreements in place to build nine LNG-powered cruise ships across four of its global cruise brands – three for AIDA Cruises, two for Costa Cruises, two for P&O Cruises UK, and two for Carnival Cruise Lines. In a statement, Carnival revealed that, "As of 2023, more than half of AIDA Cruises' guests will be spending their vacation on a cruise ship that runs fully or partially on LNG."

Hamburg port, where dual-fuel *AIDAperla* currently calls, is LNG-ready, *P&H* was told by

Hamburg Cruise Gate. Speaking to *P&H* its managing director Sacha Rougier, who is also chair of the IAPH cruise committee, said, "Hamburg Port Authority has worked in close co-operation with Hamburg authorities such as the river police and authorities for environmental and energy affairs, creating a basis to enable the very first bunkering process in the Port of Hamburg."

Hamburg has been offering LNG bunkers for a year now, first to *AIDAprima* and now *AIDAperla*. Both vessels run on LNG and shoreside power while in port and are bunkered from a truck situated on the pier. "Soon *AIDAnova* will call at our port and will be the first [cruise] ship with its four dual-fuel motors to be able to [run] on LNG fuel," she said.

AIDAnova will be in operation by December this year. It will be followed in 2019 by *Costa Smeralda* as the second LNG-powered cruise ship in the fleet.

Like Carnival, MSC Cruises is diversifying with a combination of scrubbers and LNG fuel. Last year MSC signed a letter of intent with STX France for up to four LNG-fuelled cruise vessels. The ships are due for delivery from 2022 onwards. Disney Cruise Line has ordered three new dual-fuel ships from Meyer Werft, due for delivery from 2020 onwards.

Rotterdam is also readying itself for the arrival of LNG-fuelled cruise vessels and is preparing to bunker *AIDAnova* when it is launched later this year.

Cees Boon, safety adviser at Port of Rotterdam Authority, told *P&H* that the port "has invested in preparation for welcoming LNG-fuelled cruise ships, and other vessel types, by making the port ready to welcome ship-to-ship LNG bunkering during simultaneous operations, or SIMOPS". Ten licensed bunker vessels will operate in the port by 2020, he said.

Speaking at the IAPH conference in Baku in May, Boon said one of the additional challenges of offering LNG bunkers to cruise was that typically cruise terminals were more likely to be located in busy city centres. The port has carried out studies related to these challenges.

Lack of bunkering infrastructure continues to dominate concerns about the adoption of LNG as a marine fuel, although action is being taken by global ports to address concerns over supply.

IAPH is one such organisation and its LNG bunkering project is developing an audit and accreditation scheme to recognise high-standard LNG bunker facility operators and bunker companies that operate in ports (see *P&H* May/June p20–21). The project is being developed under the World Ports Sustainability Program (WPSP).

Cruise, like other sectors of shipping that follow its lead on using LNG, will have to work with ports as the fuel landscape matures. **PH**

i MORE INFO: sustainableworldports.org



Getty Images: 5081 004

Towards a bio-fuelled future

Catherine Austin writes that while biofuels will not form the backbone of a sustainable low-sulphur bunker supply chain, they will have to feature among the options to meet maritime's emissions targets

Biofuels are not a new concept, but, so far, they have failed to take off in the maritime industry. In fact, it is the last of the major transport modes to look to biofuels as an alternative fuel source to cut emissions.

Although the market for biofuel remains in its early stages, several major developments are catalysing interest in its use, meaning that ports can expect to welcome a greater number of vessels bunkering biofuel in the future.

Existing bunkering facilities can be used for biofuel, so costly modifications to facilities are not required. Rather, the focus and constraints are on the logistics providers that supply the fuel at the port on behalf of the biofuel companies. For merchant ships, supply of the product can either be via truck or barge as a pre-blended finished grade, or as 'drop-in' fuel, whereby it is mixed with other fuel on board. No machinery

modifications or additional installations are required for ships to use this kind of fuel.

From a technical standpoint, the use of biofuels in marine diesel engines is very appropriate. The first engines designed by Rudolf Diesel ran successfully on peanut oil.

In the past few years, there have been great advances in biofuel technology. Several marine biofuel products are beyond the experimental stage and there are biofuel-powered commercial vessels hitting the water.

So why has the maritime industry not grasped the use of biofuels with greater enthusiasm? It comes down to two important considerations: sustainability and availability.

The sector's lack of knowledge about the handling and application of biofuels has stifled uptake to date. Security of sustained supply of the large volumes of the fuel that may potentially be required is a concern.



A biofuel storage and transshipment terminal at Port of Amsterdam. The port is using 100% biofuel in its port vessels

Lack of trust in this type of fuel, because of insufficient data from ship and engine trials is another. And the comparatively low cost of fossil fuel has also had a limiting effect.

However, while biofuels were previously perhaps not an obvious option, a number of catalytic legislative behemoths are causing a shift in ship operators' interest, and subsequent use.

As a sector that consumes more than 330 million tonnes of fuel a year and accounts for 2–3% of the global CO₂, 4–9% of SO_x, and 10–15% of NO_x emissions, according to a report by IEA Bioenergy, shipping is firmly under the spotlight for its environmental impact. Emissions from vessels in ports that are close to local populations are under fire from a regulatory standpoint.

The global sulphur cap prohibiting the bunkering of fuel with more than 0.5% m/m sulphur content from 1 January 2020 is turning ship operators' attention towards abatement technology or the bunkering of alternative, less polluting fuels than heavy fuel oil (HFO).

A recently rubber-stamped target to cut the shipping sector's overall CO₂ output by 50% by 2050 based on 2009 levels has forced the industry into strategising around carbon emission reduction, prompting interest in biofuel.

Well-reputed studies have identified biofuels as a key enabler for a decarbonised shipping industry thanks to their potential for emissions reduction. It's not surprising, given the emission-reducing potential of biofuel. GoodFuels Marine's sustainable marine gas oil (MGO) biofuel, for example, offers CO₂ reductions of 75–90%, SO_x cut by more than 99%, NO_x down by 10–30%, and particulate matter emissions lessened by 30–70%.

Current forecasts are that marine biofuels could make up 5–10% of the marine fuel mix by 2030. If so, GoodFuels Marine estimates that the supply of biofuels would amount to 1 million tonnes by 2020, rising to about 40 million tonnes 10 years later.

A report prepared for Sustainable Shipping Initiative (SSI) and authored by Lloyd's Register and University Maritime Advisory Services states, "Advanced biofuels may represent the most affordable zero-emission alternative for the shipping industry." The report concludes that the industry will need multiple solutions and investment in different technologies, not just biofuels, to reach beyond fuel efficiency to decarbonisation. But biofuels certainly claim a place on the podium.

This means that an increasing number of ship operators may be open to the idea of exploring their potential. And while the worldwide availability of biodiesel is currently very limited, that does not stop a growing number of trailblazing ship operators and ports trialling its use.

Port of Amsterdam is using 100% biofuel in port vessels following a successful pilot programme launched in 2016. MGO replacement biofuels are

Biofuel potential

Biofuels forecast if they make up 5–10% of the marine fuel mix by 2030, as estimated by GoodFuels

2020
1 million tonnes

2030
40 million tonnes



Source: GoodFuels Marine

© 2018 IHS Markit/Getty Images: 5077284

already available in the Amsterdam-Rotterdam-Antwerp area, which includes two of the biggest ports in the European emission control area, and supply chains are in place to all northwestern European ports.

The first Asian port made a commitment to biofuels in 2017. The Maritime and Port Authority of Singapore (MPA), BHP Billiton, and GoodFuels signed a letter of intent in 2017 to collaborate on a biofuels pilot project in Singapore. That is expected to be carried out this year.

Several ship operators have made a firm commitment to biofuels in the past few years, including Red Funnel, which announced in May that it had launched a trial using Green D+ fossil-free fuel, formulated by Green Biofuels, on its fleet of ro-pax vessels that operate between Southampton and the Isle of Wight in the United Kingdom.

Dredging company Boskalis has reported on the success of a trial of a sustainable wood-based drop-in biofuel called UPM BioVerno, with blends going up to 50% biofuel, on the vessel *Edax*, a 1,696 dwt cutter suction dredger. This was the first use of a biofuel derived from wood residue used in a marine fleet and came as part of a consortium involving GoodFuels Marine and Wärtsilä. The use of the biofuel resulted in a saving of 600 tonnes of carbon over the operating period.

An alternative fuel option with strong fundamentals, sustainable marine biofuels will play an important role in the future marine fuel mix. However, before they can be introduced at a larger scale, technical and logistical issues related to supply need to be resolved. The supply chain for biofuels is rapidly maturing, resulting in greater efficiency and leading to more competitive pricing, although prices include a premium, so their use needs a business case or financial incentives. When these instruments are in place, biofuels will have a promising future in the industry. **PH**



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Rotterdam's case for LNG

Rotterdam is one of the key ports in the development of IAPH's WPSP LNG fuel auditing tool. Its safety adviser, Cees Boon, talks to **Catherine Austin**

Rotterdam landscape hints at the power shift: a coal power plant, container terminal, liquid gas storage tanks and wind turbines

Lack of bunkering infrastructure has dominated concerns surrounding the adoption of LNG as a marine fuel. Whether confirmed orders for LNG-fuelled tonnage are sizable enough to justify the investment by ports and LNG fuel suppliers in setting up infrastructure for supply is a major commercial barrier.

Port of Rotterdam, Europe's largest port and bunkering hub, has made a milestone commitment to the supply of LNG fuel by getting ready to welcome ship-to-ship (STS) LNG refuelling. LNG bunker suppliers Shell, Nauticor, Titan LNG, and Total have made big investments and are ready at the port.

For short-haul LNG-fuelled vessels, STS LNG refuelling is an important development, as these ships have previously refuelled with LNG in Rotterdam via truck-to-ship transfers while docked. For larger vessels this guarantees security of supply at the port.

Ten licensed bunker vessels will operate in the port by 2020. Cees Boon, safety adviser at Port of Rotterdam Authority, told *P&H* that six of the bunker vessels already had clients in place.

The first vessels are expected to be refuelled in September this year. The bunkering of LNG-fuelled cruise ships will follow by the end of 2018 as the port welcomes AIDA's new LNG-fuelled cruise vessels.

For the port, LNG ship-to-ship bunkering during simultaneous operations (SIMOPS) was one of the important issues to solve in realising its LNG fuel bunkering infrastructure plans. "SIMOPS is possible when you can totally control all of your activities," said Boon. "A safety zone has to be calculated

and within this safety zone the right actions must be taken, the right mitigation must take place if something happens and to avoid escalation you have to control activities in the safety zone."

The port has established a safety framework, a licensing process for LNG bunker vessels and suppliers, and spatial planning that dictates where LNG bunkering is allowed to take place. All LNG bunker vessels must hold a license. The port also audits the LNG suppliers and the ships receiving the fuel. Quantitative risk assessments then ensure that intended LNG bunkering activity is safe.

Boon says that the port's simple motto is "Show us that you can do it safely and we will allow it."

Rotterdam is one port involved in IAPH's LNG bunkering project, developed under the World Ports Sustainability Program (WPSP). It is currently developing an audit tool for LNG bunkering. When a vessel is audited by one port, others can access the information and accept the audit for their own in-port operations. Boon hopes this tool will convince others that they can host LNG fuel bunkering in their ports and that it will offer harmonised safety checks globally for LNG fuel suppliers.

He is confident that the 'chicken and egg' situation for LNG fuel use has been broken. "What is now required is for all stakeholders to work together to realise the potential of the fuel going forward." **PH**

MORE INFO: portofrotterdam.com/sustainableworldports.org

ICHCA and IAPH collaborate for sustainable ports

Cyber security is an area that the two organisations have already identified for potential collaboration, **Penny Thomas** discovers



IAPH and the International Cargo Handling Coordination Association (ICHCA) signed a memorandum of understanding (MOU) at the Terminal Operators Conference (TOC 2018) in Rotterdam in June to pursue projects of mutual interest.

Both organisations are keen to share their research and findings, including the work of ICHCA's technical panel and working groups, and of IAPH's technical committees with the IAPH membership.

ICHCA deputy chairman Laurence Jones commented, "ICHCA and IAPH have worked together for many years and this MOU formalises that relationship. We look forward to working more closely together to improve safety and efficiency in the port and terminal industry."

IAPH's managing director, policy and strategy, Patrick Verhoeven, sees the understanding as a major boost for IAPH's World Ports Sustainability Program (WPSP) launched in March this year. Much of the work of the organisation's technical committees underpins its aims.

Based on the UN's 17 Sustainable Development Goals, the programme fosters port-related sustainability projects, acts as a think-tank for sustainable solutions, and provides a platform for sharing these ideas. The programme also strives to enhance and co-ordinate future sustainability efforts of ports worldwide. Its work is focused mainly on the areas where ports can affect change: resilient infrastructure; climate and energy; port community outreach and port city dialogue; safety and security; and governance and ethics.

Verhoeven, who is also co-ordinator of WPSP, said, "With most of the IAPH members being landlord port authorities, this MOU valorises the valuable experience and know-how of cargo-handling companies in our joint ambition to demonstrate global leadership of port communities in achieving sustainable development. We also look forward to working closely with ICHCA in strengthening the voice of ports in global forums such as the IMO."

One area that IAPH and ICHCA have identified as an opportunity for collaboration is cyber security. Although the understanding is in its infancy, ICHCA's security adviser, Richard Brough, can already see ways that IAPH can contribute to its work.

ICHCA is launching a 'digital and innovation' working group and cyber will be on its agenda. Brough said IAPH

could join in these discussions if it wished.

ICHCA is also part of the consortium involved in Scalable Multidimensional Situation Awareness Solution for Protecting European Ports (SAURON) – an EU initiative headed by Valencia Port Foundation to "look at how ports and terminals can respond more effectively to physical and cyber attacks by linking all the differing systems and technologies that we have to work more efficiently together", Brough told *P&H*.

He sees cyber security as more of a challenge for port authorities than for the private terminal operators such as ICHCA represents. Private companies can take "an in-house holistic approach to security [both physical and cyber]. Ports tend to be conglomerates of many, sometimes thousands, of separate entities. It is much harder to assign and co-ordinate efforts across the port".

Verhoeven is also keen to explore the possibilities of a cyber-reporting scheme where ports and terminals can report their attacks, a point that was also raised at the IMO special event on ports in early June. "I think it's obvious that we look to ICHCA as a potential partner here because the incidents we've had so far in ports have involved terminals and the very sensitive information for cargo movements," he told *P&H*. **PH**



IAPH's Patrick Verhoeven (right) and ICHCA's Laurence Jones sign an MOU to further boost WPSP



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Closing in on criminals

Closing off networks is just one way to prevent hackers from infiltrating a port's operating system, writes **Charlie Bartlett**

A visit to the control room of the semi-automated Terminal 3 at DP World's flagship port of Jebel Ali, belies the enormous operation going on outside. Here, operatives respond whenever automated STS cranes and RTGs require human assistance. A large screen dominates the office, tracking and plotting each container, stacker, and truck in a virtual bird's-eye view.

"Eagle Eye is part of the control system in all our machines," our guide explained. "Earlier we had no GPS to govern where machines and trucks are going. Now, if someone is misusing a truck, or hiding, we can see where they are."

The large screens are mainly to impress visitors; each operative has Eagle Eye on his or her own personal computer screen. The room is sealed-off from the visiting

journalists as though hermetically by floor-to-ceiling glass. DP World is not about to run the risk of some errant guest plugging in to charge a phone. Nor, indeed, the staff. "It's totally prohibited to bring USB sticks in or out of this room," the guide explained. "All the ports are disabled anyway. The only people who are allowed to use USBs or USB ports are the IT staff. We have backups ... and anyway, we never face this kind of problem."

Communications between networks are similarly restricted, taking place directly from one system to another. The internet is involved as little as possible, if at all.

The paranoia is justified, as today's hackers won't merely mock their victims with a laughing skull and crossbones. In the world of malware, hackers can



Systems can be locked down tightly, but rarely completely, against infiltration

choose from an array of pre-existing codes: WannaCry, Petya, NotPetya, and others are available 'off the shelf' to be slightly modified and redeployed at will.

In other cases, particularly for unique systems such as those that govern port machines, new codes have to be written. These are referred to as 'zero-day exploit' strategies, where 'day zero' is the point at which the victim and wider world learn of the vulnerability. With a unique signature distinct from previous malware, the zero-day attack is far less likely to be detected when it is eventually set in motion.

Moving about 4 million teu each year, the STS cranes at Terminal 3 have no human operators. DP World is looking to retrofit the same system to cranes at neighbouring Terminal 2. Meanwhile, across the harbor is Terminal 4, fully assembled and poised to come online as soon as demand allows, bringing capacity up to 22 million teu. Any breach, even collaterally, as with the Maersk NotPetya incident last year, could wipe out millions of dollars in revenue overnight.

"Maersk, by their own admission, weren't terrible or the best at security. I'd suggest many ports are in a similar state," said Ken Munro, consultant at cyber security and white-hat hacking firm PenTest Partners. "They're probably using some legacy systems – long

lifespan, hard to keep up to date – which manage cranes and movement of containers around the port. Whether from a deliberate hack or collateral damage, it's not difficult to see a port destabilised."

If an infection spreads to other terminals, as is plausible, it could bring a hub port to its knees.

The UK government's National Cyber Security Centre (NCSC) considers ports critical national infrastructure, prime for targeted attacks.

And between 2005 and 2010, Stuxnet, a malicious computer worm, breached closed systems at Iran's Natanz nuclear facility, causing 1,000 uranium centrifuges to rattle themselves to pieces. A similar hack targeted at a port could yield damage to life and property beyond imagining. "You could seriously destabilise a small- to medium-sized country by stopping containerised transport," Munro said. "We've already seen evidence of what we believe are Russian state actors attacking Ukraine. This could equally apply to ports."

In theory, DP World's 'closed' systems, locked down into small networks and not connected to the internet, make this impossible. Munro, however, has a different view. "There have been 'closed' systems around for years. The problem is, they're just not closed – there's no such thing. There are always bridges between these networks.

"We've spent the past 20 years working in utilities that have a control room using remarkably similar tech to the shipping industry. Stuff needs to be kept up to date. Either you connect to the internet to bring down updates and patches or you use a USB key. That separation of duties, of networks, is compromised time after time."

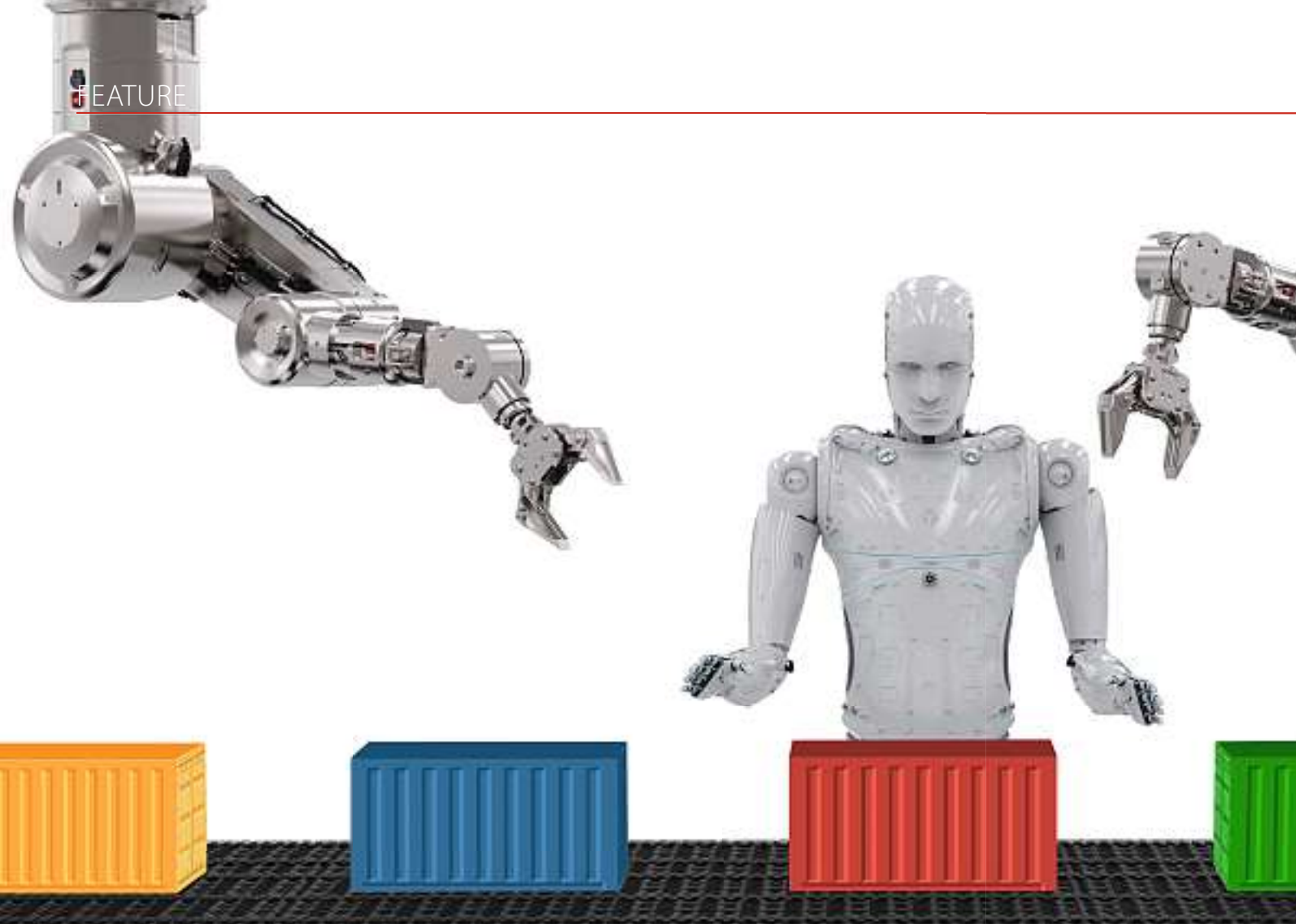
As Terminal 3 continues operation, more day-to-day data will be gathered and will probably be used to develop an artificial intelligence capable of automating more tasks. Cyber-security experts insist that humans are the weakest links in the chain. Omitting them will close many loopholes. But 'wetware', or human intelligence, has its advantages, and ports do away with it at their peril.

"Poorly trained people are the biggest risk, but [if] well-trained, they're one of the best defences," Munro explained. "Often, it takes a human to spot something out of the ordinary. For example, someone walking through the port who shouldn't be there."

However, we should not understate the problems of human error. In fact, the risk of automation lies largely in eventualities that have not occurred to programmers. "It all depends on the data going in," said Munro.

He used the example of the Tesla cars that crashed because they sent the wrong data. "In [one] case, the car didn't see the lorry in front of it, because it was white against a white background." Autonomous systems respond only to the data they have been fed. If there are problems with sensors that collect the data, there will be problems with the way the code is put together.

"Without applying some judgement and sense to it, automation can actually make things worse." **PH**



Cyber savvy: A case for AI in ports

Ports are starting to turn to artificial intelligence to help plug the gaps that malware seeks. **Charlie Bartlett** speaks to Andrew Tsonchev

Artificial intelligence (AI) cyber security is well-established in financial services and other sectors, but is new for ports and shipping. Yet experts believe that new machine learning techniques will allow hitherto unheard-of cyber vigilance at ports.

Conventionally, cyber-security software has been designed to detect signatures – that is, familiar arrangements of code corresponding to a specific type of malware. But both zero-day attacks – those that exploit previously unknown vulnerabilities – and marginally customised off-the-shelf malware are novel, and cannot be picked up by solutions designed to scan for existing threats.

“Whether it’s a zero-day or a slightly altered piece of malware, you have to be able to deal with novelty,” explained Andrew Tsonchev, director of technology at

Darktrace. Based in the United Kingdom, his firm signed a contract in May to supply the port of Harwich with its new Industrial Immune System, which uses AI designed to ‘learn’ the day-to-day exchanges of data between port systems and users and generate an effective picture of a working system. Once this has been determined,

“Any approach that’s built around protecting a specific industry is unlikely to work in others”

Andrew Tsonchev, *director of technology, Darktrace*



sniffing out zero-day attacks becomes a matter of detecting when events deviate from the normal 'pattern of life'. This allows the system to identify unheard-of threats such as zero-day attacks.

"The idea of Darktrace is to use machine learning and AI to detect new and novel threats that haven't been seen before," said Tsonchev.

Modern technology, such as the latest Windows and Macintosh computers, has been designed to be as resistant to malware as possible. But the systems that run port equipment do not have built-in security. "There is traditional IT and operational technology [OT]. When it comes to ports, the sorts of attacks we see are against OT, the systems that run machinery. These legacy systems are custom and bespoke and look very different from one port to another.

"It's not so easy to protect a ship or port network. In an office, you can just take all your employees' laptops and update them or install software designed to guard against malware. But at a port or on a ship, you're dealing with OT systems that are 10, 20, or 30 years old."

Yet, thanks to the move towards interconnected systems to improve efficiency, IT systems are being interlinked with OT systems, which are never designed with this external connectivity in mind. "That stuff was designed and built before the days of malware. It is very delicate, and will malfunction if the slightest thing goes wrong," Tsonchev said. "The systems were never built to survive this kind of attack. Ports have to protect these very delicate and vulnerable systems."

A common accusation levelled at cybersecurity firms is that, when breaking into industrial markets such as maritime, they try to apply the same principles. Such organisations come in for considerable criticism, as a one-size-fits-all approach is unlikely to succeed, Tsonchev explained. "Any approach that's built around protecting a specific industry is unlikely to work in others," he said. "Coming into a new industry with a predefined idea of 'what bad looks like' doesn't really work if you're trying to protect a unique OT environment. Things are getting too complicated for that.

"Every OT environment is one of a kind, so traditionally you'd have to design a custom security solution for every single one of them. That doesn't work either.

"One of the nice things about using machine learning and AI is that we can protect radically different environments we haven't seen before. We come along to a rig, a port, a train, a car engine – we don't have to manually tell it anything, just leave it alone for around a week and it figures out what it's looking at, and builds up a picture of what the environment looks like," explained Tsonchev.

"It's not saying this is how things should happen, but [is] looking at how things do happen." **PH**

Untangling blockchain

The newcomer has its own security challenges, writes **Charlie Bartlett**

Last year, Maersk Line and IBM planned to digitise bills of lading using blockchain, the driving technology behind Bitcoin, Ethereum, and other cryptocurrencies, it could potentially improve transparency in the container industry and save it USD38 billion annually. Yet both Andrew Tsonchev, director of technology at Darktrace, and Ken Munro, consultant at cyber security and white-hat hacking firm PenTest Partners, argue that the latest digital craze is not the cure-all of common imagination.

"Too many companies are saying 'blockchain' to pump their share prices," said Munro. "There are huge issues, particularly with containerisation, with the volume of data a blockchain can generate. A Bitcoin transaction takes time, and now you say we're putting the entire container system on blockchain. Any time a container moves, a ledger will have to be updated. You're going to need enormous processing power and bandwidth."

And the technology is unlikely to address every cybersecurity concern, either. "Don't think it will make your security problems go away. It'll make them different."

Munro explained that a blockchain 'wallet' was a cryptographic private key, with a password. "Is that password changed regularly? Sufficiently long and varied?" he asked. "If you have a port official with an iPad helping manage the blockchain by zapping things in and out and tracking them: is the iPad properly secured?"

Any successful application of blockchain will lie in identifying relevant means of employing it, rather than in modifying operations to accommodate it, Munro emphasised. "I'm supportive of blockchain, but don't put it in place where there are better technologies that could do this for you. What most organisations really need is a database.

"Something as straightforward as an electronic bill of lading might be a much better solution to some of the challenges in containerisation today."

Tsonchev insists blockchain is an extremely powerful tool, if a deliriously over-hyped one. "Blockchain is clearly a very important and profound technology. It can potentially solve many problems, but there is still a major gap between that and what is available on the market today. So blockchain is becoming a bit of a marketing buzzword that people need to be aware of when assessing whether a company or solution is genuinely innovative." **PH**



Getty Images: 5000458

AI can learn the day-to-day movements of a specific port operating system, and use this information to detect new threats

Taiwan takes control of wind power

Taiwan International Ports Corporation is taking advantage of the wind on the Taiwan Strait and is positioning its ports to support what it hopes will be a burgeoning wind-power cluster

Wind turbines in
Gaomei Wetlands,
Taichung, Taiwan

Wind farms in the Taiwan Strait account for 16 of the top 20 global marine wind farms, according to research by UK offshore consultancy 4C Offshore in its *Global offshore wind speed rankings* report.

To achieve the goal of a non-nuclear homeland, the Taiwan government has included wind power as one of its major energy development policies and has incorporated the offshore wind power development plan into its Forward-looking Infrastructure Development Programme, which covers the next 30 years.

Commercial ports operator Taiwan International Ports Corporation (TIPC) plays a huge role in supporting the development of the country's offshore wind power. In line with national wind power policies, TIPC has visited leading countries in the sector such as Denmark, the United Kingdom, and Germany to learn from their offshore wind power industries, government agencies, and academic research institutes.

It has identified Taichung Port as the future home port of offshore wind power operations and Taipei Port as the base for storage and transfer of underwater foundations (see box).

Its aim is to provide integrated port services throughout the offshore wind farm lifecycle and build a comprehensive wind power operation port cluster of the sort seen at Esbjerg Port in Denmark or Lowestoft Port in the United Kingdom.

Port of Taichung was chosen to support wind farm operations as it is the nearest international

commercial port to the potential wind farms, with a deep navigation channel and alongside depths and sufficient adjacent land area. It has comprehensive infrastructure and can meet the various operational requirements for the transport and installation of large offshore wind turbine components, as well as service crew and operation and maintenance (O&M) vessels.

To encourage players from the offshore wind power industry at home and abroad to settle in the port area, it has developed an industrial park dedicated to the localisation of wind turbine components. The plan is to create a base for four key areas of business: development; O&M; talent training; and marine engineering.

Port of Taichung has already started the renovation and construction of the heavy cargo wharves for wind turbines, including the upgrade of two wharves and the construction of another three. The port has also allocated 0.7 km² (80 ha) of land in its industrial park to the localisation of wind turbine components.

Looking to the long term, Taichung is considering releasing another four wharves and the land behind them as assembly space for wind turbine equipment above the water level. It also plans to allocate land at two further wharves to temporary storage space for underwater turbine foundation facilities. Taichung Port also provides space for certain shore-based operations such as the storage of cables and riprap stones.

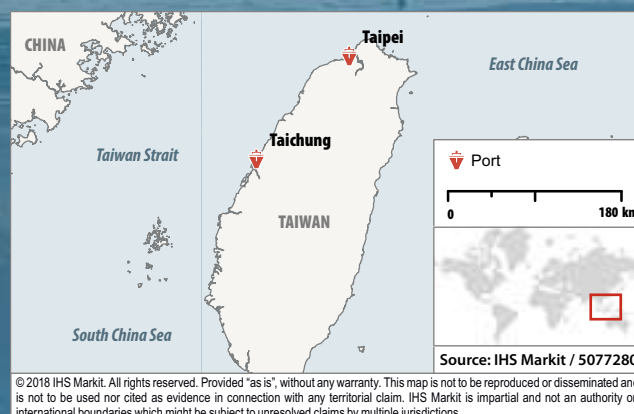
Once a wind farm installation is in service, its follow-up operation and maintenance period will last up to 20 years. Therefore, the operation and



maintenance vessels, operation bases, and vessel berths are all vital to its success. TIPC Marine Corp, a subsidiary of TIPC, plans to use Taichung Port as its main base to provide one-stop services such as crew transfer vessels, tugs, commercial offices, a monitoring centre, a standby room for wind turbine service personnel, warehousing for wind turbine spare parts, a vessel maintenance and repair base, and machinery and equipment.

The installation of wind turbines at sea is a highly dangerous operation. TIPC has set up a training park at the Academy of Maritime Development at Port of Taichung and has established maritime-related training courses. In the future, TIPC will work with the industry to establish a joint-venture Global Wind Organisation (GWO) training centre in Taichung Port. The centre is expected to begin its operations in early 2019 and will provide the GWO basic safety training certification courses.

Meanwhile, Taipei Port can provide land and wharves, all of which are located in the South Wharf district and have been recently developed. Taipei's main function will be to provide storage and



transfers of underwater foundation components for marine transport.

TIPC and the Taiwan government are confident that wind power will be a significant component of the country's non-nuclear energy mix in the future and the country's commercial seaports will be there to support this evolution. **RH**

Ports bear the load

Taichung Port has been selected to support wind farm operations owing to its location near the Taiwan Strait. Here, wind farm components can be assembled and transported to the offshore sites. Taipei Port, associated with the capital city of Taiwan and home to extensive research and development organisations, will support the underwater foundations sector.

The development of offshore wind farms can be divided into four stages: development; construction; operation and maintenance; and decommissioning.

Wind turbine components have oversized and overweight characteristics so the construction phase calls for dedicated installation vessels, a heavy-load wharf for pre-assembly of the wind turbines, and a rear assembly area at the terminal. The operation, maintenance, and decommissioning stages also requires the wharf and nearby warehouses.

A port with the right credentials to act as a base for these operations is, therefore, a key element in successful wind farm development.

According to the assessment report of the Massachusetts Clean Energy Center in the United States, the distance between the port and wind farm, including fuel consumption, insurance, and time, must all be taken into consideration.

From the ship side, the maritime transport of wind turbines is affected by weather, sea conditions, and meteorological conditions. The shorter the distance the better, and the risk is lower.

There are three different types of wind-farm construction activity: construction, including storage, assembly, and shipping; operation and maintenance; and underwater foundations, to accommodate the planning and requirements for the sections of turbine beneath the water's surface.

Of the three, a construction wharf requires the highest load-bearing capacity – higher than is required for a breakbulk, bulk/general cargo wharf, or a fishery port. Sufficient storage and assembly space is also needed. It is unlikely that existing domestic wharves will be strong enough to support these loads and will therefore, need to be reconstructed or newly built if they are to support these operations.

Operation and maintenance wharves can be divided into light, moderate, and heavy, depending on the size of the service crew vessels and the material requirements for component maintenance. As for the underwater foundation wharves, these need to be planned in accordance with the requirements of manufacturers to provide enough space for manufacturing, storage, assembly, loading, and rear areas.



Delegates at IMO's MEPC 72 meeting approved fuel bans that could be in effect by March 2020

Draft ban on high-sulphur fuel approved

Delegates to the International Maritime Organization's 72nd Marine Environment Protection Committee (MEPC 72) approved draft amendments to the MARPOL convention to ban ships from carrying fuel oil with a high sulphur content.

The move was expected, given the industry-wide support for the ban, which regulators and shipowners largely agree will help port state control administrations enforce the 0.5% global cap on sulphur in bunker fuel that comes into force on 1 January 2020. If formally adopted at MEPC 73 in October, the ban can take

effect as early as 1 March 2020.

The ban would not apply to vessels that use scrubber equipment to clean sulphur emissions in the stack while continuing to burn fuel with sulphur content higher than 0.5%.

Several countries had argued for delaying the ban because of uncertainty about the availability of compliant fuels in 2020 and concerns about fuel safety. "They were advocating a phase of experience-building before the use of fuels above 0.50% sulphur and carriage of such fuels on ships without approved equivalent arrangements such

as scrubbers are prohibited," the International Bunker Industry Association (IBIA) noted.

"A majority of IMO member states, however, see the carriage ban as a crucial instrument in enabling more effective enforcement of the 2020 sulphur limit and hence, reduce the risk that operators will be tempted to cheat and gain a competitive advantage," according to IBIA.

Plans to develop a ban on heavy fuel oil (HFO) in Arctic shipping, along with an assessment of the impact of such a ban, were also agreed upon during MEPC 72. Delegates

directed a subcommittee to develop a ban on HFO use and carriage for use by ships in the Arctic, based on an impact assessment and on an appropriate timescale.

Environmental group Clean Arctic Alliance has called for the IMO to ensure the ban will be in place by 2021.

"Any impact assessment must inform, but not delay, progression towards an Arctic HFO ban," said Sian Prior, its lead adviser, "and member states must ensure that Arctic communities are not burdened with any costs associated with such a ban."

Notable numbers

USD75 billion

Annual infrastructure investment needed in Africa, according to the World Bank



13 June

ICHCA and IAPH signed an MOU to collaborate on sustainability

IMO debates need to modernise itself

The International Maritime Organization is 70 years old and, in celebration of this milestone and the acceptance of the 174th member state, the Pacific island of Nauru, the regulator in May hosted a forum to debate major developments in shipping since its inception.

A panel of experts was asked to discuss the issues of the day. However, one of the major debating issues became be the

regulator itself and its method of developing regulations.

Knut Ørbeck Nilssen, CEO of DNV GL and current chairman of the International Association of Classification Societies, was the first to raise the issue, claiming the IMO would need to be more “agile” in future. He said that digitalisation, automation, and the “tremendous opportunities for innovation and change in the maritime industry ... will put

heavy pressure on the IMO to be more agile and have very close collaboration with the industry”.

Diane Gilpin, founder of the Smart Green Shipping Alliance (SGSA), compared shipping with Formula 1 racing, where she had previously worked.

“Formula 1 teams were all motivated by one goal. ... If we can adopt some of that mindset and some of that urgency... that’s a really tremendous

opportunity that knows no bounds,” she told the forum.

However, she added, “You need to look at the other enabling systems that bring technology to fruition and to market quickly. [You] need to be thinking, ‘How do we finance this stuff? How do we measure its success?’”

In defence of the IMO, Peter Thomson, the United Nations oceans envoy, said the current system of governance, although imperfect, was the best available. “If there is a better system, I couldn’t think of it.”

Sulphur cap affects more than fuel cost

IMO’s sulphur cap, which will require bunker fuel to drop from 3.5% sulphur to 0.5% or less by 1 January 2020, will increase demand for clean-burning marine gas oil and ultra-low-sulphur fuel oil. This is likely to cause a price spike, at least initially, for those compliant fuels.

But the regulation will also affect how the fuel is stored on board and even where the ship trades, according to a marine fuels expert.

The availability and price of 2020-compliant fuel will mean that certain ships “will be determined by their operators to be profitable only in a certain trading area”, Alok Sharma, head of global sales at Inatech, a division of bunker fuel supplier Glencore, told *P&H*.

“Vessel operators aren’t used to that. Right now they say they have a global network, but I



Uncertainty over low-sulphur fuel network persists

don’t think it’s going to be a global network for some if they want to maintain profitability. There will be a need to keep certain ships in a certain region because that’s where the fuel a particular ship requires is located.”

Fuel availability was the focus of a warning from the International Chamber of Shipping (ICS) on 21 May, issued

directly after the annual meeting of member national shipowner associations in Hong Kong.

“It is still far from certain that sufficient quantities of compliant fuels will be available in every port worldwide by 1 January 2020,” said ICS chairman Esben Poulsson, “and in the absence of global standards for many of the new blended fuels that oil refiners have promised,

there are some potentially serious safety issues due to the use of incompatible bunkers.”

It is unknown at the moment, Poulsson said, what types of fuel will be available and at what price, specification, and quantity.

Based on discussions with shipowners, Sharma is convinced that weighing up low-sulphur fuel strategies – as opposed to simply opting to install emissions scrubbers that will allow vessels to continue to burn high-sulphur fuel – will form the bulk of shipowners’ compliance assessments.

But tanker specialist Stena Bulk, which operates a fleet of approximately 100 vessels, is not discounting scrubbers as a compliance option. “The challenge today is not knowing what fuels will be available where, so the compliance considerations of what to go for is still quite difficult from a shipowner point of view,” Stena Bulk president and CEO Erik Hånell told *P&H*.

30,000 teu

Cap on container exports out of Port of Newcastle



16

High-ranking wind farm locations in Taiwan Strait

Hydrogen and methanol to feature in carbon-free fuel mix

Alternative fuels will be a key element in the battle to cut the shipping industry's carbon footprint following the decision at the International Maritime Organization (IMO) to halve carbon emissions by 2050.

To achieve such a goal, a bridging technology, such as liquefied natural gas (LNG) and liquefied petroleum gas (LPG), will not be sufficient. There will need to be ultra-low and zero-emission fuels included as well, with onboard power coming from electricity, via battery storage, wind energy, such as rigid sails, solar energy, such as onboard panels, and biofuels.

European Commission transport commissioner Violeta Bulc has confidently predicted that the technology to achieve significant – 70–100% – reductions in carbon emissions will be available by 2050.

Two fuels that may well be in the mix to help the industry achieve its carbon goals are methanol and hydrogen. They are favoured fuels in that they burn in diesel engines with limited modifications to the engines themselves and, with hydrogen needing to be stored at -250°C, any LNG-enabled vessel should be able to switch from one gas to the other.

Hydrogen has long been used as a fuel for space rockets, not only because it is the simplest element in



A hydrogen fuel cell in a laboratory. Hydrogen is already used to fuel cars

the universe, but because it is also the most abundant. When it burns in its pure form, the exhaust is water, which in space is a useful by-product.

Here on Earth there is already an abundance of water, and consequently hydrogen, but the element is not found in its pure form.

A number of companies have seen opportunities for hydrogen and are looking into cost-effective methods of extraction.

Antwerp-based shipowner Compagnie Maritime Belge (CMB), has embarked on a long-term project to develop green propulsion for its fleet. In the first stage, which CMB's research and development manager Roy Campe calls phase 1.0, the company spent EUR1 million (USD1.2 million) developing

a hydrogen-powered water shuttle named *Hydroville*. It has a capacity of 16 passengers and will be used to ferry CMB staff roughly 7 km from Kruikebe to the company's headquarters in Antwerp, Belgium.

The shipping industry has committed to reducing its carbon footprint by 50% within the next 32 years, which will be a tall order. According to a report by Tristan Smith, head of University College London Energy Institute's shipping group, the shipping sector would need to produce approximately 80 million tonnes annually if it were to meet its climate obligations through hydrogen alone. Current global hydrogen production stands at 60 million tonnes.

ITM Power CEO Graham Cooley said, "If we're going to get to

80 million tonnes of hydrogen per annum by 2050, we need to start building infrastructure now."

Cooley believes there is a significant role for hydrogen in the shipping industry despite the hurdles that need to be overcome, including the storage of hydrogen for larger vessels.

The model for the development of hydrogen as a marine fuel is not the same as that for heavy fuel oil (HFO), where an oil company produces the fuel and sells it through an intermediary to owners.

Cooley believes that with certain vessel types, the ship operator can produce its own fuel with a proton exchange membrane electrolyser at the port. It will then deliver the fuel whenever it is needed by the vessel.

Bunkering of hydrogen-powered vessels will vary depending on the ship type, Cooley said. "The low-hanging fruit is passenger ferries, inland waterway barges, and APUs [auxiliary power units], or gensets," he said.

ITM Power also considers that it would be more appropriate to offer shoreside power through a hydrogen-powered fuel cell for some vessels, rather than operate vessel systems using auxiliary engines.

Methanol, unlike hydrogen, is already in use on very large vessels. Waterfront Shipping took delivery of seven methanol-powered methanol tankers in 2016, and in 2015, Stena Line retrofitted *Stena Germanica* to burn methanol.

At the time, Stena Line CEO Carl-Johan Hagman said, "We are very enthusiastic about

Notable numbers

80 million

Tonnes/year of hydrogen needed if it alone were to meet shipping's climate obligations



20%

Indonesia's Beyond Cabotage requirements for imports and exports

methanol's possibilities and it has the potential to be the maritime fuel of the future. We want to pursue change and development in the shipping sector and, with *Stena Germanica*, our environmental impact will be completely different to what the industry has seen before."

According to the Methanol Institute, inland waterway vessels, ferries, workboats, and shortsea vessels are all types where LNG has made inroads, and these are all potential markets.

"As a low-flashpoint fuel, methanol is subject to the revision of the IGF Code and should have full regulatory approval by 2023. Equipment manufacturers have responded, with engine maker MAN Diesel & Turbo investing substantially in a dual-fuel, main-engine capable of burning a range of low-sulphur fuels efficiently and safely, with an impressive emissions scorecard for seven vessels already running on methanol," said Chris Chatterton, the Methanol Institute's chief operating officer.

Methanol is toxic, however, and changes have been proposed to regulations governing its use as a fuel. The institute said, "As part of the MethaShip Project, and in co-operation with the Methanol Institute, Lloyd's Register is developing a marine fuel and safe bunkering guidelines report that will be shared with the IMO."

Demand for green fuels will increase, and regulation has played a part in that, but some believe there is a need to introduce market measures that will levy charges on polluters and use that money to clean up the broader shipping industry.

Greater transparency in ship recycling aims to raise sustainability standards



A shipbreaking yard in Bangladesh: initiative aims to make all such sites safer and operating to high standards

The Sustainable Shipping Initiative (SSI), a non-profit organisation of leading companies from the maritime industry, is building renewed momentum in steering the industry towards a sustainable future – socially, economically, and environmentally – by 2040.

SSI's most ambitious plans for this year are in ship recycling. The organisation has already been working with its members on ship recycling for three years, but in March it announced the launch of the Ship Recycling Transparency Initiative (SRTI) to give this work renewed impetus and focus. SRTI is now seeking to appoint an executive director.

The initiative aims to develop industry-based mechanisms to reduce bad practice in ship recycling and reward

good ones. According to SSI, existing legislation and international guidelines, such as the Basel Convention, the Hong Kong Convention, the European Union Ship Recycling Regulation, the IMO Guidelines for the Development of the Ship Recycling Plan, and the International Labour Organization Convention on Health & Safety in Shipbreaking, provide only partial coverage of material aspects of ship recycling and are not applied consistently. This, SSI believes, is in large part due to insufficient transparency across ship recycling policy and practice.

At the heart of the SRTI strategy, therefore, is a plan to improve transparency by creating an online platform for information on ship recycling practices and performance. This

will allow shipowners to share their approach to ship recycling, enabling them to learn from each other and make better decisions.

In turn, this information can be used by charterers, investors, and other stakeholders to make informed and responsible assessments about which shipowners to work with, "rewarding good performance and resulting in better social, environmental, and economic outcomes", according to an SRTI document. In addition, it will bring about a level playing field for shipping companies in regard to recycling.

The timeline for the plan includes having a set of ship recycling disclosure criteria in place very soon and for the platform to be up and running by the end of this year.



USD18 million

Singapore Maritime Port Authority's investment pot for LNG bunker schemes

1 March 2020

High-sulphur fuel ban could come into effect

Baku lights way for cross-border trade

IAPH's most recent World Ports Conference refocused port players on the shifting state of global logistics

More than 400 people watched as Port of Baku laid out its plans to strengthen its place in the evolving Eurasia logistics chain.

Gathered in the beautiful Heydar Aliyev Center, designed by Zaha Hadid, delegates were shown the history of Azerbaijan's rich logistical heritage, through the fictitious character of Mariam, a young girl whose story evolved to the present day.

The opening programme featured international relations expert and author Parag Khanna, who noted Baku's location bridging Asia and Europe. Asia is where it is at, he said and Asian nations are increasingly trading with each other, rather than Europe or the United States.

Dubai's connectivity has increased exponentially, he noted. "Over time more cities will regain their role as great commercial hubs [that] won't compete, but will increase connectivity."

DP World is supporting Baku as it aims to position itself as the 'Dubai of the Caspian' and its group chairman and CEO, Sultan Ahmed Bin Sulayem, said that a "port-centric concept, combining the port, free zone and sub-zones" was the best model for success.

Not all ports are lucky enough to be situated in a unique or significant location that captures and maximises trade routes. Many have to be creative about attracting and retaining customers and logistics or free-trade hubs are one way to do this.

However, hubs are not necessarily a panacea or a one-

stop-shop to success, panellists agreed during one session. Most argued that total buy-in from government, as well as a unique value proposition, were core requirements for a logistics hub to be a success.

Michael Proffitt, who was CEO of Dubai Logistics City between 2005 and 2008, attributes the success of the zone and airport to the vision and total commitment of the government. You have to "create the right environment," he told delegates, pointing out

A port-centric concept, combining the port, free zone and sub-zones, is the best model for success

Sultan Ahmed Bin Sulayem,
DP World chairman and CEO

that many Asian businesses and headquarters were in Dubai because the government put plans in place that were attractive to businesses.

Speaking to *P&H*, economist Parag Khanna noted that Jebel Ali was not in an ideal location for trans-Eurasian commerce, but that it succeeded because it had first-mover advantage.



Baku Media Center: 5081288



Baku Media Center: 5081293

DP World group chairman and CEO Sultan Ahmed Bin Sulayem

He told *P&H* that it came out ahead "simply because the right geographies didn't do what they were supposed to do. So I look at King Abdullah Economic City and Duqm in Oman and I say here are two Arabian Peninsula port projects that will completely undercut Jebel Ali because their geography is much more sensible for reaching the Arabian markets.

"Jebel Ali will need a new reason for being," which it is doing with its planning and investment in logistics and e-commerce and other areas, he noted.

Port of Trieste in Italy is another port that is evolving. It cannot rely on its location either "and so has to do something more," said Zeno D'Agostino, president of the port authority. Discussions



From left to right, IAPH secretary-general Susumu Naruse; Guangzhou Port Authority deputy director general Yuan Yue; Taleh Ziyadov, Port of Baku director general; and IAPH president Santiago Garcia-Milà



IAPH president, Santiago Garcia-Milà (left), with Taleh Ziyadov, director-general of Port of Baku, who wants the port and free trade zone to act as a business hub



IAPH's Patrick Verhoeven called for sharing of insights



Ethnicity, inclusion and diversity featured in the Women's Forum debate

about a freeport started three years ago, he told delegates, noting that as in Dubai, the free trade zone had the full support of the government and was given new tools to make it work.

In 2017 a ministerial decree was signed for an international trade zone. The aim is to "offer a one-stop-shop" for manufacturing and logistics. "The future of the

port is not the port," D'Agostino told delegates, adding that ports should consider how they could position themselves at the centre of the logistics chain. Knowledge is very important, he asserted, and new ideas are always needed, adding that Trieste is "investing a lot in brains".

Theo Notteboom from the University of Antwerp also

acknowledged the importance of working to your strengths. As key criteria for a successful logistics hub, he cited being aware of the specifics of a location, knowing its unique selling points, and the ability to evolve to retain a competitive advantage through investment in resources such as IT.

Proffitt echoed this view. He said ports should be clear on the value

proposition when developing a hub, "then keep talking it through". Guimara Tuñón Guerra, director-general for ports and maritime ancillary industries at Panama Maritime Authority noted that a successful hub should offer a level playing field supported by a warranty. It needs a "clear strategy for sustainable development to make it work," she said.

Peter van der Kluit passes away

Peter van der Kluit, IAPH honorary member from the Netherlands, passed away on 17 May after a prolonged period of ill health. He is survived by his wife, Trix, a daughter, and three grandsons.

Van der Kluit's involvement in IAPH dates back to the late 1970s, when he participated in rewriting the IMO's guidance document on the handling of dangerous goods in ports as the representative of Port of Rotterdam and IAPH. In July 1999, he was appointed as managing director of the IAPH Europe office.



IAPH: 5061290



Port Authority of New South Wales: 5080238

Jeanine Drummond, general manager of operations and deputy harbor master at Sydney



Port of Stockton: 5080237

Elizabeth Blanchard, port commissioner of Port of Stockton

New vice-chairwomen for Women's Forum

The Women's Forum is pleased to welcome two new vice-chairs to help drive its agenda of advancing and promoting training for women in maritime.

Jeanine Drummond, general manager of operations and deputy harbor master for Sydney at Port Authority of New South Wales, Australia, and Elizabeth Blanchard, port commissioner of Port of Stockton, California, USA, were appointed by President Santiago Garcia Milà.

Blanchard has been involved with the IAPH Women's Forum since it was founded. A port commissioner since 2008, she is a professor emeritus of San Joaquin

Delta College psychology department and the University of the Pacific School of Education. Among her present positions she is president of the Association of Pacific Ports.

Jeanine Drummond is a maritime professional with more than 20 years of experience in shipping, commercial, and port operations. She will bring her profound knowledge to the IAPH Women's Forum.

MORE INFO:
www.iaphworldports.org/womens-forum

Membership notes

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

Temporary member

Mwani Qatar- Qatar Ports Management Company

Address: PO Box 313, Hamad Port, Umm Al-Houl, Qatar
Telephone: +974 44993333
Email: info@mwani.com
Website: www.mwani.com.qa
Representative: Capt Abdulla Al-Khanji, CEO

Regular members

Port and Harbor Bureau, City of Osaka

Address: 10th Floor ITM, ATC, 2-1-10 Nankokita, Suminoe-ku Osaka 559-0034, Japan
Telephone: +81-6-6615-7773
Fax: +81-6-6615-7789
Email: na0005@city.osaka.lg.jp
Website: www.city.osaka.lg.jp/port
Representative: Hiromu Yabuuchi, director general

Gibraltar Port Authority

Address: North Mole, PO Box 1179, Gibraltar GX11 1AA, Gibraltar
Telephone: +350 200 46254
Email: ceo@port.gov.gi
Website: www.gibraltarport.com
Representative: Manuel Tirado, acting CEO

Workshops help ports to cut emissions

The IMO GloMEEP Project of which IAPH has been a strategic partner since August 2016, has launched a workshop package, developed in collaboration with IAPH, named 'Prevention and control of shipping and port air emissions'.

It aims to train participants in how to undertake a port air emissions assessment, to gain a better understanding of different source categories in ports, and how to quantify these. It also provides training on the development of strategies for the reduction of air emissions in ports.

The first workshop in this series was held in Ningbo,



A three-day workshop in India focused on reducing port emissions

China, from 23–25 May, with participants from the national maritime administration and port and terminal operators. It was co-hosted by Ningbo MSA

and Ningbo Zhoushan Port. The workshop programme included a visit to Port of Ningbo Zhoushan, which did a presentation on the sustainability initiatives there.

The project continues to roll out a training package on addressing port emissions. A national workshop took place from 15–17 May in Mumbai, India for port personnel from across the country. It aimed to support ports in developing emissions inventories, with a view to better understanding emissions sources and developing appropriate strategies to address them.

The three-day workshop, hosted by the Indian Directorate General of Shipping and the Indian Register of Shipping, was based on two draft guides, *Guide for a Port Emissions Status Assessment* and *Guide for the Development of a Port Emissions Reduction Strategy*, which will be published later this year.

2018

2019

2020

Dates for your diary

A selection of forthcoming maritime courses and conferences

July

- 25–27:** AAPA Port Security Seminar & Expo
Chicago, Illinois, USA.
www.aapa-ports.org
- 30–2 August:** 39th PMAWCA Council Meeting and 14th Round Table
Conference Accra, Ghana
www.agpaoc-pmawca.org
- 30–2 August:** Apec-JNPT: Dredging strategy and technology for port
Mumbai, India
www.jnptantwerpporttraining.com
- 30–3 August:** 36th International Conference on Coastal Engineering 2018
Baltimore, Maryland, USA
www.icce2018.com

August

- 1:** JOC Events- Mexico Trade Forum
Mexico City, Mexico
events.joc.com

- 6–10:** Apec-JNPT: Dredging strategy and technology for port
Mumbai, India
www.jnptantwerpporttraining.com
- 6–10:** Port Operations Demand Sensing, Deployment & Management
London, UK
www.ttpminternational.co.uk
- 27–28:** 1st European-African PIANC YP-Com Seminar
Cape Town, South Africa
pianc.info/events
- 27–29:** Ports Australia 46th Biennial Conference
Darwin, Australia
bit.ly/2H2t5IH

September

- 17–19:** IAPH Regional Meeting (Africa Region)
Abuja, Nigeria
iaphabuja2018.com
- 18–28:** World Maritime Day 2018
London, UK
www.imo.org
- 24–28:** IMO Sub-Committee on Implementation of IMO
Instruments (III)
London, UK
www.imo.org



Edhard Amdt: 5079933

“Women should have the courage to raise their hands and apply for jobs that normally are out of their reach”

Standing strong against the cultural norm

Cruise Gate Hamburg's managing director, **Sacha Rougier**, tells *P&H* that business and society need to allow women to climb the career ladder, but that equally women need to be better self-promoters

For centuries shipping was considered a man's world. And so it was all over the press when Nicole Langosch, a native of Hamburg, became the first and so far only female captain of a cruise ship in Germany.

Women on board cruise ships are no longer rarities and today are regularly found on the bridge. Yet the highest function – captain – is still very much the preserve of men.

However, the traditional image of shipping is changing. Over the past decade we have seen more women appointed to leadership positions. In the world of terminal operations there are women in top positions; some are CEOs of ports.

If we look to the cruise industry we have some very important women CEOs, at TUI, Carnival Cruise Line, Ponant Australia, Celebrity, and Cruise Lines International Association (CLIA), who are doing a brilliant job. The cruise industry has had a longer tradition of having women in top functions, in contrast to the cargo industry that can still be very male focused and where female leaders are the exception. This may be because of its history, but the transition to more women at the top will happen. It has already been seen in the United States and Sweden, where purely male executive teams are no longer socially accepted.

In fact, companies with mixed teams on the executive floors seem to perform more successfully. Women at the top of the company are an indicator of how changeable and open to new developments the corporate culture is as a whole. Companies that bring women into leading positions are, according to studies, able to compete better in the international market.

But it's not just about companies helping to promote in-house diversity and appointing women to leadership

positions. Many women are still reluctant to take leadership positions. The cultural background and the image society has of a mother plays a significant role.

Many women still decide consciously to opt against a career, and instead work part-time. In Germany, that is the socially accepted model. In France and certain other European countries, the situation is completely different and it is totally acceptable to work full time and leave the children in daycare.

Combining career and family life, however, is only one part of the challenge to bring more women into leading positions. Women looking to build a career have to combine their skills with self-confidence and challenge themselves to get the best out of opportunities and resources in exactly the same way as men have always done.

When it comes to self-marketing and networking, men have the upper hand and women could do with improvement in those fields. Women should have the courage to raise their hands and apply for jobs that normally are out of their reach. It is worth it, and I can say that from personal experience. **RH**

i MORE INFO: www.cruisegate-hamburg.de



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