



# PORTS & HARBORS

Official Journal of the International Association of Ports and Harbors

## Hard hitters

Ports' plans for hurricane protection

## Grimaldi on ports

Shipowner's take on sustainability

## Shale expectations

Corpus Christi dredges for increased exports



# Heightened prospects

Raised bridge hails new dawn for New York/New Jersey



D3512  
Liebherr LRS645  
YOM: 2012



D3562  
Liebherr LRS645  
YOM: 2005



D3552  
Linde C4531TL  
YOM: 2010



D3546  
Linde C4026CH  
YOM: 2008



D3554  
Linde C4535TL5  
YOM: 2007



D3555  
Linde C4535TL5  
YOM: 2006



DK115  
Kalmar DRF450-60S5  
YOM: 2013



D3478  
Kalmar DRF450-60CSX  
YOM: 2005



D3579  
Kalmar DRF450-70CSXS  
YOM: 2005



D3490  
Kalmar DRS4531S5  
YOM: 2004



D3578  
Kalmar DRF420-60S5  
YOM: 2003



D3528  
Kalmar DRF400-60CS  
YOM: 2003



DK112  
CVS Ferrari F478  
YOM: 2012



D3553  
CVS Ferrari F379.5  
YOM: 2003



D3551  
Fantuzzi CS45KL  
YOM: 2004



D3453  
Steinbock Boss G4212CH/MKIVA-2  
YOM: 1990



D3576  
Kalmar DRF100-54S6  
YOM: 2011



D3586  
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YOM: 2010



D3577  
Kalmar DRF100-54S6  
YOM: 2009



D3537  
SMV SC2016CA  
YOM: 2004



D3514  
Hyster H22.00XM-12EC  
YOM: 2013



D3572  
Kalmar DCF100-45E7  
YOM: 2011



D3550  
SMV 5/6 ECB100DS  
YOM: 2011



D3525  
Linde C80/6  
YOM: 2001



D3503  
Valmet TD3012  
YOM: 1985



D3535  
SMV SL-22-1200A  
YOM: 2005



D3582  
Kalmar DCD200-12LB  
YOM: 2002



D3442  
Svetruck 1260-30  
YOM: 2011



D3584  
SMV SL20-1200B  
YOM: 2009



ML001  
Meclift ML1812R  
YOM: 2017



D3581  
Kalmar DCE160-12  
YOM: 2005



D3534  
Svetruck 13,6-120-32  
YOM: 2013



D3397  
Svetruck 13,6-120-32  
YOM: 2008



D3558  
Svetruck 12120-35  
YOM: 2009



D3547  
Kalmar DCE120-12  
YOM: 2005



D3564  
Kalmar TT612d  
YOM: 2010





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Bigger ships have been passing under the raised Bayonne Bridge bound for the port of New York and New Jersey since June, signalling a new era for the US east coast port

Photo: Shutterstock/IHS Markit

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# PORTS HARBORS

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## PORTS & HARBORS

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# The bigger issue

Security threats should not overshadow the longer-term impact of global warming



**Susumu Naruse**

Secretary General – The International Association of Ports and Harbors



It is easy to feel nervous living in Tokyo right now. On 15 September and 29 August smartphones beeped in unison and television stations suddenly cut to an ominous black screen with bold white script warning of a possible missile attack. The missile was launched by North Korea, which is developing nuclear weapons that are capable of striking the continental United States.

Luckily, the missile passed over Japan's northern island before splashing into the Pacific Ocean without any damage to the country. Japan's government is at a loss as to how to respond to North Korea's aggression. This is an extreme case, but many people in other parts of the world face a variety of security threats caused by terrorist groups and gun mania. Strong measures should be taken to fight these security threats. However, global warming might be a bigger threat to the world in the long run. The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century below 2° C above pre-industrial levels and for global emissions to peak as soon as possible.

To make the Paris Agreement a reality, the best option would be to stop the growth of greenhouse gas emissions by 2020 and reduce them by 60% by 2050. In keeping with these aims, the International Maritime Organization (IMO) is discussing an initial strategy for the reduction of greenhouse gas emissions from ships. IAPH is to participate in the development of a comprehensive global strategy on

reducing greenhouse gas emissions from the maritime sector.

IAPH also co-sponsored a submission calling for a qualified global emissions plan for international shipping to lay down the level of ambition of the initial IMO strategy, which is set to be agreed upon in 2018. The objective is that greenhouse gas emissions should start to reduce as soon as possible and decrease towards zero in the second half of the century. The efforts of ports to reduce gas emissions should be counted as part of a national contribution as defined in the Paris Agreement. However, since ports accommodate oceangoing ships, I believe the port industry needs to show it can give credible figures and a convincing story about its carbon footprint as an industry. This topic is very much on the agenda of the newly established World Ports Sustainability Program.

Through this, IAPH will strive to formulate a global strategy to reduce greenhouse gas emissions from ports in the world. **PH**

IAPH co-sponsored a submission calling for a global emissions plan for international shipping



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## Port updates

### ► DUNKIRK INDUSTRY

Dunkirk Multibulk Terminal in France is planning an extension that will see a new industrial facility built at the port. The project requires a total investment of EUR40 million (USD47 million) over two years. The factory will absorb about 300,000 tonnes of raw materials a year, procured from the Iberian Peninsula and neighbouring countries. These raw materials will be imported on ships of 15,000–30,000 dwt.

### ► LIVERPOOL LINK-UP

Peel Ports at Port of Liverpool in the United Kingdom plans to start a new rail container service for its customers by the end of this year. The company is in contract discussions with a rail provider and shippers and is aiming to offer a “seamless route to market, from quayside to any UK destination served by major rail lines, or vice versa”. Peel Ports is also backing calls for significant investment in the 19th century rail infrastructure serving the UK's east-west corridor.



### ► ROTTERDAM'S BLOCKLAB

The Dutch municipality of Rotterdam and its port authority have jointly launching a field lab for “the development of concrete applications and solutions based on blockchain technology”, known as BlockLab. It will be funded by the port and municipality. “There's this huge buzz about blockchain, but actually, there aren't that many fully functional applications,” said Rotterdam's deputy mayor for economic affairs, Maarten Struijvenberg. “We'll be changing this with BlockLab.”



A 10-minute survey will help ensure IAPH delivers maximum benefits to its members

## Have your say in IAPH survey

IAPH is running a survey until Friday 24 November on the value of IAPH membership and encourages feedback from both members and non-members.

Last year, IAPH adopted a new constitution, which requires a new way of thinking and doing things within the organisation. The goals are to ensure that the voice of world ports is heard, to expand the role of IAPH, and to

create more value for its members.

Feedback from this survey will help the IAPH council steer the organisation to meet these goals. It addresses both present and former members as well as ports and port-related organisations that have never been members of IAPH.

Depending on whether you are a member, a former member, or have never been a member, a specific set of questions emerges.

Feedback is sought on the tools and resources, advocacy role, networking opportunities, and communication tools that IAPH offers. The survey then asks about the future themes and activities IAPH should be giving attention to.

It should take 10–15 minutes to complete and all answers will be treated in confidentiality. Take the survey at [www.surveymonkey.com/r/IAPH2017](http://www.surveymonkey.com/r/IAPH2017).

## Libya's Benghazi port reopens for business

The Libyan port of Benghazi reopened in late September for the first time in three years after civil conflict within the country was finally resolved.

In 2014, the port of Benghazi was closed to commercial activity as the eastern-based Libyan National Army (LNA), under commander Khalifa Haftar, clashed with opposing local factions. The last reported vessel arrival was bulk cement storage ship *Oasis V* on 14 October 2014.

After years of conflict, in July of this year, Haftar announced that his forces had “liberated” Libya and declared victory. The local airport resumed business and now, almost three years to the day after its closure, the port has also been reopened.

To mark this occasion, the prime minister of the Tobruk government, Abdullah al-Thinni, arrived on board a tanker sent from the city. Port manager Abdulaziz Al-Abbar later confirmed by telephone that the port was back open for business.

The port's main imports are gas, textiles, petroleum products, and general cargo, and its main exports are wool, hides, fabrics, and rugs. It does not currently export oil.

Prior to its closure, Benghazi had been a large commercial port that served the surrounding region and was well equipped to handle a variety of vessels such as tankers, container ships, ro-ros, and general cargo vessels.

# US player enters Middle East

The Middle East and north Africa (MENA) port terminal management space is seen as increasingly lucrative, but is crowded and is dominated by the incumbent operators, Dubai Ports World and GulfTainer.

In August, however, an American player entered the arena, when it announced the signing of a deal with Hutchison Ports for the management of a container terminal in Iraq.

North America Western Asia Holdings (Nawah), an entity set up in 2011 “to build and operate industrial businesses in the Middle East”, was founded by the Chicago-based Pritzker family, which owns global concerns including the Hyatt Hotels Corporation, and Paul Brinkley, a former US deputy undersecretary of defence.

Although Nawah's progress has been hampered in Iraq by the coming of Islamic State and the continued state of civil war in the country, it has ambitions to use the terminal at Basra as a springboard for investment throughout the MENA region and beyond.

“Nawah is an investment firm focused on opportunities in Iraq, the greater Middle East, north Africa, and Asia,” according to its LinkedIn page. “[It] is one of the first American companies to make a multimillion-dollar capital investment in a re-emergent Iraq, combining its unique expertise and understanding of the region with its global industrial network to identify and develop successful business.”

In partnership with the Moosawi family of Basra, it launched Nawah Port Management (NPM) in 2012, “establishing a modern container berth” at the port.

Hutchison Ports and Pritzker Family Business Interests (PFBI) of the US announced on 23 August that the Hong Kong-based port operator was to partner with UAE-



GettyImage: 1017497

**The opening of Abu al Fulus Port in Basra in January, where dredging of the Shatt Al Arab waterway is needed so more ships can access the port**

based NPM, to manage port operations at Basra.

Nawah's Iraqi commercial activities consist of three business units: NPM, Nawah Supply & Distribution (NSD), and Nawah Investments. “NPM and NSD are both designed to service the increasing logistical and commercial needs of Iraq, being fuelled by significant investment in oil and gas development and the growing emergence of an Iraqi middle class,” it said.

“NPM [is] a unique maritime asset in southern Iraq as well as strategic platform in the epicentre of one of the fastest growing regions in the world,” Eric Clark, CEO of NPM, said.

In early 2014, NPM signed an agreement with the General Company for Ports of Iraq and Iraq's ministry of transport to quadruple the size of its terminal operations at Port of Basra. “Efforts are also under way to dredge the Shatt Al Arab waterway, allowing greater cargo volumes to directly reach the Port of Basra,” it said.

NPM's corporate headquarters are at Jebel Ali Free Zone in the UAE, and it says it “specialises in commercial ventures focused on

frontier markets,” including oil and gas equipment supply and distribution, oil field services, port management and freight forwarding, and advisory services.

Basra Port is located about 130 km from the open sea and much of the route to the inland facility traverses the Iraq-Iran border on the Shatt Al-Arab waterway, including the Iranian city of Abadan. The Shatt Al Arab River flows about 200 km from the point of confluence of the Tigris and Euphrates at the town of Al Qurnah to the Persian Gulf. Also known as Al Maqal Port, Basra Port is located to the north of the city. It has 15 berths, most of which were in the past allocated to general cargo, according to an October 2011 advisory note published by Inchcape Shipping Services.

“We view NPM's operations at the Port of Basra as an integral piece of our expanding Middle East strategy and are excited about the opportunities this partnership creates,” said Andy Tsoi, Hutchison Ports' managing director for the Middle East and Africa. “We believe strongly in the growth story of Basra, Iraq, and the Middle East as a whole.”

## Port updates

### ► KANDLA RENAMED

Indian government officials have given their approval to the renaming of Kandla Port in Gujarat to Deendayal Port. The port, which is one of the largest in India – it handled more than 105 million tonnes of cargo in financial year 2017 – has been renamed in honour of Hindutva icon and Indian politician Pandit Deendayal Upadhyaya. The Union cabinet, chaired by Prime Minister Narendra Modi, has given its retrospective approval to the renaming and port logos are being updated to accommodate this change.

### ► VOPAK SELLS EEMSHAVEN

Dutch tank storage specialist Royal Vopak is selling off most of its stake in Vopak Terminal Eemshaven to investment manager Whitehelm Capital as part of a reorientation of its terminal ownership strategy. Vopak, which has a 50% stake in the terminal alongside NIBC European Infrastructure Fund (NEIF), is to sell Whitehelm a 40% holding, retaining just 10% in future, while NEIF is to sell all of its holding to the investment manager. Vopak will continue to operate the terminal, which is sited in the Dutch port of Eemshaven and comprises 11 tanks and has a deepwater jetty for seagoing vessels.

### ► SHEERNESS DISRUPTION

The port of Sheerness in the United Kingdom, part of the Medway maritime cluster, was disrupted on 21 September after protesters from environmental group Greenpeace tried to block a shipment of Volkswagen diesel cars from being delivered from a vehicle carrier. Greenpeace said 25 volunteers in kayaks and boats surrounded the vessel, attempting to block its entry to the port in protest over car diesel emissions.



## Port updates

### ► COSCO EUROPE MOVE

COSCO Shipping Ports announced a major incursion into the European ports sector in September in the form of an agreement to take over from APM Terminals as majority shareholder in APM Terminals Zeebrugge (APMTZ). The Chinese group, which has made a number of investments in the European ports sector in recent months, is to buy out its partners, APM Terminals and Shanghai International Port Group (SIPG), for EUR35 million (USD42.04 million).

### ► DUBAI ON CLUSTERS

Dubai is looking at making a 'global maritime council of clusters,' it emerged during a London International Shipping Week event in September. Nawfal al Jourani, head of the Dubai Maritime Cluster, told the audience at a global maritime cluster round-table event that the emirate planned to take a lead in the venture, but that it was still very much in the planning stage. The initiative was broadly welcomed by other members of the panel, including high-level representatives from Canada, Cyprus, Hong Kong, the United Kingdom, Singapore, and the United States.

### ► ARCTIC FUEL DEBATE

Proposals to limit the use of heavy fuel oils (HFO) in the Arctic will receive closer scrutiny by the IMO next year. HFO is already banned in the Antarctic. While an Arctic ban by 2020 is a high priority for environmentalists, commercial shipping realities may undercut that goal. The latest push for the ban was at the Our Ocean conference in Malta on 9 October, where four organisations launched the Our Ocean Arctic Commitment. The scheme follows the Arctic Commitment, set up in January and signed by more than 50 companies and non-profit groups, to ban HFO, either as a fuel or cargo, in Arctic waters.



Joachim Aflfeldt: 100497

COSCO Shipping Ports terminal in Piraeus, Greece

# China's port operators continue overseas expansion

The number of overseas port locations with investment from China's big-three terminal operators has tripled in the past five years to the point where it comfortably eclipses the number of facilities they operate in their home country, according to research from shipping consulting company Drewry.

China Merchants Port Holdings (CMPort), COSCO Shipping Ports, and Shanghai International Port Group (SIPG) have together invested in nearly 40 overseas port locations, a dramatic rise from about 10 locations five years ago.

But with just 15% of combined-equity-operated teu throughput coming from outside China in 2016, Chinese operators still have some way to go before their international throughput volumes match those of the big four traditional international players, APM Terminals, DP World, Hutchison Ports, and PSA.

"Domestic China port volumes are so huge they will always

represent a big percentage of total volumes," said Neil Davidson, a senior analyst in the ports and terminals practice of London-based Drewry.

Davidson said it was clear the Chinese players were willing and able to pay a premium for assets and were able to make aggressive bids on projects because Chinese banks offer loans with interest rates as low as 2% to support the Belt and Road initiative.

In its recent investment in Spanish container and rail terminal operator Noatum Ports, COSCO Shipping Ports paid a significant premium compared with other recent port asset purchase deals, Drewry said.

COSCO paid USD228 million for a 51% stake in the company, which operates container terminals in Valencia and Bilbao, as well as the Conterail dry port in Madrid and Noatum Rail Terminal in Zaragoza.

"Overseas acquisitions by Chinese port operators are

earnings-accretive investments and diversify geographical risk simultaneously," Davidson said.

So far there is scant evidence to back claims that overseas port investments by Chinese companies may cool as Beijing implements measures to improve control of capital outflows.

Chinese operators continue to hunt for opportunities in multiple world regions, particularly Asia, Africa, and Latin America.

Earlier this month, Hong Kong-listed red-chip CMPort announced its first investment in South America with the acquisition of a 90% stake in TCP Participações, operator of Port of Paranaguá in Brazil.

The facility is the second-largest container terminal in Brazil, with a design capacity of 1.5 million teu. CMPort said it would increase capacity to 2.4 million teu with an expansion due to commence later this year and expected to be complete by the second half of 2019.



"In spite of the existing ports in southern Asia, Africa, North America, and Europe, the group can further expand its business to the Latin America region through the existing acquisition," CMPort said in a statement announcing the deal.

The investment will provide the company with an opportunity to use the marine transport hub to develop its logistics network, an export/import and industrial zone, and potential residential projects and related financial service platforms, the company said.

The number of overseas terminals with investments by the three Chinese operators is now more than half the combined number of terminals owned by the big four international operators.

Chinese operators continue to look for investment opportunities in individual facilities as well as portfolio investments along the lines of the acquisition of a 49% stake in CMA CGM's Terminal Link, Davidson said.

The traditional international operators are facing a challenging time competing with China for assets in emerging markets. Their own expansion strategies have been more cautious in recent years as sluggish demand and industry trends such the deployment of larger vessels and customer consolidation have squeezed margins.

With global container throughput forecast to grow at between 5% and 6% this year, the improving demand environment is supporting better results in terms of both volume and revenue growth. But industry consolidation as a result of merger and acquisition activity among shipping lines is resulting in downward pressure on handling tariffs and port operators continue to spend on infrastructure and process improvements to deal with larger vessels and call sizes in an increasingly competitive market.



Congestion at Bangladesh's Chittagong port needs to be addressed

## Bangladesh ports get Indian backing

The Indian government has announced a USD1.2 billion line of credit for ports in neighbouring Bangladesh. Upgraded infrastructure at the country's key ports is needed as shipping lines face severe delays. Waiting times at the country's biggest port, Chittagong, for example, have ranged from 10 to 15 days since May this year.

Chittagong port's Bay Terminal will receive USD450 million, Mongla port will get USD250 million, and Paira seaport, already under construction, will get USD750 million from the Indian credit line. The money will be used for equipment and terminal construction.

Bangladesh is searching for billions of dollars from numerous sources to fund development projects amid growing use of its ports. Meanwhile, cargo owners using Chittagong are charged extra by shipping lines due to the long periods at ports and demurrage by truck operators because their cargo has overstayed the time given for storage.

Bangladesh's container volume last year jumped 16% to 2.3 million teu, even though its terminals were built to only handle 1.7 million teu annually.

Chittagong wants to commission the first-phase of its Bay multipurpose terminal by 2021. When complete it will be able to accommodate 190 m-long vessels with a 12 m draught. At the moment the largest vessels handled at Chittagong have a draught of 9 m.

The country's second-largest seaport, Mongla, will expand its yard capacity and buy equipment with the funding as it positions itself to increase its goods handling capacity.

Construction of two new jetties at Mongla is set to start by early next year, one with Chinese funding and another under public private partnership.

The country's third seaport, Paira, which is now under construction, will put the USD750 million towards a multipurpose terminal, which will have three jetties and 16 m depth alongside.

## Port updates

### ► DPW ACQUISITION

DP World is to acquire Maritime World, the owner of Dubai Maritime City (DMC), for USD180 million, and to buy Drydocks World through a capital injection of USD225 million, for a total transaction of USD405 million. DP World said the deals were expected to close in the first quarter of 2018, pending approval from bondholders still owning debt associated with Drydocks' restructuring in 2012. Drydocks will be acquired by P&O Maritime, DP World's maritime-services subsidiary, while DMC will be transferred to Economic Zones FZE, which is seeking new space given the space constraints at Jebel Ali port.

### ► DREDGING IN EDEN

Dredging works have begun at Port Eden in New South Wales, Australia. The port is increasingly becoming popular for cruise ship calls and the dredging will remove up to 231,500 m<sup>3</sup> of sand and rock to improve access for these vessels. The existing Breakwater Wharf, which is 105 m long, will be extended by about 110 m to enable cruise ships of lengths of up to 325 m to berth, and there will be a minimum clear depth of 10.5 m around the wharf. The project will cost a total of AUD44 million (USD35.17 million).

### ► BANGLADESH EQUIPMENT

Port of Chittagong received 46 pieces of container-handling equipment in September to help it cope with increasing throughput. It moved 2.3 million teu in 2016, well beyond its design capacity of 1.6 million teu/year. The equipment included rubber-tyred gantry cranes, high straddle carriers, loaded-container reach stackers, forklifts, and container movers.



## Port updates

### ► MUNDRA PRODUCTIVITY

Adani Group-owned Mundra Port in India has passed a new productivity milestone, increasing competition with its public rival Jawaharlal Nehru Port Trust as it prepares to open a fourth mega-terminal. Adani International Container Terminal, a joint venture between Adani Group and Mediterranean Shipping Co, loaded and discharged 10,254 teu, claimed to be the largest-ever lift on a single sailing at an Indian port, when it serviced *MSC Bruxelles* in October.

### ► KARACHI HIGH

Hutchison Port Holdings (Pakistan) is achieving efficiency and productivity growth at its new Karachi terminal, a deepwater facility that began commercial operations in December after years of construction delays. South Asia Pakistan Terminals notched up a productivity high, claimed to be the best-ever at a Pakistani port, in October when it handled 8,562 teu *Hyundai Courage*. This involved 2,683 moves in about 13 hours, with berth productivity reaching 203.4 moves/hour and gross crane rates averaging 32.3 moves/hour. While in berth, the vessel loaded and discharged 3,501 teu.

### ► JAPAN BOXES UP

Major Japanese ports posted strong container traffic growth in the first half of 2017 on the back of a moderate global economic recovery and the national government's financial and other support measures. The number of foreign trade containers handled by Port of Tokyo surged by 6.5% in the January–June period, compared with a year earlier, to a new first-half high of 2.2 million teu. Imports led the growth, rising 7.1% to 1.2 million teu, as exports climbed 5.8% to 1 million teu.



DP World429865

DP World Port of Caucedo in the Dominican Republic is currently developing a major logistics centre

# Caribbean volumes to rise as islands rebuild after hurricane

Despite catastrophic hurricane damage, the cargo volume outlook for the Caribbean is actually improving, according to speakers and attendees at the Caribbean Shipping Association annual conference in Barbados.

"For the shipping industry serving the Caribbean, it will be a growth story for the next several years," said Americas Market Intelligence (AMI) managing director John Price at the Caribbean Shipping Association (CSA) annual conference, held in Barbados on 9–11 October.

Most Caribbean islands import fuel, consumer goods, and construction materials, and export tourism. Because of the drop in the price of oil over recent years, Price estimated that "much of the Caribbean is enjoying growth levels that are probably a full percentage point ahead of where they would have been without this oil price 'gift'".

He also highlighted the importance of the United States to the Caribbean as another positive for regional cargo volumes. "Proximity and economic integration with the United States

is a huge factor, whether it's receiving American tourists, American savings coming into the Caribbean banking system, or remittances. And the good news is that the United States is continuing to grow."

AMI's preliminary estimate of rebuilding costs in St Maarten, the US Virgin Islands, Barbuda, Dominica, and Puerto Rico is USD173 billion, with insurance covering only one-quarter of that. Puerto Rico represents the majority of the rebuilding costs, at about USD150 billion.

"In the next few months, the governments of these islands will begin to search for sources of funding for the rebuilding," said Price. "This will represent an immediate fiscal cost to these islands. But assuming they can find the funding from external sources, it will also be a source of growth and an opportunity for the shipping industry and the construction industry."

"Whether they are motivated by altruism or profit, you will see a lot of companies vying to help in the reconstruction – particularly in Puerto Rico."

The impact of the hurricanes will be uneven over time. "Initially, there will be a positive impact on cargo volumes, assuming there is funding released quickly for reconstruction," he said. "But after that, it will probably have a negative impact [on cargo volume] until they are able to bring the tourists back. The first year would be positive, followed by negative numbers for the following two or three years. How long really comes down to how effectively they get the message out that they're back in business."

Price believes hurricane reconstruction could further expand the Chinese business footprint in the Caribbean. Even before the storms, he noted that the Chinese had been targeting regional infrastructure projects. "I think you will see a very aggressive push by Chinese companies to be part of the rebuilding budget in the Caribbean," he said. "You may even see the development banks based in China lending money into the region. They tend to move more quickly than the International Development Bank or

the World Bank when it comes to approving loans, so they have an advantage that I know they're going to be pursuing."

Meanwhile, the generally positive trends for regional cargo volumes are mirrored by an upswing in transshipment flows through the larger Caribbean hub terminals, as mainland economies grow across North, South, and Central America.

The problem for regional terminal operators is that, as a result of expansions to accommodate larger new-Panamax vessels, there is considerably more port capacity than cargo. According to Anibal Ochoa, marketing vice-president at SPRC, which operates terminals in Cartagena, Colombia, "It used to be that the 'ticket to play' was about infrastructure. Every shipping line asked, 'Can you handle the big ships? Do you have the cranes, the draught, the berths?' Now that infrastructure is there, but it is no longer a competitive advantage. We see a lot of terminals in Latin America that have the infrastructure but are idle" (see p30).

Ochoa told the CSA conference that the competitive focus of regional terminals had shifted to added value through on-port logistics and warehousing. "The 'build it and they will come' concept for terminal operations is gone forever. The ticket to play is now about adding value to every box you can," he said, noting that a heightened focus on warehousing and logistics equated to more revenue for the terminal operator and a greater incentive for shippers to remain loyal.

"It's an opportunity to convert transshipment cargo into domestic cargo, which increases revenues per box for the terminal, and, once a customer is in a logistics centre, it's very tough for them to go," he said.

## Africa port productivity rises

Ports in West Africa joined those in the Middle East and Oceania, as the three regions that showed strongest levels of improvement in berth productivity among global container ports, the latest analysis of port call data carried out by *Journal of Commerce* at IHS Markit reveals.

The west African port of Cotonou in Benin, which two years ago was ranked in a study by Shanghai Maritime University as one of the least efficient ports in its region, topped the list of improvers, with a 66% increase

in average berth moves per hour weighted by call size in the first quarter of 2017 compared with the same period in 2016.

The combined average number of berth moves per hour achieved by its three terminals in the first quarter of 2017 was 48.3 when weighted by call size. The average call size was 762 moves.

Port of Lagos, also in west Africa, revealed significant improvement in berth productivity in the period of comparison – a 22.4% increase in average berth moves per hour..

## Bulk ports win on growth

Being a bulk specialist may have been difficult for shipowners in the past five years, given fleet oversupply and fluctuating freight rates, but it is the opposite for ports specialising in this type of cargo. An analysis of IHS Markit data on total annual cargo throughput at the top 20 ports worldwide indicates that bulk facilities have been the clear winners when it comes to growth between 2011 and 2016.

While Shanghai takes the top spot in the listing of annual cargo throughput at 700 million tonnes in 2016, volumes have fallen 4.1% since 2011. It is the only port in the top-20 list to register negative growth, with the rest forging ahead and focusing mainly on bulk. Singapore, Suzhou, Tianjin, and Guangzhou complete the top five, and all recorded positive growth over the five-year period.

Australia's Port Hedland, which claims a respectable ninth place in the total listing with 484.5 million tonnes in 2016, leads in total growth and boasts a five-year increase of 143%, up from its 2011 total of 199 million tonnes.

The next four ports to lead the growth stakes are all in

China. Zhoushan recorded a five-year growth rate of 92.88% (220.8 million tonnes to 425.9 million tonnes), Caofeidian 70.45% (170 million tonnes to 289.8 million tonnes), Tangshan 62.7% (317 million tonnes to 515.8 million tonnes), and Suzhou 50.98% (380 million tonnes to 573.8 million tonnes).

Only three ports in the top-20 ranking of annual cargo throughput are outside Asia. Port of Rotterdam, which takes the 10th spot at 461.2 million tonnes, and Port of South Louisiana, which placed 16th, with 295 million tonnes. Rotterdam is also one of the slower growth performers on the list, registering a modest 5.6% increase in throughput over the five years. A slight dip in iron ore, scrap metals, coal, agribulk, crude oil, and liquefied natural gas (LNG) handled is one reason why progress at the port has not been more substantial.

Just failing to make the top-20 cut is Hong Kong, which recorded a total annual throughput of 256.7 million tonnes in 2016. However, the port recorded negative growth of 7.4% over the five-year period.

## Port updates

### ► HAMAD INAUGURATION

Qatar officially inaugurated Hamad Port in September against the backdrop of an economic embargo imposed on it by neighbouring Arabian states. The USD7.4 billion port, designed as an alternative to nearby and congested Doha, has been commercially operational for some time, including handling container vessels. In the first phase, the port can move 2 million teu annually, and at full build-out could potentially handle 7.5 million teu. Its alongside depth of 17 m enables the latest generation of mega-ships to berth.

### ► GPA RAIL

The Georgia Ports Authority in the United States is investing in projects to expand Savannah's intermodal rail traffic deeper inland and help the container port – the second busiest on the US east coast – keep pace with bigger ships, increased volume, and new distribution centres. The port said projects under way or planned would double Savannah's annual intermodal rail capacity to 1 million lifts of containers in various sizes. The port currently handles about 400,000 lifts/year. Savannah's container volume jumped 6.9% to 3.9 million teu in Georgia Ports Authority's most recent July-to-June fiscal year.

### ► TIME FOR MEGA-SHIPS

Longer opening hours at Port of New York and New Jersey's four major terminals will be needed to handle an expected surge in containers from mega-ships, industry leaders argue. Turnaround times have improved at the port, but the terminals and trucking community will not be able to handle the container volume within the present opening hours, visitors to the Port of New York and New Jersey Port Industry Day in October heard. The terminals now open at about 6:00 and close between 15:00 and 19:00.





United Nations: 5062978-95

## Partners in sustainability

**Patrick Verhoeven** explains the five pillars of the World Ports Sustainability Program and the plans to promote knowledge sharing and innovation

**T**he theme of this year's World Maritime Day in September was 'Connecting ships, ports and people' to promote working together to highlight the industry's efforts and develop a sustainable logistics chain.

How apt this theme is for IAPH as it embarks on a journey to create the World Ports Sustainability Program

(WPSP), which it aims to officially launch in March next year.

The development of the programme was announced in Bali in May and it aims to address the economic, social and also environmental factors that the ports sector can affect in order to help create a truly sustainable supply chain for the future. IAPH members agreed that they should consider how

ports, as part of the supply chain, could contribute to achieve the 17 sustainable development goals (see graphic) agreed by the United Nations in 2016.

WPSP is also the natural next step for the World Ports Climate Initiative (WPCI), which has been the backbone of many of IAPH's projects for the past 10 years, fostering successful initiatives such as the Environmental

Ship Index and LNG fuel bunkering guidelines website.

It is time to broaden this scope and look to the many other ways ports and the shipping and logistics sectors can implement practical changes that will lead to a more sustainable future for us all.

Since the Bali meeting we have identified the next steps to make WPSP a reality and five areas that will form the backbone of the programme are now being considered:

- Climate change and energy conservation: following on from WPCI, this will continue to play an important part in the WPSP story.
- Future-proofed infrastructure: covering areas such as port



‘ IAPH cannot do this on its own; nor should it try ’

**Patrick Verhoeven**, IAPH managing director for policy and strategy



IAPH: 5048774

a reference point for information at a regional and national level.

The second will be a platform or online portal where the ongoing projects will sit, similar to WPCI. We are hoping to have this portal up and running and ready to be populated for the official WPSP launch in Antwerp on 22 and 23 March next year.

The third, and most exciting, element will be the development of a breeding ground for new projects and collaborations. Priority will be given to topics where there is less information available. For example, there are very few international projects on ethics in port business.

IAPH cannot do this on its own; nor should it try. That is why it is partnering with organisations such as the American Association of Port Authorities (AAPA), European Sea Ports Organisation (ESPO), World Association for Waterborne Transport Infrastructure (PIANC), and AIVP, the worldwide network of port cities. All these organisations bring their own expertise to the sustainability conversation. PIANC, for example, is very involved in the technical and engineering side of infrastructure and ESPO and AIVP have carried out a lot of research on port cities being good neighbours.

Rather than duplicate research already carried out by these organisations, WPSP aims to incorporate relevant projects into

the online portal, but the projects will always have proper recognition and belong to the organisation that carried out the work. These are early days, with many conversations and work still to take place.

When we have worked out what we have got, we can then start to fill in the blanks of the matrix. This will require the creation of a steering group that can oversee where work is needed most and co-ordinate efforts across the organisations effectively. I hope we can use the momentum of the March launch to start getting people together and get a couple of new lead projects out there.

As we collaborate across borders and engage with a variety of stakeholders we will encounter different priorities and regional differences, but we should not be afraid of differentiating these requirements. The idea of WPSP is not to impose but to offer the chance to educate as broadly as possible across the port sector and the wider logistics chain.

It's about bringing together the right people with the same interests from across the supply chain and ensuring that any work carried out is eventually shared through the WPSP online portal. And as the only global port authority organisation, IAPH is best placed to facilitate this. **PH**

**i MORE INFO:**  
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resilience to more extreme weather as a consequence of climate change, the political landscape, and infrastructure changes required as a result of initiatives such as China's Belt and Road. Also, technical infrastructure leading to automation, use of artificial intelligence, and 'smart' ports.

- Societal integration of ports: ports' relationship with local residents, stakeholders, the hinterlands they serve, and their involvement in social dialogue.
- Safety and security: a huge area for consultation, including security of physical infrastructure in the port and maritime sector, as well as cyber security and regional and international security

programmes, such as ISPS.

- Governance and ethics: how ports can foster transparency, equal opportunities, and prepare future generations to continue the sustainability story.

Horizontal objectives to help shape the programme were also identified. These include sustainability reporting and the involvement of pioneering ports in these five key areas.

The idea is to create information banks and knowledge-sharing centres based on these five key pillars that will be accessible to all. This is a three-strand process. The first and most straightforward element will be the creation of a library of existing products that will act as

# Tackling today's hot topics

Emanuele Grimaldi and Patrick Verhoeven discuss shipowner's expectations of ports when it comes to sustainability, the environment, and increased automation. **Namrata Nadkarni** reports

**I**n late September, Emanuele Grimaldi, Grimaldi Group managing director, played host at the annual EuroMed Convention, which provided a platform for shipowners, operators, car manufacturers, and agents to talk about the issues affecting the industry.

The main panel, on which IAPH managing director of policy and strategy Patrick Verhoeven was a guest speaker, focused on sustainability (see pages 10–11). On the sidelines of the conference, in the Sardinian municipality of Santa Teresa Gallura, the two caught up with *P&H* to discuss what owners and vessel operators are seeking from global ports, now and in the future. One of the first topics that came up in the conversation was how ports could support operators that were

be able to enter the ports and have no environmental impact," he said. He believes that attracting such vessels would benefit ports as this would address the concerns from a growing number of associations that are going head-to-head with ports on vessel emissions.

Verhoeven strongly believes there is no straightforward fuel solution, yet feels that port investment in future fuels needs to be done hand-in-hand with operators in order to achieve a critical mass of uptake. "It's a volatile era with regard to the energy mix, but it's important there is a dialogue between ports and their customers. If one is interested in developing LNG, which is still a fossil fuel and may need replacing in the long term, then a port may choose to explore the business case for this kind of investment, while others could choose to invest in shore power or cold ironing."

An option that many ports and ship operators in Europe already benefit from is pilot project schemes funded by the European Union and national governments. "These definitely decrease the risk for any port or ship operators looking to explore emerging fuel options, and are something that we can advocate for on a more global scale," said Verhoeven.

In the meantime, however, he is of the opinion that IAPH's Environmental Ship Index (ESI) may be a good tool for ports to assess the green credentials of visiting vessels and could form the basis to calculate and allocate incentives. "We have over 50 ports applying this scheme worldwide, with large concentrations in Europe and US as this is where political pressure is particularly high. The ESI database currently includes about 6,000 ships." Often the ports choose to give operators the benefit of reduced port dues. "Although port dues form only a small part of overall transport costs, the reduced tariff may still prove enough of a commercial incentive to encourage other operators to follow suit when investing in newbuildings or retrofitting existing vessels", Verhoeven said. "We do encourage ports to evaluate the impact of the incentives they provide and use these in dialogue with customers and local stakeholders."

It is of note that Grimaldi was dead set against vessel assessment by gross tonnage, as, he argued, this would penalise ro-ro operators looking to take advantage of the economies of scale when investing in large ships such as the G5GGs. "Looking at cargo interests is not a reliable system that can be applied worldwide," he stressed. "If you are really looking at the environment, a good place to focus would be the ship's engine rather than gross tonnage, as some smaller catamarans have more horsepower than even the biggest bulk carrier and so would be polluting more."

**I'd like shipping to promise something that we can deliver now**

**Emanuele Grimaldi**, *Grimaldi Group managing director*

making the effort to be sustainable. Grimaldi, whose company has ordered six new Grimaldi Fifth Generation of Green Ships (G5GG) ro-ro carriers with an option for a further four, believes the ships should receive incentives from ports that are looking to attract more environment-friendly vessels. "What we would like to see more is our investment in an environment-friendly way of transport translated into preferential treatment in terms of [cargo] volumes and so on – it gives us a legitimate competitive reason to continue investing in such ships," he said, adding that some ports in Spain were already examining incentive structures for green vessels.

While many ship operators are opting to achieve their green credentials through use of either distillate fuels or LNG, Grimaldi maintains that his vessels go a step further towards reducing the impact on the local population as the hybrid ships will use battery power when in port. "LNG-fuelled ships still have emissions in port. This is a very important point in the Mediterranean as many of the ports, such as Barcelona, Palermo, and Naples, are in the heart of the town. We know that our new ships will



Sustainability panel at Grimaldi's EuroMed Convention in September, from left: Ennio Cascetta, managing director of Rete Autostrade Mediterranee; Peter Weiss, head of EMEA supply chain management at Fiat Chrysler Automobiles; Emanuele Grimaldi, managing director of Grimaldi Group; Mikael Makinen, president-marine at Rolls-Royce; Patrick Verhoeven, managing director, policy and strategy of IAPH



Grimaldi Group: 5062310

He advocates an in-house global approach to regulation by the IMO in order to establish the reputation of shipping as a responsible industry that should not be at the mercy of fragmented regional policy. However, as part of this, Grimaldi, who is also a vice-president of the International Chamber of Shipping (ICS), stressed the need to have realistic expectations of environmental activities so the maritime sector can ensure that stakeholders are able to consistently deliver results. "I'd like shipping to promise something that we can deliver now and reset our goals every 5 to 10 years to match what improvements in technology there have been," he said, adding that he was confident that environmental shipping was inevitable. "This is a win-win for operators, as this comes with energy savings, which will also reduce costs."

Another trend that both gentlemen view as unavoidable is increased automation, which has been noticeable on the ports side for a number of years and is now gathering momentum on vessels.

"Compared with shipping, ports have experience, as we saw the first automated container terminals back in the early 1990s," observed Verhoeven, estimating that there were about 35 automated terminals worldwide in 2017.

Shipping has been slower to follow, but Grimaldi said it was no longer a matter of 'if', but rather 'when'. He believes there will be official rules for vessels with

skeleton crews in the next five years. "Having fewer crew on board will reduce the human element, which is the risk element," he said, adding that ports would need to finance infrastructure to accommodate these future vessels. He suggested that ports invest in solar panels and other green energy sources, modern warehouses, and robotized mechanics.

Automation, of course, raises the issue of displaced crew, many of whom will have to retrain for new jobs. Grimaldi believes skilled crew will find themselves in high demand on land, as automation will level the situation between developed countries, which tend to have more highly skilled, but more expensive manpower, and developing countries, which offer cheaper labour.

"There may be a good business case for factories or centres to open in developed countries, as there will be more access to skilled personnel and lower overheads required for set-up," he prophesied.

The vision Grimaldi puts forward involves massive social change, something Verhoeven noted that ports have extensive experience with. "The fear of loss of jobs is a big issue and we have had industrial action at a number of ports over the years. But we have been intimately involved in the social transitions – particularly on the container side – and we can share the benefit of our experience with shipowners," he said, adding that he hoped to continue to facilitate open discussions between port authorities and vessel operators. **PH**

# Bayonne Bridge elevates port's prospects

Port of New York and New Jersey, the second-largest port in the United States, is poised to regain its market share as it welcomes 14,000 teu-plus vessels

**N**early seven years after the Port of New York and New Jersey took the decision to raise the height of the Bayonne Bridge in December 2010, 14,855 teu ship *CMA CGM Theodore Roosevelt* became the largest vessel ever to enter the port. It transited the Panama Canal on 22 August and went under the bridge on 7 September, then on to APM Terminals at Port Elizabeth, New Jersey.

The raised bridge will enable larger vessels to access the New York and New Jersey ports and CMA CGM

will add New York and New Jersey to its weekly South Atlantic Express (SAX) route, starting in Hong Kong and stopping at Shanghai, Yantian, and Ningbo, before heading through the Panama Canal to the east coast of the United States. The loop, operated by the Ocean Alliance, currently stops at Norfolk, Charleston, and Savannah. It will conduct Caribbean transshipment operations at Panama's Colon Container Terminal.

In addition to CMA CGM, the Ocean Alliance is made up of OOCL, Cosco Container Lines, and Evergreen Line.





OOCL was the first to put big ships into New York and New Jersey. Its 13,926-teu *OOCL France* sailed under the bridge in May and held the size record until it was superseded by *CMA CGM Theodore Roosevelt*. Prior to the raising of the bridge in a USD1.6 billion project, Port Newark-Elizabeth Marine Terminal in New Jersey and Howland Hook Marine Terminal in Staten Island had previously only handled ships slightly larger than 10,000 teu.

There has been big shift in market share between US ports over the past couple of years. New York and New Jersey's share of the Asian import market fell from 43% of imports to the east coast in 2010 to 34.5% at the start of 2017, according to IHS Markit PIERS. Labour issues on the west coast have also led some of its market share to move to the east coast.

Lawrence J Gross, president of Gross Transportation Consulting, wrote in an article for IHS Markit's *Journal of Commerce*, "It is interesting and perhaps revealing that the June 2016 opening of the enlarged Panama Canal has had no discernible effect in terms of share shift. One plausible reason may be that the deployment of the new ships was delayed because

of the lack of access to New York harbor, a must port for most east coast ship rotations." But now, with the bridge raised, Port of New York and New Jersey is open for mega-ship business, he said.

"We have been waiting for this," Marc Bourdon, CMA CGM's America president, told the gathering of about 100 industry representatives at APMT's terminal at Port Elizabeth, where the *CMA CGM Theodore Roosevelt* docked. "It's very significant for the continuing economic growth of the northeast region."

New York was not originally on the SAX route, because CMA CGM and its partners in the Ocean Alliance planned the route a year ago, Bourdon said. "The Panama Canal was ready but this wasn't, and until we knew exactly when that bridge would be ready, we couldn't really make any plans."

The expansion of the Panama Canal, when it opened in June 2016, tripled the size of ships that could pass through it, from 4,500–5,000 teu Panamax vessels to 13,000 teu. *CMA CGM Theodore Roosevelt* is the largest vessel ever to go through the canal. "We have reviewed the conditions now and, together with our Ocean Alliance partners, we have just decided to include New

***CMA CGM Theodore Roosevelt*, a 366 m container ship, passes under the recently elevated Bayonne Bridge on its maiden voyage to the United States**





York,” Bourdon said. “This will link Shanghai to New York in about 27 days.” He noted that New York’s importance could be seen in the fact that it handled 36% of the cargo moved by CMA CGM from Asia to the US east coast. “New York is an attractive and an important port,” Bourdon said, “partly because of the density of population in the northeast region. It’s a gateway for the northeast region, and parts of the Midwest. It’s crucial.”

*CMA CGM Theodore Roosevelt* will probably stop at Maher Terminals on the SAX service because APM Terminals at Port Elizabeth does not yet have cranes tall enough to handle the mega-ship’s maximum height, Bourdon said. The ship was stacked six containers high when it called, but can take stacks eight containers high, he explained. Vessels on the route will either be 14,000 teu – CMA CGM is in the process of putting six of them into service on different routes – or 13,000 teu operated by partners in the Ocean Alliance, Bourdon said.

These vessel sizes are typical of those once used on the Asia–Europe routes, but which are now being replaced by 20,000 teu behemoths such as *OOCL Hong Kong* and calling at the like of Felixstowe in the United Kingdom and Rotterdam in the Netherlands. Krispen Atkinson, a maritime consultant at IHS Markit, noted that these 13,000–14,000 teu ships can now be cascaded into the trans-Pacific Asia – US east coast route, since Panama Canal has been widened.

By design, ships of this size are only intended to call at major gateway ports. This has prompted several US ports to invest in changes, and some still have work to do. The Port Authority of New York and New Jersey has invested heavily on port upgrades, spending USD4.7 billion on dredging, rail access, and other projects, including the bridge. Port terminal operators have spent about USD2 billion on upgrades.

“Both draught and air draught restrictions have a dramatic impact on the ocean carriers in terms of their load plans, operations, and schedules, which need to

## US imports on the up

The US is seeing an uplift in its imports, both to the east and west coasts.

According to figures from the US National Retail Federation (NRF) and Hackett Associates, ports whose data is included in its Global Port Tracker (Los Angeles/ Long Beach, Oakland, Seattle, Tacoma, New York and New Jersey, Hampton Roads, Charleston, Savannah, Port Everglades, Miami, and Houston) handled 1.8 million teu in August, making it the highest recorded since NRF began tracking imports in 2000. It topped the previous record of 1.78 million teu set in July.

NRF vice-president for supply chain and customs policy Jonathan Gold said, “Consumers are buying more and everybody from dockworkers to truck drivers is trying to keep up.” Imports have risen 3.1% from 2015 to 2016, and 2017’s are expected to rise 5.4% on last year.

be worked around at ports that have restrictions,” a representative of the Port Authority of New York and New Jersey told *P&H*.

The port told *P&H* it was ready for this transformation and that since 1998 it had been growing at an average rate of 4.1%. It expects to continue to grow at a rate of about 4%, while the number of vessels it will handle will shrink due to the increased volumes they can carry. “In August we handled 5.2% more containers than we did in August 2016 and did it on 37 fewer vessels – 18% fewer vessel calls,” it said. The port is also expecting its modal split to change, with more containers being moved beyond the port on trains, rather than trucks.

“With the Bayonne Bridge project completed, there is a broad range of ship deployments and ship sizes that we expect will be phased into rotations on a consistent basis over the next 12 months,” it said, pointing to it being added to the Ocean Alliance’s SAX route. It also noted that the project’s completion paves the way for ships of up to 18,000 teu to call at the port. **PH**

## Canal rivals use tariffs to lure back customers

A reduction in Panama Canal tolls will attract larger ships and boost revenue, but it is unlikely to immediately lure back Asia–North American east coast backhaul services transiting the Suez Canal, according to Drewry Shipping Consultants.

The USD10–15/teu tariff cut on southbound sailings, which came into effect on 1 October, applies to vessels of 6,000 teu and above, which must have carried at least 70% of their capacity on the northbound leg and not take longer than 28 days between the two journeys through the Panama Canal. “The savings available to carriers will increase according to the size of ship deployed, but they might not be sufficiently attractive to immediately change carriers’ routing plans,” London-based Drewry said.

Based on the eight services that currently transit the Panama Canal in both directions, with an average ship size of 6,900 teu, the round voyage saving will be “only” USD30,000, and for the 80 vessels that will qualify, the total annual discount will amount to almost USD13 million if they each make about five round-voyage transits each year.

While this is a “good sum,” the Suez Canal has just extended to the end of the year its “generous” toll rebates of between 45 and 65 % depending on the direction and port coverage of the services. If the rebates are repeated next year, the Panama Canal’s discount is unlikely to lure many carriers from the Egyptian waterway, according to Drewry.

Only eight of the 14 headhaul services from Asia to the North American east coast that transit the Panama Canal make the same journey on the return leg – three completely avoid any canal tolls by sailing via the Cape of Good Hope, while three use the Suez Canal.

While the Panama Canal has the same number of weekly loops as it did before its expansion, the number of Suez-routed services has declined from nine to five.

“We do not expect to see much, if any, change to carriers’ routing plans this year,” Drewry said. However, “that could change in 2018 if the Suez Canal ends its rebate scheme, in which case Panama’s return leg discounts will provide a more compelling argument to switch.”



Getty Images: 5063122

# Funding gap needs private investors

US ports facing an investment shortfall have been told that private funds will step in, given the right incentives, **Bill Mongelluzzo** reports

**Unlocking the cash: ports need to offer investors long-term stability**

**U**S ports must invest USD154 billion on terminals and road and rail connectors over the next five years to help handle growing volumes and bigger ships, but can probably expect access to no more than USD25 billion in public financing. This message came from Anthony Renzi, partner at Akin Gump Strauss Hauer & Feld, which specialises in international and domestic corporate transactions, at the annual conference of the American Association of Port Authorities on 3 October 2017. This leaves a shortfall of more than USD100 billion, but Renzi said “there’s a lot of private-sector money out there”.

Federal government grants and loans have historically provided only a small percentage of ports’ capital expenditure needs, with harbor deepening being the primary beneficiary. As port-related infrastructure projects grow more expensive, the federal share will continue to shrink as a percentage of total project costs. Ports will therefore have to leverage public money to attract investments from private sources such as banks, hedge funds, retirement

funds, and terminal operators that build and operate their own facilities.

Infrastructure funds, teachers’ retirement funds, and other private-sector investors descended upon the marine terminal market from the second half of the 1990s, often paying multiples of projected earnings. Concerns arose that those bets were unreasonable, and the global economic recession of 2008–09 proved that the concerns were well-founded.

In the past, investment funds looked for opportunities that would generate at least a 20% return they could count on for about 10 years before selling out. Since the recession, investors have concentrated on terminal and infrastructure projects that offer lower, but stable returns over 20 years or longer. Private equity investors seek to mitigate risk by partnering with terminal operators that have shipping line affiliates, Renzi said. With about a dozen global shipping companies concentrating their vessel calls at fewer but larger terminals, private equity investors seek long-term stability, relatively low risk, and guarantees of container volume, he said.

The key factor in these decisions is guaranteed container volume. In an era of terminal consolidation, investors find especially attractive those projects in which they can partner with shipping line-affiliated terminal operators, Renzi added.

However, continued consolidation in the shipping industry will result in fewer options for ports that seek to partner with shipping line-affiliated terminals. Josh Hurwitz, senior consultant with infrastructure consultancy Moffatt & Nichol, said that next year, after the merger of the three big Japanese-flag shipping companies – NYK, MOL, and K’Line – is completed, the top 10 global shipping lines will control 84% of the world’s container capacity, up from 53% in 2006. When it comes to investing in a large terminal with a 30-year lifespan, the investment is further complicated by the nature of shipping line alliances, which are almost certain not to last that long, he said.

Port authorities, meanwhile, should also seek to minimise their risks when committing to building these costly terminals with long lives. Maintenance and repair costs in the rugged port infrastructure can add up, so partnering with a terminal company that builds and operates the facility will result in a better-built project, Renzi said.

The effects of consolidation among shipping companies, ports, and terminals are creating unprecedented financial demands on major ports. Mega-ships need mega-terminals to handle container exchanges that can easily exceed 10,000 teu per vessel call, but many terminals were designed to handle vessels less than half the size of these mega-ships. Today’s terminals need taller cranes, sturdier decks, larger container yards, more efficient gate complexes, and more extensive road and intermodal rail connectors in order to deliver containers efficiently to beneficial cargo owners. **PH**



Getty Images: 5062685

# Canada strives for port framework

The privatisation of Canada's ports is no longer under discussion, but governance changes are still possible, reports **Alex Binkley**

**Canada's largest port at Vancouver. The country's port authorities will continue to be state-owned**

**W**hile privatisation of Canada's 18 commercial ports is no longer being publicly discussed, transport minister Marc Garneau has not ruled out changes to the governance structure of the port authorities that operate them.

He told the House of Commons transport committee in late September that while the ports generally work very well, "I do not rule out the concept of examining certain parts of the governance of them. There's always the possibility to make improvements and we're open to considering other ways of improving that".

When asked for additional comment, his department, Transport Canada, would only say it "is open to considering and examining all aspects related to the transportation system ... and this includes

active, continuous engagement, and analysis on topics such as port governance".

Garneau is understandably reluctant to take on port reforms when he is piloting a massive overhaul of national transport laws and regulations through Canada's parliament.

Neither Garneau nor other ministers in the government of Justin Trudeau took a public position on privatisation of the ports and national airports, even though they commissioned private-sector reviews of ownership options for both in 2016. Garneau insisted the studies were simply a matter of exploring different possibilities.

While a few economic commentators called for privatisation, the idea failed to stir much interest and the ports and airports lobbied openly against the idea, saying it would lead to higher costs and diminished service. There is no longer even any talk of a follow-up consultation on the privatisation of the ports and airports that the government originally suggested would occur after the studies were complete.

If Garneau needs ideas on more effective port governance, he only has to read the testimony of David Emerson to the Commons transport committee. Emerson, a former federal cabinet minister and current chairman of Vancouver-based terminal operator Global Container Terminals, led a task force that conducted a sweeping review of the Canada Transportation Act. Its lengthy report to the government last year provided





**A bulk terminal at Port of Montreal. Port access to public money is under debate**



Port of Montreal, 5061 362

much of the basis for Garneau's bill. While the review recommended a more commercial, market-based operation of ports to reduce their dependence on government funding, it was mute on the issue of privatisation. It said the port authorities had "been able to strike a reasonable balance between commercial disciplines and public interest in ports as enablers of trade development".

However, the current federal control funding model has made "it increasingly difficult for the authorities to respond to evolving trade demands", the review said. Currently, the authorities have to finance infrastructure projects out of their earnings or from government grants.

The review recommended a shared-capital approach so the ports develop projects in partnership with the private sector. Garneau's response was to include a provision in his bill to allow port authorities to seek project funding from the fledgling Canada Infrastructure Bank.

That moved alarmed Emerson. He told the transport committee in September that until there was a "thorough review" of the governance arrangements that deal with both port and airport authorities, "I get very nervous about opening up more spigots, if you like, for these authorities to get hold of more money because I'm concerned with a governance framework that applies both to ports and airports".

In relation to the deployment of capital, Emerson said, "There's inadequate governance when it comes to making sure that there is a recourse to a regulator where there is abuse of monopoly power, there is inadequate governance when it comes to port or airport authorities entering into business in competition with their own tenants, and so frankly I wouldn't give them any more access to money until you clean that up." He also said there was little in the way of legislated guiding principles spelling out public interest considerations. "Authority relationships with tenants and customers are important aspects of the public interest, yet there

## Canada's ports and airports

Canada's ports are managed by Canada Port Authorities, whose sole shareholder is the central government. However, they operate independent of government and are instead governed by a board of directors nominated by those within the industry and government. They can set their own port fees and are responsible for their own dredging. They operate under the traditional port authority model of landlord port, with privately leased terminals. The country's airports have a different governance structure. Known as the National Airports System, the country's 26 airports are managed by regional boards of non-elected representatives nominated by central and local governments and other business stakeholders. Each airport operates within its own mandates, set out by its board, including board composition and reporting of financial and operating information.

is no clear guidance against abusive pricing power or limiting preferential arrangements with tenants that may undermine the common user principles that are so critical to well-run public facilities," he said, posing the question of whether authorities might be permitted to go into business in competition with their own tenants.. "To make governance meaningful, the government also needs to empower the Canadian Transportation Agency to oversee the port authorities and handle appeals about their actions," said Emerson.

Last year, the government hired Morgan Stanley to advise it on possible ownership options for the ports. That report was submitted to Garneau early this year. The government refused to release it because it was still being studied and contained confidential business information.

It treated a parallel examination of ownership options for major Canadian airports by Credit Suisse the same way. Both the ports and airports are owned by Transport Canada and have been operated by local authorities since 1998. The St Lawrence Seaway is covered by a similar arrangement.

The heads of Canadian ports are not opposed to a review of their governance rules. Jim Quinn, president and CEO of the Port of Saint John and a former chairman of the Association of American Port Authorities, said the privatisation review was frustrating because Morgan Stanley did not discuss the issue with the port authorities.

"The review should have involved the people who manage the assets on the government's behalf. We should have had a dialogue on the potential options. Instead we faced a lot of uncertainty and a lack of clarity."

He said the concept of regional port authorities needed to be fully discussed, along with possible private-public partnerships.

He called for "a roundtable process for discussing the [Morgan Stanley] report so we can talk with senior government officials about what direction it should take. In the end this would put the government in a much better position". **PH**

# Forecasting port preparedness

*P&H* considers the damage inflicted on US and Mexican ports this year and reviews what is being done to future-proof them against more severe weather. **Kevin Tester** reports

Getty Images: 5062864

September 2017 was the single most active month for Atlantic tropical cyclones on record. For the first time in recorded history, three hurricanes in the Atlantic simultaneously threatened land. Hurricane Irma alone broke dozens of meteorological records. It caused havoc and deaths in the Caribbean and Florida in the United States. Hurricane Katia hit Mexico's Gulf coast a few days earlier, bringing more destruction to a country already responding to an earthquake.

On average, there are about 12 storms per season, with half becoming hurricanes. Two of those six typically become major hurricanes with sustained winds exceeding 179 km/h, said Chris Hebert, lead hurricane forecaster at StormGeo. "This year, we'll probably end up with 16–18 named storms. So far, there have been eight hurricanes, five of them major Category 3 hurricanes or greater. That is well above average."

Ports are especially vulnerable to extreme weather events. According to the Intergovernmental Panel on Climate Change's (IPCC's) fifth *Climate Change Assessment* report, 72% of ports on the US Gulf coast are at or below 122 cm in elevation, as are 27% of major

roads and 9% of rail lines. With a storm surge of 7 m, virtually all the ports would be subject to flooding.

Situated in coastal zones, low-lying areas, and deltas, they are also exposed to the predicted impact of climate change, including sea-level rise, fewer but severe storms (see page 22), and increased precipitation. Their long lifespans and interdependency with shipping and inland transport services add to their challenges. Despite their integral role in global supply chains, the report's authors continue, they remain largely unaware of the potential threats or are slow to consider appropriate adaptation measures.

In 2012, Hurricane Sandy crippled the New York region, leading to a week-long shutdown of one of the largest container ports in the United States. The Port Authority of New York & New Jersey has had resiliency guidelines, based on the projections and recommendations of the New York City Panel on Climate Change, since 2009.

While these requirements, which were last updated in 2015, are compulsory for capital investments overseen by the authority, they are not mandatory for projects initiated by individual tenants, although they are strongly



**Irma hits Miami. US ports are especially vulnerable to such severe weather**

recommended to take the guidance into consideration.

Moreover, it is possible the recommendations don't go far enough. Recent storms in the United States have resulted in large storm surges in combination with significant rainfall amounts. "This has produced flood levels that are at levels equivalent to the 800–900-year flood height, which is significantly greater than we are currently designing our systems to," the Port of New York & New Jersey Authority told *P&H*.

Hurricane Sandy was a wake-up call, which prompted a broad federal and state response involving projects across the Middle Atlantic region, including a USD97.4 million seawall construction and beach fill project on New Jersey's Absecon Island initiated by the US Army Corps of Engineers (USACE) Philadelphia District.

Construction started in 2015 and is expected to be completed by the end of 2017. Almost 3 million m<sup>3</sup> of sand will be dredged and moved to beaches in four Absecon Island communities.

The material is excavated into berms and dunes. Stabilised with native grasses, these are designed to

absorb the brunt of future storm events, shielding local communities from the worst of the impact. Depletion is inevitable but, with periodic nourishment, the system should continue to provide long-term protection.

To the north, at the Absecon Inlet, a USD34.1 million seawall is under construction. The seawall is in two sections, one of 408m, the other 122m long. The structure consists of marine mattresses, to preclude scouring that would undermine the toe of the structure, beneath the core stone and 4,545 enormous granite capstones.

The USACE, together with the state, is also exploring ways to combat coastal flooding and make shore infrastructure more resilient along hundreds of kilometres of New Jersey coastline. In the USD3 million New Jersey Back Bay Study, which got under way in 2016, engineers are evaluating various defences, including storm surge barriers, tide gates, levees, floodwalls, and drainage improvements, as well as natural flood barriers, with the objective of making site-specific proposals. While some local projects, such as re-nourishing beaches and dunes, are already being implemented, others have been impeded by private landowners on some coastal stretches.

Harvey resulted in port closures from Corpus Christi to Lake Charles. Along the upper Texas coast, ports were closed for several days due to extreme flooding. The devastation caused by the storm has focused the minds of Port of Houston officials, who are now assessing options for mitigating risk and making port infrastructure – in particular the Houston Ship Channel, which links the busiest US petrochemical port to the Gulf of Mexico. – more resilient to future weather events and disruption.

Roger Guenther, the port's executive director, will be keenly awaiting the outcomes of a USD10 million study that was jointly initiated with USACE in late 2015. Experts are evaluating the feasibility of widening and deepening portions of the channel, adding or rehabilitating turning basins, and other features, in order to make it less vulnerable to hurricanes and thus minimise the impact on vessel operations and port income. Hardening the channel is now regarded as a commercial imperative, particularly as the port seeks to raise operational efficiency and cater for predicted growth in demand.

The Houston Ship Channel's normal operating depth ranges from 11 to 14m. Shoaling, caused by silt deposited from bayous and rivers that feed the ship channel, and obstructions, including a drydock that sank in the upper channel, reduced this to between 7.6 and 13m, which significantly impeded the movement of tankers due to call on oil refineries along the lower part of the channel. Work to dredge the shoals and remove the obstructions is expected to take several weeks. Houston's container terminals escaped the worst of the flooding and reopened six days after the storm, however more than a dozen container ships opted to discharge cargo at other ports. **PH**



# Weather warning



Getty/5062867

The severity of this year's hurricanes has revived the debate about links between extreme weather and climate change. The evidence is inconclusive, but scientists have noted a trend, writes **Kevin Tester**

**The relationship between severe weather and climate change is under scrutiny**

**H**urricane Irma maintained a maximum wind speed of 298 km/h for 33 hours – the longest any cyclone has maintained that intensity – and broke numerous meteorological records. This has rekindled a debate on whether climate change, by warming the sea, was a factor in Irma's ferocity and an apparent intensification of storms this season.

Hurricanes form and gain their energy from the temperature differential between the atmosphere and the ocean's surface. Sea surface temperatures of about 26.5°C are typically warm enough to allow hurricanes to strengthen. Irma moved over an area of water north of the Caribbean Sea warmer than 30°C.

In an exploration of the global tropical cyclone response to ocean warming published in the journal *Nature Climate Change*, scientists from Florida State University found that ocean warmth increased the intensity of hurricanes while simultaneously decreasing their frequency.

As global sea surface temperatures increase, more moisture is evaporated at the ocean surface, resulting in large amounts of water vapour concentrated in the lower troposphere. Although some moist air moves upward, not all of it is effectively transported out of the area in which it formed. These conditions result in higher pressure over the middle and upper troposphere, which

accounts for increased hurricane intensity. But these same conditions also inhibit hurricane formation.

Their research revealed that each 1 m/s increase in average wind intensity led to 4.7 fewer hurricanes over the past 30 years. However, overall activity, measured as the product of intensity and frequency, was virtually unchanged. These apparently contradictory influences may help explain some of the confusion and controversy that surrounds the influence of climate change. However, while warmer seas probably caused Irma to be worse, it is not possible to say precisely by how much nor to point the finger of blame solely at climate change.

With the exception of Hurricane Sandy in 2012, few significant storms have made landfall in the United States over the past decade. Until this year, the last hurricane to reach the Gulf of Mexico was Ingrid in September, 2013. A similar four-year absence for the gulf has not been recorded since the 1850s. Meanwhile, Florida has not been hit by a hurricane since Wilma in 2005.

This intermission in hurricanes making landfall – they still formed out in the Atlantic – makes it seem plausible that the country's two costliest storms on record, Harvey and Irma, could come in the same year.

Scientists have only been able to collect exhaustive data on storms since the advent of satellites. Their knowledge before then is less detailed. While the Atlantic Ocean has raged with tropical activity during September, much of the rest of the Northern Hemisphere tropics was relatively quiet, particularly the Northwest Pacific Ocean Basin, which typically is more than twice as busy as the Atlantic at that time of year.

Nonetheless, while the consensus is that the current spate of severe weather was not directly caused by climate change, it appears extreme events are increasing in intensity and frequency. Once-in-100-year events are happening more often. The flooding in Houston brought on by Hurricane Harvey was the third 1-in-500-year flood the city has experienced since 1979. The US National Weather service had to add a new colour to its weather graphics to represent the rainfall from Harvey.

Irma was so strong that it was detected by earthquake sensors. Its combination of rainfall accompanied by strong winds and storm surge was potent enough to change the coastline as it raged across the Caribbean and on to Florida. The damage caused by each of these hurricanes is expected to exceed USD100 billion. Recovering from the devastation is likely to take many years.

As more people are exposed to storms, resilience planning is needed to limit their impact. The built environment and major infrastructure projects need to consider not only what is needed in the future, but also the interaction with infrastructure that is already in place. In Houston, for instance, the standard of floodplain design needs to be updated to cope with heavier rainfall. The costs of mitigation can be large, but earlier investment can greatly limit both climate change and related expenses from extreme events. **PH**



Port of Montreal: 5060792

# Shore-side power for Montreal

Montreal is the fourth Canadian port to connect up to shore-side power under Transport Canada's Shore Power Technology for Ports Program, writes **Alex Binkley**

**Cruise ship  
Veendam linking up  
to shore-side power  
in Montreal in July**

Cruise ships arriving at the Quebec port of Montreal's newly refurbished cruise terminal can now turn off their engines and plug into a shore power electrical system to curb air pollution during their stay. Holland America Line cruise ship *Veendam* was the first ship to connect to the system on 29 July. The electrical load generated by the vessel was the equivalent of serving a small town of 2,500 homes or apartments, a Montreal Port Authority (MPA) representative told *P&H*. The facility was officially opened in August.

The MPA included installation of shore-power equipment as part of its renewal of the Alexandra Pier and the cruise terminal. In 2016, it made shore power available to four other piers where ships tie up for the winter when the St Lawrence Seaway, Great Lakes, and other Canadian routes are shut down. The shore-power project is expected to reduce port greenhouse gas (GHG) emissions from ships calling on the port by 2,800 tonnes/year, said Sylvie Vachon, president and CEO of the MPA. It "will result in a significant reduction in greenhouse gas [GHG] emissions, offsetting virtually all the GHG emissions for which the MPA is responsible". Cruise ships generate about half the emissions.

The project "enables Port of Montreal to keep providing efficient, modern, and improved infrastructure to its clients and to remain a leader in environmental protection," she said. "Shore power is a very effective way to reduce air emissions from marine diesel engines. It leads to better ambient air quality by enabling ships to turn off their engines and connect to the power grid for the power they need while they are docked."

The busy cruise ship season in Montreal runs from early May to late October. The total project cost was about

USD9 million. The Canadian government contributed almost half of the funding under Transport Canada's Shore Power Technology for Ports Program with the Quebec provincial government and the port authority providing the rest. Shore-side power is one way the Canadian government is aiming to reduce the country's GHG emissions by 17% by 2020 and the government has allocated up to USD22 million for the programme.

As shore-side power relies on electricity to power ships, to truly reduce GHGs, the electricity used must be generated in a clean way and not rely on coal or other fossil fuels. However, the Canadian government has set itself a target to increase its share of clean electricity from 80% to 90% by 2030 and invest in renewable energy such as wind and solar. This underpins the ports' ability to reduce their GHGs, both on site and at the energy source. The shore-side power project involved building a 25 kV transmission line to supply electricity from the provincial hydropower network to a new substation at the cruise terminal. Schneider Electric Canada designed and built the equipment used in constructing the electrical substation.

Transport Canada said the Montreal shore-power project was the fifth to be completed under its programme. Other projects included a major cruise shore-power upgrade and expansion for cruise ships in Port of Vancouver, which also got improved systems for its container terminals, an upgrade of 10 shore-power facilities, and the construction of two further facilities for the British Columbia Seaport ferry service. A cruise system was installed at Port of Halifax. **PH**

**MORE INFO:** [www.port-montreal.com](http://www.port-montreal.com)



# Rotterdam sees the future, and it's sustainable

Rotterdam has re-evaluated its decision-making process and now financial prospects sit next to a project's sustainability credentials, reports **Malcolm Latarche**

**A**s Europe and the Netherlands' largest port, Rotterdam contributes significantly to CO<sub>2</sub> output. In fact almost one-fifth of all the CO<sub>2</sub> emissions in the Netherlands are attributable directly or indirectly to activity in the port.

That CO<sub>2</sub> comes from a variety of sources, including oceangoing and coastal shipping, inland waterways traffic, the machinery in the port itself, and, of course, from the huge workforce that goes to make Rotterdam a centre of world trade.

In the spirit of the Paris Climate Agreement, Port of Rotterdam Authority has looked at its performance and has determined that in order for the Netherlands as a whole to achieve its aim of becoming carbon neutral, the port has a key role to play.

It is somewhat ironic that an element of Rotterdam's

CO<sub>2</sub> output is due to the fact that the port is one of the world's foremost bunkering ports and as such, the port owes much of its success to fossil fuels. However, the port is looking at a number of initiatives to considerably reduce CO<sub>2</sub> production, although, as Remco Neumann, programme manager CSR at Port of Rotterdam, told *P&H*, it will not be the easiest of tasks.

Neumann pointed out that carbon-neutral solutions are often more expensive than the alternatives and, in the current economic climate, that can mean a dilemma for those making decisions. Until about five years ago, most decisions taken by the port were done mainly on financial grounds alone but, under the new thinking, the financial element is only one aspect of decision-making and the objective of meeting sustainability targets is of equal importance. A recent study by the German





**Port of Rotterdam believes it has a key role in helping the Netherlands become a carbon-neutral country**

Wuppertal Institute for the port suggests that an 80–90% reduction in CO<sub>2</sub> could be possible within 30 years.

The task is not made easy because the port authority is not itself the main producer of emissions. Most of the terminals, industrial complexes, service providers, and subcontractors within the port are private companies and all have control over their own decision-making processes. Highlighting the scale of the task is the fact that some 180,000 jobs are provided by the activity of the port in the port area itself and in its environs. However, the port authority only employs about 1,100 directly. Nevertheless, Neumann said there was a general consensus that at some point in the not too distant future, there will be legislation in the Netherlands that will put a higher price on carbon emissions than there is now.

In the meantime, the port authority will be working with customers and contractors to reduce emissions on a collaborative and occasionally compulsory basis. As an example of the latter, it set strict requirements in terms of sustainability for companies wishing to locate on Maasvlakte 2. The port authority has agreements with the companies about air quality, noise, and cleaner hinterland transport – all trucks coming there must be Eur 6 standard, a grading between Eur 1, the lowest, and Eur 6, the highest – but also about the efficient use of energy, each other's waste heat, waste materials, and semi-manufactured products. APMT's terminal, for example, sets the standard and is powered entirely by wind.

Collaboration also comes into play in Maasvlakte 2, where, together with its partners, the port authority is enabling 'plug and play' facilities in the bio-based cluster there. Thanks to this initiative, companies do not need to invest individually in the supply of energy, energy networks, tank storage and wastewater, process water, and drinking water.

In another initiative, the port authority and another nine partners are examining the possibility of establishing a waste-to-chemicals plant that would make use of technology developed in Canada. This would convert plastic waste into new feedstocks for the chemical industry as a sustainable alternative to those made from petroleum.

The port's chemical factories currently use mainly oil to produce raw materials for plastic packaging, cleaning products, and cosmetics, but the use of oil will be gradually scaled back. In the near future, these products will be made from products such as sugar beet, soyabean meal, and wood. This is already happening on a small scale in the port area.

For its part, Rotterdam has already taken a number of other initiatives that will reduce its share of the port's overall effect on the environment. For example, it has invested in a hybrid patrol craft that will run on electricity instead of diesel some of the time and it is well advanced in a project to replace all the public lighting in the port with LEDs before 2020. This will

## Port of Rotterdam Authority was a key player in the establishment of the Environment Ship Index

cut the power needed for lighting, and hence all CO<sub>2</sub> emissions associated with that, by 50%.

The port authority also has an ambition to establish two large-scale projects that will cut CO<sub>2</sub> emissions even further. One is to set up a carbon capture and storage scheme that will see CO<sub>2</sub> piped to gas fields in the North Sea and sequestered there. The other is a waste heat scheme that could provide heating for several hundreds of thousands of properties in the area around the port. Both of these will involve considerable expense, so a business case has to be made before the ideas can be progressed.

One plan that is already in action will also reduce emissions to the benefit of customers. Ships calling at the port are responsible for much of the CO<sub>2</sub> and other emissions and the port authority is actively reducing this. Rotterdam was a pioneer in establishing the Green Award Foundation (GAF) in 1994 with the Netherlands Department of Transport. GAF became independent in 2000 and now issues certificates certifying the investment that has been made in ships with high green credentials. This is rewarded in certain ports, including Rotterdam, by a reduction in port dues.

More recently, Port of Rotterdam Authority was a key player in the establishment of the Environment Ship Index (ESI), together with other European ports, under the umbrella of IAPH's World Ports Climate Initiative, now known as the World Ports Sustainability Program. This index indicates vessels' environmental performance in terms of emissions of NO<sub>x</sub>, SO<sub>x</sub>, and CO<sub>2</sub>. Oceangoing vessels arriving in Rotterdam with an ESI score of 31 points or more are rewarded with a 10% reduction on the gross tonnage portion of the port fees. The discount is doubled if the vessel also has a good score on the ESI-NO<sub>x</sub> index. It can increase by a further 6% for tankers and gas carriers above 20,000gt if they have a Green Award. In 2016, the port gave about EUR3 million (USD3.54 million) in discounts.

The inland shipping sector also receives incentives in terms of harbor dues discounts. These can increase to 30%, depending on whether the vessel has a Green Award certificate and the main engine performance satisfies CCR2 (particulate matter emissions for inland vessels) emission requirements. Conversely, inland vessels that do not satisfy CCR2 emission standards must pay a 10% surcharge on the harbor fees. **PH**

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

# US oil exports trigger renaissance at Corpus Christi

The US new brand of light export crude will turn a small Texas city into an economic powerhouse – assuming prices rise, writes **Charlie Bartlett**



Port of Corpus Christi, 5062717

**Port of Corpus Christi wants to establish itself as a major US oil exporting port**

In May 2017, Euronav's 307,284 dwt very-large crude carrier (VLCC) *Nautilus* stopped just outside the port of Corpus Christi in Texas, United States, to load a cargo of light, shale-derived crude oil to be shipped round the Cape of Good Hope to China. The shallow water depth prevented the tanker, with a draught of more than 22.7 m, from mooring alongside, and instead the vessel waited at anchor outside the access channel while smaller lightering craft went back and forth with smaller cargoes.

This call had huge significance for the port. Until recently, large tankers handling oil cargoes off Corpus Christi and other terminals in the region would have

been discharging their cargoes as imports from west Africa and the Middle East. *Nautilus*, however, was loading an export cargo bound for China.

For a VLCC, this is an arduous 42-day voyage through some of the world's most challenging seas and means huge fuel bills. But some analysts consider that this could well become a key route for these massive vessels, creating new demand for tanker owners seeking to find profitable employment for ships contracted in something of a binge two-to-three years ago.

*Nautilus'* call was hailed as symptomatic of a possible Gulf of Mexico oil boom following the lifting of the US crude oil export ban in December 2015. This has

‘ We’d like to dredge all the segments at once ’

**Dan Koesema**

*Head of the channel development  
at Port of Corpus Christi*



Port of Corpus Christi: 5062701

meant that the United States has become a bigger oil exporter than Ecuador, Libya, or Qatar. If what is being described as an energy ‘renaissance’ is under way, then Corpus Christi, 2016’s biggest exporter of US oil and just a stone’s throw away from the Permian and Eagle Ford shale plays, will be at the centre.

“There has already been lots of investment in pipelines, and we’ve been working to deepen and widen the ship channel for a number of years now,” said Dan Koesema, head of the channel development.

“We’ve been working with the federal government and the US Army Corps of Engineers to complete design of the first segment of the channel, which will run from the Gulf of Mexico into Harbor Island. Subsequent contracts will be designed and built shortly after.”

The scope of the work to be undertaken is immense, and will add up to USD350 million, Koesema said. Most of this will involve the deepening and widening of Corpus Christi’s access channel, a 10km stretch of water running parallel to Nueces Bay. The port plans to dredge this channel to 16.5m below mean lower low water (MLLW) as well as carving a 17m-deep approach from the channel’s access point out into the Gulf of Mexico, from its current 14m below MLLW.

While the new depth will not allow access for a fully laden VLCC, such ships are already being partially loaded at the Oxy Ingleside Energy Center on the opposite side of the Corpus Christi bay from the access channel. Once the maximum safe draught is reached, these vessels then sail out further into the Gulf of Mexico, escorted by one or more lightering vessels carrying the remaining crude oil shipment and loading it in deeper water.

The port’s plan to increase this draft from 14m to 17m will enable much more crude oil cargo to be loaded at its oil terminals, greatly reducing the required extent of costly lightering services. “It will decrease vessel delays and improve safety, and the efficiencies of a deeper channel will also reduce the cost of imported goods,” Koesema said. His team will design it and the US Army Corps of Engineers will put it out to competitive bids. “They don’t really have the equipment to dredge it.”

Confirming that the dredgers involved in the project

would have to be US-flagged under the Jones Act, Koesema said this was unlikely to present an issue. “Any number of dredging companies will participate in that project, and the dredgers will have to be US-flagged. It certainly hasn’t been a problem for us in the past. There are lots of companies and lots of dredgers available. In fact, one of the segments, the La Quinta channel extension, was already completed in 2013, so it’s nothing new.

“We’d like to dredge all the segments at once if we can get funding, but it’s more likely to be three or four separate contracts,” he added.

For the port, ramping up demand means day-to-day investment. “We’re building new docks, a new bridge is being built to allow taller, deeper-draught vessels to get into the port – that’s a USD1 billion project.”

Other facets to the scheme comprise widening the channel in the reaches across Redfish Bay and Corpus Christi Bay to 162m, allowing more vessels to pass, as well as constructing two 61m barge lanes on either side of the Ship Channel across Corpus Christi Bay.

This is good news for ship operators, as, according to Koesema, there will be major savings once the project is completed. “The Army Corps of Engineers did a fairly extensive feasibility study on this in 2003 and there have been two subsequent updates – they call them ‘limited evaluation reports’ – most recently in December 2015.

“They calculated that there would be annual savings of USD100 million over the next 50 years. That’s just using the existing fleet. So the economics of this really stack up.”

And the port authority needs to be sure. With such volatility in the price of oil, it has known there is a solid basis for these large investments. “The Permian basin currently has a 2.3 million barrels/day output. We’re expecting that to increase to 6 million in 2022,” Koesema told *P&H*.

“[The low oil price] has certainly tempered the increases of crude exports that we had expected. But as prices stabilise and the market recovers – and the indications are that it will – we anticipate lots of growth here, both in the port and in the region; 30,000 jobs are expected to be created in the region by 2020, directly related to the oil industry, so it’s going to have a tremendous economic impact, not only on the region, but on the country as a whole.”

If Koesema is right and exports grow, trades from the Gulf of Mexico to the Far East are likely to tie up a significant number of VLCCs, generating demand for Suezmax and possibly Aframax tankers. As well as being able to complete the loading of cargoes inside the bay, thereby avoiding expensive double-handling and lightering, Aframax and Suezmaxes will be able to use the recently expanded Panama Canal, opening up a streamlined and trouble-free route across the Pacific to Asia. If realised, this would further cement Corpus Christi’s position as an export favourite. **PH**

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





Getty Images: 5062873

# Dredging deep into DRC

A dredging project covering sections of the Congo River should allow bigger ships to serve the lucrative and booming market of Kinshasa and its hinterland, ***Shem Oirere*** reports

**I**nternational Container Terminal Services Inc (ICTSI) plans to deepen certain sections of the Congo River to enable direct calls of mainline vessels at its Matadi Gateway Terminal (MTG). The port of Boma, situated further downstream, will also benefit from the dredging. The two ports together handle about 85 % of the Democratic Republic of the Congo's (DRC's) trade.

Dredging International, part of the DEME Group, was awarded the USD40.7 million contract in August this year, that will take place in a country that faces political uncertainty as it awaits a general election that its president, Joseph Kabila, seems reluctant to organise.

Dredging will focus on sections of river leading to Matadi situated around 145 km from the mouth of the Congo, Africa's second-largest river at 4,700 km long. Boma is situated about 45 km further downstream and is about four hours sailing from the seaport of Banana.

Matadi and Boma are natural gateways to DRC's capital city of Kinshasa, its hinterlands, and the 30 million people that live there. Matadi is the last stretch of river before a series of waterfalls that make the river unpassable for ships. Kinshasa is considered the fastest growing market in central

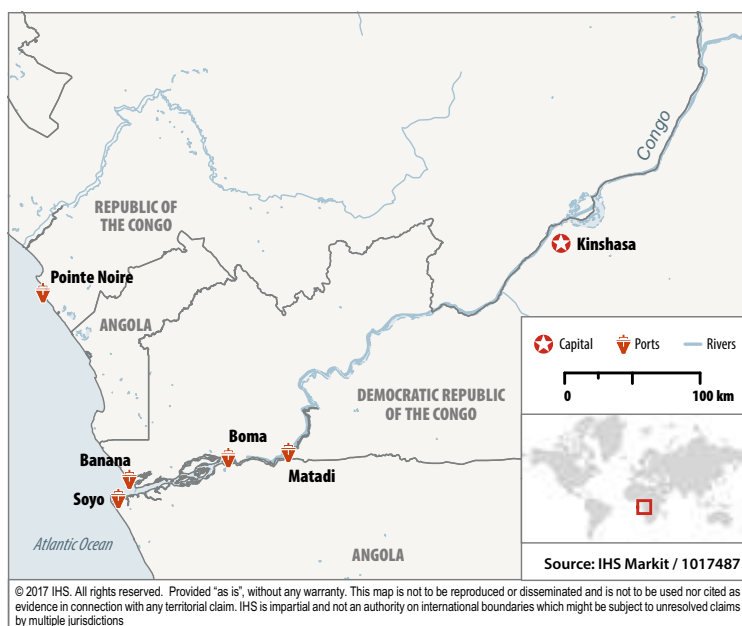
Africa. In addition, demand for larger vessels has been increasing because of a surge in production volumes at DRC's flour mills, cement factories, and oil terminals, said Matadi Gateway Terminal's chief executive officer, Tim Vancampen.

He explained the rationale for the project to *P&H*. "There is a strong demand to bring in vessels of bigger tonnage with a better filling ratio. Because of the draught restriction, containers are transhipped and feedered from Pointe Noire, while chartered bulk vessels come in only half laden".

MGT is a joint venture between ICTSI, which owns 52%, local Matadi company (Groupe Ledy), which owns 38%, and the remaining 10% is owned by the government. Together they built the terminal at Port of Matadi, which opened in 2016, and now manage and operate the facility.

"The deepening of the Congo River will not only benefit the private partners of MGT, but also the DRC government," said Vancampen. He said the two-berth terminal, which has a total quay length of 350 m and depth of 12 m, was built to receive smaller feeder vessels and larger mainline ones, especially 4,500 teu Wafmax (West Africa Maximum). These 249 m-vessels, with a draught of up to 13.5 m, could access the port with a lighter load.

Draught limitations are especially limited in the Divagante area just downstream from Boma. The natural depth of this section of river is 4–5 m but the area is currently maintained at 7.9 m by a public-private dredging partnership between the DRC



“The deepening of the Congo River will not only benefit the private partners of MGT, but also the DRC government”

**Tim Vancampen**, CEO, Matadi Gateway Terminal

market in central Africa and needs efficient and direct access, which will significantly reduce the total transport cost of DRC imports and exports,” he said. “Lower transport costs will have a positive impact on the unit prices of products, resulting in a decrease of the prices of the commodities.” The first phase of the deepening project could commence in the first quarter of 2018 and will take less than a year to complete.

At present, the largest vessels calling at DRC’s ports of Matadi and Boma are the MCP (mini container pool) feeder vessels, which carry less than 1,000 teu and have an overall length of 127m and a draught limit of 7.9 m or less. “The biggest container vessel we ever received in Matadi was the 1,500 teu, 25,000 dwt *Clara Maersk*, although we also handle mini-bulkers and Handymax vessels,” he said.

But with the deepening of the Congo River, both Matadi and Boma ports will start receiving vessels up to 2,500 teu, which Vancampen believes will soon to be replaced by Panamax and Wafmax vessels up to 4,500 teu “and possibly larger in a later phase”. **PH**

**Kinshasa – considered the fastest growing market in central Africa**

government and DEME. The new depth following the dredging project will, however, see the Divagante area deepened from its current 7.9m depth to 9.1 m and later dredged to 11 m.

This will “enable the terminal to receive direct calls by larger mainline mother vessels, which will eliminate the expensive cost of operating dedicated feeders and transshipping to surrounding ports”, said Vancampen. Once the deepening project is complete, he said, “bigger bulk carriers will cost less per tonne than the small ones currently in use”.

Currently, MGT has a capacity of 175,000 teu and 350,000 tonnes of general cargo. “Kinshasa and its hinterland is the biggest and fastest growing

## Soyo plans dredging for LNG development

Angola LNG Limited has launched a survey of the area surrounding its LNG terminal at the Port of Soyo at the Angola mouth of the Congo River. Huge volumes of earth and sand flow from the Congo River into the port’s vicinity, making continuous annual maintenance dredging works necessary.

Soyo is the only port in Angola that has the facilities to handle LNG and so it is considered vital to the national economy. Angola LNG is a joint venture consisting of Cabinda Gulf Oil Company, part of a Chevron subsidiary, Angola’s national oil company Sonangol, BP, energy firm Eni and oil and gas company Total.

Angola LNG collects gas from offshore fields in Angola, then purifies, liquefies, and stores it for export.

It is developing a USD10 billion liquefied natural gas (LNG) project in the country to commercialise its estimated 3.114 trillion m<sup>3</sup> of natural gas reserves.

The joint venture has chosen a Royal Boskalis/Dredging International (DEME) joint venture to carry out the study that will help map out the river’s sedimentation, making it easier to schedule a maintenance dredging programme at the port’s LNG terminal and surrounding areas. The annual bathymetric survey will take place over the next five years, said Steven Poppe, DEME Group’s area director for Africa.

These shareholders are supplied with gas produced during oil field operations in Angola. The gas is then converted at the modern liquefied natural gas processing plant at Soyo, 350 km north of Luanda, before it is shipped onward to customers around the world.

With the Angola LNG project being the largest investment in Angola’s history, the status of Port of Soyo is likely to be enhanced as more shipping companies jostle for space to load LNG destined for the global market.



# Shifting sands

There may now be too much container transshipment capacity in the Caribbean port sector. As the liner sector consolidates, there could be big winners and big losers among the terminals, **Greg Miller** reports

Getty Images: 5061763

**Behind the Caribbean tranquility, container terminals must compete much more aggressively**

**T**he Caribbean container port sector is being reshaped, both by natural forces – destructive hurricanes – and man-made ones: canal expansion and liner consolidation.

Local economies in Puerto Rico, the US Virgin Islands, the British Virgin Islands, Turks & Caicos, St Barts, St Martin/St Maarten, Anguilla, Barbuda, and Dominica suffered substantial damage from tropical cyclones in 2017. Damage will have a significant impact on box volumes, both positive, in the form of relief and reconstruction supplies, and negative, due to potentially years-long economic slumps.

Simultaneously, the region's larger container transshipment hubs, located in Jamaica, the Bahamas, the Dominican Republic, Panama, and Cartagena, are experiencing major changes to their own market landscape. Following Panama Canal expansion and the raising of the Bayonne Bridge, which connects New York and New Jersey (see p14), the average size of mainline container ships traversing the Caribbean has surged.

The largest ship to ever pass through the Panama Canal or under the Bayonne Bridge, the 14,855 teu *CMA CGM Theodore Roosevelt*, transited the waterway on 22 August and went under the bridge on 7 September. In between those transits, it conducted Caribbean transshipment operations at Panama's Colon Container Terminal (CCT). *CMA CGM Theodore Roosevelt* is more than triple the size of the container ships that previously

plied these trades. The good news is that regional ports are prepared for this new vessel class.

According to Juan Carlos Croston, vice-president of the Caribbean Shipping Association (CSA) and marketing vice-president at Panama's Manzanillo International Terminal (MIT), "All across the Caribbean, the ports did their homework and they invested [to accommodate larger ships]. Everybody had to adapt and everyone stepped up – it was one of the success stories of the canal enlargement."

The potentially bad news is that a wider canal and higher-capacity ships do not translate into more cargo. Now that the ports have built new quays, bought new cranes, and added yard space to retain their liner customers, they will have to pay for those investments. The risk is that as carriers and alliances shuffle their services in the years ahead – in some cases toward terminals that carriers own equity in – some terminals could be left without the volume necessary to cover their capital costs.

Ricardo Sanchez, a senior economic affairs officer at the United Nations' Economic Commission for Latin America and the Caribbean, cautioned in a recent paper that regional port investments driven by Panama Canal expansion "could lead to overcapacity" and that there's a need for a "wake-up call" on the "risk of over-investment" in the Caribbean port sector.

"The port capacity in the region is now behaving more like the carriers," Croston said. "If you ask the





shipping lines whether they need these big vessels due to demand conditions, they will say, 'No, we need them to compete'. I think that's what's happening in the Caribbean [port sector]. The capacity coming on now and coming online in the future is not because of demand. It's because we need to compete."

There is "definitely" port overcapacity in the region, said Carlos Urriola, president of SSA International, which operates MIT. "The vessels are bigger, they collapsed the loops, and volume is only up in the single digits, meaning there is more competition [among ports]."

One of the key questions facing the regional transshipment sector is whether Panama Canal expansion and liner consolidation will drive more transshipment or result in the opposite: more direct calls.

According to Michael Kristiansen, president of consultancy CK Americas, two opposing forces are in play. On one hand, folding two services into one larger service creates "the need to transship more". On the other hand, he noted that "alliances have the opposite effect", because they give carriers access to more direct services through the other shipping lines involved in those alliances. Croston reported that since the expanded canal opened in June 2016, there has been more transshipment at MIT. "In our case, the neo-Panamax vessels, with their additional capacity, are giving the carriers options to do additional transshipment in the Caribbean," he said, adding that some shipping companies want to prove that the transshipment model can be applied to certain destinations in the United States depending on the customer and commodity.

Some beneficial cargo owners (BCOs) are calling at a few of the region's ports, picking the cargo up and taking

“The vessels are bigger, they collapsed the loops, and volume is only up in the single digits, meaning there is more competition [among ports]”

**Carlos Urriola**

*President, SSA America*

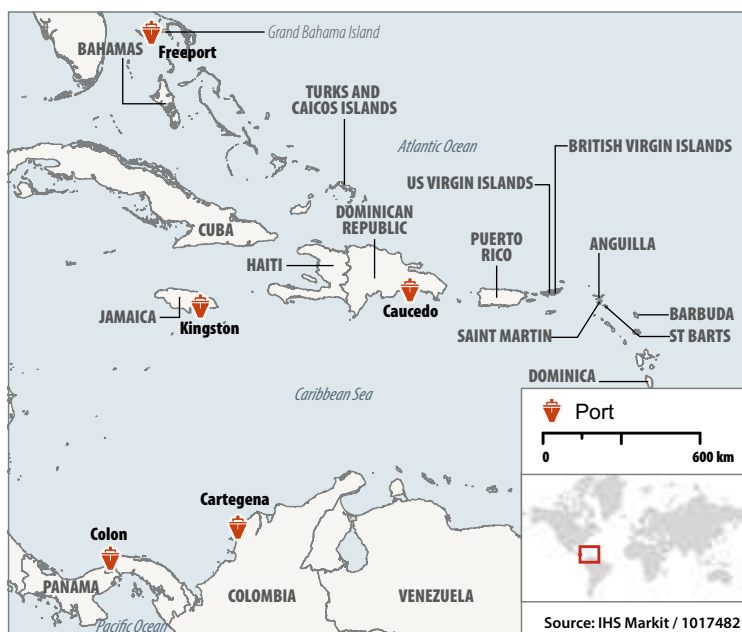
it to the US east coast and Gulf of Mexico coast. "The fact is that right now, the United States is the single leading destination and origin country for MIT," said Croston.

Despite the new alliances, liner ownership consolidation, and the increasing size of vessels, there have not been dramatic changes in the hubs' core customers – yet. There have been some cargo migrations, but the prediction that vessel upsizing and service consolidation would lead to fewer hubs getting the business has not played out.

According to Giovanni Benedetti, vice-president of SPRC, which operates the Contecar and Manga terminals in Cartagena, "All of these theories that say bigger vessels will mean fewer [transshipment] ports in our region – that's not the reality we are seeing. There are fewer strings, so there are fewer calls, but there are the same number of moves," he said. "With the alliances, there is not as much movement of volume [to new hubs] because they have to have consensus among all the partners," said Croston, who believes that as a result the shifting of the cargo between terminals in the Caribbean is not going to be as fluid as it was before.

But Kristiansen believes a rationalisation of Caribbean hubs will be the inevitable result of liner consolidation, whether through shared ownership, alliances, or vessel-sharing agreements, because consolidation will allow for more synergies between services. He believes that, over time, transshipment moves in the Caribbean, which to date have been between larger ships and smaller feeders, will evolve towards more moves between larger ships in the east-west trades and larger ships in the north-south trades. As he told attendees at last year's CSA conference, "In the past, with transfers from a relatively big ship to small feeder ships, you did that in multiple locations because feeders would only cover nearby areas. But when you see more and more interchanges between two 8,000–10,000 teu ships, you will actually need to be in one single location.

"It's an all-or-nothing game [for hubs]. You can't just have one or two services, you've got to get all of them or you won't have enough connections," he said, warning, "If there are more hub choices than there are alliances, someone is going to lose big." PH



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LNG bunkering to a truck by Singapore SLNG. SLNG and the Maritime and Port Authority of Singapore signed an agreement on the development of an LNG truck loading facility last year

## Singapore LNG bunkering on track after safety trials

Liquefied natural gas (LNG) bunkering trials conducted in Singapore are currently focused on truck-to-ship (TTS) operations but will soon progress to ship-to-ship (STS) operations, Andreas Salim, operations manager at FuelNG told the International Safety@Sea Conference held by the Maritime and Port Authority of Singapore (MPA) on 22 August.

At the same event, Richard Tan, vice-president at Pavilion Gas, confirmed that his

company was on track to import LNG from suppliers as early as the end of 2017.

FuelNG is a Keppel-Shell joint venture while Pavilion Gas is an LNG trading group backed by Singapore state 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 MPA in the first quarter of this year.

Both FuelNG and Pavilion Gas shared their experience in LNG bunkering operations, highlighting key safety aspects.

In line with MPA's pilot programme, Pavilion Gas started with small-scale operations focusing on harbor craft. These included tugs, bunker tankers, and ferries, vessels that are at most 110 m long and require 20–80 m<sup>3</sup> of bunker, every one to two weeks.

The mode of transfer is direct

TTS transfer via pressure difference and this is to be conducted at an open berth with proper quay walls. Such bunkering operations take 30 minutes for mobilisation, nearly an hour for transferring a 20 m<sup>3</sup> isotank, and another 30 minutes for demobilisation.

There are no permanent installations on the berth side. All LNG tanks and bunkering equipment is deployed and mobilised only when required. Bunkering operations are contained within a 30 m x 23 m area, and limited to the duration of the operation. With three isotanks allowed on site, this gives the area a risk exposure of up to 60 m<sup>3</sup> of LNG.

On 2 May, Pavilion Gas conducted a live LNG bunkering operation at Jurong port's berth. A 7 m radius from the point of loading was established as a safety zone for first party personnel – crew and bunkering personnel directly involved in bunkering activities – while the safety radius for second party personnel – port and terminal staff – is 60 m.

"The weakest link in the operation will be the transfer of LNG from the tank on to the vessel," said Tan, who noted that it was important that the crew of receiving vessels were trained and competent in receiving LNG as bunker fuel.

To achieve this, theory and practical workshops are being conducted for bunkering operators. The theory explains all operational steps for familiarisation of the safe work procedure document while the practical involves

## Notable numbers

2,800 tonnes/year

Montreal's projected reduction in port greenhouse gases though shore-side power

11m

Planned depth of sections of Congo River following ICTSI investment

drills using actual LNG bunkering equipment.

Meanwhile, FueLNG's experience with TTS operations comes from supplying *Hilli Episeyo* with LNG for its gas engine. It will be the world's first converted floating liquefaction vessel (FLNG) when completed and was under construction at Keppel O&M's shipyard in Singapore at time of writing and was expected to leave for deployment in Cameroon in mid October.

This was a unique situation as FueLNG had to create a temporary bunkering station within Keppel's shipyard. This comprised a dispenser tank and a water bath vapouriser. At the yard, the LNG is passed from the truck's isotank to another isotank within the dispenser tank. The LNG is then transferred through the water bath vapouriser and the resultant natural gas is supplied directly into the ship.

Salim shared three key risk factors identified in the process as well as the mitigating actions taken. The first risk factor came from simultaneous activities in the yard. To minimise any impact on the LNG bunkering operations, hot work and lifting operations within the designated area were prohibited. A much larger, 25 m first-party personnel zone was created, while trucks had to be escorted into the yard.

Second, there was a chance of natural gas leakage during LNG transfer, which can happen due to equipment failure or improper connection. The first-party personnel zone was established based on

the results of a gas dispersion study. An emergency shutdown system was also in place to stop the flow of natural gas into the vessel system in the event of an emergency. This can be activated from the shipside control room or by quayside personnel.

In addition, the hose used for bunkering operations will automatically close off at both ends, in the event of a rupture. This limits the gas escape to what is contained in the length of the hose. Salim pointed out that while LNG is visible as a white vapour at the leakage point, it is colourless when converted to natural gas.

The final risk factor comes from overfilling during LNG transfer, especially if there is an inaccurate level gauge in the tank. To prevent this from happening, the maximum filling limit is set at 80% of the isotank's capacity, against a 95% operational limit. Also, one operator is assigned to monitor each tank, while periodic checks are connected on the tank level gauge to make sure it is working.

There are other factors, but these three require more attention, said Salim. "This is definitely a very exciting period for LNG bunkering in Singapore." He added that FueLNG would work closely with MPA and the relevant authorities to improve and develop procedures for LNG bunkering in Singapore.

Like Pavilion Gas, FueLNG is currently focused on TTS bunkering operations, but will expand into STS operations in the near future.

## Low-sulphur fuel increases propulsion loss incidents

California ports have noticed a marked increase in vessels suffering from propulsion loss following the introduction of more stringent emission control areas (ECA) in 2015. Gary Rawlings, marine engineer consultant at TMC Marine believes low-sulphur fuel may be behind the incidents.

"A lot of cases of propulsion loss are due to fuel failure," Rawlings said during a talk at London International Shipping Week (LISW) in September. "I attended a vessel that changed [to low-sulphur] fuel in the English Channel and the procedure was not done properly. The fuel pump plunger seized and damaged the cam, which broke the cam follower. The vessel had to stop in the Channel, disable the unit and limp to port."

P&I club Gard has previously warned its members that changing to low-viscosity low-sulphur fuel can cause several engine problems, including "thermal shock in the fuel system due to the rapid change in temperature and poorer lubrication qualities of low-sulphur fuel". This can result in "sticking/scuffing of the fuel valves, fuel suction valves, and fuel pump plungers, which can lead to shut down of the main engine followed by manoeuvring problems".

However, Rawlings said that too often crews did not follow correct procedures during the fuel changeover process and proper

monitoring and maintenance was not followed, leading to engine failure and loss of propulsion. Research by the London P&I Club carried out into the causes of propulsion loss over the past five years found that 29% of incidents were down to insufficient or ineffective maintenance, closely followed by human error (24%), and equipment failure (24%).

The current global limit for sulphur content of ships' fuel oil is 3.50% m/m (mass by mass) as part of the revised MARPOL Annex VI, which significantly strengthened requirements and came into force on 1 July 2010. However, ships face tighter restrictions in designated ECAs: for example, on 1 January 2015, the new fuel oil sulphur limit authorised by MARPOL Annex VI, Regulation 14.3.4 came into effect, lowering fuel sulphur content from 1.0% to 0.10% for vessels operating in the North American and US Caribbean ECA. As a result, vessels using higher-sulphur-content fuels must change to ultra-low sulphur (ULS) fuel oil to comply.

And, starting in January 2020, the global sulphur limit will drop to 0.50%, except when travelling in a designated ECA with 0.10% limits. In order to reduce such incidents, TMC Marine has launched a booklet, developed in collaboration with Bureau Veritas and London P&I Club, on how to prevent marine engineering issues and procedures that cause loss of propulsion incidents and blackouts.



12

Number of strategic projects in Antwerp's long-term plan

14,855 teu

Size of largest ship to pass through the Panama Canal or under the Bayonne Bridge



# Hurricane relief restarts Jones Act debate

The Trump administration's decision at the end of September to waive the Jones Act for hurricane relief in Puerto Rico has restarted the debate on whether the 1920 law requiring US domestic shipments to move in US-flagged, US-built ships owned and crewed by US citizens, should be permanently scrapped.

On 26 September, US senator John McCain sent a letter to the Department of Homeland Security urging it to waive the Jones Act for Puerto Rico to help recovery following Hurricane Maria. McCain, who first introduced legislation to repeal the Jones Act in 2010, also asked for an assessment of how a long-term waiver or full repeal of the act "would impact recovery efforts of hurricane-damaged communities, including in Florida and Texas".

Both sides of the larger debate on whether the Jones Act should be scrapped or protected have valid points. Critics argue that the law is protectionist. They say it unfairly increases the cost of goods to US states and territories dependent on ocean transport, endangers crew safety, and fosters abuses such as the price-fixing scandal that a few years ago produced a series of guilty pleas by carriers and their executives for the US mainland-Puerto Rico services. Studies, most notably one by the US Government Accountability Office, have suggested that the Jones Act raises consumer costs.

Jones Act defenders argue



Hurricane Maria devastated the Caribbean island of Puerto Rico and prompted a temporary waiver of the Jones Act

that comparisons between Puerto Rico consumer costs and those in Florida do not account for extra transport. They add that higher fuel costs in Puerto Rico are due to power plant inefficiency and poor infrastructure, not price gouging.

Jones Act proponents counter that the law helps the United States maintain a maritime base of shipyards, vessels, and seafarers needed for national defence. On the other hand, the Jones Act requirement for construction in US shipyards has been blamed for discouraging new construction and keeping overaged ships in operation long after they

otherwise might have been scrapped. Most recently, libertarian think tank Cato Institute argued that the Jones Act was why 40-year-old *El Faro* was still operating when it sank during Hurricane Joaquin in 2015, killing its entire 33-member crew.

The argument that the act discourages new construction has been undercut by a recent surge in orders for new liquefied natural gas-fuelled ships by Jones Act carriers, including those in the Puerto Rico trade. Those orders were made necessary by tougher emission-control regulations that take effect in 2020, but the fact remains that

opening domestic markets to foreign competition would undercut good-faith investments by Jones Act carriers. Scuppering of the act would also hit marine terminals, ports, forwarders, and others tied to the trade.

No legislation, much less a commercial solution, has been proposed to bridge the sharp divide between Jones Act proponents and opponents. The US maritime industry has rallied consistently to block attempts to remove the Jones Act, despite the efforts of McCain.

Meanwhile, funding to support US shipbuilding and crew training is subject to the mood of Congress.



5,956

Total number of vessels that have joined the Environmental Ship Index

2050

Deadline for Rotterdam's ambitious sustainability plans

# Port state control to act after BWM Convention in force

Countries that are parties to the Ballast Water Management (BWM) Convention under the IMO must now impose the requirements of the convention on all vessels calling at their ports, whether the vessels are flagged by countries that have ratified the convention or not.

Since the convention came into force on 8 September, port state control can check to make sure a ship has a valid BWM Convention certificate issued by the vessel's flag administration. They can also inspect the ship's ballast water record book and/or sample the ship's ballast water.

According to the convention, if

port state control finds evidence of non-compliance, it is now authorised to carry out a more detailed inspection and to "take such steps as will ensure that the ship shall not discharge ballast water until it can do so without presenting a threat of harm to the environment, human health, property, or resources".

Because the United States is not a signatory to the convention, it cannot regulate compliance for either US-flagged vessels or foreign flagged vessels operating in US waters. However, the US Coast Guard issued a policy letter on 7 September establishing a voluntary inspection scheme

for US-flagged vessels trading with countries that are party to the convention.

Jeanne Grasso, a partner with the law firm Blank Rome, "highly recommended" US operators to participate in the programme. "If I were a US flag shipowner, it would be unwise to enter a country without being able to demonstrate compliance with the convention," she said. "Any prudent shipowner would want to go through this process, or risk being detained."

For shipowners, the biggest cost of complying with the convention has been addressing the 'D-2' standard, which requires

installing a ballast water treatment system (BWTS). Since the one-year countdown to enforcement began in September 2016, when the convention was ratified, owners have been working more intensely to weigh up compliance strategies, from investment in various types of available BWTS to assessing whether to scrap the vessel altogether.

For vessels that are eligible for decoupling their International Oil Pollution Prevention (IOPP) certificate from other major surveys, they will be able to take advantage of a two-year compliance extension approved at MEPC 71.

## ESI figures still stack up

The Environmental Ship Index (ESI) continues to attract ships, as owners and operators seek incentives related to their emissions data.

From the end of July to 1 October this year, 152 ships joined, taking the overall total to 5,956. A further three incentive providers have also joined, taking that total to 53.

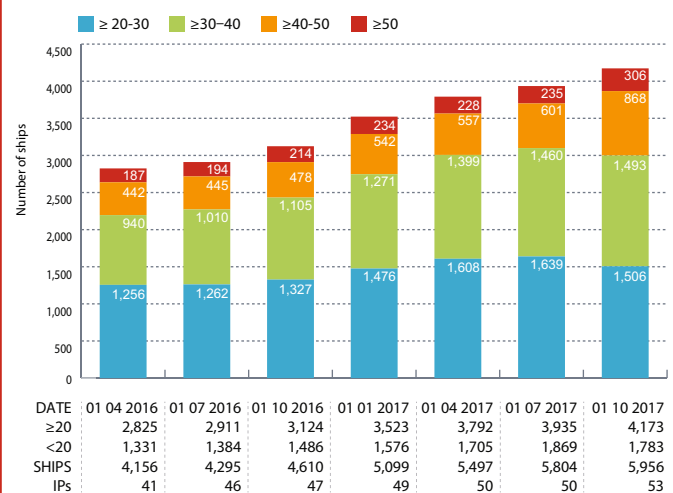
Results now available following four years of data collection reveal that 171 ships participating in the ESI's CO<sub>2</sub> emissions reduction programme have reduced their CO<sub>2</sub> emissions. This analyses on a total of 2,936 vessels, took place in two phases: first, the baseline of a ship's CO<sub>2</sub> emissions was identified using data gathered over three years;

second, this baseline figure was compared against a CO<sub>2</sub> emissions reporting period over one year. The baseline period was between 1 April 2013 and 30 March 2016, and the reporting period 1 April 2016 to 30 March 2017.

These data show that of the 2,620 ships participating in the CO<sub>2</sub> emissions study with an ESI score of more than 20, 162 reduced their CO<sub>2</sub> emissions. Of the participating ships with an ESI score of less than 20, nine reduced their emissions.

Having a favourable CO<sub>2</sub> emissions figure is taken into account when calculating a ship's overall ESI score, and most incentive providers start offering incentives when a ship has a

### ESI scores



\*Please note that the bars only show ESI scores over 20

Source: IAPH

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score of 20 or more.

The ESI measures ship's SO<sub>x</sub> NO<sub>x</sub> and CO<sub>2</sub> and gives a score

of between 0 and 100.

**MORE INFO:** [esi.wpci.nl](http://esi.wpci.nl)

# 40

Number of overseas ports in which Cosco Shipping Ports, SIPG, and China Merchants have invested

# 299,533 dwt

Size of largest oil tanker to call at a US Gulf of Mexico port



Port of Baku, Azerbaijan, is hosting the next IAPH conference, which will be held in May 2018

# Baku is waiting for you

A message from the organisers of the next IAPH conference

Port of Baku has finalised the agenda for the next IAPH conference in Baku, Azerbaijan, in May 2018. Under the theme 'Ports of the Future: Creating Hubs, Accelerating Connectivity', conference host Port of Baku will encourage delegates to consider ports of the future, including areas such as multimodal transport, containerisation of trade, ports, and free trade zones (FTZs), and the implications of initiatives such as Belt and Road and the East-West and North-South transport corridors on traditional maritime and port industries.

The first day will feature the pre-conference board council, regional, and general meetings of the IAPH, as well as the conference reception dinner at the Boulevard Hotel Autograph Collection, located on

the Caspian waterfront. The board council and regional meetings will be hosted in the Villa Petrolia in Baku's White City.

The next two days will see a range of industry experts speak across four sessions, including transport corridors, women and

multiculturalism in the ports industry, FTZs, as well as innovation in trade.

The exhibition will showcase state-of-the-art maritime and transport technologies.

- The first session, 'Emerging Corridors: Interconnectivity and



Conferences and exhibitions will take place in Baku Convention Center

## Evening events programme

### Tuesday 8 May:

Welcome reception dinner, Boulevard Hotel Baku

Meet fellow conference participants and presenters in the Boulevard Hotel Baku on the shores of the Caspian Sea. The hotel's terrace offers beautiful views of Baku's city lights and the iconic Flame Towers.

### Wednesday 9 May:

Networking dinner, JW Marriott Absheron

Network with new and old connections in the JW Marriott Absheron that lies between the conference venue and Baku's ancient inner city, Icherisheher.

### Thursday 10 May:

Gala Dinner, Elektra Events Hall

The Elektra Events Hall is one of Baku's premier concert and events venues located in the new Flag Square Complex development along the Caspian shore, a beautiful place to celebrate another successful World Ports Conference.

Multimodal Transportation', will present the transport strategies and policies being developed by host country Azerbaijan, in its quest to become a regional and world transport and logistics hub. It will also discuss the Belt and Road initiative and the impacts it will have on regional ports and trade routes, as well as cover key developments in multimodal transport.

- In partnership with the IAPH Women's Forum, this session will tackle multiculturalism and cultural diversity in modern-day business. It challenges participants to expand women's roles in the international shipping and maritime industry, focusing on key opportunities and challenges in expanding women's participation in the field. It will discuss the



importance of women's perspectives and culturally diverse work environments to modernity and innovation in the maritime economy.

- Session three will take a deep look at FTZs and their role in the development of port and logistics business in the 21st century. Session participants will engage with experts to consider the advantages and disadvantages of developing FTZs and will hear lessons-learned from a case study of a successful FTZ. Then, host Port of Baku will present the Alat FTZ and talk about how it will support local economic development and diversification in Azerbaijan.
- The fourth session will consider regional issues, especially in relation to hub development including innovation, smart port cities, and sustainable tourism.

The fourth day will conclude with a brunch hosted by next year's conference hosts followed by a technical excursion to the new Port of Baku located in the Alat township about 70 km outside of the city.

When completed, the Port of Baku will have the capacity to process 25 million tons of cargo and 1 million teu every year. Alat is the site of the future Alat FTZ, which will cater to various sectors – from traditional petrochemicals and agriculture to advanced high-tech parks and biotech, among other technologies.

The city of Baku, where old meets new and East meets West, is the embodiment of many of the topics featured in the 2018 World Ports Conference. With its exciting new Port of Baku and Alat FTZ project, it is the ideal location for next year's conference.

We look forward to seeing you at the next IAPH conference in May 2018.

## Conference and meeting venues

### Villa Petrolia

The board council and regional IAPH meetings will be held at the historic Villa Petrolia in Baku's White City district. Former home of the Nobel Brothers oil barons and now a museum dedicated to the history of oil production in Azerbaijan, the Villa was the site of the signing of the so-called 'Contract of the Century', which propelled modern Azerbaijan back onto the world stage in oil and gas.

### Boulevard Hotel Autograph Collection

The IAPH general meetings and welcome reception dinner on 8 May, as well as board council meeting and World Ports Conference 2019 launch brunch on 11 May will be held at the Boulevard Hotel Baku Autograph Collection. The Boulevard Hotel Baku is located on the shores of the Caspian Sea in Baku's up-and-

coming White City district. The Boulevard Hotel terrace offers beautiful views of Baku's seaside and night-time city lights, including the iconic Flame Towers.

### Heydar Aliyev Center

The conference opening ceremony on 9 May will be held in the futuristic Heydar Aliyev Cultural Center designed by the late world-renowned architect Zaha Hadid. The centre surrounds a beautiful public greenspace complete with whimsical sculptures of giant bunnies and snails and iconic 'I LOVE BAKU' sculpture.

### Baku Convention Center

The exhibition and conference sessions from 9 to 10 May will take place in the neighbouring state-of-the-art Baku Convention Center, a 5-minute walk across the street from the Heydar Aliyev Center.

## Getting there and accommodation

Heydar Aliyev International Airport is a 20-minute taxi ride from Baku city centre. Shuttles to and from the airport and partner hotels will be available for conference attendees.

Three partner hotels have been selected, all located within a 10 minutes' drive to the Heydar Aliyev Center and Baku Convention Center. Partner hotels are equipped with wireless high-

speed internet access in guest rooms, lobby, and public areas. They all offer a range of fine dining options, spa and fitness centre, and pool. A free shuttle service for all conference delegates will operate between the Boulevard Hotel, the JW Marriott Absheron, and Four Seasons hotels and the Convention Center during the conference period.

The accommodation for the four-day conference can be booked with registration at a discounted price. Base registration rates include one accompanying person, additional charges apply for additional guests.

**i MORE INFO:**  
www.airport.az; www.iaphbaku2018.com/registration

## Registration and contact information

### Early bird registration until 31 December 2017:

- USD1000, IAPH member/USD1100, non-IAPH member
- USD1500, IAPH member/USD1600, non-IAPH member (with accommodation)

### Registration after 1 January 2018

- USD1200, IAPH member/USD1300, non-IAPH member
- USD1700, IAPH member/USD1800, non-IAPH member (with accommodation)

### Register online:

<http://www.iaphbaku2018.com/registration/>

### For inquiries about the conference schedule or registration, contact:

[iaphbaku2018@portofbaku.com](mailto:iaphbaku2018@portofbaku.com)  
Office: +994 12 599 00 03 (ext.1011)  
Mobile: +994 55 400 08 51

### e-Visa

Apply for your visa online using the ASAN e-visa system and receive your visa within three business days. The Port of Baku team will be happy to assist you in all visa related matters.

**i MORE INFO:**  
[www.iaphbaku2018.com/pages/visa-hotels-5](http://www.iaphbaku2018.com/pages/visa-hotels-5)

# Southeast Asia members elect new vice-president

IAPH officially elected its vice president in October for the Asia, Southeast, and Oceania region in a vote by members in the region. Captain Karuppiah Subramaniam, general manager, Port Klang Authority, Malaysia, was elected as vice president, succeeding Martin Byrne who stepped down from the post in August.

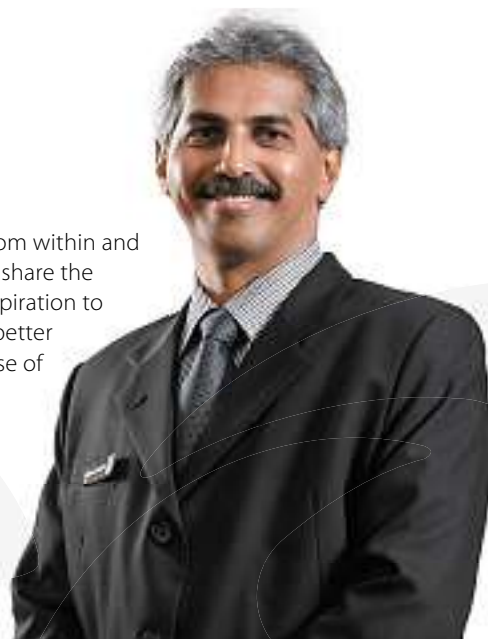
Subra, who is also chairman of the IAPH Port Safety and Security committee, has been active in

international maritime arenas such as the World Organization of Dredging Associations (WODA), International Maritime Organization (IMO), ASEAN Maritime Transport Working Group, APEC's Transportation Working Group, and IAPH.

Commenting on his appointment as the vice-president for the region he said, "As vice-president, I am committed to working closely

with colleagues from within and outside IAPH who share the same goals and aspiration to make our ports a better place in every sense of the word."

**Karuppiah Subramaniam is the new vice-president for the Asia, South East and Oceania region**



Port Klang Authority: 1032021

## Two prestigious training scholarships on offer



Getty Images: 5063616

**Moving forward in port management: two scholarships will be awarded**

The IAPH training scholarship is an opportunity for two members of staff from IAPH regular member ports in developing countries to attend advanced short-term port training programmes, a week or so in length, so they can gain the latest knowledge in port management and operation and expand their network of contacts. For each calendar year, USD10,000 is budgeted to fund two scholarships, each of USD5,000, which should be used to cover

tuition and course fees and, if deemed necessary, economy international air travel.

The approved applicants are requested to make all necessary arrangements, including registering on the approved course and payment of the tuition fees. If international travel is required, the applicant is recommended to seek support from his/her port, permission for leave, and obtaining the necessary visas.

## Membership notes

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

### Temporary member

#### Terminals and Tanks Petrochemical Company (TTPC)

**Address** Unit 6 No 8 Farshid Alley, MolaSadra Intersection, Kordestan expressway, Tehran, Iran  
**Telephone** +98-21-42579600  
**Fax** +98-21-88064031  
**Email** manouchehri.gh@ttpc.ir  
**Website** <http://www.ttpc.ir>  
**Representative** Mohammad Sharif Shahriary, managing director

### Associate member

#### Loh Hui Shan

**Address** Singapore University of Social Sciences, 461 Clementi Road, Block C Singapore 599491, Singapore  
**Telephone** +65-62481627  
**Email** [hsloh@suss.edu.sg](mailto:hsloh@suss.edu.sg)

# IAPH Annual Report 2016–17

The 2016–17 *IAPH Annual Report* has been published in digital format. It contains the association's major outcomes and activities over the past year. These include: the 2017 Conference in Bali, Indonesia; the IAPH technical committees and Women's Forum; World Ports Sustainability Programme (WPSP); financial status; and more.

**i MORE INFO:** [www.iaphworldports.org/news/4226](http://www.iaphworldports.org/news/4226)



2017

2018

2019

## Dates for your diary

A selection of forthcoming maritime courses and conferences



### November

- 14–16:** Port Investment and PPP Course, Panama  
[www.portfinanceinternational.com/ppppanama2017](http://www.portfinanceinternational.com/ppppanama2017)
- 20 Nov–** Port Management and Operations Course, Singapore
- 1 Dec:** [www.psa-institute.com](http://www.psa-institute.com)
- 21–23:** 8th Intermodal Africa\* (20% discount for IAPH Members)  
Abidjan, Côte d'Ivoire  
[www.transporevents.com](http://www.transporevents.com)
- Commences 22:** Certificate in Marine Insurance, Distance learning  
[www.loydsmaritimeacademy.com/event/marine-insurance-distance-learning-course](http://www.loydsmaritimeacademy.com/event/marine-insurance-distance-learning-course)
- 29:** DPC Innovation Awards 2017 London, United Kingdom  
[www.dpcawards.com](http://www.dpcawards.com)
- 28–30:** Intermodal Europe 2017, Amsterdam, Netherlands  
[www.intermodal-events.com](http://www.intermodal-events.com)

### December

- 4–15:** Strategic Port Policy, Governance, and Stakeholders Management, London, United Kingdom  
[www.ttpminternational.co.uk](http://www.ttpminternational.co.uk)
- 5–6:** TOC Africa, Durban, South Africa  
[www.tocevents-africa.com](http://www.tocevents-africa.com)
- 11–13:** Cyber Security for the Maritime Sector, Rotterdam, Netherlands  
[cybermaritime.iqpc.co.uk](http://cybermaritime.iqpc.co.uk)
- 12–13:** Port Performance North America Conference, New Jersey, United States  
[events.joc.com/port-performance](http://events.joc.com/port-performance)

### January 2018

- 1–5:** Port and City Community Relationship Management, London, United Kingdom  
[www.ttpminternational.co.uk](http://www.ttpminternational.co.uk)
- 8–12:** International Trade, Policy, and Maritime Logistics Management, London, United Kingdom  
[www.ttpminternational.co.uk](http://www.ttpminternational.co.uk)
- 15 Jan–** UNESCO-IHE Short Course: Port Planning and Infrastructure Design, Delft, Netherlands
- 2 Feb:** [www.un-ihe.org/short-courses](http://www.un-ihe.org/short-courses)
- 15–26:** APEC Seminar on Port Management, Antwerp, Belgium  
[apecporttraining.com/course/port-management/](http://apecporttraining.com/course/port-management/)
- Commences 22:** Certificate in Container Shipping, Distance learning  
[www.loydsmaritimeacademy.com/event/container-shipping-distance-learning](http://www.loydsmaritimeacademy.com/event/container-shipping-distance-learning)
- 29 Jan–** APEC Seminar on Port business development and marketing, Antwerp, Belgium  
[apecporttraining.com/course/port-business-development-marketing/](http://apecporttraining.com/course/port-business-development-marketing/)
- 30–31:** AAPA Seminar on Planning for Shifting Trade, Tampa, Florida, United States  
[www.aapa-ports.org](http://www.aapa-ports.org)
- 30 Jan–** PEMA Annual General Meeting, Bilbao, Spain
- 1 Feb:** [www.pema.org](http://www.pema.org)





Port of Antwerp, 5061 916

# The Port of Things

Antwerp is seeking a sustainable future through innovation, says the port's CEO, *Jacques Vandermeiren*

Our world is in constant change, a process that is clearly reflected in the international port landscape. Ports play a vanguard role when it comes to taking the temperature of international trade. Port of Antwerp has been able to produce impressive figures for freight volume in the past few years, and so we share the cautious optimism of the World Trade Organization (WTO). And yet the port community is fully aware that the hesitant growth in the world economy cannot be taken for granted. Geopolitical developments and economic unrest, growing protectionism and the uncertain outcome of the Brexit negotiations all create uncertainty. This in turn makes the sustainable development of our port an even greater challenge.

Now, more than ever, the port is in transition and this brings challenges and a lot of new opportunities. A proactive policy is key to making a major international port such as ours future-proof, which also requires a clear vision. In addition to its long-term framework for the period 2030–50, Antwerp Port Authority has, this year, defined 12 strategic projects.

An international port is naturally suited to innovative projects and offers

a unique testbed for transformation projects. Big data, the energy transition, and the circular economy are just some of the themes embraced by Antwerp. For example, the port community has launched the NxtPort project, which aims to achieve transparent, efficient, and strategically important exchange of data throughout the supply chain. We, as the port authority, fully support this project.

However, our partnerships and ambitions are not limited to the port community. Together with the city of Antwerp, the University of Antwerp, and the Imec Technology Forum, a research and innovation hub for nanoelectronics and digital technology, we have set up a unique collaboration project. The Capital of Things project aims to develop an ambitious and distinctive ecosystem around the internet of things. The Smart Port is one of the five spearheads of this effort. Combine it with the other spearheads, Industry 4.0 and the Circular Economy, and the Port of Things becomes a breeding ground for a dense innovation network. Port of Antwerp opts resolutely for strong partnerships and a sustainable future through innovation. **IF**

“A proactive policy is key to making a major international port such as ours future-proof”



# DPC INNOVATION

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