May/June 2014 Vol 59 No 3



Official Journal of the International Association of Ports and Harbors



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D3342 Kalmar DC20-1200N Baujahr: 1991 Preis: 42.000 EUR



D3174 Svetruck 2812045 Baujahr: 1995 Preis: 69.000 EUR



D3305 Kalmar DRF100-54S6 Baujahr: 2008 Preis: 109 000 FUR



D3301 SMV SC4535TB5 Baujahr: 2005 Preis: 149.000 EUR



D3328 CVS Ferrari F16 Baujahr: 2003 Preis: 79.000 EUR



D3219 Kalmar DCE90-45E7 Baujahr: 2006 Preis: 85.000 EUR



D2817 Valmet TD1812 Baujahr: 1990 Preis: 50.000 EUR



D3327 Kalmar DRF100-54S6 Baujahr: 2008 Preis: 112 000 FUR



D3282 SMV SL4ECA Baujahr: 2001 Preis: 49.000 EUR



D3299 Hyster H18.00XM-12EC Baujahr: 2002 Preis: 29.000 EUR



D3345 SMV SL20-1200B Baujahr: 2009 Preis: 99.000 EUR



D3303 Kalmar DRF450-65S6 Baujahr: 2008 Preis: 220.000 EUR

D3234

Baujahr: 1996





Kalmar DC845RS5



D3348

Hyster H18.00XM-12EC

Baujahr: 2005

Preis: 69.000 EUR

D3339

Svetruck 12120-35

Baujahr: 1997

Preis: 20.000 EUR



DK056 Linde C4535TL Baujahr: 2008 Preis: 190.000 EUR













D3255

Svetruck 13,6-60-30

Baujahr: 1996

Preis: 39.000 EUR

D3346

Kalmar DRF420-65S5

Baujahr: 2006

Preis: 170.000 EUR

D3330

CVS Ferrari F478

Baujahr: 2009

Preis: 222 000 FUR

DK053

PPM GSM40

Baujahr: 1991

Preis: 70.000 EUR





D3272 Svetruck 15120-35 Baujahr: 1980 Preis: 25.000 EUR



D3344 Kalmar DRF420-60S5 Baujahr: 2004 Preis: 140.000 EUR



D3329 CVS Ferrari F258.6 Baujahr: 2008 Preis: 99 000 FUR



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**Developers** are transforming the maritime map of West Africa

Photo: Choo Eng Koay/Shutterstock

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#### COMMENT

### PORTS HARBORS

#### Official Journal of the International Association of Ports and Harbors

#### PORTS & HARBORS

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### A great success

The mid-term conference provided a chance to discuss a wide range of issues affecting members at company, port, and country level



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



the IAPH Mid-term Conference and Board Meeting 2014 in Sydney was a great success.

The conference covered various 'hot' issues such as "Expansion of the Panama Canal" and "Raising the *Costa Concordia*", which involved state-of-the-art techniques, careful planning, use of hightech machinery, and environmental mitigation. Other stimulating topics included: port automation, empowerment of women in the industry, enlargement of ship size, overweight containers, and some environment issues.

Among the many intriguing topics, I was somewhat relieved to hear keynote speaker Luis Ferreira of the Panama Canal Authority claim that the expansion programme would surely be finished by the end of 2015. Following his kind invitation, we are now seriously considering holding one of IAPH's meetings in Panama after 2016. Neil Davidson from Drewry revealed engrossing projections

about future container transport, saying that global port throughput

#### ■ Today's megaships would be replaced by 22,000teu vessels

would rise from current levels of 623M teu to reach 1Bn teu. He also suggested that today's megaships with 18,000teu capacity would be replaced by 22,000teu vessels, and that major shipping alliances would reduce in number from the current seven to just two by 2020. Of course, this is just one projection, but ports need to think and

act proactively for constantly changing environments.

We also had fruitful meetings of all nine IAPH technical committees, which discussed many issues: the Cruise Committee discussed future activities at its first meeting; new and ongoing projects (such as IT trucking systems for efficient gate control and port performance indicators) were reported and discussed at the Port Finance, Port Operations, and Port Planning committees; the detailed schedules and specific themes of the five IAPH awards contests were fixed; and the IAPH Women's Forum considered creating a new scholarship scheme specifically for women, which should be incorporated into the budget proposal for the next year.

The board meeting officially decided to reform IAPH's decisionmaking processes and to create a small group to examine the options. The group will have its first meeting in Tokyo in July, but will meet several times to reach a consensus on a framework of new by-laws; these should be presented to the membership for approval in Hamburg next year. Despite facing many challenges, IAPH is determined to work more closely with you to better serve you. PH

#### Port **updates**

#### MORE INVESTMENT

NSW Ports has opened a second bulk liquids berth at its multi-user Port Botany facility, for refined fuels, gas, chemicals and LPG. It is adjacent to the existing one and will operate 24/7, accommodating 120,000dwt vessels, up to a maximum of 270m. It is also investing \$70M in three new GrainCorp liquid bulk storage facilities for Brisbane, Port Kembla and Fremantle.

#### **GREEN RECOGNITION**

The Port of Piraeus recently hosted a waste reception facilities workshop during which it, along with the ports of Bremen and Aqaba, were presented with certificates by the European Sea Ports Organisation (ESP0). These were for achieving what the ESP0 called "the only port sector specific environmental management standard – port environmental review system (PERS) certification."

#### INLAND TERMINAL

WienCont – Vienna's trimodal container terminal handling around 200,000 trucks per year – is the first Austrian terminal in the Europeanwide Inland Links Network. It has a seven-track rail terminal and inland shipping connections with Antwerp, Rotterdam, and Amsterdam and the Black Sea ports via the Rhine-Main-Danube canal



• EUROPE-ASIA CALL Peel Ports has worked with Westfal-Larsen Shipping to develop a new steel and plywood combined break bulk service which will now be arriving regularly at Liverpool from the Far East. Demand for both commodities is growing in the north of the UK from a growing construction sector, served by the Port of Liverpool's proximity to this market.

### Fresh impetus for Tanzanian ports



Map showing locations of planned port developments in Tanzania

Both its government and port authority have ambitious plans for Tanzania: new ports bringing less congested roads and more employment opportunities. First of all – just 50km west of the city of Dar es Salaam – Kibaha District is planning to build a dry port at Soga, close to two major railway lines that are themselves targeted for major investment and renewal. The Central Railway runs northwest to Kigoma on Lake Tangyanika, while the TAZARA line heads southwest into Zambia.

The government and Tanzania Ports Authority (TPA) are both keen to increase rail's share of freight haulage from the port. A rail-connected dry port would relieve pressure on the spaceconstrained seaport and remove trucks from Dar's overburdened roads. It should also provide local employment opportunities.

Then, just north east of Dar es Salaam, Tanzania's semiautonomous island province of Zanzibar is to get a new port at Maruhubi, under a \$230M deal with China Harbour Engineering Company (CHEC). Construction is scheduled to take three years. It is being funded by a \$200M loan from China's Exim Bank, repayable over 25 years, plus \$30M in equity finance from CHEC.

It will be a multi-purpose facility with 300m of quay and modern handling equipment. It is

### Shanghai's new breakbulk kid

Shanghai Nanhui Port has established itself as the only breakbulk terminal in southeast Shanghai since it opened in August last year. Also known as Shanghai Lingang Industrial Zone Multi-purpose Port, it serves not only nearby manufacturers but those from further inland.

The L-shaped first phase of the terminal, which was opened in August 2013 to serve the adjacent Lingang Industrial Zone, has a coastline of 12km and three 30,000-tonne breakbulk berths and a 50,000-tonne ro-ro berth, with a design depth of 11.7m. According to the first-phase plan, five other 5,000-tonne general purpose berths with a design depth of 8.3m will enhance its handling capability in the future.

On the land side, the terminal has a stock yard of 230,000 m<sup>2</sup> with capacity of 8-10 tonnes per m<sup>2</sup> for the first phase, with a planned second phase of 360,000 m<sup>2</sup>. The depth of the main channel of the terminal is 8.5m. The terminal claims its berths are suitable for use by conventional vessel types.

"The terminal is mainly intended to serve the plants in the Lingang Industrial Zone," Ying Zhu, assistant marketing manager with Shanghai Lingang Industrial Zone Port Development, the terminal's owner and operator, told *P&H*."In addition, it also aims to attract cargoes sourced from the areas along the Yangtze River."

As the terminal is not connected to Shanghai's railway networks, shipment has to be discharged and shipped by trucks to their receivers, Zhu added. A plan for a rail link is not foreseeable in the near future, she added.

Also, the opening of the terminal has created competition of some degree between itself and the Luojing Port in the northern area of Shanghai, which is located along the Yangtze River and owned and operated by the Shanghai International Port Group (SIPG). "Unlike us, the intended to handle an annual throughput of 200,000teu and 250,000t of bulk and break-bulk cargo. Being near the existing port of Malindi and the Maruhubi freeport zone, it should relieve pressure on both those sites. Malindi in particular has several problems: in 2012, the Zanzibar Ports Authority discovered that Malindi port was sinking; the authority had already rebuilt some 382m of quay in 2005 at a cost of \$42M, following substandard work done in 1992.

Further north still, a new port is planned for Mwambani Bay, near the existing port of Tanga. The TPA has launched an invitation to tender for the design, construction and financing of the new facility. The deadline for proposals is 26 June and a decision on a contractor is expected in July.

It is designed to relieve both existing pressure on Tanga and cater for an expected increase in traffic. Tanga is already handling 600,000t of cargo a year – 100,000t more than its design capacity – and projections suggest that, by 2028, volume will have risen to 4.5Mt

Tying in with the new port will be a new railway, running to Musoma in the northwest of Tanzania via Arusha, linking the port with Lake Victoria, where further developments are planned. That could open up the markets of neighbouring Uganda, Democratic Republic of Congo (DRC) and Rwanda. In fact, the port was originally to have been developed in partnership with Uganda, but the Ugandan government has opted instead to pass its goods through Mombasa, Kenya.

Finally, for the very south of the country, the TPA has issued invitations to tender for two ports expecting to handle increased traffic as a result of the offshore energy industry and the Mtwara Corridor – central to this corridor is an 860km railway to Mbamba Bay on Lake Malawi.

The deadline for bids to design, build and finance a jetty rehabilitation project at the small seaport of Lindi is 25 June, while at the deepwater port of Mtwara – which currently has two berths, one of which is dedicated to servicing the oil and gas industry – the construction of four new berths is up for tender.

Current traffic comprises imports of cement and foodstuffs and exports of cashew nuts. Total cargo throughput is below 250,000t but it is expected to reach 28M t by 2030, according to the TPA.

With the railway to Mbamba Bay, Mtwara in particular is expected to gain traffic from coal mines there and at Namwele-Nkomolo and Ngaka, an opencast agricultural lime mine at Songea, plus from gypsum mines in the Kilwa district. Rare earths in Nkasi and large uranium deposits at Namtumbo will also become accessible. The railway will also serve Sichuan Hongda's mines at Mchuchuma (coal) and Liganga (iron ore). A feasibility study on the Mtwara Corridor for the (\$1.5Bn) Chinese-built project is under way, to be followed by an economic viability assessment.

By 2018, the transport map for Tanzania could be very different indeed.



Loading of a wind turbine blade at Shanghai Nanhui Port. It has handled a total of 29 since it opened in August last year

Luojing Port also handles general bulk cargoes as well as breakbulk cargoes," she said, "Moreover, our terminal offers discharging services for ro-ro vessels. Since its official opening the terminal has handled the shipment of 29 wind turbine blades, which were produced by a Siemens plant in the nearby industrial zone. The loading of the turbine blades onto the *HR Intonation* took about three hours, marking the first loading operation at the terminal.

Other potential shippers for the terminal will include various plants in the industrial zone, which manufacture renewable energy, marine and offshore engineering equipment, vehicles, auto parts and heavy machinery.

The terminal has also been actively in search of more shipment upstream the Yangtze River, Zhu said.

"Its users will come from not only the nearby industrial zone but the inland areas along the Yangtze River as well as the Yangtze River Delta," she added..

#### Port updates

#### **GREEN DIESEL**

Swedish oil company Preem is planning to invest €33.6M (\$46.5) at its plant in Gothenburg, to increase production of green diesel based on tall oil, a residual product from the forestry industry. It is shipped from Piteå, on Sweden's Gulf of Bothnia, to Gothenburg, where it is processed together with fossil-based diesel at the Preem refinery, "giving it the same properties as regular diesel", states the company.



#### ▶ UP, UP, UP

International Container Terminal Services, Inc (ICTSI) reported audited year end results for 2013 showing port operations revenue of \$852.4M, up 17% on 2012. At \$377.3M, earnings before interest, taxes, depreciation and amortisation (EBITDA) were up 23% year-on-year. Net income was \$172.4M, up by 20%.

► US-COLOMBIA MoU The US Port of Tampa Bay and Colombia's Port of Barranquilla have signed a Memorandum of Understanding (MoU) to strengthen commercial relationships between them and to encourage shared trade and marketing initiatives. It was signed by Port Tampa Bay president/ CEO Paul Anderson and Rene F. Puche, President (CEO), Port of Barranquilla.

SECURITY ARRESTED Despite being licensed by the Nigerian authorities, two of Port2Port West Africa's contractors were arrested at Warri by the Joint Task Force (JTF) in Bayelsa State, Nigeria, and detained for 7 days, as part of an investigation into an alleged third party crude oil theft.

#### Bought&Sold

#### **LUCRATIVE TRIO**

Cavotec has won three orders worth more than €28 million (\$38.7M) for its MoorMaster automated mooring systems. The first is for 39 MM400L units for 13 locks and related rail structures for the St. Lawrence Seaway, Canada; the second is for two MM400 units in Denmark; and the last is for the installation and commissioning of eight MM200B (bulk) units for Jan de Nul in Australia.

#### **CRANE DEBUT**

Charleston Harbor in South Carolina, US, has introduced its newest asset: heavy-lift crane Ocean Ranger. It has a 500-ton lift capacity and a lift rating of up to 740 tons for heavier cargo. As a fully mobile barge crane, it is designed primarily for heavy project cargo lifts to and from breakbulk vessels but can also lift cargo on barges, railcars, trucks and container vessels.

#### MAPUTO TUG

A new 60 ton ASD (Azimuth Stern Drive) tug, *Sereia*, has started work at the Port of Maputo, Mozambique. It was built by Sanmar in Turkey and joins its sister ship *Bulani*, a pilot boat and a mooring vessel already working in the port. It is part of a \$15 million port investment package by P&O Maritime.



#### SA SEVEN

Liebherr Maritime Cranes has recently received Latin American orders for seven mobile harbour cranes – LHM 550, LHM 600 and LBS 600 units. The new and returning clients include Compania Portuaria Mejillones and Terminal Puerto Arica (both of Chile), Chibatão Navegação e Comércio (of Brazil), and Callao (of Peru).

## Konecranes targets intra-Asia box trade

During the TOC Container Supply Chain Asia conference in Singapore on 8 April, Konecranes launched a new type of rubber tyred gantry (RTG) crane, Boxhunter. Konecranes CEO Pekka Lundmark described the Boxhunter as a complete rethink of RTG operation and operator ergonomics.

The concept of the Boxhunter is based on advanced video and laser technology that the Finnish firm has developed for its top-ofthe-line automated stacking cranes (ASCs). Video cameras are located at strategic points around the crane and a sophisticated Graphical User Interface (GUI) in the cab give the operator comprehensive visibility.

Boxhunter handles 15 to 20 boxes per hour, compared to higher-end machines that can handle double that amount.

Konecranes CEO Pekka Lundmark told *P&H* that his company developed the Boxhunter following discussions with Asian port operators.

He said: "We believe the main market will be in Asia but we are happy to sell it anywhere in the world. When you look at the facts, this is where the growth in levels of world trade is, especially intra-Asia. Already today, half of the investment in port equipment is in this part of the world and there's a direct connection between this and the growth in traffic."

Previously, Konecranes focused on top-end equipment that was pricier. Boxhunter's price starts from \$1.3 million. Lundmark said: "Those (high-end) machines continue to be in our portfolio and there will be a market for big handling solutions but we saw in our discussions with many customers that there are many ports in Asia that are looking for economic solutions for mediumcapacity handling. We wanted to add a product to the mid-segment where we didn't make any compromises on safety and where we didn't lower the technical specifications. Instead, we came up with product innovation and technology to lower the machine prices. These are the things that we are doing differently from our traditional RTG cranes. These innovations enable us to price the product at a level that is 25% lower.

"When you look at the reality in many ports, they are operating at capacities where cranes move 15-20 boxes per hour. If you have an operation like that, it doesn't make sense to pay a high price for a machine that serves 40 containers per hour. It's simple mathematics. There are many such places, especially in Asia. We want to give a good, basic and economic solution to these ports."

These ports are mainly mid-sized ports but as megahubs are developed, Lundmark said it is important that mid-sized ports improve productivity so their feeder traffic can compete with these megaports.



#### Rainbowing troubles in Maldives

Dredging in the Maldives was halted on 25 March after property and vegetation was covered with sediment as a result of 'rainbowing' – the spraying of material from a dredger's bow-mounted nozzle. Boskalis' 18,091gt trailer suction hopper dredger *Prins de Nederlanden* is engaged on a 17.5ha land reclamation project on the island of Meedhoo. The \$37 million, six-month contract also covers Eydhafushi, Thulusdhoo and Kudahuvadhoo.

On 23 March environmental NGO Ecocare alerted the Environmental Protection Agency (EPA) that

contractors had not complied with mitigation measures. In a letter to Boskalis, seen by *P&H*, Ecocare said: "The implications to the environment are frightening, while property is at risk."

Local people complained that 60 to 70mm of sediment was deposited on house roofs and trees were dying after being covered with seawater.

A Boskalis spokesman told IHS Maritime: "As soon as the concerns were registered, we halted the work." The "regrettable incident" was caused by "adverse weather conditions", he explained.



The Boskalis dredger, Causeway, began dredging the area on 13 April 2014.

### Dredging starts at Felixstowe

The VSBW Joint Venture has begun dredging at the Port of Felixstowe in the latest expansion of the UK's largest container port using the dredger Causeway. Causeway's dredging paves the way for construction to begin in the summer where 1 million m<sup>3</sup> of material is dredged to provide

the berth and approaches, and enable a new steel-piled guay wall to be built.

The VSBW Joint Venture is a consortium of VolkerStevin and Boskalis Westminster, which is the lead contractor on a project that will extend the port's Berth 9 by 190m. The work will increase the

combined lengths of Berths 8 and 9 to 920m, so that the world's largest container ships can berth at the port.

Clemence Cheng, Hutchison Ports (UK) Limited chief executive officer, said: "Felixstowe's location closest to the main shipping lanes and the ports of northern Europe already saves our customers both time and money. Combined with the best road and rail connections to serve the UK, the new extension will further extend our advantage as the port of choice for deepsea container ship operators."

"Piling of the guay wall for the new extension will start later in the summer with construction due to be completed in mid-2015. The new extension will be equipped with three new ship-toshore gantry cranes, each with a 25-container wide outreach," said the Port of Felixstowe.

#### Cash&Cargo

APMT THROUGHPUT UP APM Terminals increased its network's container throughput in 2013 by 36.3M teu, a 3% increase in volume. 2013 saw the operator open Brasil Terminal Portuário at the Port of Santos, Brazil and the acquisition of NC Group by Global Port Investments, which it part owns. Work is ongoing on seven new terminals and 16 are being upgraded or expanded.

#### HAMBURG'S GROWTH

In 2013 the Port of Hamburg achieved a total throughput of 139Mt – up 6.2% - made up of general cargo handling (of 96.8Mt) and bulk cargo handling (of 42.3Mt), says Axel Mattern, a port marketing executive board member.



The Port of Hamburg is delighted to welcome you to the 29th IAPH World Ports Conference from June 1 - 5, 2015. Join us and experience first-hand our smartPORT - a "flagship port" for innovative technologies. Be a part of the smartest event ever staged at Europe's second largest container port, situated right in the heart of this beautiful city.

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#### Port **updates**

#### WORLD'S BIGGEST

HAROPA-Port du Havre (France) says it has hosted the "world's biggest reefer ship" the *Cap San Lorenzo*, a box vessel of 9,600teu delivered by Hyundai to German shipping firm Hamburg-Süd. The vessel is 333.20m long, 48.20m wide, and has 2,100 plugs for refrigerated units.

#### RECORD BREAKING

Ports of Auckland set a new record for container handling: 54,427 containers (79,492teu) in March this year, beating the record of 54,049 set last October. Ports of Auckland chief executive Tony Gibson said: "Breaking the monthly record in March is unusual; normally the pre-Christmas period is the busiest."

#### MASTER PLAN

Sweden's Port of Gothenburg has unveiled a new master plan to 2035, with more and bigger terminal areas, and more land earmarked for warehousing and logistics. The port is planning to focus on developing new terminal areas and berths for energy products, located in the outer port areas of Risholmen and Arendal.

#### REALIGNMENT

In a \$7M project, Port Everglades (Florida, USA) has realigned its main roadway into Southport's containerised cargo area "to enhance productivity". Port CEO Steven Cernak advised: "Efficiency counts when moving cargo. So smooth free-flowing roadways are vital for port productivity and also good for the environment".

#### PORT MISSION

A delegation from the Belgian Port of Antwerp recently visited Montreal, Canada, to develop trade relations, intensify the collaboration between the ports, exchange know-how and best practice. It follows the 2013 signing of a Memorandum of Understanding between them.

## Port of Antwerp wins international welfare award



PoA's chief operations officer, Christiaan De Block, receiving the award from Guy Ryder, director general of the ILO.

The Port of Antwerp (PoA) has been judged the best port in the world for seafarers' welfare by the International Seafarers' Welfare and Assistance Network (ISWAN).

Antwerp was awarded the Port of the Year title over 15 other competitors, and four fellow shortlisted ports: Kandla (last years' winner), Paradip, Singapore, and Venice, and impressed the jury with its free port-wide Wi-Fi, free seafarers' shuttle bus from port to city, and what ISWAN calls "the close co-operation between the port and the welfare organisation".

Speaking to *P&H*, ISWAN's executive director Roger Harris said that the award is part of ISWAN's drive to raise awareness worldwide about the need for seafarer welfare facilities at ports.

"The key thing for us is to set out examples, such as Antwerp and Kandla, because they illustrate best practice. These ports really engage with seafarers and their welfare. Some ports struggle to get welfare organisations established, to get seafarers access to the port, and to get the port authority to co-operate with them. That is really the challenge in quite a few parts of the world," said Harris.

Two threats to seafarer welfare at ports, said Harris, are security and fast cargo turnarounds.

"It is really key for welfare organisations to be able to get inside the port and for seafarers to get outside to visit the city and welfare centres. The welfare centres are sometimes based outside the secure area of the port. That is a real challenge," said Harris.

He continued: "The other big challenge is shortage of time in port - particularly for container ships; seafarers, even if they have the right visa, don't have time to get off the ship. So again one of the key things for welfare organisations to achieve is the supply of Wi-Fi, SIM cards, and newspapers in the seafarers' language, and to provide laptops and tablets for seafarers who do not own laptops." Harris said that the ports at Antwerp and Kandla both excelled in providing these facilities.

Port welfare is on the radar of

the International Labour Organization (ILO), which includes relevant obligations in the Maritime Labour Convention (MLC), such as the need for welfare facilities and port welfare committees. However, Harris said that the obligations are "advisory" and not mandatory.

He added that this year ISWAN will be advocating and lobbying governments to meet these obligations, particularly the setting up of welfare committees, which bring together all stakeholders, including the port authority (or the port owner in the case of private facilities), welfare organisations, shipping agents, immigration, and security providers..

However, Harris said that ISWAN would not be lobbying for mandatory application of the ports-related section of the MLC: "Not at the moment. First we want to see the existing sections on shore-based welfare facilities implemented, and governments opening a dialogue with their national welfare organisations," concluded Harris.

### Togo opts for single window

The Port of Lome in the Republic of Togo will be set up on the country's 'single window' this year with airports and border posts being added in 2015 and 2016. The single window will allow parties involved in trade and logistics to lodge standardised information and documents with a single point of entry. It will fulfil all foreign trade related requirements.

The concession to set up and run the system was awarded to Bureau Veritas Bivac and Soget in October last year. In a statement the partnership said that the single window will reduce "costs and delivery times, simplifying procedures and enhancing transparency in business to government relations".

A BV spokesperson told *P&H* that the process involves a huge

restructuring process costing several million dollars, and includes technical infrastructure, such as a data centre, establishment of a local port single window operator, gap analysis, capacity building, training for the local staff and endusers, and development of a call centre. A Soget/BV team will be located on site and will operate the port single window system alongside local staff. "Since this contract is under a concession scheme, the project is totally financed (Capex and Opex) by the concessionaire - the Bureau Veritas-Bivac/Soget consortium. Revenue is based on a transaction fee by customs declarations," the spokesperson explained.

Since 2008 Soget has been working with the continent's regional ports, shipping and customs organisations to enable the changes needed to introduce the single window concept.

Neighbouring Benin has also implemented the single window concept and "had a tremendous success in 2012 thanks to the strong support from government and the private stakeholders involved," the spokesperson told *P&H.* The project has been notably rewarded with the 2013 IAPH Gold IT award in Los Angeles.

The single window enables a completely transparent process that removes 'middlemen', multiple counters, cash transactions and lack of traceability, said the spokesperson. The gains in productivity levels should make the country more competitive for trade, she added, describing it as a "win-win situation".

#### Cash&Cargo

#### **EFFICIENCY DRIVE**

The Kenyan port of Mombasa has seen results from its efficiency drive with cargo turnaround times falling from 4.6 days in 2012 to 3.5 days in 2013, according to the Kenya Ports Authority (KPA). The nationwide rollout of the Kenya National Electronic Single Window System is also expected this month (May).

**BOX SHIPMENTS SOAR** 

Container shipments through the Port of Los Angeles, "the busiest in the USA" says the port, climbed in March by the most in seven years as commerce rebounded following the Chinese New Year and harsh winter weather in the United States.

#### Commission publishes first EU transport scoreboard

The European Commission has, for the first time, published an interactive scoreboard – http://ec.europa.eu/transport/facts-fundings/scoreboard/index\_en.htm – on transport in the EU. Based on business executives' perception of their country's facilities, it can compare the performance of Member States in 22 transport-related categories and, for most of these categories, highlights the five top and bottom performers. The Netherlands and Germany generally top the scoreboard with high scores in 11 categories, followed by Sweden, the UK and Denmark.

The scoreboard can be consulted by mode of transport (road, rail, waterborne, air) or by one of the following categories: single market (access to market, regulation); infrastructure; environmental impact; safety; transposition of EU law; infringements of EU law; innovation and research; and logistics.

For example, choosing maritime and port infrastructure suggests the top performing states are Belgium, with 6.28; Denmark, with 5.85; Netherlands, with 6.79; Finland, with 6.38; and Sweden, with 5.82. Low performers are Bulgaria (3.92); Hungary (3.92); Poland (3.68); Romania (3.00); and Slovakia (3.69). The EU average is 5.05.

Data comes from the World Economic Forum's Executive Opinion Survey (2012/13). These figures are combined with data from the previous year to create a moving average. Scores range from 1 (port infrastructure considered extremely underdeveloped) to 7 (port infrastructure considered efficient by international standards).

It will be interesting to see whether the EC's TEN-T programme impacts this scoreboard over the coming years.

#### **Expressions of interest**

#### Port Development and Port Infrastructure Planning Central Pacific Ocean

Nauru Rehabilitation Corporation (NRC) is a State Owned Enterprise (SOE) of the Government of Nauru that is charged with responsibility for rehabilitation works in the Republic of Nauru. The Corporation is responsible for mining primary and secondary deposits of phosphate in Nauru and for rehabilitating the minedout land. It mines the phosphate on behalf of RONPHos (another SOE) which processes and markets it for export. NRC also produces aggregate, armour rock and other limestone rock as marketable by-products. NRC is looking for innovative ways to exploit the phosphate and limestone for the long-term benefit of the Republic of Nauru.

Port development consultants are invited to express interest for provision of consultancy services to the Nauru Rehabilitation Corporation (NRC) in the following fields:

- Supply chain and logistics.
- Mooring design and analysis.
- Vessel simulation naval architecture.
- Hydrodynamics, including coastal dynamics.
- Numerical modelling and physical modelling.
- Port infrastructure and cargo handling equipment.
- Coastal engineering, including foreshore stabilisation.
- Marine civil engineering, including wave attenuation and heavy marine structures.

Interested parties may request Invitation to EOI documents by emailing the Chief Executive Officer at <u>tekohi.rivera@nrurehab.org</u>

The closing date for submissions is Tuesday 15 July 2014. NRC Ref # CONSPOR001/FY1415.

#### OPEN FORUM



# Hub port with Star quality

Antwerp has made itself attractive to major shipping lines by its can-do attitude and an ongoing dialogue with users, says the port's boss *Eddy Bruyninckx* 

ntwerp can lay claim to be the most challenging – and therefore we believe the best organised – major port in Europe. It's an estuarine port transiting through a friendly neighbour, the Netherlands, with an average tidal range of 5m. We use Dutch and Belgian pilots, and we use tugs on the River Scheldt and behind the tidal locks.

I believe we have become very attractive to the biggest ship operators in the past decade

because of our well-organised access to and from the sea, improved supply chains, flexibility, and can-do attitude.

A major benefit for ships arriving to load and unload at the port's 30-odd cargo terminals is the updated traffic management system installed two years ago. I believe our can-do attitude and improved accessibility were among the key reasons why the P3 Alliance decided to make Antwerp one of its privileged North European container hubs, able to accommodate the largest ships being brought on line by alliance members Maersk, MSC, and CMA CGM.

The port's tidal window is the purest example of a good performing traffic system in that the biggest vessels can safely navigate the Scheldt in both directions even when there is a limited tidal window. Ship operators know from experience that they can rely on Antwerp's traffic planning system and on the availability and reliability of its nautical technical and handling services.

Anchor client MSC has always believed in the excellence of our traffic management and we got the opportunity to demonstrate it to Maersk when it was obliged to transfer the operations of the biggest vessels of the time, including the 18,000teu Mary Maersk.

Thanks to a major river dredging programme during the last decade we are able to offer a depth of 14.5m behind the tidal locks and access to vessels with a maximum draught of 13.1m independent of the tide. In the Deurganck dock that will be used by P3 vessels, the depth reaches 16m.



We bring seagoing vessels inland and then optimise the onward journey of cargo by barge and train. The traffic management system now extends to intraport traffic and barges using the waterway system that connects the port with Benelux inland ports and the heart of Europe, including Germany and Switzerland. Antwerp's inland location means it is located closer to Europe's main consumer markets than the majority of North Sea ports.

As well as the container terminals in the Deurganck and Delwaide docks, we have two further box facilities located on the river itself. The updated traffic system gives us a smooth operating intraport logistics system that regulates the movement of containers between the terminals and minimises congestion.

In 2008, as part of our efforts to reduce truck congestion in and around the city of Antwerp, work began on a cargo rail tunnel beneath the Scheldt to create a link between expanding cargo operations on the left bank and the main cargo rail terminal on the right bank. Currently, rail traffic is obliged to circumnavigate the city of Antwerp for bundling at the main rail



# Ease of access, flexibility, and can-do attitude

Eddy Bruyninckx Port of Antwerp CEO

#### Antwerp is the home port for P3 operator MSC

terminal. The new rail link under the Scheldt will cut that orbital journey by an estimated 22km, reducing the transport costs and emissions of intraport rail cargo.

The link is also part of our strategic planning, since most of the port's room for expansion in the coming decades will be on the left bank. The Flemish government has earmarked more than 1,000ha of land on that side for further logistics or industrial expansion.

One way in which our port is different from any other is the total integration of its three core functions of cargo distribution, industrial production, and value-added logistics. As a result of this we exceed all other European ports in terms of the value-added created and our employment of people in those sectors.

However, decisions about the port's development can not be seen in isolation – we have developed a total framework in which to look at the port reality. This is reflected in what we believe is the mission of the port and the role this particular port can play in international trade, given its location, its strengths and weaknesses, its accessibility, social climate, and all the other specific characteristics of Antwerp as a busy urban port.

The business framework in Antwerp is the product of a long-standing intensive dialogue between the port authority and the port users. I would describe Antwerp as being in the Hanseatic tradition in the sense that we are solidly anchored in the local community and all the port development has been guided by this local dialogue between port authority, users, and the city and regional governments.

Our strong bond with the city we operate in is one of the reasons for our success because development is inspired by the

#### immediately felt needs of port users.

Decision-making is always grounded in a common view that we try to reach together, which is then adapted and updated in the light of changing circumstances. One example was in October 2008, when we thought about how we could make use of the economic crisis to force through changes to strengthen the port's competitive position.

The initiative generated a series of working groups involving hundreds of people, giving us an opportunity to review how we see this port as a community but also as port manager. The result was a radical overhaul of port processes that not only increased efficiency but led to major initiatives to improve traffic infrastructure, as explained previously, and overall port sustainability.

The sustainability report we produced was a totally new idea since we did it for the entire port rather than just the operations of any one user. Antwerp was the first European port to draw up a list of recommendations about sustainability in all its various sectors for private operators and the departments of the port authority itself.

As well as enjoying economies of scale in common with other northern range ports, at Antwerp we can also talk now about an ecology of scale, since the environmental measures we have put in motion add up to a dramatic increase in sustainability.

Dialogue with our users has also helped us to move from a limited port-centred viewpoint to seeing the broader picture that our operations form part of a wider distribution chain. We have, therefore, become more collaborative in designing and developing maritime and hinterland supply chains with other stakeholders. **PH** 

**MORE INFO:** www.portofantwerp.com

## West African port fever

Developers are transforming the maritime map of West Africa. *Stephen Spark* selects some highlights

Freetown

Dakar

The Abidjan terminal in Ivory Coast t used to be called the 'Fever Coast'. West Africa's Atlantic seaboard was where foreign adventurers' dreams died and the grand plans of European empires fell into terminal decline. Defeated by internal strife, indebtedness, and mismanagement, ports silted up, roads crumbled, and railway trackbeds were appropriated for squatter camps.

Takoradi

Now the tide has turned and the fever is for building ports. Governments, miners, construction companies, investment banks, and port operators compete to announce ever-more ambitious plans to improve maritime and inland connectivity.

Asian and European hunger for the continent's mineral wealth is stimulating the construction of bulk terminals and driving railways far into the hinterland. In much the same way, offshore oil and gas exploration and production in the Gulf of Guinea is creating a demand for port-based support facilities.

Domestic demand for fuel, food, and consumer goods is growing too, creating a need for deepwater terminals able to accommodate the largest container ships. As elsewhere, each port is competing with its neighbours to grab the lion's share of transhipment business. Intra-African trade is still small, hampered by poor cross-border links and cumbersome bureaucracy, but the picture is set to change as major east-west and north-south trans-African rail and highway projects are developed.

Container terminals are springing up along the coastline from Senegal to Angola. In Dakar, CMA-CGM and Delmas launched their 15,000m<sup>2</sup> TCD2 logistics platform in mid-February, just as Jan De Nul's cutter suction dredger *Leonardo da Vinci* was finishing a



channel deepening campaign for the port authority. Operator DP World is due to modernise the three existing terminals to boost capacity to 550,000teu/ year, but the port has in its sights a 1.2M teu/year container facility at an adjacent site dubbed Port of the Future. Some 4,000km to the southeast at Cabinda, China Gezhouba Group Co recently upgraded the Angolan port's 319m jetty and added 775m of new quayline, with a further 775m promised for Phase 2.

In the Ivory Coast port of Abidjan, a consortium of Bolloré, APMT, and Bouygues is planning to have a second container terminal open by 2018, while in San Pedro the port authority is to construct a new container terminal, a rail-served ore wharf, multipurpose terminal, and fuel terminal, plus warehousing, on a 150ha

site. Bolloré also has the concession at Conakry, Guinea, where China Harbour Engineering Company (CHEC) has started Phase 2 of expansion works, worth \$137M, extending the deepwater dock to 600m, dredging to 13m and almost doubling container storage capacity to 15,000teu. Capesize vessels can now load iron ore at Tagrin Point's new deepwater berths, just across the estuary from Sierra Leone's capital, Freetown, and close to Pepel port. The facility, which includes a secondary port with container terminal and fuel depot, handles ore from African Minerals' Tonkolili mines brought in via a revived and extended railway. In due course, Tagrin Point may handle up to 5M tonnes/year of ore from Marampa Iron Ore's deposits near Lunsar. Just over the border in Liberia, a new port is

planned for Robertsport, which is well placed for the Western Cluster iron ore mines that will shortly start production at Bomi and Mofe Creek. Its development is seen as a priority to relieve Monrovia, already busy with the ore China Union is bringing in on the newly repaired railway from Bong Mines. Lamco built the port of Buchanan and a 260km railway to export iron ore from Nimba, close to the Guinean border. Arcelor Mittal refurbished the railway, which has begun transporting 4M tonnes/year of ore to the port, but increased traffic is in prospect from Sable Mining's fledgling project in south-east Guinea. Farther down the coast, Greenville demonstrates the challenges Liberia's National Ports Authority faces in repairing war-damaged infrastructure. Sunken ships still have to be cleared and dredging completed before Greenville will be ready to export Putu Mining's iron ore in 2016.

Designarity is

CM/

By the middle of the year, Lonrho is expected to start work on an oil and gas shorebase with 16m depth at Atuabo, Ghana. The \$600M PPP project is expected to cut the cost of repairs and maintenance of rigs and offshore vessels when it opens in late 2016, but it has attracted fierce opposition from Ghana Ports & Harbours Authority (GPHA), which is planning its own oilfield support facility at nearby Takoradi. Over the next three years, GPHA will add 1.1km of breakwater, plus bulk and box berths to Takoradi, and Jan De Nul will dredge to 16m depth from late 2014. The whole scheme will cost about \$197M. A deepwater port with an oil shorebase is also proposed for the twin-island state of São Tomé and Principe, probably at Fernão Dias.

Last year, Bolloré rehabilitated the existing port at Pointe-Noire, Congo, with quay and breakwater extensions. However, CHEC is expected to start work soon on the first phase of a 31-quay port on a 9km<sup>2</sup> site that is expected to handle 40M tonnes/year of iron ore and 3M tonnes of potash. APMT's proposed mega-port at Badagry, Nigeria, would handle the full range of cargoes – bulk, boxes, petrochemicals, ro-ro – on a greenfield site 55km west of Lagos.

Two of the biggest developments currently in hand are at Tema, Ghana, and Kribi, Cameroon. Reclaiming 400ha of land and dredging from 11.5m to 16m will be the prelude to GPHA's \$1Bn expansion scheme for Tema, comprising two new container berths, two multipurpose berths, ro-ro facilities, and a passenger/ cruise terminal – and that's just in Phase 1. Subsequent phases will add food/fruit terminals, more container berths, and an oil and gas rig servicing centre. Ultimately, 23 berths and 7.8km of quayline are envisaged. Seven bids for the work have been submitted and the winner will be announced in August.

At the time of writing, CHEC is close to completing the \$567M Phase 1 construction of a new deepwater port at Kribi, scheduled to open in June. Its 16m alongside depth compares favourably with Douala's 6-7m. The bulk and box terminals are just part of what ultimately will become a 20-terminal port, including berths dedicated to aluminium, alumina ore, oil, and LNG exports. The masterplan developed by Royal HaskoningDHV also envisages an industrial complex and a city of 300,000 people by 2040. Meanwhile, Australian mining company Sundance Resources, through its Cam Iron subsidiary, plans to build a 500km railway to its own bulk facility at Lolabe, 4km south of Kribi, which will be able to take 300,000dwt vessels. The line will tap huge iron ore deposits at Mbalam and Nabeba straddling the Cameroon-DR Congo border and output is expected to reach 35M t/y.

The long-term viability of many of these port developments is dependent on reliable rail connections, but doubts remain about the availability of finance for all the lines being plotted so optimistically on the map. How many of the ports and terminals themselves are economically sustainable will only become apparent once the first flush of fever has passed.

### The Eastern gateway

Construction recently started in Djibouti on two major port projects worth an estimated \$470 million, funded by China state-owned China Merchants Group, reports **Shem Oirere** 

> jibouti is a major gateway for Ethiopia and handles more than 70% of its exports and imports. It has also seen most of South Sudan's cargo being re-routed through its facilities. It is, therefore, confident that its \$4.4Bn port construction programme is necessary. The programme entails construction of five new ports with likely funding from China, Brazil, and the African Development Bank.

> The Damerjog livestock port and the Doraleh multipurpose terminal projects broke ground in September 2013 and are expected to support Djibouti's dream of being the market leader in Africa's cargo business given the country's strategic location at the crossroads of the shipping routes to Africa, Asia, and Europe on the entrance of the Red Sea.

> "The Damerjog livestock terminal is intended to be the biggest hub for livestock in Eastern Africa," said Luca Beghini, project manager for Italian company Technital SpA, which designed the \$70 million port. It will be exclusively dedicated to livestock and works include the



construction of a livestock terminal, a road link, and a five-hectare collecting area with capacity to traffic more than two million animals every year.

He said the terminal will be built with 25 cellular circular cofferdams each with diameter of 20.5m. The cofferdams will be made of sheet piles linked by sheet pile arcs to be filled with about 200,000m<sup>3</sup> of suitable material. Beghini said the terminal will have a perimeter of 863m with mooring facilities for up to 5 livestock carriers along an estimated 620m of quay.

The livestock holding space will also serve as a watering point for the animals and an area where veterinary

### Durban digs deep

Proposed expansion at KwaZulu-Natal's Port of Durban is expected to revolutionise container traffic through this regional hub

> ransnet, which bought the site of the old Durban International Airport where the proposed plans are to be carried out, said that the port will not be able to cope with the anticipated vessel and cargo traffic increase envisaged over the next 10-20 years. The land, located 11 km from the existing port, was purchased for nearly R2 billion (\$190 million) and is

expected to cost around R100 billion upon completion.

"Durban is best placed for the new port due to its position in proximity to Gauteng," said Marc Descoins, programme director of Transnet's Durban Dugout Port project, noting that Richards Bay and Ngqura in the Eastern Cape were ruled out due a variety of factors including cost and logistical challenges.

Transnet forecasts that growth will grow fourfold over the next 30 years, with container volumes in Durban expected to grow from 2.7 million teu to between 8-12 million teu per year by 2040.

"The Port of Durban handles about 70% of South Africa's containers and is anticipated to retain its position as South Africa's premier container port," said Descoins. "Since the global shipping industry has seen the advent of a new generation of vessels that are longer, wider, and deeper, these ships will require a modern, deep water port and other facilities which this port will offer," he added.



Design of the livestock terminal at Damerjog services would be offered before they are moved to a quarantine centre or, in case of export, to the carrier.

Beghini added that designing the of Damerjog livestock terminal presented various challenges to Technital SpA team, such as the requirement to design "the terminal without dredging, as requested by the client [Port and Free Zone Authority]". He said it was overcome by identifying a location 2km offshore off a barrier reef, with a depth of 11m depth.

The collecting area is about 15km south of Djibouti town and 2km from the main road, Beghini told P&H. The terminal design has made provision for the installation of power generators, a water desalination plant, and solar photovoltaic plant.

Aboubaker Mohamed Hadi, president of Port and Free Zone Authority, said that although the facility requires an estimated investment of \$70 million, export earnings are projected at around \$500 million a year.

#### Damerjog is intended to be the biggest hub for livestock in Eastern Africa

At \$400 million, the more expensive of the two projects is the expansion container terminal at Doralah into a multi-purpose port. The facility is expected to relieve pressure on the Port of Djibouti, which is operated under a 20-year concession signed between the government and DP World.

Hadi said: "We have the deepest container terminal in Africa. We took a decision to go deeper [than Ngqura] because there was a chance the ships are going to keep getting bigger. We feel confident we made the right decision." The multi-purpose Doraleh terminal will be built in two phases resulting in a total quay length of 4,130m with 15 berths that can handle 29M tonnes of cargo per year. The first phase – with a quay length of 1,200m and 7 berths including a ro-ro one – will be able to handle 12 million tonnes of cargo per year.

The Port and Free Zone Authority had pledged to invite bids for the Doraleh port project in the last quarter of 2012, but declined a request for an update on the status of the bids. **PH** 

However, completion is not expected until 2040. When it is complete, the port will consist of a 16-berth container terminal to handle around 9.5 million teu, an automotive terminal, a liquid bulk handling facility, and developed connecting road and rail infrastructure.

"While the South African economy overall will benefit from the port's construction, the main impact will be felt in KwaZulu-Natal [KZN], and specifically the e'Thekwini Municipality," said Descoins. "It will add to the city's infrastructure proposition and in so doing, will be an important catalyst for attracting investment to the city and thereby creating economic growth and jobs for its people," he added.

Meanwhile, Transnet needs to get environmental permissions to enable it to kick-start this project and to carry out required environmental impact assessment and authorisation processes. It has also not yet raised the required capital needed. In addition to this, the relocation of the existing single buoy mooring facility needs to be addressed.

What has been active and evident is the resistance from the local community opposed to the expansion project and the suggestion from some industry experts that the port under the current flow will be able to cope with the demands for at least the next 10 years.

Fear of being displaced by ancillary back-of-port development is due to the city authority revealing its own ambitious plans to develop a back-of-port logistic parks occupying most of the area between the existing and the new port.

Desoins remains positive. "The initial viability studies indicate that the proposed Durban Dugout Port will result in approximately R11.3 billion per annum being added to KZN's GDP and approximately 46,000 direct and indirect jobs are expected to be created in KZN per annum averaged over the first 30 years of the project," he said. PH

# Africa wants delay for EU trade deals

African nations are seeking an improved deal on economic partnerships, reports *Jem Newton* 

enya hopes to soon join four former European colonies that have ratified interim economic partnership agreements (EPAs) with the European Union (EU) – Mauritius, Madagascar, Seychelles, and Zimbabwe. The country's deputy president, William Ruto, said after talks with EU officials that Kenya wants to fast-track EPA negotiations, but any agreement must consider the needs and concerns of farmers and traders in the East Africa Community (EAC).

Ruto also called for value to be added to agricultural exports to the EU and other international markets, to generate more jobs in the region.

However, generally in Africa, governments are asking for more time to reach a consensus with the EU on renegotiating trade relations. The EU is keen to reach new economic partnership agreements with its African partners to align trade relations with World Trade Organization (WTO) requirements.

African nations fear the agreements will put their economies at a disadvantage, since the EPAs will change hitherto non-reciprocal and preferential trading terms into a system based on reciprocity in liberalisation.

The European Commission (EC) would like African partners to ratify EPAs by 1 October 2014. Many African governments say they feel pushed into agreeing trade agreements that they do not consider advantageous to them and without the full consultation and support of their citizens and business communities, particularly small and medium-sized enterprises.

Frustrated with the slow pace of EPA negotiations, which started in 2002, the EC is threatening to remove preferential market access from the so-called Africa, Caribbean, and Pacific (ACP) countries – former colonies of EU member states – that fail to ratify EPAs this year. The ACP countries that miss the October deadline risk losing the trade advantages they currently enjoy under expiring EU trade deals.

"ACP countries fear a massive loss of revenue [from EPAs] resulting in budget cuts. Some countries such as Togo draw up to one third of their entire budget from ports revenue, ie customs duties from the preferential trade with the EU," a spokesman for the Brussels-based African Forum told *P&H*.

African governments also fear that opening their

# Ports prepare to compete for enlarged EU intermodal kitty

Aid for EU transport infrastructure projects is to be tripled over the 2014-20 period but ports will have to fight the rail and roads lobbies for a share of it

uropean Union (EU) ports can look forward to a relative embarrassment of riches in terms of EU participation in the funding of their investment projects in 2014-20, if the European Commission is to be believed.

The budget allocation for the period, agreed in October last year after months of discussion and highlevel inter-government haggling, provides for funding totalling €26Bn (\$36Bn) for EU transport infrastructure projects – more than three times the amount available over the preceding 2007-13 multi-annual financial framework, according to the commission.

However, although 2014 is already well under way, funds have yet to start flowing from the new 2014-20 allocation.

For the time being, awards are still being made under the 2007-13 framework. Recent European Commission contributions to a terminal extension and upgrading of intermodal infrastructure at the Italian port of Genoa and improvement to intermodal ro-ro facilities at the French port of Dunkirk were decided on the basis of a call for projects made in 2012. The same goes for a  $\in$ 1.04M contribution to studies on an LNG bunkering network in Spain.

Funds will continue to flow under the 2007-13 financial framework, moreover, following a final €350M call for projects in December last year, largely funded from resources allocated to unrealised projects. The deadline for projects to be submitted fell on March 11.

However, this continuing activity under the previous



ACP countries are former colonies of EU member states domestic markets to European exporters will expose them to unequal competition with products highly subsidised by the EU. This in turn could also have a detrimental impact on regional economic groups

financial framework has not prevented preparations from getting under way on the new one.

A commission source told *P&H* that the European elections in May and the subsequent appointment of a new European Commission should not hold up the process of launching the first call for projects under the new framework before the end of the year.

This would allow for the first projects to be adopted "not too late" in 2015, said the source. European Union ports organisation ESPO, which is following progress on the new funding framework closely, confirmed this. Secretary general Isabelle Ryckbost told *P&H* that she was hoping to see a first call for projects "after the summer".

With the new budgetary allocation comes a new policy, which the commission describes as the most radical overhaul of EU infrastructure policy since its inception in the late 1980s.

Although funding will continue to be concentrated on the Trans European Transport Network, it will be channelled through the new Connecting Europe Facility, based on nine multi-modal "corridors" that together make up what the commission calls the "core network".

Ryckbost said that this approach posed a challenge to ports, as they are less accustomed to framing their projects as part of the EU's wider multi-modal corridor strategy than the rail and road lobbies, already familiar with the corridor approach.

### APC countries fear a massive loss of revenue [from EPAs]

and communities, such as EAC and the Economic Community Of West African States (ECOWAS).

Finally, according to the African Forum, African governments view EPAs not as vehicles of development co-operation but as neoliberal trade agreements that disadvantage emerging economies.

Last summer, an EPA negotiations co-ordination meeting organised by the African Union (AU) in Tanzania concluded that African regions should refrain from signing EPAs until after the Brussels summit, where they want a discussion of EPAs to be added to the agenda.

The stance of the EC is that the EPAs are needed to align trade relations between the EU and its ACP partners with WTO rules, especially the General Agreement on Tariffs and Trade (GATT) agreement, which aims to outlaw the preferential treatment of ACP countries, since it discriminates against other emerging economies on the basis of non-objective criteria. The Commission also points out that, far from steamrollering the ACPs into hasty agreements, EPA negotiations were due to be completed six years ago, in 2008. **PH** 

"I think ports are less in the habit of asking for money within the TEN-T framework than other transport modes," she said. "So, now, we have to be more proactive on that because it's true that we have to show that we have projects, that we need this money, and that we want to do something with it."

ESPO is looking to help its members in this respect by gathering information on projects in progress or planned among its members. Its objective is to encourage co-operation between ports and to provide the European Commission's transport directorate, DG Move, with as clear a picture as possible of the industry's needs.

The organisation is no longer quibbling over the amount set aside for transport projects in the new framework. It should also be remembered that the €26Bn allocation is only seed capital for core network projects that the commission says will cost €250Bn.

ESPO had campaigned for a €32Bn allocation and expressed disappointment when this amount was finally reduced last year.

Ryckbost said that it was true that the allocation had been less than the organisation had hoped for, but admitted that it was nevertheless "not bad" compared with that received under the previous framework.

"In the end, being realistic, I think we should be happy with what has been decided," she said. **PH** 

### Re-use, repurpose, recycle

Alternative methods of sediment treatment and disposal can open opportunities for beneficial re-use and reduce costs, writes *Stephen Cousins* 

amburg Port Authority (HPA) has embarked on an ambitious campaign to reclaim one of its former harbor basins in a bid to create new land for businesses.

During the spring, dredging contractor Strabag Wasserbau, formerly Josef Möbius, worked to stabilise the bottom of the Dradenau harbour, which is characterised by a weak sub-ground of silt, by spraying sand in thin layers and pumping out the water.

A subsequent 13-month project, currently out to tender, is due to start this summer and will see the harbour bottom raised by placing several layers of wet sand and silt.

In an effort to boost the project's environmental credentials, the project will make beneficial use of

around 300,000m<sup>3</sup> of dewatered fine silt produced at the nearby Mechanical Treatment of Harbour Sediments (METHA) plant, which will be placed in the basin in alternating layers with sand to help raise and stabilise the land.

"This is a landmark scheme for the port because it means an entire year's production of silt from the METHA plant will find a beneficial use rather than going to one of our two disposal sites," explained Heinz-Dieter Detzner, dredging engineering officer at the HPA. "Although this is a pilot project, if successful we will look to extend it to other areas of the port that require filling."

The treatment of contaminated material in facilities such as Hamburg's METHA plant represent one of a range of alternative methods of dealing with contaminated



hotos Odebrecht

Geotubes sediment dewatering site on Isla Pombeba in Brazil sediment that avoid the need for expensive and environmentally unsustainable methods of disposal. A similar large scale mechanical dewatering facility is run at the Port of Antwerp, known as AMORAS (Antwerp Mechanical Dewatering, Recycling and Application of Silt), which through a seven-stage process converts contaminated dredged sediment into compacted filter 'cakes' designed either for beneficial reuse or confined disposal. Meanwhile, ports in Brazil are making use of low carbon TenCate Geotube technology, which contains and dewaters contaminated sediments inside compact fabric tubes, providing a more economic alternative to upland disposal facilities.

According to EU legislation, dredged material that is too contaminated for relocation or direct re-use must be treated and/or directed to confined disposal. The most common solution used by ports is confined disposal, either in sub-aquatic sites that are 'capped' with clean material or upland confined disposal facilities, the latter being more costly.

International guidelines drawn up by PIANC and the Central Dredging Association (CEDA) recommend a range of technologies for treating contaminated sediment, the main objectives being to find a beneficial re-use, such as creating a construction material; to reduce the volume going into confined disposal; and to actively encourage the reduction, removal or immobilisation of contaminants.

In most cases, contaminants are bound to the fine fraction of the dredged material and treatment is carried out using techniques such as dewatering, separation and stabilisation. Simple technologies only allow a restricted part of the contaminated material to be treated for beneficial re-use, with the majority of the material still requiring disposal. More advanced techniques, such as thermal immobilisation, can also treat the heavily contaminated material ready for beneficial re-use, although these technologies are more costly and generally only applied on a small scale.

The large-scale dewatering facility AMORAS, in operation since 2008, is designed to provide a spacesaving solution for contaminated sediment disposal in the port area by compacting material into small filter cakes of dry matter. AMORAS was developed in collaboration with the Flemish government and replaces the port's previous, unsustainable strategy of sub-aqueous silt-capping.

Over the past two and a half years, the facility has disposed of around 1.3M tonnes of filter cakes, produced from around 2.6M  $m^3$  of sediment taken over 2,500 dredging cycles.

Conditioners such as lime, gypsum and cement are added to the dried sediment to prevent the cakes from decomposing, also protecting the environment from any harmful substances that may be present.

The port has also completed trials of potential beneficial re-uses for the material with a plan to roll them out on a more permanent basis, according to Maarten Van Esbroeck, an engineer at the Flanders Department of Mobility and Public Works. "We ran some pilot tests through the Valorisation of AMORAS project, which looked at re-using the filter cake material in bricks, expanded clay aggregates and as a foundation used in roads," he said. "Some small constructions were built using sediment bricks as well as a test road. The tests were very promising and the next step will be to put that knowledge into practice."

An alternative to mechanical dewatering is the use of large fabric geotubes, supplied by Dutch firm Tencate, which when filled with contaminated dredged material allow liquid to bleed out through the porous surface whilst retaining the fine grain materials and contaminants inside.

Each tube is fabricated by sewing panels of woven engineered filtration textile together to form an elongated cylindrical tube with a circumference of up to 35m and lengths up to 100m.

A typical geotube can hold around 1,000m<sup>3</sup> of sediment and due to the absence of chemical processes and moving parts could be considered a more environmentally friendly, low carbon alternative to mechanical dewatering.

Geotubes have recently been installed by the Port of Rio in Brazil on the island of Pombeba as well as at Base Naval, the Brazilian Navy's new nuclear submarine port located in Sepetiba Bay, to dewater sediments dredged from within the breakwaters of the new facility. In addition, the GE Oil and Gas port facility in Niteroi, inside Guanabara Bay across from Rio, will start a geotube containment and dewatering project in May.

"Geotubes provide clients with multiple cost benefits by allowing the use of contaminated sediments to replace expensive imported fill and eliminating the need to buy extra land for disposal sites," said Tom Stephens, director of South American operations at Tencate. "They also allow projects to be constructed within limited governmental agency funding because the product is less expensive than traditional alternatives." **PH** 

**MORE INFO:** www.amoras.be

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### Underwater sound: dredging Maasvlakte 2

This article is based on an extended version that appeared in IADC's journal Terra et Aqua in September 2013, with additional material from the Maasvlakte 2 sustainable report

Maasvlakte 2 from the air... the port authority has monitored the sound produced during dredging at the site he first phase of the 2000 hectare project on the Port of Rotterdam was finished in April 2013 and, once operational, the site will be rich in sustainable attributes such as initiatives for cleaner trucks and renewable sources of energy.

"Investing in sustainable innovation, the port authority will develop a new port and industrial area in Maasvlakte 2 that is based on the balance of ecological, social, and economic considerations," said Port of Rotterdam's Maasvlakte 2 sustainability report. Since the start of its construction in 2008, the port authority has worked in collaboration with scientists to map out its impact on the coastal area, the sea and the creatures that inhabit it.

One of the licensing conditions was the monitoring of underwater sound produced during construction, with an emphasis on the establishment of acoustic source levels of trailing suction hopper dredgers (TSHDs) during their various activities: dredging, transport and discharge of sediment. It is the first Dutch study to focus on how much sound is produced by sand extraction dredgers and how far this sound travels underneath the surface of the water. It considers how much of this sound is heard by fish and marine mammals and how they respond to it. "In virtually every impact prediction, the researchers have decided it is better to be safe than sorry and have taken a worst-case scenario as their starting point," said the port in the sustainability report.

To determine the effects of underwater sound generated by dredgers on fish and marine mammals,

model calculations were made for the Environmental Impact Assessment (EIA) on the basis of the best knowledge available at the time. From these calculations it emerged that the sound level below the water in the vicinity of dredgers can exceed the hearing threshold of fish and marine mammals. However, at a distance of more than a few hundred metres away from the vessel, it was thought that the threshold for avoidance would not be exceeded.

The port authority asked TNO (Netherlands Organisation for Applied Scientific Research) to carry out measurement and analysis activities for this monitoring. During an initial measurement campaign in September 2008, background measurements were performed in the absence of dredging. A year later, when dredging was under way, source level and background sound measurements were taken in the dredging area. In a final phase of the study, possible effects of underwater sound on marine fauna were considered for scenarios with and without dredgers.

Underwater sounds can affect marine organisms in different ways depending on the sound pressure level and the frequency. Literature written by Richardson et al, 1995, and Kastelein et al, 2008, generally distinguishes between zones of responsiveness, which range from a zone in which the sound is heard but where the animal does not respond, to a zone in which severe physical harm or death can occur. In between, there are zones in which behaviour is affected, with the animal swimming away from the sound or being attracted to it, and a zone where the animal's hearing may be affected temporarily or permanently: temporary hearing threshold shift (TTS); and permanent hearing threshold shift (PTS).

A new method has been developed for the analysis of the measured radiated sound associated with the various activities of the individual dredgers. TSHDs produced most sound when they were travelling to and

#### Existing Maasvlakte site

- Maasvlakte 2
- Approved sand dredging areas/ borrow areas
- The location where sand was dredged for the construction of Maasvlakte 2

Recording sites: Transport of sand

- Background sounds
- Sand dredging

Construction area, including bottom discharge, rainbowing and pumping ashore



from the borrow and discharge areas at relatively high speed. The next loudest activity was sand dredging.

During pumping ashore and rainbowing, the source levels in the frequency range between 500Hz and 10kHz were comparable with the level of vessels dredging sand, but significantly lower at higher and lower frequencies. The lowest sound levels were produced during the bottom discharge of sand.

For the assessment of effects on animals, the criteria recommended by Southall et al (2007) were adopted. Relevant data to develop thresholds for effects of underwater sound on animal behaviour were not available and so it was decided to focus on the risk that animals experience a temporary hearing threshold shift. This risk is associated with the total underwater sound dose that animals are exposed to during 24 hours. TTS onset may occur when the cumulative weighted sound exposure level received by an animal exceeds a specified threshold level. It is likely that this is a safe choice because there are indications that, at sound levels below the TTS threshold, there are no changes in behaviour in some marine mammal species, including the seal.

To establish a picture of the possible maximum effect distances, calculations were made to determine where, in the area of  $15 \times 15$ km under study, thresholds for TTS onset would be exceeded by sound from ships in the area if an animal were to remain stationary there for a period of 24 hours.

The worst-case calculations for animals spending 24 hours at 1m above the seabed – which is not realistic for marine mammals because they have to breathe – produced the following results:

■ For fish, the size of the area affected increases from 23km<sup>2</sup> to 72km<sup>2</sup> as a result of dredging activities. The areas affected for smaller fish are 68km<sup>2</sup> and 97km<sup>2</sup> for

regular shipping only and shipping including dredging, respectively

The area in which seals can suffer TTS is 10km<sup>2</sup> in the scenario with regular shipping traffic only and 72km<sup>2</sup> if there is also dredging activity

For harbor porpoises, these areas are 0.0 and 0.5km<sup>2</sup> respectively

The areas are much smaller for animals closer to the surface. The threshold value for a permanent hearing threshold shift (PTS) was not exceeded in any of the cases studied, nor in any of the species in question.

In order to obtain an impression of more realistic effect contours, calculations were made to determine the extent to which fish, seals and harbor porpoises swimming once past a vessel dredging sand at a relatively low relative speed of 1m per second (3.6km per hour) may suffer TTS, or PTS. Seals swimming past a stationary vessel dredging sand will only suffer TTS if they are swimming 1m above the seafloor at a distance of 90m or less from the dredger. If they are swimming at 1m below the surface, they will suffer TTS at approximately 11m from the dredger. Harbor porpoises will not suffer TTS in any of the scenarios studied.

The distances at which fish are affected are larger at 1m above the seabed: 100m for fish weighing more than 2g and 400m for smaller fish.

In the case of fish swimming closer to the surface – at a depth of 1m – the criterion is not exceeded for fish weighing more than 2g and the distance will be 20m for smaller fish. Again, the threshold value for a permanent threshold shift (PTS) was not exceeded in any of the cases studied, nor in any of the species in question.

From this it can be concluded that the effect contours around a dredger calculated in this study are lower for harbor porpoises and seals than the 'few hundred metres' mentioned in the EIA and that they are of the same order of magnitude for fish.

In reality, marine mammals never stay at the same location for a long time in natural conditions; they are constantly swimming in order to feed and to move from one place to another.

Calculations were therefore made for the situation in which seals and harbor porpoises swam for a period of 24 hours at a realistic speed of 6km per hour along the north-south lines in the area measuring 15 x 15km. This equates to 9.6 transits in 24 hours. Again, a worst-case scenario was established with calculations conducted only for animals swimming 1m above the seafloor for a period of 24 hours. In this rather unrealistic scenario – marine mammals are unable to breathe underwater – less than 0.1% of the harbor porpoises and seals are exposed to the risk of experiencing a temporary hearing threshold shift (TTS), even in the presence of dredging activities representative for the construction of Maasvlakte 2. **PH** 

MORE INFO: www.iadc-dredging.com; www.maasvlakte2.com

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# electric Market States States

A switch to electric-powered cranes and yard equipment can help ports and terminal operators reduce their reliance on expensive and polluting diesel fuel, but knowing which machines to purchase and in what configuration can be complicated. **Stephen Cousins** asked the experts

> iesel engines are still the world's main source of power for cranes and port handling equipment and reducing their emissions is considered key to mitigating the harmful effects of nitrous oxide and particulate matter in and around terminals, as well as meeting greenhouse gas (GHG) reduction targets.

> The EU has made a unilateral commitment to reduce overall emissions from its member states by 20% by 2020, compared to 1990 levels, a figure that could increase to 30% if other major economies agree to undertake their fair share of reductions, and as part of that commitment the activities of port terminals will play an important role.

There are also economic reasons for reducing the industry's reliance on diesel. During the 1980s and 1990s, diesel was one of the cheaper fuels, but prices have risen steeply over the last 10–15 years, and between 2009 and 2010 prices in Europe alone increased by 70%.

Efforts to find a cleaner and cheaper alternative to diesel are driving take-up of electric-powered port equipment, including hybrid diesel-electric and all-electric rubber-tyred gantry cranes (RTGs), ship-to-shore cranes (STS), reach stackers, rail-mounted gantries (RMGs), and automatic guided vehicles (AGVs). Figures from the Port Equipment Manufacturers Association (PEMA) revealed that by 2012 an estimated 20% of RTGs worldwide were electrified, which is major progress given that these machines can be responsible for up to 50% of a port's emissions.

The International Association of Ports and

Harbors (IAPH) is also promoting the use of electric equipment, emissions control systems, and cleaner fuels, through its World Ports Climate Initiative.

Electric-powered equipment can dramatically reduce carbon emissions by taking power from the grid, which is produced far more efficiently and more cheaply than using a diesel generator. In addition, electric vehicles have fewer moving parts and therefore require less maintenance, and they generally produce less noise, which is an important consideration if a container terminal is near a residential area.

Deciding the right way to electrify port equipment remains a complex affair and specific installations will depend on the operators' capital and operational budget, operational profile, local environmental legislation, and many other complex factors.

"Defining all the cost and benefits involved in electrification is difficult," explained Mario van den Heuvel, manager for competence and retrofits at Konecranes. "The most important factor is to consider the terminal's specific operational mode and to choose the ideal system to connect machines to the terminal's power grid."

Therearetwomainmethodsofelectrifyingterminals, either by installing a permanent above-ground bus bar power system or a cable drum reel system. The

EUR75,000 (USD103,882) of fuel per year, whereas an electric retrofitted E-RTG might only use EUR30,000–40,000 of electricity, and there are also savings related to maintenance of the diesel generator set, which you will not be using as much."

However, the capital investment of retrofitting is not justified when the existing equipment is over 10 years old in which case the ROI is unlikely to be significant, he added.

One advantage of buying all-electric yard equipment is the system's ability to regenerate power. On electric yard cranes, the energy that would have been lost through crane braking or lowering containers can be captured and reused. Electric motors store energy generated for use when accelerating, therefore reducing the overall energy needed. Conversely, a retrofitted diesel crane that has retained its diesel drive system is unable to perform the same function.

"If you lower a load you will have to burn off the energy using the system banks, which is much less efficient," said Fredrik Johanson, marketing manager at ABB, which supplies electrical and automation equipment for controlling the movement of container cranes and ship unloaders. "At present our machines can recover maybe 85% of the power used, with the remainder lost due to internal friction in gear boxes, ropes and sheaves, and other factors, although we are working on innovations to reduce that margin."

All-electric machines also incorporate automated functions designed to increase efficiency, for example GPS location technology to enable cranes to reduce travel times or the ability to operate at night without a driver, helping further reduce fuel costs and carbon emissions. "Automation is what the market is asking for to increase efficiency and productivity, and electrification is fundamental to making that happen," adds Johanson.

Automation is the key to the operation of APM Terminals Rotterdam at Maasvlakte 2, which is set to become the world's first facility to be free of all  $CO_{2^{\prime}}$  NOx and particulate emissions, when it opens in November this year.

The terminal will be the first to implement Gottwald's battery electric-powered Lift AGVs, 37 of which will streamline container transport and storage in the container yard. The LAGV's integrated container lifting mechanism enables it to place containers directly onto the stacking crane rack, which increases productivity by decoupling the operation between AGVs and cranes. The units will also serve an on-dock rail terminal, something that has previously only ever been performed manually in terminals.

Ireland-based Liebherr Container Cranes (LCC) builds electric-powered STS and RMG cranes and fully electric E-RTGs, with the majority of its recent E-RTG orders headed for South America. The manufacturer says electrification can reduce operating costs in terms

c o s t l y and requires s i g n i f i c a n t alterations to the yard, the latter may require trenches to be dug or other measures to ensure that top loading equipment, such as reach stackers, do not run over

former

is more

cables, causing damage or accidents.

Where some operators will be looking for a turnkey solution, most will be looking to integrate an installation into an existing yard and to help them develop a solution, equipment manufacturers, or engineering consultants such as Aecom, will often team up with infrastructure and electrical component suppliers to provide an evaluation of the yard, the nature of the operation, and then based on these findings, draw up a proposal for the most beneficial installation.

If a terminal has invested in diesel-powered equipment recently, retrofitting a number of existing machines with electric systems might make more sense, said van den Heuvel. "In this case it is important to calculate the likely return on investment (ROI) of retrofitting. The fuel consumption savings can be quite substantial. For example, an RTG might use about

#### **CRANES & YARD EQUIPMENT**





(top) Connecting yard equipment to the local grid via cable reel is an alternative to using electric bus bars

(bottom) Liebherr electric RTGs at Sharjah Container Terminal, UAE of the need for lubricants, maintenance requirements and electrical energy costs. "When comparing electric to diesel, the local price of diesel to the port when compared with the local price per Kilowatt hour will be the key factor," said Trevor O'Donoghue, marketing manager at LCC.

However, productivity-wise the firm's advanced diesel RTG performs better than electric, he says, harnessing features such as simultaneous drive motion and an eight rope-reeving anti-sway system said to "substantially reduce" the overall cost per box moved.

Sweden-based Bromma supplies a range of allelectric spreaders for yard cranes including RTGs, RMGs and automatic stacking cranes, which it said are comparable price-wise to their non-electric equivalents, whilst offering significant operational savings.

"An electric spreader is relatively lightweight and only uses power when it is operating, which is a fraction of the time the crane is running, unlike a hydraulic spreader whose motor needs to be constantly running," said Lars Meurling, VP marketing and product business development at Bromma Conquip and vice-chair of PEMA's safety committee. "We estimate, based on number of assumptions, cost savings of between USD9,000–11,000 per spreader per year, which translates into around 16% of the spreader value. This includes the reduced fuel requirement and reduced cost of maintenance."

The corresponding reduction in emissions is equally impressive, equating to about 200 tonnes of  $CO_2$  over 10 years compared to a conventional hydraulic spreader, said Bromma. "To put that in perspective, to consume the same amount of  $CO_2$ , a Volvo V70 estate car would have to drive 1.7 million km, or 42 turns around the globe," added Meurling.

For these reasons, global interest in all-electric spreaders is high. Over the past five years, over 90% of all spreaders Bromma supplied to Africa, Europe, the Middle East, and South America have been all-electric.

The picture is less impressive when it comes to all-electric STS spreaders, however, which are significantly more expensive than their hydraulic equivalent, incorporate many more electrical motors, meaning higher maintenance costs, and provide fewer operational savings. Bromma has delivered 25–30 units globally since 2007.

"The financial justification for all-electric STS spreaders tends to come from the environmental side. The technology is much more complicated, which creates more opportunities for issues to emerge, however, we have made changes to our latest generation of STS spreaders and we expect prices to come down in future as the components become cheaper," said Meurling.

It is reassuring to see the shipping industry's growing awareness that a cleaner, greener future means being less reliant on polluting-diesel machinery. **PH** 

#### Australia bulks up

A refurbished 1,250-tonne coal shiploader for Adani Mining was put in place at north Australia's Abbot Point coal port, SAL Heavy Lift announced in early April. The upgrade of the 20-year-old loader gives it capacity to load bulk carriers at 7,000 tonnes per hour – up from its original 5,000 tonnes per hour.

SAL transported and installed the ship loader at the Queensland port, in what it described as a year-long, technically complex project.

Meanwhile Australia's east coast should see a new grain depot developed at Port Kembla, due to be operational in early 2016. On 27 March, Australian company Qube Holdings announced it is investing USD50 million in the joint venture with Hong Kongbased Noble. Quattro Grain plans to export up to 1.3 million tonnes of grain annually. Moving west, Port Hedland in Pilbara forecasts it will top 340 million tonnes this financial year up from 280.2 million tonnes in 2013. Speaking at IAPH's conference in Sydney in April, Port CEO Roger Johnson, predicted Hedland, already the world's biggest ore port, would account for 27% of global ore exports by 2014.

"Port Hedland already exports 24% of all global iron ore exported by sea," he said. "Average growth since 2009 has been 20% per annum." Export volumes out of all West Australian ports account for 42% of all the global shipments.

Exports are expected to spike out of the port in the coming months as both BHP and Fortescue have raised their export targets in anticipation of a new entrant. Gina Rinehart's Roy Hill project was confirmed and work on the berth is under way.



India's plans to increase container capacity are starting to become a reality as projects are awarded and deals are signed, reports *Christina Anto* 

n anticipation of growing trade in India, New Delhi is ramping up container-handling capacity at the state-owned major ports. The Cabinet Committee on Economic Affairs (CCEA) recently approved five port projects worth Rs176.3Bn (\$2.8Bn) to augment the country's port capacity, of which four are container terminals. The terminals, once operational, will double container-handling capacity from 11.57M teu today.

Among the major port projects is the muchdelayed 4.8M teu fourth container terminal at Jawaharlal Nehru Port Trust (JNPT), the 4.2M teu mega-terminal at Kandla, the 1.4M teu terminal at Ennore, and the 1.2M teu terminal at Kolkata, near Diamond Harbour that will be off the existing port.

Another delayed mega-terminal project is also coming up at Vizhinjam in Kerala.

Other terminal and berth projects are also under way. JNPT has awarded a minor terminal project to DP World, while Visakhapatnam Port Trust awarded a \$132M container berth expansion project to Visakha Container Terminal Private Limited (VCTPL), a joint venture between DP World and United Liner Agencies of India, which is currently operating the container terminal at Visakhapatnam.

New Delhi hopes these new projects will not only attract the latest state-of-the-art technology in line with global standards but the new facilities should reduce transaction costs by improving efficiency in handling operations, and the additional capacity is expected to give a shot in the arm for India's foreign trade.

At the signing of the JNPT agreement, India's shipping minister G K Vasan said: "In India, container volumes are expected to witness an exponential growth. Container terminals at major ports help in furthering international trade. Building new container terminals will help meet the growing global demand."

The most anticipated project is the fourth container terminal at JNPT. After a prolonged delay of more than a decade, the project has finally taken off. The terminal will have a quay length of 2km and a capacity of 4.8M teu/y. Though the official project cost is pegged at \$1.3Bn, industry officials believe it may be upwards of \$1.5Bn.

PSA International recently won the mandate to develop the project, edging out the only other bidder – a joint venture between Gautam Adani-owned Adani Ports and Special Economic Zone Ltd (APSEZ) and Mediterranean Shipping co-owned Terminal Investment of South Africa. PSA quoted the highest percentage of revenue share at 35.79%. Once completed, the terminal will double JNPT's current capacity. The letter of award (LOA) has already been issued to PSA.

The same project was awarded to a consortium of PSA and ABG Ports in India in 2011. They offered 50.828% of revenue share but subsequently refused to sign the contract, forcing the port authorities to invite new bids. JNPT had encashed the bank guarantees of about \$10.5M.

JNPT's three existing terminals – DP World-run Nhava Sheva International Container Terminal (NSICT), the APM Terminals-run Gateway Terminals of India (GTI), and JNPT-run Jawaharlal Nehru Port Container Terminal (JNPCT) – have a cumulative capacity of 3.6M teu but, at 4M teu, the port is handling more

Five port projects worth \$2.8Bn have been approved, including four for containers, which when operational will double India's container-handling capacity than its designed capacity.

Another project coming up at JNPT is a 330m berth container terminal by DP World at a cost of \$200M. The terminal, once operational, will add 800,000teu of container capacity to the port.

Anil Singh, senior vice-president and managing director, DP World Subcontinent, said: "For the last five years, India's premier port has been in critical need of capacity with container trade rising. Nhava Sheva (India) Gateway Terminal will provide the immediate relief that the trade community urgently requires and we at DP World are fast-tracking the project to commence operations as early in 2015 as possible and we have already placed the order for the cranes that will be installed."

On the west coast, Kandla Port Trust (KPT) is also building a mega container terminal. The project is to be developed on a build-operate-transfer (BOT) basis outside Kandla Creek at Zero Contour, about 1km east from the dry bulk terminal now being developed near Tuna-Tekra. The terminal will have a capacity of 4.19M teu for an estimated project cost of \$967M. The terminal hopes to first handle 15,500teu vessels then eventually 18,000teu vessels, following further dredging.

APSEZ and a consortium of Hyundai Engineering and Construction and Concast Infratech were the two bidders for the tender to build the terminal. However, the port is now reducing the size of the project to attract global bidders, as it did not receive any request for proposal (RFP) from either bidder.

The two had sought flexibility to build the terminal in phases according to cargo demand. However, the tender terms framed by KPT compel the private operator to build six berths with a capacity to load



Indian Shipping Minister G K Vasan and Minister of State for Shipping Milind Deora with Sultan Ahmed Bin Sulayem, chairman of DP World, inaugurating the ceremonial plaque for the new 330m terminal at JNJP



Several projects are underway or planned across India's coasts to increase the nation's container capacity 4.2M teu a year irrespective of cargo demand.

R Murugadoss, chief engineer at KPT, told *P&H:* "We did not receive any RFP from the two bidders. Hence the port now plans to restructure the project. It is at the initial stage so nothing can be said now. The scale of the project will be brought down to make it attractive for potential bidders."

The project aims to cater to the growing container handling demand in the hinterland, especially Gujarat, Rajasthan, Madhya Pradesh, and northern India.

Development of the Diamond Harbour Container Terminal in Kolkata on the east bank of the river Hooghly was recommended by a high-powered committee set up by the shipping ministry.

The project site, about 50km south of Kolkata Port by road, is envisaged at an indicative cost of about \$249m. The first phase of the project will comprise 900m of quay, a design capacity of 1.2M teu, and would be able to handle two container ships at a time.

According to the tender, the successful bidder will be responsible for design, engineering, financing, procurement, construction, operation, and maintenance of the project under and in accordance with the provisions of a 30-year concession agreement.

Kolkata Port Trust (KoPT) was forced to extend the last date of submission of bids for its container

terminal project for the third time to 31 March as the second round of bidding drew few bidders. A senior Kolkata Port official told *P&H*: "We did not receive any request for proposal hence we were forced to extend the last date of submission of bids to 31 March 2014." The earlier date set for the container terminal at Diamond Harbour was 17 February which was then extended to 14 March.

Since then, the project has attracted five bidders: APSEZ, APM Terminals, Hindustan Ports, a consortium of Concast Infratech and Hyundai Engineering & Construction, a consortium of IL&FS Maritime Infrastructure and Pembinaan Redzai.

Moving to the east coast, APSEZ has won the bid to build a container terminal at Ennore Port Ltd (EPL), the only corporatised government-owned port in India. APSEZ, India's biggest private port operator, cited a revenue share of 37% for building the new terminal with an investment of \$205M.The container terminal will have a berth length of 730m and be able to handle 1.4M teu a year.

VCTPL has bagged the container berth expansion project at Visakhapatnam Port on the east coast, where it operates the existing container terminal. The \$132M expansion project will help the port handle 1.05M teu, up from 0.5M teu currently. After negotiations, VCTPAL raised the revenue share from 10.044% to 11.044% in the design, build, finance, operate and transfer (DBFOT) public private partnership (PPP) project.

The project works – which include constructing a berth, erecting higher capacity cranes, handling equipment, and reclaiming more than 40ha – are expected to be completed in the next three to four years. Once the expansion is over, the terminal will have one of the east coast's longest quay lengths at about 845m and be able to handle bigger vessels.

Vizhinjam Container Terminal project – the \$807M deepwater container transhipment project in Kerala – is being proposed as a public/private partnership on a BOT basis. Vizhinjam has the added advantage of deeper berths and an approach channel of up to 20m depth, enabling it to accommodate the larger ships of the future with lower costs for approach channel maintenance.

Five major port operators: Gammon Infrastructure Projects; a consortium of Concast Infratech and Hyundai Engineering & Construction; Essar Ports; Adani Ports; and Srei-OHL (a consortium of Srei Infra and Spanish construction company Obrascón Huarte Lain) have responded to the global tender floated by Vizhinjam International Seaport Ltd (VISL). **PH** 

MORE INFO: www.vctpl.com; www. vizhinjamport.in, www.jnport.gov.in; www. kandlaport.gov.in, www.ennoreport.gov. in; www.kolkataporttrust.gov.in; www. chennaiport.gov.in; www.mumbaiport.gov.in

### Measuring the ripple effect of canal delay

The completion date for the new set of locks in Panama has been pushed back, but ports in the Caribbean and on the US east coast are still moving forward

Workers busy on the Panama Canal project t was supposed to be a year of celebration, marking the Panama Canal's 100th anniversary. But no-one was celebrating in early 2014, when work stopped on the third set of locks project after a cost dispute between the Panama Canal Authority (ACP) and Grupo Unidos por el Canal (GUPC), the consortium building the locks.

Throughout the Americas, port planners have partially set timetables for their own dredging and capital improvement projects with the Panama Canal expansion in mind. Wharves are being expanded, channels deepened, and cranes acquired to prepare for the larger vessels to arrive upon the new locks' debut.

The question now is whether delays in Panama will translate into delays at regional ports as planners feel less urgency to spend their budgets on capacity upgrades. The contract for Panama's locks project calls for completion by October 2014. Even before the ACP-GUPC cost overrun dispute arose earlier this year, it was evident that the contract date would not be met, with the target already slipping to mid-2015.

As a result of the dispute between ACP and GUPC, work stopped completely over a two-week stretch in February.

Work on the locks was at only 25% of normal levels for several weeks before it halted on 5 February. GUPC restarted some work, at a reduced level, on 20 February.

GUPC and ACP announced a conceptual agreement on 20 February 2014 to resume work on the locks and signed a final deal on 14 March. The compromise calls for the completion of the new locks by the end of 2015. The locks will then require a testing period, implying a full commercial opening in 1Q16 – a little over a year behind the revised schedule.

However, even after the deal between GUPC and ACP, widespread scepticism remains over the project's completion date. In early April, six weeks after construction had resumed, the contractors were still only back to 70% of normal work levels.

"Unless we see the contractor moving at 100%, the date will continue to slip," said Carlos Urriola, senior vice-president of Carrix, parent company of SSA, which operates Panama's Manzanillo International Terminal (MIT). "We have lost a whole dry season as a result of this conflict," said Urriola in an interview with *P&H* in early April. "When the rainy season begins at the start of May, even if the contractor does go back



to 100%, production would normally decrease [as a result of the weather]."

Urriola does not believe canal project delays will impact regional port plans, because the market remains convinced that the expanded canal will be completed eventually. "The canal project is going to be finished and you need to be ready," he said. "On a big project like this, a delay of 12 months is not something people get nervous about."

### Unless we see the contractor moving at 100%, the date will continue to slip

**Carlos Urriola**: senior vice-president, Carrix

MIT is "going ahead as planned" with its own expansion project, affirmed Urriola. "There has been no change, no matter that the canal expansion is delayed." Nevertheless, terminal operator SPRC in Cartagena, Colombia has acknowledged adjustments to its own timetable. In 2013, SPRC commercial director Giovanni Benedetti said that capacity at SPRC's Manga terminal would be increased by the middle of this year. "Considering all of the issues and the delays of the Panama Canal, we decided that it was best to postpone and push it back a year or a year and a half," Benedetti told *P&H* in early April. The newly approved timetable calls for the Manga expansion to be completed by 3Q15.

One potential consequence of canal project delays is that ports that have been slow to dredge for larger ships will have more time to catch up.

For example, the Port of Norfolk, Virginia is already dredged to handle larger vessels. To the extent that the Panama Canal expansion is delayed, the period that Norfolk can boast a depth advantage over other US east coast ports will be shortened. "Our window of opportunity may have gone from 8–10 years to 7–9 years," said Virginia Port Authority spokesman Joe Harris. "But it's not keeping us up at night."

To the idea that canal expansion delays lessen the value of Norfolk's infrastructure investment, Harris said: "That's not the case at all." Harris and other US east coast port representatives pointed out that infrastructure expansion is also driven by the expectation of larger ships arriving through the Suez Canal. "The moves we've made from 2006 forward have been in reaction to growing cargo volumes that come to us via Suez, as well as Panama," said Harris.

"It's easy to deduce that the longer the [Panama] canal takes, the less of a delta there is between the completion date and the completion of expansion projects at any given port," said Jamie McCurry, a senior director at the Georgia Port Authority, referring to the Port of Savannah.

"But it's a misnomer to think we started deepening because the Panama Canal expansion was proposed. Our deepening project pre-dates the Panama Canal proposal. We've long known that we needed to deepen the port, because you need that capacity to fully accommodate even the Panamax ships."

McCurry noted that roughly half of Savannah's Asian liner services are coming via the Suez Canal. "So the bigger ships are already coming and we have to get our deepening done regardless of what happens in Panama," said McCurry.

The Port of Charleston, South Carolina already receives approximately seven post-Panamax ship calls weekly, a spokesperson there confirmed, adding that the port does not foresee canal construction delays changing the competitive landscape. Indeed, the largest impact of canal expansion delays may be that larger vessels will still come to the US east coast, but via Suez.

Setbacks for the expansion project "hurt the route", warned Urriola, referring to the all-water route from Asia to the US east coast via the Panama Canal. "More services are taking the decision to go through the Suez, and we will have to work harder to regain them," he concluded. **PH** 

### SECAs: 'treat owners fairly'

European owners are calling for a level playing field to be applied to ship operators investing in technology and infrastructure to comply with new sulphur norms coming into force next year.

The deadline for implementing Sulphur Emission Control Areas (SECAs) is January 2015 and the head of Europe's shipowners association ECSA has made a plea for fairness in monitoring and enforcing compliance with the new regulations that will impose limits on the sulphur content of bunker fuels.

"First of all, the early adopters, those operators that completed all the investments and are ready to meet the sulphur norms in time, [should not be] penalised," secretary-general Patrick Verhoeven told delegates at a Clean Shipping Conference in Gdansk in March.

"But it equally means that those that can demonstrate that they made the necessary commitments to meet the

norms, but may not be entirely ready by the time the deadline elapses for technical or other good reasons, are given a compliance path within a limited and conditional timeframe."

He said ECSA planned to urge even-handedness at meetings of the European Commission's Sustainable Shipping Forum, of which the association is a member. ECSA also aims to raise other key issues concerning SECA implementation, such as the need to clarify financial support options and legal certainty on applicable rules and regulations in ports.

Verhoeven has also expressed regret that ECSA's call for an early deadline for LNG refuelling points in major European ports has not been endorsed by European governments.

"Shipowners' hopes for decisive action with regard to LNG refuelling points have been shattered," said Verhoeven in a statement.

ECSA had called for the introduction of legislation to ensure that major European

ports will be obliged to have LNG refuelling points in place by 2020 - at the latest - to coincide with the 0.5% limit in sulphur content of bunker fuels within EU waters.

However, FU member states. the Commission, and the European Parliament have jointly agreed on a less ambitious goal.

According to an informal agreement, EU member states will have to ensure that "a sufficient number" of big European ports will have developed LNG refuelling infrastructure for maritime transport by 2025.

In the United States, Shell is reportedly planning to build LNG bunker barges as part of its investment in LNG corridors in the waterways of the US Gulf and the Great Lakes.

Shell marine project engineer Bill Hutchins told the CMA Shipping 2014 conference in March that he expected Shell to soon announce orders for bunker barges to serve the new generation of LNG-powered vessels operating in these two US regions.

**C** Operators ready to meet sulphur norms [should not be] penalised **J** 

> under construction being tracked by ABS

**Patrick Verhoeven** ECSA Secretary-General

WPC However, a spokesman told P&H in April that Shell was still

calibrating these two regional projects and that there are no plans yet to make an announcement about investing in bunker barges.

Hutchins said that initially Shell intends to construct 3,000m<sup>3</sup> capacity LNG bunkering vessels, some of which will be built in the United States to serve the North American market

Hutchins said the first vessels would be designed to serve both inland and deepwater markets. Eventually, however, he anticipated that, as the LNG bunkering market further develops, bunkering vessels would be modified to serve these two sectors more efficiently.

Antwerp Port Authority has also announced that it has appointed Exmar as a strategic partner in the construction of an LNG bunkering vessel for use in the Belgian port. The port has published specific procedures for LNG bunkering as part of new portwide guidelines that came into force in March 2014 to ensure that bunkering operations are conducted as safely as possible (see page 34).

The port said that it saw LNG as part of the solution to ensure sulphur reduction compliance when new SECA legislation comes into force in 2015 in the North Sea and English Channel.



### ABS draws up LNG bunkering guidelines

ABS has created a set of LNG bunkering guidelines for shipowners that plan to build an LNG fleet. Its aim is to make the permit approval process as painless as possible for shipowners.

At the Connecticut Maritime Association annual meeting in March, the Houston-based class society unveiled guidelines to help meet the various requirements from government agencies such as the IMO, US Coast Guard, Transport Canada, and the US Environmental Protection Agency that affect the LNG bunkering supply chain.

"This is the first comprehensive study of its kind that clearly identifies a path forward for regulatory approval of LNG bunkering practices and infrastructure in North America," said ABS Group vice-president Chuck Mitchell.

The report notes that the use of LNG as a fuel for ships is a relatively new concept in North America, driven by both new sources of LNG from shale deposits as well as regulations requiring lower sulphur emissions from ships.

Offshore supply vessel specialist Harvey Gulf in 2011 became the first US vessel operator to contract for the construction of vessels capable of operating on LNG. In February it broke ground on its \$25M LNG-fuelling facility at Port Fourchon, Louisiana.

Over the last year, several US Jones Act carriers such as Totem Ocean Trailer Express (TOTE), Crowley, and Matson have announced plans to build dual-fuel containerships capable of being powered by LNG.



New bunkering barge design approved by ABS

"Currently in the US we're tracking 24 gas fuelled ships, and that's significant," Roy Bleiberg, director US gas development for ABS, told *P&H*. He also noted oil major Shell's plans to create its own bunkering network (see story on page 32).

"The maritime sector is going to be watching over the next couple of years to see how well Harvey Gulf works out, how well TOTE works out, to see if the infrastructure supporting them can be brought to a larger scale," said Bleiberg.

"I think it's hard to estimate the exact number of vessels that will be using LNG here in the US over next five to 10 years, but a lot will be determined by the success of these first ones coming out."

While there are US regulations for waterfront facilities handling LNG, "they are written primarily to address large quantities of LNG imported or exported as cargo", ABS points out. Nevertheless, "there is a robust regulatory framework containing requirements that apply when LNG is being transferred between vessels and shore-based structures, including tank trucks and railcars".

To meet the growing demand for LNG bunkering, US and Canadian regulators are developing standards to help

#### ABS combi bunker barge design

ABS is also helping build LNG marine infrastructure in the United States through new bunkering vessel designs. The class society approved in February the design of a 78m (257ft) LNG combination bunkering barge by Seattle-based engineering firm Elliott Bay Design Group. The vessel was designed for either an articulated tug barge (ATB) or towed configuration. It features a marine diesel fuel cargo tank for refuelling dual-fuel vessels. It includes a tankerman's office, wide walkways to maximise crew safety, and an optional stern ballast tank for trim optimisation and a trunk-level control room that provides increased visibility and operational access.

ensure LNG marine fuel transfer operations are conducted safely. For example, volatility and cryogenic conditions make LNG's hazards different from traditional fuel oil, ABS cautions, so vessel operators must understand the resulting risks.

ABS also stresses that a "simultaneous operations" (SIMOPS) assessment may be required if owners and operators want to perform other activities, such as cargo or passenger loading, while bunkering.

"For LNG bunkering, a SIMOPS assessment would focus on how other activities could increase the likelihood or consequences of an LNG release," ABS said. "For example, if cargo operations are located too close to bunkering locations, cargo could be dropped on LNG piping or hoses during lifting operations, resulting in an LNG release."

Another example is the risk that might be posed by equipment, such as a crane that is not rated for hazardous area service, close to a tank vent during bunkering, the guidelines note.

the cost of planned developments at Takoradi terminal



likely opening of expanded Panama Canal

### Antwerp's LNG bunker guide

Antwerp Port Authority's (APA's) new Municipal Police Regulations, Port Guidelines and associated forms came into force on 9 March 2014 for the first time with specific procedures for LNG bunkering. The authority hopes the guidelines will ensure "bunkering with LNG is carried out as safely as possible".

The port is an active advocate of LNG as fuel in ships marine fuel and has been championing the WPCI LNG project since its inception two years ago. APA therefore decided last year not only to promote but also to actively facilitate LNG as a marine fuel.

It therefore asked the Norwegian classification society Det Norske Veritas (DNV) to develop the procedures that will serve as operational standards for bunkering with LNG. "It also investigated the possible risks of parallel LNG bunkering operations in the port," said the port.

Feedback from a presentation to about 50 stakeholders, from the port and internationally, helped finalise the procedures, which will be accessible to other European ports that wish to make LNG available, said the port.

Eddy Bruyninckx, APA's CEO, said: "Since the technology for



Antwerp Port Authority now has specific guidelines for LNG bunkering

LNG bunkering is still in its early days we expect to build up new know-how during the implementation stage, and the procedures will be refined and updated on an ongoing basis." (see pages 10-11)

The forms in the police regulations for handling LNG will be regularly updated to keep them in line with state-of-the-art safe LNG bunkering, notes the port. The port has also appointed Exmar shipping company as its strategic partner to construct an LNG bunkering vessel. Register (LR) assessed 22 ports in its 'LNG Bunkering Infrastructural Survey 2014', which concluded that shipowners' demand, availability of infrastructure, and pricing were the main drivers for ports considering adapting their facilities.

The survey found that 76% of the ports believe LNG bunkering operations will commence at their port within five years. Another key finding was that 59% of ports surveyed have specific plans for LNG bunkering infrastructure.

"In the short term, ports will rely on third-party specialist suppliers to supply gas from terminals to



ship – mainly by either truck or bunker barges," said LR. "In the longer term, 47% of ports will have dedicated LNG storage capability for bunkering. One port is considering the use of floating storage and regasification units."

In 2020-25, ports expect that 13-24% of bunkers supplied will be LNG, and the report added that societal concerns about LNG as a future fuel are falling.

Latifat Ajala, LR's senior market analyst, said: "Traditional bunkering ports will need to be able to offer gas just as they offer the traditional choice of fuel oil or distillates today. Most LNG-fuelled projects seen so far are very short haul, point-to-point trades where the operator can secure and control gas supply regardless of the global bunkering market's inability to supply LNG.

"But gas can only really take off if supply is more like orthodox bunkering arrangements. Real expansion requires infrastructure and delivery capability. It is clear that ports are planning to develop the infrastructure and capability."

Classification society Lloyd's

### San Diego plugs into shore-based power system

The Port of San Diego switched on its shoreside power system at its Tenth Avenue Marine Terminal in late February. The port hopes the system will improve air quality and reduce greenhouse gas emissions by enabling vessels to 'plug in' rather than run their diesel engines while in port.

Construction on the \$4.25M project began in mid-2013, funded by the port's capital improvement programme (CIP), with NEWest Construction in San Diego as the contractor.

"The port is proud to be a leader in

environmental issues and continues to be a great steward of San Diego Bay," said Bob Nelson, chairman of the Board of Port Commissioners. "By offering shore power, we not only improve air quality for communities nearby, but we also reduce our impact on the planet."

the planned teu capacity for India's ports



### Where have the pirates gone?

Alongside the plunge in the levels of piracy off the Horn of Africa over the last two years. other encouraging signs suggest the scourge may finally be on the wane, maritime security expert Dr Dave Sloggett told P&H.

This year, up until the start of April, only five attempted attacks on vessels operating off the Horn of Africa have been recorded, of which none were successful, he pointed out.

In the same period, no criminal activity in the anchorages or ports of South America has been reported. "This may, of course, be an artefact of reporting cycles and some reports may have not yet been logged," he noted.

"But the total lack of any reported activity does contrast markedly with the full-year figure of 19 robberies in 2013, of which nine occurred by the middle of April. The investment in improved naval capability in nations plagued by criminality is apparently having a positive impact."

While problems still exist in the

The US Environmental Protection

Agency (EPA) awarded \$4.2M in

grant funding for clean diesel

projects at six US ports at its

Advancing Sustainable Ports

Port of Seattle, the Port of

The funding recipients were:

Hueneme, the Port of Tacoma, the

Maryland Port Administration, the

Virginia Port Authority, and the

summit on 8 April.

Port of Los Angeles.

Gulf of Guinea, the levels of activity so far this year are below those in previous years. "At the end of the second week in April seven events had occurred in the Gulf of Guinea in 2014. This is lower than the 11 that occurred over the same period in 2013 in the same area," Sloggett hiahliahted to P&H.

He drew attention to the fact that only two attacks have occurred inside territorial waters - one in Liberia and the other in Cameroon. "The remaining attacks have all occurred off the well-known trouble spot around 50 to 60nm to the south west of Brass in Nigeria," he said. "Even this cluster of attacks will soon come under increased pressure as additional measures being introduced by the Nigerian Navy to focus its maritime assets into this area start to have an impact."

As no attacks have occurred along the coast from Ivory Coast to Benin, some of the measures by the Ghanaian and Togo navies to improve maritime security in the anchorages and the wider territorial waters seem to be taking effect, said Sloggett.

"For those responsible for the safe delivery of trade into and out of these countries along the northern coast of the Gulf of Guinea, the increased vigilance and awareness of suspicious activity in the maritime environment by their navies will help the free movement of trade and have a beneficial impact on their economies," he said.

The fall in incidents also demonstrates what can be achieved by applying the right, he said. "Countries such as Indonesia – where 20 of the 52 attacks recorded by the International Maritime Organization [IMO] up until early April took place – should take note," he said. "It would seem that when targeted investments are made in naval capability the impact on local security is immediate," Sloggett concluded.

#### Cruise ship power monitoring

RINA has introduced its InfoSHIP EM, a real-time tool for monitoring and optimising the hotel power demand on cruise ships.

Aimed at reducing fuel costs on cruise ships, the product could enable ship owners to save more than 10% in hotel load energy consumption, according to RINA.

Paolo Moretti, head of the marine business line at RINA Services, said: "Around half the energy used by a modern cruise ship is for the hotel services. So if we can bear down on that, we can produce substantial cost savings for cruise operators."

InfoSHIP EM is part of the InfoSHIP Energy Governance suite, which was developed by RINA and software house IB Software & Consulting. The suite collects live power consumption data from the hotel services, AC systems, accommodation and lighting systems, and galley and laundry services.

Target values are set by calculation at the design or the installation stage and are then continuously updated using operational feedback and trend analysis. The values are optimised according to the season and area of operation. the operational mode - either in port or at sea - and the time of day.

EPA initiative to "recognise ports that take action to improve environmental performance", the agency said in a statement. "Ports are the main gateway

US grants awarded for clean diesel projects

The summit kicks off a new

for US trade and are critical to our country's economic growth, vet the communities surrounding ports face serious environmental challenges," said FPA Administrator Gina

McCarthy. "Today we demonstrate that through collaboration and innovation we can achieve the goals of economic growth and environmental stewardship."

Most busy ports in the United States are near urban areas, so finding ways to reduce pollution through clean air strategies is high on the agenda for many of them.



### 1000m<sup>3</sup> the amount of sediment a

#### MARITIME UPDATE



## Ballast water debate drags on after MEPC meeting

A coalition of industry bodies has responded to the outcome of the ballast water debate at the IMO's Marine Environment Protection Committee (MEPC) meeting from 31 March to 4 April.

The global shipping industry will struggle to implement the requirements of the Ballast Water Management (BWM) Convention, it warned, until clarity has been provided on the type approval process from the IMO on ballast water treatment systems.

The International Chamber of Shipping (ICS), BIMCO, Intercargo, Intertanko, World Shipping Council (WSC), CLIA, and IPTA criticised the failure of governments at the meeting to address their submission, which also raised concerns about the proposed criteria for sampling ballast water during port state control inspections and the need for 'grandfathering' of existing type-approved equipment that has already been fitted.

Instead, the MEPC has opted to carry out a study examining how ballast water systems are faring, which the coalition said "implies no guarantee as to what actions might finally emerge".

The decision by the "MEPC is that shipowners, and society at large, will continue to lack confidence that the new treatment equipment will actually work, or that it will be found to comply with the standards that governments have set for killing unwanted marine micro-organisms," said the industry bodies.

Progress on bringing the BWM into force has stalled because not enough IMO member states have ratified it.

Currently 38 contracting

governments have signed. However, these represent only 30.38% of the world's merchant fleet tonnage, while entry into force requirements specific a figure of 35%.

The MEPC urged states yet to ratify the convention to do as soon as possible. However, this leaves the shipping industry uncertain when the BWM will take effect and what the backlog of fitting ballast water treatment systems will be like.

The ICS has called upon member states to hold off ratifying the BWM Convention "until confidence-building measures on resolving implementation concerns have been set in place".

Other topics on the agenda at the meeting include:

■ The adoption of amendments to MARPOL Annex VI, regulation

Techcross's ballast water treatment system. At the recent MEPC meeting it was agreed to carry out a study to examine how ballast water treatment systems are performing

13, on nitrogen oxides (NOx), which is concerned with the implementation date of 'Tier III' standards within emission control areas (ECAs). These standards apply to marine diesel engines for ships constructed on or after 1 January 2016 and operate in an ECA. The amendments are expected to enter into force on 1 September 2015.

The adoption of amendments to MARPOL Annexes I through to VI to make the use of the IMO Instruments Implementation Code (III Code) mandatory. They are expected to come into force on 1 January 2016.

A review of the Draft Polar Code environmental provisions and the establishment of a correspondence group to finalise the draft MARPOL amendments and environmental requirements. The draft code covers the design, construction, equipment, operational, training, search and rescue, and environmental protection matters relevant to ships operating in the inhospitable waters surrounding the two poles.

The meeting approved draft amendments to MARPOL Annex VI regarding engines solely fuelled by gaseous fuels, and clarified that such engines should be covered by the Annex VI NOx regulations. It is hoped this will be adopted MEPC 67. Also approved was the guidance for port reception facility providers and users.

the seaborne portion of Port Hedland's iron exports the work level resumed on th Panama Canal in early April

### Busan Port adopts WPCI's ESI

Busan Port Authority (BPA) has been giving a discount since January this year to vessel operators with certain green credentials. Clean seagoing vessels that score 31 points or more on the WPCI's Environmental Ship Index (ESI) receive a 15% discount on the GT part of their entrance fee port dues in Busan.

The ESI measures emissions of nitrogen oxide (NOx), sulphur oxide (SOx), particulate matter (PM), and greenhouse gas to give a good indication of the environmental performance of oceangoing vessels or ships.

BPA plans to put lists of ESI-registered vessels into its Port Management Information System (PORTMIS). Container carriers calling at Busan Port will receive an automatic port due discount if their vessel is recorded with the ESI and has 31 points or more.

Busan Port Authority spokesman BK Kim told P&H that the initiative is a way to be sustainable: "Sustainability can offer Busan Port the opportunity to develop our capability and to survive as a global port. I think it's our duty".

While the port has made efforts in equipment, its ESI policy is the first step towards a vessel-emission



Busan Port Authority offers rewards through WPCI

reduction approach "that has never been touched upon in Busan Port", he said.

Kim, however, think it is unlikely that the port's initiative on this front will be supported by the development in the region of an emission control area, (ECA) as has been seen in North America and Europe. He described the likelihood of this as "very, very low".

"To make the ECA a success there must be mutual co-operation between other countries such as China and Japan," he said.

### HAROPA rewards through ESI

MSC, Hamburg Sud, Hanjin Shipping, Maersk, CMA-CGM, Hapag Lloyd, Hyundai, Evergreen, UASAC, and NYK shipping lines were awarded a HAROPA environmental trophy on 5 March in Le Havre.

HAROPA - a group of French ports made up of Le Havre, Rouen, and Paris - uses the WPCI's

WPC Environmental Ship Index (ESI) as the benchmark to assess the environmental performance of participating ships that call at its ports, with the aim of reducing air emissions.

### Stopping stowaway ship access

More needs to be done to make it harder for stowaways to access ships, especially at African ports, an IMO seminar in Abidjan, Cote d'Ivoire, has concluded.

In 2011-12, 774 incidents involving 1,600 stowaways were recorded by the International

Group of P&I Clubs (IGPIC), which cautioned that the total is only for successful stowaway attempts, not attempted boardings and unreported incidents.

IGPIC sees the stowaway risk as highest in the major ports of Benin, Cameroon, DR Congo,

Ghana, Guinea, Cote d'Ivoire, Morocco, Nigeria, Senegal, Sierra Leone, and Togo. East African seafarers' leader Andrew Mwangura told P&H that stowaways often travel to other countries before attempting to board a ship.

#### MSC Lirica carries out piracy drill

MSC Cruises has provided details of an unannounced crisis management drill aboard MSC Lirica off the coast of Oman.

More than 2,500 people – crew members, passengers, and shore staff - were involved in the drill when the alarm was given at 18.00 local time on 31 March. In the simulated attack, shots were fired from a skiff and 'pirates' tried to board the ship. The company said it was satisfied with the exercise's outcome, especially efficient communication between different agencies. In a statement, MSC said: "Lessons that need to be learned will be implemented."

Five years ago, an MSC ship suffered a genuine pirate attack in the same area. At 11.35 local time on 26 April 2009, MSC Melody, with 994 passengers aboard, was 180nm from Seychelles when six men in a skiff fired automatic weapons, shattering several windows, according to passengers.

Crew ordered passengers to shelter in their cabins as Israeli security personnel shot at the men with pistols and sprayed them with fire hoses as the gang attempted to put a ladder aboard. The attack was repelled without injuries to passengers or crew. However, the incident prompted an exodus of cruise ships from Indian Ocean islands and east African ports.



E26Bn TEN-T's budget allocation for 2014-20





Full coverage of the IAPH mid-term conference in Sydney will be in the next issue of Ports & Harbors but here is a taster...

This successful IAPH event looked at where ports and port authorities must focus their efforts: "Port automation has to be the way of the future," said Grant Gilfillan, IAPH president, who told the global ports attendees: "Labour has become increasingly expensive, and automation relieves employees from the risk of an unsafe workplace."

Dr Yvo Saanen, TBA managing director, Netherlands, said automated ports were predominantly established where regions had high labour costs. However, in China, a labour shortage was behind three new port automation projects. Saanan revealed that costs of operational labour decreased 60-40% and productivity increased 10-20% with the introduction of automation. Other benefits were a cut in emissions and lighting costs. "Still, humans remain crucial in successful automated terminals," he said.

Fer van de Laar, managing director IAPH Europe Office agreed, telling P&H that the most important asset of an automated terminal was the human being. "There are still people. Without people nothing goes," he stated.

A reduction in worker injury was the main feature [we] highlighted arising from automation, said Patrick director Alistair Field. "We saw a 75% reduction in lost time injuries in the first year at our Brisbane terminal," he told the conference, outlining the company's \$350M investment in Port Botany automation.

Miland Desai, project manager of the Trapac automated terminal under development in Los Angeles, US, said the use of magnets was a key feature of its fully automated terminal project. Finland's Dr Teo Kokko, Kalmar, outlined new port software, auto lashing and shuttle technology.

All of this will be needed: world port throughput could reach 1Bn teu – up from 623M – by the end of 2020, according to Neil Davidson, Drewry Maritime Research's senior analyst of ports and terminals.

Reports and pictures in July/August issue.

### Membership notes

The IAPH Secretariat is pleased to announce the following new members of the Association:

#### **Regular members**

#### **Port of Beirut**

	Address:	Quarantaine region, POB: 1490 Beirut, Lebanon
Q	Telephone:	+961 1 58 02 11
6	Fax:	+961 1 58 58 35
Θ	E-mail: f.allam@portdebeyrouth.com /w.kamal@portdebeyrouth.com	
	Website:	http://portdebeyrouth.com
۵	Representative:	Hassan Kraytem, President Director General

#### Hakata Port Terminal Co Ltd Address: 4-2-2 Kashiibamafuto Higashi-ku Eukuoka-City 813-0018

U	Address.	
		Japan
C	Telephone:	+81-92-663-3111
6	Fax:	+81-92-663-3114
$\mathbf{O}$	E-mail:	info@hakatako-futo.co.jp
	Website:	http://www.hakatako-futo.co.jp
٨	Representati	ve: Kazuhiko Egashira Dr Eng, President

#### Puerto de Santa Marta

	Address:	Cra 1a. No. 10A-12 A.A 655 Santa Marta, Colombia
Q	Telephone:	+57-5-4217970
6	Fax:	+57-5-4212161
•	E-mail:	spsm@spsm.com.co
	Website:	http://www.spsm.com.co
	Representative:	Mauricio Suarez Ramirez, CEO
	Dout of Longuis	

#### Port of Longview

	Address:	10 Port Way, PO Box 1258, Longview WA 98632, USA
	Telephone:	+1-360-425-3305
	Fax:	+1-360-557-8650
5	E-mail:	gekalhagen@portoflongview.com
D	Website:	http://www.portoflongview.com
	Representative	: Geir-Eilif Kalhagen, CEO

IAPH INFO

# New operations and logistics boss

Juan Antonio Delgado, deputy managing director strategic planning and transformation, Port Authority of Valencia, Spain, has been appointed by President Grant Gilfillan as chair of the port operations and logistics committee, replacing Yossi Bassan, who retired from Ashdod Port Company, Israel, at the end of January. and in addition to his roles at the Port, he is also a professor in the Masters Program of the IPEC in Port Management, professor in the Logistics Master at the European University – a multicampus private business school, with headquarters in Switzerland, and operating campuses in Switzerland (Geneva and Montreux), Spain (Barcelona), and Germany (Munich).

Delgado is from Valencia, Spain,

### IAPH's training scholarship is still available

This financial assistance scheme aims to give staff at developing ports the opportunity to attend advanced port training programmes overseas. For full details of institutes, and to ensure your staff qualify, visit

www.iaphworldports.org

### Visitor to head office

Chair of a newly established IAPH cruise committee, Monica Bonvalet (Grand Port Maritime de Marseille-GPMM, France), visited IAPH Head Office on 7 March and was greeted by Secretary General Susumu Naruse and his staff. They discussed various matters related to the cruise committee that had its inaugural meeting in Sydney, Australia, on 7 April, in conjunction with the IAPH Mid-term Ports Conference and Board Meeting.



APH

(L to R) Susumu Naruse; Monica Bonvalet; Risa Ryu (Port of Marseille's Japan representative)

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### Dates for your diary

A selection of forthcoming maritime courses and conferences

#### May

- **15-16:** ESPO Conference, Gothenburg, Sweden www.espo-conference.com
- **19-30:** Port Management and Operations Course, Singapore https://www.psa-institute.com
- **20-21:** 6th International Conference & Exhibition USA 2014 Savannah GA, USA. *www.millenniumconferences.com*
- **21-22:** 10th Trans Middle East 2014, Doha, Qatar *www.transportevents.com*

#### June

- **1-5:** 33rd PIANC World Congress, San Francisco CA, USA. http://2014congress.pianc.us
- 2-13: Seminar on Container Terminal Management, Antwerp, Belgium www.portofantwerp.com/apec
- 2-20: Port Policy, Governance & Stakeholders Management, London, U.K.

www.ttpminternational.co.uk

- **10-27:** Partnerships in the Water Sector, Delft, Netherlands *www.unesco-ihe.org/short-courses*
- **11-12:** 12th ASEAN Ports and Shipping 2014, Jakarta, Indonesia *www.transportevents.com*
- **15-17:** CMI Hamburg Conference 2014, Hamburg, Germany *www.cmi2014hamburg.org*
- **16-27:** Seminar on Port Engineering, Antwerp, Belgium *www.portofantwerp.com/apec*
- Commence from 23:
   Diploma in Port Management, Distance learning www.ibc-academy.com
- 24-26: TOC CSC Europe 2014, London, UK http://tocevents-europe.com

#### July

- **1-2:** Africa Ports and Harbours Show 2014, Johannesburg, South Africa *www.terrapinn.com/exhibition/africa-ports-and-harbours*
- **7-25:** Strategic Customer Relationship Management in Maritime Trade, London, U.K. *www.ttpminternational.co.uk*



■ Tailor port and land services to customer requirements

# on the right road

*Juan A Delgado* is the new chairman of IAPH's Port Operations and Logistics Committee and deputy managing director, strategic planning, at the Port Authority of Valencia

There is only one way forward for ports whose traffic is stagnant or falling – that is to tailor port and land services to customer requirements, and step up the search for new clients. There are numerous ways to approach this, and too many to list here. At Port Authority of Valencia we have come to the conclusion, following an in-depth study listing and analysis of the available options, that the vast majority of approaches can be divided into two main groups: those that improve environmental efficiency, and those that tighten up the supply chain.

For those of us born in the 1960s, school holidays bring back fond memories of tagging along with our mothers on their daily trip to the local market. I remember those delicious yoghurts my mother used to buy as though it were only yesterday, with a simple label on the pot spelling out the product and the brand.

Nowadays, when any of us buys a yoghurt, as well as the sell-by date, the storage temperature, and the ingredients, we are also given a series of details whose existence we could not even have imagined in times gone by, such as proteins, carbohydrates, fat, saturated fat, fibre, sodium, and calcium. Yet today, these details are what make one product stand out from another.

I am sure that, sooner rather than later,

an extra piece of information will be added, featuring the product's carbon footprint, to allow this information to reach us. So, as port authorities, we need to be aware of how to add a reduced-carbon footprint to our value proposal. To achieve this, we must develop a method to measure its impact, as a result of goods being handled through our ports, and the effectiveness of the measures we have to take to minimise that footprint.

The second group of approaches I mentioned centres on giving customers a competitive advantage by tightening up the supply chain to increase efficiency in the production or distribution cycle. The challenges ahead include: developing e-solutions to bolster the reliability of port processes; cargo traceability; increasing connectivity; boosting intermodality options to reduce friction costs; encouraging closer-knit port communities; and international message standardisation.

In short, every port authority needs to ask itself whether the port management decisions it makes actually contribute to tightening up the chain, how this is achieved, and what it costs. Tightening up the supply chain and minimising our port's carbon footprint are the cornerstones of our strategy here at the Port Authority of Valencia. We believe that we are on the right road. INH

uan h.

# INSIDE THE BOX

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