ports & harbors

November/December 2024
IAPHworldports.org
Vol 69
N° 6

Providing thought leadership on the role of ports in a connected world

Leading the way

Barbara Scheel Agersnap, CEO of Copenhagen Malmö Port, says ports must pioneer, innovate and collaborate if they are to meet the critical challenges ahead

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Providing thought leadership on the role of ports in a connected world

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ISSN 0554-7555 (print)

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MARTIN CLARK
Editor

Family ties

As 2024 draws to a close, it is important to look back and reflect on some of the highlights and achievements from within the IAPH, and across the broader ports and maritime sector, after what has been a busy and eventful year.

There are many positives, including the outstanding success of the recent IAPH World Ports Conference. That includes some notable words of encouragement from IMO secretary general Arsenio Dominguez, a keynote speaker, on how the ports community remains a close and integral part of the wider maritime transport industry. "You are a part of the family," he told the hundreds of port delegates gathered in the city of Hamburg in October.

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Freelance journalist

Vlad Vorotnikov is an international journalist specialising in coverage of the energy, agriculture and transport services markets. He holds a master's degree in journalism and specialises in covering Eastern Europe and Asia. Based in Georgia, he has been contributing to Ports & Harbors since 2018. ■

With disruptions to shipping and supply chains now seemingly becoming a part of 'the new normal', the vibrant ports community that IAPH nurtures — clearly evident in Hamburg — is well placed to navigate the multitude of challenges likely to be faced once more in 2025.

Collaboration is a key ally in this strategic approach. The notion of working together, sharing best practice, and even 'family', as the IMO secretary general refers to it, is one that imbues strength and resilience, not only within the ports segment, but also across the whole supply chain network. It is a way of thinking that has attracted new shipping and cargo firms to the IAPH membership ranks in recent times.

In a world that, by and large, does not consider the resilience of the ports and shipping sector until things go wrong, the industry once again performed its role with great aplomb. That alone is a significant accomplishment against a backdrop of rising geopolitical concerns, macroeconomic pressures and raging conflicts across various parts of the globe.

Similarly, there are the added long-term challenges of decarbonising the maritime transport sector and the need to transition to cleaner energy sources, topics that are covered in this issue. While the IMO will, of course, serve as a key driver in these crucial areas, IAPH and the wider ports network have again shown great willing and enterprise in rising to these huge challenges.

As the IAPH Sustainability Awards illustrate, ports around the world are taking the initiative in these and other areas to drive through clean energy projects and other innovative ideas. Special recognition goes to South Korea's Port of Ulsan for landing two awards in 2024, including the prestigious Climate & Energy accolade for its pioneering Green Methanol and Biodiesel Bunkering project. It also scooped the Health, Safety & Security prize for its Port Cargo Working Safety Index.

Reflecting this spirit of cooperation, it was also announced at the Hamburg conference that the successful World Ports Climate Action Programme (WPCAP) would be integrated into the IAPH Climate and Energy technical committee from January 2025. The pooling of resources will help focus efforts of both large and small ports worldwide on industry decarbonisation, ensuring all have the necessary tools and safety procedures in critical areas ranging from power-to-ship solutions at berth to future ship-to-shore alternative fuel cargo transfer standards.

Behind the scenes, IAPH has worked with partners to deliver other initiatives aimed at building best practice and meeting climate- and sustainability-related targets. They include the launch of the first digital version of the Port Readiness Level for Marine Fuels self-assessment tool. This is a fuel-agnostic framework that ports can use to self-assess their readiness and identify areas requiring further development to facilitate bunkering of a new low- or zero-carbon marine fuel.

As the world grapples with these changes and challenges, it underscores the need for all industry stakeholders to come together in the interest of securing the global supply chain. The role of the port itself may evolve as these and other shifts occur over time. There are so many challenges ahead, yet the spirit of cooperation that has been mapped out by IAPH and its colleagues provides a clear pathway for all parties to step into the coming year with confidence. ■

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FELICITY LANDON
Freelance journalist

Award-winning journalist Felicity Landon is a well-known figure in maritime circles, with the depth of knowledge and network of contacts to prove it. Felicity is versatile in her areas of coverage, with these spanning the container, dry and liquid bulk, cargo handling, energy and diverse other subject areas. ■

Leading by example

Barbara Scheel Agersnap is CEO of Copenhagen Malmö Port AB (CMP), which operates the ports in Denmark's capital Copenhagen and Sweden's third largest city, Malmö. The spirit of pioneering and innovation that connected these two ports and countries more than 20 years ago remains just as evident today in the face of new challenges surrounding the green transition and resilience. Here, she talks to IAPH managing director Patrick Verhoeven about how the port is navigating a rapidly-changing world

MARTIN CLARK

Q Barbara, can you give us an introduction to CMP?
B: Yes, it's one company, spanning two ports, two cities and two countries. I think it was the first port in the world to merge cross-border. There's a bridge that links Copenhagen with Malmö and the ports were merged after that was completed. We are a full-service port, some things we do on both sides of the water, such as energy, but other things are more focused. So, for instance, Copenhagen is the leading cruise terminal in the Nordics, but cruise is pretty non-existent in Malmö. On the other side, we have Scandinavia's largest car terminal in Malmö, and that, of course, leads to a concentration of expertise, so we have used our combined forces in a more strategic manner.

Q: How would you reflect on CMP's achievements post-merger?
B: There are definite synergies. At the beginning, it was more operational and administrative, but today I think it's far more interesting than that, looking at potential opportunities. We hold a unique geographical position where 40,000 ships pass through every year, including traffic into the Baltics; it's a good crossroads to be at. So how do we use this position going forward? For example, we opened a cruise terminal in Gotland, an island further up the Swedish east coast, which is our first footprint outside the Copenhagen-Malmö area. It was good to show that we can operate more locations and with the knowledge and expertise we've gained we could potentially do more elsewhere. It's given us confidence to look at other projects.

Q: What are your priories right now as CEO?
B: Apart from the obvious ones, I would say it's trying to understand the shifts that are shaping our world right now, how to adapt to them, and how to find the opportunities within them. I think things are changing rapidly and I don't see that stopping. I'm not talking about technology, because that's a curve we're all now on, all of the time, I'm thinking more about how world trade patterns will develop, if it gets more fragmented, and its effect on supply chains. Will the world's production and consumption patterns look the same? I don't think so. So what kind of change will that bring and where do you position your own port within that huge change that is happening? I think the challenges in front of us are of a size most of us cannot handle on our own, such as the green transition and the changing geopolitical landscape. This will encourage closer collaboration, so you need to know where you can partner up and do things together to make sure the supply chain remains strong.

Q: Patrick (P), does this echo what you are hearing elsewhere in the industry?
P: At the recent World Ports Conference in Hamburg we heard from Drewry that there are indeed strong indications that global trade patterns will change and that intra-regional trade may become more prominent as a result. This creates opportunities for short-sea shipping and, therefore, also for ports. We see, for instance, more scope for shorter Green Shipping Corridors as they are less likely to be disrupted and some are already developing in the Baltic and North Sea area. It requires close cooperation between ports, shipping lines and energy providers.

Q: Tell us about some of your work in sustainability and the transition?
B: We have an approach here we call 'practical transition' where we engage in projects within our own reach. We're trying to build a regional eco system around carbon capture, utilisation and storage (CCUS). We do this with people and companies in the region, all partners we can meet with within 30 minutes, allowing close cooperation. We've also signed a Letter of Intent with an energy company for clean fuels production within the port, again based on regional products like natural leftovers from farming, transforming it into bioenergy. With a bit of luck the ecosystem will one day have both a CO2 hub for the local energy companies, production of bioenergy, and who knows, perhaps greener bunker opportunities for the passing vessels. There are still many ducks we need to get into a row, but I feel comfortable about the direction it's moving in and the people we're working with. There are still so many unknown factors for everyone working seriously with the transition, so we need close partnerships to succeed.

> "There are still so many unknown factors for everyone working seriously with the transition, so we need close partnerships to succeed
> **BARBARA SCHEEL AGERSNAP**

Q: Do you see further opportunities for the port in this role?
B: On greenhouse gas emissions in scope 1 & 2, we will be net zero with our own operations during 2025. Our focus will therefore shift to scope 3, hence the regional ecosystem on CCUS and — hopefully — work with our customers to bring their emissions down, for example, with green fuels of the future. The more we looked at this, the more confident we became that we could also turn the challenge into a business with future income streams. Taking such a facilitating role is very exciting. Everyone is aware we need to make some sort of connection, otherwise we cannot make the changes we need

Pictured: Barbara Scheel Agersnap with Patrick Verhoeven at the IAPH World Ports Conference in Hamburg
Photos: World Ports Conference 8-10 October 2024 @Richard Langdon

to make, or at least in the timeframes we would like to bring them about. And I think that's why we will succeed, because we all know that we cannot do this alone.

> "In IAPH we strongly believe in this concept of 'community building'
>
> **PATRICK VERHOEVEN,** Managing Director of IAPH

P: This is a good example of how a port can take the lead in bringing stakeholders together to drive energy transition. In IAPH we strongly believe in this concept of 'community building', which takes ports beyond their traditional roles as landlords and regulators. It not only requires cooperation, but also a different mindset. Both business and societal stakeholders need to see the port as a trusted party that can lead the transition. It is the only way for ports to secure their license to operate and grow. An interesting aspect is indeed that energy transition may create new business opportunities for ports, including new revenue streams.

Q: Can you tell us about your onshore power project?
B: Our onshore power project will be expanded in 2025, starting with the cruise terminals in Copenhagen. I'm not sure if it's the biggest in northern Europe, but it's pretty big. It will double in size by 2028. I find an immense shift in the conversations we're now having with the cruise liners; where we had to push the initial development there is now a pull from several cruise lines, they're now asking us: when can we plug in? I think that's super-positive. We're also doing this because our communities and the cities we serve look for more sustainable solutions. The responsibility for delivering that no longer stops on the quayside when the ship comes in, it's about taking more responsibility with the local communities, working closer with our customers, which of course makes things more complex overall. But we're lucky to be in a part of the world where that has been a priority for a long time. So, a few hundred metres from where the ships actually come in, people are bathing — that would not be possible if it were not a priority. It's because people care. The duty to do something here is pretty high.

P: Onshore power supply is gaining momentum, especially in Europe, where the European Union has set a target for container and cruise terminals to be equipped with onshore power facilities by 2030. At the same time, the EU is providing and allowing financial support for first movers, which is a must as the investments remain considerable. Ports that are located close to cities have always had the pressure to invest in the facilities, also for noise abatement, and it is good to see that there is now also a pull from customers. Whilst we have OPS standards for container and cruise ships, there is still work to be done for bulk shipping, something which is currently under consideration.

Q: What other initiatives are you working on right now?
B: We have a new container terminal in Copenhagen, opening in the second half of 2025. Moving by sea is still a far more environmentally-friendly way to transport goods than road, so we are excited about the opportunities to have a modern terminal so close to the city and all its new infrastructure, it will allow for a new generation of urban distribution. Exactly how it is going to look is too early to reveal but surely the location and modern structure should challenge the traditional way of doing things. ■

PERSPECTIVE SAFE MOORING

Reducing the tension

Mooring is one of the most common daily tasks facing seafarers. However, in recent years, incidents related to mooring have become more frequent, often resulting in injuries. New regulations from the International Maritime Organisation (IMO) aim to make mooring safer but place new demands on shipowners.

The high frequency of mooring operations and a high level of human involvement have resulted in multiple safety incidents related to mooring over recent years.

The International Group of P&I Clubs reported 858 injuries and 31 fatalities involving mooring operations during the five-year period before 2021. This has been a key driver behind new SOLAS requirements related to mooring from the IMO.

New SOLAS requirements

With widespread recognition that the safety of mooring operations needs to be improved, amendments by the IMO to SOLAS regulation II-1/3-8 and new guidelines for safe mooring entered into force on 1 January 2024.

These new requirements aim to enhance the strength and design of mooring arrangements, the selection of mooring equipment, including lines, and the maintenance and inspection of mooring equipment and lines.

The new mooring requirements affect maintenance practices on the existing fleet.

Two new guidelines are now in place for safe mooring. MSC.1/Circ.1619 relates to the design of mooring arrangements and the selection of mooring equipment and fittings for safe mooring, whilst MSC.1/Circ.1620 is a guideline related to the inspection and maintenance of mooring equipment, including lines.

Pictured: The maritime transport sector is adapting to new safer mooring rules
Photo: ID 113184495 Unkas1978 Dreamstime.com

The Maritime Safety Committee has also published a revision of MSC.1/Circ.1175, which relates to guidance on shipboard towing and mooring equipment.

These guidelines will affect all vessels built after 1 January 2024 and compliance will mainly be handled by classification societies during the approval process. However, MSC.1/Circ.1620 also affects vessels in operation. Whilst compliance with this can also be handled during the approval process for newbuilds, it will also retroactively affect the existing fleet in operation, which means that ship operators need to review their existing safety management systems related to mooring lines and mooring equipment on board.

From MBL to MBLSD

One of the key features of MSC.1/Circ.1620 is a requirement for all shipowners to establish Ship Design Minimum Breaking Load (MBLSD) for each of their vessels. In practice, this is a more accurate way

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of predicting when a mooring line breaks and will lead to greater safety.

This is a departure from the previous system, known as minimum breaking load (MBL), where operators knew the minimum point at which a line could break. However, this was unpredictable because the line could break at any point over the MBL.

More predictability

The new regulations make line breaks more predictable. With the MBLSD requirement, operators can now be much more certain about when a line will break. Crucially, the lines certified to meet MBLSD requirements will be certified by a new concept called Line Design Break Force (LDBF). In effect, this means that lines will be designed to break at a certain load, within a deviation range of 5%.

There is huge energy stored in a synthetic rope and when it snaps back after breaking it can cause serious injury or death. By ensuring that the line will break under a certain level of force, the other safety barriers in the system, such as the operational rendering point of the mooring winches, wrapping angles of the lines, safe working load of the mooring fittings, and energy-absorbing capacity introduced by tails, can be designed and placed in a safer manner for normal operation.

Achieving compliance with these new regulations will present some challenges to ships in operation, especially those built before 2007. DNV, through its independent Maritime Advisory business can help by carrying out a review of all design-related documents and design standards of a vessel's mooring system design and establishing the appropriate MBLSD. This then functions as a baseline criterion to measure and verify all the other components related to mooring.

> “Incidents related to mooring have become more frequent

This review can also be expanded to mooring operations and focus on maintenance and inspection procedures and plans. This helps clients to optimise the safety and functionality of their mooring in an efficient and straightforward way.

MBLSD assessment

MBLSD is crucial in assessing all mooring-related components. Establishing these criteria can also lead to the development of safer procedures around other mooring-related parts on vessels.

For example, the MBLSD can be used as a guidance on how to best adjust the rendering point of winches so that the tension in the ropes is controlled at an acceptable level to reduce the risk of breaking strength under normal operation.

Setting a winch render that is slightly higher than the expected working loading range but well lower than the design break force of the line (LDBF) is usually advisable. As a result of this action, before the line reaches its maximum loading and break strength, the winch will reel out, reducing the tension of that line and distributing the excessive load to adjacent lines.

Whilst adapting to new SOLAS regulations and enhancing the safety of their mooring operations will be straightforward for some operators, this will be a more complex assignment for others.

It is, therefore, crucial that all shipowners review their mooring operations and, establish their MBLSD and gain an overview of general design-related risks. This will, ultimately, help to enhance the safety of mooring operations and could save lives in the future. ■


Hydrogen-powered
LH2

Expert tools for future fuels

There are more questions than answers when it comes to what future fuels ports and shipping will be utilising years from now. IAPH is leading the efforts to prepare for a multi-fuel future

FELICITY LANDON

What ship owner is going to order a ship to run on ammonia if they have no idea where or when they will be able to find the fuel they need? On the other hand, what port is going to invest in the infrastructure and technology to supply hydrogen or methanol if they have no confidence that a suitable ship will turn up for bunkering with those fuels?

The chicken-and-egg debate around shipping, ports and future fuels continues. But as Eric van der Schans, director environmental management at Port of Rotterdam and chair of the World Ports Climate Action Programme (WPCAP), says: "Sometimes in these real-life problems, you have to work on the chicken and the egg at the same time – there is no way you can wait for one to happen before the other. We, as ports, have to deal with a multi-fuel future. In the energy transition, we don't have time to sit on our hands and wait to see what kind of ships we will see. For people in the industry, 2030 is almost tomorrow. If you are investing in a fuel production facility or in a ship, decisions must be made now. If we wait two more years, we will be 'beyond 2030'."

Van der Schans says he has a moral obligation to be optimistic. "We are the generation that is able to make the transition. We should do everything we can to make sure this transition will be successful."

As for the big question, 'which fuels will be the future fuels?', he says: "I think the larger bunker ports should be able to have a very fuel-agnostic strategy and make sure they offer everything. But also, I think it's not realistic to expect that in every corner of the world. My feeling is there will be fuels that differ from one trade or geography to another, and then there is the very strong global trade and they will have to accommodate all fuels." We are already seeing an element of trade/geographical differences, he says, "and it will all balance out in time."

Of course, life would be easier across the industry if the choice was limited to one or two fuels, he adds. "But the reality is different and we should prepare ourselves for a multi-fuel strategy."

A motorist stopping at a service station can already see a widening choice – CNG, LPG, hydrogen, diesel, petrol, different quality/blending levels, as well as the EV option – he points out. "If you drive a car, the fuel choice has diversified. The same will apply to the maritime industry."

Pictured: Rendering of liquid hydrogen cargo vessel
Photo: ID 218469867 Audioundwerbung | Dreamstime.com

When asked which ports might emerge as 'winners and losers' in this transition, Van der Schans emphasises that it isn't just about bunkering. "Not all ports do bunkering, of course; but I think the ports that will not 'win' are those that do not prepare themselves for having all these ships with different fuels on board, because even then it's required to assess the safety situation and procedures in place in case of emergency. There is a big difference whether there is Marine Gas Oil or ammonia in the ship."

Cutting-edge tools for port preparedness

Two initiatives at the IAPH are key to port preparedness. First, the IAPH Clean Marine Fuels working group's industry-standard Bunker Operations Audit toolkit for current and future fuels has been finalised and was launched at the World Ports Conference in Hamburg in October. The fuel-agnostic eight-step audit tool is available for member ports to meet the growing demand for licence applications in multiple fuels, including methanol, hydrogen and ammonia. Operators applying for licences to operate bunkering facilities in several locations will also be able to benefit from the toolkit, which clearly defines the responsibilities of the bunker facility operator relating to safe and sustainable operations.

Second, there is the Port Readiness Level for Marine Fuels (PRL-MF) self-assessment tool. Designed by the World Ports Climate Action Programme (WPCAP) in conjunction with the IAPH Clean Marine Fuels group, with input from partners including the Mærsk Mc-Kinney Møller Centre, Mission Innovation, DNV, Lloyd's Register's Maritime Decarbonisation Hub and the National Renewable Energy Laboratory (NREL), the PRL has been created to accelerate support for shipping's decarbonisation journey. The first digital version of the bunkering element of the PRL was also launched in Hamburg at the World Ports Conference.

For the online version, WPCAP worked with the Pacific Northwest National Laboratory in collaboration with the NREL, says Françoise van den Brink, senior adviser energy transition, Port of Rotterdam, who led on the PRL digitalisation. She says the important message to ports is: be prepared – and asked what do the new fuels mean for you?

"These specific gases or liquids are coming into a completely new area of the port or are new to ports in general. For example, in Rotterdam, we have a specific area for all kinds of hazardous goods. Now we must look at it in a different way because the fuels are also at other terminals, like the container terminals, in the new energy-propelled vessels and there are also bunker operations alongside these terminals. The terminal operators need to be aware what these fuels are and how to be prepared."

Safety is crucial, she says. "What do you need to do to make sure of safety if a new fuel comes towards your port – whether it's bunkering, port of call or even cargo? Governance, infrastructure, market demand/supply are also important domains. A lot of effort was put into the development of the PRL."

Supporting a multi-fuel future

The first step was developing the self-assessment tool as a PDF where a port, on the basis of the taken strategies, tasks and measures, can determine which level they are in and what they could still do to prepare themselves even better, says van den Brink. "We started with bunkering and we are now working to have the tool developed for the port-of-call and cargo."

Because the sources of new fuels are different, some ports face handling a completely new activity, she adds. "For example, a port with no experience of hydrogen could now be expected to handle it. The international infrastructure regarding where the

Pictured: Bunkering a ferry in port
Photo: Port of Barcelona

energy is coming from is changing. There will be ports for whom it's a completely different field of work and new developments they can reach out to the IAPH and larger ports to get the knowledge and competence and awareness of what is there and what can be used to support these new developments.

"I see the interest; ports are reaching out with questions to the Port of Rotterdam. It is really good also to make them aware that the PRL tool and the Clean Marine Fuels tool exist and can support them as first guidance in setting up these new activities. You don't have to reinvent the wheel – there is already information out there."

The ambition is that the PRL tool could also be used as a 'profiler' after further development, so that the public and other stakeholders can see how ready a port is with regard to a particular fuel. A shipping line can look at the PRL to see the readiness of a particular port with regards to fuels, and a port could also demonstrate to the shipping lines its preparedness for fuels.

Peter Alkema, strategic policy advisor and project manager at the Port of Amsterdam and chair of the IAPH Clean Marine Fuels working group, says that while the 'frontrunner' ports tend to be very active, other ports need more help to prepare for vessels with new fuels.

"Especially when it comes to safety and environmental issues, we must share information and experience for the common good," he says. "It is still early days – there is a lot of talk about these new fuels but it's a very small percentage of vessels that are using them. A lot of ports in South America and Africa have not been confronted with these new fuels yet and they are not even on their top priority list. That will come in the next decade and luckily, we are prepared to help them with the tools we have created, which will be improved over the years."

Price is an issue he feels strongly about. "The IMO has to close the price gap between green fuels and fossil fuels, which are basically subsidised. We have a tremendous gap and if that gap remains, we are never going to break the chicken-and-egg issue. It is because of that gap that it is very complicated for shipping lines to decide which fuels they are going for."

Amsterdam is taking the 'multi-fuel port' approach and will ensure it provides all the fuels that shipping is asking for, says Alkema.

Françoise van den Brink notes that besides new fuels, vessels are seeking additional ways to further lower their emissions and ports may also have to prepare for these developments. "For example, onboard carbon capture is an additional interim solution – a stepping stone in the whole energy transition."

Alkema agrees but warns: "Onboard carbon capture is not really going to stimulate the use of new, better fuels. Instead of taking away the source, it is taking away the effect."

Meeting public expectations

As WPCAP becomes integrated into the IAPH (see end text below), Eric van der Schans says carbon capture is an important new topic to be worked on – along with issues around air quality. "We see increasing concerns that ships in ports and approaching port emit much more air pollutants than we would expect. For example, NOx reduction is very effective in open sea but seems to be less effective in in-port manoeuvring. Air quality continues to be a big issue in many of our port cities."

There is an increase in public awareness of the environmental impact of ports, he says. "They want to understand what is happening and to be part of the assessment of what is acceptable and safe – they do not want it to be left only to the specialists."

He also says that whether we are talking about hydrogen, methanol or ammonia, and whether these are from sustainable sources or fossil-based, the chain of custody will become more important and there will be a whole new dimension to fuel quality. "The other thing we have learned from existing fuels is that regulations are necessary because otherwise people find ways to create business with not always the best intentions. There should be clear and developing industry-based standards, from the ports, the shipping companies and the classification societies, to ensure these regulations are effective."

The industry values the harmonised approach provided by the IAPH toolkits, he says. "If you ask the Port of Rotterdam 'what is your readiness level for ammonia?' and ask another port in South America, you will get an answer that is comparable. That is really helpful in the transition and decision-making process that many of the ship owners will have to make in the near future." ■

■ **Accessing the Clean Marine Fuels Audit tool**

The newly launched, fuel-agnostic CMF Audit Tool is available to IAPH members via the members area of the IAPH website at iaphworldports.org. The toolkit is planned to be made available to non-members on a subscription basis in future. For other useful tools developed by the CMF Working Group, visit https://sustainableworldports.org/clean-marine-fuels/

■ **Accessing the Port Readiness Level for Marine Fuels (PRL-MF) self-assessment tool**

To use the digital version of the PRL tool, IAPH member ports will first need to register and create an account at https://fuelreadyports.org/ Non-member ports and other interested parties are encouraged to use the publicly available manual version at https://sustainableworldports.org/wpcap/wg-4/ which is also available in French and Spanish.

■ *For further enquiries about either tool, please contact IAPH technical director Antonis Michail at antonis.michail@iaphworldports.org*

WPCAP, the World Ports Climate Action Programme, was established at a global climate action summit in San Francisco in 2018, led by the Port of Rotterdam with participants including the ports of Amsterdam, Antwerp-Bruges, Barcelona, Gothenburg, Hamburg, HAROPA, Long Beach, Los Angeles, New York/New Jersey, Valencia, Vancouver and Yokohama. At the World Ports Conference in Hamburg in October, it was announced that, as of January 2025, WPCAP will be integrated into the IAPH Climate and Energy technical committee.

Baltic Transport Journal

bimonthly-daily companion

CAPTAIN PAPPU SASTRY
CEO of Adhira Shipping and Logistics

Wake-up call

Opportunity knocks for ports in Africa: rising bulk cargo volumes can be achieved without substantial infrastructure growth

Much has been told about Africa's potential and its famed resources. Yet, the perception of doing business in Africa has traditionally been negative. I believe this may be an outdated perception.

Export volumes of some major and minor bulk commodities have increased exponentially in the past decade; this can be attributed to the increased use of transshipment equipment and loading of Capesize vessels at anchor.

When Kamsarmax vessels were designed in the early 2000s, the approximate amount of cargo handled at Kamsar, a two-berth port in Guinea in West Africa, amounted to three million tons. As of 2023, Kamsar alone exported close to 90 million tons of bauxite with most operations happening at anchorage using river barges and floating cranes and without any overall port authority or traffic control system. These volumes started to increase in 2016.

The port of Pepel, a small Supramax berth in Sierra Leone, has also grown in importance due to increasing iron ore prices and quantities. The berth exported five million tons in 2019, before the operator ceased trading because of low commodity prices and lack of funding. Then the Sierra Leone government took over ownership of the infrastructure and contracted it to a Chinese operator in 2021. That port is looking to export 12 million tons of iron ore in 2024 utilising a berth and anchorage using several barges, coasters and floating cranes. Like Kamsar, it is also developing into a Capesize loading port.

In Gabon, the Port of Owendo (and Libreville) has a long history of manganese exports using Supramax vessels. The advent of transshipment operations in 2021 has increased this throughput. Now, Cape vessels are loading at anchorage, which has provided the opportunity for higher and more consistent volumes during the next decade.

It is clear from these examples that volumes without real infrastructure growth can be achieved in a short time, without much capital expenditure and by loading mined commodities into larger vessels at ports, using traditional transshipment models that are adopted from Asia.

The critical aspect for any bulk port is to increase its volumes; it is not just adequate port infrastructure that is needed, but everything from the mine onwards.

Africa, a continent with so many countries and so many resources to export, also has a challenge in finding investment for port infrastructure projects. This is changing slowly with some operators like DP World, Abu Dhabi Ports, Adani Ports and others, expecting to do more in terms of infrastructure in the region's bulk ports. These companies are entering the African market because the host governments realise the benefits of stability and consistency in their policies.

More ports, like Mombasa (Kenya), Toamasina (Madagascar), Mtwara (Tanzania) and many others, are all slated for private investments to boost efficiency. There also plans for other large port projects across West Africa, to support the increase in bauxite and iron ore volumes across the region that will support expansion of commodities exports well into the future. ■

Periklis Saragiotis

Periklis Saragiotis is a senior private sector specialist at the World Bank focusing on port logistics and global supply chains. He recently co-authored a study on Port Community Systems and how they could radically transform trade within the port ecosystem – if only key hurdles can be overcome

MARTIN CLARK

Imagine a cargo vessel arrives at the harbour, carrying thousands of containers with diverse origins and destinations. Each requires swift and coordinated handling by shipping lines, terminal operators, freight forwarders, customs and other regulatory bodies.

Traditionally, this coordination was a logistical challenge often mired in miscommunications, inefficiencies and costly delays. But with the introduction of Port Community Systems (PCS), this once-fragmented landscape is being transformed.

Periklis Saragiotis, a senior private sector specialist at the World Bank's Global Trade & Regional Integration unit, has been working on how to make this a reality. "More than just a technical solution, a PCS acts as the nerve centre of port logistics," he says. "It ensures real-time data sharing across the port ecosystem, allowing customs to clear shipments faster, terminal operators to optimise resources and freight forwarders to track cargo movements accurately."

By breaking down silos and synchronising activities, the PCS reduces administrative burdens, minimises delays, and enhances the predictability of cargo flows. "In doing so, it transforms ports into more than just trade gateways — they become hubs of efficiency and innovation, setting new standards for global logistics and trade facilitation. A PCS also fosters a culture of collaboration within the port community by bringing together public and private stakeholders to work towards common goals. It institutionalises cooperation."

In the Netherlands, Portbase has emerged as a benchmark PCS, says Saragiotis, adding value for companies of up to €245 million. Singapore's PortNet also stands out as a premier example of a successful PCS, enabling a significant reduction in vessel turnaround times and improving the levels of throughput efficiency.

Report findings

The recent Port Community Systems Global Study*, compiled by Saragiotis and a distinguished team of experts, reflects on the evolving nature, challenges and opportunities of PCS implementation worldwide. The study underscores the role of PCS as a vital instrument for streamlining port logistics but highlights great disparities in terms of their adoption, notably between high-income and developing countries.

"While most ports in developed economies have adopted fully operational PCSs, low- and middle- income countries are lagging behind, primarily due to financial constraints, lack of technical expertise and fragmented digital infrastructure," he says.

Implementation remains inconsistent globally, notes Saragiotis. As well as Singapore and the Netherlands, leading adopters include the Belgium, France, Germany, Japan, Spain, South Korea and the UK. Emerging markets making strides in PCS implementation include Brazil, Chile, India, Indonesia, Malaysia, Mexico and Thailand. Strikingly, over 90% of ports in low- and middle-income countries have yet to adopt these systems.

The challenges in implementation go well beyond lack of finance. The study identifies issues such as complex stakeholder coordination, the need for strong legislative, institutional and governance frameworks, as well as lack of interoperability with existing digital systems, as significant hurdles to effective PCS deployment.

Given the disparity, yet clear benefits within reach, what can be done to advance the adoption of PCS on a much wider scale?

Saragiotis believes that expanding the adoption and understanding of PCS requires a multifaceted approach involving technical assistance, capacity building and financial support to invest in port digital infrastructure. The starting point should include targeted efforts to demystify the whole concept.

"While the PCS concept has gained traction globally, there is still a need to clarify its functionalities and benefits, especially in low- and middle-income countries where adoption rates remain low, and the concept is often mistakenly confused with Trade Single Windows or Maritime Single Windows. To address this, the World Bank and IAPH have entered into a strategic partnership aimed at promoting the implementation of PCS solutions across the world. Since the formal publication of our study, we received several requests from port authorities – especially in Africa, Asia, the Pacific and the Caribbean — to assist them with the development of their own PCS."

He adds: "Moving forward, our focus is to finance PCS pilot projects, while supporting difficult but necessary reforms. Through these efforts, we aim to build a robust foundation for widespread PCS adoption, ensuring that even the most complex ports can streamline their operations and become integral nodes within the global supply chain network." ■

Port Community Systems: Driving Trade in the 21st Century. Access the report: https://bit.ly/WBIAPHpcs

A celebration of innovation

Held during the World Ports Conference in Hamburg, the IAPH Sustainability Awards 2024 were a showcase for innovation, technology and industry-leading sustainability initiatives within the ports and maritime world

American, European, Asian and African ports were all among the winners at the IAPH Sustainability Awards, which were celebrated at a gala dinner during the World Ports Conference in Hamburg this October.

The glittering evening event took place on 9th October at the prestigious Schuppen-52, a historical quayside venue with a view of the Elbe, and was hosted by Francesca Vanthielen (second image, right), a Belgian journalist, news anchor and presenter.

Uslan Port took home two awards — in the Climate & Energy and Health, Safety & Security categories — making it a night to remember for the pioneering South Korean maritime hub.

"With 71 projects submitted from over 50 ports this year, we congratulate all ports who have been selected by both our expert jury and over 4,500 members of the voting public as winners in their categories," said IAPH managing director Patrick Verhoeven. "We see some countries winning for the first time, with small, as well as large ports, from all regions being chosen by our expert jury and the voting public."

Here, we take a look at these examples of excellence and how each winner is leading in their field and in the advancement of the ports sector.

World Ports Sustainability Programme

Find out more about the IAPH World Ports Sustainability Programme and how your port can participate, including at next year's event, at: https://sustainableworldports.org/submit-your-project/

All photos: World Ports Conference 8-10 October 2024 @Richard Langdon

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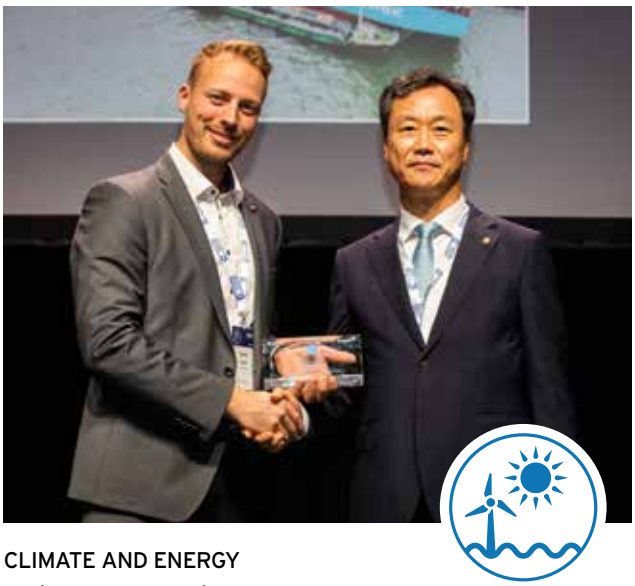

CLIMATE AND ENERGY

Ulsan Port

Green Methanol and Biodiesel Bunkering

In July 2023, Ulsan Port, in South Korea, became the first to successfully bunker green methanol and biodiesel for a Maersk Solstice container vessel as part of the port's energy transition strategy and carbon neutrality targets.

As a marine fuel, green methanol can reduce carbon emissions of vessels up to 95% compared with fossil-based fuels, helping to contribute to carbon neutrality within the port.

Facing legal, procedural and safety challenges, the port worked extensively with stakeholders to ensure the safety and efficiency of green methanol and biodiesel bunkering operations.

Ulsan Port finally achieved the world's first successful methanol supply, creating new energy markets and contributing to carbon neutrality. In doing so, the port made innovations in green marine fuel regulations and promoted the spread of green methanol bunkering globally.

Award recipient: Soon-yo Jeong, vice president, Ulsan Port
Presented by: Norman Keppler, shore power manager of igus GmbH

COMMUNITY BUILDING

Chennai Port

Championing Community Empowerment and Sustainable Growth

Chennai Port has long played a pivotal role in catalysing regional growth, fostering trade and driving commerce in India and beyond. The port authority is also fully committed to empowerment through education, community welfare and environmental sustainability.

Its port school has educated more than 50,000 students over five decades and it has now established a special local school for autistic children. It has also provided a full-sized stadium, basketball, tennis and volleyball courts and a community hall for cultural events and gatherings. All the amenities are free of charge and accessible to all.

Recognising fishermen as vital maritime stakeholders, Chennai Port has modernised and upgraded Chennai Fishing Harbour, one of the largest fishing harbours in India, supporting thousands of fishermen and sheltering over 2,000 boats.

Chennai's Green Port Initiatives focus on environmental conservation and resource optimisation, partnering with neighbouring ports for collaboration, shared best practices and planning.

Award recipient: Indranil Hazra, secretary, Chennai Port Authority
Presented by: Mark Assaf, member of the awards expert jury and chief of TrainForTrade, UNCTAD

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zenze

DIGITALISATION

Freeport of Riga Authority

Seamless 5G Connectivity in the Baltic Sea

A project enacted by the Freeport of Riga Authority in Latvia, 'Seamless 5G Connectivity in the Baltic Sea', aims to enhance maritime communications. It develops the multi-hop concept: the 5G network signal is passed from one ship to the next, enabling shore-to-ship and ship-to-ship communication. Ships become floating base stations, creating a dynamic 5G network over open waters and creating a maritime infrastructure for deploying autonomous ships, USV drones and a range of new-use cases, from real-time pollution monitoring and control to automation of certain port operations.

The concept was first successfully tested in the Port of Riga on board LVR Flote's ship LIVA – the first 5G technology-equipped ship in the Baltic Sea. The hydrographic surveys by LVR Flote require large volumes of data transfer. A 5G network enables smooth communication between the ship, its USV 'OTTER', and the coast.

The project's long-term objective is to join forces with the region's largest ports and stakeholders, creating a connected maritime ecosystem in the Baltic Sea and beyond.

Award recipients (left to right): Ansis Zeltinš, CEO, Freeport of Riga Authority and Kaspars Ozolins, CEO, LVR Flote
Presented by: Stephan Piworus, co-founder, Zenze

ENVIRONMENTAL CARE

Port of Antwerp-Bruges

Species Protection Programme

The Port of Antwerp-Bruges is home to 90 protected plant and animal species. It has recently established a dedicated species protection programme to preserve them and, at the same time, allow industrial growth.

The programme is in partnership with Natuurpunt, an independent volunteer association with over 130,000 members, and focuses on 10 of the protected species every five years, ensuring that by 2027, targeted conservation efforts have been applied to a rotating group of species.

To address the historic challenges of obtaining timely permits for new infrastructure in areas inhabited by protected species the Port Authority has established ecological corridors between nature reserves. This ensures that companies can proceed with necessary developments and the protected species have sufficient habitats to thrive. By implementing this comprehensive conservation strategy, the Port of Antwerp-Bruges demonstrates a commitment to balancing industrial activity with the preservation of its unique biodiversity.

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Ministry of Oceans and Fisheries

UN trade & development

GNU 경상국립대학교 Gyeongsang National University

This approach not only safeguards the environment but also supports sustainable development within the port area.

Award recipient: Tonka Pemen, regional coordinator for business development for Central and Eastern Europe, Port of Antwerp-Bruges International

Presented by: Dr. Ju Dong Park, professor in transportation and logistics, Gyeongsang National University

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REPS

INFRASTRUCTURE

Port of Açu

Low-carbon Hydrogen and Derivatives Hub

Porto of Açu leads Brazil's low-carbon development by integrating climate strategies into its port masterplan. The project achieved Brazil's first environmental permit for a low-carbon industrial cluster.

Low-carbon hydrogen, a key energy for the industrial transition, plays a central role in this initiative. A Low-Carbon Hydrogen and Derivatives Hub was developed to ensure environmental and social viability for a 1 million square metres and 3.7GW capacity cluster, integrated into port infrastructure and industrial areas.

During project development, Porto do Açu engaged with national and international stakeholders and their insights and feedback were incorporated into the project design, enhancing acceptance and sustainability and compatibility with Brazilian and local plans and policies for the energy transition.

Porto of Açu's innovative and sustainable master planning and stakeholder engagement sets a model for future industrial clusters in ports, driving regional development, job creation and long-term positive impacts across the entire value chain, contributing to a more just and inclusive energy transition.

Award recipient: VVinicius Patel, port administration director, Port of Açu and IAPH regional vice president for Central and South America.
Presented by: Alfons Huber, CEO and founder of Road Energy Production System, REPS-Tirol GmbH

HEALTH, SAFETY & SECURITY

Ulsan Port

Port Cargo Working Safety Index

Ulsan Port, located on the southeastern tip of the Korean peninsula, has developed the world's first 'Port Cargo Working Safety Index'. By surveying the operations of the Terminal Operation Company and that of liquid bulk terminals, the index quantifies safety levels and reduces port occupational accidents.

The index calculates five safety levels by applying weights to seven diagnostic performance indicators. Each company can utilise the index to diagnose the current safety level of each stevedore.

Following the pilot introduction of the Port Cargo Working Safety Index in 2023, industrial accidents decreased by 7%, and accidents onboard ships decreased by 40% compared to the previous year. Ulsan Port has also maintained a zero major port loading and unloading accident rate for the past five years.

By achieving the reduction of industrial accidents in the port through quantified management of safety levels, Ulsan Port aims to become a leader in global port safety.

Award recipient: Award recipient: Soon-yo Jeong, vice president, Ulsan Port.
Presented by: Jan Hoffmann, head, trade logistics, UNCTAD

AKIYAMA AWARD

The Autonomous Port of Cotonou

Sustainable Transformation of Vendor Livelihoods

For years, vendors sold food along the boulevard at the Port of Cotonou, facing safety risks from traffic and working in unhygienic conditions. To address these issues, the port authority initiated a community engagement programme involving meetings and awareness campaigns with the vendors to address their needs and concerns.

Through this programme, vendors were relocated to a new site near the port which opened in February 2024. The site features two 250-seat halls, 36 stores, 24 sales kiosks, a 12-seat secondary hall, and retail space. The facilities include covered sales stands, hygienic kitchens, toilets for all, running water, electricity and daily waste removal services. The sales areas range from 3.4 to 12 square metres with some equipped with kitchens tailored to the type of service offered.

The Sustainable Transformation of Vendor Livelihoods project has not only improved the working conditions and provided financial stability by increasing customer access, the new location has also helped foster an inclusive community environment by encouraging more diverse clientele, including senior executive and dockworkers, to visit the premises. Furthermore, early results show this move has led to a 20% increase in sales and the ongoing data collection aims to measure further impacts on incidents and waste reduction.

Before creating the new site, stakeholder consultations were held with vendors to discuss site organisation and meal specialisation, and post-relocation, meetings continue to address constraints and identify improvements. Awareness campaigns on health, safety, hygiene, fire safety, plastic reduction and waste management were conducted, as well as clean-up campaigns every Sunday with all the vendors involved, helping to promote social cohesion and integration between the members.

Award recipients (left to right): Rosine B. Sounkoto, sustainability manager, Hakilatou Idrissou, director of legal affairs and litigation and Bart Van Eenoo, CEO, Autonomous Port of Cotonou
Presented by: Dominik Englert, senior economist, transport practice, World Bank

WHAT IS THE AKIYAMA AWARD? Created in memory of one of IAPH's founding fathers, **Toru Akiyama**, who was Secretary-General of IAPH from 1967 to 1973, the Akiyama Award goes to the highest-placed IAPH Sustainability Awards finalist runner-up from a Least Developed Country, a Landlocked Developing Country or a Small Island Developing State.

PROJECT FOCUS CHINA

Quality vs quantity

Home to some of the largest and busiest ports anywhere in the world, China is now prioritising a shift to smarter, more efficient operations

VLAD VOROTNIKOV

In its latest domestic seaport development initiatives, China appears to be shifting away from the concept of prioritising capacity growth at all costs into other areas, notably improving the quality of port operations, adjusting costs and lowering overall environmental impact.

The country runs some of the world's largest and busiest ports, which have enjoyed huge success in recent decades on the back of the nation's booming export industries.

The Chinese government paid attention to domestic seaport development in the 14th Five-Year Plan through 2025, a cross-sectoral policy document outlining social and economic priorities for the period, noted Ricardo Ungo, an assistant professor in the School of Supply Chain, Logistics and Maritime Operations, and director of the Maritime, Ports and Logistics Management Institute at Old Dominion University in the USA.

Pictured: Shanghai container terminal at dusk
Photo: ID 35453854 | Port Shanghai Chuyu | Dreamstime.com

"The report highlights the goal of increasing synergies between port clusters and integrating port development with broader economic development planning," he said.

It usually takes around three years for the Chinese authorities to hammer out a new five-year development plan from scratch. When the work on the latest version began around 2018, the key topic on the agenda in the nation's port industry was how to optimise the efficiency of domestic port operations. A clear signal of the path ahead.

Mathieu Duchâtel, director of international studies and resident senior fellow for Asia at Institut Montaigne, indicated that market players at that time emphasised that, following decades of growth, the Chinese seaport industry was "large but not strong", plagued by overcapacity and disorderly competition.

China needed to manage the balance between cooperation and competition among ports that operated in the vicinity of each other, such as Shanghai and Ningbo-Zhoushan or Guangzhou and Shenzhen, Duchâtel said.

He added that this was largely a question of administrative arrangements and bureaucratic efficiency, with the relationship between state ownership and market forces also playing a role.

"The key question was to move away from a growth model centred on throughput to a next phase of growth driven by quality upgrading of port operations," Duchâtel said.

This logic has been laid into the foundation of the National Comprehensive Three-Dimensional Transportation Network Plan, adopted in February 2021 — another document critical for the Chinese domestic seaport development programme, as explained by Ungo. As indicated in its title, this plan outlines the interconnection and integration of road, waterway and air transport.

"The plan includes goals for the 27 major coastal ports and 36 major inland river ports, plus the acceleration of the construction of eight channels as the backbone for the network," said Ungo.

The Chinese vision of national seaport development envisages integrating freight transport hubs that are well interconnected to the national transport network.

"The plan indicates that for a 10 million TEU port, integrated freight corridor and inland port systems will be built," Ungo said. "This will potentiate the role of the ports as development nodes."

For example, Shanghai International Port Group (SIPG), which develops coastal ports, invested in several ports along the Yangtze River — the Port of Chongqing, the Port of Wuhan and the Port of Nanjing — with the aim of creating a Yangtze River shipping network.

According to Ungo, this strategy is primarily targeted at increasing the competitiveness of the Chinese maritime cluster.

Chinese seaport cities saw the added value of their port economy amount to 6.2 trillion yuan ($870 billion) in 2023, which accounted for 13.4% of these cities' total economic output, the government estimated in a report issued in July 2024. The added value increased by 192.9 billion yuan ($27 billion) over the previous year.

"Another interesting direction is that coastal ports also developed dry ports in cooperation with inland cities, improving their connectivity to global supply chains," Ungo said, adding that there are currently about 70 dry ports in China.

> "The gradual introduction of intelligent technologies is one of the core elements of China's domestic seaport development plans in the coming years

Size still matters

Almost all of China's largest seaports have embarked on ambitious development projects over the past few years.

For example, the first stage of Shanghai Port Luojing Container Port was officially completed on August 7 this year. This means that Shanghai Port, the world's largest container seaport in the past 14 years, has completed a new round of expansion.

The first phase of the Luojing Container Port involves building a 100,000-ton berth and four 10,000-ton berths, with a designed annual throughput of 2.6 million TEU.

Zhou Wei, general manager of Shanghai Port Group Luodong Company, indicated that the development will serve the construction of the Yangtze River Economic Belt, facilitating further growth in Chinese foreign trade with several countries. Moreover, Wei added that the terminal is keen to explore and test innovative port terminal technologies.

A new development plan has recently been approved for Ningbo-Zhoushan Port, the world's largest seaport in terms of cargo throughput and third in terms of container throughput.

By 2035, the cargo throughput is set to reach 1.8 million tons, and container throughput will reach 60 million TEU, the plan stipulated. During the first nine months of 2024, these figures stood at 1.05 million tons and 29.52 million TEU, respectively.

As a part of this plan, Ningbo-Zhoushan Port recently outlined plans to invest almost $1 billion in the Fodu Terminal, which aims for an annual throughput of 2 million TEU.

Guangzhou has announced a port expansion plan that will increase its cargo capacity to 700 million tonnes and the number of standard containers it handles annually to 27 million TEU by 2026. The three-year plan will see an investment of "more than 15 billion yuan ($2 billion) in ports and shipping," according to the strategy.

Guangzhou, one of China's largest ports, handled 675 million tons of cargo and 25.41 million standard containers in 2023, according to the Guangzhou Port Authority. It ranked fifth and sixth in the world in those respective categories last year, the Port Authority said, without providing the ranking source.

This will be Guangzhou's fourth three-year action plan since 2015 promoting the "continuous improvement of the international shipping hub" idea, the port authority said.

Ambitious development plans are also being developed by port authorities in the other largest seaports, including Qingdao, Tianjin, Shenzhen and Hong Kong.

However, some ports need to overcome long-standing challenges before proceeding to the execution of expansion plans.

For instance, Huanghua Port in Cangzhou, in north China's Hebei province, has undergone a remarkable transformation in recent years. The port handles more than 200 million tonnes of coal every year, but its development was hindered by pollution concerns.

As Wang Jingang, general manager of Guoneng Huanghua Port Company, told local press recently, the investments made in turning Huanghua Port into a green port in recent years have paid off. During the past few years, it has focused on areas such as dust control and coal sewage treatment.

"For the treatment of coal sewage, Huanghua Port proposed the concept of building a 'sponge port' involving water treatment," said Jingang. "The water resources recycled by Huanghua Port include rainwater, ship ballast water, and treated sewage. The water storage capacity reaches 1.2 million cubic metres, basically making the port self-sufficient in industrial water, solving both the problem of coal sewage and the problem of industrial water use."

Betting on smarter operations

The gradual introduction of intelligent technologies is one of the core elements of the Chinese domestic seaport development plans for the coming years.

"The National Comprehensive Three-Dimensional Transportation Network Plan includes the promotion of intelligent development," Ungo said. "Systems based on 5G, automation, Internet of Things (IoT) and autonomous systems will be the backbone for monitoring inland waterways and the development of automated terminals and yards."

Pictured: Cargo ship on Yangtze River
Photo: ID 28012801 Liz Lee | Dreamstime.com

However, he warned that the transition to smart systems will imply certain challenges.

"As each port and port cluster is different, an assessment of the right degree of automation for each port will be needed. To maximise the returns on the investment, the automation will naturally be directed to the largest ports and port clusters," Ungo assumed.

Smart systems also imply a higher automation level. China boasts a growing network of automated container terminals, with the Yangshan Port in Shanghai as a prime example. The switch to automated technologies was spurred by the Covid-19 pandemic after the Chinese logistics sector was affected by labour shortages associated with strict lockdowns.

There are already some promising examples of how smart technologies can help streamline seaport operations.

Intelligence is also one of the characteristics of the recently launched Luojing Container Port. New capacities involve an automated container terminal, with remote-controlled quay cranes and autonomous intelligent vehicles for horizontal transport. The terminal also employs NEO-TOS, a state-of-the-art Chinese intelligent operation control system utilising AI, big data and Internet-of-Things to operate quay cranes, rail cranes, and autonomous vehicles.

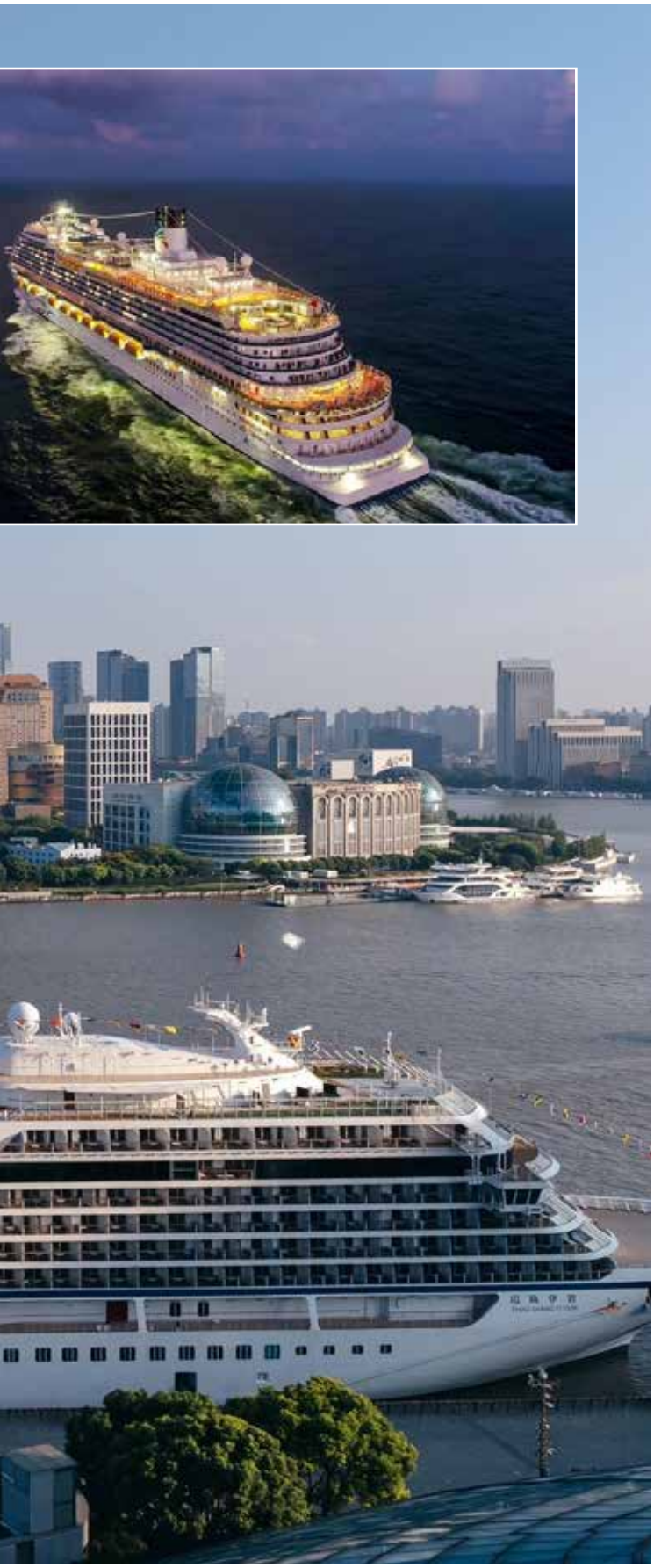
Port officials stressed that the 'smart brain' system of the entire Luojing Port operation also uses domestic databases, operating systems and servers.

In the future, the same technologies will likely be expanded to the whole of Shanghai Port.

"Another promising element is the implementation of multiple waterway community systems, such as the Dalian Port and Waterway Community System," said Ungo. "This type of system allows for fast and accurate information exchange on shipping services, import manifests and electronic payments for logistics customers. This will allow the full digitalisation of port operations and I would foresee its deployment in all major ports." ■


VIKING

A cruise milestone



Viking recently celebrated its historic return to China after *Viking Yi Dun* completed its first voyage from Shanghai to Hong Kong (Shenzhen). Viking's new itineraries include a domestic sailing of China's coast that highlights rarely-visited destinations and ports to which only Viking has access.

"With its ancient history and rich culture, China is a phenomenal destination that many curious travellers have not yet had the opportunity to experience," said Torstein Hagen, chairman and chief executive of Viking. "For 15 years, we introduced China to guests on our Yangtze River itineraries. Now, we are proud to offer these exclusive domestic sailings in China, and we look forward to welcoming people to this part of the world in the Viking way."

Viking's latest move reflects growing interest and activity in China as a cruise market and destination.

It also follows the launch, earlier this year, of China's first large domestically-built cruise ship, *Adora Magic City*, which set sail on its maiden voyage from Shanghai on January 1st, 2024 en route to South Korea and Japan. With a capacity of 5,246 passengers, the luxury 16-deck vessel is aimed at the country's expanding middle class with a growing appetite for travel. It has already completed multiple sailings in its first year of operation, serving around 250,000 passengers in total.

Built by Shanghai Waigaoqiao Shipbuilding, it has been hailed as a milestone for the nation's shipbuilding industry. The sector has traditionally been dominated by European shipbuilders, although international suppliers played a key role in the ship's development.

Wärtsilä ANCS, part of Finnish technology group Wärtsilä, delivered a suite of solutions, including various control and automation systems, for the project. Thomas Heldarskard-winnerskjold, director, automation & navigation, ANCS, said: "*Adora Magic City* not only represents a leap forward for China's shipbuilding industry but also allows new opportunities for the cruising industry in China."

Zhou Qi, project manager, Shanghai Waigaoqiao Shipbuilding, CSSC, called it "a symbol of China's prowess in shipbuilding," setting new standards in China for the luxury cruise industry. ■

Main picture: *Viking Yi Dun* arrives in Shangai
Photos: Viking/Business Wire

Inset picture: *Adora Magic City*, China's first domestically-built cruise ship
Photos: CSSC SWS

ABOUT THE AUTHOR

CAIO CUNHA is an executive with over 15 years of experience in the port sector, with a legal and sustainability background. He is currently responsible for the port relations and Caruara Reserve areas of the Port of Açu and is on the board of directors of the Brazilian Association of Private Port Terminals (ATP).

Nine to five

Caio Cunha is responsible for port relations and Caruara Reserve areas of the Port of Açu in Brazil, one of the winners of the IAPH Sustainability Awards in October. Here, he tells P&H about a busy day showing media around what is now the largest private industrial port complex in Latin America

6:00

The port is located 350 km from my home, so I typically stay at the port's hotel. I enter the lobby for a much-needed latte, the first caffeine shot of the day! I meet some colleagues and we head to Caruara Reserve, the port's conservation area located beyond the northern perimeter for a refreshing kayak trip on the Lagoa de Iquipari. Then, back to the hotel for breakfast, a quick shower, and then cross the street to the Port House.

8:30

Arriving at the office, I found the first open workspace, greeted my team, checked my schedule, opened my notebook and created my daily to-do list. I dedicated this morning to reviewing all my pending tasks for the week.

10:00

After a few calls (and my second and third coffees of the day), I prepared a presentation for visitors scheduled to arrive this afternoon, responded to some outstanding emails and began drafting a strategic stakeholder engagement plan to support a new project—the upgrade of one of our public access roads.

12:00

I joined the marketing team to welcome today's visitors, a group of international journalists, and we headed to the port's restaurant for lunch. For Brazilians, lunch is the main meal of the day, so we had a proper meal – no sandwiches allowed! We enjoyed a small dessert and my fourth coffee of the day (yes, we do love our coffee!). During lunch, the journalists started taking notes on our port and the day's agenda.

13:00

After lunch, our CEO, the marketing team and I led a presentation for the journalists, covering the port's operations, future plans and answering their questions, all of which were diligently recorded in their fast-filling notebooks. After this exchange, we drove to our nautical centre to begin the official port tour.

15:30

Onboard our speedboat, we navigated through our onshore channel (T2), showcasing nine of our 11 operational terminals and the construction site for the port's second gas-fired thermoelectric plant, connected to an LNG terminal. This plant, set to dispatch energy to the Brazilian grid by 2025, will make our port the largest thermoelectric production hub in Latin America, with a capacity of 3 GW.

16:30

Leaving the boat, we boarded trucks with the media to visit Caruara Reserve. We took the more adventurous off-road route, winding through trails and sand dunes. At Caruara, we introduced our social programmes, city-engagement initiatives and ongoing biodiversity and environmental education work led by the Caruara team.

17:30

We wrapped up the tour at Caruara's lookout, enjoying a stunning sunset with distant views of vessels on the horizon. Afterwards, it was time to head back to the hotel.

20:00

I meet some colleagues at the hotel restaurant for dinner with a firm end time of 9:30 pm due to an important event, the Copa Libertadores semi-final match (yes, we Brazilians are passionate about soccer!). We finished business discussions on time and the whole group watched the first half of the game together – Botafogo (Brazil) vs. Peñarol (Uruguay).

22:30

Back in my hotel room, I watched the second half of the match, celebrating as Botafogo secured a spot in the Copa Libertadores finals. I went to bed around midnight, thrilled with the win.

History illuminated

Belfast's iconic Thompson Dry Dock – known as the 'birthplace of the *Titanic*' – came alive with light and sound this September during an immersive production highlighting the city's maritime heritage.

For the first time ever, the slipway hosted the 'Shadowdock' event as part of Belfast 2024, a year-long celebration focused on the themes of People, Place & Planet. Hundreds of attendees embarked on an audio-visual journey, exploring the history, and the future, of Belfast in this inaugural 'cultural activation' at the dock.

"It's about looking at things from a different perspective and that is why we have two ways to view the show, Above and Below Deck," said creative director Harry Sykes. "You can view from the top of the dock, down at the lights and hear the enchanting soundscape with narration on speakers, or you can dive deeper into the story with headphones by descending 40 feet below sea level into the dock itself, and walking through the lights, creating shadows, in a fully immersive experience."

Constructed between 1903 and 1905, the Thompson Dry Dock in Belfast, Northern Ireland, played a pivotal role in the early 20th-century shipbuilding industry. As part of the expansion of Belfast's Harland & Wolff Shipyard – one of the world's foremost shipyards at the time – the dock was designed to accommodate massive transatlantic liners, including the RMS *Titanic* and her sister ship, the RMS Olympic. The *Titanic* was famously placed in the dry dock for fitting out and final touches before its ill-fated maiden voyage in 1912.

Though no longer in use for shipbuilding after the 1960s, the dock has endured as a symbol of Belfast's rich industrial heritage. It has since become a key feature of the redeveloped *Titanic* Quarter, which celebrates the city's maritime legacy. The nearby *Titanic* Belfast museum further commemorates the shipyard and the *Titanic's* story, and the dock now serves as a popular tourist attraction as part of the Maritime Mile.

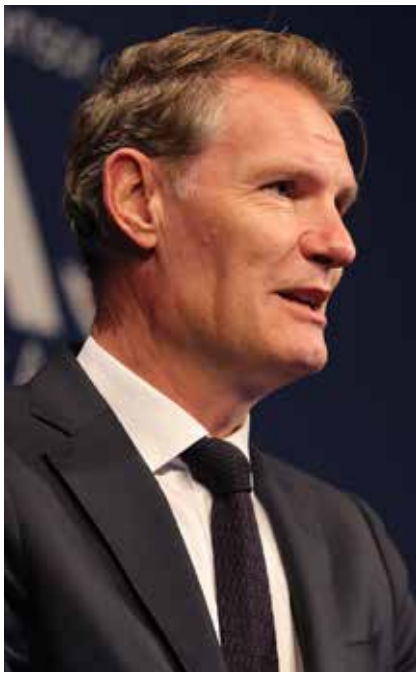
The Thompson Dry Dock remains a monument to Belfast's shipbuilding era and the craftsmanship that made Harland & Wolff a global leader in the industry.

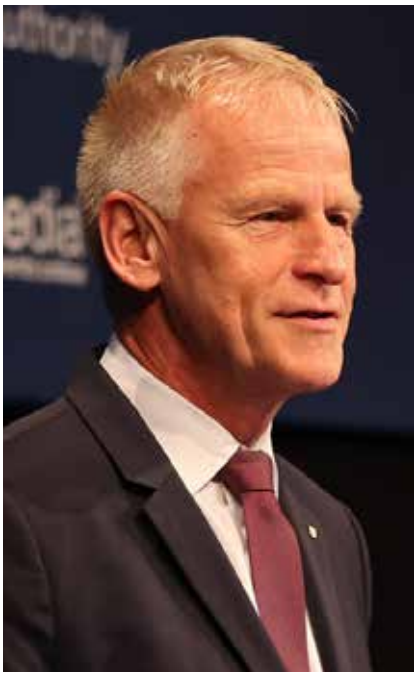
"Shadowdock not only tells the story of the forgotten heritage of the amazing city of Belfast, but also asks questions about where it goes from here," said Gary Lightbody from The Lightbody Foundation, which supported the initiative. ■

Pictured: Highlights of the Shadowdock Belfast 2024 event at the iconic Thompson Dry Dock, known as the birthplace of the Titanic
Photo: Studio Kin/Tourism Ireland

IAPH 2024 **HIGHLIGHTS**

P&H looks at some of the highlights from the recent World Ports Conference in Hamburg and looks ahead to the forthcoming Kobe event in October 2025, to mark 70 years since the formation of IAPH





The World Ports Conference (WPC) in Hamburg was a resounding success, attracting hundreds of port professionals from all over the world. Held at the city's plush CCH Congress Centre in the centre of Hamburg, it came at a critical juncture for the maritime transport sector.

Key speakers included Arsenio Dominguez, secretary general of the International Maritime Organisation (IMO), with WPC following on from the latest round of meetings of the Marine Environment Protection Committee (MEPC). He assured delegates that progress was being made on whether and how to price emissions from global shipping, and that the ports community was being listened to, and remained a vital part of the wider maritime network.

Referring to the ports community as a part of the broader IMO "family", he called for continued support on issues such as decarbonisation and investment in bunkering and onshore power infrastructure, as the industry navigates the green energy transition. "We are here to reiterate that commitment, as well as to learn from you," he told the audience gathered in the main hall.

Another keynote speaker was MSC chief executive, Soren Toft, who said the efficiency and productivity of the ports sector would help to build a more resilient and sustainable industry going forward, helping to serve vessels more effectively. MSC itself has an interest in over 100 ports, reflecting its deep involvement in the sector. "I think ports are sometimes undervalued in the supply chain, but we really value the work that you do."

Pictures (left to right): Arsenio Dominguez, IMO secretary general; Soren Toft, CEO, MSC; Jens Meier, CEO Hamburg Port Authority and IAPH president

All photos: World Ports Conference 8-10 October 2024 @ Richard Langdon

He also highlighted the changing nature of supply chains and the need to remain flexible and agile in the face of unprecedented changes, including further unexpected or so-called 'black swan' events. "I can't predict the next one, but I want to be ready," he told delegates.

Resilient supply chains

The role of ports in building out this resilient supply chain would be critical, according to Noel Hacegaba, chief operating officer at Port of Long Beach. "What we've learnt since the pandemic is how important it is for port leaders to have a global mindset." This would help to build an infrastructure that is more future-proof, he added. "We need resilient port authorities to enable a resilient global supply network." He also suggested that as well as working together more closely, it was time for a more coordinated action plan among the port community and other industry

stakeholders. "We have to go from collaboration to coordination."

These were all sentiments echoed by Mary Carmen Barrios, senior vice president, operations, at Wallenius Wilhelmsen, a leader in integrated vehicle transportation and logistics, who underscored the role of ports in securing end-to-end supply chain solutions for car manufacturers during a time of seemingly-constant upheaval. Labour strikes and the crises affecting maritime traffic in and around the Red Sea are just some of the challenges to have impacted the shipping and ports industry in recent months.

At the same time, all sides are being tasked with the need to decarbonise operations and to shift to more sustainable practices, additional long-term challenges that pile pressure and greater responsibility onto the sector. These are areas in which the likes of Wallenius Wilhelmsen are taking the initiative, with Barrios highlighting the company's pioneering new wind-powered vessels. "We are testing theory," said Barrios. "This is the next generation of sustainable shipping."

Green transition

Boudewijn Siemons, chief executive of Port of Rotterdam Authority, continued to explore the topic of port leadership in climate action. He announced plans to integrate the efforts of leading world ports – led by the World Ports Climate Action Programme, or WPCAP – on developing tools for use by all ports on onshore power adoption and port readiness for new clean marine fuels into IAPH's Climate and Energy Technical Committee.

When asked if he believed the industry could achieve zero-carbon transportation, the head of Europe's busiest port said: "Yes, I do think it can be done." The advent of more green corridors was a step in the right direction, he added, but the

Kobe 2025

The Hamburg conference closed with a look ahead to next year's World Ports Conference in Kobe, Japan, which will mark IAPH's 70th anniversary. Tomohisa Izumi, deputy director general, Ports & Harbours Bureau, Kobe City Government, invited delegates to the city to attend the conference on 7-9 October next year.

Delegates also enjoyed an impressive video showing a vibrant and advanced port city venue ready to host global supply chain professionals from around the world for networking, innovation and debate.

More information on #IAPH2025 will be available soon, as IAPH returns to its roots in Kobe to celebrate seven successful decades of operation.

Save the date:
World Ports Conference 2025
Kobe, Japan
7-9 October, 2025

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> When we think about physical infrastructure, it can't come without digital infrastructure
>
> **MARGI VAN GOGH,**
> World Economic Forum

economics of driving green shipping still needs momentum. "We need to create an economic reality in which it pays off."

There was related discussion around the development of the CEM Hubs initiative. That includes what a Clean Energy Marine Hub might look like in terms of infrastructure, upstream and downstream supply chains, renewable electricity supply for sustainable electrolysis and industrial production of hydrogen carriers such as ammonia and methanol. But the challenges are far from straightforward given the current evolution and economics of clean marine fuels. "We don't know for sure what tomorrow's fuel will be," said Ebsen Poulsson, immediate past chairman of the International Chamber of Shipping (ICS).

It was a point underlined by the World Bank's Rico Salgmann. "We're dealing with an immature, not yet existent market for clean fuels," he told delegates. "Up until that demand is there, we're navigating a bit in the unknown."

While policy may act as a stimulus, and regulation may have the ability to clear the fog, the ports sector too can play a role as a partner and one that can help de-risk this nascent system. Qin Aohan of China Classification Society outlined the new green fuel network in China, a template for progress in transitioning to a clean energy model.

Into the future

Data collaboration and digitisation was another major focus of the conference, with streams that included information on artificial intelligence (AI) and other innovative technologies that could reshape ports in the years to come. "When we think about physical infrastructure, it can't come without digital infrastructure," said Margi Van

> What we've learnt since the pandemic is how important it is for port leaders to have a global mindset
>
> **NOEL HACEGABA,**
> COO, Port of Long Beach

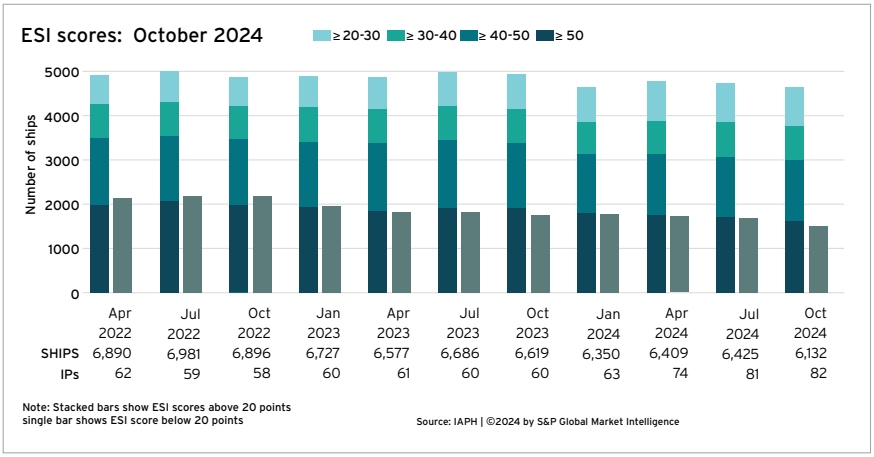
Gogh of the World Economic Forum.

While these challenges may be daunting enough on their own, a counter view was stated by Tim Power, managing director of Drewry, pointing to a different future entirely. He said most energy transition talk generally assumes that maritime trade will look a little different in the future but that everything will probably be okay. But as the energy transition moves ahead, much of today's current trade in commodities such as oil, gas, coal and related products, may largely cease to exist. Such a decline could result in reduced maritime trade altogether, potentially resulting in stranded ports and other assets. Moreover, issues at critical bottlenecks can bring with them adverse impacts with untold consequences. "The global economy would not function if the Strait of Hormuz were to close," he said as an example.

Ultimately, there was a determination to work together in a spirit of collaboration in the face of such unknowns and challenges. The IAPH Sustainability Awards Hosting this year's event, was a highlight showcasing how port professionals worldwide are rising to the challenges they are now faced with.

Hosting this year's event, Jens Meier, chief executive of Hamburg Port Authority and IAPH president, struck an upbeat tone, suggesting that ports were no longer mere transit points, but increasingly hubs for enterprise and innovation. Rephrasing the famous NASA quote from the Apollo 13 mission, he said the emphasis must now be not on the 'problem' but on finding the answer: "Houston, we have a solution." He again called for greater "collaborative action" and said the industry was up for the challenge, citing a familiar saying from northern Germany: "What must be done, must be done." ■

Latest ESI scores released



The latest scores of the IAPH Environmental Ship Index (ESI) were published on 1 October. The number of vessels with an ESI score above 20 is at 4,636, whereas the total number of vessels in the ESI database is at 6,132. The average ESI score again increased slightly to 32.6. The number of incentive providers in the scheme has increased and now stands at 82.

You can find out more about how to get involved in ESI via our dedicated website, or contact Green Award Foundation, the administrator of this IAPH scheme. ■

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Daniele Rossi, President

Welcome to new members

We are pleased to welcome as new members of the association:

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EVENTS TIMELINE 2024-2025

2

DECEMBER (2-6)
IMO Maritime Safety Committee
The 109th IMO Maritime Safety Committee in London, UK

imo.org

3

DECEMBER (3-4)
The final IAPH Harbour Cafés of 2024
take place online on 3 December (10.00-11.00 CET) and 4 December (17.00-18.00 CET)

iaphworldports.org

Q&A

EDVARD MOLITOR

New chairman of Climate & Energy technical committee

Edvard Molitor, head of international public affairs and sustainability at Gothenburg Port Authority, has been appointed as the new chairman of the IAPH Climate and Energy (C&E) technical committee

He has served as vice chairman since 2021 and steps into the shoes of previous chairman Peter Mollema of the Port of Rotterdam.

At the Port of Gothenburg, Molitor is responsible for external relations with a special focus on sustainable development and decarbonisation. He has broad international experience in environmental management, sustainable development, maritime operations and marine pollution response, having also worked for SSPA Sweden AB, at the European Maritime Safety Agency (EMSA) and at the Swedish Coast Guard headquarters.

He also chaired the Sustainable Development Committee of the European Sea Ports Organisation (ESPO) between 2017 and 2020 and is a board member of the IAPH Environmental Ship Index.
P&H caught up with him to find out more.

Q: What are your priorities at Port of Gothenburg?
A: Our main priority at the Port of Gothenburg is limiting climate emissions, both for the port itself and within the entire transport chain, through the provision of onshore power supply and alternative fuels, supported by environmentally-differentiated port fees. We want to be one of the world's most sustainable ports through our continuous work on innovative solutions that lower our environmental footprint.

Q: Can you tell us about your previous work there?
A: I previously had responsibility for the overall sustainability work at the port, leading the strategic management in incorporating sustainable development goals within the company, where the aim was towards a balanced governance through proactive environmental efforts in combination with continuous business growth. Since 2022, I have focused more on the international arena.

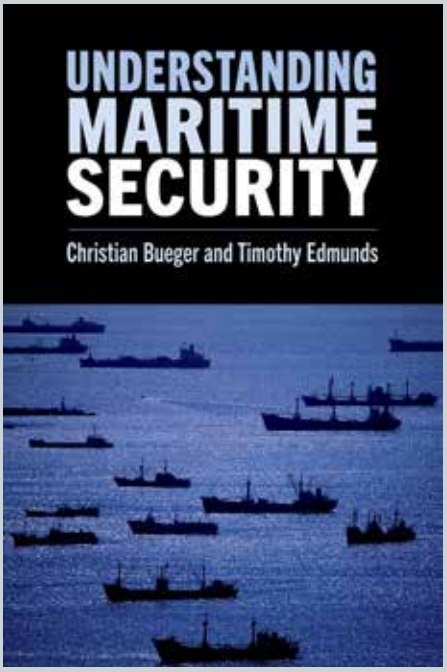
Q: What do you hope to bring as the new chair of the C&E technical committee?
A: I hope my wide experience across climate, sustainability and business allows me to help IAPH members find a balanced approach to decarbonisation and future work on limiting the environmental footprint of ports. I also hope my in-depth knowledge from various projects and pilots will provide a basis for improving the pace of work in the committee and among the members, as we learn from each other and avoid making the same mistakes others have made. Furthermore, I bring extensive experience from the development of new legislation in the EU. This can help in IAPH work towards IMO, as we look to spread the EU's ambition level to thenew IMO regulations.

> "The success of IAPH is built on the ambition and dedication of its members and therefore relies on their active input
>
> **EDVARD MOLITOR,**
> chairman of the IAPH Climate and Energy technical committee

Q: How can IAPH members support the committee?
A: I would like to encourage all CEOs within IAPH to allow their colleagues on all levels to take part in the work of the committees and the working groups. The success of IAPH is built on the ambition and dedication of all of its members and therefore relies on their active input. ■

BOOK AUTHOR

CHRISTIAN BUEGER is professor of International Relations in the Department of Political Science at the University of Copenhagen, where he leads the Ocean Infrastructures Research Group and the Copenhagen Ocean Hub.



BOOK AUTHOR

TIMOTHY EDMUNDS is professor of International Security and Director of the Global Insecurities Centre at the University of Bristol. He is also one of the directors of the SafeSeas network.

THE REVIEW

Understanding Maritime Security

Christian Bueger & Timothy Edmunds

This academic but accessible book is for all those keen to learn about maritime security, one of the hot topics in the industry right now.

Whether it is pirates, smugglers, illicit fishing, or disputes in the South China Sea, the oceans are of continuing importance to international security. At a time of heightened geopolitical tensions worldwide, this is a subject that takes on even greater significance, something that should be understood by all port professionals.

This book, written by two of the most reputable scholars in the field, offers a concise and coherent introduction to all things maritime security, drawing on case studies, examples and experiences from across the world. The authors analyse key issues in security at sea, including inter-state disputes, terrorism, piracy, smuggling and illicit fishing and how states have responded to these and other challenges.

Christian Bueger and Timothy Edmunds provide a concise introduction to the history of security on the high seas and explain the core frameworks of analysis that experts use to understand and tackle challenges affecting maritime order.

The authors also analyse future trends and show how maritime security is impacted by the critical infrastructure agenda, emerging technologies, cyber security, climate change, as well as the renaissance of geopolitics.

Understanding Maritime Security synthesises a decade of scholarship, research, teaching, talking and thinking about maritime security by the two authors to provide a coherent and concise introduction to what can be a complex and broad topic.

It also examines an area that is in constant flux, challenged by everything from automation and cyber security to the impact of climate change and biodiversity loss.

This book evolved from conversations by the authors with people engaged in the diverse spectrum of maritime tasks across different parts of the world and aims to make intricate matters digestible, to connect the dots between different issues and disciplinary approaches, and to take a global view.

It does this very well, presenting a concise introduction to the history and evolution of security at sea, and a glimpse into the maritime security world of today and the multiple challenges faced ahead. Comprehensive and incisive, this primer of maritime security is essential reading for maritime security professionals and students of this increasingly important issue. ■

WORLD PORTS CONFERENCE 2025

7 – 9 October 2025
Kobe, Japan

iaph
international association of ports and harbors

SAVE THE DATE

As the Association celebrates its seventieth anniversary, IAPH looks forward to welcoming you to Japan and the city of Kobe, where its roots can be found. Following the symbolic idea of establishing world peace through world trade, and world trade through world ports, this 70th annual meeting at the #IAPH2025 World Ports Conference will reunite global port leaders with their counterparts from policy makers, financial institutions, ship and cargo owners, and service providers, delivering a forum for networking, knowledge sharing and debate.

To secure your delegate place or further information on attending/sponsoring contact the events team:

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#IAPH2025

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