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

Taking action

Elisabeth Munck af Rosenschöld, IKEA
supply chain sustainability manager, on
integrating ports into greener operations

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Fuel power

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EDITOR'S COMMENT



INES NASTALI

Editor

The new fuel

Producing this edition of *P&H* revolved around the upcoming IAPH World Ports Conference that will take place in Abu Dhabi, United Arab Emirates, from Oct. 31 to Nov. 2.

If you have not registered for the conference, perusal of the magazine in front of you – or on your screen – might convince you to do so as we have put together a preview for you that should allow you to get a feel of what to expect during the three-day conference.

If you do hold a physical copy of the magazine in your hands, it is more likely you are doing so while already in attendance at the conference – if so, I look forward to catching up with you – and the notion of the preview, in absence of a printed conference guide, holds true nevertheless.

From distinguished speakers such as the new IAPH associate and first cargo-owning member IKEA, the World Bank, the World Customs Organization and United Nations Conference on Trade and Development, better known under its abbreviation UNCTAD, there are many discussions to be had and concrete expert guidance for transformational topics, such as around the maritime single window, to be launched during our time in Abu Dhabi.

The maritime single window is probably one of the most comprehensive structural developments ports have had to deal with in recent years.

While the COVID-19 pandemic has spurred on digital exchange of cargo, trade and crew information between ports and shipowners owing to the limited in-person contact and for speed's sake, the amended IMO Facilitation Regulation that will enter into force in January 2024, will make it mandatory for the first time for ports to

establish digital data-exchange services and systems for all maritime stakeholders involved in the port call.

Collaboration is key here. One might say collaboration is therefore the new fuel, as the –slightly cringe – saying now goes within the maritime industry.

So now is the time to source new and alternative collaboration to supercharge maritime digitalization and make sure we are all ready for the massive changes ahead.

For ports, these are twofold: port authorities around the world hope to benefit from an increased low-carbon energy source transport, with higher amounts of methanol and ammonia being shipped in the second half of the century.

Second, the quest to produce and source green fuels for maritime propulsion have the potential to bring in new players for fuel bunkering in ports and coastal fuel production as those fuels have to be transported from the source location to the bunkering hub.

With the current energy outlook, fossil fuels will continue to make up most of marine propulsion until the mid-century, but how to most effectively use the time in the run-up?

Before those alternative fuels come into play, I think emphasis should therefore be placed on setting up systems that allow for easy trade and exchange of information.

The maritime single window is a chance to propel the port sector into a modern information-sharing environment that we know from other transport sectors, such as aviation.

What concerns me is that when a regulator introduces a regulation, this does not mean the industry follows suit in implementing it. When we look back at the mandatory introduction of port community systems — a prerequisite for a functioning maritime single window, states did not keep apace.

The IAPH found that two years after the regulation came in place, only one-third of countries had functioning port community systems. A missed opportunity as those systems can be – and should be, to avoid duplication of data – integrated into the national maritime single window. The port community system might already work between more stakeholders than the authority-focused maritime single window — such as between shipping lines and freight forwarders.

Hence, in this magazine edition and at the conference, we will not only discuss the single window but still talk about how ports can support the development of those systems to get their digitalization journey underway or unify the manifold existing systems and exchanges between stakeholders, for which I can only again emphasize: collaboration is the new fuel. ■



TONY SLINN
Contributor

When you prepare questions to interview someone as senior as World Customs Organization deputy secretary-general Ricardo Treviño Chapa, background research is vital. Given that IAPH and World Customs Organization have been examining how to work better together for some time, that made their 89-page Guidelines on Cooperation between Customs and Port Authorities essential reading. But what to ask, given the resulting article would have limited space? Perhaps the most important thing to come out of the guidelines was not just the challenges in aligning differing digital systems, but also something very human: the issue of trust and the need for cooperation. Getting that right is key to a more efficient tomorrow. ■

IN CONVERSATION WITH
ELISABETH MUNCK AF ROSENSCHÖLD

In the same boat



Elisabeth Munck af Rosenschöld, sustainability manager at IKEA supply chain operations, and IAPH's Patrick Verhoeven talk about the home-furnishing retailer's decision earlier this year to join the IAPH as an associate member to support its quest to reduce emissions stemming from the transport of its products

Q:

Elisabeth (E), what is IKEA's current transport carbon footprint and what are your reduction targets?

E: IKEA supply chain operations is a big transport buyer with about two million shipments a year over land and ocean, emitting about 1.3 million metric tons of greenhouse gas. Considering the transport and logistics that IKEA supply chain operations is responsible for, it amounts to about 5% of the total IKEA value chain emissions, of which just over 2% of the total emissions comes from ocean shipping.

One of the key priorities within the supply chain operations is to reduce carbon emissions by an average of 70% by 2030, compared with the baseline year 2017. This is part of the greater ambition to reduce more GHG than the IKEA value chain emits, still while growing the IKEA business, and we are well on our way. If we look back five years, we have decreased the CO₂ emissions of every transport that we do by an average of 18%. Although we increased transport by 12% in ton kilometers, we reduced the total emissions by 8% compared with 2017.



Q: How will you achieve these goals?

E: Our decarbonization agenda consists of the three pillars — reduce, replace and rethink — where reduce is about increasing efficiencies throughout the value chain and working together with carriers to reduce fuel consumption, increase equipment utilization and optimize our transport network. In doing so we reduce the number of transports, save costs and lower emissions. Replace is about replacing fossil fuels with more sustainable fuels where a switch to intermodal solutions plays a big part since we, on average, reduce the carbon footprint by half compared with using diesel trucks. Intermodal means that the longest distance is done by rail, and trucks are only used for shorter distances, and we are constantly increasing our share of products being transported by rail instead of road. In fiscal year 2022, our share of intermodal was almost 49% in ton kilometers compared with 37% in fiscal year 2019. In Europe, our share was more than 52%. The key is to continue to collaborate with like-minded partners to scale up the development of infrastructure, technologies and renewable energy sources. Lastly, rethink is about integrating innovations and new types of collaborations into our value chain. We are continuously rethinking our ways of working, whether it concerns the energy consumption in our operations, the technologies we use, the energy sources or how we move our products through the supply chain.

Q: Patrick, the recent supply chain crisis has added to the increased collaboration and acceleration of decarbonizing the transport sector. This includes ports and their strategic outreach. How are you seeing the relationship between shippers and ports?

P: We see a much closer dialogue with the cargo owners than ever before. Many ports, as part of their strategy, are now talking to their ultimate customers, even if they do not have a contractual relationship with them. At the World Ports Conference last year, we invited Lori Fellmer of BassTech International and chair of the US National Industrial Transportation League's Ocean Transportation Committee to outline what shippers need from ports. The message we got was very clear: speed, predictability, alignment with cargo owner experience and a go-to for exception handling. Cargo owners need a one-stop-shop contact for what goes on in the complex ecosystem that

“We see a much closer dialogue with cargo owners than ever before”

PATRICK VERHOEVEN
IAPH

a port community represents. This is a role more and more port authorities are becoming aware of.

Q: How will this new collaboration help with decarbonizing the transport sector and push the switch to alternative fuels?

E: Climate change is so much bigger than just the goals and objectives of one company. To tackle climate challenge the whole industry needs to make this transformational journey and we need to come together and collaborate with stakeholders that we traditionally have

not worked with, such as IAPH. By doing so we can get a better end-to-end perspective of our transports, identify opportunities for development and influence a shift toward alternative fuels.

A prerequisite for knowledge sharing is transparency and visibility of emissions along the supply chain. We are not saying what kind of fuel should be used because there are many different pathways to the future. What is important is that fuel needs to be sustainable in the long run from environmental and social perspectives.

Q: What is needed to kickstart the decarbonization of maritime transport?

P: There are two dimensions involved. The obvious one is the ship-port interface, where ports can facilitate the decarbonization of shipping in various ways. First and foremost, by providing low- and zero-carbon fuel bunkering in a safe and efficient manner.

In IAPH, we have built an extensive toolbox, which focuses on the safety aspect and with the World Ports Climate Action Program, we are now preparing the launch of a port-readiness tool that will give carriers insight in the fuel bunkering options available in ports.

Other elements are the provision of onshore power, the optimization of port calls and the provision of incentives to ships that are performing better emission-wise than what international regulation requires. The latter is the subject of our Environmental Ship Index, which has been in operation for 11 years and is now being updated to include the latest IMO technical and operational CO₂ indicators. All these facilitating measures are covered by the IMO's 2019 Ports Resolution, and we encourage our member ports to actively uptake them, using the tools that we have developed in IAPH. For ports, the future will also bring change in terms of business as they will



“We want our partnership to lead to more collaboration across the total value chain”

ELISABETH MUNCK AF ROSENSCHÖLD
Supply chain sustainability manager, IKEA

facilitate the transport of future fuels. The International Renewable Energy Agency (IRENA) predicts that by 2050 probably 50% of all the low- or zero-carbon fuels will be transported by ship.

The current petrochemical clusters are all based on refineries and the oil industry looks at all the major ports. So, to transform that into zero-carbon energy clusters is challenging and we need all ports starting to get into that discussion as well.

It will be important to attract investment for hydrogen plants or other industries while also working out what to do with the existing network — another sign that getting involved early in the low-carbon transition will pay out in future to not miss the boat.

That is why we got involved in the Clean Energy Marine (CEM) Hubs Initiative of the International Chamber of Shipping, which was officially launched in July at the Clean Energy Ministerial conference in Goa, India.

Under CEM Hubs, governments and industry across the value chain will share best practices to de-risk investment to accelerate production.

E: To accelerate the decarbonization of the ocean transport industry, a portfolio of different solutions is needed. Since many of these solutions are rather complex, collaboration across the supply chain is critical to drive the development toward zero emissions. And it can be both bigger and smaller projects, because they all contribute to the overall goal of decarbonization. The concept of green corridors is a good example of how to address sustainable transport economically, environmentally and socially, allowing different stakeholders to get involved at the right time and concentrate on specific manageable pieces.

However, collaboration does not necessarily mean that everyone needs to agree on everything. The climate challenge is huge and it is everywhere, so it is important that we have enough confidence in the direction to slice the challenge into a multitude of solution-focused actions.

Q: What results would you like to see from the collaboration between IAPH and IKEA?

E: We want our partnership to lead to more collaboration across the total value chain end to end to reduce emissions, which is the reason why we joined IAPH. Ports are important hubs as interfaces between our land and ocean transportation and key players when it comes to enabling zero-emissions solutions for ocean shipping and land transportation. As a member of IAPH, we look forward to learning more and participating in discussions on how we can contribute to decarbonizing the transport industry together.

P: We are very excited by IKEA supply chain operations joining us as a member. I think this is the first time in our almost 70-year history that we have a cargo owner joining as an associate member and we are really keen to continue on that pathway to establish this particular dialogue with the cargo community. Stefan Krattiger, project leader for ports in IKEA supply chain operations, already joined the IAPH Technical Committee Days in London, which took place in April with the view that ports make up a substantial part of the supply chain from an end-to-end perspective. He said that many stakeholders involved in the IKEA supply chain are connected to ports, and that IAPH therefore is an important platform to bring port stakeholders together to discuss sustainability topics, digitalization and day-to-day operational issues. ■



PERSPECTIVE MARITIME SINGLE WINDOW

Ready for action

The maritime single window (MSW) for data interchange will be required in ports across the world by Jan. 1, 2024, which will accelerate the digitalization of shipping, mandated via the IMO's Convention on the Facilitation of International Maritime Traffic (FAL 1965).

For the electronic interchange of information on arrival, stay and departure of ships in ports, public authorities in all IMO member states must set up, manage and use single-window systems.

Additionally, to ensure that information is submitted or provided just once and is reused to the greatest extent possible, public bodies will need to collaborate and integrate the electronic transmission of the data.

Users can upload papers, including the products manifest, bills of lading, import and export permits, certificates of origin and other pertinent trade documents via the MSW. The system automates these documents' validation, processing and approval, enabling faster goods clearance and lessening

administrative work, hence reducing the delay of shipment. A study by the Asia-Pacific Economic Cooperation Policy Support Unit, published in 2018, claimed that by reducing shipment delays, one can save as much as \$115 for each sea container.

Malaysia is on track

In April 2023, Malaysia's transport minister announced that the Malaysian MSW will be ready by the third quarter of this year, and it will be implemented at Port Klang and Johor Port through a unified platform developed by both entities. The MSW system can fulfill the obligation to IMO FAL.

In Malaysia, the Royal Malaysian Customs Department, Malaysian Quarantine and Inspection Services, Malaysia Marine Department and port authorities are among the several government organizations that are integrated into the MSW and are involved in marine trade. By offering a uniform and centralized platform, better coordination and information exchange are encouraged

between various authorities, resulting in increased effectiveness and fewer delays in the clearance process.

The idea of the Malaysian MSW was mooted in the 2000s in the form of a trade facilitation portal or simply known as the national single window headed by the Ministry of Investment, Trade, and Industry as the lead agency and the Malaysia External Trade Development Corporation as the implementing agency. Prior to that, the UN European Economic Commission has already recommended the implementation of the single window mainly in facilitating cross-border cargo movement for trading systems.

It is estimated by the World Trade Organization that the single-window system increases port efficiency from 25% to 75%, while at the same time cuts down transport costs by about 12%. This is further supported by the World Bank, which stated that the single-window system leads to the reduction of transportation costs by up to 75%, hence resulting in a 25% rise in bilateral foreign trade.

Generally, the MSW is able to resolve issues of redundancies since the procedures where businesses have to submit the same information to multiple agencies are eliminated. Currently, port operators have to engage with 12 different agencies, including the Malaysian Maritime Enforcement Agency, the Immigration Department, the Department of Malaysian Quarantine and Inspec-



ABOUT THE AUTHOR

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tion Services and port authorities, through multiple platforms. Nevertheless, through the MSW, users, including importers, exporters, shipping agents and government agencies, will be submitting their electronic documents and information required for customs clearance and other regulatory processes for compliance, thus providing added value and integrity among maritime industrial players and government agencies.

The MSW also reduces bureaucracy and increases efficient operational time, hence reducing the cost burden for shippers. This is supported by the World Bank through its study published in 2017, which found that electronic data interchange saves export and import border compliance times at 68.3% and 69.4%, respectively. In fact, the UN Economic and Social Commission for Asia and the Pacific had already found in 2014 that cross-border paperless trade could reduce export costs to 17% from 31%.

Eventually, through this time-and-cost-saving platform, the MSW allows the government to deliver a more customer-friendly experience to businesses, especially to sensitive goods traders, such as agricultural and manufacturing products.

Challenges

At the same time, the participation of various stakeholders, including government agencies, port authorities, customs agencies, shipping lines and logistics providers, especially at the early stage is foreseen to be an issue. However, this is manageable through several engagements led by the Ministry of Transport in addressing their concerns and establishing consensus on data sharing and

system interoperability. In addition, it is forecast that development and compatibility of the legal and regulatory frameworks for data sharing, privacy and security may pose some challenges in the Malaysian MSW implementation, especially

in ensuring compliance and harmonization across several entities and jurisdictions. Hence, prompt actions involving complex tasks are taken in considering national and international laws, regulations and standards relevant in implementing the MSW.

The challenge in accurate, reliable and consistent data standardization, harmonization, integration, and inter-operation across diverse systems under one roof of the MSW involving several levels of stakeholders will also adversely impact the effectiveness of electronic data exchange.

“By the end of this year, Malaysia is ready for the MSW”

SHUHaida ISMAIL
Director,
Maritime Institute of Malaysia

Not only the data, but also the infrastructure must be able to ensure reliable accessibility and connectivity to support the MSW operation, especially in handling the data traffic. This is where the proper interchange management efforts should be in place through training, not only to the system owners, but also to the users, for effective adoption and eventually acceptance by the maritime industrial players. Through effective and active engagement with stakeholders, although time-consuming and resource-intensive, agreement upon common data formats, definitions and exchange protocols can be achieved.

Outlook

Nevertheless, it is important to highlight that the Malaysian MSW is not intended to replace or compete with other existing systems, but to coexist and complement each other. The MSW ensures involvement from every stakeholder to increase efficiency for trade facilitation by enabling connections and single-window interactions, besides facilitating collaboration between trading countries. Despite all the hurdles and challenges that might obstruct the implementation of an MSW, in demonstrating Malaysia's commitment and unwavering support to the IMO for the benefit of maritime industrial players, by the end of this year, Malaysia is ready for the MSW. ■



Photo: Getty Images/Alexey Lesik



FEATURE ENERGY HUBS

Port transfer

The maritime industry eyes up carrying low-carbon energy products in future but replacement of the manifold coal and oil shipments might only start in the second half of the century

INES NASTALI

H

ow ports fit into the energy and fuel transition is one of the tasks to figure out for the freshly launched Clean Energy Marine Hubs (CEM Hubs) Initiative.

The initiative, aimed to establish production hubs for future low-carbon fuels, was formally launched and adopted by the Clean Energy Ministerial at its 14th conference held in Goa, India, at the end of July — and the IAPH is part of the founding organizations.

The Clean Energy Ministerial is a consortium of countries that together emit 80% of global emissions, represented by respective government departments entrusted with advancing clean energy technology. Current other hub backers are Canada, Norway, Panama, Uruguay, the United Arab Emirates, as well as the International Chamber of Shipping (ICS).

“The energy maritime value chain is far from ready to transport the influx of low-carbon fuels that are expected between now and 2050. To accommodate demand, the shipping industry is expected to transport at least 50% of all traded low-carbon fuels by 2050, according to the International Renewable Energy Agency [IRENA],” the IAPH stated in a project launch release, emphasizing the need of the initiative.

Phase down

Currently, maritime transport handles 36% of traded energy products, according to maritime consultancy firm Clarksons, with the majority being oil products, followed by natural gas and coal.

While global need of coal and oil shipments will reduce toward 2050 with countries in the EU working toward achieving the EU’s net-zero Green Deal that calls for electrification of the energy system coupled with the deployment of renewables to decarbonize the supply chain, it does not look like maritime transport will benefit from the expected transport of low-carbon fuels in the short term. First, usage of renewable energy, such as wind and solar, will reduce the tonnage of fuels required to be shipped.

At the same time, oil and gas production and, therefore, export will continue. So far, 12 countries have joined the Beyond Oil and Gas Alliance founded by Denmark and Costa Rica, however, none of those are major oil producers or exporters.

During COP26 in 2021, governments agreed on a phase-down as opposed to a phase-out of oil, natural gas and oil. On the contrary, some of the big producers, such as Saudi Arabia, plan to finance green energy via fossil fuel revenue, hence the plan to continue exploring oil and gas for the foreseeable future — financial support from governments for fossil fuel production and consumption is increasing, the International Energy Agency confirmed.

While 48 global governments have committed to phase out coal power, with the majority aiming to end it at some point after 2025, this again does not include major users, such as mainland China, India or the US.

Additionally, LNG – known to be a bridging fuel when produced from fossil fuels and emitting climate-damaging methane – has become popular in energy usage. Especially the Russian invasion of Ukraine and the following export sanctions saw European countries, such as Germany, scramble to reroute its gas supply and even build LNG import terminals, an investment that worries environmental stakeholders.

Research by nongovernmental organization New Climate, which receives funding from government agencies and international environmental organizations, suggests that “terminal operators appear to be deliberately accepting stranded asset risks, presumably with the goal of securing their market share by bidding for larger contracts. The plans are oversized, even if there are intentions to eventually repurpose the terminals to import green hydrogen or ammonia,” scientists said in their report, which they aptly titled *Plans for German LNG terminals are massively oversized*.

The government plans investments of up to \$10 billion into those terminals until 2038 — seven years before Germany plans to be a net-zero emitter.

For port authority Niedersachsen Ports, this means investment costs for the LNG ship jetty before operator Uniper SE takes over the remaining construction of the terminals, with financial support from the government. “The terminal in Wilhelmshaven is being re-financed via the fees our customers are paying, currently Uniper,” Dörte Schmitz, head of communications at Niedersachsen Ports said to *P&H*.

For one terminal, the total investment costs are about \$100 million and Niedersachsen Ports is planning on continuing to use the terminals for future hydrogen and ammonia import. “The infrastructure is ready for all kinds of gas imports. It is possible that the superstructure, such as the gas lines on the jetty, will have to be adjusted. These are operated by our customers,” Schmitz added.

Globally, the demand for LNG is forecast to grow until 2050, according to S&P Global Commodity Insights. Consequently, shipowners are spurred on by this with the number of LNG tankers that will enter into service forecast to double by 2028, according to newbuild data by Commodity Insights. How those numbers develop in the years to come will be interesting as any future com-

missions, with a lifespan of at least 25 years, might sail into the IMO’s and EU’s net-zero target of or around 2050 with the majority of those carriers running on boil-off gas produced during transport.

ETS on the horizon

However, before alternative fuels might change the trade pattern of energy shipments, another abatement regulation is set to disturb oil and bulk trade flows into EU ports: the EU’s emission trading system that from 2024 will include 100% of intra-EU emissions and 50% of emissions from journeys ending or starting in EU ports.

This could lead to a change in long haul flows. “I’m speaking of oil specifically now, but it applies equally to containers and dry bulk. If we take a scenario where you have a very large crude carrier loaded with oil in North Asia, these regularly flow to the EU at the moment and discharge in the EU,” Steve Laybourn of Ardmore Shipping said to Commodity Insights’ “Carbon Neutral Cargo” report. “Therefore, we could see some significant carbon leakage in the short term as charterers look to maybe ship these cargoes outside of the EU. So, you would maybe perform North Asia to North Africa, breaking bulk in North Africa and then placing them on smaller tankers because delivering the cargo to the EU states will have very low carbon overhead,” he added.

Reshaping trade routes

While it looks like there might be a changing trade pattern emerging of some sorts, the low-carbon fuel transport will likely pick up from the middle of the century, so what can ports do now to prepare — production centers, vessels, and port infrastructure required to accommodate expected demand do not exist at commercial scale.

Under CEM Hubs, governments and industry will share best practices to de-risk investment to accelerate production.

IAPH managing director Patrick Verhoeven attended the hub launch in Goa and participated in a roundtable with government and industry representatives. In his comments, he linked the project to

the industry adoption of containerization.

“The move to global production and consumption of low-carbon fuels will fundamentally transform business models of ports and, as with containerization some 60 years ago, first movers and early adopters are emerging.”

The difference is that containerization did not have global targets and deadlines. “That is why an element of coordination and planning is needed. This is precisely where CEM Hubs comes in. Criteria must be established to unlock the necessary funding from global and regional development banks and other financial institutions to ensure infrastructure gets put in place in time to meet global decarbonization targets,” he added.

Currently, one dedicated hydrogen carrier is in operation globally. However, liquefied petroleum gas carriers can be

“We could see some significant short-term carbon leakage”

STEVE LAYBOURN
Ardmore Shipping





Picture: Ship-to-ship methanol transfer in Singapore.

Photo: MPA Singapore

used for the transport of ammonia, which, in turn, can be converted back to hydrogen. There are more than 1,500 LPG carriers in service that will continue to run for a few more years and about 20 vessels will enter into service each year until 2028, according to Commodity Insights data. “Therefore, the best export markets for green hydrogen producers are likely to be those with direct uses of ammonia, such as in fertilizer manufacture — avoiding the need for reconversion,” according to the *Shipping’s Role in the Global Energy Transition* report, commissioned by the ICS, written by researchers at the Tyndall Center for Climate Change Research at the University of Manchester, UK.

“The recent price hikes for natural gas, and falls in electrolyzer, wind and solar costs, mean that in the EU, imported green ammonia can be cheaper than domestic grey ammonia production around a decade earlier than thought likely just two years ago,” the report authors said.

With a global ammonia trade route already established, reconfiguring port terminals to prepare for increased trade of ammonia and hydrogen is advisable. Australia is one of the leading countries in this respect, having established trading routes with Japan, South Korea and Singapore. “It has the largest quantity and capacity of potential new hydrogen projects, existing port infrastructure for ammonia export, and very high renewable energy resources, planned projects near ports and low costs of capital,” according to IRENA. Other areas tapped for their export potential are Chile in Latin America and West African countries that are now preparing hydrogen strategies to then develop storage and bunkering facilities in ports.

From shipment to shipment

One part of the transition and changing business opportunity for ports is the transport of energy products,

the other is the facilitation of alternative fuel bunkering. Louise Tricoire, vice president of Marine Fuels at TotalEnergies SE pointed out during Singapore Maritime Week in April 2023 that TotalEnergies is considering to produce green marine fuels in the US owing to the US’s Inflation Reduction Act, which makes the local production of alternative fuels attractive. Through the act, investment costs could be down to 60% of the current \$1 billion to build a 1-million metric ton e-methanol terminal. The company is also in the process of studying the feasibility to implement a viable methanol bunkering supply chain in Singapore, having kicked off a joint study with Green Marine Bunkering in June 2023. Tricoire also said that TotalEnergies is seeking bunkering hubs outside of Singapore for future cooperation and called on port authorities to support any infrastructure developments needed.

Methanol is indeed being positioned as the current frontrunner to propel future ships with two major bunkering hubs – Antwerp-Bruges and Singapore – both competing for the first ship-to-ship bunkering.

In June, Antwerp-Bruges saw inland navigation ship *Tamariva* bunkering 475 metric tons of methanol onto oil tanker *Stena Pro Marine*. A month later, Singapore’s Maritime and Port Authority (MPA) announced the first ship-to-containership methanol bunkering operation of a Maersk container vessel, which was refueled with about 300 metric tons of bio-methanol via the MT *Agility* tanker, for its onward maiden passage to Copenhagen.

Testament to this being the start of a new bunkering era are the preparations that went into the transfer of a material that has been a known cargo but is new as a fuel in ports. “MPA reviewed methanol-related incidents and worked with the Meteorological Service of Singapore to provide lightning risk warning. A methanol plume model was developed to forecast the dispersion path of the methanol plume in an event of an accidental methanol release and guide operations,” the MPA said in a statement.

Additionally, during the methanol bunkering operation, researchers from the Cambridge Center for Advanced Research and Education in Singapore flew drones equipped with methanol detectors and infrared cameras to aid the detection of potential methanol leaks.

Globally, “there are currently 122 ports with methanol storage facilities worldwide, and various ports have issued methanol bunkering rules or are preparing to do so,” said Øyvind Skåra, principal engineer in Safety & Systems at DNV Korea. “The long-term solution will probably be bunker vessels because of their simplicity and flexibility.”

In terms of which ships these facilities can cater to, there are currently more than 70 container ships and tankers on order that will be able to run on methanol and come into services over the next three years, according to Commodity Insights data. A fleeting number compared with the total of more than 6,000 container ships and nearly 16,000 tankers currently in service that run on heavy fuel oil, low-sulfur fuel, distillates or LNG. ■

The CEM Hubs Initiative will be discussed at the IAPH World Ports Conference in Abu Dhabi. More information:

🌐 bit.ly/CEMhubs

The scale and pace required for the green energy transition and achieving net zero should not be underestimated. It will require a major transformation at full speed of the energy-maritime value chain.

The world will require low-carbon fuels – whether hydrogen-based or sustainable biofuels – to be produced in multiple locations at scale. These new facilities will need to be strategically located in areas with lower electricity costs and capacity to exponentially increase production in a reliable and affordable way, for industries to replace fossil fuel use with low-carbon fuels in their operations.

For the world to reach net zero and to produce low-carbon fuels, global electricity demand from renewable sources will need to increase by 60,000 TWh, according to the International Energy Agency — that is an 18-fold increase of all the renewable power we have built to date and to achieve this is going to require a massive amount of dedicated areas of land and sea for low-carbon fuel purposes. As an example, Germany estimates that two-thirds of hydrogen-based fuels that the country will use will need to be imported.

Therefore, the location where new low-carbon fuels are produced and stored should be a crucial part of national infrastructure planning and its connection to the maritime sector should also be a priority for international action-oriented cooperation. In Canada, one idea under consideration is to have production facilities in Alberta, then transporting hydrogen by pipeline to ports where it is converted to ammonia so that it can be exported. This will require industrial scale electrolyzers and storage facilities to be built, and this will have an impact on port design and planning.

To accelerate the energy transition and use of low-carbon fuels across nations and sectors, the maritime sector will require a transformation to play a leading role in transporting these new low-carbon fuels. The International Renewable Energy Agency (IRENA) estimates that 50% of the trade of hydrogen will be by ships. The International Chamber of Shipping (ICS) estimates that 90%-95% of the world's demand for hydrogen and its derivatives will come from non-maritime sectors, making the shipping sector a relatively small user of

these fuels. Moreover, ICS estimates that the trade of hydrogen derivatives by ship will be up to five times higher than what shipping as a sector through bunkering would demand by 2050. Shipping then, will have a dual role, as a transporter and as a user of these fuels.

This is where the Clean Energy Marine Hubs (CEM Hubs) Initiative comes in.

The CEM Hubs Initiative focuses on addressing the main problem to reach net zero for multiple sectors, including shipping, having reliable and affordable access to low-carbon fuels at scale. The CEM Hubs Initiative seeks to increase and de-risk the production of the much-needed low-carbon fuels for shipping to transport worldwide and use.

Ministers and CEOs supporting the initiative convened in Goa, India on July 20 for the first CEM Hubs meeting.

The CEM Hubs Initiative was formally launched by His Excellency Suhail Mohamed Al Mazrouei, Minister of Energy and Infrastructure of the

United Arab Emirates, together with supporting countries, ICS, IAPH and CEOs across the maritime sector along with partnering organizations such as the IRENA and the Global Center for Maritime Decarbonization.

The green energy transition is going to be one of shipping's biggest ever transformations. Ports are going to play an integral part of the CEM Hubs' success; as hubs will need to be established within easy access of ports or within ports to ensure shipping can collect, transport and deliver net-zero fuels globally.

The CEM Hubs represent an opportunity for ports in two initial ways. First, it provides an inter-

national platform that supports their governments and decision-makers with a pathway and criteria to transform ports into a CEM Hub. Second, it brings an understanding and engagement across the energy-maritime value chain on the pace, timelines and priority of fuels from multiple industries, including shipping.

COP28 in Dubai is going to be a significant moment for the CEM Hubs and for the net-zero energy transition. We will bring leaders across the energy-maritime value chain on Dec. 9 and 10 to show practical solutions on how to take forward plans for the hubs to address climate change. ■



NELSON MOJARRO
Head, Innovation and Partnerships,
International Chamber of Shipping

Wake-up call

Countries need to work with industry in planning Clean Energy Marine Hubs to tackle low-carbon fuel availability at scale



Closing the gaps

Hear from Ryan Hare of consultancy WSP what role ports play in the changing energy landscape and how they can stimulate creating zero-carbon freight villages

Q&A

Q: Please give us a brief introduction of your role and how you interact with ports

A: As a leading ports and maritime consultancy, within a wider engineering and environmental professional services firm, globally our interaction with ports is diverse in nature and scale. We provide strategic advice and transaction due diligence, through to master planning, design, construction supervision and asset management.

The team has recently provided technical support to the UK government's Freeports program and supported offshore wind port master planning in the northeast of England.

Q: How do you see the market potential for port bunkering and digital infrastructure?

A: As a catalyst for growth and prosperity, the potential for ports in the long term looks strong across most sectors, specifically energy, consumer goods and tourism.

Beyond traditional port logistics, the central discussion currently is the way ports have and will continue to support the way in which our energy is created, distributed and used. Offshore wind is the driving force behind this, followed by other renewable and clean energy technology, such as green hydrogen production, storage and logistics, carbon capture schemes and on-site solar.

This in turn will facilitate the decarbonization of the manufacturing industry, from steel, chemicals, and cement to upstream manufacturing. In addition, with a combination of transport connectivity, proximity to population centers, access to skilled labor and decarbonized energy, ports have huge potential to facilitate and attract logistics businesses looking to decarbonize. The ports' energy connections, whether that be electricity, hydrogen or similar, will be a unique feature, allowing vehicles to refuel and recharge, stimulating zero-carbon freight villages.



RYAN HARE
Director,
Maritime Engineering, WSP

In parallel, we should expect to see swift advances in the digitalization of ports and development of smart infrastructure. We already see the introduction of sensors for maintenance needs based on necessity rather than a schedule. Where logistics companies, port operators and cargo owners are likely to benefit is the introduction of port-wide applications, making cargo flows in and around the port more reliable.

Q: What do ports need to do now to prepare for a changing infrastructure landscape?

A: For example, while the UK is ahead of Europe in installed offshore wind capacity, many turbine components are shipped from Europe, pre-assembled in the UK, and transported to the installation site. Likewise, the energy generation capacity exceeds energy demands resulting in a surplus export potential. These supply chains create a long list of activities serving a similar purpose.

To manage these complex supply chains, the reality is ports need to do what they have always done, and adapt to the emerging markets, facilitate their supply chains and create

growth environments for their communities and businesses. "Work with what you've got," so they say.

Q: How can ports close the gaps?

A: Think slow, act fast. Plan hard or go home. That is easy to say when time is of essence and first movers gain the upper hand. Still, it is important that the above gaps are closed in the right way. Efficiently, safely and sustainably. Keep decarbonization best practice in mind; build nothing, build less, build clever and build efficiently.

Port masterplans are an essential step in the evolution of ports. Take the time to undertake this step, thoroughly examining the options to arrive at the most economically, technically, environmentally, and socially feasible solution. An effective masterplan is more than a new port layout. It is a means of communicating the port's vision, mission, purpose and values to its communities, businesses and users. Lastly, masterplans help secure funding, which given the extent of innovation and investment required to close the gaps, I anticipate this to be high on the agenda of all ports.

Q: How do you cooperate with ports?

A: The role that ports will play in the transition needed to decarbonize and digitalize the economy over the next 20 to 30 years is truly exciting. The challenges will be plentiful but as we have seen in the past, collaboration is an easy way to grow capacity to do things in new ways. I have had the opportunity to work with and observe colleagues at WSP and across our industry deliver some truly innovative schemes, helping ports and associated logistics navigate challenges and implement change quickly, and I am excited about the future potential of the role of ports in UK growth. ■



Ricardo Treviño Chapa

During the World Ports Conference, IAPH and the World Customs Organization will launch joint guidelines aiming to transform trade flows and ensure global supply chain integrity

TONY SLINN

To counter a lack of sufficient trust and cooperation between customs and port authorities – particularly in emerging and developing countries – along with: “a low level of awareness of the actual benefit to be gained from collaboration between the two agencies,” the IAPH and World Customs Organization (WCO) joined forces to develop guidelines on cooperation between customs and port authorities. Indeed, WCO’s own longstanding advocacy for digitalization in cross-border trade practices made this a natural fit as WCO deputy secretary-general Ricardo Treviño Chapa explained to *Ports & Harbors*.

In tandem, the WCO has worked with the International Maritime Organization in facilitating the seamless integration of the IMO’s Compendium on Facilitation and Electronic Business into its own data model. This compendium serves as a vital tool for software developers who design systems to support data transmission, receipt and response for ship arrivals, stays and departures in preparation for the 2024 maritime single window. “In addition to the IMO FAL derived information package, practical guidance on implementing the IMO FAL Compendium using the WCO data model has been developed and published, including a message implementation guide designed to provide invaluable technical insights for implementers.”

As IAPH has also advocated, such a convergence of digital platforms between ports and the WCO will also allow for intelligence sharing to promote and help protect supply chains. “It is now important to promote the IMO FAL derived information package among maritime authorities and operators. With this in mind, WCO and IAPH have joined forces to go a step further by collecting information on concepts and standards, and recommended practices supporting the convergence and integration of customs and port IT systems,” Treviño Chapa commented. The purpose of developing the guidelines is therefore also to establish a dialogue between the two entities.

Work in progress

Looking ahead at what work needs to be done, “two significant issues will demand our collective attention,” said Treviño Chapa. “First and foremost, the challenge of interoperability looms large. To achieve it, a resolute commitment to standardization is vital. We are staunch proponents of harnessing the WCO data model and, in particular, driving convergence and interconnection between trade and maritime single windows.”

He added, “Second, in an era marked by escalating cyber threats, we are resolutely focused on cultivating cybersecurity awareness. Our aim is to ensure that customs and port systems remain fortified against evolving cyber vulnerabilities.”

Other recognized challenges include getting reluctant stakeholders to share data. “We strive to foster an environ-

ment where collaborative data sharing not only bolsters operational efficiency, but also enhances security and regulatory compliance,” Treviño Chapa stated. “The imperative to share data is predicated on the bedrock of responsible data utilization, facilitated through robust legal frameworks and comprehensive data governance policies. It’s important to emphasize that interoperability does not entail unrestricted data access. Instead, our focus is on enabling precise, purpose-driven access to data, serving specific functions such as customs control.”

To help overcome incompatibility between digital systems, the World Bank relies on “the harmonized standards for maritime processes established by the WCO in partnership with the IMO, which stand as a testament to our commitment to technological agnosticism,” he said.

“Our approach encompasses a comprehensive knowledge dissemination strategy involving technology-focused events,

informative publications and recourse to a dedicated team of experts – within both the secretariat and in customs administrations – who are available year-round to provide guidance.”

Safe collaboration

Steadfast focused on the 2024 IMO FAL update on maritime single windows, Treviño Chapa calls on ports to “embrace this opportunity to enhance interoperability between maritime and trade single windows. This alignment, anchored in adherence to international standards, is essential to reducing redundancy in data submission”. He therefore encourages a robust dialogue and engagement between port authorities and customs entities by sharing experiences and lessons learned. “So, we can build a symbiotic relationship that will assist with the establishment of national customs and trade windows,

thus propelling compliance with the 2024 IMO FAL Regulations.” This is another point of cooperation between the IAPH and WCO. Treviño Chapa hopes that “the collaborative foundation established through the creation of the guidelines sets the stage for a future

characterized by enriched cooperation.”

For example, as “the guidelines are dynamic and adaptive, both entities are committed to enhance this document in coordination with relevant stakeholders.”

He voiced another call for action. “We envision port authorities delving into the role of customs administrations and their challenges, reciprocated by customs gaining a comprehensive understanding of port operations. This will lay the foundation for our future collaboration, nurturing a robust communication that facilitates shared growth and support.”

This could also provide safer maritime operations in future. “A strategic approach would involve structured training and the establishment of effective communication channels. By nurturing this understanding, ports and customs can collectively reinforce law enforcement efforts, bolstering information exchange and thereby advancing the cause of maritime security and regulatory compliance.” ■

"It's important to emphasize that interoperability does not entail unrestricted data access"

Competitive connections

In this edition of the World Ports Tracker, UN Conference on Trade and Development data reveals the best-connected container ports around the world

PROFESSORS THEO NOTTEBOOM AND THANOS PALLIS

All nine regions show significant double-digit growth in the number of container vessel arrivals compared with the calls in the second quarter of 2022, according to the S&P Global Market Intelligence Port Performance Program, owing to an amended berth move per-hour boundary that includes more vessel calls in the data. From a longer-term perspective, vessel calls are down compared with the first quarter of 2019 in five of the nine regions. Northeast Asia and North America recorded the steepest declines in container vessel arrivals compared with the pre-COVID-19 period.

Port moves per hour

Port productivity levels saw a strong year-on-year growth in North America and North East Asia, while they remained relatively stable in the Mediterranean and Latin America & the Caribbean. Three of the nine world's port regions had to accept a decline in the second quarter of 2023 compared to the same quarter in 2022.

Considering the trends in the past four and a half years, the number of port moves per hour saw a strong increase in Northeast Asia (+17%) and a double-digit decline in Oceania (-25%). The other regions recorded smaller changes.

Container capacity

Between the second quarter of 2022 and 2023, Africa (+20%) and North America (+16%) reached double-digit growth in the share of calls by container ships of 8,501+ TEU capacity. A strong decrease was recorded in North Europe (-8%), Southeast Asia (-7%) and Latin America (-6%). Looking further back, Oceania went from only 0.7% for 8,501+ TEU vessels of all container vessel arrivals in the first quarter of 2019 to 8% in the fourth quarter of 2022. In the same observation period, double-digit growth was observed in North America (+43%), Northeast Asia (19%) and Southeast Asia (13%). In the past four and a half years, the share of 8,501+ TEU vessels decreased strongly in Africa (-13%) and North Europe (-7%).

Call sizes

On a year-on-year basis, the average call sizes show strong declines in all port regions. The strongest declines were

recorded in North America (-27%) and North Europe (-23%). The steep year-on-year increases in the number of vessel calls thus go hand-in-hand with much smaller call sizes.

When focusing on medium-term changes, the picture is different. Since 2019 the TEU handled per container ship call has increased, with major increases in average call sizes compared to the pre-pandemic year 2019 recorded in North-east Asia (+20%), Oceania (+8%), and Southeast Asia (+9%).

Connectivity review

The bottom part of the dashboard on page 21 summarizes some of the findings related to the country-based UNCTAD Liner Shipping Connectivity Index (LSCI), building on MDS Transmodal's Containership Databank. The five best-connected countries per region in terms of the LSCI are listed. Both the year-on-year development as well as the first quarter 2019-second quarter 2023 evolution is shown.

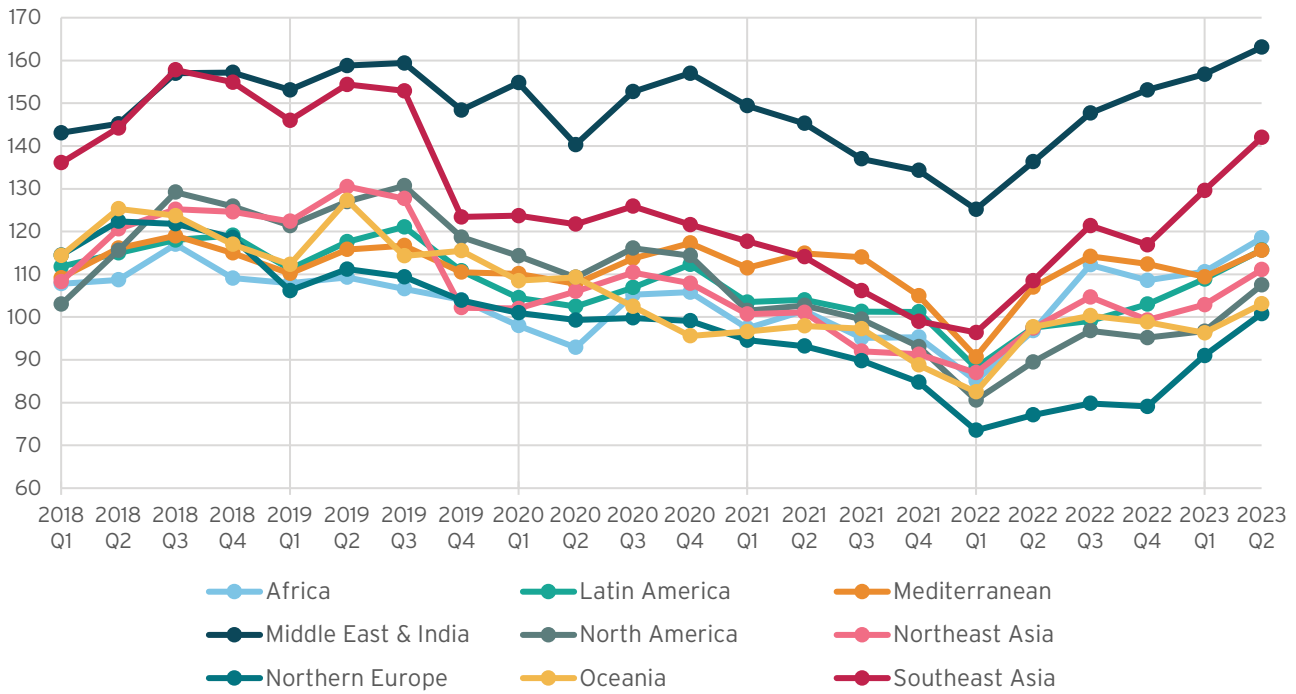
The comparison of LSCI in the second quarter of 2023 with the same period of 2022 illustrates the significant changes that took place during the last year in sub-Saharan Africa, where new countries are emerging among the best-connected ones in the region. Also the double-digit percentage LSCI improvements that occurred in Southeast Asia (with some exemptions), in Latin America and the Caribbean, and the Mediterranean Sea. The LSCI improved to a lesser extent in Northeast Asia and North America. Some internal shifts are present in North Europe, the region where changes occur at a slower pace. In Oceania and the Pacific, LSCI improvements were marginal.

Comparing the long-term trends, the dashboard reveals a positive evolution of the LSCI in the best connected countries in all parts of the world. A significant LSCI growth was recorded in sub-Saharan Africa, Southeast Asia, the Middle East and the Indian sub-continent, the Mediterranean Sea, Latin America, and the Caribbean.

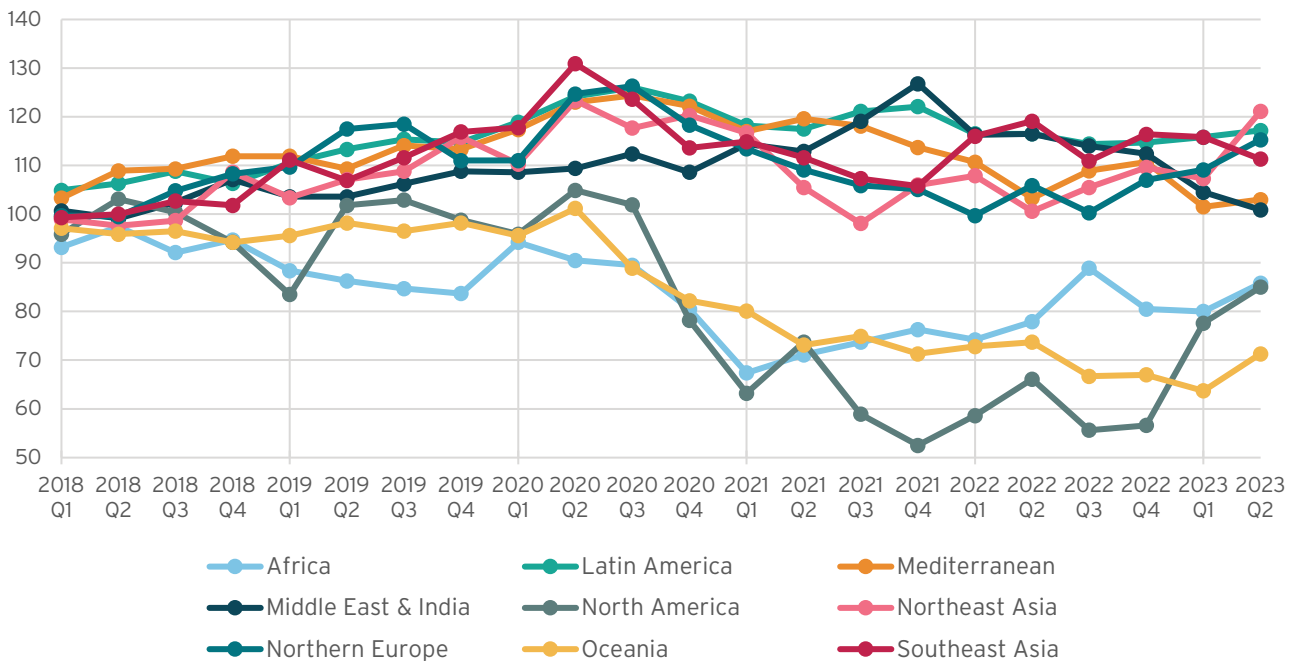
The LSCI increases presented single-digit percentages in North America, North Europe, and most of Oceania and Northeast Asia. This is however a partial picture: regional analysis of the LSCI evolution in the forthcoming sections of the report reveals notable internal dynamics are present in all world regions - the most extended ones occurring in Africa and Latin America and the Caribbean. ■



Vessel calls per region (index-based reporting with Q1 2017 = 100)



Port-moves-per-hour (total moves divided by port hours) per region (reporting quartile development, index-based with Q1 2017 = 100)

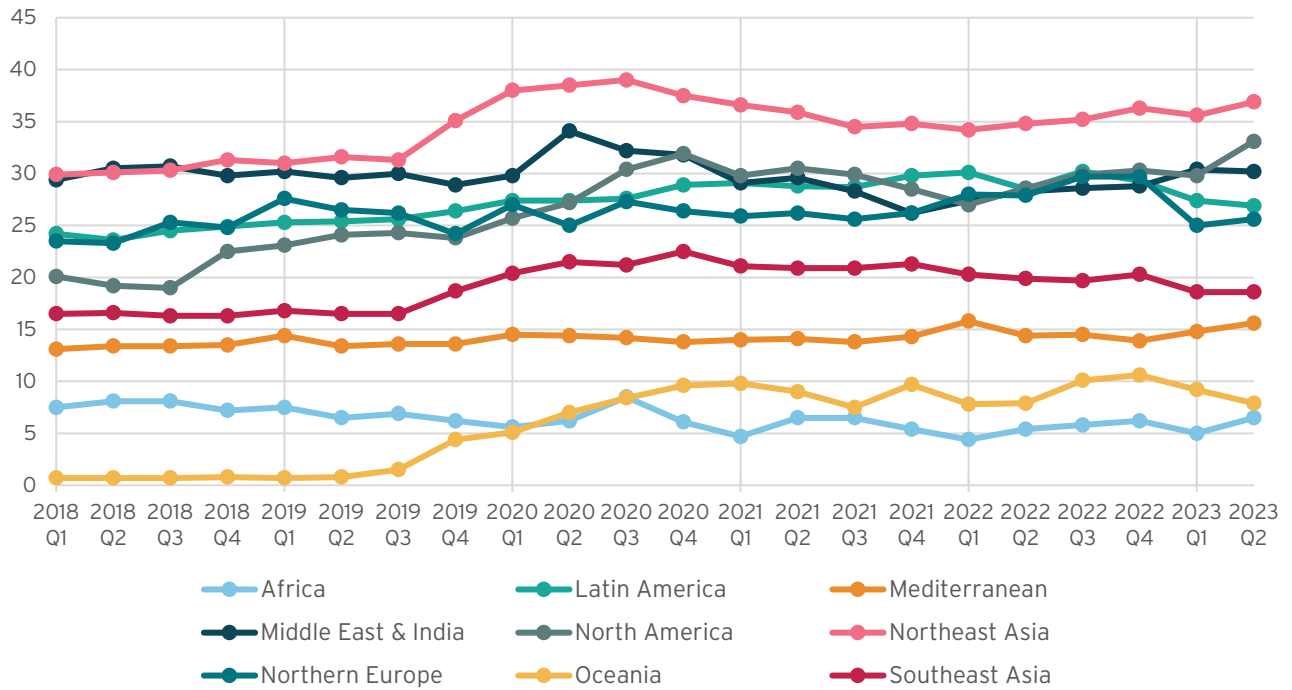


Note: The berth moves per-hour (BMPH) boundary was reduced from 15 to 5. Calls with BMPH below 5 are now eliminated, instead of 15.

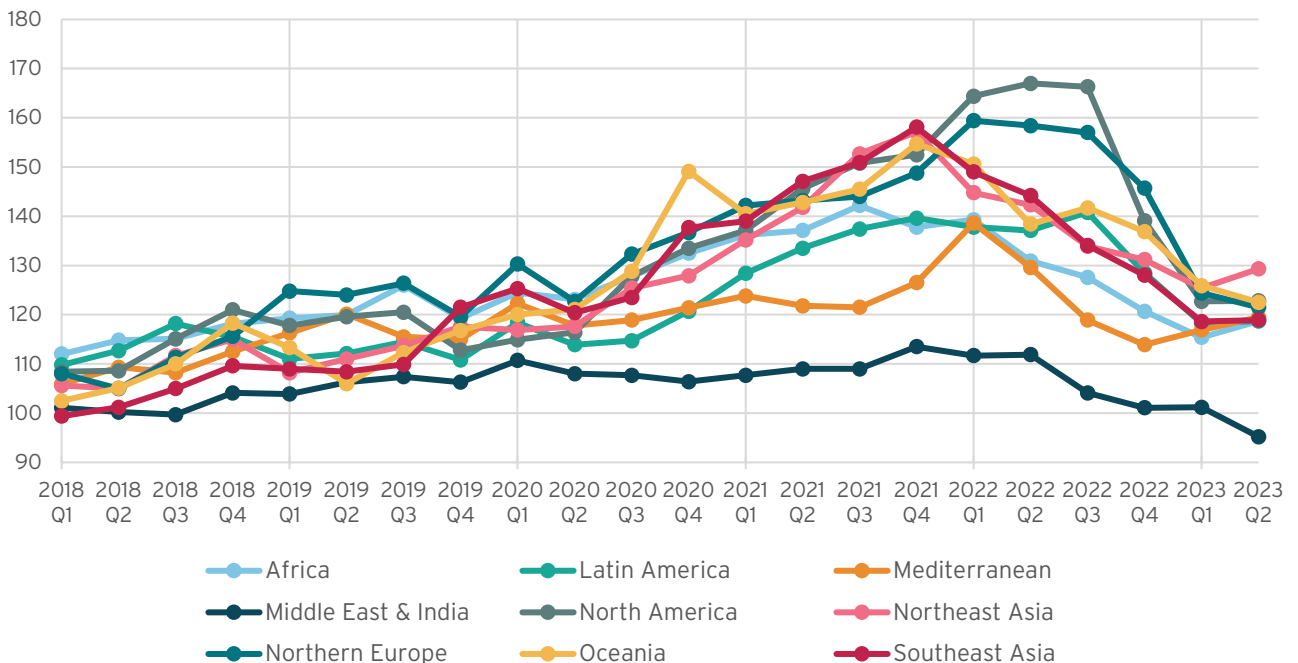




Evolution of vessel size per region (reporting share of vessels 8,501+ TEU in total vessel calls, compared with Q1 2017)



Evolution of call size per region (reporting quartile development without call size band reference, index-based with Q1 2017 = 100)

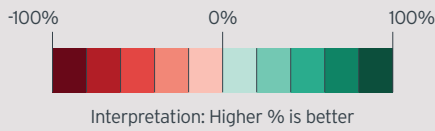


Source: S&P Global Port Performance Program | © 2023 S&P Global Market Intelligence

The index is created using the average regional values per quarter (total moves/total calls).



Excerpt from the IAPH World Ports Tracker (Q2 2023): Trends in container ports (September 2023)



	Africa	Latin America & Caribbean	Mediterranean	Middle East & India	North America	Northeast Asia	Northern Europe	Oceania	Southeast Asia
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Year-on-year evolution in container ports (index-based, Q2/23 vs Q2/22 in %)

Number of vessel calls	22	19	8	20	20	14	31	6	31
Port-moves-per-hour	10	1	0	-13	29	20	9	-3	-7
Share of Containerships >8.500 TEU capacity	20	-6	8	7	16	6	-8	0	-7
Call size	-9	-13	-8	-15	-27	-9	-23	-12	-18

Long-term evolution in container ports (index-based, Q2/23 vs Q1/19 in %)

Number of vessel calls	10	4	5	7	-11	-9	-5	-8	-3
Port-moves-per-hour	-3	6	-8	-3	2	17	5	-25	0
Share of Containerships >8.500 TEU capacity	-13	6	8	0	43	19	-7	*	11
Call size	-1	7	3	-8	4	20	-3	8	9

* In Oceania the size of such calls in 2009 was very small, thus the increase of the index is not detailed.

	Africa	Latin America & Caribbean	Mediterranean	Middle East & India	North America	Northeast Asia	Northern Europe	Oceania	Southeast Asia
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Year-on-year evolution of the Top 5 countries in the UNCTAD Liner Shipping Connectivity Index (index-based, Q2/23 vs Q2/22)

Rank 1	South Africa	Panama	Spain	United Arab Emirates	United States	Mainland China	Netherlands	Australia	Singapore
Rank 2	Ghana	Colombia	Italy	Saudi Arabia	Canada	South Korea	United Kingdom	New Zealand	Malaysia
Rank 3	Côte d'Ivoire	Mexico	Egypt	Sri Lanka		Hong Kong	Belgium	French Polynesia	Vietnam
Rank 4	Togo	Jamaica	Morocco	India		Taiwan	Germany	Papua New Guinea	Thailand
Rank 5	Congo Republic	Brazil	Turkey	Oman		Japan	France	New Caledonia	Indonesia

Long-term evolution of the Top 5 countries in the UNCTAD Liner Shipping Connectivity Index (index-based, Q2/23 vs Q2/19)

Rank 1	South Africa	Panama	Spain	United Arab Emirates	United States	Mainland China	Netherlands	Australia	Singapore
Rank 2	Ghana	Colombia	Italy	Saudi Arabia	Canada	South Korea	United Kingdom	New Zealand	Malaysia
Rank 3	Côte d'Ivoire	Mexico	Egypt	Sri Lanka		Hong Kong	Belgium	French Polynesia	Vietnam
Rank 4	Togo	Jamaica	Morocco	India		Taiwan	Germany	Papua New Guinea	Thailand
Rank 5	Congo Republic	Brazil	Turkey	Oman		Japan	France	New Caledonia	Indonesia





SATYA PRASAD SAHU
Senior trade facilitation
specialist, World Bank

THE COLUMN

Digitalizing helps decarbonizing

International trade is a powerful driver of sustainable growth and prosperity, helping lift more than 1 billion people out of poverty since 1990. From 1990 to 2017, developing countries increased their share of global exports from 16% to 30%. During the same period, the global poverty rate fell from 36% to 9%. And because more than 80% of goods traded globally are shipped by sea, ports are vital hubs of economic activity. Numerous studies have shown that when goods move smoothly and quickly in and out of ports, trade costs fall, volumes rise and jobs are created.

At the same time, port management is becoming increasingly complex. Today's ports require massive and efficient information flows to function efficiently. That is where port community systems (PCS) come in. These digital collaborative platforms link ports' many functions — logistics, storage, transportation, insurance, finance and customs — allowing them to coordinate more closely. The benefits include lower costs, reduced delays and bottlenecks, and quicker responsiveness to changes in demand and market conditions.

Adopting a PCS is not easy. Linking all of a port's existing systems is complex and requires buy-in from all members of the port community. That is why the World Bank has prepared a step-by-step guide, *Port Community Systems for Sustainable Maritime Trade Facilitation and Logistics* (the IAPH World Ports Conference will discuss this report in more detail; see page 42). For ports willing to take the next step in the evolution of maritime trade, the World Bank stands ready to provide technical assistance, financing and a platform to bring stakeholders together.

Therefore, it should come as no surprise that ports with the highest scores on the

World Bank's Logistics Performance Index have all adopted the system, while most of the laggards have not. Our research shows that just 10% of ports in low- and middle-income economies have PCSs, compared with 80% of ports in advanced economies. Countries with ports that do not function at maximum efficiency are losing out on the full economic benefits of trade, while those that do are gaining a competitive edge.

The coming decade offers a prime opportunity for developing countries to adopt the system. Most port communities have access to high-speed internet, and the costs of digital technology are falling. The PCS can be used to harness technological advances, including big data, artificial intelligence, cloud computing and the internet of things to bring port manage-

ment into the 21st century. It can build resilience to shocks, such as the COVID-19 pandemic or the increasingly frequent and intense storms associated with climate change. Additionally, it can help the transport industry cut greenhouse gas emissions, which now account for a staggering 11% of the global total, by reducing congestion and unnecessary fuel consumption in ports and the hinterland. ■

“Just 10% of ports in low- and middle-income economies have PCSs”

ABOUT THE AUTHOR

SATYA PRASAD SAHU is a senior trade facilitation specialist with the World Bank's Global Practice on Trade and Regional Integration. He specializes in the use of information and communication technology in trade facilitation and works extensively on projects and analytical activities concerning digitalization of international trade, transport, and regulatory procedures.

QATAR'S MAIN GATEWAY TO WORLD TRADE



Qatar's largest deep-sea hub, Hamad Port, Qatar's main gateway to world trade has now connections to major ports in three continents. Hamad Port is on an ambitious move to build a global shipping network. With its state-of-the-art facilities Hamad Port unlocks the potential for new business opportunities as Mwan Qatar surges ahead with the development of a sustainable ports as well as an integrated logistics chain that is aligned with Qatar National Vision 2030, strengthening Qatar's position to transform it into a regional vital logistical hub.



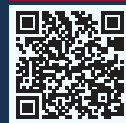
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HAMAD PORT
BROCHURE








PROJECT FOCUS MARITIME NORWAY

Securing green capital

Norway's maritime industry is committed to reduce its emissions footprint – mainly by treating decarbonization as a business opportunity

INES NASTALI

yvind Endresen, senior principal consultant at DNV explains why Norway is making a business case for decarbonization. "Cargo owners and shipping companies need to reduce their greenhouse gas emissions, there is biofuel available that can achieve a real reduction in fleet emissions and insets allow stakeholders in the value chain to share the cost of introducing alternative fuels, which will lead to a more rapid uptake of those," he said during a press tour of the Oslo maritime cluster attended by P&H.

Pictured: The Northern Lights Long Ship terminal in Norway.

Photo: Northern Lights



Pictured: The port of Oslo, Norway.

Photo: Bo Mathisen

To convince the ports that are part of the value chain to get involved in associated business ventures, DNV has interviewed 27 Nordic ports and identified 81 green corridor projects that were finalized in the Nordic routemap.

“The overall aim is to reduce key barriers to the implementation of alternative fuels and establish a common roadmap for the whole Nordic region and logistics ecosystem toward zero-emission shipping,” said Endresen, who serves as the project lead for the routemap on the DNV side.

The onshore barriers identified by DNV range from a lack of production capacity and infrastructure for zero-emission fuels to safety challenges originating from the physical properties of the different fuels – the toxicity of methanol and ammonia and the extreme flammability of hydrogen.

According to the accompanying routemap paper, the fuel cost gap and the need for coordinated action among stakeholders are the two key issues holding back the widespread adoption of alternative marine fuels.

With alternative fuels projected to cost three times more than conventional fuel, orders for ships that can use them have been limited. Carbon pricing initiatives, such as the inclusion of maritime emissions into the EU’s emission trading system (ETS) and IMO’s soon-to-be-determined economic measures, will be crucial to close the cost gap.

So will be Contracts for Difference (CfD), where low carbon energy sellers receive a subsidized, fixed fee to encourage investment into renewable energy projects – successfully proven to have helped with the adoption of wind energy in the United Kingdom.

The funds for such contracts could come via the EU ETS and “for international routes, CfDs could be administered

and funded at the country level with a partnership formed between two or more counties, or potentially by the ports,” the Nordic routemap paper suggested.

A 2021 study titled *Zero-Emissions Shipping: Contracts for difference as incentives for the decarbonization of international shipping*, published by the Institute for New Economic Thinking at the University of Oxford, supports this, as “fuel-only CfD was the most popular solution among stakeholders, providing shippers with zero-carbon emission fuels at the same price as marine gas oil”.

For this analysis, the researchers interviewed 36 stakeholders from the shipping and energy industry, maritime representatives, government, as well as financial and research institutions. In particular, the shipping and industry representatives as well as governments favored the fuel-only CfD.

Following through

To break down the second barrier, which is the lack of coordination between the different stakeholders, Heidi Neilson, environmental manager at the Port of Oslo in Norway has sought out conversations with container shipping companies around decarbonization. In this case regarding the use of onshore power. “We see which ships come to us and therefore work our way through the sectors that will use shore power – passenger, cargo and then bulk by 2025,” Neilson said to P&H during a boat tour of the port facilities.

The initiative is needed to meet the target of reducing greenhouse gas emissions by 85% by 2030 in the Oslofjord ports (see map). “We have around 40 container vessels per year and if the 15 ships that most frequently come to call at Oslo were fitted with shore power, that would make a 90% emission reduction,” Neilson said.

Her team therefore follows the trade routes of those ships and engages with ports along those to encourage them to also install onshore power to make the investment on both sides worthwhile. The port currently plans to have onshore power installed in 2024 for the container feeder vessels visiting from Hamburg and Rotterdam.

Additionally, to incentivize shipowners to invest into retrofitting ships, the port is collaborating with a shore power supplier, which has resulted in discounted onboard installation costs. Also, “we sit down with the cargo owner who look at their scope 3 emissions and it’s therefore important for them to know that they will have shore power.”

This is equally important as Neilson knows that “the ports can’t do it by themselves. We need the shipping lines and cargo owners on board. We’ve invested in the infrastructure, and we want them to use it. It’s either that or you pay more”.

While Norwegian ports benefit from government funding through the Ministry of Climate and Environment’s Enova agency, how important a prior cost and usage analysis for onshore power by the port is, shows the case of the Port of Drammen, which installed onshore power back in 2019.

The country’s car import hub, which has handled 50,000 cars in the first quarter of 2023, or 70% of Norwegian car imports annually, has not seen any usage of its multimillion-dollar onshore power facility at all.

This is because the car carriers calling are not equipped with the technology. When P&H visited the port, the *Auto Achieve* was being handled at berth, which can run its main

propulsion on liquefied natural gas (LNG) and uses batteries for auxiliary loads, such as those needed in ports, but has no onshore power capabilities.

The port is now therefore working on incentivizing especially container shipowners to retrofit their vessels, according to Drammen's port director Arne Fosén.

In Oslo, Neilson therefore suggested to "make long-term agreements with the cargo owners who are here and agree on a financing plan." One of the clients in the port is Heidelberg Materials, a concrete producer that "emphasizes on a green last mile delivery and also they use shore power on their bulkers," Neilson said.

She is now also discussing the port's onshore power concept with colleagues in Australia while on her own agenda, trucks coming in and out of the port are the next on the list to be decarbonized.

Carbon capture and the maritime market

In related decarbonization and cooperation efforts, Heidelberg Cement's subsidiary Norcem AS (Norcem) is involved in Norway's Longship carbon capture project (CCS) – one of the few concrete CCS projects under way globally.

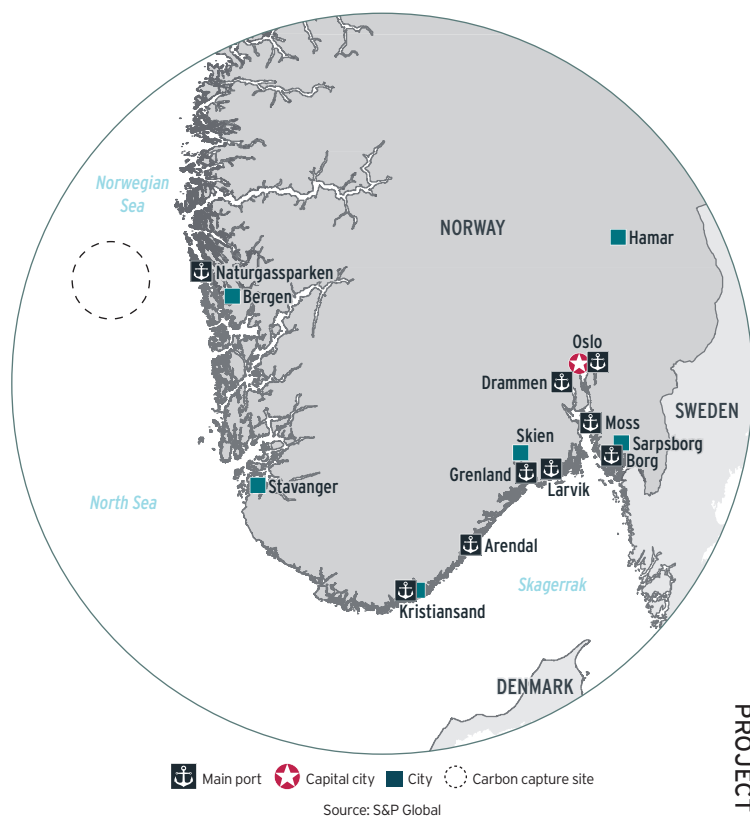
In addition to targeting manufacturing industries, Northern Lights, the company behind the project backed by Equinor, Shell plc and TotalEnergies SE, also sees both blue hydrogen and blue ammonia projects to be potential customers – both handled to be future fuels for the maritime industry as well as see increased trading by maritime transport.

The first phase of the project with an annual storage capacity of 1.5 million metric tons of carbon dioxide (CO₂) is 80% funded by the Norwegian state and planned to go online in 2024. The CO₂ receiving terminal will be located at the premises of the Naturgassparken industrial area in the municipality of Øygarden in western Norway. Equinor, until the start of the operations, is responsible for the construction of the onshore infrastructure. Construction was 80% complete, Northern Lights confirmed to P&H in June 2023.

In 2022, Northern Lights said it successfully drilled two CO₂ injection wells and started construction of the first two liquefied CO₂ ships. The two 7,500 m³ ships, being built at Dalian Shipbuilding Industry Company in mainland China, will run on LNG with a wind-assisted propulsion system and air lubrication. Kawasaki Kisen Kaisha, Ltd. (K Line) has been chosen as ship manager.

While one of the two carbon capture projects, Hafslund Oslo Celcío's waste incineration facility in Klemetsrud with a capacity of capturing 400,000 metric tons of CO₂ annually, had to pause to readjust finances, Northern Lights is confident to start operations on time with the capture program through Norcem, which also envisions to capture 400,000 metric tons of CO₂ annually.

However, both projects experienced delays and cost inflation caused by the sanctions and supply chain disruptions following Russia's invasion of Ukraine. While Norcem confirmed the installation of equipment this year, Knut Inderhaug, CEO of local energy provider Hafslund Oslo Celcío said in April 2023, "An updated cost estimate shows a significant increase in the cost of equipment supplies due to inflation, geopolitical instability and unfavorable exchange rate developments, which will lead to the project exceeding its investment budget."



Source: S&P Global
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In the coming year, the company will therefore review the budget and see where and how costs can be reduced to get the project under way later.

It is all about the money

While the ports try to use their leverage for decarbonization financing via their clients and procurement, the national stock exchange – the Oslo Børs – also looks to shipping companies when it comes to decarbonization.

The shipping sector is one of the three focus areas of the stock exchange, together with energy and seafood, with listed companies worth \$25 billion.

Those mostly Nordic companies that partly look at green financing, attract worldwide investors, mainly in the United States, the United Kingdom and continental Europe.

"Investing is a form of accountability. If you're listed, you might be excluded by your investors if you do not include environmental, social and corporate governance in your company," said Mathias Borge Bye, listing advisor at the Oslo Børs. On the other hand, a requirement of getting pension funds, which often invest in private ports, means that listed companies have to fulfil certain aspects of environmental, social and corporate governance investing, he added.

While financial incentives and governmental support is vital in the decarbonization journey, ports and the maritime industry are therefore advised to engage with their customers and again their customers to position themselves favorably for financing within a sustainable trade sector. ■





Hot take

The fire on board car carrier *Fremantle Highway* that killed one seafarer and injured over 20 crew has again sparked debate around onboard fire safety and how to ship electric cars in a safer manner.

While the investigation into the cause of the fire is ongoing, it is speculated that lithium-ion batteries of the around 500 electric or hybrid vehicles, which were being shipped from Bremerhaven, Germany, to Port Said in Egypt and Singapore, fueled the fire due to thermal runaway.

Regardless of the cause, the fire, which broke out at sea, shows how inaccessible a car carrier is once a fire has started with the decks around the source of the fire, assumed to be on deck eight, being completely destroyed. With deck five having been empty, and the cargo below it intact, one lead of the lessons learnt might focus on creating a barrier to isolate electric cars.

The incident is also a reminder to ports. Laurence Biard Tertois, a senior claims specialist for Energy and Marine Hull for insurer Allianz, said during Singapore Maritime Week in April that ports are “afraid to take in vessels as they have no confirmation of reimbursements” following an incident. Being based in Singapore, she has also noticed that the emergency responses in Singapore are not equipped to handle battery fires in port. Therefore, she called on the IMO to work on regulations for how to handle battery fires – related submissions to the IMO have been made in the past with the IMO Maritime Safety Committee (MSC 105) agreeing to look into addressing the regulatory gap for those vehicles in 2022.

Advice for any coastal ports that might get called upon to take in fire-stricken vessels that carry electric cars pertains, on one side, to the available fire-fighting capabilities they can offer, and on the other to having available berth space.

Seaports Groningen, the port authority in Eemshaven where *Fremantle Highway* was sent, has said that it needs the dock space in October for another shipping company – a timeline that could end up running short. While intact cars were unloaded in late August, investigators and insurance adjusters have to go through the vessel before ship owner and charterer make a decision on sending the ship elsewhere within the EU for recycling. ■



PERSPECTIVE MAINTENANCE DREDGING

Transforming dredging business in ports

In our current landscape, with challenges ranging from rising sea levels to the urgent pursuit of a net-zero carbon economy, the need for innovative solutions that break traditional boundaries becomes apparent. As leaders who navigate the complex waters of port and harbor management, we understand the need to be innovative beyond current standards, and as a result, we proudly introduced Tiamat – an agitation dredging solution innovated by Harwich Haven Authority – in April 2023, aimed to redefine how we approach maintenance dredging around the world.

The need for transformative change in the sector highlights the need to progress and move forward while simultaneously managing our ecological responsibilities against the bottom line.

Tiamat is a testament to our commitment to shaping a future where port operations not only thrive, but coexist harmoniously with nature, thus dredging with nature.

A quest for change

The industry has long been in search of more efficient and sustainable solutions to dredging. Traditional methods not only come with substantial costs but also emit around four million metric tons of CO₂ annually and have significant environmental consequences. Our resolution to address these challenges head on led us to a relentless pursuit of innovation.

Following robust development and trials by Harwich Haven Authority, one of the largest trust ports in the UK, we introduced Tiamat in early 2023. A hydro-dynamic agitation dredging solution, Tiamat redefines

the way we approach maintenance dredging. Its technology is built on the foundation of sustainability, reducing maintenance dredging costs while embracing a cleaner, greener process compared to conventional methods. To bring this solution to market, Haven Dredging was established as a wholly owned subsidiary and commercial arm of the port authority.

The business case for port authorities

Tiamat works by pumping up and discharging sediment in the midwater column, meaning it can dredge continuously without having to dispose sediment elsewhere, saving time, energy and money. Its adaptable design and scalability mean it can be deployed on small vessels without the need for costly modifications. This makes it accessible to a wider range of applications,



ABOUT THE AUTHOR

JAKE STOREY is the executive director at Haven Dredging. He joined Harwich Haven Authority in August 2017. Storey has over 25 years' experience in the shipping industry and prior to joining the authority he was a strategic advisor to the anti-bribery business TRACE International.

enabling cost-effective dredging in locations where traditional methods are expensive or inaccessible. It also resolves capacity and resource constraints that exist in the dredging market and lowers fuel consumption compared to traditional methods. Its scalable technology ensures a bespoke design for each port, maximizing effectiveness.

One of the most compelling aspects of Tiamat is its potential to significantly reduce dredging costs. Unlike traditional methods that require bespoke vessels and multiple trips to disposal sites, Tiamat harnesses the power of nature – the tide and currents – to agitate sediment. This dynamic approach eliminates the need for complex machinery, reduces fuel consumption and dramatically reduces costs by up to 50%. The economic advantage is undeniable, allowing port authorities to allocate resources more efficiently and invest in other critical infrastructure projects.

Sustainability and environmental impact

At the heart of Tiamat's innovation lies a commitment to environmental stewardship. Our approach aligns with the global drive toward a net-zero carbon economy. By eliminating the need for extensive travel to disposal sites, Tiamat drastically reduces greenhouse gas emissions, as well as noise and traffic pollution on the water. Trials have shown emissions reductions of up to 95%

Pictured: The Tiamat in action.

compared to conventional methods, making it a key contributor to our collective efforts in combating climate change. Furthermore, Tiamat's process encourages self-replenishment of sediment, promoting healthier estuarine systems and the protection of marine ecosystems.

Tiamat's versatility extends beyond its innovative technology. The solution's scalability allows adaptation to a wide range of environments, from bustling ports to remote waterways. This adaptability addresses the unique challenges faced by port authorities worldwide. Additionally, our commitment to nature-based dredging resonates with the ever-growing demand for sustainable practices. We are now adapting Tiamat so it is less invasive to marine life by fitting low-powered water jets, which will alert marine life to its presence before arrival. Tiamat's ability to work in harmony with nature sets a new standard for dredging operations that prioritize ecological wellbeing.

A catalyst for change

Tiamat represents not just a technological advancement, but a catalyst for transforming industry norms. Its introduction encourages us to rethink the way we approach dredging and instills a new sense of responsi-

bility in preserving our marine ecosystems. As we navigate the complexities of climate change and resource constraints, Tiamat is a solution that empowers port authorities to contribute positively to both their local communities and the planet.

Global impact

Our journey is far from over. As we continue refining and scaling this groundbreaking technology, we envision a truly global impact. The success of trials and the array of patents granted around the world serve as testament to the power of innovation. Tiamat is not just a solution for today; it is an investment in a sustainable future for generations to come.

Tiamat's development has been fueled by a deep-rooted passion for positive change and a commitment to creating a brighter, cleaner future for maritime industries worldwide. Haven Dredging stands at the forefront of this transformative journey. Tiamat's business case is not just about reducing costs; it is about revolutionizing dredging operations, championing sustainability and leaving a positive mark on the maritime landscape. We invite fellow port authorities to join us on this journey toward a net-zero carbon economy, where innovation is our compass and sustainability is our guiding star. Together, we can make a difference that resonates for generations. ■

ABOUT THE AUTHORS



HENK SMITH is the co-founder and partner of Marine Masters. He has extensive experience in a wide range of projects involving all aspects of salvage and offshore construction.



AMANDA DRINKWATER is the commercial account manager at Marine Masters. During her career, she has also been the assistant to the Secretary of State Representative for Maritime Salvage and Intervention.

How to

...salvage new fuels in ports and harbors

As the maritime industry seeks to rapidly advance the uptake of alternative fuels, salvage experts Henk Smith and Amanda Drinkwater of Marine Masters discuss the challenges and opportunities that lie ahead for the ports sector.

N°1



Establishing an emergency response plan is vital to derisking port operations

Although bunkering in ports will likely have its own mitigation measures in place, vessel incidents involving new fuels may have significant consequences for commercial operations, marine pollution, tourism, routing, marine traffic, coastal communities, and fishing activities in both short and long terms. Ports intending to court business from early movers on future fuels would therefore benefit from a proactive strategy foregrounding rapid response. This may require additional staffing of these ports by well-skilled personnel and standing arrangements with salvage contractors.

N°2



Despite risk, larger ports are likely to have an early commercial advantage

The operational capacities of large ports mean they can often meet the specific demands of shipowners at the cutting edge of new technologies. Bunkering of alternative fuels is likely to grow from established bunkering hubs, granting those ports a competitive advantage when it comes to servicing vessels operating on ammonia, methanol, hydrogen or any other future fuels. This will mean greater income for ports that can lay out full services for vessels with alternative fuels while implementing proactive strategies for risk, and a challenge for non-bunkering ports that may lack the infrastructure and institutional knowledge on alternative fuels. Smaller ports are likely to face a chicken and egg dilemma – vessels using alternative fuels are less likely to call at ports that lack the relevant expertise and infrastructure to safely accommodate and service them, and ports are less likely to invest in alternative fuel training and infrastructure without a clear demand signal.

N°3



Multifuel vessels will bring more complex operations

Ships with hybrid or multifuel operations offer flexibility with bunkering but add a further layer of complexity for salvage operations. Crew will need proper personal protective equipment, training and upskilling to ensure they can recognize pertinent warning signs and can act in the moment to mitigate the impact of an incident, where possible. They will also need to provide essential information to the salvage team regarding the location and volume of fuels on a ship, and the condition of the tanks they are stored in, at the earliest opportunity to ensure the safety of all stakeholders.

N°4



Ports will need more staff with broader expertise

Just as greater fuel variety will necessitate diverse infrastructure within ports, more port staff will also be needed with specialized knowledge. As the risk and complexity of operations in a port grows, so too will demand for services at hand to deal with a greater range of situations. Ammonia spill response requires different skills and equipment to fuel fire response, which has separate considerations to battery fires – all eventualities will need to be covered to safeguard port operations, human health, and the environment. Smaller ports could make use of third parties for expertise and assistance.

N°5		Ports may be encouraged to advocate for supportive, risk-aware local legislation
<p>In an incident involving alternative fuels, time will be of the essence. Previous delays in response in a traditionally fueled casualty scenario, such as disharmony between P&I clubs and hull and machinery insurers, could be unacceptable where the implications of marine pollution are far more immediate. Although rare, certain national legislations may afford a port the ability to implement their own rapid salvage response. For example, the port of Rotterdam has a mechanism whereby if 15 minutes pass without communication regarding an incident, the port will take control and charge the shipowner for any work done with an added 15% premium. As alternative fuels raise the stakes in casualty situations, ports may find themselves advocating for legislation empowering them to enact timely incident responses to limit commercial and environmental impact.</p>		

N°6		
Collaboration key to limit the impact of pollution		
<p>Although there are immediate implications for the ship, bunker and port facilities in the event of a vessel incident, the consequences may be far further reaching with future fuels. Rapid responses can limit or mitigate the impact of an incident but depending on the level of contamination surrounding regions may be impacted. As the current spreads the effects, fishing, food sustainability, tourism, vessel routing and other commercial activities may see reverberations. While conventionally ports are more likely to compete with other ports in their vicinity, these circumstances suggest potential benefits arising from strategic partnerships that would seek to limit the impact of fuel casualties in the region.</p>		

N°7		
Salvage operations will evolve in future		
<p>Newbuilds using alternative fuels will soon enter service with proprietary technologies and unique vessel designs, while existing ships may have undergone retrofits that change the location of fuel storage and supply systems. Salvaging these vessels may require information from new stakeholders – such as energy providers and shipyards – to be brought into the fold. Provisions must be made to ensure that beyond crew familiarity, relevant port personnel and salvage teams have ready access to the information they need to safely control a given situation.</p>		

N°8		
Salvage operations will evolve in future		
<p>As we move into a multifuel future, there are currently no known waste disposal contractors in the salvage industry with operations that account for alternative fuels. While this, no doubt, presents a significant opportunity for waste disposal contractors seeking to distinguish themselves and their services, uncertainty regarding the safe collection, transport and disposal of future fuel-contaminated materials present a logistical challenge for the moment.</p>		

N°10		
Simple operational changes may offer solutions		
<p>Lithium-ion battery fires have become a relatively familiar scenario for the salvage industry. Our operations usually prioritize keeping the container offshore, employing a salvage grab to separate it from the vessel and extinguishing it by any means available. Acting quickly can mitigate damage and avoid total loss for the vessel. However, container ships may choose to stack containers so high that the grab is unable to reach the impacted container, resulting in the fire spreading and inflicting greater damage to the vessel and pollution for the region. Ensuring that this is not the case can allow for a quicker and more effective response in the event of a battery fire.</p>		

N°9		Establishing training for the salvage industry can help improve safety
<p>Although seafarers require additional certification to work on specialized tankers, no corresponding certification is required for those working to salvage these specialized tankers. Although at Marine Masters we ensure that salvage crews are trained and upskilled, the lack of established training standards in salvage and wreck removal may have consequences for risk and safety when dealing with future fuels. As commercial shipping seeks a global transition, estimating that over 800,000 seafarers will need training or retraining to handle alternative fuels, the salvage industry has an excellent opportunity to implement our own training standards and support for salvage crews.</p>		



ABOUT THE AUTHOR

JAN HOFFMANN is chief of the Trade Logistics Branch, division on Technology and Logistics, at UNCTAD. He coordinates the UNCTAD Review of Maritime Transport and works on the Liner Shipping Connectivity Index.

6:59



8:30



9:00



10:30



Nine to five

In this edition of *P&H's* diary section, UNCTAD's Jan Hoffmann takes readers through a day walking and working in Geneva, Switzerland



My inner clock wakes me up just before my phone alarm rings at 7 a.m. with Tone Loc's words Let's Do It from the Jan Hoffmann worst karaoke singer prize playlist – yes, I won this prize at the Busan International Port Conference.

My wife and I have breakfast with herrings, blueberries, yogurt and coffee. Some housework before leaving home on foot.



Walking to the office – unless I have a mission, in which case I would be walking to the airport. That is quality of life, listening to audiobooks while passing by green areas and other international organizations in Geneva, including the International Labour Organization, World Health Organization and United Nations. Walking two or four times per day for 30 minutes gives me an average of one audiobook per week.



A morning in the office, with an open door. Colleagues pass by to discuss a question about measuring port KPIs, transport costs and which trade facilitation measures are most relevant to reduce cargo dwell time. When a new colleague, or a visitor, or an intern passes by, and trying to multitask, I suggest a working coffee on the first floor.



An in-person working meeting with an inter-divisional task force on trade statistics. Working for UNCTAD on transport and trade facilitation allows me to put our relatively practical work into perspective of more macro topics.

During the working coffee and the task force meeting, I tried to keep my inbox in check, but now need to urgently answer 25 messages about information requests, mission planning, recruitments and contracts.

12:30



Walking home for lunch with the audiobook playing. Impolitely checking emails while discussing with my wife how the children are doing. Happy to see how all three sons work on things that did not exist when I studied: one is working on climate change adaptation for a Canadian think tank, the second does big data visualizations in London, and the third one a virtual internship producing AI-generated videos for a consulting firm in Singapore. The parents could not be prouder.

14:00



Working from the home office this afternoon, I get ready for non-stop meetings and webinars, mostly on Teams, discussing budget reporting and to prepare our Global Supply Chain Forum in Barbados. This is followed by a research project meeting on decarbonization of maritime transport.

17:00



Responding to emails that accumulated during meetings, sending inputs for upcoming travel for colleagues, formatted charts for the next Review of Maritime Transport, responding to a question about fleet ownership, setting up meetings, approving leave and travel and mission reports, sending input for UNCTAD reports, helping a student with a survey, declining conference invitations because my agenda is already packed.

19:30



Some gymnastics for my back. Or should I call it yoga? Listening to the audiobook while doing so.

20:00



A PowerPoint contribution to a webinar in Latin America, on supply chains and the form of the shipping supply curve and why delaying decarbonization in shipping is more costly than decarbonization itself.

20:30



Dinner, cleaning dishes, doing housework with my wife, perhaps go for a walk holding hands around the block, relax on the roof terrace. Check emails, ensure that the inbox on my smart phone is empty before I go to bed at 11 p.m.

CREATIVE SIDE UNCONTAINED ART

C

onnecting creatives from different port cities is what the Uncontained Art project is seeking to do with its inaugural exhibits in a shipping container in Genoa, Italy, and Rotterdam, the Netherlands.

“Our main theme is migration and – of course – the port city,” one of the organizers, Rotterdam-based photographer Despina Papachristoudi said to *P&H*. “Migration is almost synonymous with the culture of port cities, as ports have always been the first places to receive people and their ideas from faraway places.”

She also said that they embody diversity and “share a sense of tolerance to newcomers and the cultures and ideas they bring. The interactions that result amongst these diverse communities create new stories,” she explained.

Together with Dutch-American multimedia artist Matti Wim Havens and local partners – the Muma Musei and Zones Portuaires – she made sure that the container opened its doors to the public in Genoa at the end of July in the city center’s Piazza della Commenda.

Inside, local photographer Valentina Fusco and Dutch artist Florian Braakman showed their works. Fusco’s *eMovere* photography focuses on life in Buenos Aires, her family’s own migratory journey, and migration between Italy and Argentina, while Braakman’s *In Between Homes* showcases stories of migrants and their life between their home and expat countries in film.

“Fusco’s long-term projects are inspired by poetry and literature, and aimed to explore social themes such as migration, family and patriarchy. Through an uprooting from known places, the desire was born to try to understand the most intimate, emotional and multifaceted meaning of migrating,” stated the exhibition listing.

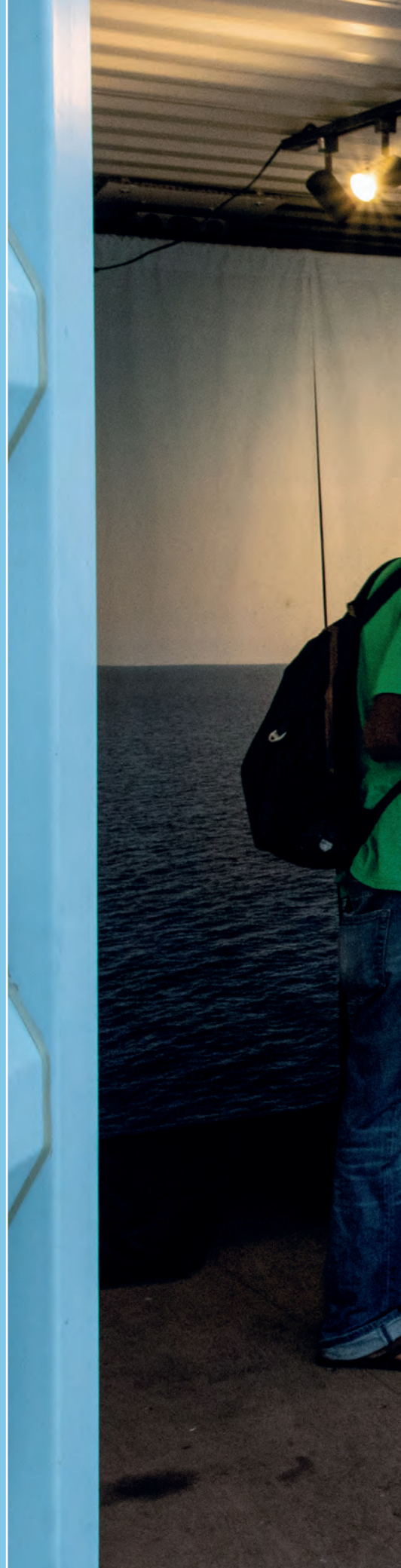
“Florian has immortalized the community in the ongoing research project *Delfshaven’s Finest*, an ode to the economically deprived but culturally vibrant neighborhood. With his practice, Florian proposes ways to showcase the community with people who share a home, but perhaps not a homeland,” Braakman’s project description reads.

Plans for future instalments include finding transportation sponsors and shipping a container to different locations, rather than renting ones in the exhibition city.

While the current exhibition takes place in Genoa, the organizers will collect stories and materials that will be exhibited from 30 August to 10 September 2023 at the Maritime Museum of Rotterdam, to complement the exchange of stories around arrivals, departures, and migration that the Uncontained Art project is all about. ■

Shared space

Pictured: The Uncontained Art exhibit in Genoa, Italy.
Photo: Despina Papachristoudi





Welcome to new members

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

Regular members

Jawaharlal Nehru Port Authority
 India
 +91 22 2724 2290
 milindchimote@jnport.gov.in
 www.jnport.gov.in/
 Sanjay Sethi, chairman

Transnet National Ports Authority
 South Africa
 +27 41 507 8495
 Rufus.Lekala@Transnet.net
 www.transnet.net
 Pepi Silinga, chief executive

Heraklion Port Authority SA
 Greece
 +30 28 1033 8000
 info@porthera.klion.gr
 www.porthera.klion.gr
 Minas Papadakis, CEO

Port of Oakland
 United States
 +1 510 627 1243
 bbrandes@portoakland.com
 www.portofoakland.com
 Bryan Brandes, director of maritime

Jens Meier to be president

IAPH regular and honorary members voted to elect Jens Meier, CEO of Hamburg Port Authority, Germany to be the next president of IAPH for a two-year mandate, commencing in November. Meier has been vice president for the Europe region since 2019.

He will succeed captain Subramaniam Karuppiah, general manager at the Port Klang Authority in Malaysia who has been at the helm of the organization since 2021.

The official transition will take place during the 2023 World Ports Conference. At the annual general Meeting in Abu Dhabi this year, regular and honorary members will vote. ■

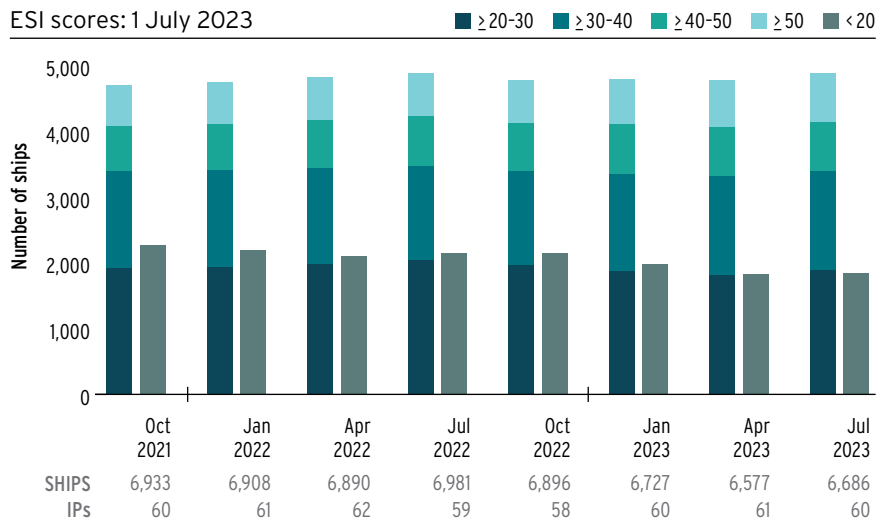
ESI scores updated to reflect changes

As of July 2023, 6,686 vessels have been registered with the Environmental Ship Index (ESI). The ESI identifies seagoing ships that perform better in reducing air emissions than required by current IMO standards. Registered incentive providers in ports then allow vessels scoring high on the ESI to receive a discount on seaport dues.

A new ESI-at-berth program to evaluate cruise ship emissions during a port call is in trials. Find out more about how to get involved on the dedicated ESI website or contact the Green Awards team, which works with the IAPH on the scheme. ■

environmentalshipindex.org
 admin@environmentalshipindex.org

ESI scores: 1 July 2023



Note: Stacked bars show ESI scores above 20 points, single bar shows ESI score below 20 points

Source: IAPH | © 2023 by S&P Global Market Intelligence

EVENTS TIMELINE 2023

7

SEPTEMBER (7)

IAPH Data Collaboration Committee Association meeting taking place online

iaphworldports.org

11

SEPTEMBER (11-15)

London International Shipping Week Conferences and seminars held in London

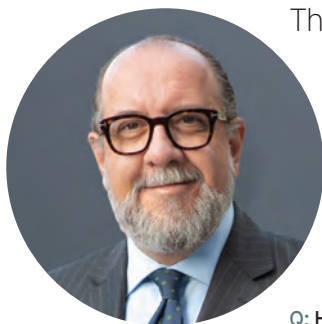
www.londoninternationalshippingweek.com

19

SEPTEMBER (19)

IAPH Risk and Resilience Committee Association meeting taking place online

iaphworldports.org



The association recently completed a survey to allow for making improvements in the way IAPH operates and members can benefit from their membership

Q&A

PATRICK VERHOEVEN
Managing director, IAPH

Q: How many members took part in the survey and what were you aiming to achieve?

A: The digital survey was completed by 155 respondents. In addition, we held semistructured videoconference interviews with senior leaders at a select sample of members from across our six geographic subregions. The membership survey complemented an overall benchmarking exercise that was carried out over the past year, with the aim of improving the products and services of IAPH and optimizing our overall performance. The last membership survey was held in 2017. Since then, many things have changed in the association, so the time was right to go back to the members and get feedback from them on our offerings.

Q: What focus areas to work on transpired?

A: The survey showed strong levels of satisfaction with IAPH's products and services, communications and networking opportunities. Our strongest member benefits are industry networking and making connections at global level, sharing best practices, provision of IAPH guidelines and information, the World Ports Conference and advocacy at a policy-making level. Significantly, the survey pointed to an opportunity for us to improve engagement with, and usage of, our many products and services.

Our work at the IMO needs stronger profiling as well and we must explore alternative ways to evolve the World Ports Sustainability Program. Furthermore, there was an understandable desire among some members to take a more regional focus regarding digital meetings, to ease attendance challenges and interaction.

Q: Which of the focus areas will you work on first?

A: We should focus on improving our outreach to members in the different regions and reviewing the format of our meetings, including those of the technical committees.

We have already tried out the first Technical Committee Days last April, held in hybrid format in London, UK. That format worked very well, and we will continue having those days on an annual basis as a counterpart to the World Ports Conference. Given the global scope of our membership, our other meetings during the year will remain largely digital, but we should innovate the format, so that discussions become much more interactive, engaging all members.

Q: Did anything about the results stand out to you?

A: I was pleased to see that we have real champions in our membership – people that actively follow all our work within their port and mobilize and engage their colleagues to participate in relevant activities. When such a person had left a port, engagement generally declined or membership was reassessed. We should therefore nurture those relationships and build a network of IAPH champions across the regions.

Q: Apart from the survey, what are your personal goals for the near future of the IAPH?

A: As mentioned, the membership survey complements a broader benchmarking exercise, which compared our performance to that of peer organizations in the port and maritime sector. My immediate goal is to make the recommendations from that exercise work. These mainly relate to our internal organization, and I am happy that an important implementing step has been taken already with the adoption of an integrated organization chart, which optimizes our resources and clarifies the roles of staff in Japan and Europe. Masahiko Furuichi, my colleague in Tokyo, and I form the leadership team, and we are jointly responsible for the strategic direction and management of the organization.

In addition, we each have specific roles, with Masahiko looking after the administrative matters of the organization, including secretarial and financial affairs, and me taking care of the operational side of things, including external representation. We are also putting in place new budgeting and reporting procedures and I am personally very pleased that our board has agreed to establish a formal presence in London to support our activity at the IMO and become part of London's international maritime community. We have taken a first step in this direction by employing Rhona Macdonald, our IMO and policy liaison officer, under a staff-sharing agreement with the British Ports Association; we are now seeking a formal establishment. ■

IAPH INFO

Photo: IAPH

29

SEPTEMBER (29)

IAPH Harbor Café on CEM-Hubs
Association meeting taking place online

iaphworldports.org

5

OCTOBER (5)

IAPH Climate and Energy Committee
Association meeting taking place online

iaphworldports.org

30

OCTOBER-NOVEMBER (30-2)

IAPH 2023 World Ports Conference
Conference and IAPH Board and Council
meetings in Abu Dhabi, United Arab Emirates

iaphworldports.org



BIMCO launches survey into maritime digitalization

BIMCO has teamed up with other industry organizations to launch a survey that will gain insights into how advanced the digital port call is. This is in preparation of the IMO requirements to exchange data electronically via maritime single windows, entering into force on Jan. 1, 2024

Every time a ship calls at a port, the shipmaster must submit pre-arrival information to various commercial parties and government agencies to ensure a smooth clearance to the port. This information includes, for example, safety, security and environmental protection matters, as well as operational details about the ship, cargo, crew and passengers on board.

The specific information required, and the submission process, currently varies from port to port.

In 2022, the IMO's Facilitation Committee agreed to make a maritime single window (MSW) for data exchange mandatory in ports around the world from 2024, thereby

taking an important step in accelerating digitalization in the shipping industry.

The new requirement means that countries must have a digital platform in place, that allows ships to submit pre-arrival information only once into a single point of entry.

To gain a better understanding of the current process between ports and ships, BIMCO, the IAPH, the International Federation of Shipmasters' Associations, and the Federation of National Associations of Ship Brokers, and agents have launched a survey, aimed at actors involved in the collection and submission of information requested by the authorities as part of a ship's port call.

For example, countries and their relevant public authorities will have to combine or

coordinate the electronic transmission of the data through an interoperability framework to ensure the information is submitted or provided only once and reused to the maximum extent possible.

Many ports could meet the mandatory IMO requirements for electronic data interchange for key documentation by amending already established electronic platforms.

This could be through a port community system. Such a system is used to optimize, manage and automate port and logistics processes through a single submission of data in the transport and logistics chain. It could also be through a port management information system (PMIS), which enables the port authority to control all port traffic



ABOUT THE AUTHOR

JEPPE SKOVBAKKE JUHL is the manager of Maritime Safety and Security at BIMCO. He liaises with BIMCO members and other maritime industry stakeholders by coordinating interests. Over the past years, he has built up an expertise in maritime regulation, digitalization, as well as autonomous ships.

through a single digital interface. The PMIS also manages port infrastructure, such as port calls, dues, journal, incidents, waste, dangerous goods, planner, cargo, inspections, permits, services, security and assets.

Whether the electronic platform is called one or the other, it is important that the MSW efficiently shares relevant information among the stakeholders. By efficiently exchanging the data digitally, the administrative burden of the ship master is reduced and the quality of data and efficiency of port call processes are improved.

The planned industry questionnaire seeks answers to questions, such as how long it typically takes on average to complete the process of collecting and submitting the information required in a port call documentation process. It also aims to find out how the information was submitted to the authority and whether the information was submitted to the authority through an MSW platform, just to mention a few.

Some of the information required may need to be submitted to the authority by other actors, such as the agent, ship man-

ager or other third party appointed by the shipowner. Therefore, the survey will also benefit from third-party participation.

The results of the survey will provide insights into how prepared national authorities are for the implementation of the new regulation on establishing a MSW. The results will be presented in a paper to the

IMO FAL Committee in April 2024, when member states will discuss the implementation and potential need for further action.

The survey will also serve as an indicator of the maturity and extent of maritime digitalization in ports and harbors. It will

highlight the need for collaboration among stakeholders within the maritime industry, as knowledge and data collaboration from all actors in port operations are crucial for the successful implementation and operation of MSWs worldwide.

Digitalization in shipping is not solely about faster internet or data collection; it is about developing smarter human interfaces with available technology to enhance efficiency. When properly implemented, digitalization can make a significant impact

"The survey will be an indicator of the maturity of maritime digitalization in ports and harbors"

on sustainable transportation. However, achieving global implementation will require a new mindset and willingness to share data.

The survey will be conducted from September to December 2023. All responses are anonymous to ensure confidentiality.

Wide distribution of the questionnaire is essential to gain a comprehensive picture of the current state of digitalization. Reaching all relevant stakeholders is of utmost importance in gathering valuable input. The questionnaire can be used at various ports and terminals as the level of digitalization may differ from one call to another. ■

Should you have any questions related to the survey, please contact BIMCO via: @marinesurveys@bimco.org

Scan the below QR code to access the survey or follow this link: www.form.jotform.com/232192914745359



Collaboration is key at the World Ports Conference

The IAPH World Ports Conference will take place from Oct. 31 to Nov. 2 in Abu Dhabi, United Arab Emirates. As part of the three-day discussions, results of several maritime stakeholder collaborations will be presented and launched.

Here is what to look out for



World Customs Organization and IAPH present brand new guidelines

IAPH and the World Customs Organization will provide delegates with an insight into how both port authorities and their governing

bodies can partner with customs authorities to facilitate smoother trade and cargo flows in their maritime supply chains using the new

Customs and Port Authorities Cooperation guidelines, the first document of its kind.

Session: Customs authorities as trade facilitators, Oct. 31, 2.30-3 p.m.

Speakers

Name	Title	Company
Pascal Ollivier	President	Maritime Street; (Chairperson, IAPH Data Collaboration Committee)
Ricardo Treviño Chapa	Deputy secretary general	World Customs Organization
Introduction: Dr Patrick Verhoeven	Managing director	IAPH
Moderator: Christian Doepgen	Publisher	International Transport Journal

Overview by World Bank and IAPH on the global status of port community systems

The distinction between data interchange and true data collaboration will be examined in this C-Level session. What framework is

required for a port to successfully become a neutral, effective data exchange ombudsman between all port community stakeholders?

The session will preview a World Bank-IAPH report being developed on the global status of port community systems.

Session: Data Collaboration in Maritime Cargo Supply Chains, Nov. 1, 9.45-10.30 a.m.

Speakers

Name	Title	Company
Jens Meier	CEO	Hamburg Port Authority (Vice president of the IAPH)
Dr Noura Al Dhaheeri	CEO	Digital Ports Cluster, AD Ports Group
Sheeba Varughese	CIO	Port of Los Angeles
Moderator: Eric Johnson	Senior technology editor	Journal of Commerce, S&P Global

Taskforce Port Call Optimization reports progress on aligning data standards

The industry is mostly unaware of the significant progress being made by pioneering ports in improving efficiencies around their

port call processes. This session will highlight those first cases, how they were achieved and what next steps are needed to homogenize

this innovation to the benefit of all ports. A newly developed interactive animation will help guide this session and overall process.

Session: Port call optimization – Results from the first pilot projects, Nov. 1, 2-2.30 p.m.

Speakers

Name	Title	Company
Captain Ben van Scherpenzeel	Chairperson	International Taskforce Port Call Optimization
Kevin Coelho	Nautical advisor	Oil Companies International Marine Forum
Moderator: Ingrid Boqué Sastre	Global strategic networks officer	Hamburg Port Authority

Clean Energy Marine Hubs and what ports can deliver to COP28 and energy transition

Three sessions will discuss the role of ports in the maritime and global energy supply decarbonization journey. On Oct.31, government and private sectors will discuss how to de-risk

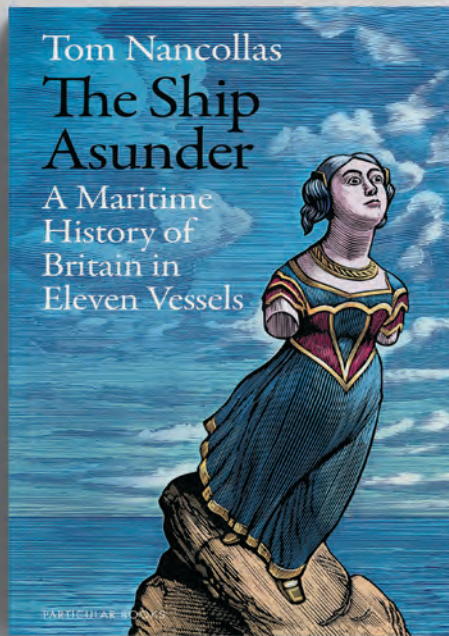
investments in energy transition, with ports defining their role as future Clean Marine Fuel Hubs, The keynote panel on the final day of the conference will discuss the concrete

decarbonization deliverables shipping and ports have to offer to COP28, which takes place mere weeks after the conference.

Session: What can ports and shipping deliver to COP28?, Nov. 2, 11 a.m.-12 p.m.

Speakers

Name	Title	Company
Captain Subramaniam Karupiah	President	IAPH
Kitack Lim	Secretary general	IMO
Emanuele Grimaldi	Chairperson	International Chamber of Shipping
Moderator: Katharine Palmer	Shipping lead	Climate Champions Teams



BOOK AUTHOR

TOM NANCOLLAS is a writer and building conservationist based in London. For his second book, *The Ship Asunder*, he brings a conservationist's eye to the relics of Britain's historic ships.

THE REVIEW

The Ship Asunder

PATRICK VERHOEVEN



Following his critically acclaimed debut *Seashaken Houses*, in which he traces the history of Britain's lighthouses, Tom Nancollas sets out for a wider maritime voyage in *The Ship Asunder*, exploring his country's rich seafaring past and how that affected shipping globally. He does so in an original format in which he takes a ship asunder, i.e., deconstructs it in 11 parts, which form the chapters of the book: Prow, Trumpet, Trophy, Rope, Bell, Figure-head, Timbers, Mast, Propeller, Hull, and Anchor. These form the starting points for an exploration of three-and-a-half millennia of British maritime history, from the Middle Bronze Age to the early 20th century.

On the journey, we encounter legendary ships, such as *Golden Hind*, *HMS Endeavour* and *HMS Victory*, and those that navigated them: Sir Francis Drake, Captain Cook and Admiral Nelson. However, we also get acquainted with lesser-known people who nevertheless had a significant impact on the

development of shipping. Who has heard of Francis Pettit Smith, son of a Kentish postmaster, born in 1808 in Hythe? Yet, he designed the two-bladed screw propeller, which revolutionized ship propulsion. Who knows that the Plimsoll mark that features on the hull of every ship to mark the safe load lines was named after member of parliament Samuel Plimsoll who had to fight a tough battle in parliament against vested shipowner interests to get a bill passed in 1876 that would significantly increase the safety of seafaring crews?

Resonating well with those of us active in the maritime industry today are the chapters Mast and Propeller, in which the author describes the 19th century transition from wooden sail ships to iron, steam-propelled vessels. Shipowners then faced similar dilemma's as their contemporary colleagues who are experimenting with low- and zero-carbon fuels. The early steamships were assailed with the problem that the quantity

of coal required to steam any distance would consume all the space available for profitable cargo or passengers.

Nancollas refers to himself as quaintly nostalgic, nostalgia being a term that – surprise – appears to have nautical roots. Although he is not a sailing man himself, he does have a clear passion for the age of sail. This would explain why he does not think much of contemporary cruise and container ships, which he, on the penultimate page of his book, dismissed as “encapsulating the overheated habits of a post-industrial Western world: cheap travel, cheap cargoes, cheap thrills – and as much of all of them as possible”. While the role of contemporary shipping certainly deserves more nuance, I would agree with the author that no part of our seafaring heritage, whether good or bad, should ever sink again. History is there to help shape our future. *The Ship Asunder* provides both an informative and enjoyable basis to help us on that journey. ■



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