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

Closing the gaps

US federal maritime commissioner
Carl Bentzel on connecting the supply
chain without red tape

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Under pressure

Dealing with trade sanctions in UK ports

Ready to rebuild

Ukraine Seaports chair looks ahead

Keeping track of operations

IAPH launches new World Ports Tracker



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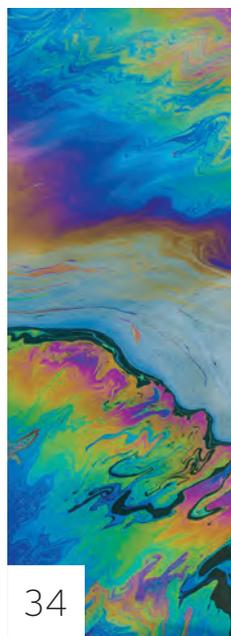
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EDITOR'S COMMENT



INES NASTALI

Editor

Call to connect

When you read these words in our digital edition, hot off the virtual press, I hope that you are a few days away from attending the annual World Ports Conference in Vancouver, Canada, organized by the IAPH and S&P Global, and hosted by the Port of Vancouver.

Should you hold a physical copy of this magazine in your hands, it is very likely that you are doing so while already in attendance of the World Ports Conference.

If so, I look forward to catching up with you.

For those of you who are unable to make it, I hope you enjoy content from the conference in future issues!

Following the cancellation of the 2020 live event that was to be hosted by the Port of Antwerp, and 2021 hybrid discussions, partly set in Antwerp, the time has come for the IAPH and its guests to get back together in person from 16–18 May.

While this is extremely exciting, I think this also serves as an important reminder: ports are a connection point.

They are where ship and shore meet and it is here where the decision is being made of where the cargo will go next and how it will be transported, whether on another ship, a train, or a truck.

Ports are therefore where the supply chain comes together – and where decisions are made that will impact other supply chain stakeholders.

To me it is obvious that the efficiency and continuity of global trade operations are being decided in ports.



TONY SLINN
Freelance journalist

While the world's attention was on the expansion of the Suez Canal, the Egyptian government's simultaneous long-term plan to transform the country's economic landscape via the Suez Canal Economic Zone (SCZone) really didn't get that much attention.

As Zaki pointed out, a key strategy is to create opportunities. And given what is in the pipeline during the current development phase, that's certainly working. ■



NAMRATA NADKARNI
Freelance journalist

It was really interesting to speak with Andriy Gaidutskiy about the aspirations of Ukrainian ports once the war is over – particularly to absorb underutilized capacity. Their model of public-private partnership would be a good way to secure both the funding needed and also increase their share of international cargo. ■

Especially in times of high port congestion, these decisions are vital to ensure an efficient flow of cargo.

We have seen ports adjust to challenging circumstances. For example, following the COVID-19 lockdown in Shanghai that has been in place since March this year, China introduced more transshipment services. The country is also making more use of its river network to ease the burden of the congested Shanghai port.

This is something that other countries should be looking to do.

To go on a tangent for a second, making use of the river system for transshipments is also something that helps decarbonize the maritime supply chain as it takes trucks off the road and brings cargo on to the water network – which is more efficient.

Furthermore, the neighboring ports were at the same time able to increase cargo throughput during the first quarter of 2022 by diverting cargo from Shanghai – a win-win. See page 32 of this edition for more details on this story.

I believe the industry should also look to reap the associated benefits that come from improving efficiency.

We are painfully aware that all parts of the supply chain are connected, which means that if an issue presents itself to one part, it will likely be an issue for all others. It is therefore important that we continue to talk to each other to figure these issues out.

This is exactly what we will try to do during this year's World Ports Conference in Vancouver.

Serving as the proxy port of call for the leaders of the global maritime nodal points and associate partners, the two days of discussions offer the chance to come together, iron out inefficiencies, and agree to work on standardized protocols in ports.

But it is also here where we will discuss how shipping will evolve, which alternative fuels get chosen to further decarbonize the industry, etc. We therefore have a chance to shape a sustainable supply chain of the future.

As we make improvements, it is also important to celebrate our successes. I am glad to see that once again the IAPH Sustainability Awards will honor those in the port sector that are setting milestones for our industry.

The gala dinner on Tuesday, 17 May, to celebrate this year's winning projects will be a fantastic opportunity to learn what other ports are doing to foster this sustainable supply chain. They are also a chance to dress up and mark the industry's reunion.

I look forward to these discussions and catching up in Vancouver to witness how we will #CloseTheGaps of the maritime supply chain and make future operations more efficient. ■

Closing the gaps

Carl Bentzel of the US Federal Maritime Commission and IAPH managing director Patrick Verhoeven discussed standardizing US trade data and making the market more resilient without adding more red tape

INES NASTALI

C

arl Bentzel is a busy man. Having worked for the US Federal Maritime Commission (FMC) since 2019, he currently tries to untangle the thick spider web of data exchange to do with the arrival of vessels in ports.

The lack thereof inhibits the crunched maritime supply chain from operating efficiently.

A crucial part of cataloging the status quo happens via the Maritime Transportation Data Initiative, which the federal commissioner has been leading since the end of 2021. In weekly meetings, different stakeholders of the supply chain – on the land side via trucking companies, terminal operators, and forwarders – had the chance to identify gaps in data definitions.

This exercise aims to culminate in developing recommendations for common data standards and protocols to upgrade the operational efficiency of the supply chain.

Sharing some preliminary insights and results with IAPH managing director Patrick Verhoeven, Bentzel said, “We’ve done 16. Our last one was with the carriers and we have everything on tape. So, our staff is using those to evaluate and come up with recommendations on standards.”

Bentzel is happy with the turnout. “I think the meetings have been going really well. I’ve been very impressed and we’re trying to really focus our questions to get answers about what are the action points in a shipping transaction from beginning to end that includes all of the intermodal.”

Therefore, Bentzel has also been asking the industry not only what sort of data they have that it could share but also what benefit it sees in receiving it. “So, even though there may have been some reticence about sharing information, they also recognize there’s value in getting data from other sources that would help them be more efficient.”

He thinks that this has made them be open because even, “if we determine that they’re going to have to share information, there’s some value in other areas in getting information shared. I’ve been surprised at how outgoing the industry has been and embracing of the mission”.

At the same time, Bentzel acknowledged, “We have had issues. I think the labor unions are slightly concerned that this exercise does not generate to mandate information that could be used around the debate on collective bargaining and automation. And so, we’re working with labor unions to indicate we’re just really looking at the transportation action points and the data surrounding the movement of cargo and we want to know what data is out there and available.”

One concrete focus area for those action points is the trucking sector. “We definitely don’t have as much information on some of the intermodal actions and the shipment of cargo after it leaves marine terminals. And so, we’re also looking at railroads and intermodal movements.”



IN CONVERSATION WITH CARL BENITZEL

Photo: Federal Maritime Commission





Common nominator

Verhoeven agreed, “It’s a common problem that we see in port or maritime communities around the world, this lack of trust in data sharing. I think this is a good example where it shows that you need an authority to step in, like the FMC in this case, which has the neutrality to bring parties together.”

He has seen this power occur elsewhere. “The European Union to some extent has that as well with the European Commission that has certain powers to bring stakeholders together and that’s why they’ve been working on things like national single windows. Although it also has its own problems in that regard, you need a neutral party somehow that says we are going to bring all stakeholders around the table and see who has which data, what are the concerns about confidentiality and sharing, and then push it forward.”

For Bentzel, this international cooperation is one of the next steps, potentially also involving the IAPH. “We’re talking with international bodies as well. We see this as potentially leading to further discussions on an international basis. We met with the Digital Container Shipping Association and we’re taking all of these recommendations as well from other bodies.”

He also emphasized that the FMC is not going to come up with new regulations but is going to utilize what is already out there to, instead, try and harmonize those and issue recommendations on how to amalgamate all of these efforts rather than create new requirements.

“And we are not looking at confidential information, such as cargo movements and pricing. We’re looking solely at the movement functions. The FMC already has information about contracts and prices, but this is about efficiency of movement and coordinating efforts,” said Bentzel.

Ultimately, “if we get it right, this will provide the impetus for some sort of international standardization that would be capable of being used at every major port that’s out there.”

Beyond the waters

This is something Verhoeven and the IAPH welcome. “But the more you go into the intermodal chain, I think that’s where, as you indicated, more gaps exist and where you have more difficulty to access data. It’s clearly a matter of showing what the advantages are.”

While Verhoeven acknowledged that progress has been made on the shipping side, Bentzel asked for more granularity. “I know where a vessel is because there are six or seven websites that provide you their AIS, but we don’t

“There is a lack of trust in data sharing”

PATRICK VERHOEVEN
IAPH MD

know whether they’re slow steaming and when they anticipate coming into port – and they know these things in advance. So, there should be a better picture at ports of vessels that are anticipating making a service.”

That is especially true for regularly scheduled vessels, which – because of the current disruption – might alter their calling plan to get back into rotation.

So, while proposals are being discussed at the IMO Facilitation committee to create more standardized trade data protocols on the shipping side, Verhoeven warned, that “the moment you go further inland, it becomes difficult for a body like the IMO to step in.”

Additionally, a standardized set of regulations would also avert how different parties define requirements for electronic data exchange differently, “for some people an email is electronic,” Verhoeven added. Bentzel sees an opportunity in this. “I do think we can come to grips with this, as it’s not that they don’t have the information, it’s just that they’re not transmitting that information.”

Container competition

Ensuring vessel arrival and departure information gets shared among global stakeholders would also aid to remedy another issue ports, especially in the west of the United States, have encountered over the past two years – the shortage of equipment and blank sailings on the US-Asia routes.

The FMC in April released a report on container manufacturing, prompted by the fact that during the early part of the pandemic there were not enough containers. While this was in part because of the congestion and the delays in getting containers back into service for shipment, Bentzel also noted in his report that “96% of the containers used in the entire world are manufactured in China.”

“The US government has assessed the market and had previously concluded that they were all under Chinese government control and that substantial subsidies had gone into the construction of those. So, I felt it was really important to bring out that we have a de facto monopoly for the manufacturing of intermodal containers. It’s also that 86% of the intermodal chassis used around the world are made by the same group of manufacturers,” he added.

Therefore, the commissioner recommended that the United States look at ways to stimulate local production of containers as an essential element of trade, “just like with semiconductors, we’re all very interested in having them manufactured to make sure that there’s market alternatives.



Picture: Trucks are lined up at the Port of Los Angeles. The Ports of Los Angeles and Long Beach suspended a charge for container storage as a backlog of empty containers at the ports has decreased.

We've circulated the report internally to our staff and to Congress and other federal agencies."

"We're using it as an educational tool at this point. But clearly, it points to the need to do something from a competitive standpoint and it points to the need to have more alternatives available for the market going forward."

Reforming regulations

Another tool to aid the competitiveness of US ports is the Ocean Shipping Reform Act that is currently taking shape, having recently signed off by the Senate and now being discussed by the House of Representatives before, if passed, being signed into law by President Biden. The update to the Act focuses on the detention and demurrage challenges and the correct practices in assessing penalties for those.

In addition, it helps with the aforementioned data puzzle Bentzel is working on solving. "It also provides further clarifications on what is a reasonable practice with respect to providing export services. It requires the carriers to report on imports and exports and empties. So, we'll have real-time reporting requirements from every port and can get a better sense of whether the markets are flowing," Bentzel explained.

The commissioner is well-versed with the Act, having worked on its update in 1998 when he was senior Democratic counsel of the Senate Committee on Commerce, Science, and Transportation.

The FMC is feeling the strain of working with limited resources in-house. It is a small agency with fewer than 120 people regulating \$1.5 trillion of commerce that comes in as containerized trade and another \$3.5 trillion of commerce surrounding the movement of cargo in and out of the ports,

according to estimates from the American Association of Port Authorities. "We have six investigators to take policing action and investigate malpractice. That's one for every \$1 trillion of commerce." He added, that in comparison, the Securities and Exchange regulators, for every \$1 trillion of commerce have about 150 investigators. "We haven't had to have those because as the market was relatively fluid. But we're in a new market reality with more cargo being shipped."

Once the updated Act is in place, Bentzel would especially like to focus the authority's policing powers on the carrier alliances that have won market share – and thus influence over pricing – in recent years. While carriers authorize the FMC to look into requirements for contracting, "we'll continue to rely on supply and demand and the market to provide pricing. So hopefully further steps are not warranted."

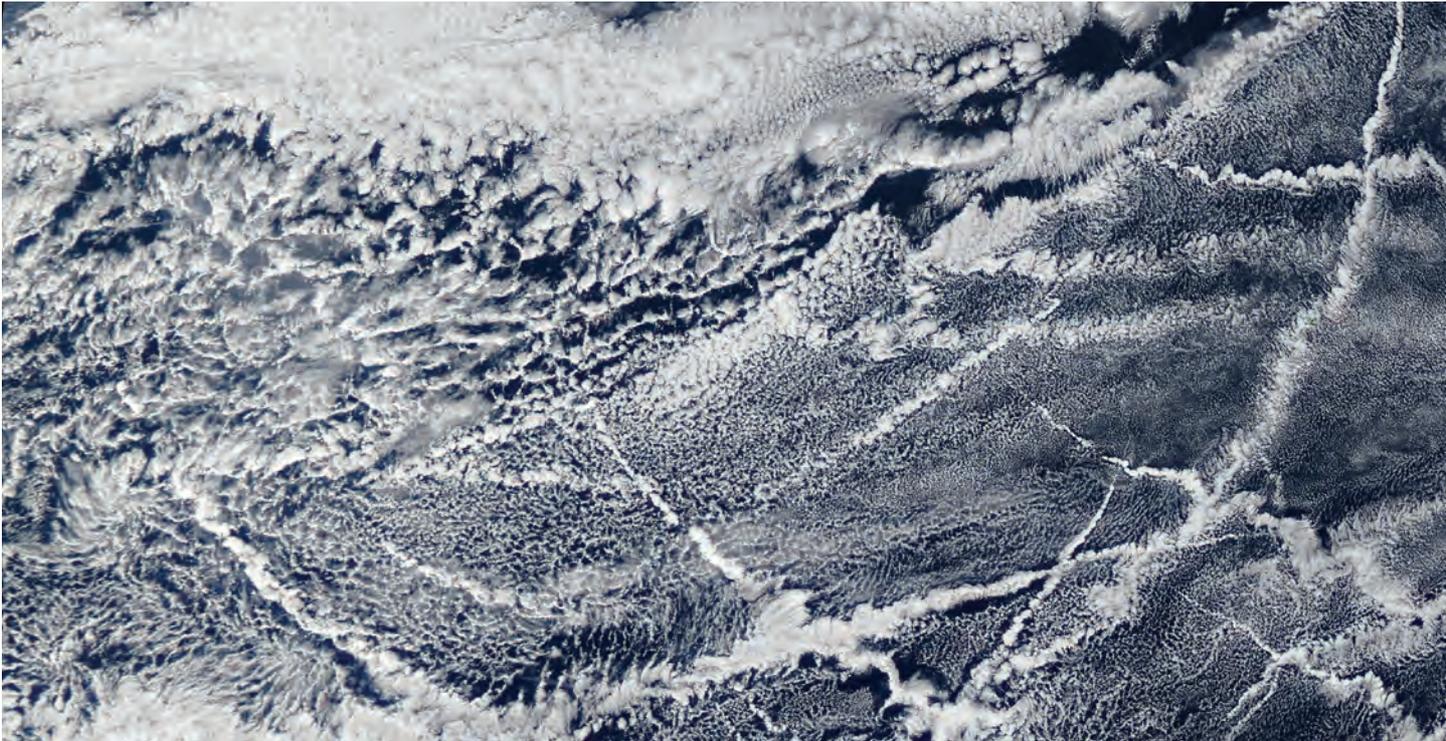
Verhoeven understands the actions taken by the FMC. "Certainly, the bargaining power of the carriers, as Carl indicated, has increased tremendously."

"The FMC has the new Act coming out, Europe has the block exemption for alliances and also state aid guidelines, so the question comes up, is there some form of global regulation that is feasible or at least some global cooperation between global regulators?" he asked.

While the different global authorities meet every two years to discuss antitrust and competitiveness challenges in global trade in relation to shipping carriers, the different levels of power the agencies hold, make regulating difficult.

"It is a pretty strong power to make sure that they're not unfairly treating the shipper. So, we're very cognizant of making sure that the European regulations, for instance, don't contradict with the United States', and, so far, we've been successful in that," said Bentzel.

In June, the commissioner will hold a data summit to discuss the outcome of the weekly meetings on global trade data sharing, hopefully aiding to have another cooperative tool to keep the maritime industry free of cobwebs. ■



PERSPECTIVE EMISSION REPORTING

The scope of scopes around market-based measures

Emissions from shipping have been estimated to be circa 3% of the world total – or equivalent to a developed country the size of Germany. They are expected to grow in absolute terms if predicted increases in world trade are correct. While there is a myriad of ever-changing international, national, and local legislations that produce increasing targets for the reduction of emissions from ships, pressure is also increasing for market-based measures to be implemented.

Market-based measures, or a tax on carbon, will drive shipowners to turn to ports to help them reduce their CO₂ emissions during a vessel's port call. To understand how this also benefits the port's emission profile, it is necessary to see how emissions are categorized. Per the IMO Greenhouse Gas Protocol, there are three scopes.

- Scope 1 is for direct emissions under the control of the port – for example, harbor-owned craft and vehicles
- Scope 2 is indirect emissions also under the control of the port – for example, electricity purchased for buildings and streetlights
- Scope 3 is all other indirect emissions that are not included in Scope 2 – for example, emissions from cargo-handling equipment used by port tenants and particularly ships, where 85% of these emissions are attributable to bulk, container, and oil vessels.

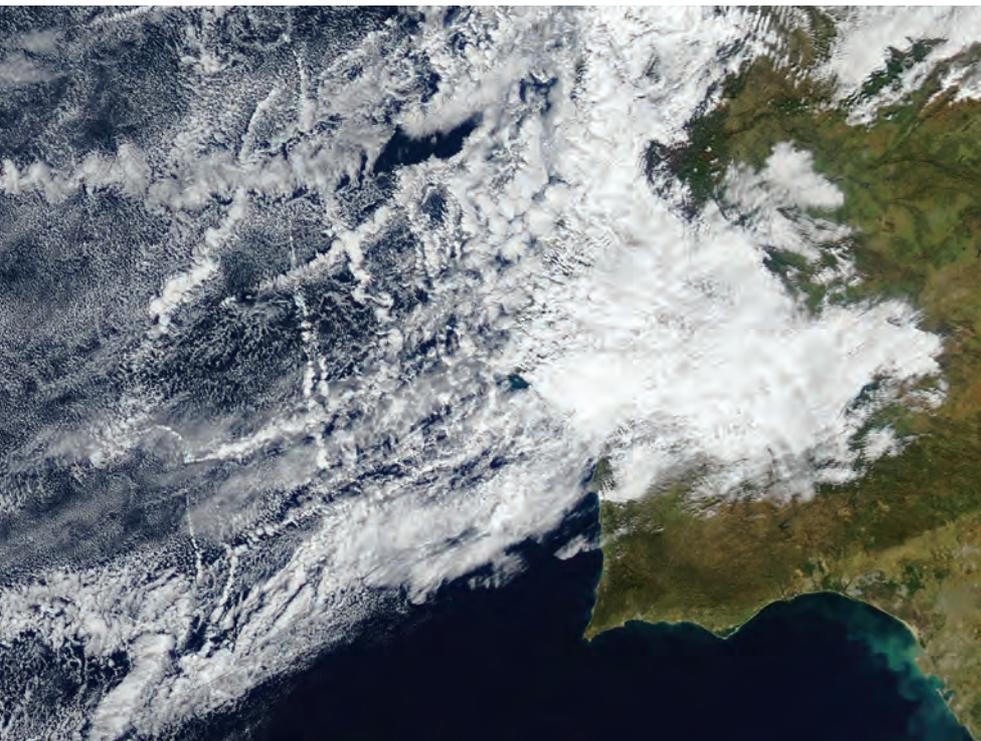
Keeping track

The first step a port needs to take to address emissions is to track and calculate them. This first step can also present the first problem.

Many smaller ports do not have dedicated environmental managers and it can therefore be difficult for port managers to find the time to focus on what is a time-consuming exercise.

The second problem is searching for data that may not yet be recorded. For example, tenants can be resistant to collecting and providing information, which will need time and effort on their part, with no perceived obvious gain. In fact, reduced emissions can be directly related to lower energy usage, which represents a monetary saving.

However, research has shown that the biggest contributor to a port's emissions are ships (Scope 3). As far as this data is concerned, ports may not be tracking ship movements in a meaningful way, and most probably do not collect fuel consumption figures or details of auxiliary engines on



ABOUT THE AUTHOR

PAUL MARTIN is a master mariner and director of Maritime at ABL. He graduated from the World Maritime University with a post graduate diploma in Maritime Energy and has a long-held interest in initiatives to reduce pollution.

board that will be needed to calculate their side of emissions.

Once emissions are tracked and calculated, the port must then take action to curb them.

How to proceed

There are a few promising solutions, but they require varying degrees of investment.

Digitalization of the maritime value chain can allow just-in-time arrival of vessels to port. This omits unnecessary emissions in a port domain that are created when a vessel must wait at anchor for a berth. It also has the beneficial corollary of reducing emissions en-route – given the cubic relationship between speed and power, lower speed equals lesser fuel; ergo lower emissions.

First, make shore power available to vessels. While ostensibly shore power makes sense, the cost of installation, maintenance, and

operator training is significant. Despite it being effective at removing emissions from the period of a port call when the vessel is alongside, it will not remove emissions during the transit phase of the call.

Second, alternative fuels such as methanol can be a better alternative, and the re-

Pictured: Ships in the Atlantic Ocean off the coast of Portugal produced this patchwork of criss-crossing narrow exhaust trails.

cent order by Maersk of 12 methanol-powered vessels certainly ups the ante.

However, it is likely to be some considerable time before the bunkering infrastructure could support all vessels, coastal vessels as well as blue water vessels, and the bunkering infrastructure itself will need further investment.

Third, although energy-efficient ship handling is not a new

concept, this is not a widespread practice and training of pilots and crew in this respect is not common.

However, to put this into perspective, research carried out at the Swedish ports of Gothenburg, Halland, and Stockholm in 2016 show

“Research at Swedish ports in 2016 show that over half of the ship’s emissions occur at berth”

PAUL MARTIN
Director, ABL

that over half of the emissions from ships occur at berth. Therefore, perhaps options one and two can bear the best results.

An inextricable link emerges between the ships and the port – ships need the port to provide the infrastructure to allow ships to make reductions, which in turn can help

a port to reduce its Scope 3 emissions. A collaborative approach will be needed as, after all, a port’s Scope 3 emissions are a shipping line’s Scope 1.

Ahead of the curve

Although currently there is no legislation that directly requires ports to reduce their emissions, it is not unrealistic to imagine that eventually market-based measures will be applied to the ports themselves, similar to the pressure that shipping is coming under. If those measures are invested in the necessary infrastructure, then progress toward emission reduction can be made.

No matter which initiative is followed, it is important to continually track and calculate emissions so that the effectiveness of any implemented initiative can be monitored. International energy and marine consultancy ABL has developed a digital solution called emiTr that allows the seaport industry to easily track its emission profile from each emitter by scope, and to calculate the cost of its carbon footprint according to carbon credit schemes.

EmiTr can help ports and other maritime facilities such as shipyards, offshore wind sites, and even the oil and gas industry to get ahead of the curve and identify their carbon footprint, so they can take informed action. Understanding the scope of the scopes is key. ■

FEATURE LAW ENFORCEMENT

UK ports on the frontline

A raft of recent regulations by the UK government has put the nation's ports in the unwelcome position of enforcing laws without much-needed guidance

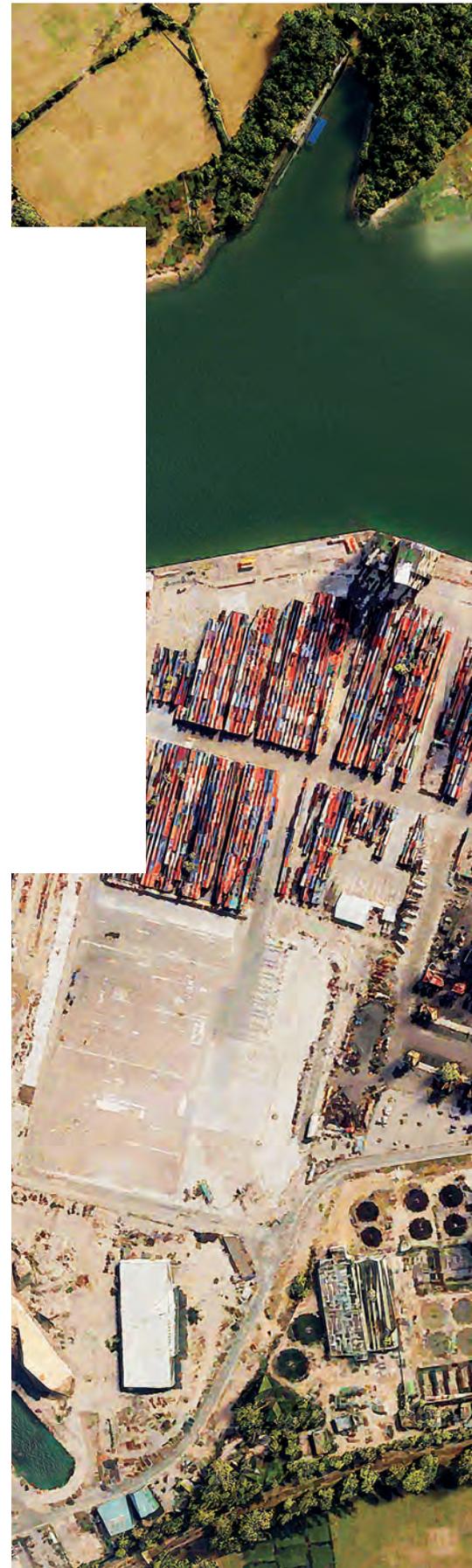
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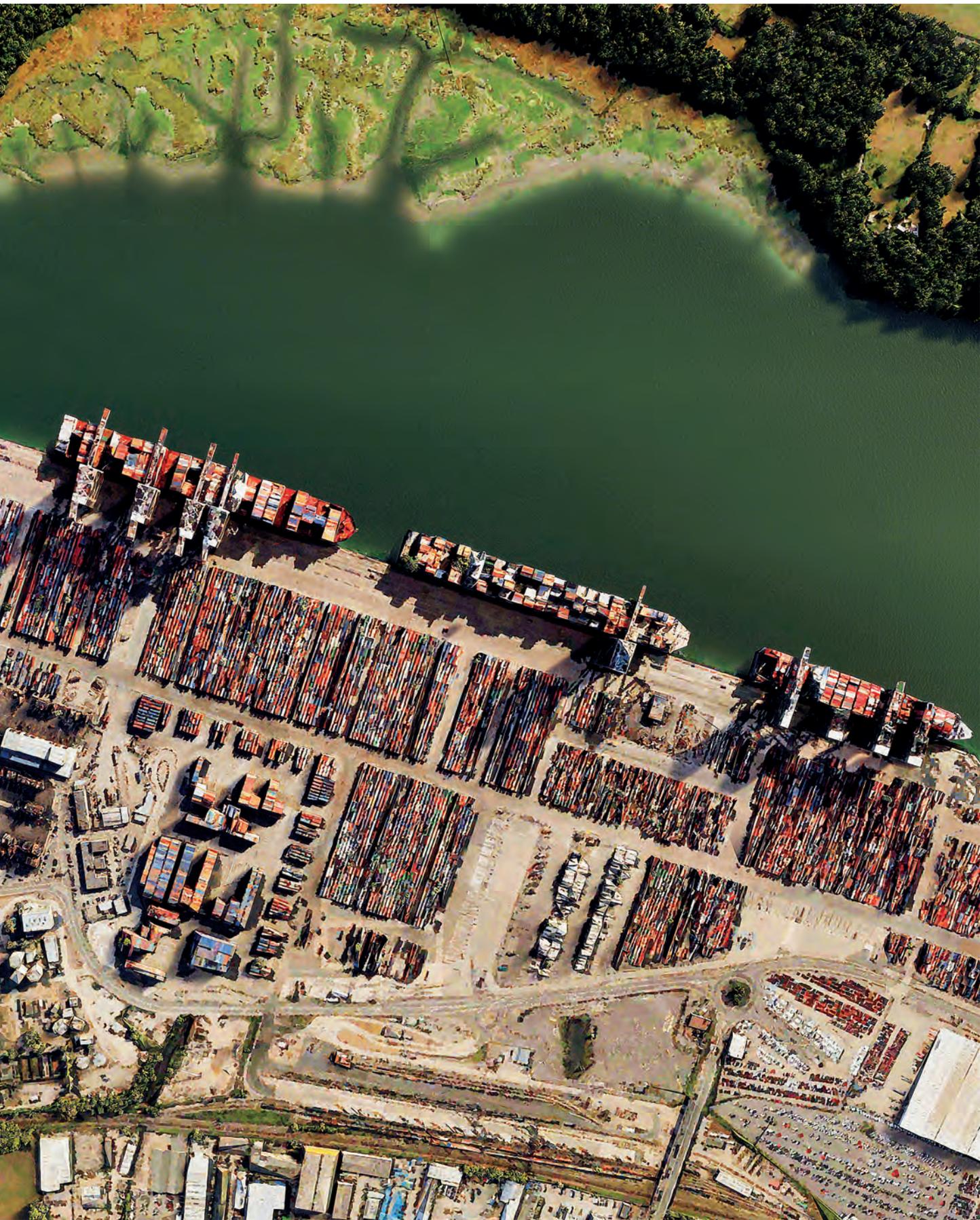
As the boundary between ships and shore, ports are tasked with enforcing numerous regulations pertaining to safety, and port and vessel operations – while at berth – and, of course, customs and immigration. This is ordinary for UK ports, but there have been a number of political and economic upheavals that have shifted this landscape in the past few years.

Not only has the UK government recently imposed sanctions on Russian-associated vessels calling at national ports – as have the European Union and Canada – but it has also initiated efforts to create a new minimum wage for the ferry sector in the wake of the P&O Ferries incident in which the UK ferry operator sacked 800 UK crew members across its entire fleet. Enforcing these regulations is not only challenging because they hold the potential to create huge delays in the supply chain, but also because the regulations themselves are yet to be clearly defined. Furthermore, the border implications of Brexit are still playing out, with a new tranche of regulations due to be implemented this year that may complicate the situation.

Pictured: Southampton commercial dock, UK.

Photo: Getty Images/Vonkarai







Pictured: Former P&O workers and their supporters protest along the main road to the Port of Dover on 23 March 2022.

Photo: Guy Smallman/Getty Images

Russian restrictions

The Russian military invasion of Ukraine in February 2022 prompted international condemnation, with the UN Human Rights Council, the International Association of Classification Societies (IACS), and other bodies suspending or withdrawing Russian membership of their organizations. On 28 February, UK transport secretary Grant Shapps tweeted an image of a letter written to UK ports, asking them “not to provide access to any ship that they have reason to believe is owned, controlled, chartered, or operated by any person connected with Russia; owned, controlled, chartered, or operated by designated persons; flying the Russian flag; or registered in Russia.”

This directive, aimed at economically impacting Russia, thrusts UK ports into the role of enforcer without any guidance. “It was extremely frustrating to wake up and read an article in the national newspaper about changes that will affect your daily operations and potentially cause supply chain delays when you’ve not been given so much as a heads up,” a UK port operator said to *P&H*

on condition of anonymity. “We just had no idea how to implement these rules. Should we suspend service to a vessel if it has just a single Russian seafarer on board – or is there a threshold? What if the cargo was Russian in origin but had been loaded at a European port and transported by a ship with no Russian connection? It was absolute chaos at the port.”

The operator was one of a number of ports that approached the government for clarification, which eventually specified that the sanctions did not apply in the case of Russian seafarers on ships not connected to Russia. However, even at the time this article was written, the UK government has yet to provide concrete legislation on the topic, particularly with regard to how this would play out for contractual obligations.

On its website, the British Ports Association (BPA) said, “The open port duty and contractual arrangements could make this difficult in some circumstances, but we understand the UK government is working on legislation to underpin this, which will be published in the coming days. We expect this to only impact a relatively small number of vessels.”

As the war stretches on, the guidance may shift, particularly with regard to energy transportation, which accounts for the lion’s share of Russian exports and is a

sore point for UK consumers going through an energy crisis in the wake of the COVID-19 pandemic.

Employment landscape

Another hot topic on the UK Department for Transport's (DfT's) agenda is the working conditions for UK seafarers in the ferries sector. On 17 March, P&O Ferries made its staff of 800 UK workers redundant with immediate effect via a recorded Zoom call and replaced them with cheaper contract workers. The move was said to be fueled by crew costs that made the business unsustainable in its existing operating format, but it prompted a public outcry and made international headlines.

Although the legality of the issue is still playing out, with trade unions arguing that the operator broke UK employment law that entitles workers to a consultation ahead of employment termination, the matter has spurred the DfT into announcing a package of nine measures aimed at preventing such an occurrence in the future.

Prime among the measures is the need for all UK ferry operators to comply with the national minimum wage, currently at £8.72 per hour, and for the Maritime and Coastguard Agency (MCA) to review enforcement policies. Shapps also proposed working with the International Labour Organization to implement an international minimum wage, which will prove challenging given the complex nature of maritime employment and operations. BPA CEO Richard Ballantyne commented on the situation, stating, "While it's right the government and the ferry industry look to improve employment rules and standards, the expectation that port authorities will need to enforce minimum wage rules in the shipping sector could be unworkable. This will place ports in a difficult legal predicament, especially before any legislation is in place.

"The ports industry is genuinely sympathetic toward the situation of the impacted seafarers; however, we would suggest that ports are not the competent authorities to enforce rules on employee salaries or working conditions in the shipping industry. We are concerned that the government is rushing to find a solution without considering the wider implications in the maritime sector," he continued, adding that the BPA would work with the DfT, MCA, and the ferry sector to resolve the situation.

Regulatory disconnect

However, the situation has soured the views of some members of the ports sector who feel that the DfT has been acting in the interests of its own reputation rather than the sector that it safeguards. "We are constantly scrambling to minimize the impact of what feels like PR exercises by a government that's looking to win brownie points with voters and announces changes to regulations left and right without thinking them through. It's left to ports to figure out how to implement them and of course, when the delays inevitably happen, we will get criticized for being inefficient," the anonymous UK port operator said.

"We are concerned that the government is rushing to find a solution"

RICHARD BALLANTYNE
CEO, British Ports Association

The operator stated that organizations such as the BPA and the UK Chamber of Shipping had proven invaluable in helping unravel the implications of the new regulations and to grant port authorities peace of mind about compliance. "But they are in the same position as us. Most times, they do not know what the DfT is going to announce before it is on the government website, and they are then lobbying to make the rules enforceable from a practical perspective. It would be much more effective if they worked more closely with us so that they would know what could actually be done from a practical perspective."

Brexit checks

The need for closer collaboration is particularly urgent given that UK ports have been making arrangements to incorporate new customs and immigration checks, which were supposed to be introduced in July this year.

Instead, at the end of April, the UK government announced a delay until 2023 for border checks on EU food and animal product imports.

"This is quite an amazing development to say the least! Many UK port operators have built border control posts in preparation for post-Brexit checks and all were due to be ready. This announcement is a major policy change, meaning the facilities will effectively become white

elephants, wasting millions of pounds of public and private funding, not to mention the huge effort there has been to get things ready in time," Ballantyne said.

The BPA will therefore, "urgently seeking clarification from policy makers if there will be any type of financial assistance or compensation for ports and also if operators can start to bulldoze the facilities and use the sites for other purposes".

Although this change has been in the works for a number of years, the logistics involved in rolling out these changes,

particularly in a post-pandemic environment, is not without its challenges. A big issue to be overcome is labor shortages, particularly for skilled work such as customs enforcement and heavy goods vehicle driving.

Administrative burden

Although larger ports may have the employee capacity to cope with the burden that enforcing these new regulations brings, smaller ports may feel a greater impact of those. Not only will labor shortages affect their ability to respond in a timely fashion, but the need to hire and train more staff will also increase costs and impact their bottom line. This can have a disastrous effect given the heavy investments needed to bring ports in line with the net-zero targets set by the UK government.

"There is just no financial room for surprises," explained the UK port operator, adding that many ports were already forced to delay planned upgrades in the face of increasing costs for imported raw materials, including timber, steel, and aggregates. "We are keeping a tight eye on costs. There are only so many costs that we can pass on to our customers, who are also in a tight spot themselves." ■

While many disruptions in port supply chains are commonly attributed to a single and readily identifiable event, such as a labor movement, a natural disaster, or equipment failure, COVID-19 resulted in a logistical entanglement. A multiplicity of propagation and back-propagation effects were felt across port supply chains to the point that discerning the cause and effect became challenging. While data underline that by late 2021 and early 2022, about 80% of all delays in containerized shipping were attributed to North American ports, the actual cause of these delays is fairly intractable.

Still, port terminal capacity is a core driver of this great entanglement, but compounding effects, such as workforce shortages, strained terminal and rail capacity, container and chassis shortages, and continuing high cargo demands, provide limited relief for major North American container terminals. Compared with 2019, the largest container ports in North America collectively handled 18.3% more traffic in 2021. Port capacity is stressed but this stress masks a growing challenge of moving containers into the hinterland. For instance, for the ports of Los Angeles, Long Beach, and New York, empties accounted for about 60% of all outbound container flows before the pandemic but surged



70-75% by late 2021. Because of congestion and a lack of supply-chain velocity, the lack of containers became so scarce that the priority of shipping lines was to reposition empties to export markets.

In light of the above context, it can be argued that connectivity and efficiency are the most pressing port competitiveness issues in North America. Terminals' connectivity as gateways to rail corridors reveals that supply-chain flows are mostly locked-in due to existing agreements, such as carrier haulage contracts. Further, it is challenging to transfer large cargo volumes from one corridor to another as rail capacity is already deployed and rather fixed. This would involve negotiating new contracts with shipping lines, terminal operators, rail carriers, motor carriers (drayage), and inland logistical facilities. The capacity of one or several components of this new transportation chain may not be readily available. Even if North America offers options concerning maritime ranges (West Coast, East Coast, Gulf Coast) and ports of entry, the capacity of these options is constraining since it remains offered as a port/corridor continuum. The corridor, thus, represents a fundamental coordination mechanism where connectivity allows port terminals to improve efficiency with better throughput and fluidity. ■

THE DEBATE

Why connectivity and accessibility and port efficiency are the focus areas most in need of improvement

DR WALTER KEMMSIES | Managing partner, Kemmsies Group

One of the first things one learns, or should learn, about ports is the concept of a port gateway. A port gateway consists of at least six elements: the waterways, the roadways, the railways, industrial estate infrastructure, the port itself, and the labor pool in the area. The port infrastructure is, of course, the nexus of the gateway.

The elements' volume-handling capacity must be balanced with one another across the gateway. If one gets too large relative to the others, it could suffer severe financial distress and potentially even go bankrupt. This does not benefit the port or any of the other gateway elements. On the other hand, if one of the gateway elements underinvests in capacity, it will become a bottleneck.

This gateway approach indicates that all elements are interconnected, very much like the way the six focus areas are. However, one focus area needs to be picked and preferably with a view to create a virtuous cycle that drives investment and interest in the other focus areas.

Connectivity and accessibility, if defined within the gateway context, are a logical starting place since they are mutually self-reinforcing. They are also intertwined with the other focus areas. Improved



connectivity and accessibility requires higher port efficiency of cargo handling to prevent it from becoming a bottleneck, reduces the cost of cargo shipping since faster freight movement reduces labor overtime and inventory carrying costs, and cannot be achieved without structuring a regulatory environment that allows gateway participants to make investments that can change the way they operate. It also requires improved freight visibility in order to accommodate higher volumes without creating congestion – port users need to know when it is their turn to retrieve cargo as opposed to sending trucks to the port every day until they finally retrieve their cargo. To achieve this, more digitization is required. In fact, digitization can reduce the need to build physical infrastructure by replacing it with information.

Instigating additional investment and attention on the other focus areas, will help reduce carbon emissions because a lot more volume can be handled with less congestion.

Of course, investing in decarbonization in the form of equipment that does not produce emissions will also help. However, it seems that doing that without the investment in capacity and connectivity will not be as effective. ■

SIXTY THREE

Readership results: Which focus area do you consider to be the most important one to be improved?

63%

37%

MARCH/APRIL | OPERATIONS

POLL RESULTS

Out of the six suggested focus areas, connectivity and accessibility, port efficiency, decarbonization, digitalization, regulatory environment and the cost of cargo shipping, our poll shows that regulatory environment and port efficiency are the two areas that need most improvement.

Regulatory environment, with 63% of the votes, therefore seems to be the most pressing issue for readers, while our two debate candidates – while also arguing for connectivity in relation to it – both see port efficiency as the starting point where port operations need to improve. ■

JUNE/JULY | DECARBONIZATION

THE POLL



With no breakthrough expected to determine global market-based measures in the short term, is it right for maritime to proceed with regional emission reduction measures?

The next IMO MEPC meeting will take place in early June. Expectations are high that global and equitable market-based measures will be discussed to reduce maritime's global carbon footprint.

However, with these discussions having stalled in the meantime, a solution on IMO-level is not in sight, leading to regional measures being suggested.

Are you supporting the idea that those will spur on decisions being made at the global regulatory level or do you think this will only lead to a piece meal of regulations that shipping has to adhere to? ■

Either scan the above QR code or use the web link below to submit your answer to this month's reader poll:

🌐 bit.ly/PHJuneJulyPoll



Andriy Gaidutskiy

The chairman of the supervisory board at the Ukrainian Sea Ports Authority is poised to harness his considerable financial acumen to help rebuild the country's maritime future

NAMRATA NADKARNI

The past few decades have been tumultuous for Ukrainian ports, which have seen the operating landscape shift rapidly. The country has navigated several waves of political change: revisions to its constitution in 2004, 2010, and 2014; severe impact from the COVID-19 pandemic; and the current resistance toward the Russian military invasion.

Despite this challenging landscape, Andriy Gaidutskiy, chairman of the supervisory board at the Ukrainian Sea Ports Authority (USPA) has retained his firm belief in the country's maritime future. "I think shipping will recover very quickly once it is safe," he said to *P&H*. "We produce a huge percentage of agricultural food and metals, so I think the world is waiting for Ukraine to recover. And it can recover – hopefully within a year – once the war ends."

Acknowledging that the pace of recovery depends on the damage to infrastructure from the crisis, which has included missile warfare, Gaidutskiy pointed out that many of the plans that USPA had prior to the crisis retain their commercial viability and can be implemented to jumpstart recovery. "We had created a good strategy for Ukraine's 13 ports until 2025, but its fulfilment has been delayed due to COVID, and now the war," he said.

Funding change

Gaidutskiy, who has an economic research background, feels strongly that privatization of ports is problematic. "Privatization can lead to ports becoming very specific and working only with their own interests to transport their own cargo. This can mean that they end up not being transparent," he explained. His preference is for the ports to remain generalists and cater to mixed cargoes, which improves their flexibility and makes the region more attractive for infrastructure investments and vessels to call at.

Accordingly, the USPA's strategy for the future circles around public-private partnerships (PPP) that envision international investment in individual projects, whether

for single berths or a port terminal. "Our remit is to operate berths, piloting, maritime security, and dredging. Building berths will cost millions and can be carried out through PPPs with concessioners investments. This is why we decided to do concessions," Gaidutskiy said.

That said, the organization, which operates with the ethos of a private company despite government ownership, is exploring multiple means to draw in revenue and international business. This includes the possible privatization of three smaller ports: The Port of Skadovsk in the south, the Port of Bilhorod-Dnistrovskiy in the Southwest, and the Port of Ust-Dunaisk near the mouth of the Danube River. "We are seeking foreign investors," Gaidutskiy clarified, adding that modernization of the USPA and port infrastructure will be high on the agenda once the conflict ends.

Gaidutskiy estimated that 80% of USPA measures have been focused on internal transformation of the company to make it competitive on the modern market and to increase public-private partnership projects. He is particularly interested to harness the unutilized port capacity. "Most of the ports were built in Soviet times and there is more than double the capacity than what is in use," he estimated. "In total, Ukrainian ports have around 280 berths. Of these, about 20 are in concession agreements for 30–40 years with contractual obligations for investments and cargo turnover. There is potential for the additional capacity, especially for transshipment cargo, but these berths will need to be modernized."

Current landscape

Gaidutskiy, who was forced to relocate to a different city as a result of the crisis, has been extremely touched by the outpouring of support for Ukraine's sovereignty.

"We are seeing a lot of international support from maritime organizations," he said, referencing bans on Russian-flagged or Russian nationals-associated vessels on entering their ports (see page 12). "We have also seen dock workers refuse to serve Russian vessels," he said.

"We would like to see more ports refuse Russian vessels and for international ships to stop calling at Russian ports," he said passionately. However, he believes that some countries will bow to their oil and gas needs and maintain ties with Russia despite their sympathies for the plight of the Ukrainian people.

In addition to seeing to the safety of his team, the USPA chairman is contending with the complications of catering to the needs of stranded vessels in the Black Sea and the Sea of Azov. Although discussions with the IMO have explored the possibility of creating a blue maritime corridor to allow the ships to leave the area, the threats of air strikes and sea mines make this

an extremely risky endeavor.

Gaidutskiy explained that there are three scenarios being dealt with: vessels with no one on board those that have had international crew members evacuated and replaced by local Ukrainian seafarers; and vessels staffed by a mix of international

and Ukrainian seafarers. "We are supplying the seafarers on these vessels with food and trying to help them," he said.

Brighter future

Despite the challenges of the past two years, Gaidutskiy does not regret his decision to take on the USPA role.

"Maritime is interesting because it shows the wonderful social and economic effect that sustainable development and investments can have," he said, pointing out that 40% of all imports and exports for the country come via Ukrainian ports. This, he believes, makes his role more meaningful as his remit allows him to serve his nation's people. ■

The IAPH and The Seafarers' Charity have launched an emergency appeal for Ukrainian port workers. Donate here:

🌐 bit.ly/PortWorkerAppeal

"We produce a huge percentage of agricultural food and metals, so I think the world is waiting for Ukraine to recover"

Exploring regional container port data

Regional container port data of the past five years identify trends and relationships in key metrics, providing an introduction to the IAPH World Ports Tracker

THEO NOTTEBOOM AND THANOS PALLIS

Following on from the COVID-19 Barometer published during the first year of the pandemic, the IAPH is rolling out the World Ports Tracker to track critical aspects of the evolution in the global port industry. The tracker aims to aid the timely understanding of challenges ports face by surveying a combination of survey-based results and port performance data.

The first survey is expected to be sent out after the IAPH 2022 World Ports Conference in May when the tracker will be officially launched and subsequently reported on in *Ports & Harbors* and via specialized reports circulated to IAPH membership. You can find more detailed information on the survey on page 22 of this edition.

As an introduction to this new data tool, this contribution elaborates on the non-survey part of the tracker exercise - quarterly container port statistics based on IHS Markit's Port Performance Program. These statistics focus on four container port metrics: vessel calls, evolution of call, vessel size, and port moves per hour, aggregated per region covering the period 2017-21.

Trends and challenges

The index-based evolution of the vessel calls per region reveals that most regions face a declining number of container vessel arrivals. Container vessel activity in North European ports in fourth quarter 2021 was a hefty 20% decline from the first quarter 2017 level. Only in Latin America, and the Middle East and India the number of vessel calls was substantially higher than in 2017. In the latter case, however, this is the outcome of trends from the pre-pandemic era. In all other regions, the initial increase in vessel calls throughout 2018 and 2019 were compensated by subsequent drops during the peak of COVID-19 pandemic in 2020 and 2021.

Against a backdrop of rather stagnant vessel call numbers in most regions when comparing first quarter 2017 and fourth quarter 2021, there is a tendency toward larger vessels and bigger call sizes in quite a few regions. While the share of 8,501+ TEU vessels in Northern Europe remained fairly the same throughout the analyzed period, the 20% decline in vessel call numbers coincided with a 40% increase

in average call size. Particularly for vessels in the 20,000+ TEU class, a few North European container ports, such as Antwerp and Felixstowe, reported records of close to 25,000 TEU vessels handled in one port call in the past year.

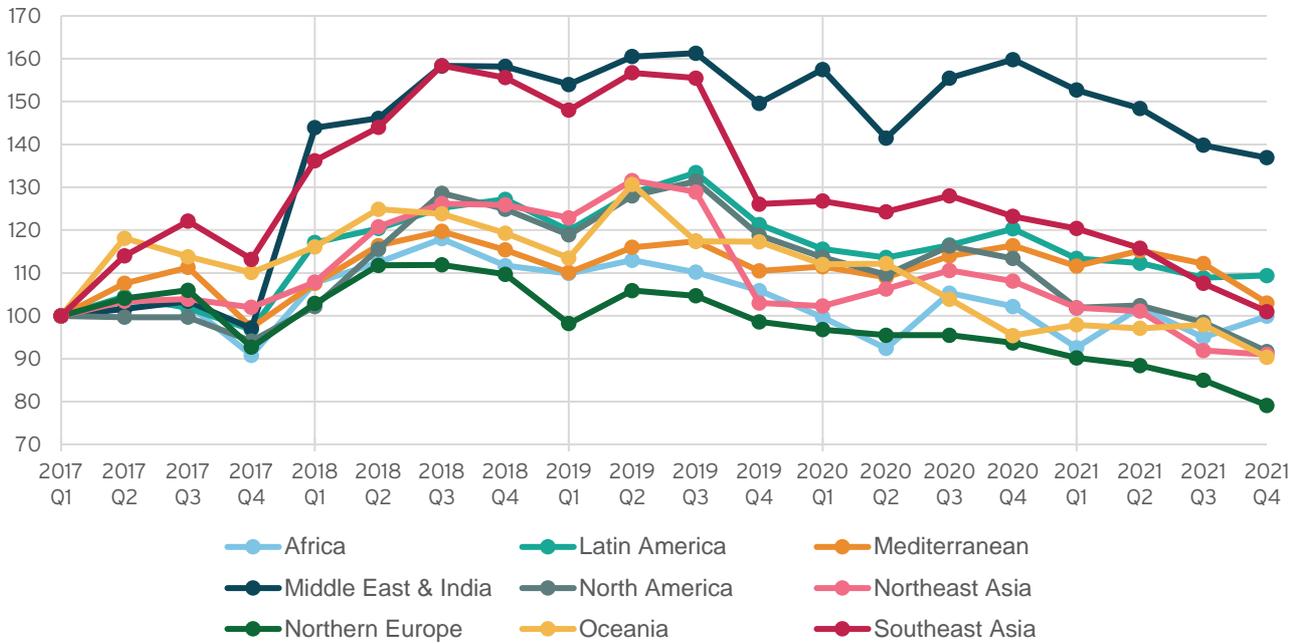
Average call sizes have gone up by more than 50% in North America, Northeast Asia, and Southeast Asia. In the last two regions, the largest vessel classes were already very important five years ago, with Northeast Asia being the only region breaking the 35% threshold in 8,501+ TEU vessel share in recent years. In 2021, around 30% of all ships calling the North American port system had a unit capacity of over 8,501 TEU, or double the share recorded in early 2017. In line with North America, Oceania combined a 10% decline in vessel calls compared to first quarter 2017, with a strong increase in average call size and ship size. The Mediterranean, and Middle East and India combine more modest increases in call sizes with a rather stable share of 8,501+ TEU vessels.

Port capacity challenges, temporary terminal closures, and supply chain disruptions clearly had their impact on port performance. While one might expect otherwise, the deployment of larger vessels and the higher call sizes did not go hand in hand with higher terminal productivity in all regions. The regional data on port moves per hour demonstrates that North America, Oceania, and also Africa all witnessed a significant decline in port moves per hour. In North America, this decline kicked in quite abruptly in third quarter 2020 - the start of the demand peak and associated supply chain crisis. Also, Northeast Asia, Southeast Asia, and Northern Europe witnessed a COVID-19-related drop in port productivity, but in these cases the index remained above the 100 threshold. The Middle East and India, and Latin America are the only regions characterized by a rather significant improvement in port productivity figures throughout the period of observation, particularly toward the end of 2021.

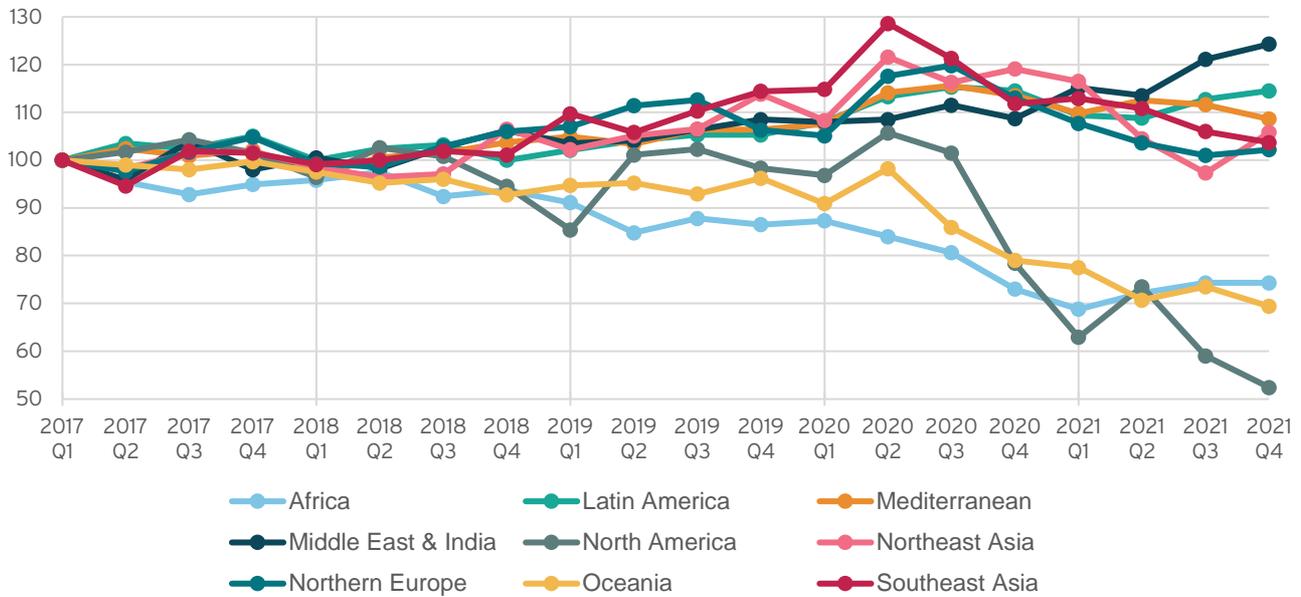
Via quarterly updates of these and additional metrics, the IAPH World Port Tracker will guide ports and stakeholders in their efforts to improve services and address emerging challenges - in the meantime, do not miss your copy of the accompanying detailed report on trends per region that will be available at the IAPH 2022 World Ports Conference. ■



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



Port-moves-per-hour (PMPH) per region (reporting quartile development, index-based with Q1 2017 = 100)

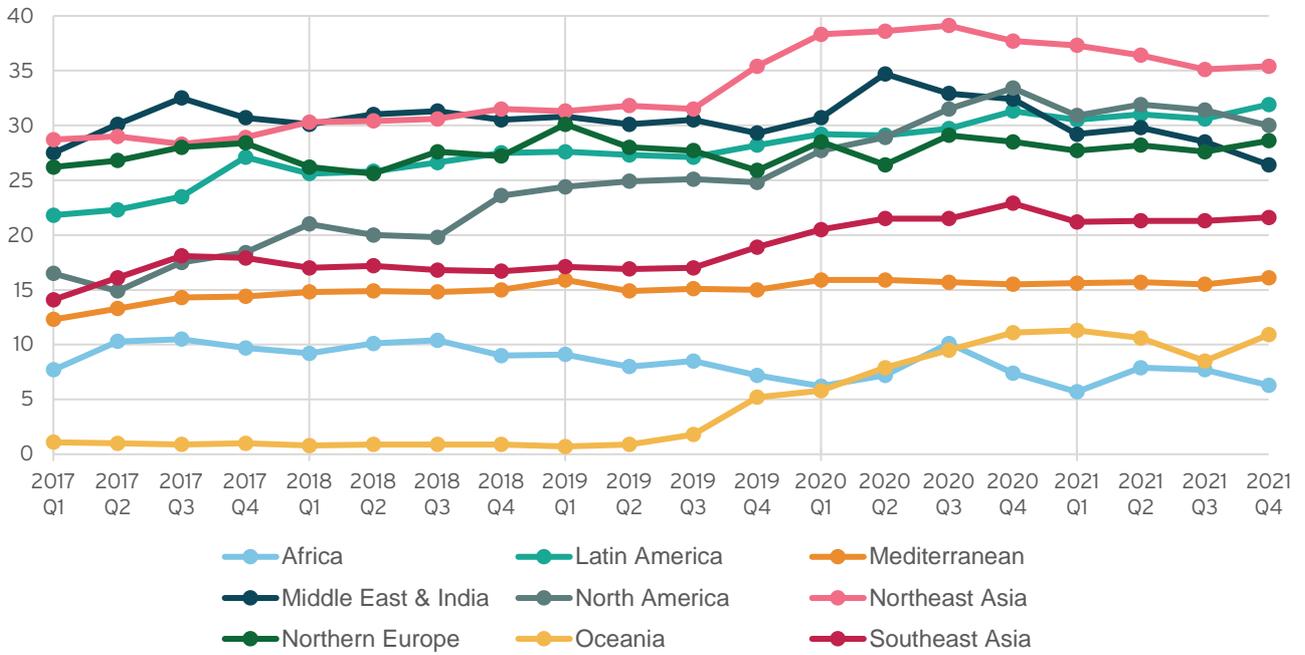


Port-moves-per-hour (PMPH): Total moves recorded divided by total port hours recorded over the period.

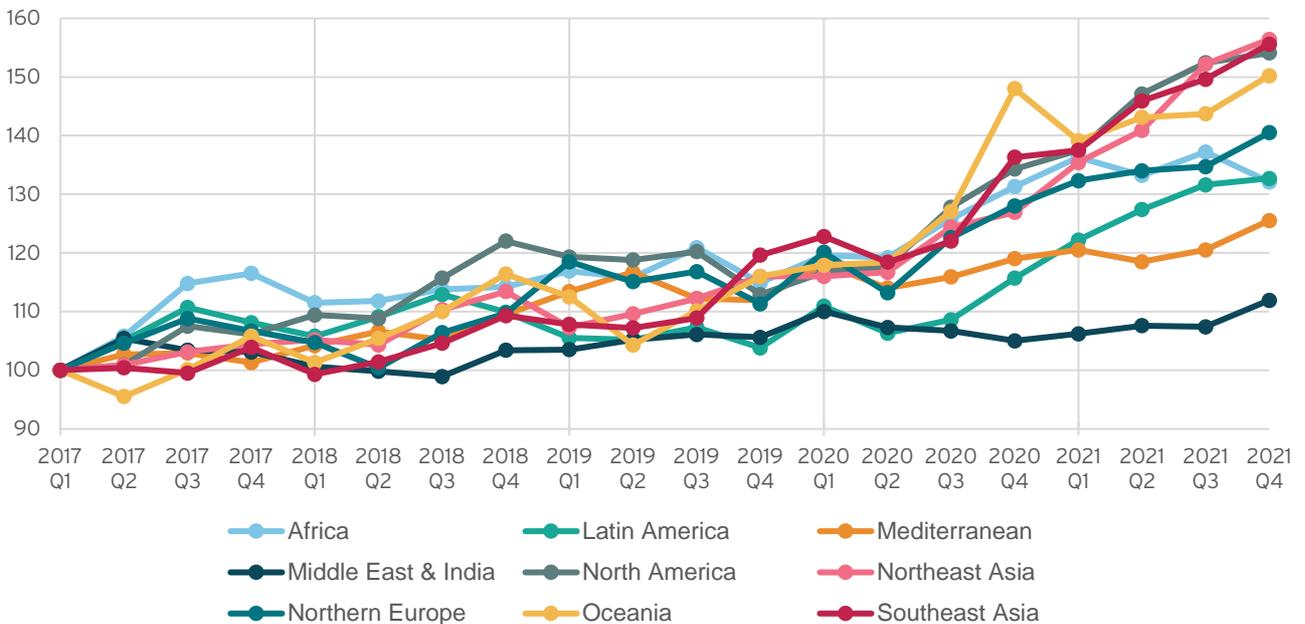




Evolution of vessel size per region (reporting share of 8,501 TEU + vessels in total container vessel calls, compared with Q1 2017)



Evolution of call size per region (reporting quartile development, index-based with Q1 2017 = 100)



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

EDM for Maritime Ports and Terminals

S&P Global
Market Intelligence

Embrace the potential of digitalization and support your decision-making by using our leading workflow automation platform to optimize your data and technology workflows



Secure market share

Understand cargo flows, volumes, and values with granularity to capture additional, and protect existing, market share



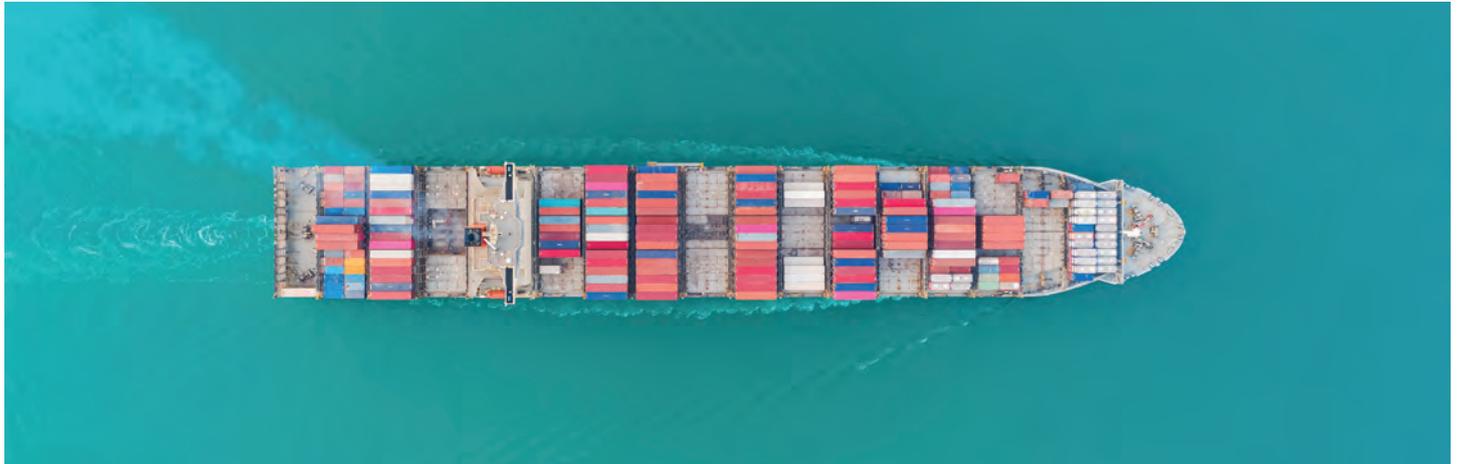
Gain transparency into your emissions

Achieve greater visibility and tracking of emissions to drive decarbonization initiatives with greater purpose and transparency, differentiating your port and terminals



Achieve data collaboration

Equip your teams and supply chain partners with data and analytics that can be trusted and quickly actioned



200+

data management clients across multiple industry verticals

15+

years of data management experience

300+

data management specialists

350+

maritime and trade professionals

30,000+

sources from which we collect our maritime data

300+

years' experience in the maritime industry

Q&A



THEO NOTTEBOOM
Professor, Ghent
University, Belgium



THANOS PALLIS
Professor, University
of Piraeus, Greece



IAPH's World Ports Tracker co-authors professors Theo Notteboom and Thanos Pallis talked to *Ports & Harbors* about the why, how, what, and when on the association's new tracker being developed by ports for ports

Q: Question **P:** Thanos Pallis: **N:** Theo Notteboom

Q: During the first waves of the pandemic between April 2020 and May 2021, you co-authored 17 IAPH-WPSP port economic impact barometer reports, which were sole indicators of what was happening to global ports at that time. What do you think were the most valuable lessons learnt?

N: Above all, simplicity and the value of having data directly from the 120+ global ports that were updating us on such a regular basis, allowing us to help give them an accurate view on what was going on during a global phenomenon no one had ever experienced before.

P: As we processed the data and published it within a maximum of 10 days of receiving it, we could explain exactly what was happening at ports at the time, by region and by activity. We also kept the

questions short and to the minimum, a successful formula, which we will keep with this new tracker, with very similar content.

Q: Risk and resilience is a major strategic pillar for IAPH's activities. How in your view will the World Ports Tracker assist members to gauge their level of resilience against future crises?

P: Having fresh as opposed to just historic data from ports is key not only to a timely overview. With careful interpretation, it can give us clues as to what will happen next, also regionally - this is what ports will obtain from our global ports tracker to react accordingly.

N: To do so you first need to gather decent data. As an example, key info from ports on call volumes,



Photo: Getty Images/World Map Courtesy of NASA: <https://visibearth.nasa.gov/view.php?id=55167>

status of warehousing capacity, and hinterland connectivity can be interlinked, and then combined with expectations on cargo and passenger throughput as well as vessel calls.

Q: For now, what are we asking from port members for this first phase in terms of regular data and what can they expect in return?

P: As with the previous barometer, this tracker will stand out from others by coming from ports exclusively for ports. Theo and I will be there to interpret the data for you when members send their data in, just like with the COVID-19-barometer. Similarly, we also will confidentially handle the IAPH data and not reveal individual port information - the tracker reports will be there for members to use to help them to run their ports.

N: What we are calling for is the same commitment shown by fellow ports around the world when the pandemic broke out, as we clearly see that COVID-19, geopolitical conflict and tensions, extreme weather, and other factors mean that ports do need a bellwether like this tracker as a tool to improve resilience.

Q: In the longer term, what further developments can we anticipate from the IAPH World Ports Tracker once a firm base of data is established during this first phase?

P: It is a balancing exercise to ensure continuity and consistency. We prefer to keep the questions the same and their frequency to a minimum ...

N: ... and we will take on board new topics, which reflect the dynamics of the industry but only after careful consideration.

Further reading

Notteboom and Pallis co-authored, together with fellow IAPH collaborator professor Jean-Paul Rodrigue, the *Port & Harbors*-reviewed book *Port Economics, Management and Policy*, which comprehensively analyses the developments of the global port industry.

The book is available for industry colleagues and students alike - see page 48 for the review.

In addition, Rodrigue contributed to the debate of this edition, writing about which focus areas are most in need of operational improvement - find the article on page 14. ■

QUICK 10



**CRAIG BELL
ESTABROOKS**
President and CEO of
Port Saint John, Canada



N°1

Favorite app
Sonos



N°2

**Something unexpected
that brings you joy**
Well-timed humor



N°3

**An item you cannot live
without and why?**
Golf clubs. I always need
to be prepared to play
the next great new
golf course



N°4

**What world record do
you think you have a
shot at beating?**
Speed walking



N°5

**A quality that impresses
you in a business
partner**
Empathy and
self-awareness



N°6

**What mythical creature
would you like to believe
was real?**
The Loch Ness Monster



N°7

**If you could time travel,
where would you go and
what would you do?**
Saint John, New
Brunswick, Canada in
1888 to witness the
construction of
my home



N°8

**Dream dinner date
and why?**
Franklin Delano
Roosevelt; to pick his
brain about how to
persevere in the face of
serious opposition



N°9

**Three things you take to
a deserted island**
An iPad, a tent, and
an axe



N°10

**Best advice
ever received**
Be present

I was born under a wandering star



PADDY RODGERS

Director, National Maritime Museum, Greenwich, UK

THE COLUMN

The headline does not refer to the Royal Observatory – part of the Royal Museums Greenwich – but to a remarkable fact that Lee Marvin had sung that line in a song destined to be number one from the surprising hit musical *Paint Your Wagon*. It resonates with many in the shipping industry because it goes on: “Home’s a place for coming from, with dreams of going to, dreams which with luck will never come true.”

This could be the anthem of the shipping industry, which operates in between places. The culture of the industry is formed in the liminal spaces between national identities where value is embedded in optionality and price arbitrage determines your destination. The ocean is the medium for shipping, but its values are set by the market.

As carbon emissions damage our environment, it becomes apparent that the cost of cheap hydrocarbons to fuel our transport has been paid for by spoiling the global commons, the shared environments of atmosphere, and the ocean. It is a hard lesson for humanity and for shipping — one that the character of the industry finds particularly difficult to adapt to. Shipping has a default setting to avoid regulation and to minimize contact with national administrations.

Alone and not together

How then can shipping regulate for reduction of carbon emission? Taxation of carbon-emitting fuels would be best done at the point of production, but the IMO is uncertain of its remit to regulate on the shore side. Taxation at the point of consumption would require a very powerful global enforcement process with global unanimity. However, emerging economies are frustrated not to have the stimulus of cheap

fuel that built the reserves of rich nations. The market, the traditional regulator of the shipping environment, will fracture if there is no uniform response.

The shipping industry needs to ask for help but is particularly ill-suited and ill-disposed to do so. It seems to be trying to go it alone with individual companies trying out very different solutions, but how can anyone be sure if methane is worse than carbon, ammonia too dangerous to handle,

or hydrogen too lightweight for long voyages? Hydrogen in its free form is not abundant on the Earth, so in all these formats are a store of energy produced from other means, and if those emit carbon in the production of energy, then there is no benefit in their use. The determination of which of these will win and when, are the

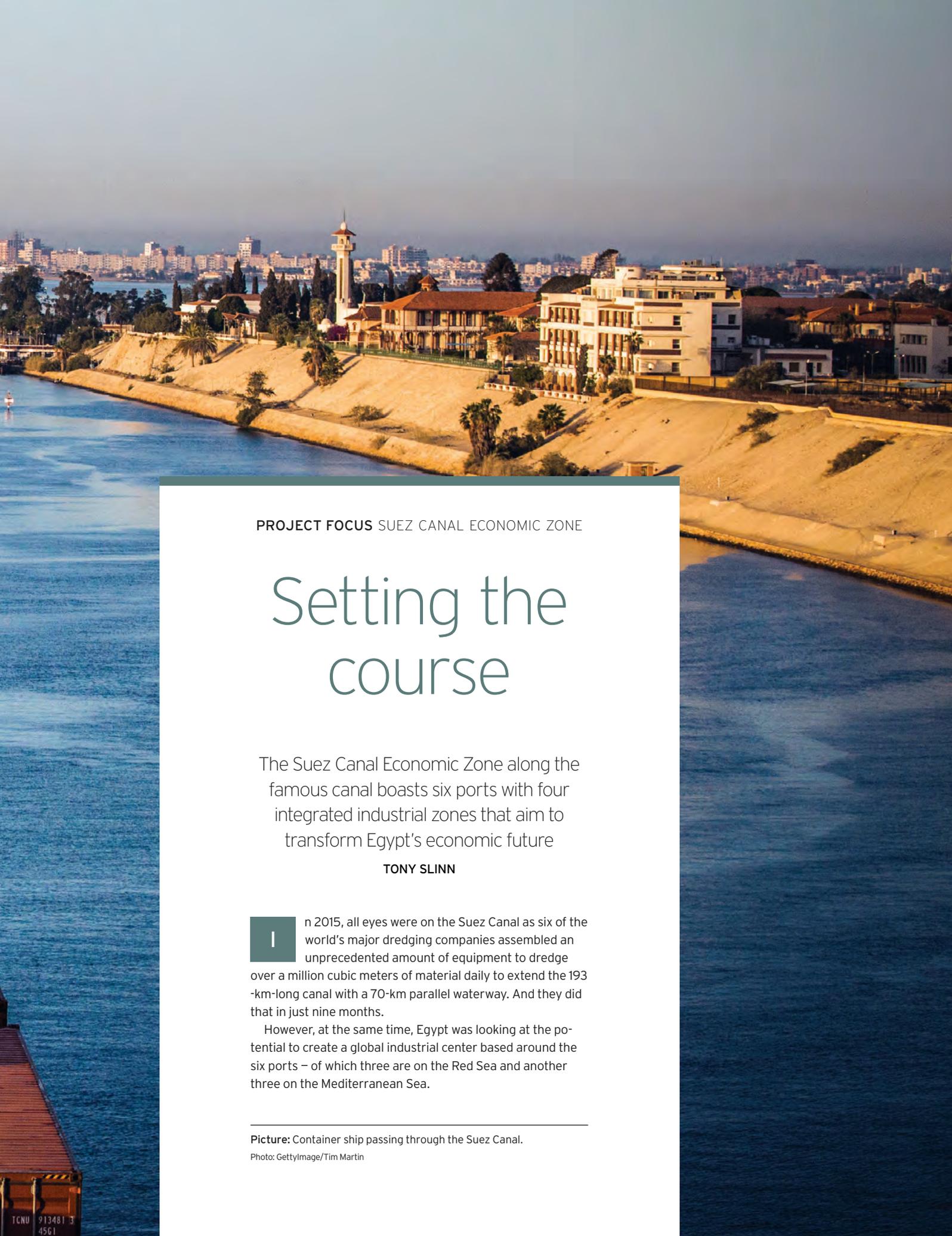
“The ocean is the medium for shipping, but its values are set by the market”

wrinkles in these product choices that are often based in shoreside infrastructure development as much as in the ship’s engine. As an example of this, coal was boosted over sail for good upon the opening of the Suez Canal, as quality coal could be bunkered east. These are choices with long-term consequences, but market pricing is short term, and the efficacy of enforcement that underpins any benefits far from certain. Now we need a set of fixed points in regulation, enforcement, and market structure to provide us in shipping a guiding constellation to chart our course and find our way home. ■

ABOUT THE AUTHOR

PADDY RODGERS is the director of the National Maritime Museum in Greenwich. Before taking up this role, he led tanker company Euronav for almost two decades.





PROJECT FOCUS SUEZ CANAL ECONOMIC ZONE

Setting the course

The Suez Canal Economic Zone along the famous canal boasts six ports with four integrated industrial zones that aim to transform Egypt's economic future

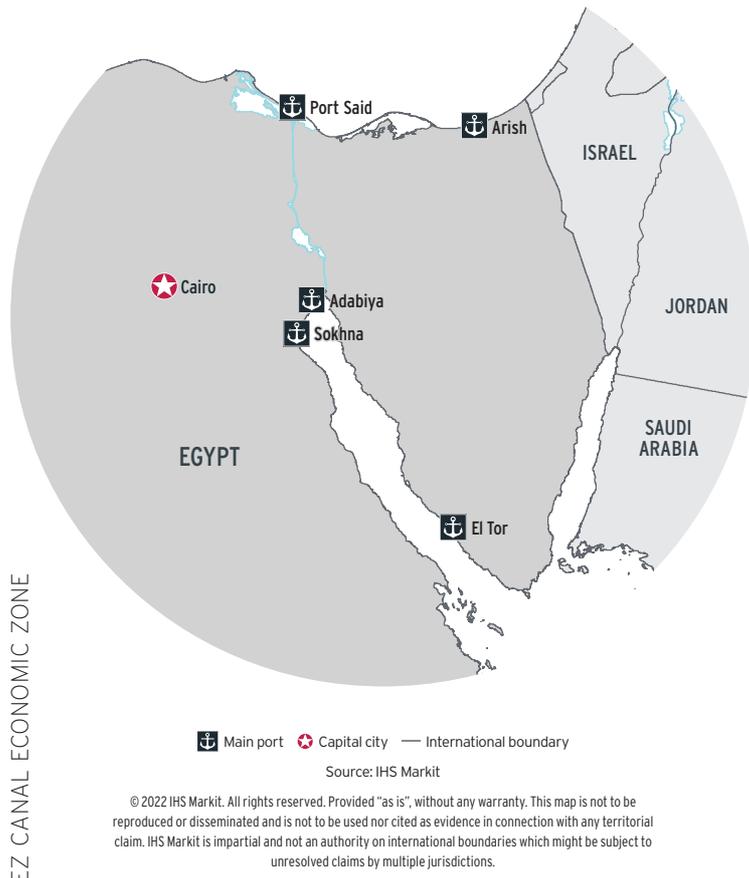
TONY SLINN

In 2015, all eyes were on the Suez Canal as six of the world's major dredging companies assembled an unprecedented amount of equipment to dredge over a million cubic meters of material daily to extend the 193-km-long canal with a 70-km parallel waterway. And they did that in just nine months.

However, at the same time, Egypt was looking at the potential to create a global industrial center based around the six ports – of which three are on the Red Sea and another three on the Mediterranean Sea.

Picture: Container ship passing through the Suez Canal.

Photo: GettyImage/Tim Martin



The Suez Canal Economic Zone (SCZONE) covers 461 km² and is designed as an international investment hub and export platform at the crossroads between Africa, the Middle East, and Europe.

"SCZONE was established in 2015," chairman engineer Yehia Zaki explained, "with a strategic plan based on three phases: 2015-20, the preparation phase; 2020-25, the enabling phase; and 2025-30 will be the localization phase."

"[The year] 2021 witnessed the implementation of the enabling phase of our strategy. It enabled SCZONE's resources, along with various projects, and also exploited opportunities especially in the African market after we became a member of the executive office of the Africa Economic Zones Organization," Zaki said.

SCZONE offers an open economic system with financial and nonfinancial incentives to investors in the region, linked by trade agreements with the European Union, United States, Arab countries, and North and East African countries. It will also be a point of contact for China's Belt and Road Initiative. "For example, the new El Frdan railway bridge, built by the China State Construction Engineering, is one of the most important projects to link the Sinai Peninsula with the valley and delta inside Egypt with multiple and varied means of transportation to aid development of the region," the chairman explained.

Port investment

Turning to the ports, Zaki highlighted their unique positioning and access to global markets, along with a series of massive investments. Sokhna port, for instance, is considered the

canal's southern gateway and covers 23 km². It has a 680-m basin and entrance plus a multipurpose terminal capable of handling giant ships. The port is designed to be automated to deal with the next generation of container-handling equipment and is linked with the Sokhna Industrial Zone, one of the largest and most integrated industrial development zone with an area of 210 km².

Of the five others, Adabiya is located in front of the canal's southern entrance and specializes in liquid bulk and general cargo handling. West Port Said has terminals located just 250-300 m from the canal's main corridor and offers 3.9 km of berths, of which 2.3 km have depths of 10-16 m.

El Tor is now mainly used as a marine services berth for petroleum activities, while Arish is the only port in north Sinai, covering 1.4 km² and 369 m of berths.

Finally, given its privileged location at the northern entrance to the Suez Canal, East Port Said is one of the most important Mediterranean ports, greatly benefiting from the 12% of global trade volumes that annually transit the canal.

"As for investments," Zaki continued, "SCZONE is spending well over US\$253 million developing Al-Arish and close to US\$2.35 billion on Sokhna to position that port as the largest on the Red Sea with over 21 km of quays. That will see construction of a 3.6-km-long breakwater; four new 18.5-m-deep basins; and 18 km of berths with depths of 18 m encompassing terminals handling containers, liquid bulk, coal, chemicals, rolling stock, and general and multi-purpose cargoes."

Additionally, Sokhna will have new yards totaling 5.6 million m², plus 5.3 km² of commercial and logistic areas. It will be served by a 33 km rail network connected to the Sokhna-Marsa Matrouh express route, along with a 14 km arterial road connecting the berths.

Zaki was keen to point out that a major SCZONE attraction has been the US\$18 billion spent on infrastructure. "Six mega tunnels under the Suez Canal now connect the east and west banks, facilitating both road and rail transits. In addition, we have built two desalination plants to ensure the water supply, along with three water lift plants and two filtration units. We have eight sewage treatment plants and three communication centers using optical fiber cables. SCZONE also has its share of new road networks."

That goes hand in hand with business-friendly measures designed to attract investors. For example, foreign companies operating within SCZONE are exempt from customs duties and sales tax on imports.

The zone also allows 100% foreign ownership and full control of import/export activities to foreign investors. "Our plan has five main pillars: set up and ecosystem readiness; cost positioning; regulatory framework; a high-service level; and financial incentives," Zaki said.

The latter includes 0% VAT on goods, merchandise, and services; a new customs guide along with digital transformation and discounts on corporate taxes; an export support program; and incentives to encourage investors to use local labor and components.

"SCZONE has two plans to implement those five pillars," Zaki explained. In the short term, it will focus on financial incentives, especially for the prioritized industrial sectors, and the implementation of initiatives to strengthen the



Picture: Ismailia, Egypt – dredging for a new waterway to expand part of the Suez Canal in 2015. The works converted part of the one-way canal into a two-way stretch. Photo: Alamy/BJ Warnick

regulatory and legal framework as well as provide various high-quality services. In the long term, it will concentrate on improving integrated systems for industries, along with the gradual reduction of financial incentives after the other four pillars of the strategy are strengthened.

Moving forward

As investors began to turn aspirations into facts, 2021 was important for SCZONE, the chairman commented.

“Highlights during 2021 included a USD2.6 billion contract signing for an international methanol complex and the establishment of a US\$63.525 million optical fiber factory, both in Sokhna. The latter covers 50 km² and has an annual capacity of 4 million km of cables. East Port Said witnessed the creation of the 5.25 km² Russian Industrial Zone, with an investment of US\$6.9 billion, plus a US\$240 million project to assemble, supply, and rehabilitate railway units.”

At the same time, SCZONE also concentrated on petrochemical industries in Sokhna, with investments amounting to US\$10 billion, but clean energy is very much a focus –

especially as Egypt will host the 2022 United Nations Climate Change Conference in November. “SCZONE has many ongoing negotiations to establish green hydrogen projects with global alliances,” Zaki clarified.

“We have several offers with the first project signed off with an international company. Following direct investments by the Egyptian sovereign fund, wind energy produced in the Zaafran station will be used to manufacture green hydrogen in the Sokhna economic zone.”

Speaking about other offers, some are from shipping companies that are looking at building ships to be fueled with green hydrogen. “We have noted that some companies have moved their net-zero goalposts. Originally, they planned for 2050. That moved to 2040 and then to 2030,” Zaki said.

For him, that means these companies have a clear business plan and recognize the need for green hydrogen to be available as soon as possible.

Given this prospect, where does SCZONE find itself today?

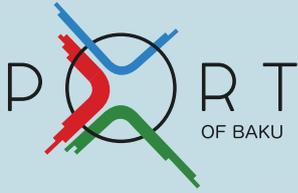
“In the pre engineering stage,” Zaki confirmed, adding that this “includes the memoranda to determine the true cost,

paths, and locations to complete the engineering and contractual matters. In turn, we should begin green hydrogen production in 2024.” Looking ahead, Zaki concluded, “The next eight years will be very exciting!” ■

“Some companies have moved their net-zero goalposts. Originally, they planned for 2050, then 2040 and 2030”

YEHIA ZAKI

Chairman engineer, SCZONE



120 Years
1902 - 2022
Port of Baku



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The Port of Baku's transformation

Catching up with director general Dr. Taleh Ziyadov in the port's 120th year

Q: 2021 was a year of growth for the Port of Baku. What accomplishments are you most proud of?

A: Overall, the results obtained at the Port of Baku have been positive, exceeding forecasts by 4% set for 2021. Our port has demonstrated growth of its performance: total throughput grew by 14,6%; dry cargo handling by 66%; and container transportation by 11,6% as compared to 2020. The growth of handling volume at the Port of Baku is linked to the transit cargo flows via Azerbaijan.

The Port of Baku makes us proud of its great achievements in implementation of exemplary solutions for digitalization, operational efficiency and sustainable development. The port became the first Green Port in the region to develop a zero-emissions 2035 Climate Change Action Plan and received the European Seaports Organization's EcoPort certificate in 2019 – and it was successfully re-certified in 2021. Azerbaijan is among 25 countries with EcoPort status in the world. Such initiatives promote environmental awareness amongst the ports of the Caspian region and help Azerbaijan reach sustainable development targets.

Q: What plans are underway to ensure continued growth?

A: The expansion of the Port of Baku is based on the Port's Development Plan, which consists of two phases. The first phase has already been completed. The port's total throughput capacity in the first phase is 15 million tons, including 100,000 TEU; the second phase envisages further increase in the port's capacity to a total throughput of 25 million tons, including 500,000 TEU.

The next phase of the port's development is likely to follow the PPP or BOT models, whereby the port will engage specialized international companies to jointly realize the planned expansion projects. In other words, the Port of Baku is continuously collaborating with international and local investors to ensure multi-stakeholder engagements in the port's development.

Currently, the Port of Baku is completing the construction of the fertilizer terminal that will enable it to act as a major transshipment point for fertilizer products from Central Asia. The terminal will be operational in Q1 2023 and will have an annual handling capacity of 3 million tons. In addition, the Port of Baku is working on the launch of a grain terminal with 1 million throughput capacity and 120 thousand metric tons of storage. These projects will ensure a sustainable flow of Central Asian fertilizers and grain products to the world markets via the Port of Baku.

Q: How has COVID-19 impacted the Port of Baku?

A: The pandemic has presented an unprecedented challenge impacting human lives, global economies and societies in ways that risk sustainable development. It once again demonstrates a need for multi-stakeholder engagements, while also calling for collective action to overcome emerging regional and global challenges.

From the first days of the pandemic, the Port of Baku, in cooperation with relevant government and international agencies, ensured the prompt organization of cargo transportation, creating conditions for the port's users to pass PCR tests in special zones in the port as well as the border checkpoints. This allowed for smooth and uninterrupted transit of cargo and passengers via the port and increased the cargo volumes by 20 and 15 % in 2020 and 2021, respectively.

The challenges associated with the COVID-19 pandemic has also led to rapid smart port transformation. The Port of Baku has successfully completed effective smart projects in port operations, a digital HR platform, a port management

information system and international certifications in HSE and environmental management. The port has also initiated a digital platform to collaborate and connect the supply chain users along the Middle Corridor.

Q: 2022 marks the 120th anniversary of the Port of Baku's establishment, How will this and significant milestones be celebrated?

A: For many centuries, the Port of Baku has served as a multimodal trading center on the ancient Silk Road between Europe and Asia. However, it was not until the beginning of 20th century that the new Baku Trade Port Administration was established as a self-governing body on 21 July 1902. Since then, the port celebrates this date as the official commencement of the port administration, making the Port of Baku the oldest port in the Caspian Sea.

There are many milestones in the recent history of the port that make us feel proud. To highlight a few: The inauguration of the Baku–Tbilisi–Kars railway corridor connecting Asia to Europe was marked (2017); Opening of a new phase of the Port of Baku (2018); Hosting the IAPH World Ports Conference in Baku with 400 participants from 65 countries for the first time in Central Eurasia (2018); Receiving the EcoPort certificate (2019) and ISO certificates of 9001:2015, 14001:2015, 45001:2018, and 50001:2018 (2019-2022); and endorsing the net-zero emission 2035 Climate Action Plan.

Q: You work with the EU to create a green and smart port complex. Can you update us on the achievements of that project?

A: The EU considers the Port of Baku as a flagship project in the Caspian region. Since 2016, with the support of the EU, the Port of Baku has successfully implemented five TAIEX and three long-term technical assistance projects in green port operations, digitalization and sustainable development.

Our strategic partnership is based on the Climate Change Action Plan developed for the Port of Baku with the EU assistance. The key pillars of the plan focus on reducing port-related energy consumption, developing energy efficiency measures, promoting renewable energy and clean fuel production. The next EU-supported technical assistance project is planned to start later this year.

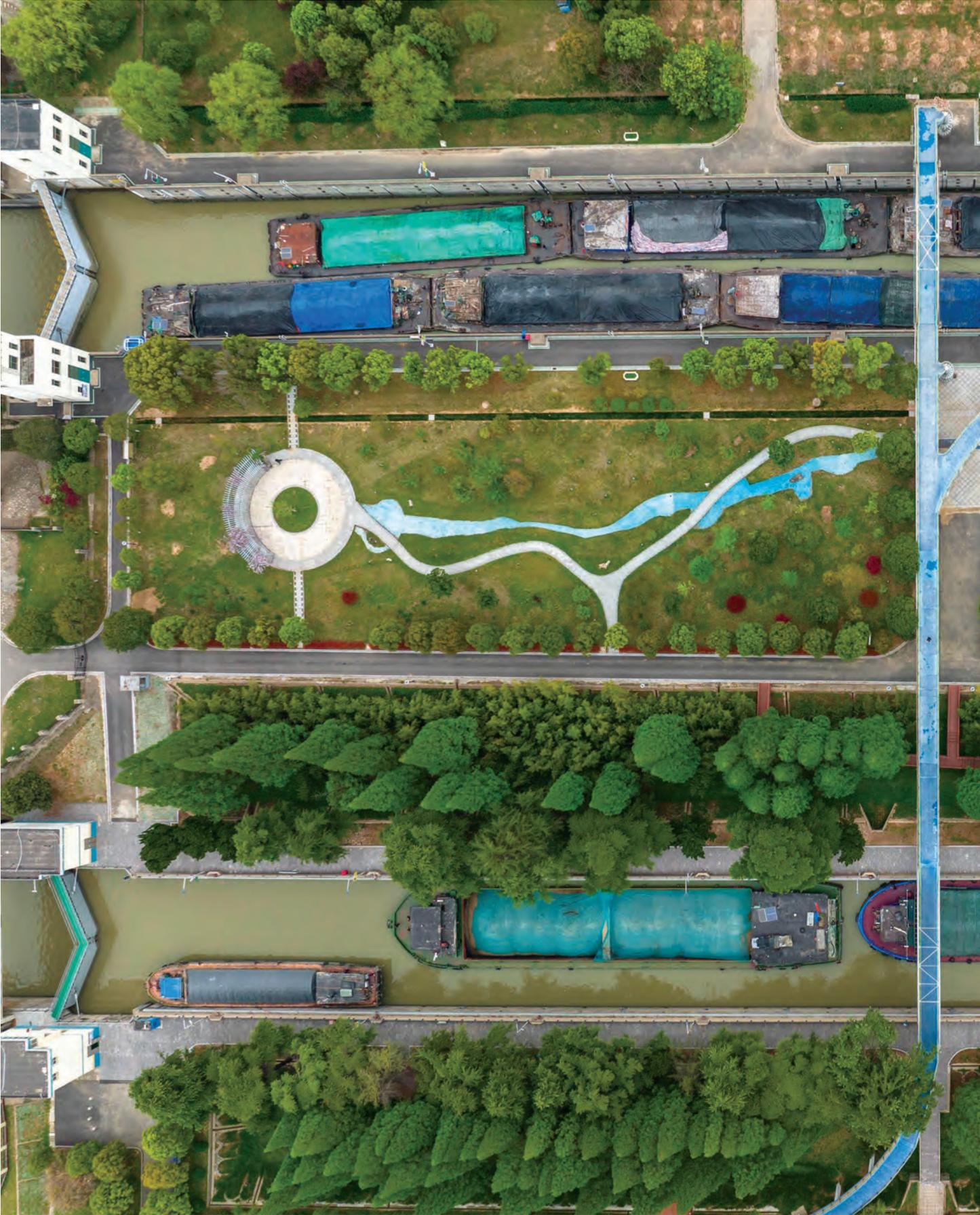
In addition, we are working with the EU, European Bank for Reconstruction and Development, as well as the government and relevant international organizations to launch the Eastern Europe Energy Efficiency and Environmental Partnership initiatives in the port. These initiatives will help connect the port's operations directly with renewable energy sources.

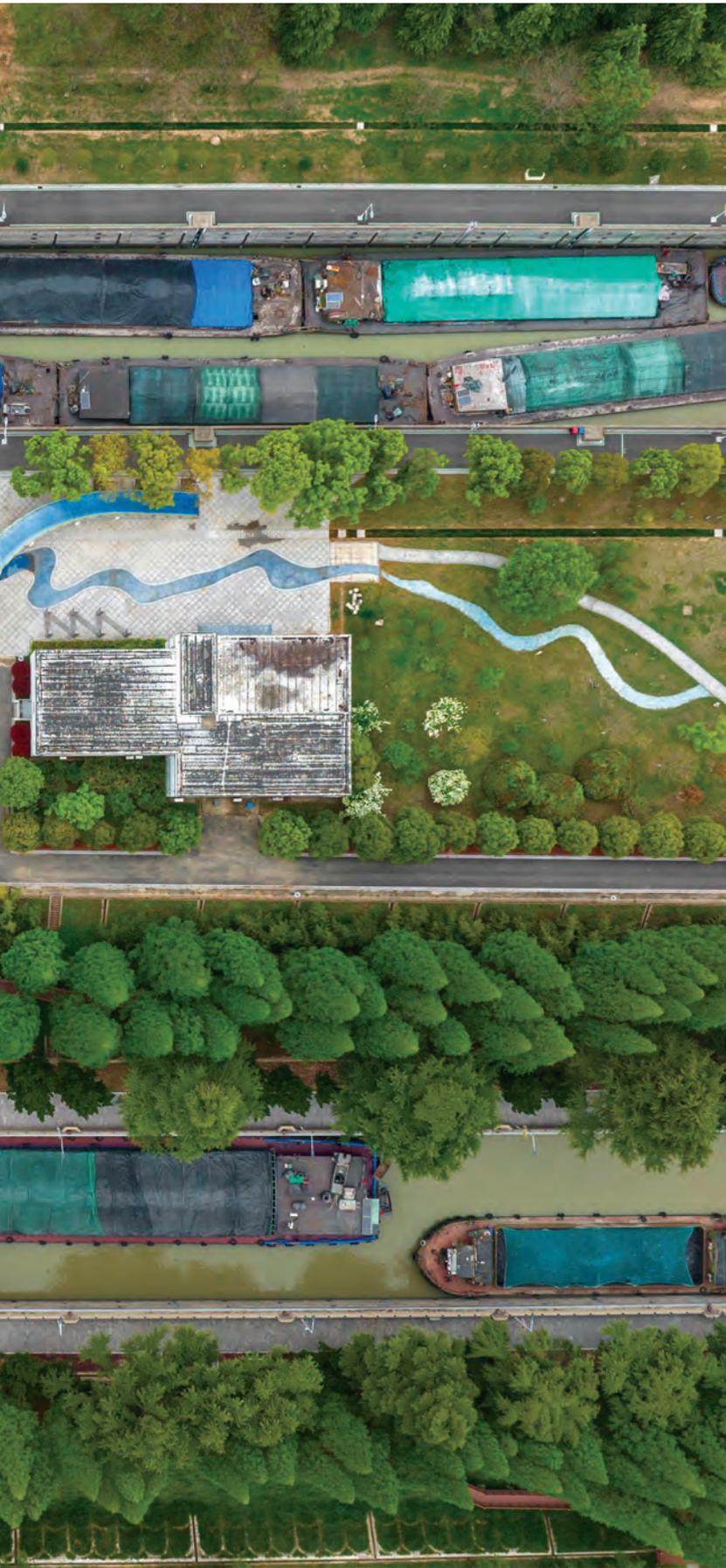
Q: What other plans do you have for the Port of Baku in 2022?

A: The Port of Baku is surrounded by countries, which have big markets in terms of both GDP and import capacity. Within a 1,000-km-radius of Azerbaijan, there is a huge market with a population of over 130 million people. The focus of the Port of Baku is, therefore, to maximize Azerbaijan's transit capacity and use its geographic position at the crossroads of the East-West and North-South transport corridors in turning the port into the key trade and logistics hub of Eurasia.

For this purpose, the Port of Baku is rapidly implementing development projects to expand its throughput efficiency, storage capacity, value-added and digital services to be able to accommodate the expected cargo flows from Asia to Europe and vice versa.

LOOKOUT CONGESTION





LOOKOUT CONGESTION

Trying to cope

Images of ships waiting to call at Chinese ports flooded social media streams in April following the government-imposed COVID-19 lockdown in Shanghai in March. With residents fearing for food shortages and manufacturing companies warning of supply and labor shortages, neighboring ports launched alleviation measures.

The Ports and Shipping Administration of Huai'an, northwest of Shanghai, launched the "replacing land with water" project, an import and export channel to Shanghai port, which reduced the overall freight rate by nearly 50%. Huai'an Ports and Shipping Administration has also taken other measures to withstand the fallout from the COVID-19 pandemic since the beginning of this year, such as opening up a new container route to Xinyang and arranging more shipments to inland ports further west in Zhoukou, Fengyang, and Jiaxing.

Huai'an's container throughput also benefited in first quarter 2022, reaching 99,000 TEU, a year-on-year increase of 35%.

Elsewhere, in Yantai port north of Shanghai, ferries transported 300 trucks carrying more than 2,300 metric tons of pandemic supplies across the Bohai Strait from Dalian in Liaoning province to Yantai, which then traveled to Shanghai via expressways in a single day in April.

Yantai Port and the Bohai Ferry Company have set up a green channel to ensure that ships and vehicles are given priority to leave the port quickly to ensure that supplies reach the frontline in Shanghai.

"Although the main ports in China have remained open throughout, the carriers are increasingly blanking sailings amid land side restrictions leading to lower utilisation in Shanghai. Overall congestion levels at Chinese ports have increased in recent weeks but the numbers are not alarming and remain in line with what was observed in late October–November 2021," Rahul Kapoor, Head of Commodity Analytics & Research, S&P Global told *P&H*. ■

Pictured: Transport ships sail on the Beijing-Hangzhou Grand Canal in Huai'an, Jiangsu province, in April 2022.
Photo: Alamy Stock Photo/Sipa US



PERSPECTIVE TANKER INSPECTIONS

Inspectors' pass to SIRE 2.0

The *Torrey Canyon* disaster in 1967 continues to be a poignant reminder to the oil industry of the importance of universal standards of safety and best practices. In that year, the 61,263 GRT Suezmax tanker ran aground off the United Kingdom's southwest coast, spilling about 100,000 metric tons of crude oil into the waters.

This catastrophic event galvanized industry efforts to do better, as a collective. It is for this reason the Oil Companies International Marine Forum (OCIMF) was formed by a coalition of energy companies seeking to collaborate on how to mitigate risks in the construction and operation of terminals, tankers, barges, and offshore vessels.

Similar to IAPH, which, through its voluntary World Ports Sustainability Program, has augmented the sustainability efforts of ports and supply chain partners worldwide, OCIMF provides the technical skills and knowledge to develop and implement practical guidance and best practices focusing

on protecting the people and environment from incidents related to transporting vessel crude oil, oil products, petrochemicals and gas and their interfaces with terminals, as well as offshore marine operations including vessels supporting oil and gas exploration, development, and production.

One of the most significant safety initiatives introduced by OCIMF is the Ship Inspection Report Program – known as SIRE.

Most terminal operators will be familiar with OCIMF-accredited inspectors that move through the site, equipped with paper and pen, to meet ships and carry out onboard inspections based on SIRE criteria. These inspectors are nominated by OCIMF member companies, and then trained and accredited by OCIMF to carry out inspections.

Ship inspections are commissioned regularly by SIRE-registered parties, and inspectors' observations are submitted into an OCIMF database. This information is made available for download by charterers, ship operators, terminal operators, and gov-

ernment bodies concerned with ship safety.

Since the OCIMF inspection program was launched in 1993, it has governed over 180,000 inspection reports and has become a crucial tool for industry in vetting vessel quality and safety.

While SIRE remains a vital risk assessment tool for industry, OCIMF recognized that safety improvement has plateaued, industry risk profile is changing and integrating human factors into SIRE was critical to achieving the next step change in safety improvement.

Time to upgrade

OCIMF's membership agreed the time was right to make the change. Through its Vessel Inspection Project (VIP) Steering Group and Working Groups, OCIMF has been working with its members, program participants, and industry partners to reimagine the inspection regime and develop the significantly enhanced tools, processes, and systems that will underpin a new inspection process.



ABOUT THE AUTHOR

SAM MEGWA is the program director at the Oil Companies International Marine Forum. He directs the operation of the forum's inspection programs comprising IT system development, policies and procedures management, inspector training and accreditation, contractor management, and industry and government relations.

OCIMF has overhauled the program so that it takes a risk-based approach, integrates human factors, and also provides significantly enhanced reporting outcomes through a future-proofed regime that can be adapted to evolving risks and requirements onboard for the next 30 years and beyond. It will be a reporting outcome that informs the recipients on the quality of a vessel and its crew on an ongoing basis – strengthening their confidence on how well the vessel is managed.

Following a comprehensive Management of Change (MoC) process, the new regime – known as SIRE 2.0 – is now on course to be made fully operational in fourth quarter 2022.

Most affected by the new regime will be inspectors, ships' crew, vessel operators, and users of the SIRE reports, which includes terminal operators. All these parties have a key role to play in the smooth transition to the new program.

One of the major changes of the new regime is the shift from a static to a dynamic inspection questionnaire. To support this change, the paper questionnaires carried by inspectors will be replaced with intrinsically safe tablet devices, loaded

Pictured: An oil slick left behind after an oil spill occurred in the ocean.

with software developed in accordance with International Safety Guide for Oil Tankers and Terminals guidance, which was developed in association with IAPH and the International Chamber of Shipping.

The digitally enabled questionnaire will expand the depth and quality of marine assurance data gathered during vessel inspections.

Furthermore, inspectors will be able to conduct inspections in real-time and take photographic evidence of their findings, enhancing reporting outcomes.

Paper format questionnaires will only be used under SIRE 2.0 as a contingency where the use of a tablet is not permitted owing to a local requirement or regulation.

Industry engagement

OCIMF is engaged in an extensive MoC across industry and so far, has completed the first phase of training for 491 inspectors in the new SIRE 2.0 regime. The intrinsically safe tablet devices, certified for use in hazardous areas (Zone 1/Division 1), are

“SIRE 2.0 is now on course to be made fully operational in fourth quarter 2022,”

SAM MEGWA
Director, OCIMF

being developed and tested so that no other software can be downloaded and they can only be used in OCIMF inspections.

The tablet device is also being developed and tested to be fitted with cameras, which can only be accessed through the SIRE 2.0 software, but which can be fully and demonstrably isolated if photography is prohibited onboard a vessel, at a terminal or in a port.

OCIMF understands the sensitivities surrounding the carriage through ports and terminals of tablets and other devices. As part of the MoC, the organization is undertaking several initiatives to identify facilities where the use of tablet devices and/or cameras is known to be prohibited or restricted. Where such ports or terminals are identified and they potentially have a significant impact on the conduct of SIRE 2.0 inspections, OCIMF will engage and work with these ports or terminals with a view to implementing measures to allow the safe and secure use of the tablets.

It is important to stress that while the move to SIRE 2.0 will be a significant step change for industry and the adjustment will take some time, the benefits will be long lasting and will transform the terminal operators' – and the wider marine industry's – ability to understand and address issues or risks across tanker operations and to become better-positioned to respond to evolving risks and changing regulations. ■



ABOUT THE AUTHOR

GYORGYI GURBAN is the head of projects implementation within the Department of Partnerships and Projects at the IMO.

Previously, she worked on the UN Environment Programme Mediterranean Action Plan.

How to

... apply for funding in ports

The decarbonization of the maritime industry is a costly process.

Especially for smaller ports, this undertaking can therefore be a stressor on other port operations.

The following listed 10 points are therefore aimed to give an overview of funding streams available to smaller ports looking to digitalize and adopt greener technologies.

In addition, the list can be used to check that all operations needed to set up a pathway to decarbonization are arranged. ■

N°1



Decarbonization requires investment on a grand scale

As the intersection between ship and shore, ports are a vital part of the decarbonization equation. In fact, the majority of investments – the creation of bunkering infrastructure, supply chains for alternative fuels, and equipment for shore-side power supplies – need to be undertaken on land. Ports must also invest in updating safety procedures and retraining port staff to handle these new fuels appropriately.

N° 4



Feasibility studies and pilot projects increase the likelihood of securing funding

Feasibility studies assess the likelihood of a project's success by measuring factors such as economic, technical, legal, and scheduling plans. Such studies are an important tool to de-risk the project for investors. Many international financing institutions (IFI) and multilateral development banks (MDB) provide free feasibility studies, which can make this onerous process easier for least developed countries (LDL) and small island developing states (SIDS). Once ports authorities and national governments have identified the investments needed to achieve their goals, IMO can help connect the port authorities with the relevant IFIs. Pilot projects that prove the viability of technology or way of operating allow investors and lenders to imagine the potential of the project when scaled up. IMO has supported a number of these projects and has coordinated with the World Bank to ensure that these projects will result in bankable proposals.

N°7



Draft a bankable proposal

Financial institutions have criteria that must be met when considering investing in projects. An NAP or emission-reduction plan is often seen as a de-risking measure by private institutions that may be more willing to provide funding. For projects where the long-term investment has limited commercial advantages, but brings social benefits, IFIs and MDBs may be more suitable investors. In either case, the proposal for funding needs to be tailored to the criteria and priorities of the lending body and of the country. IMO's Department of Partnerships and Projects (DPP) has successfully helped develop many such proposals and may be able to support countries seeking assistance by opening doors with banks and IFIs.

N° 8



Aligning with international goals can be beneficial

Many investors embrace UN goals and guidance. In particular, IFIs and MDBs use alignment with the 2015 Addis Ababa Action Agenda and the 2030 Agenda of the Sustainable Development Goals (SDGs) as criteria to assess funding applications. Grant applications or investment proposals that support implementation of these goals should emphasize this connection, as this may secure them zero-interest loans or even grants. This is particularly true for developing countries. For example, funding proposals for projects supporting the implementation of digital and greener technologies should highlight the fact that this will help the country achieve the SDG5, SDG9, SDG13, SDG14, and SDG17 goals.

N° 2		Ports are eligible for different funding from that available for ships
<p>Unlike ships, ports are fixed assets and are thus a better match for instruments of infrastructure investment finance. There are several potential funding streams available with different criteria, making some more suitable for larger ports and others more suitable for financing ports in developing countries, including island nations. Port managers or authorities can attend events such as the IMO's Financing Sustainable Maritime Transport (FIN-SMART) roundtables, which are co-organized with the European Bank for Reconstruction and Development (EBRD) and the World Bank. These platforms are very helpful in identifying financial instruments supporting green shipping, especially those from private banks and international financial institutions (IFIs) and multilateral development banks (MDBs).</p>		

N° 3		
<p>Some ports are viewed as higher risk</p> <p>FINSMART roundtable meetings/ workstreams highlight the fact that least developed countries (LDCs) and small island developing states (SIDS) may find it more difficult to get funding from private banks for their green transformations. These banks may be reluctant to invest in countries rated as high risk (such as LDCs and SIDS) and in smaller ports, where bankability is harder to showcase. MDBs and IFIs may be able to offer tailor-made financial solutions to them, in many cases supporting feasibility study development via grants.</p>		

N° 5		
<p>Stakeholder buy-in is useful to align goals and progress</p> <p>For a decarbonization pilot project to succeed, various parts of the government, including maritime authorities, need to further coordinate with shipowners, ports, fuel suppliers. They must be clear on the scope of the project, the efforts required, and what success looks like. IFIs and MDBs should be involved and should be looking at the bankability criteria of a project as early as possible, which will increase the likelihood of investment to scale up – if a pilot project is successful. IMO has been assisting countries with stakeholder integration through various greenhouse gas-related projects, including GreenVoyage2050, GMN, IMO CARES, and the FINSMART roundtable.</p>		

N° 6		
<p>Government support is important in securing funds</p> <p>Government involvement and support for projects can be extremely useful as this may provide funding streams for efforts that align with the country's overall energy transition objectives. Ideally, countries would create a national action plan (NAP) or other key policy, or development documents showcasing the country's plans for addressing maritime decarbonization in a coordinated manner. IMO has information about NAPs on its website, and the GreenVoyage2050 team has recently issued additional guidance on this topic.</p>		

N° 10		
<p>Share knowledge you have gained through projects</p> <p>Decarbonization is a shared global journey requiring multiple stakeholders to transition to new fuels, technologies, infrastructure, and ways of operating. To be truly successful, this transition must be equitable, and the gap between developing and developed countries must be bridged. Knowledge sharing is an important part of this transition. It is vital that advances in technologies and lessons learned are made available to those either starting their journeys or looking to accelerate their transition pace. The NextGEN online collaborative global ecosystem of maritime transport decarbonization initiatives (jointly run by IMO and the Maritime and Port Authority of Singapore) bring stakeholders, such as ports, governments, companies, and research institutes, together to identify the gaps and opportunities for decarbonization in shipping.</p>		

N° 9		Use free information resources to identify investment criteria and make connections
<p>Private banks, MBDs, and IFIs all publish their funding criteria on their websites, and further information can be gathered by reading annual reports that will spell out their strategies for the future. Many ports that have embarked on such projects will share their experiences and learnings via their websites or in magazines. Decision makers and those looking to gather information can also attend events like FIN-SMART and national maritime authorities can approach DPP and the IMO for free assistance.</p>		

CREATIVE SIDE BASSINS DES LUMIÈRES

D

uring World War II, Bordeaux in France was a strategic base for the German troops who occupied the city from the end of June 1940.

The city's location near the Atlantic Ocean, its port facilities, and distance to the British enemy made it a very attractive choice.

As part of the occupation, the German navy built a submarine base in the north of the city that is today living a second life as a massive digital art space.

Now visitors can enjoy, for example, Joaquín Sorolla's painting *Walk on the beach*. Sorolla is considered to be one of the leading Spanish painters of the 20th century.

The installation combines his paintings with visual and audio effects of cascading waves, sails moving in the wind, and kids enjoying a day out at the beach.

The port district of Bacalan, north of Bordeaux, was chosen for the construction of an initial base for Italian submarines in 1940 before another one opened along the Garonne river.

The roof is 9-m thick and is made of concrete poured on corrugated iron sheeting, the top of which was covered by a screen framework composed of rows of concrete beams to protect the construction from any aerial attacks.

Under this very stable roof, the U-boats, when returning from their missions, docked for servicing.

During the 22 months of its existence, 43 U-boats were assigned to it to carry out attack missions near the US coast as well as to resupply missions in the Indian Ocean.

On 26 August 1944, the Germans abandoned the base. It was used until the 1990s as a construction workshop.

In 2020, Culturespaces – after renovating and enhancing the location – opened art exhibitions in four of the six wet docks. It is considered to be one of the largest digital art spaces in the world.

"Several challenges had to be overcome due to the history of the base – an old bombed-out building and the presence of water that is 16 m deep," the company stated. In total, Culturespaces has invested €10 million in the project. ■

Immerse yourself in the art:

🌐 www.bassins-lumieres.com

Pictured: The Sorolla exhibition at the Bassins des Lumieres in Bordeaux, France.

Photo: Culturespaces/Eric Spiller

Immerse yourself





CREATIVE SIDE BASSINS DES LUMIÈRES

IAPH Sustainability Awards shortlist 2022



Infrastructure

Port of Vigo – Living Ports

The Living Ports project is designed to catalyze a fundamental change in the coastal and marine infrastructure industry's operations by shifting away from grey construction toward nature-inclusive infrastructure with structural and socio-economic co-benefits.

Living Ports will include two large-scale demonstration sites with onsite production having started in February 2022. During the three-year project, from 2021 to 2024, biological, structural, and noise pollution-reduction monitoring activities will be conducted between the Technical University of Denmark and ECONcrete. ■



Infrastructure

Port of Vancouver – Maplewood marine restoration

In 2021, the port authority delivered the Maplewood marine restoration project to offset the effects of one of the port authority's infrastructure projects and add

additional hectares to its existing habitat bank for future offsetting. The project was delivered with significant collaboration and input from Tseil-Waututh Nation and involvement from Musqueam Indian Band and Squamish Nation. The site's mudflats hold cultural significance to Tseil-Waututh Nation and continue to be used for traditional practices, such as harvesting.

Annual measurement and monitoring efforts assessing the habitat's productivity will begin later in 2022. ■



Infrastructure

Port of Rotterdam – Flood risk management

While it is currently well protected against flooding – the port area has been constructed several meters above sea level and is partially protected by storm surge barriers – the aim of this project is to ensure the port remains a safe place for business as the port is located outside the flood defense system and in open connection to the North Sea.

By considering various climate change scenarios, the port developed adaptation strategies for coping with flood risk in collaboration with port companies and public organizations. Rotterdam has mapped out the probabilities and consequences of flooding, assessed these risks with an assessment framework, specifically developed for our port, and listed and selected appropriate measures.

The adaptation strategies combine preventive measures with spatial adaptation and emergency response and tailor each measure to specific characteristics of an area such as with regard to flood probability, the different activities in the area, and area dynamics. ■

Following the jury's screening, the shortlist for this year's IAPH Sustainability Awards has been released. The publicly-voted winners will be announced at a gala dinner during the IAPH World Ports Conference on 17 May in Vancouver, Canada

iaph
international association
of ports and harbors

WPSP
WORLD PORTS SUSTAINABILITY PROGRAM



Digitalization

PASSport

PASSport is an operational platform managing a fleet of semi-autonomous drones to improve safety and security in port areas, do pollution monitoring, support e-navigation, and protect critical infrastructure against aerial and underwater threats. The need for it comes from the EU Directive 2005/65/EC asking for enhanced surveillance systems for port areas. About 1,000 European ports fall within the scope of the directive. PASSport responds to the needs of port authorities, harbor masters, and border-control authorities. PASSport will be validated via five specifically designed case studies in the ports of Hamburg, Le Havre, Kolobrzeg, Ravenna, and Valencia. ■



Digitalization

MAREMIS

The MAREMIS project of the ports of Hamburg and Singapore is targeting air pollution in harbor cities through artificial intelligence (AI)-based calculation of air pollution emitted by ships and their dispersion. Both

ports are very close to the city center and therefore have a strong impact on the air quality in these cities. Through MAREMIS, the degree of impact by ships on air quality will be fully investigated and once determined, recommendations for action will be made.

The project will develop and deploy an AI-based ship-emission model based on real ship movements and validate the AI model using sensor-based emission data. ■



Digitalization

Port of Antwerp – Automated drones

About 100 oil spills occur in the Port of Antwerp, Belgium, every year. The clean-up cost can be more than €1 million, especially when the polluter is not known, which happens in 60% of incidents.

To detect oil spills more quickly, automated drones are used to systematically fly over the docks, 12 times per day - 18 times from 2023 - including night flights. Visual and thermal cameras and a computer-vision model are used to detect oil spills. A research project has started to define the use of even more advanced, hyperspectral cameras. The first results are promising as more incidents are detected when they are happening and faster intervention of cleaning services can be organized.

This project therefore contributes to a cleaner and more sustainable port. The expectation is that the clean-up costs will be reduced by 30% and the identification of polluters will increase to at least 80%.

The project collaborates with research, industry, and regulatory partners, as well as tech start-ups. ■



Community Building

Solomon Ports – Renewable energy for the community

Solomon Ports wants to support rural communities by providing sustainable energy for those who previously could not access any form of energy.

As part of the project roadmap, this project will be extended toward deprived communities in all provinces in the Solomon Islands. An investment of \$100,000 has been allocated for community projects to promote and encourage more communities across the country to use more renewable energy sources and reduce greenhouse gas emissions.

With the aim of becoming a zero-emission port by 2030, Solomon Ports has endeavored to promote and build a social cohesion toward establishing renewable energy for rural communities in the Solomon Islands. Solomon Ports also takes pride in investing in its communities to achieve this goal by assisting them with solar outfits, installation, and maintenance and creating awareness on the importance of using renewable energy for a sustainable community. ■



Community Building

Johor Port Authority – Community empowerment through science

The Johor Port Authority (JPA) is supporting youth capacity-building in Mukim Tanjung Kupang, a stretch of nine fishing villages around the Port of Tanjung Pelepas. Local youths are trained in natural habitat monitoring, learning about seagrass meadows, mangroves, and island habitats in situ. This enables them to better understand, appreciate, and take ownership over these ecosystems in their backyards and playgrounds.

They are also trained as ecotourism guides, combining local ecological knowledge with science to manage and run unique tours, benefiting the local community.

Currently, trained young professionals work fulltime at local environmental NGOs as green badge nature guides, certified by Tourism Malaysia, and are recognized as “rakan pintar” (habitat experts) by the Johor Bahru Education Department.

The youths are now able to independently determine gaps in local habitat information, devise their own research plans, and carry out studies to fruition.

Well-trained youngsters combine and use the acquired knowledge in advancing ecotourism efforts, as well as become trainers themselves and passing on knowledge to more youngsters and the wider community. ■



Community Building

Port of Riga – Ghetto Games

The Freeport of Riga Authority acts as an and integral part of the Latvian society to build the port as a socially responsible entity and a good neighbor.

Working in partnership with street sports and culture movement organization Ghetto Games, the Freeport of Riga Authority started a cooperation for the positive development of neglected urban areas.

Ghetto Games started street sports and culture activities in 2009, when the economic crisis hit Latvia hard.

A group of young people decided to come together and develop a street sports and culture activities movement in one of the most unfavorable areas in Riga, Grizinkalna.

In this place everyone could come and practise sports and lifestyle activities that most of the young people are interested in, such as football, dancing, skateboard, BMX, inline skating, floorball, hip-hop music, online broadcasts in YouTube, and documentaries production.

The example of Freeport of Riga Authority's social corporate responsibility program to support street sports and culture activities empowers underdeveloped areas and society groups and contributes to reducing all forms of violence.

Ghetto Games youth NGO is the largest street sports and culture movement in Eastern Europe and each year, its activities involve 10,000 participants, about 200 volunteers who are aged from 13 to 25 years.

There are also 250,000 young people on social media that participate in the program virtually. ■




Health, safety, and security

Port of Montreal – Cargo2ai

The Cargo2ai system is a logistics tool with a humanitarian calling. It uses AI to quickly identify and prioritize the critical cargo that Canadians and US citizens need.

It was developed in the spring of 2020 through a partnership between the Port of Montreal, CargoM, terminal operators Termont and MGTP, Scale AI, and Ivado Labs to tackle the COVID-19 pandemic. The purpose is to deliver medications, medical equipment, and other essential goods as quickly as possible to avoid supply delays and stock shortages.

To date, as of the time this entry is being submitted, more than 12,100 TEU have been identified by Cargo2ai and expedited to consumers. Decision making on critical cargo is based on data and quantitative information to accelerate operations and reduce dwell time for imported goods. Dwell time for critical containers can be cut by up to 50% between their unloading and their departure from the terminal compared with the average dwell times for all containers.

Furthermore, the Cargo2ai solution enables better understanding of the data flowing through the port, introduces AI-driven innovative solutions into processes that are traditionally conservative, and creates a tool that acts as a single source of truth for the entire supply chain linked to the Port of Montreal, increasing the technical level of maturity of all organizations involved. ■




Health, safety, and security

Port of Amsterdam – Multifuel port/spatial safety

As per the Port of Amsterdam's clean shipping vision, in 2050, shipping in the Amsterdam port area will be emission free. This is the reason why the port strives to become a multifuel port, meaning that it must facilitate

the safe and efficient bunkering of clean, not yet fully researched fuels.

The Port of Amsterdam has therefore decided to commission a joint study with classification society DNV to look at expected low-carbon fuels of the future and assess the risks in granular detail for each one of them.

The results of the study emphasize important spatial safety considerations when designing zero-carbon fuel bunkering infrastructure at city ports.

The findings help in better understanding what ports have to do when considering a berth location for new fuels' bunkering, especially when port terminal infrastructure is predominantly located in the vicinity of urban or business locations.

These findings will allow ports to add spatial safety considerations to the many other parameters needed when considering whether to plan for a bunkering hub.

The report will help other ports in their ambition to advance the transition of the maritime industry toward cleaner fuels for decarbonization and air quality improvement. ■




Health, safety, and security

Northport Malaysia – Journey toward HSE excellence

Northport has formulated a strategic roadmap to operate its business activities to the highest level of health, safety, and environment (HSE) standards in its journey toward achieving HSE excellence.

The journey started with the transformation phase in 2012 to promote mindset and behavioral change. In 2016, the focus was shifted to effective implementation to enforce all the actions toward achieving HSE goals.

In 2019, Northport embarked on sustenance and continuous improvement to strengthen the best HSE practices among its stakeholders.

Finally, the business resilience and continuity phase was enforced in 2020 to seal its commitment toward business continuity management.

Throughout the journey, Northport has embarked on various HSE initiatives, which include, for example, the establishment of a business continuity plan; strengthening port security with the use of drone and closed-circuit surveillance system; and establishment of drugs, alcohol, and illegal substance policy to preserve the health, safety, and welfare of Northport's employees and port users. ■



Climate and Energy

DP World Posorja – Mangrove reforestation

DP World Posorja (DPWP) as part of its global strategy Our World, Our Future, and the Ocean Enhancement Program, began a mangrove plantation program on 65 ha with the Calisur Foundation in Guayas province, Guayaquil canton, Puna Island, near the Zapote community. The program evolved to stand as a key program of DPWP decarbonization strategy, called *Sembrando Vida*. The company delivered more than 150,000 red mangroves in September 2021 to the Ecuadorian minister of environment, and to reach the goal of 105 ha of mangroves, DPWP started sowing 115,000 additional mangroves seeds in November 2020. Until now, 35,000 red mangroves seedlings have been planted. DPWP estimates a reduction of 3 million kg of CO₂ in 2024 from the red mangrove planting.

In addition to the emission reduction, this project creates jobs. About 6,000 people adjacent to the port are engaged in fishing. They mostly depend on the products that can be extracted from the mangroves, such as crabs and shells. Creating new mangroves and working together with the communities contribute to the protection of these habitats, allowing the development of a long-term strategy with fundamental stakeholders for DPWP. ■



Climate and Energy

Port of Colombo – GHG emission-reduction project

The Sri Lanka Ports Authority (SLPA), along with other terminal operators and port stakeholders, conducted an GHG emission-reduction project to align with national climate change targets. As a port in a developing country, the financing and investments toward sustainability

projects has been challenging. Therefore, the SLPA, in collaboration with the other terminal operators and port stakeholders have taken joint measures through smaller but impactful contributions.

As part of its contribution, SLPA has undertaken various initiatives to increase the efficiency of port call and operations, including investments in digitalization and infrastructure, electrifying port equipment, using solar energy to power the port authority offices, committing to carbon footprint monitoring and reporting, as well as investigating and planning the provision of onshore power supply to vessels at berth.

Overall, the project resulted in port sector contributions toward the National Climate Change Policy on GHG emission reduction, increased awareness among port employees and port stakeholders on sustainability and GHG emission reduction, and opportunities and ideas for future larger projects under a spirit of collaboration and joining forces. ■



Climate and Energy

Fiji Ports – Green Port Initiative

Fiji Ports, operating across the Fiji Islands, is focusing on alleviating climate impacts through the Green Port Initiative by 2023.

Fiji Ports plays an important role in trade, logistics, and the survival of many Pacific Island nations.

Understanding the port's significance and impact, the Green Port Master Plan 2019-23 was launched, aligning to the port's vision of being the smart, green gateway for trade in the Pacific region, which outlines the pathway to reduce its environmental footprint and combat climate change.

Fiji Ports has implemented a number of energy-efficiency upgrades, such as LED lighting, solar PV systems, and replacement of diesel-powered incinerator with an electric incinerator to reduce its carbon footprint.

As a result, Fiji Ports has achieved 11% average reduction of GHG emissions over the past five years. It intends to further reduce its carbon footprint by 220 metric tonnes of carbon emissions by 2023 with a goal to reach carbon-neutral status with respect to energy usage by 2027. Fiji Ports has implemented an energy tracker to monitor its progress in achieving the goals.

This initiative hopes to encourage Pacific Islanders in the greenification while providing ample leadership. ■



Environmental Care

Port of Hamburg – SeaClear project

The EU-funded SeaClear-Project (2020-23), being trialed in the Port of Hamburg, Germany, is working on developing an efficient, cost-effective, and innovative solution to remove plastic waste from the ocean. A team of autonomous robots finds and collects seabed litter. Underwater detection sensors allow the autonomous robots to operate under low-visibility conditions. One robot identifies litter using deep-learning AI trained to differentiate between marine wildlife and debris. The collection is performed by a larger robot that navigates to the location where waste has been found and removes it using a gripper-suction device. This process is carried out in strict compliance with nature conservation standards.

The team also works with stakeholders from ports and coastal regions, as well as marine biologists, environmental activists, and the public to develop a globally deployable solution that actively contributes to maintaining and restoring the world's oceans. ■



Environmental Care

Port of Tacoma – Wapato Creek habitat project

This is an 18.52-acre habitat improvement project that will remove a fish passage barrier and restore Wapato Creek with a diverse mosaic of interconnected stream channel, estuary, emergent, and forested wetlands and riparian habitat to generate advance permittee-responsible compensatory mitigation credits for future Port of Tacoma projects. The project will provide unimpeded fish access and habitat connectivity upstream, improve hydrology and flood conveyance, reduce flow velocities, improve and expand fish and riparian habitat, and restore

estuary and natural stream processes, such as sediment movement and tidal exchange. Wapato Creek is a fish-bearing stream with a variety of Endangered Species Act-listed and other fish species. Fish species present include salmon, steelhead, sea run cutthroat, and resident trout. The project will create 10.02 acres of wetland, 8.50 acres of vegetated upland buffer, and 0.36 miles of new stream channel.

Replacing undersized culverts with a full-span bridge will improve a stream that is culturally important to the Puyallup Tribe of Indians while immediately enhancing the safety of nearby streets. The current crossing at Wapato Creek is dangerous and lacks a shoulder or curb on either side of the street and there are no safety barriers to prevent a car from falling into Wapato Creek.

The port worked closely with stakeholders including the Puyallup Tribe of Indians, City of Fife and Tacoma, Tacoma Power, Washington State Department of Transportation, Washington State Department of Ecology, and Washington Department of Fish and Wildlife, US Army Corps of Engineers, and US Environmental Protection Agency. ■



Environmental Care

Port of Seattle – Ocean Acidification Action Plan

In 2020, the Port of Seattle became the first port in the world to join the International Alliance to combat the threat of ocean acidification.

In doing so, the port formally recognized the effects of ocean acidification on the maritime industry and marine environment and committed to addressing it through the creation of an Ocean Acidification Action Plan. The existing initiatives unify efforts across the port's aviation and maritime sectors as both work to meet ambitious GHG reduction goals while enhancing coastal resilience and building adaptation capacity.

The port works to ameliorate ocean acidification through habitat, stormwater, as well as clean air and energy initiatives.

The Maritime Climate and Air Action Plan describes the port's plan to reduce GHG emissions to 50% of baseline by 2030 and become carbon neutral by 2050.

The Smith Cove Blue Carbon initiative will increase scientific understanding of the role kelp and eelgrass play on carbon sequestration, offering a pathway for localized ocean acidification mitigation via habitat restoration. ■



Membership notes

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

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We value your opinion

Do you have any views about any of the articles in Ports & Harbors? Are there other industry issues you feel strongly about and would like to see included in the magazine? Email us to discuss.

@ ph@iaphworldports.org

EVENTS TIMELINE 2022

9

MAY (9-13)

IMO 46th Facilitation Committee (FAL 46)
 Discussions around
 enabling trade
 🌐 imo.org

11

MAY (11-12)

Coastlink Conference
 Short sea shipping conference
 held in Antwerp, Belgium
 🌐 www.portstrategy.com/coastlink

16

MAY (16-18)

2022 IAPH World Ports Conference
 The IAPH's flagship conference held in
 Vancouver, Canada
 🌐 www.worldportsconference.com



Antonis Michael, the IAPH's technical director for the World Ports Sustainability Program, talks all things IAPH Sustainability Awards

Q&A

ANTONIS MICHAEL
Technical director IAPH & WPSP

Q: Tell us about the characteristics of projects that have impressed you this year.

A: I was impressed by several innovative habitat restoration projects that were submitted this year combining ecological and port development objectives. It is also good to see the geographical dispersion of such initiatives from North and South America to Asia and Australia. I was also impressed by the original character of some of this year's community building initiatives addressing social inclusion, humanitarian objectives, and environmental sustainability objectives at the same time.

Q: Why should ports enter their projects to the World Ports Sustainability Program (WPSP) portfolio?

A: The WPSP portfolio is the most comprehensive database of port sustainability projects globally, hence the best place for world ports to share their initiatives. It currently contains 238 projects from 109 ports in 47 countries. The port projects in the database are associated and linked to the UN Sustainable Development Goals (SDGs). As such, the WPSP portfolio provides a comprehensive global overview of the world ports efforts in addressing the different areas of sustainability and achieving the UN SDGs.

Q: What kind of projects do you look for to be added to the WPSP portfolio?

A: The projects on the WPSP portfolio are classified under six main areas of interest: infrastructure; digitalization; climate and energy; community building; environmental care; and health, safety, and security. The portfolio is inclusive and all ports around the globe can share their projects by completing the online submission form, irrespective of whether they are IAPH members or not. The exclusive privilege of IAPH member ports is the participation in the annual IAPH Sustainability Awards. All projects submitted to the WPSP portfolio by IAPH members, automatically qualify as candi-

dates for the awards. Overall, we are looking for original and innovative projects that demonstrate vision and commitments by the port authority on any area of sustainability.

Q: How does the portfolio help drive decarbonization?

A: Climate and energy is a priority strategic focus area for IAPH and one of the central pillars of WPSP. It is also one of the most addressed categories when one looks at the content of the WPSP portfolio. More than one-third of the 238 projects relate to Climate and energy. Such projects target energy transition in ports; increasing energy efficiency of port operations; use and production of renewable energy; piloting and enabling the provision of new zero-carbon fuels and technologies; setting ambitious carbon neutrality targets; circular and bio-based economy initiatives; provision of clean ship incentives as well as port emission reduction equipment and services to ships, inland barges, and trucks. Once again, the portfolio demonstrates the good work that is being undertaken by the world ports and provide inspiration for peers to follow.

Q: This year, the awards will be given out in person again during the World Ports Conference in Vancouver in May.

What do you look forward to the most for that evening?

A: We are most excited to have the opportunity to meet with our fellow port and network colleagues personally again. We last met in Guangzhou 2019 and that has been too long. Despite the positive contribution of remote working toward the work of our international organization, we have greatly missed the networking opportunities of physical events. When it comes to the awards ceremony, we look forward the most to congratulating the 2022 award winners and finalists in person and to giving these splendid initiatives the recognition they deserve.

Q: What is WPSP's plans for the future?

A: WPSP is the IAPH flagship initiative on sustainability and is evolving all the time. This year, we have already restructured and finetuned our areas of interest to fit new realities in line with current port and IAPH priorities. We are also excited about the Port Endeavor game (see *P&H* November-December 2021 edition). We will also be producing a report on the overall progress of the program later this year with useful data on the final picture of port sustainability projects across regions and activities. ■

16

MAY (16-20)

IMO 12th Intersessional Working Group GHG
Discussions on emission
reduction in shipping
imo.org

23

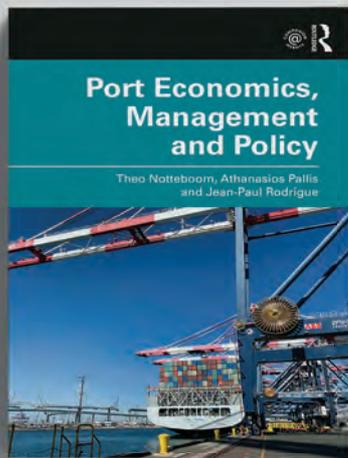
MAY (23-25)

FONASBA Annual Meeting
Ship agency and broking meeting
held in Antwerp, Belgium
www.fonasba-antwerp-2022.com

6

JUNE (6-10)

IMO 78th Marine Environment Protection
Committee (MEPC 78)
Discussions on maritime sustainability
imo.org



BOOK AUTHOR



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THE REVIEW

Port Economics, Management and Policy

PATRICK VERHOEVEN



You may have heard of the “The Rat Pack,” which originated in the late 1940s as a group of Hollywood show business friends, who met regularly at the Los Angeles home of Humphrey Bogart and Lauren Bacall.

The group built itself a reputation in the 1960s under the leadership of Frank Sinatra, Dean Martin, and Sammy Davis Jr, who appeared together on stage and in films.

The serious research field of port economics has its own “rat pack.”

It is the group of scholars behind PortEconomics, a web-based initiative aimed at generating knowledge about seaports.

The uncontested leaders of the pack are Theo Notteboom, Athanasios (Thanos) Pallis, and Jean-Paul Rodrigue, who have cooperated in the field of port-related academic and contract research for more than two decades.

A solid basis of cooperation and friendship, as well as a desire to share knowledge, have led Theo, Thanos, and Jean-Paul to publish *Port Economics, Management and Policy*, a comprehensive analysis of the contemporary port industry, showing how ports are organized to serve the global economy and support regional and local development.

This textbook examines a wide range of topics, covering maritime shipping and international trade, port terminals, port

governance, port competition, port policy, and much more.

Having worked with the authors over many years, I have come to know them as anything but ivory tower academics.

They combine solid theoretical knowledge with a thorough practical understanding of how the port and maritime industry works. That is what makes this textbook so unique and a must-have for every port executive.

The Hollywood rat pack liked to party. I can personally testify that the leaders of the Port Economics rat pack are no strangers to the good life either.

The preface of what can already be called a standard work now mentions how the idea to write the book came during a dinner the authors had at Chart House, a waterfront restaurant in Weehawken, New Jersey, which is just next door to Hoboken, Frank Sinatra’s birthplace.

Witchcraft? I do not think so! ■

The online version of *Port Economics, Management and Policy* can be freely used for personal or classroom use and is available from www.porteconomicsmanagement.org.

The print version can be ordered from www.routledge.com.



ATHANASIOS PALLIS, is a professor in management of ports and shipping at National and Kapodistrian University of Athens, Greece.



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