

# Leadership Insights

Insights from the global leadership community

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# Ports in transition

As crucial interconnectors between logistics and clean energy stakeholders, ports are playing a greater role than ever in driving maritime transformation, says new International Association of Ports and Harbors (IAPH) president and Port of Hamburg CEO Jens Meier.

**Q You're taking up your new role as president of the IAPH at a time of great change for maritime regarding decarbonisation. What are your core goals to help the port industry with the challenges this poses?**

**A** I want to emphasise open communication and non-competitive knowledge exchange among all members. We need to become more geopolitically resilient by aligning global standards that advance maritime digitisation and decarbonisation.

The effective and secure exchange of data, which affects both digitalisation and decarbonisation, is indispensable. However, achieving true resilience of ports also involves expanding our efforts in the field of cybersecurity.

**Q What does cyber best practice look like for ports as well as across the supply chain?**

**A** The [IAPH Cybersecurity Guidelines](#) deliver best practice for port cybersecurity. First you have to identify typical risks. Then a holistic approach with protective, detective and reactive measures along the whole chain of port assets, including the workforce, is needed. You must implement both technical measures and also organisational processes such as awareness training for staff, which is normally the weakest link in the chain.

Threat intelligence and information sharing via sharing platforms like the

[chainPORT](#) initiative are vital to get timely information and indicators about incidents all around the world. There is no 100% security so business continuity plans (BCPs) are critical to restore operations following a major incident.

Supply chain risks are multifaceted so it is wise to implement supplier and third-party risk management to monitor and handle the risk on the contractual as well as on the technical and processual level.

**Q Are recent geopolitical issues having a major impact on global trade routes and how are ports adapting?**

**A** With the consequences of the pandemic, the war in Ukraine, the conflict in the Middle East and a strategic de-risking strategy towards China, the question of readjusting global supply chains is gaining in importance. Trade relations are closely embedded in a geopolitical context and are nowadays an instrument of foreign and security policy.

So far, we haven't seen any major impacts on a global scale, however, there is a risk of geopolitical issues causing bottlenecks on global shipping routes such as the Suez Canal, then leading to major disturbances in global supply chains. Ports should consider building up capacity in cargo handling and storing to





Therefore, it's crucial for ports to continue investing in terminal operations, storage and logistics. In order to limit economic impacts, ports should seek to diversify and not solely rely on container handling

prepare for the 'ketchup effect' (flood of previously constrained matter) which usually sets in once supply chain snarls are disentangled.

While maritime experts expect a slight decrease in global container traffic for 2023, in the mid to long run we believe in growth of global container traffic. Therefore, it's crucial for ports to continue investing in terminal operations, storage and logistics. In order to limit economic impacts, ports should seek to diversify and not solely rely on container handling.

**Q When it comes to efficiency, what should ports be investing in, for example green technologies, automation, digitalisation, employee skills?**

**A** It should not be a matter of either or. These investments are made in the future of our communities, in the wealth of our countries, in the security and resilience of global supply chains.

I have learned in my career that there is no smart investment in digitalisation if you do not simultaneously invest in people and their skills – and there are no sustainable green technologies if you do not

simultaneously take care of the financial business cases behind them. Green technologies, automation, digitalisation and employee skills all go hand in hand and belong at the top of our agenda.

**Q Who is going to pay for the decarbonisation investments that ports need to make and how can financial and political risk be reduced?**

**A** Ports are great locations for the whole value chain around new energy. Import, export, offtake and distribution can be located in a regional cluster within short distances and shared infrastructure. Authorities and operators are ready to be more active, but they will not be able to shoulder all these investments on their own.

Ports need financial support from governments. Private investments have to be paid for by the private sector and public money should support non-mature markets. Ports also need international platforms and institutions with neutral status, like IAPH, to ensure a level playing field and to support these initiatives. Working together, IAPH, ICS and other stakeholders like IMO can help ports in developing countries to make these investments and develop the needed strategies.

**Q Do you think that governments and other industries seeking to decarbonise are wholly aware of the vital role that ports and shipping will play in achieving their goals?**

**A** Ports and port authorities need a stronger voice. They have been key energy hubs for a long time and they will be in the future. We have to differentiate between two important functions. One is as key hubs for the trade of alternative energy sources such as hydrogen and its derivatives. The other is being important sites for producing and distributing alternative fuels for shipping.

Germany is currently adopting a new national port strategy. One key aspect is to recognise these two key functions of ports and thus set the frame for all stakeholders to act on it.

**Q How are initiatives like Clean Energy Marine (CEM) Hubs helping to unlock the production, transportation and use of low-carbon fuels?**

**A** The CEM Hubs initiative is crucial because the energy transition requires a massive scale of cross-sectoral collaboration and supportive regulation. Ports play a key role as enablers for access to alternative fuels, not just for shipping but for other sectors too.

The initiative recognises that large-scale investments in ports is key for supplying these fuels. Working with energy ministers, the initiative aims to integrate large-

scale production, storage, or importing facilities near ports. However, the CEM Hubs initiative must not prolong business models of the fossil energy sector.

**Q What early mover benefits do ports get from being part of green corridors?**

**A** Ports acquire valuable experience through practical learning in the establishment of green corridors, thereby gaining an advantage in terms of experience and efficiency over followers and late movers. Taking the example of Onshore Power Supply (OPS) deployment, which is a very important part for the port side end of the corridor, ports benefit by building their public perception and reputation as pioneers in clean air technologies and climate protection, thus fortifying the social license to operate.

Assisting the port in transforming into sustainable energy hubs, which are among the first to offer green fuel bunkering to ships is crucial. Promoting science

and research clusters can improve the competitive edge of the port by advancing and supporting post fossil fuel age applications and enterprises. Without new companies and business models, affordable green energy will not be attainable for the hard-to-abate sectors and for society at large. Supporting new companies developing alternative and green fuels also helps ports to shift from fossil age to future-proof business models and jobs.

**Q The 'hurry up and wait' model of ship operation has clear disadvantages for smooth supply chain operations and for environmental impact. What are solutions to overcome this?**

**A** At the beginning of this year, IAPH began a collaboration with [chainPORT](#). Our ambition is to create a collective digital infrastructure that enables a resilient supply chain for cargo owners and a reliable just-in-time port call for maritime stakeholders. The project focuses on achieving predictable gate-in/gate-out events for cargo owners and forwarders by enhancing the visibility of these events across stakeholders. Additionally, we aim to bridge the gap in port call optimisation by establishing key principles for data quality and data collaboration. It's a step to be proud of and in 2024 we will be able to share first results.

**Promoting science and research clusters can improve the competitive edge of the port by advancing and supporting post fossil fuel age applications and enterprises**

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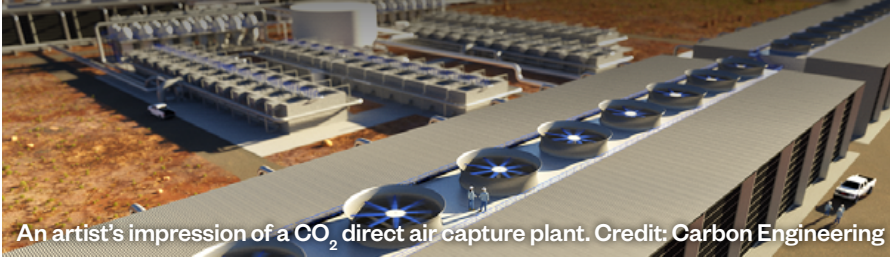
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## Carbon capture's role in net zero shipping



An artist's impression of a CO<sub>2</sub> direct air capture plant. Credit: Carbon Engineering

Carbon Capture and Storage (CCS) is seen as one of the ways to meet shipping's decarbonisation targets.

While global uptake of the technology has lagged, demand for CCS technology is on the rise. Professor Lynn Loo, CEO of Global Centre for Maritime Decarbon-

isation spoke to ICS *Leadership Insights* that shipboard carbon capture (SBCC) is recognised as an abatement measure by EU ETS, and will be tabled for discussion at upcoming MEPC meetings. Policy support at IMO could bring further demand signals and spur SBCC adoption.

CCS is also on the radar for ABS Chairman and CEO Christopher J. Wiernicki, who told *Leadership Insights* that the defining challenges for the future of clean shipping are continuing to develop and upscale electrolyzers for the splitting of water into oxygen and clean hydrogen, and carbon capture to efficiently trap CO<sub>2</sub> from fossil fuel emissions.

For the short term, Melina Travlos, President, Union of Greek Shipowners and Chair, Neptune Shipping Lines has said that the development of drop-in fuels for shipping must be a priority. Speaking at Shaping the Future of Shipping: Delivering a Net Zero World Summit at COP28, she said that in the longer term, CCS can reduce existing ships' emissions and compensate for any shortage of clean fuels. Read more [here](#).

## Shipowners opt for Starlink services to boost crew retention

Shipping giants, including MOL, NYK, Hapag Lloyd, and Maersk, are adopting Low Earth Orbit (LEO) internet services across their fleets to enhance crew retention and wellbeing and digital operations, opting for Elon Musk's Starlink. Maersk will install Starlink services on over 330 vessels by Q1 2024.

Marlink, in an agreement in 2022, integrated Starlink into its services and rolled this out to NYK Line and MOL late September 2023. Tore Morten Olsen, President, Maritime, Marlink, told ICS *Leadership Insights* that customer demand drove the move to "ensure connectivity at all times". It allows for high-speed applications like Teams and Zoom, real-time monitoring, and data transfer.

NYK plans to use Starlink for crew communications and welfare services. Yuja Inoue, senior co-ordinator for the innovation team at Mitsui OSK Lines, told ICS *Leadership Insights* the adoption of Starlink across its fleet is to retain and attract seafarers, improve crew welfare, and enhance interaction with the crew's family. Read more [here](#).

## Baku port to expand container operations

Baku port has ambitious plans to create a transshipment hub to handle cargo previously routed through Russia. Expansion work to handle container operations up to 500,000 TEU is scheduled for 2024.

Cargo shipments through the 'Middle Corridor', a shorter and sanctions-free alternative to the Northern Corridor, rose dramatically to 3.2 million tons in 2022, from 530,000 tons in 2021, in response to economic sanctions imposed on Russia due to the conflict in Ukraine.

Baku port is recognised by the European Sea Ports Organisation as the first "Green Port" in the Caspian Sea, and has a net zero goal of 2035. Taleh Ziyadov, director-general for the Baku port, told ICS *Leadership Insights*: "The Middle Corridor is a viable green alternative to existing routes" and can spread wealth, cut transit times and emissions. He believes that the Middle Corridor can also strengthen Trans-Caspian cooperation, a vital counterbalance to geopolitical instability. Read more [here](#).

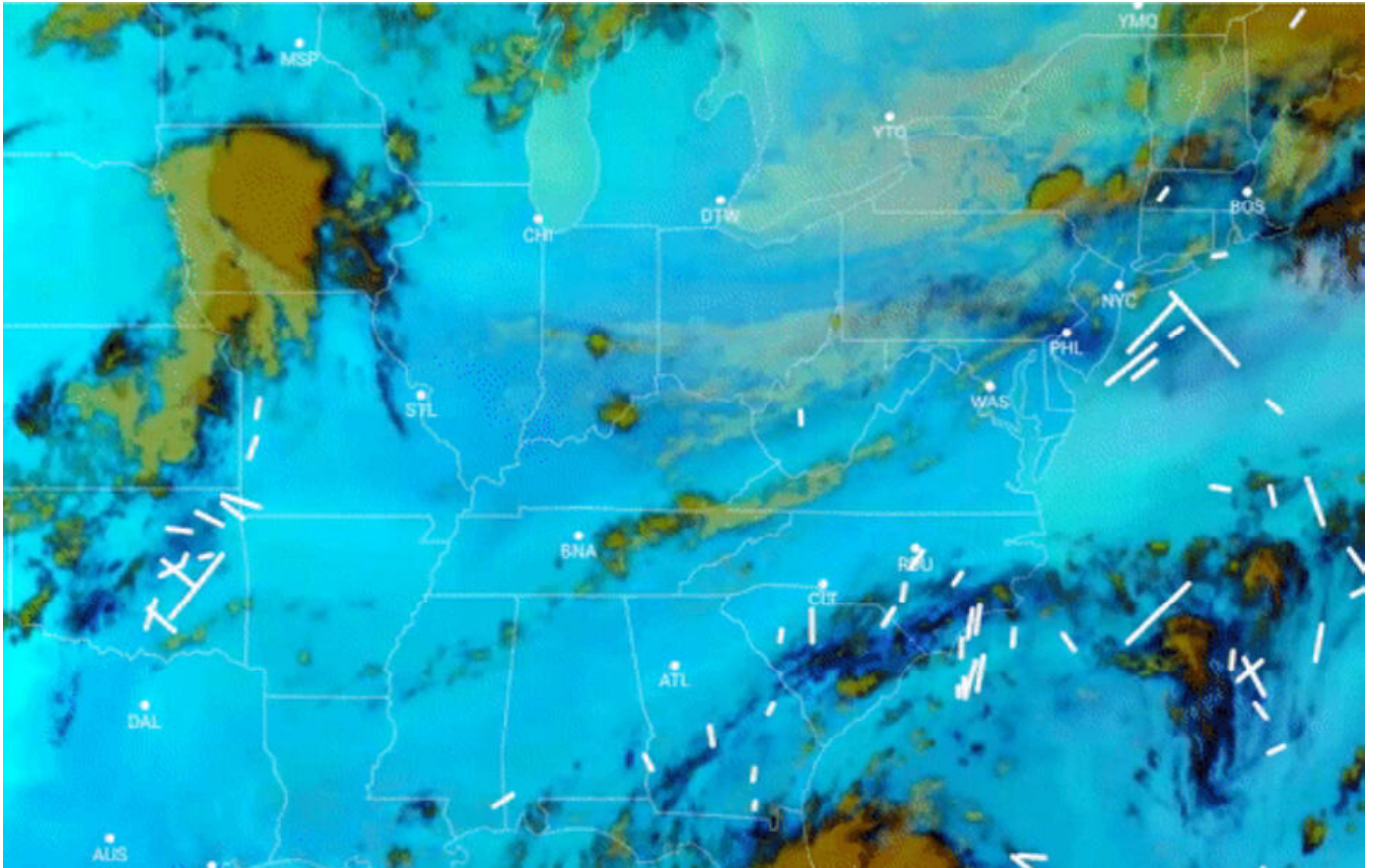
## Crossover uses for hydrogen-fuelled steel plant tech

The technology behind a project that will build a 100% hydrogen-fuelled pilot production plant for steel could potentially be applied to the maritime sector.

Italian-headquartered classification society RINA's €88M Hydra steel production initiative, aims to generate up to seven tonnes of different grades of steel per hour and will use hydrogen as a reducing agent. The plant is set to transition to 100% hydrogen fuel by 2025.

The goal is to reduce emissions to mere kilograms of CO<sub>2</sub> per tonne of steel. Currently, every tonne of steel produced emits 1.63 tonnes of CO<sub>2</sub> on average.

RINA chairman and CEO Ugo Salerno told ICS *Leadership Insights*: "[It] could pave the way for similar innovations in maritime, aligning with global decarbonisation goals," he said. Read more [here](#).



Satellite imagery of American Airlines test flights using AI-based predictions to avoid routes that created contrails. Credit: Google

# Innovation and regulation set pace for AI advances

Exploring how AI is being deployed in other transport sectors offers vital insights for its future deployment in shipping.

Across transport modes, improving efficiency and safety are the go-to problems for developers of artificial intelligence (AI) systems. But as machine learning capabilities grow, an increasing number of creative solutions are being applied across a wider range of transport-related areas.

In one notable example, [Google recently worked with American Airlines](#) to identify flight paths that would not cause pollution contrails. A contrail model was combined with satellite imagery, weather and flight path data, allowing the company to develop contrail forecast maps. Pilots using AI models to choose different altitudes when flying were able to reduce

contrails by 54%, indicating the potential to significantly reduce the 2.5% of global CO<sub>2</sub> emissions accounted for by aviation.

According to Paul Sells, CEO of ABS-affiliated software-as-a-service company ABS Wavesight, such novel uses are rapidly being embraced by maritime AI developers. He sees AI becoming a particular differentiator as fleet performance software becomes critical for compliance with a complex regulatory regime and maintaining competitive advantage.

Sells notes: "Because there are existing business cases from other industries where AI is being used, we are at an advantage

for incorporating some of the areas into the software that exists today – such as streamlining and standardising the way data is ingested and analysed and moving from real-time to predictive analytics.”

AI could disrupt transport business models as well as operations. In September, logistics startup Zerobroker raised US\$6.5 million in seed funding to expand its AI-powered platform that removes freight brokers from the shipping process. By connecting shippers directly with carriers, Zerobroker eliminates the commission fee traditionally charged by freight brokers on each transaction, allowing shippers to lower their transportation costs significantly.

One potential impediment to the uptake of AI is regulation. A large part of the challenge is the inherent opacity of AI systems, the ‘black box effect’, particularly where safety critical operations are involved. The issue was articulated in [a 2019 report](#) from the International Transport Forum.

“A regulatory agency may licence a specific technology,” the report noted. “But

**Later iterations of the code may have evolved so much that the regulatory agency is no longer able to understand how they function**

as the algorithms rewrite themselves to better perform in real-world environments, the resulting code no longer bears any resemblance to the initial licensed code. Further, later iterations of the code may have evolved so much that the regulatory agency is no longer able to understand how they function.”

In response to those threats, among others, the European Commission proposed an [AI Act](#) in April 2021 that is now in the final stages of negotiations between the European Commission, Parliament and Council. The Act would place drastic restrictions on AI systems classed as ‘high risk’, requiring that human intervention is facilitated. To

support innovation, research activities and the development of free and open-source AI components would be largely exempted from compliance.

In shipping, the International Maritime Organization’s (IMO’s) approach to regulating AI is developing on a case-by-case basis. One of the first areas for exploration is autonomous vessels. The draft Maritime Autonomous Surface Ship (MASS) Code features a section on software principles, including that ‘life and death decisions or other decisions affecting fundamental human rights of individuals must not be ceded to AI systems, as these decisions require human intervention’.

Those elements will be debated at the next meeting of the IMO Marine Safety Committee (MSC 108) in May 2024. In shipping, as for other transport modes, the complexity of such regulation makes the long-term deployment of fully automated vessels and traffic management systems challenging. But there are plenty of opportunities along the way for those with the creativity and foresight to grab them.



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# ICS in Action

A round-up of ICS news and activities over the last month

## COP28: Shaping the future of shipping

The 'Shaping the Future of Shipping: Delivering a Net Zero World' summit, organised by a coalition of leading maritime industry bodies and coordinated by ICS, in partnership with the [Emirates Shipping Association](#), and hosted under the patronage of the UAE Ministry for Energy and Infrastructure, set a course to deliver on the IMO's net zero strategy.

The largest industry gathering at COP28 saw over 300 maritime and energy sector leaders and key stakeholders, from 30 countries, and six government leaders, come together to discuss tangible solutions to meet the ambitious net zero targets by or around 2050.

Building on the discussions that took place throughout COP28, attendees collaborated to determine ambitious solutions to advance infrastructure, fuel availability and financing that can help deliver a robust regulatory outcome at MEPC 81 in March 2024. Read more [here](#).

Read an in-depth article on the summit in the next edition of *ICS Leadership Insights*.

## ICS proposes a simplified Global GHG Fuel Standard

ICS and the [International Bunker Industry Association](#) submitted a [joint proposal](#) on 20 November 2023 to the IMO for a simplified Global GHG (greenhouse gas) Fuel Standard, designed to support achieving the net-zero GHG emissions target by 2050.

## ICS launches Engine Room Procedures Guide

ICS announced the release of the second edition of its *Engine Room Procedures Guide*. The guide provides an in-depth and up-to-date reference on safe, efficient, and environmentally responsible engine room operation and maintenance. The guide available for pre-order [here](#).

## ICS to publish latest *Flag State Performance Table*

The table aggregates different datasets on flag State performance, including Port State Control records, ratification of international conventions and IMO meeting attendance.

It will be available for free on the ICS website in late January 2024.

The proposal sets out draft amendments to Annex VI of MARPOL to regulate the maximum permitted GHG intensity of marine fuels in 2030, with a tighter standard in 2040, to progressively create a market for the production of zero and near zero fuels. It also advocates a streamlined voluntary "energy pooling compliance mechanism" to be used if fuel producers are unable to supply new fuels at scale.

Government support will be vital. It will be considered at an International Maritime Organization intersessional working group on GHG reduction in March 2024. Read more [here](#).

## Training for a decarbonised future

A collaborative project to develop a 'Baseline Training Framework for Seafarers in Decarbonization' was announced at COP28. The IMO and Lloyd's Register Foundation funded framework will support seafarers' adaptation to zero or near-zero emission shipping and provide guidance for trainers and the industry.

Research commissioned by the [Maritime Just Transition Task Force](#), which formed in 2021 at COP26 and ICS is a founding partner of, identified that [800,000](#) seafarers may require additional training by the mid-2030s to operate green ships.

The training materials are expected to be available by mid-2025. Read more [here](#).

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