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Contents

REPORTS:

- 04 EMISSIONS CONTROL PROTOCOLS MUST BE PROTECTED AT ALL COSTS
[CR OCEAN ENGINEERING](#)
- 06 MIKO FLEXISHAPE PATCHES DEMONSTRATE THEIR EFFECTIVENESS IN AN EMERGENCY
[MIKO MARINE](#)
- 09 PRESS RELEASES
- 12 ISLE OF MAN SHIP REGISTRY CELEBRATES ITS 40TH ANNIVERSARY VOWING TO DRIVE DECARBONISATION AND SEAFARER WELFARE
[THE ISLE OF MAN SHIP REGISTRY](#)
- 15 ALTERNATIVE FUELS: THE CURRENT LANDSCAPE OF REGULATORY READINESS
[CLYDE & CO CLASIS SINGAPORE PTE. LTD](#)
- 17 SIKA'S SUSTAINABLE MARINE FLOORING SOLUTIONS TO IMPROVE SHIP ACOUSTICS
[SIKA NEDERLAND B.V.](#)
- 18 CURRENT & FUTURE SHIPPING ISSUES
[LIBERIAN INTERNATIONAL SHIP & CORPORATE REGISTRY \(LISCR\)](#)
- 20 HOW TECHNOLOGY CAN STREAMLINE SHIPPING
[TECHNOLOGY IN SHIPPING](#)
- 23 PRESS RELEASES
- 25 CELEBRATING 50 YEARS OF DIVERSITY: THE JOURNEY OF WISTA
[WISTA UK](#)
- 29 ONE STOP SERVICE OF ALL SCRUBBER BRANDS AND SENSORS
[PURETEQ](#)
- 33 FUTURE SUSTAINABILITY OF THE SHIPPING INDUSTRY IS VITAL
[THE BAHAMAS MARITIME AUTHORITY](#)
- 38 THE ORKNEY HARBOUR AUTHORITY



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EMISSIONS CONTROL PROTOCOLS MUST BE PROTECTED AT ALL COSTS

INCREASED TENSIONS IN THE WORLD'S MAIN NAVAL COMMERCE ROUTES COULD BRING CHAOS TO THE SEVEN SEAS

BY: NICHOLAS CONFUORTO



Nick Confuorto, Senior Advisor



This from the June 20, 2024 New York Times, *"As head of ocean freight for the Americas at Rhenus Logistics, a company based in Germany, Ms. Loomis spends her days negotiating with international shipping carriers on behalf of clients moving products and parts around the globe. Over the last few months, she has watched cargo prices soar as a series of disturbances have roiled the seas."*

"Late last year, Houthi rebels in Yemen began firing on ships entering the Red Sea en route to the Suez Canal, a vital artery for vessels moving between Asia, Europe and the East Coast of the United States. That prompted ships to avoid the waterway, instead moving the long way around Africa, lengthening their journeys by as much as two weeks."

"Then, a severe drought in Central America dropped water levels in the Panama Canal, forcing authorities to limit the number of ships passing through that crucial conduit for international trade."

The worst possible scenario is unfolding in front of our eyes, and there's very little we can do other than to helplessly sit by and watch an-all-too-real horror show as the world of sea commerce takes a series of blows. The situation in the Red Sea, in the Middle East, and the China Sea in Asia is growing increasingly critical with the deployment of some of the world's most advanced military vessels.

The situation is hot and getting hotter by the way.

As the Times's article goes on to write, re-routing of traffic, by passing long-established commerce routes and unleashing the full range of repercussions. These in turn could, ultimately, severely weaken emissions-control gains of the past quarter of a century. Shutting a major shipping route will bring along negative consequences: Ports not used will lose readiness while ports in alternative routes could be overwhelmed by increased demand, causing bottlenecks.

This instability, in turn, could lead to neglecting or rescinding norms that have been setup to protect our environment. Like the MARPOL protocol which must be protected at all costs.

Not to sound pessimistic, it increasingly looks like nothing short of a miracle will stop the situation from getting even worse.

Our team at CR Ocean Engineering remains more committed than ever to clean the environment by reducing ship's diesel emissions.

We helped introduce and gain acceptance of the now well-known scrubbing systems. Systems proven to clean diesel emissions in a cost-effective way, allowing shippers to burn high-sulfur diesel while still meeting the stringent MARPOL emissions reduction requirements. We believe that the best and most expeditious way to achieve lasting environmental benefit is when both a shipowner and the environment can gain from the application. Scrubbing systems can do that.

CR Ocean Engineering is one of the world's leading manufacturers of this powerful and increasingly attractive technology. Cleaning deadly emissions has been our core mission for over a century.

As one of the world's leading manufacturers of marine scrubbers, the main lesson we have learned from the strict MARPOL emissions requirements is that a scrubber on board (built with the ship or retrofitted) increases the shippers' choices. Like the choice to use the more established higher sulfur bunker fuels. As additional benefits to using exhaust gas cleaning technology, dangerous particulates are reduced and exhaust gas is prepared for future decarbonization technologies. And lastly, exhaust gas cleaning systems (scrubbers) when combined with heavy fuels, have a significantly smaller CO₂ well-to-wake footprint than low sulfur fuels.

CR Ocean Engineering scrubbers are available in three standard configurations, customizable to a ship's requirements:

- Open-Loop (hybrid ready): once-through scrubber using sea-water
- Closed-Loop: a recirculating scrubber using sea-water (or freshwater) with caustic
- Hybrid: a combination of both designs for maximum flexibility.

CROE Scrubbers normally replace the silencers. They are small, have a compact configuration, have flexibility of design, and are one of the most reliable in the industry. They can be installed inside or outside the ship's funnel.

Some of the features of the CROE Scrubbing Systems include:

- Option of bottom entry I-Type, side entry L-Type or our U-Type entry designs to better fit any funnel configuration and simplify engine exhaust gas duct, with or without a bypass. The CROE system can also be installed outside the funnel, if that is preferred, to maximize pre-assembly and expedite the installation.
- Strategically configured exhaust gas inlet and scrubber drainage to eliminate any potential water back-flow to the engine.
- Eliminated circulation water storage from bottom of scrubber vessel to reduce weight at the higher elevations, improving stability.



CROE® Scrubber installation.



CROE® Scrubber

- Alloy construction (external and internal) to extend the life of the system and to allow the exhaust gas to travel through the scrubber system at high temperatures in case of dry-run conditions without a bypass.
- Used proprietary internals designed specifically to increase contact area with lower liquid flows to save on typical pumping costs associated with some scrubber designs.
- Optional proprietary Caustic-Assist™ feature for Open-Loop assist operating in low-alkalinity areas.

Over the many installations in operation, the CROE design has proven very reliable and effective for all clients. In addition to the scrubbing equipment, CROE also provides spare parts, state of the art on board service as well as term contracts for the remote monitoring and updating of the scrubber operation to insure optimum performance of the system at all times. This service and option is available for all CROE scrubbers as well as any other maker's scrubbers.

While until recently, the primary focus for our sales team has been the 0.1%S and the 0.5%S regulations on fuel sulfur content (as issued by IMO, effective January 2015 and January 2020 respectively), the CROE research team has been busy developing new technologies for fine particulate reduction (PM<2.5µ), black carbon reduction, and CO₂ capture and sequestration.

While a handful of ports have implemented restrictions on the use of Open-Loop Scrubbers, most independent studies that have shown that this discharge is not harmful to the sea nor to sea life. To avoid conflicts on this issue, CROE partnered with an advanced filtration system supplier to provide an easily-integrated high efficiency wash-water filtration system to remove the sludge in a non-hazardous dry form, and to streamline the process of discharging the much cleaner water filtrate back into the body of water.

Furthermore, the use of scrubbing systems has a much smaller carbon footprint than using low-sulfur fuels such as VLSFO and MGO. Using low-sulfur fuels will increase the ship's environmental impact for CO₂ and the very dangerous PM<2.5. A CROE scrubbing system instead will have lower CO₂ (well to wake), will have much lower particulate emissions (total of PM10 and PM2.5), lower Black Carbon and in most cases can also have lower sulfur emissions than low sulfur fuels.

At CROE, we'll continue helping our clients by speeding up yard work, reducing processes to the maximum. To this end, our new designs can be installed outside of the ship's funnel and allow for greater prefabrication prior to the ship's arrival at site.

CROE Scrubber Technology is truly beneficial for our planet. It controls deadly emissions. It expands options. It protects shippers' revenue stream and can increase profits in the short (one-year ROI) run.

As I did in a previous note, I'd like to close with positive news. We are with Team Planet. But the situation at the very least demands the shipping industry to remain vigilant. We need to protect every gain of the past decade and a half because the future is uncertain. We must make sure MARPOL remains operational.

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MIKO FLEXISHAPE PATCHES DEMONSTRATE THEIR EFFECTIVENESS IN AN EMERGENCY



Tests of fitting methods were conducted by divers on sample Miko Flexishape patches

Detailed tests performed recently in Bergen have confirmed the effectiveness of Miko Flexishape patches at sealing tears and irregular damage to a ship's hull. Miko engineers wanted to verify the performance of its flexible patches in a controlled environment so tests were conducted at the Submara Diving Company premises where navy personnel and various stakeholders watched as different configurations of the patches were put through their paces.

The tests were an important opportunity to assess the performance of the patches because if the hull of a ship is damaged, sealing any leakage obviously becomes the top priority. The options available to the ship operator are limited and often ineffective but the two types of patches available from Miko Marine are already a well proven answer. The purpose of the tests was to formally compare fixing methods for the Flexishape patches and to assess how easily they could be handled by divers.

If the hull damage is a clean puncture like a knife cut then the Miko magnetic plaster has no rivals. It can be applied to the even surface of the hull like a sticking plaster to create an instant water tight seal. Consisting of a flexible magnetic surface backed by super-strength fabric a Miko plaster can be applied in minutes rather than hours. If reinforced by additional magnets, it has no rival for speed of application and the strength of its seal. It will provide seaworthy security that will enable the vessel to sail safely to a yard for permanent repair.

If the hull damage is not so conveniently clean and even, a Miko Flexishape patch is seen as the answer because a magnetic patch cannot provide a watertight seal. To close a jagged tear with protruding shards the Bergen tests looked at the latest fixing options for the Miko Flexishape patch. It had been developed specifically to

deal with these situations and is basically one piece of high strength fabric that is used to cover the irregular damage. A single diver, working alone, can then bolt the patch onto the hull in a way that makes it immovable and leakproof. The outer layer of the patch is a polyester-reinforced PVC matting, strong enough for a 50 mm strip to carry the weight of an average car. The inner layer is a Kevlar fabric, similar to bullet proof vests, which protects the patch from sharp edges on the damaged hull. The material is flexible to follow the hull curvatures and has rubber strips along the outer edges help improve the seal when pressed against the hull surface. Fastening the patch to the hull is achieved by using narrow strips of steel or aluminum along its outer edge and bolting them to the hull by using either of two methods.



Test size Flexishape patches secured with a combination of steel and aluminum strips, explosive and drill bolts



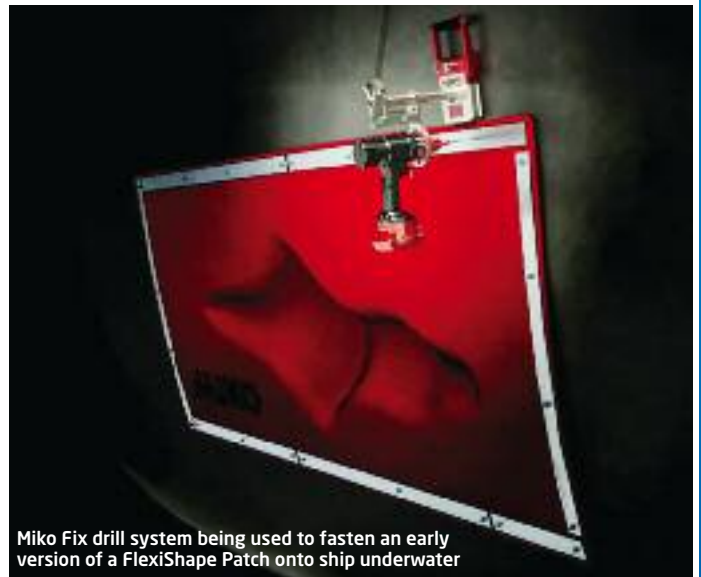
What would be the inside of a ship's hull showing Miko Flexishape test fastenings.

For many years explosive rivets have been shot through the strip, the patch and the hull by divers to provide a fast and powerful seal. They are a very effective method but the complications of transporting them by commercial airline made it difficult to get them to many emergency locations. To solve this problem Miko developed the MikoFix drill which penetrates the strip, patch and hull with a self-tapping screw, and holds the patch tightly against the hull in one action while providing the option of easier removal if required. The battery powered drill is mounted on a stand that is held against the hull by a high-power Miko magnet.

Once the diver has positioned the drill it takes just 90 seconds for the bolt to penetrate the holding strip and secure the patch tightly against the ship's hull and create a water tight seal.

An important part of the Bergen testing was to compare the use of steel or aluminum holding strips. Although they were heavier, the steel strips were found to follow the contours of the hull more effectively and ensure no leakage. Nevertheless, aluminum strips have a sound performance history. A notable example occurred several years ago when a family-owned trawler, the Nybo, was holed while at anchor in northern Norway three weeks before the end of the Arctic fishing season. After some internal structural repairs and the application of a Flexishape patch using aluminum strips, the Norwegian Coastguard judged it to be seaworthy and authorized it to continue working for the remainder of the season. This enabled the trawler's owners to earn essential revenue that would have been denied them if the vessel had been required to sail directly to a yard for repairs.

Hull damage to any ship or floating offshore structure is a serious event that can leave its owner with few options. The traditional methods of sealing a leak are cumbersome and unreliable. Wooden or fabric plugs have a poor performance record and only the determination of the crew will get a ship safely to a yard for repair. Miko Flexishape patches can now be seen as a viable alternative which is good news for seafarers and for the environment.



Miko Fix drill system being used to fasten an early version of a FlexiShape Patch onto ship underwater



Trawler Nybo being repaired with Miko patches before resuming fishing. Photo courtesy Geir Birkely.

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let's drive sustainability

4 sept 2024 hamburg

Join the discussion under the motto
“Setting a green course”


SMM, the leading international maritime trade fair, is inviting you to navigate tomorrow and engage with experts pioneering the path to greener shipping at gmec, the global maritime environmental congress.


Cutting-edge sessions will focus on the latest in maritime sustainability, encompassing immediate solutions for decarbonisation and exploring alternative fuels such as methanol, LNG, ammonia, hydrogen, and wind. There will also be a debate on nuclear power and the circular economy in ship recycling. Choose your topics, gain fresh insights and make valuable contacts. Participation is free of charge – all you need is your SMM exhibition ticket. **Step Forward for Sustainability.**





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SESSION 1 OF TMS TANKER CONFERENCE TAKING SHAPE

The 9th annual The Maritime Standard Tanker Conference will be held on Thursday November 7th at the prestigious Atlantis, the Palm, Dubai. The theme of this year's conference is *Sustainable tanker shipping: accelerating the journey to net zero, which is highly topical and relevant for this sector of the shipping industry.*

Session 1 of the conference, which will set the tone for the whole event, will have the theme of *Sustainable shipping strategies - assessing optimum solutions.* Speakers with high level of responsibility and knowledge within tanker shipping will reflect on approaches to strategic decision making in this context. They will discuss key challenges, as well as opportunities, against the backdrop of current market trends affecting the tanker trades.

Topics set for discussion include meeting IMO and other environmental regulations; global demand and supply trends; newbuilding investment prospects; and decarbonisation strategies. The issues around technology selection, the role of class and retrofit logistics will also be on the agenda.

Some senior level participants from tanker owners, shipyards, ship management, classification, technology supply and other sectors have been invited to speak and a full line up will be confirmed in the next few weeks. In the meantime, please go to <https://tmstankerconference.com/> for all the latest information about the programme, how to register and the sponsorship opportunities that remain available.



INNOVATION HAS A CENTRAL ROLE TO PLAY ON SHIPPING'S VOYAGE TO DECARBONISATION

London International Shipping Week 2025 provides the platform for innovative maritime planning for tomorrow's shipping industry

With decarbonisation firmly at the top of the shipping industry's agenda, many maritime firms are looking to innovative technology to help them navigate their way to cleaner and greener shipping.

With this in mind, London International Shipping Week (LISW25) is planning to delve deeply into the role of innovation within maritime planning, by establishing a Maritime Innovation Technology Working Group. Chaired by Ben Palmer OBE, President of Inmarsat Maritime, will pool collective expertise to address some of the most pressing challenges facing the maritime sector.

Harnessing innovation and technology, the group is scheduled to begin its work in early autumn and outcomes will be presented during the LISW25 Headline Conference, underscoring London's status as a key maritime cluster and a central player in driving forward maritime innovation and the global shipping agenda.

Fast approaching are shipping's ambitious decarbonisation targets and a global maritime commitment to achieving net zero close to 2050. Shipowners have increasingly recognised the need for investment in technology and innovation to meet the demands of shippers and regulators. The need for continued investment will have profound impact across the industry and put increased pressure on the financing of shipping and other related maritime sectors especially ports.

Collaboration is key within the maritime world. Regulators, industry associations, ship operators, and the wider supply chain all need to work together to achieve an efficient, effective, clean and green shipping industry fit for the future.

LISW25 (Sept 15-19 2025) will provide the perfect forum for these collaborative discussions and another new development is the 'London Talks Live' series. Taking place during the first two days of LISW25 and supported by maritime insurance specialist NorthStandard, this series of in-depth lectures will provide a pivotal platform for more detailed information exchange. It's an exciting prospect which will afford shipping leaders the opportunity for a deep-dive into a range of critical topics impacting the global supply chain as it seeks to evolve.

Innovation, decarbonisation, geopolitical challenges and a wealth of other key issues are likely to form the central focus at the LISW25 Headline Conference too. Taking place in the Plenary Hall of the iconic London headquarters of the International Maritime Organization, the scene of shipping's ground-breaking decarbonisation pledge, the Headline Conference will bring together some of the leading maritime innovators, regulators, and shipping personalities to scrutinise all aspects of the maritime industry. Always popular, regularly revolutionary, and frequently controversial, the LISW25 Headline Conference is well-placed to engender detailed debates which provoke new thinking.

Sean Moloney, joint CEO and co-Founder of LISW, explained: "The international shipping industry is unique in the way it operates and is governed. As the world changes, as our understanding of the importance of preserving our blue planet evolves, and as our access to global connectivity escalates, it's vital that our maritime community comes together to embrace innovation, address challenges and formulate a roadmap to lead us to a cleaner, greener, and more sustainable future."

For all the latest information please visit the LISW25 website: <https://londoninternationalshippingweek.com/>

Navigating the Future of Marine Measurement



The maritime industry is currently grappling with the need to improve energy efficiency, reduce emissions, and comply with stringent regulations. Accurate marine measurement systems play a critical role in achieving these goals. Reliable data is vital for environmental protection and optimising vessel performance, where even small reductions in consumption can lead to significant decreases in emissions and costs.

Environmental concerns have spotlighted the industry's carbon footprint, prompting stricter regulations and increased scrutiny from stakeholders. Initiatives like the International Maritime Organization's (IMO) Carbon Intensity Indicator (CII) aim to reduce emissions while enhancing environmental protection, safety, and efficiency. Meeting these standards necessitates the adoption of energy-efficient tools, systems, and technologies.

The Importance of Accurate Data

As the maritime industry evolves, the need for precise and reliable measurement systems grows. The integration of advanced technologies and a commitment to sustainability are key drivers of industry progress. Accurate measurement solutions ensure compliance with regulations, boost operational efficiency and reduce costs, thus guiding the sector towards a more efficient and environmentally friendly future.

Compliance and the success of sustainability strategies rely heavily on data accuracy. Monitoring fuel consumption, emissions, and bunkering operations accurately is crucial for assessing the effectiveness of energy efficiency and emission reduction strategies. Precise data is essential for verifying compliance and measuring the impact of these initiatives.

Achieving this level of accuracy requires high-quality measurement instruments paired with sophisticated software for data processing and analysis. The combination of precise instruments and advanced software ensures reliable data, which is fundamental for informed decision-making and regulatory compliance.

Companies investing in research and development are better positioned to support sustainable shipping methods. Advanced emission monitoring solutions, which can be retrofitted to existing fleets, provide flexibility and a good return on investment. Commitment to innovation and customer service enhances product lifetime value, reducing maintenance and downtime costs over time.

KROHNE Marine: Leading the Way

KROHNE Marine, a key division of the KROHNE Group, exemplifies the significance of accurate marine measurement. With over 60 years of expertise in the maritime sector and dedicating over 10% of its global workforce to research and development, KROHNE Marine leads in innovation within marine measurement technology. Their dedication to precision and sustainability sets industry benchmarks and delivers long-term value and reliability.

KROHNE Marine offers certified systems and precise measurement solutions worldwide, covering sales, engineering, R&D, after-sales support, and spare parts. This comprehensive approach ensures efficiency and reliability across all aspects of marine measurement. Their global partnerships provide clients with a seamless 'one-stop shop' solution, fostering repeat business and demonstrating their extensive capabilities.



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ISLE OF MAN SHIP REGISTRY CELEBRATES ITS 40TH ANNIVERSARY VOWING TO DRIVE DECARBONISATION AND SEAFARER WELFARE



Berge Olympus with WindWings

The Isle of Man Ship Registry (IOMSR) is to celebrate its 40th anniversary with a series of events this year as it seeks to cement its position as one of the world's most progressive flag states.

The IOMSR is planning signature events during the Isle of Man's Maritime Conference in July, and at Trinity House in London in September to thank its clients and partners, and present its vision for the future.

IOMSR director Cameron Mitchell said "it is vital the registry continues to lead by example as a Category 1 member of the Red Ensign Group, representing more than a third of tonnage under the famous Red Ensign. He said safety, seafarer welfare and decarbonization are the pillars of future growth."

"Since establishing in 1984 we have grown by being a quality flag of choice," he said. "Today, quality is constantly being tested by advanced technology and pressures being exerted on the maritime industry. Shipowners and Operators as a result need more from their flag states particularly in how we care for our seafarer's mental health and well-being. Without ensuring the psychological and physical safety of our seafarers our industry will struggle to implement effective Equality, Diversity and Inclusion standards, goals, policies and procedures. Meeting the IMO 2050 GHG targets will require greater data transparency and collaboration across maritime. Flag states cannot be passive bystanders we must be at the heart of taking positive action as a dynamic partner. In recent years, we have continued our commitment to innovation, becoming the first flag state to offer reduced registration fees for ships deploying green technology. We are the first flag state to join the Getting to Zero Coalition which is driving the decarbonisation agenda."

"We are also the first flag state to launch a seafarer welfare app with partners like Stella Maris, Nautilus International and the International Seafarers Welfare and Assistance Network (ISWAN). Seafarer wellbeing is very important to me and my predecessor Dick Welsh, as former seafarers ourselves. We have more than 7,000 seafarers on IOMSR vessels. It is our duty to ensure that seafarer and vessel safety, whilst embracing the latest technological advances including alternative fuels for ships, remains paramount.

Mr. Mitchell said "the IOMSR has grown into one of the highest ranked in the world by building trusted relationships with its clients."

"The Red Ensign due to its track record and heritage is synonymous with the highest standards of safety, engineering and navigation in the global maritime industry," he said. "We never forget this and take this responsibility very seriously. We thank all our shipping line clients who we work so closely with providing that 24/7 service as a trusted partner and part of their team. That has been the key to our success and what we intend to celebrate and build on this year as we mark our 40th anniversary."

Mr. Mitchell also paid tribute to the Isle of Man's vibrant maritime industry.

"The last 40 years has seen the IOMSR diversify and grow along with the Isle of Man Maritime cluster around us," he said. "Our growth would not have been possible without the support of countless people and businesses who make up the island's maritime centre of excellence including ship and yacht management, crew management, insurance, IT, law, cyber security, professional services and finance. The Isle of Man gets maritime and is always open to welcome more maritime business from around the world."

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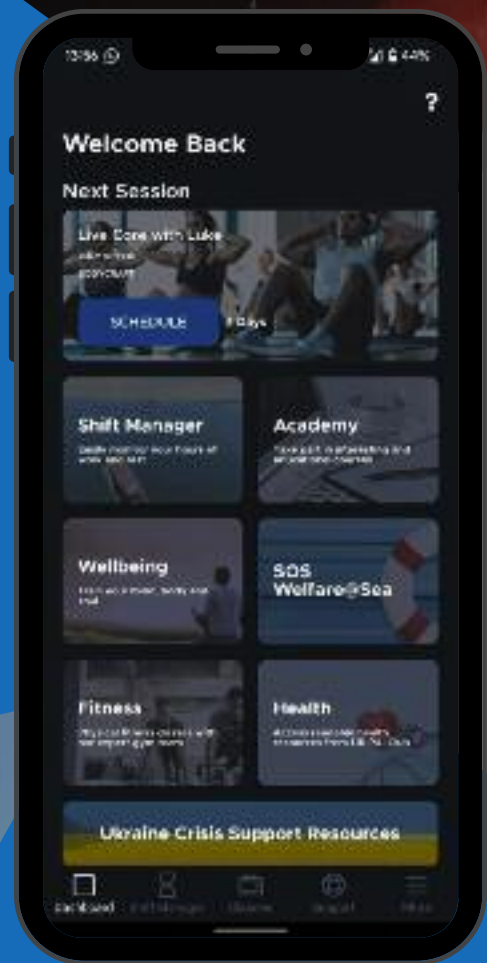
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ALTERNATIVE FUELS: THE CURRENT LANDSCAPE OF REGULATORY READINESS



Paul Collier



Benjamin Soh

Decarbonisation is increasingly in focus for the maritime industry. At a global level, the International Maritime Organisation (IMO) has set targets to reduce greenhouse gas (GHG) emissions from shipping by 20% by 2030, 70% by 2040, and to achieve net-zero emissions by around 2050. To further this aim, the IMO has introduced the Carbon Intensity Indicator (CII) regime, which rates vessels A to E for carbon efficiency, and obliges vessels become more carbon efficient year on year in order to maintain their rating.

Further, there is increasing regulation at the regional level. In the EU, there are two regimes designed to exert pressure on the shipping industry to decarbonise. The first is the EU Emissions Trading System (EU ETS), which obliges shipping companies to surrender emissions allowances for emissions on voyages to or from the EU. The second is Fuel EU Maritime, which comes into force in January 2025, which mandates reductions in the GHG intensity of energy used by vessels, beginning with a 2% reduction from 2025 and increasing to 6% by 2030, 31% by 2040, and 82% by 2050. The Fuel EU Maritime regime allows shipping companies to meet these targets by “pooling” GHG intensity reductions amongst vessels in their fleet.

It is envisaged that decarbonisation goals will primarily be achieved through vessels transitioning from consuming traditional fossil based marine fuel to alternative fuels.

However, to date, there remains a lack of clear and comprehensive regulations and standards governing the use of alternative fuels. This creates legal, environmental and safety risks that are a potential obstacle to the widespread adoption of alternative fuels.

In this article, we examine the current landscape of regulatory readiness in relation to various alternative fuel candidates and discuss how parties might be able to protect themselves where there is a gap in the regulations and standards for alternative fuels.

First, we briefly touch on liquefied natural gas (LNG). LNG is a widely used marine fuel and cargo that is familiar to the shipping industry and is already highly regulated as compared to other alternative fuels. The ISO 23306:2020 standard provides specifications of LNG as a fuel for marine applications, while the SOLAS Convention and the IGF Code govern the construction and operation of ships using LNG as a fuel. As a result, there are increasing number of vessels being built which are able to consume LNG as a fuel. However, as LNG only offers approximately a 20% reduction in GHG emissions compared to traditional fossil fuels, it is only viewed as a transitional fuel which would help reduce global GHG emissions but would not allow the industry to meet net-zero emissions.

Second, biofuels are an attractive alternative fuel in the industry because they can potentially be used in conventional ship engines without any engine modifications. However, there are concerns regarding the use of biofuels, including the possibility to corrode engine parts and clog fuel filters, as well as its potential to degrade

whilst stored in vessel tanks. Hence the recently released ISO 8217:2024 is a welcomed development as it sets standards for the use of fatty acid methyl ester (FAME) as a component in both distillate and residual fuels.

A distinct regulatory requirement of biofuels is the need for it to be certified as being environmentally sustainable for the purposes of obtaining favourable treatment under relevant IMO and EU regulations. The IMO’s Interim Guidance on the Use of Biofuels states that biofuels certified by an international scheme with at least a 65% emissions reduction from the producing, transporting, and usage of the fuel (“well-to-wake”) compared to marine gas oil may receive favourable treatment under the CII regime. Further, under the FuelEU regime, biofuels that fail to meet GHG emission-saving criteria are considered to have the same emission factor as fossil fuels. Buyers, shipowners and charterers are strongly encouraged to incorporate these certification requirements into their purchase contracts or charterparties as required.

Third, methanol is a promising alternative fuel candidate, as demonstrated by the fact that methanol dual-fuel ships are reported to make up 55% of newbuild ship orders that use alternative fuels globally. This is largely down to the fact that methanol is easier to store than hydrogen or ammonia since it does not need to be stored at low temperatures. There is some regulation of methanol, with its safety aspects being covered by Part G of the SOLAS Convention and Interim Guidelines for the Safety of Ships using Methyl/Ethyl Alcohol As Fuel (MSC.1/Circ. 1621). In terms of specifications, the ISO 6583 “Specifications of methanol as a fuel for marine applications” is expected to be published by the end of 2024 or early 2025.

However, similar with biofuels, there are questions surrounding the sustainability credentials of methanol. As such, it is anticipated that certification requirements for methanol-based fuels will likely be implemented in the near future. Indeed, the EU Commission announced in April 2024 that it intends to exclude the automatic certification of biomethane and biomethanol-based fuels produced in third-party countries outside the EU which use the mass balance chain of custody model to trace sustainability.

Fourth and fifth, ammonia and hydrogen are, in the long term, seen as fuels that could lead to substantial reductions in GHG emissions. However, the technology for their use as marine fuels is still developing and the IMO is in the process of developing interim guidelines for the safety of ships using hydrogen and ammonia as fuel. In the meantime, hydrogen and ammonia are not yet seen as being commercially viable options for alternative marine fuels. Moreover, both ammonia and hydrogen have potentially significant drawbacks with their use; with ammonia being difficult to burn efficiently and highly toxic, while hydrogen is energy-intensive to store in its liquid form at around negative 253°C and is highly flammable. Given the recent collision between the Vox Maxima and the stationary Marine Honour bunker tanker in Singapore, there are also understandable safety concerns regarding the use of both fuels as marine fuels.

Whilst there is a consensus in the shipping industry that decarbonisation needs to take place, as yet a consensus has not been reached on how this will be achieved. It is likely that there will be a multi-fuel future, with LNG, biofuels, methanol, ammonia and hydrogen all playing a role, as well as traditional marine fuels continuing to be used. Each type of fuel has its own legal, regulatory and environmental issues, meaning that parties in the shipping industry will need to carefully consider what fuels they intend to use and how they will navigate the issues relating to their use.

By Paul Collier and Benjamin Soh, Clyde & Co

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BUILDING TRUST



SIKA'S SUSTAINABLE MARINE FLOORING SOLUTIONS TO IMPROVE SHIP ACOUSTICS



There are many sources of vibrations and sounds onboard, e.g., propellers, gearboxes, diesel engines, HVAC etc. To ensure the safety and comfort of the crew as well as the passengers, it is important to use noise controlling floor systems to suppress the vibrations and noise. Sika® offers a wide variety of products which have different degrees of vibration and noise reduction properties to meet the requirements for both regulatory bodies and ship owners. One of the latest Sikafloor® Marine VEM and VEM-X technologies are paving the way for sustainable innovations and improved ship acoustics.

Vibration Damping in Ships

Noise and vibration levels are some of the most important concerns for the vessels nowadays. Vibration caused by the engines and other sources in many cases lead to noise where noise in his turn can create trouble with concentration, prevents to rest properly and in case of an emergency even not hearing alarm bells is an important reason to reduce vibration and noise on board as much as possible. Much of the disturbing noise is low frequency noise coming from vibrations in the steel structure, caused by the propeller, engines, generators, propulsion system, thrusters, etc.

Vibrations are transmitted through the steel structure and ship vibration is the response between vibration sources and the ship's structure aggravated by resonance. Visco-elastic systems are used to avoid structure vibrating at resonance and to dampen structure borne noise.



Sika® Sustainable Advanced Flooring Systems

Sika® offers a wide variety of innovative products for the marine industry. The especially created advanced flooring systems are designed to tackle the problem of reduction of structure-borne noise via the precise measurement of floor solutions' damping properties. The future of vibration damping onboard vessels comes with the sustainable technology based on Visco-Elastic cement-based flooring and is called Sikafloor® Marine- VEM (Visco Elastic Mortar).

Sikafloor® Marine VEM & VEM X technology is a patented environmentally friendly, one component solution, providing the best damping effect of structure borne noise. The products are easily mixed and applied, making live much easier for the application crew as the hassle of difficult two component resin-based products is now made redundant. As it is cement based technology, the green passport for shipment can be left blank as there are no hazardous goods to be declared.

The Sikafloor® Marine VEM technology comes in two variations, one with steel tiles as the constrained layer and one with a cementitious mortar as the constrained layer, for example Sikafloor® Marine-190. The visco-elastic system can be used in connection with all Sikafloor® Marine Litosilo steel and cement based floating floors, to improve the overall acoustic performance. This combination provides extremely good sound reduction in low, as well as in high frequencies. It can also be used in combination with the latest Sika® innovation, the Sikafloor® Marine Ultralight Floating Floor, where the total vibration and noise dampening floating floor system weighs as little as 29 kg/m².

The two systems offer different advantages. The constrained visco-elastic system has extremely good structure borne noise damping features over the entire frequency range. This system is an isolator, which, through its deformation in the visco-elastic layer, dampens the vibration energy and thus reduces the radiation of noise. The floating floor systems, on the other hand, provide high airborne noise reduction, but poor structure borne noise reduction in low frequencies. The floating floor performs best as a barrier, absorbing the airborne noise between the source and the adjacent areas.

The combination of visco-elastic and floating floor systems is key for optimal acoustic performance. With the marine flooring range Sika leads the way into a sustainable future for passengers, crew, but also for the contractors and application teams across the world.

About Sika

Sika is a well-known specialty chemicals manufacturer with a leading position in the development and production of products, systems, and solutions for sealing, bonding, and protection in the marine industry. Sikafloor® Marine offers a complete range of primary deck coverings, acoustic flooring solutions and decorative floor systems. The systems set new standards with features like low weight, fast curing, high noise reduction, thermal insulation, A-60 fire rated floating floors and vibration damping systems with low building height - less than 50mm.

All Sikafloor Marine products are Wheel-mark approved according to Council Directive 96/98/EC on Marine Equipment and are also approved by the US Coast Guard and other major authorities and leading classification societies in compliance with IMO rules.

More information on SIKA's sustainability policy:

<https://www.sika.com/en/sustainability/sika-sustainability-strategy.html>

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CURRENT & FUTURE SHIPPING ISSUES



C/V ASTRAIOS, Newbuilding container vessel with 22,750 DWT, delivered on March 19, 2024, built by Hyundai Mipo Dockyard, Korea, managed by CAPITAL-EXECUTIVE SHIP MANAGEMENT CORP.

The shipping industry faces numerous challenges, including decarbonization, digitalization, geopolitical tensions, labor shortages, and environmental regulations. To remain resilient and committed to change, the industry will need to adopt a number of strategies. We briefly present the issues and dealing strategies from the perspective of the Liberian Flag Administration.

Decarbonization, Net-Zero GHG Emissions and Environmental Regulations

The maritime industry is at a crossroad mainly caused by the environmental challenge, and the response to this huge challenge needs the maritime industry to transform to a net-zero Greenhouse Gas (GHG) emission industry by or around 2050, as also required by the revised IMO GHG Emissions Reduction Strategy that was adopted at the IMO MEPC 80 meeting in July 2023. This revised IMO GHG Strategy is a significant strengthening of the initial strategy that was adopted at MEPC 72 in 2018 and was 'only' pursuing efforts to reduce CO₂ emissions of 70% by 2050. Now the target is 100% reduction of all GHGs by or around 2050 on a well-to-wake basis, i.e. net-zero GHG emissions by 2050.

Fortunately, we are in the midst of embracing the challenges and opportunities of the 4th Industrial Revolution, and this together with an agile and adaptive international regulatory framework from the IMO, we as an industry, stand a realistic chance to respond well and in a timely manner to the environmental challenge.

There is a challenge though as the IMO does not always recognize and provide the desired benefits from adoption of innovative design features, new technologies and alternative fuels. Whilst the IMO regulations for ship designs have changed over the recent years from prescriptive rules and regulations to now goal-based standards and risk assessment-based regulations allowing for the much-needed innovation in ship design, the IMO environmental regulations do not always recognize these innovative solutions in terms of their contribution to GHG emissions reduction. As an example, can be

mentioned onboard carbon capture systems that can significantly reduce the GHG emissions from ships but currently the environmental regulations (EEDI, EEXI and CII) do not recognize these systems. Several proposals to reflect onboard carbon capture systems in the regulatory framework have been submitted to IMO but these have not yet been fully discussed and concluded upon, hence the process of identifying and allowing practical solutions to support the GHG emissions reduction needs to be accelerated with the same priority as strengthening the IMO GHG strategy.

To fully utilize the opportunities for innovation and adoption of new technologies that the regulatory framework now allows, we need close global collaboration between all high-quality and forward-looking stakeholders (shipyards, design companies, classification societies, engine manufacturers, innovative technology companies, shipowners/managers and other relevant stakeholders) and thereby unlock the potential to decarbonize international shipping and eventually reach net-zero GHG emissions shipping. To do this we need to increase collaboration and secure funding to undertake research and development projects. IMO has now embarked on developing the mid-term measures of the 2023 IMO GHG emissions reduction strategy, and it is expected that these measures will be a combination of a technical measure and an economic measure. The technical measure will probably be a Global Fuel Standard (GFS) and the economic measure a GHG levy or a feebate mechanism to incentivize increasing the uptake of net-zero or near net-zero GHG emission fuels. It is anticipated that the funding collected from the economic measure will also be allocated to fund the much-needed innovative joint industry research and development projects.

In this context the Liberian Registry has been forward thinking and since 2016 been actively involved in joint industry projects (JIPs) and our involvement is steadily increasing. Over the last 3 years, we have participated in over 35 JIPs and we expect this to increase further until we have developed and approved the net-zero emission vessel of the future and its application in international shipping is feasible and sustainable.

In regard to the net-zero GHG emissions, it should be noted that at the MEPC 80 meeting in July 2023, IMO also adopted the Guidelines on Life Cycle GHG Intensity of Marine Fuels (IMO Resolution MEPC.376(80)), also known as the LCA (Life Cycle Assessment) Guidelines, and these guidelines provide guidance on life cycle GHG intensity assessment for all fuels and other energy carriers used on board a ship. They cover well-to-tank, tank-to-wake, and well-to-wake GHG intensity and sustainability aspects related to marine fuels and energy carriers (e.g. electricity for shore power) used for ship propulsion and power generation onboard. The relevant GHGs included are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). The well-to-wake approach is complex and present challenges in terms of accurately reflect and document the GHG emissions as it covers the entire process from feedstock extraction, cultivation, recovery, feedstock conversion to a fuel product, transportation as well as distribution, bunkering, and fuel utilization on board a ship. However, compared to absolute zero GHG emissions (i.e. tank-to-wake) the well-to-wake concept offers theoretically more fuel types with pathways to zero GHG emissions. Especially in combination with onboard carbon capture systems and/or other systems and energy efficiency technologies there could be a variety of pathways to net-zero or near net-zero GHG emissions.

Although international shipping transports about 90% of all global trade and only emits less than 3% of the world's global emissions, our industry including IMO is committed to decarbonize and reach net-zero GHG emissions by mid of this century. The maritime industry is on the right track to tackle the immense environmental challenge; however, we have just embarked on decarbonization and the journey towards net-zero GHG emissions, and there is a lot of hard and dedicated work ahead for our industry to reach the levels of ambition in the IMO GHG emissions reduction strategy.

Going forward the Liberian Registry is dedicated to continuing to lead the way for Flag Administrations to support our shipowners to decarbonize international shipping through our involvement at the IMO and in joint industry and research projects. These projects can pave the way to find solutions to fully decarbonize international shipping in a sustainable way and ensure transportation of cargo remains competitive.

On the issue of Environmental regulations, the shipping industry must comply with all applicable environmental regulations. This includes regulations on air and water emissions, waste disposal, and ballast water management.

By investing in clean technologies, the shipping industry can reduce its environmental impact by using emission control systems, advanced wastewater treatment systems, and energy-efficient ship designs.

Finally, it is about time that the shipping industry start collaboration with environmental organizations to develop and implement sustainable shipping practices.



LPG GAS ANAX, Newbuilding Gas carrier vessel with 30,138 DWT, delivered on September 5, 2023, built by Hyundai Mipo Dockyard, Korea, managed by BENELUX OVERSEAS INC.

On the Digitalization front, the shipping industry can improve its efficiency and resilience by adopting digital technologies such as artificial intelligence (AI), big data, and blockchain. These technologies can be used to optimize ship operations, improve supply chain visibility, and reduce fraud. At the same time, shipping will need to invest in training and education to ensure that its workforce has the skills to operate and maintain digital systems. A need for development of digital infrastructure such as high-speed data networks and secure data centers to support its digital transformation may arise in the years to come.

On Geopolitical tensions, while shipping operates under operates under most challenging conditions perhaps shall consider reducing its exposure to geopolitical tensions by diversifying its supply chains. This can be done by using multiple ports and shipping routes, and by sourcing goods from a variety of countries. Contingency plans development may be required to deal with disruptions caused by geopolitical tensions. These plans should include alternative shipping routes, secure storage facilities, and insurance coverage.

Labor shortages is and would be one of the major challenges for shipping moving forward. As such, the industry will need to invest in training and education to attract and retain qualified workers. This includes training for seafarers, port workers, and logistics professionals. Moreover, promotion of diversity and inclusion is required to create a more welcoming and attractive workplace for all employees. Last but not least, improvement of working conditions to attract and retain workers is most critical inclusive of provision of competitive wages and benefits, safe and healthy work environments, and opportunities for career advancement.

By adopting these strategies, the shipping industry can maintain its resilience and its commitment to change, and continue to play a vital role in the global economy.

A Shipping Partnership

As a final word, shipping is an industry of partnership and not a one-way street, and we, the Liberian Registry, are committed to making sure to share with shipowners our experiences, our networks, our technology, and our global network to ensure their vessels get the support they need to operate in an ever changing and increasingly complicated regulatory environment. The aim for continuous improvement, innovation, technology utilization to improve existing system for ships to operate efficiently, safely and environmentally friendly is a continuous effort, and Liberia is committed on this continuous effort that will improve not only shipping but the community at large and this is a commitment more than ever now.

MICHALIS PANTAZOPOULOS, has more than 30 years working experience in shipping and offshore industries in Greece and United States. Graduating with a PhD in Mechanical/Ocean Engineering from the University of Washington, Seattle, he joined EXXON Corporation where for the next ten years served in engineering and managerial positions in offshore and marine engineering fields including 2 years of service as technical support to Exxon's legal team in the EXXON VALDEZ trial. Upon returning to Greece, he joined ABS Consulting (American Bureau of Shipping) in managerial positions serving the shipping and offshore industry in Greece and south Europe. Cooperation with AVIN INTERNATIONAL as Manager of the Fleet Services Division started in 2000.



Since 2004, Michalis is part of the Liberian Registry, serving in their Piraeus office as Senior Vice-President.

A regular speaker and contributor to shipping conferences and technical magazines, Michalis has been affiliated with several shipping and technical committees including INTERTANKO Associate Members Committee, Society of Naval Architects & Marine Engineers of USA and Greece, Technical Chamber of Greece, HELMEPA, Propeller Club etc.

HOW TECHNOLOGY CAN STREAMLINE SHIPPING



The world of logistics is constantly changing and evolving, meaning that the shipping industry is ideally placed to adopt new technologies to enhance efficiency, reduce costs and improve customer satisfaction. By implementing new technologies, shipping companies can streamline operations, optimise routes and ensure timely deliveries. To better understand the opportunities to streamline processes, shipping companies should have an awareness of available technologies, their impact on shipping services and how to adopt the most beneficial solutions.

How Technology Can Streamline Shipping

The world of logistics is constantly changing and evolving, meaning that the shipping industry is ideally placed to adopt new technologies to enhance efficiency, reduce costs and improve customer satisfaction. By implementing new technologies, shipping companies can streamline operations, optimise routes and ensure timely deliveries. To better understand the opportunities to streamline processes, shipping companies should have an awareness of available technologies, their impact on shipping services and how to adopt the most beneficial solutions.

What technologies are available and how can they streamline shipping?

There are several technologies that are used to optimise and streamline the distribution of goods and supplies. Implementing these technologies can be incredibly beneficial in the organisation of shipping companies, lowering the possibility for mistakes and errors to occur.

Internet of Things (IoT)

IoT is the interconnected network of physical devices embedded with sensors, software and other technologies to exchange. In the context of shipping, IoT devices can monitor the condition and location of cargo in real time, increasing efficiency, reducing cost, accurately capturing data for more accurate decision making and minimising risk.

Adopt IoT For Real-Time Monitoring - build this into a sentence

Artificial Intelligence (AI) and Machine Learning (ML)

AI and ML involve using algorithms to analyse data, make predictions and automate decision making processes. AI and ML can analyse historical and real time data such as weather conditions, sea currents and vessel performance and suggest better shipping routes - therefore accurately predicting arrival times.

According to a World Shipping Council (WSC) report, up to 1,382 sea containers are lost at sea each year. Utilising AI and ML could be an effective option to mitigate losses.

Implement AI and ML For Route Improved Optimisation - build this into a sentence

Blockchain

Blockchain is a decentralised digital ledger that records transactions across many computers in a way that ensures security and transparency. It can be used to track shipments, verify transactions and enhance transparency within the supply chain. Blockchain has the ability to reduce trade commutation, fraud and human error through uncompromisable "smart contracts" - making blockchain technology an attractive option in the shipping industry.

Whilst blockchain has a multitude of benefits, it does come with its challenges. Blockchain technology lacks technical standards, can be incredibly energy intensive and requires a significant amount of storage capacity - meaning that it is a huge investment in more ways than one.

Utilise Blockchain For Enhanced Transparency - build into a sentence

Autonomous Vehicles and Drones

These are self driving vehicles and are unmanned, meaning they can deliver packages without the need for human intervention. This can improve delivery speed, enhance cost efficiency and provide flexibility, and can be used for last-mile deliveries and in rural or difficult to reach areas through traditional means.

Drone deliveries may be more common than you think. In 2022, it's estimated that there are more than 2,000 drone deliveries occurring each day globally. Whilst these numbers are impressive, logistically drones can be difficult. In highly populated areas, drones can struggle to manoeuvre around high rise buildings and wildlife. It can also be difficult to deliver to apartment buildings without human interaction. These are all factors that should be taken into account when considering implementing drones into shipping services.

Deploy Autonomous Vehicles and Drones - build into a sentence

Advanced Analytics

Advanced analytics involves analysing large sets of data to get a detailed insight and uncover patterns and correlations. In shipping, it helps in demand forecasting, route optimisation and improving operational efficiency overall.

Using real-time conditions, weather forecasts and historical, ship speeds can be accurately calibrated to optimise fuel consumption. This can aid in route planning and navigation, enhancing operational efficiency overall.

Shipping companies are using large amounts of data to determine the most effective paths for their vessels. Another way is using shipping analytics to adjust prices based on demand and supply. Implementing advanced analytics allows businesses to get ahead of competitors by outlining competitive prices and accurate delivery times.

Leverage Advanced Analytics for Predictive Maintenance

The value of technological development in the shipping industry

The integration of technology in shipping services is no longer a luxury, but a necessity to remain competitive in the fast-paced market. Embracing these advancements not only enhances efficiency but also paves the way for innovation and growth in the logistics industry.

By Matthew Winter,
Director of Rapid Shipping



Nor-Shipping
1965-2025

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Navigating the
blue economy

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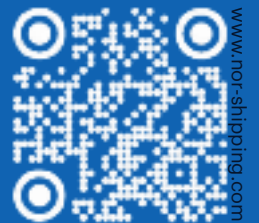
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PORTXCHANGE SHOWCASED ON FLAGSHIP FOUNDERS' GLOBAL MARITIME TECH STARTUP MAP 2024



Sjoerd de Jager, CEO of PortXchange

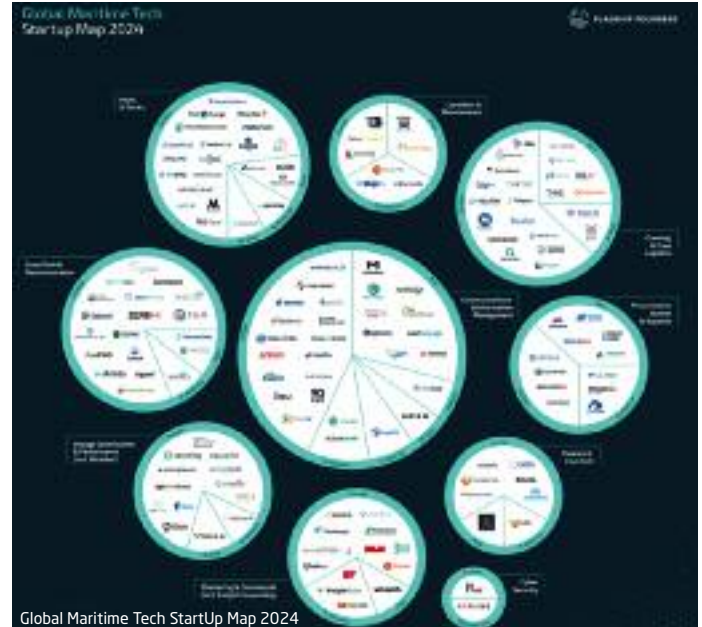
PortXchange, a leading innovator in port call optimization and maritime decarbonization digital AI solutions, is honoured to be included in the prestigious Global Maritime Tech Startup Map 2024, published annually by Flagship Founders. Recognized in the Ports and Docks category, PortXchange's inclusion highlights its cutting-edge technologies and sustainable initiatives, particularly its flagship solutions, EmissionInsider and Synchronizer.

Flagship Founders' Global Maritime Tech Startup Map 2024 comprehensively overviews the most impactful maritime software startups and scale-ups globally. PortXchange's selection underscores its pivotal role in advancing decarbonization efforts within the maritime industry.

Sjoerd de Jager, Managing Director of PortXchange, expressed his gratitude to their partnering ports, saying, "Being featured in the Global Maritime Tech Startup Map 2024 is a testament to our relentless commitment to innovation and sustainability. Our collaboration with leading ports, including the Port of Rotterdam, Port of Houston, Port of Amsterdam, and the Greater Houston Port Bureau, alongside our other port partners, paves the way for a greener and more efficient maritime future. We are proud to be working with such forward-thinking ports that step outside of the status quo to drive for decarbonization. We are honoured to be recognized alongside other pioneers in this category."

PortXchange's flagship products, EmissionInsider and Synchronizer, are at the forefront of enabling ports and ships to reduce carbon emissions and optimize operations. EmissionInsider provides real-time insights into emissions data, helping ports monitor and manage their environmental impact effectively. Synchronizer enhances port call efficiency, including JIT calls (Just In Time), minimizing delays and improving turnaround times, directly contributing to lower fuel consumption and emissions.

The Port of Rotterdam, one of the busiest ports globally, has been a significant partner in PortXchange's sustainability journey. This collaboration has led to substantial CO2 emissions reductions, setting a benchmark for other ports. Similarly, the Port of Houston, Port of Amsterdam, and the Greater Houston Port Bureau have also demonstrated their commitment to environmental stewardship by adopting PortXchange's innovative solutions.



Global Maritime Tech StartUp Map 2024

The inclusion of PortXchange in the Global Maritime Tech Startup Map 2024 not only highlights the company's technological expertise but also recognizes the forward-thinking ports that have chosen to embrace these solutions. Their commitment to sustainability and operational excellence is and will be instrumental in driving the maritime industry towards a more sustainable future.

MINTRA RECEIVES 14TH CONSECUTIVE LPI GOLD STANDARD ACCREDITATION



Sjoerd de Jager, CEO of PortXchange

03 JULY 2024 - Mintra, a global leader in digital learning and human capital management for safety-critical businesses, proudly announces its fourteenth consecutive Learning and Performance Institute (LPI) accreditation and fourth year at Gold Standard. This prestigious accolade in the highest tier of learning

technology providers highlights Mintra's dedication to excellence and innovation in the learning and development sector.

The accreditation covers Mintra's platform technologies (Trainingportal LMS and CMS, mintra.com, MIST & IMIST-Online), digital content, bespoke

eLearning services, and VR/AR simulation content. These solutions support the global maritime and energy sectors, enhancing safety and operational efficiency through digital innovation.

Following a rigorous evaluation, Mintra achieved a perfect score across 14 key performance areas, reinforcing its status as a global authority in workplace learning and development for safety-critical industries.

Kevin Short, CEO at Mintra, says, "We are immensely proud of our teams' dedication and high standards, which have secured this accolade for the fourteenth year. This accreditation is based on hard evidence of our ability to evolve, adapt, and grow in a dynamic business environment, ready to support our clients through future challenges and opportunities."

LPI auditors praised Mintra's commitment to development and training, highlighting its core values: "People are our business. We explore. Open and collaborative, driving performance and delivering with pride." Key success factors include Mintra's value demonstration of eLearning, sustainability focus, talent development support, and innovative partnerships in augmented and virtual reality.



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CELEBRATING 50 YEARS OF DIVERSITY: THE JOURNEY OF WISTA



Sue Terpilowski, Margaret Llewellyn,
Stella Marks and Gina Fyffe

In 1974, a modest Christmas lunch in London sowed the seeds for what has become the Women's International Shipping and Trading Association (WISTA). From that initial gathering of four trailblazing women—Pat Butler, Sheila Lawrence, Stella Marks and Margaret Llewellyn—the idea blossomed into a global

network championing the role of women in maritime and trading industries. Fifty years later, WISTA stands as a testament to their vision, with over 5,100 members spanning 59 countries, dedicated to promoting diversity and inclusion in maritime sectors worldwide.

The Origins and Evolution of WISTA

WISTA's beginnings were humble, marked by informal meetings and the camaraderie of women in the shipping and trading industries. These gatherings quickly grew in scope and ambition. By 1980, as membership expanded to 25, the group's focus shifted from social lunches to more structured meetings, incorporating educational visits and discussions on industry developments. The decision to hold the 1981 meeting in Hamburg instead of London marked a significant turning point, transforming the gatherings into comprehensive conferences featuring port visits, lectures, workshops, and gala dinners.

Over the years, WISTA's annual conferences have become a key event for the maritime, trading and logistics professionals' calendars, attracting between 150 to 400 delegates. These gatherings not only provide educational opportunities but also foster invaluable networking and collaboration among women professionals.

WISTA Today: A Global Influence

As of 2024, WISTA's influence has reached unprecedented levels. With consultative status at the International Maritime Organization (IMO) and observer status at the United Nations Conference on Trade and Development (UNCTAD), WISTA collaborates with most leading maritime and trading associations, including the International Chamber of Shipping and BIMCO. The organisation's mission remains steadfast: to empower women through education, mentorship, and networking opportunities, promoting a more inclusive industry.

A key initiative in recent years has been the launch of maritimespeakers.com, a joint effort between WISTA and the IMO. This platform aims to ensure diversity in conferences and events in the maritime, trading, and logistics sectors, offering a free-to-use directory of female industry speakers. This initiative seeks to eliminate biases and foster innovative, inclusive conversations by facilitating the inclusion of diverse voices.

WISTA also supports continuous education through various collaborations, both in terms of diversity and industry skills. By partnering with educational institutions and industry bodies, WISTA ensures its members have access to the latest knowledge and training opportunities, helping them stay at the forefront of advancements while promoting a culture of lifelong learning and professional development.

The Role of Allies and Advocacy

WISTA's progress has been bolstered by the support of numerous allies—individuals and companies—who have provided sponsorship, public backing, and respect over the years. Our male allies, in particular, have amplified women's voices, challenged biases, advocated for change, led by example, fostered inclusive cultures within their organisations and stood up for us in key times.

The commitment to diversity is also reflected in the leadership pledges within the industry. The IMO Secretary-General, for instance, has committed to avoiding participation in all-male panels, underscoring the importance of gender diversity in maritime discussions.

Addressing Gender Imbalances and Harassment

Despite significant progress, gender diversity in maritime remains uneven. According to the 2021 IMO-WISTA Women in Maritime Survey, women constitute only 29% of the overall workforce in the general industry and a mere 20% in national maritime authorities. Women seafarers, representing just 2% of the crewing workforce, are predominantly found in the cruise sector, highlighting the need for targeted efforts to increase female representation across all maritime sectors.

Addressing sexual harassment and bullying is crucial to creating a safe and inclusive working environment. WISTA, partnering and collaborating with the IMO and other industry bodies, has been actively involved in developing comprehensive measures to tackle these issues. The Joint ILO/IMO Tripartite Working Group has recommended harmonised terminology and mandatory training on violence and harassment for seafarers, along with implementing robust policies and procedures within safety management systems.

Looking Ahead: Towards the Next 50 Years

As WISTA celebrates its 50th anniversary, the organisation continues to drive forward its diverse vision for inclusive maritime, trading and logistics sectors. The upcoming WISTA International Conference in Limassol, Cyprus, will be a milestone event featuring keynote speakers like IMO Secretary-General Arsenio Dominguez.

The maritime, trading and logistics sectors are undergoing significant decarbonisation, digitalisation, and autonomous shipping transformations. These changes present a golden opportunity to reset gender imbalances, promoting more flexible working arrangements and increasing female participation in maritime roles. Studies, such as those by McKinsey, have shown that workforce diversity fosters innovation and makes sound business sense.

As we look to the future, the vision for the next 50 years is bright and filled with promise. The strides made by WISTA in promoting gender diversity can serve as a blueprint for achieving more significant equity across all diverse groups within the maritime, trading and logistics sectors. By continuing to empower women, advocating for inclusive policies, and fostering a culture of respect and equality, the maritime, trading and logistics sectors can become a model for diversity and inclusion.

The journey of WISTA from a small luncheon in London to a global network of over 5,100 women is a powerful testament to the impact of collective effort and unwavering commitment to diversity and inclusion. With ongoing support from allies, innovative initiatives, and a clear vision, the next 50 years hold the potential for even greater progress. Together, we can work towards a future where equity is the norm and the maritime, trading and logistics sectors thrive on the strengths of a truly diverse workforce.

Here's to celebrating the past 50 years. I look forward to a future where women and all diverse groups continue to make strides in maritime, trading and logistics, leading the sectors towards a more inclusive and dynamic era.



**By Sue Terpilowski OBE,
Founder of Image Line Communications,
Board Member of WISTA UK, Public
Speaker and Diversity Champion**

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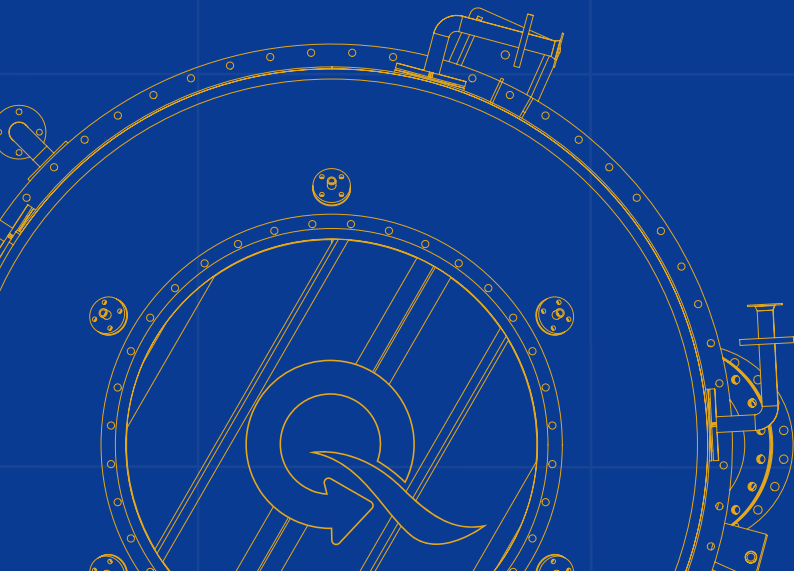
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PureServ, a certified service organization by PureteQ A/S, provides maintenance services for all brands of scrubbers and sensors worldwide.

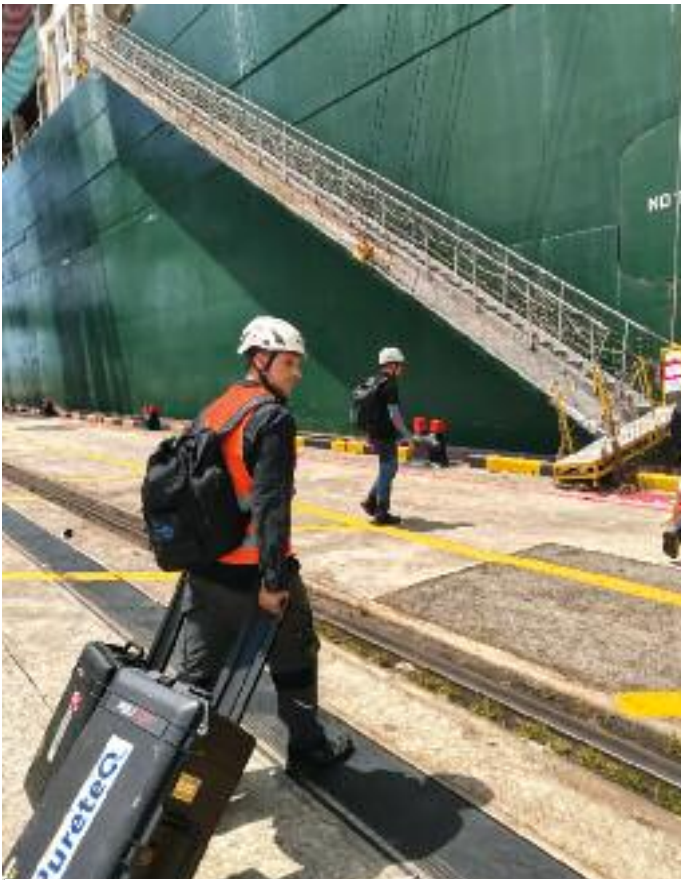
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PureteQ offers inspections that assess all components and structural conditions, creating a work scope for the yard, crew, suppliers, and stakeholders well before the scheduled drydocking. Scrubbers installed around 2018 have operated for thousands of hours, making motors, dampers, sensors, and moving parts due for overhaul or replacement, some of which can have long lead times.



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PureteQ offers pre-drydocking inspections tailored to the shipowner's convenience

PureteQ specializes in designing and maintaining scrubber systems. With established offices in Europe and Asia and extensive expertise in exhaust gas cleaning, PureteQ is a leading service provider for all brands of scrubbers worldwide. PureServ, the certified service organization of PureteQ, assists shipowners and operators in safeguarding the continuous operation, reliability, and MARPOL compliance of scrubbers with its team of experienced marine engineers.

ENERGY OPTIMIZATION AND MINIMAL CARBON FOOTPRINT

While PureteQ Maritime Scrubber Systems are known for their high energy efficiency, even less efficient ones can be fine-tuned to lower electrical consumption caused by excessive scrubbing.

To support this effort, PureteQ offers all service agreement clients access to Pure-SPOT, a web-based Scrubber Performance Optimization Tool that plays a crucial role in reducing energy consumption on all scrubber systems. Data is automatically uploaded to a cloud-based platform for optimizing and reporting environmental performance across ships equipped with scrubbers to assist shipowners and operators in making their operations more environmentally friendly, lowering operational expenses, and enhancing the Carbon Intensity Indicator (CII) rating.

To combat climate change and facilitate the transition towards a more sustainable and low-carbon future, lowering the carbon intensity of the shipping industry is key. Most ships are forced to lower their speed by derating engines, which in turn means less trade and more focus on saving costs. Cost of energy in any form is very high and cost of low-carbon fuel even higher. Furthermore, it may take years before alternative fuel and onboard carbon capture technologies become available for shipping. In the meantime, we must be energy efficient in every way possible.

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Scrubbers installed in 2017 and 2018 have operated for thousands of hours, making motors, dampers, sensors, and moving parts due for overhaul or replacement. The most economical approach is to inspect, replace, or refurbish these parts. Some parts have long lead times, so arranging a pre-drydocking inspection well before the scheduled drydocking is prudent. This inspection assesses all components and structural conditions, creating a work scope for the yard, crew, suppliers, and stakeholders. PureteQ offers these inspections for any scrubber system globally, tailored to the shipowner's convenience.

ABOUT PURESERV

PureServ is a registered trademark and certified service organisation that provides service and support to all scrubbers and sensors including shipment of critical spare parts and replacement of compliance equipment such as Continuous Emission Monitoring Systems - CEMS (gas analysers) and Water Monitoring Systems (WMS).

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For more details please contact:

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Who we are:

Founded in November 2014 as a Fujairah Free zone company, it now has physical offices in Fujairah, Singapore, Las Palmas, Gibraltar, Houston, Panama and Rotterdam

We provide a full range of specialized marine services to all types of vessels serving our esteemed clients from our base offices in UAE, Singapore, Gibraltar, Las Palmas, Houston, Panama and Rotterdam. These include but not limited to Bunker and Cargo Quantity Surveys, Shipping Agency services, Technical Services and Surveys, Bunker claims, Vessel Commercial Management, Marine consultancy. All services are rendered by dedicated individual teams lead by senior master mariners, chief engineers and industry experts working within the Viking Ethics of highest levels of professionalism. We also service ancillary ports from our major hubs which include entire Middle East, Indian Subcontinent, Far East including South Korea, China and Japan, UK Cont, Mediterranean ports, Americas and Africa Continent.

Our Vision:

We believe change is the only constant, without change there is no creativity and innovation

Viking's Vision is to be the global trusted leader byproviding bespoke services for all the inspection, technical, agency and commercial needs of our clientsand partners.

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We provide a full range of specialized services...to all types of vessel serving our esteemed clients from our base offices in UAE, Singapore, Gibraltar, Las Palmas, Houston and Panama.

Bunker and Cargo Quantity Surveys

Our experienced surveyors offer impartial, independent quantity measurement inspection services for marine fuels and issue detailed reports to confirm fuel quantity and quality. These reports help clients support bunker shortage and or quality disputes.

Agency Services

The entire scope of agency (husbandry and cargo services, logistics and warehousing) are being catered to our clients and the department is well equipped with various specialist operators with both sailing and shore experience along with complete in-house logistics support.

Technical Surveys

We conduct surveys on behalf of P & I clubs and H&M insurance underwriters. Through our personal intervention as unbiased mediators we convince claimants to minimize losses through segregation, re-conditioning and repair.

Commercial Vessel Management

Viking Fujairah manages Oil and Chemical tankers (MR and Panamax) and has the resource and expertise of handling Gas carriers and Bulk Carriers for various clients.

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We can be the dedicated desk handling your bunker technical matters globally as and when needed 24/7 support service is provided to respective buyers/sellers/traders in the event of an issue such as Compatibility issues, Wrong grade of product, Sampling of product, Investigation onboard vessels, Clarification on sales terms, Clarification on product quality, Type of testing needed i.e. full test, fingerprint parameters, complex test outside ISO 8217.

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We offer a truly unique 24/7 global network of dive stations duly reviewed and audited by our hub dive stations in Singapore and UAE. We assist our clients by analysing vessel performance data with regular – in water hull inspections to ensure optimization of the hull cleaning intervals to have maximum efficiency on vessels hydrodynamic performance and fuel consumption.

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Capt. Ghulam Hussain, Deputy Director, Maritime Affairs, The Bahamas Maritime Authority

With recent data showing that the world has experienced its warmest March ever and with sea surface temperatures also at record highs, the need for us all to act has never been clearer. As a Small Island Developing State (SIDS) whose very existence is dependent on the maintenance of sea levels at their current level, The Bahamas has a deep commitment to the IMO Green House Gas (GHG) Strategy. The country is represented at the IMO by Ambassador Rolle and The BMA's Maritime Affairs team headed up by Capt Ghulam Hussain.

IMO GHG Strategy

The IMO strategy was revised in 2023, and now includes an enhanced common ambition to reach net-zero GHG emissions from international shipping by or around, i.e. close to, 2050, and also states a commitment to the uptake by the maritime sector of alternative zero and near-zero GHG fuels by 2030. The strategy outlines indicative checkpoints in both 2030 and 2040.

At the 16th Session of the Intersessional Working Group on Greenhouse Gas, ISWG 16, The Bahamas was co-sponsor to document ISWG-GHG 16/2/3 which explores the technicalities and economic elements of implementing the strategy. The Bahamas was particularly involved in the development of the Annex to the document which sets out the suggested draft regulations for a contribution system, including the establishment of an IMO Maritime (GHG) Sustainability Fund (IMSF) with the specific purpose of supporting developing countries, especially Least Developed Countries (LDC) and SIDS, with significant funding.

MEPC 81

The Bahamas was also present at MEPC 81 (the 81st Session of the Marine Environment Protection Committee), where a basket of candidate measures, comprising of a combination of both the technical element and the economic element, was being developed as set out in the 2023 IMO GHG Strategy. Various measures were proposed such as: in terms of the technical element, a goal-based marine fuel standard regulating the phased reduction of GHG intensity (in other words a GHG Fuel Standard); and for the economic element, posing a levy against GHG emissions (a Universal Mandatory GHG Levy) and a combination of placing a tariff on ships operating on fossil fuels and rebating revenues to ships operating on zero-emission fuels (feebate). It is hoped that through a combination of incentives and disincentives, it will be possible to speed up the transitional process towards greener fuels.

MEPC 81 also approved new guidance for the temporary storage of treated sewage and grey water in ballast tanks as well examining how the impact of shipping's Black Carbon emissions on the Arctic could be reduced in the future.

As one of the world's leading ship registries as well as a SIDS, The Bahamas is in a strong position to promote the needs of LDCs and similarly situated island states on the global stage. It will continue to proactively engage in developments leading to meeting the benchmarks agreed upon by the revised Strategy of 2023.

Protecting our oceans

Although The Bahamas is primarily involved in the GHG strategy, it is also keen to ensure that the marine environment is also protected. The pristine waters surrounding the country's many cays and islands are renowned throughout the world and attract visitors from all five continents. The Bahamas is therefore a supporter of a number of organisations working to preserve our oceans and marine life including NAMEPA (North American Marine Environment Protection Association) which works with stakeholders including industry, governments and educational establishments to raise awareness among the public about the importance of protecting our oceans, and Eyesea, a non-profit organisation which is mapping marine pollution in order to protect the ocean.

The importance of the Greek shipowners

Of course, making up 21% of the world deadweight capacity, the Greek maritime sector will be playing a vital role in the sustainability of the industry as we move towards 2050. The Union of Greek Shipowners has led a number of initiatives that are designed to ensure a sustainable future for the shipping sector whilst simultaneously protecting the marine environment and HELMEPA (the Hellenic Marine Environment Protection Association) has been encouraging the industry, from ship owner to seafarer, to acquire environmental consciousness for more than four decades.

The Bahamas remains keen to support its Greek clients as they make challenging decisions about the future of their fleet. Many Greek ship owners seem set to opt for a hybrid energy model incorporating a combination of new and current technology. There is a feeling that the infrastructure from the shipyards, engine makers nor fuel suppliers is not yet in place for any one new fuel to take precedence. The Bahamas will provide assistance throughout this period of change while crews, owners and managers alike adjust to alternative energy sources. Whether searching for personnel training or ensuring compliance with regulatory requirements, we will be with our clients every step of the way as they move towards to 2050 IMO GHG deadline.



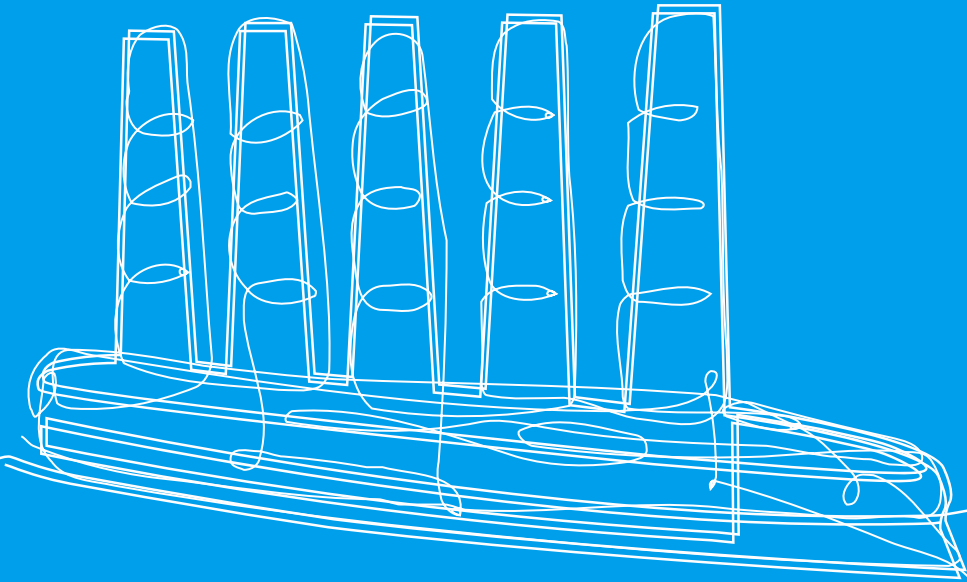
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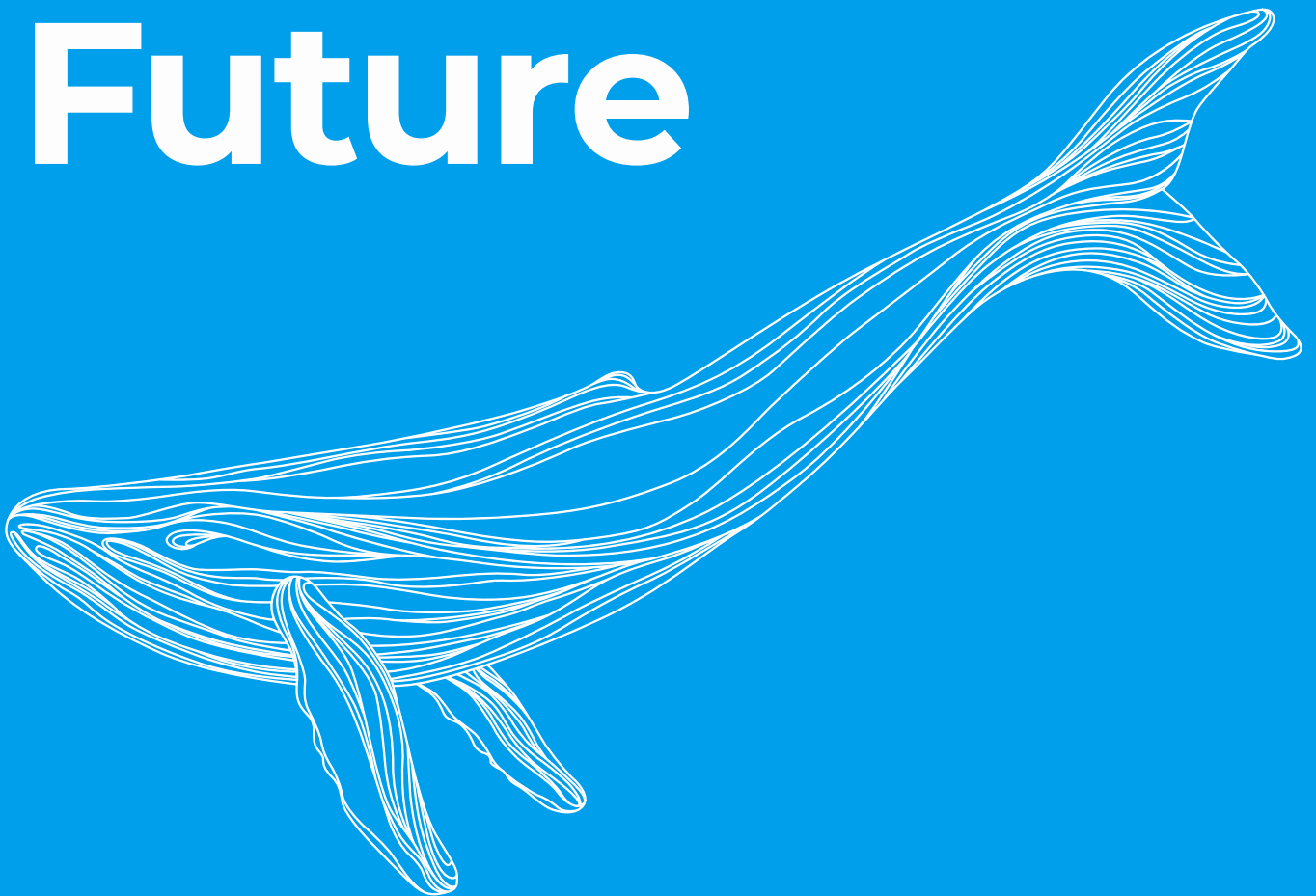
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Fast forward 47 years and the Flotta Oil Terminal continues to see tanker uplifts of North Sea product leaving Scapa Flow, the arrival of semi-submersible rigs and regular ship to ship transfer operations of both crude oil and gas, the monitoring of Orkney waters continues to be an integral element of the Harbour Authority's daily activity.

The Marine Environmental Unit (MEU), based at the Harbour Authority building in Scapa, has been monitoring the marine environment of Scapa Flow and the wider Orkney island archipelago since the Authority's inception in 1974, when the unit was set up in response to an Environmental Impact Assessment that was carried out prior to the development of the Flotta Oil Terminal.

Head of the MEU is Dr Jenni Kakkonen who, with her team of technicians, conducts a range of monitoring programmes in the Orkney waters. The sandy beach monitoring programme includes 13 sites around Scapa Flow with the rocky shore monitoring programme covering 21 sites across Orkney. As part of her PhD marine biologist Jenni analysed data from the sandy beach sites between 1974 to 2016.

The Orkney Islands Council ballast Water Management Policy was approved by the council in December 2013 and contains 2 environmental programmes;

- The Ballast Water Monitoring Programme
- The marine non-native species monitoring programme.

Since then, when the first ballast water sampling event was carried out on a vessel moored in Scapa Flow, the MEU has gained several years of experience in ballast water sample collection and analysis. From 2013, when a comprehensive baseline survey of the Scapa Flow harbour area was conducted, data has been collected and reported on with a follow on of an annual marine and brackish water non-native species monitoring.

We are proud of our marine heritage and environment and take the stewardship of our waters very seriously, something that is shown by being the only UK port that has an in house marine environmental team headed by a marine biologist.

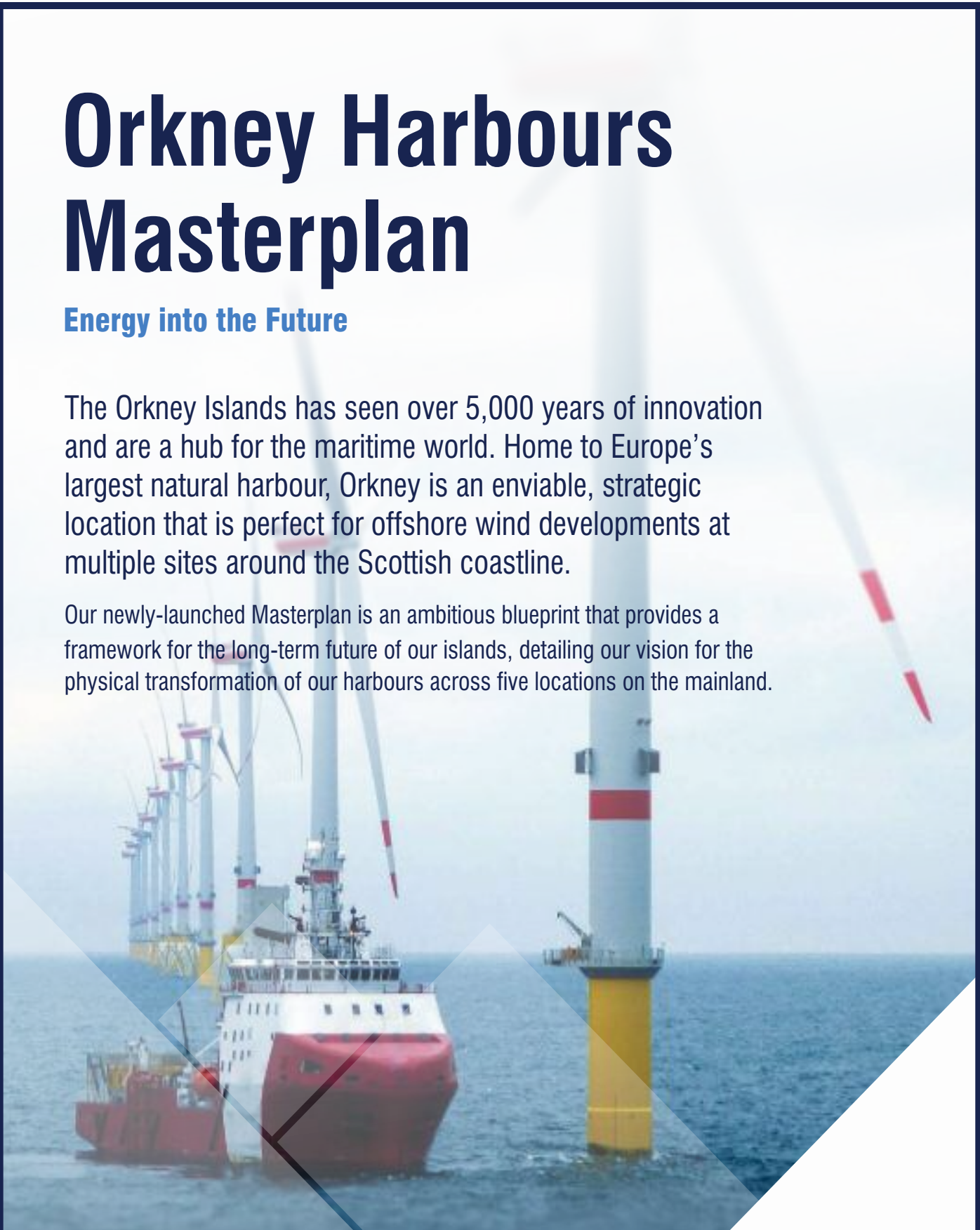


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ISLE OF MAN SHIP REGISTRY	13	QUINN OIL	27
KROHNE	10 & 11	SIKA NEDERLAND B.V.	16
LONDON INTERNATIONAL SHIPPING WEEK	33	SMM	8 & 24
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MIKO MARINE	41	THE MARSHALL ISLANDS REGISTRY	22
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