



# Posidonia today

OFFICIAL DAILY NEWS

## Can regulation change the world?

BY NICK SAVVIDES



The effectiveness of regulation in the maritime sector has been called into question with the finger pointed squarely at the failure of enforcement regimes to implement new regulations.

Speaking to Posidonia Today after the prestigious Capital Link conference, Martin Crawford-Brunt, the CEO at maritime consultancy Lookout Maritime, explained that regulations are becoming increasingly complex and difficult to decipher, even for those tasked with enforcing the new rules.

"From 1 January 2025, anyone burning conventional fuels will be paying an additional \$70 per tonne for all FuelEU related voyages," said Crawford-Brunt, who, talking more broadly about regulation added, "With the level of

complexity, I'd question its impact, and how will it be driving change? What you need is a blend of market forces and regulation to solve the decarbonisation challenge," said Crawford-Brunt.

**Regulation is changing and it requires a different response from the traditional "compliance at minimum cost" approach.**

However, the complex rule changes "could defy 'commercial gravity' because it incentivises people to find workarounds," claimed Crawford-Brunt.

■ *Continues on page 3*

## East Med is a shipping powerhouse

BY GARY HOWARD

As Greek and Cypriot shipping move from strength to strength, the combination of ship management and ship owning experience makes the Eastern Mediterranean extremely important to global shipping, Atef Abhou Merhi, managing director of

Cyprus-based Pelagic Partners, told Posidonia Today.

With three funds and combined assets under management (AUM) of around \$400m, Pelagic Partners has advanced in-step with the shipping market in Cyprus.

■ *Continues on page 9*

## Deglobalisation – a major shipping threat

BY NICK SAVVIDES

One of the major threats to shipping was identified by John Coustas, the president and CEO of ship owner Danaos Corporation, who said that deglobalisation is the major threat to shipping today.

Speaking at Posidonia, Coustas said that globalised trade is better for the world's population because it reduces costs, adding that container shipping was a disruptive force.

"The biggest danger to shipping is deglobalisation, protectionism is a major challenge. Deglobalisation and protectionism of people and industry. Globalisation brings the world closer and, in this respect, integrates markets in a much better way and means the world works as one."

According to Coustas, the West, by which he means mainly Europe and the US, offers some optimism because they do not have the workforce to substitute Chinese production.

"Immigration is the only way for the west to maintain its workforce," said Coustas.

Sitting on the same panel as Coustas, Hing Chao, executive chairman of Wah Kwong Maritime Transport Holdings, pointed out that the world is no longer bi-polar, meaning that two major controlling powers had dominated world politics and economics in the past.

■ *Continues on page 5*



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# Naftomar, Hanwha Ocean and Bureau Veritas in Very Large Ammonia Carrier design development

BY GARY HOWARD

**Key stakeholders met at Posidonia yesterday as *Naftomar* looks to be a pioneer in the green ammonia space, engaging in newly-developing supply and value chains for low carbon fuels.**

**T**he project will work to help ensure a modern VLAC design, to be engaged in the trade of green ammonia, can be safely built to operate with both LPG and ammonia as fuel. The project will use the current Bureau Veritas rules for ammonia NR 671 as fuel as the basis for helping ensure safety. The focus will be on global safety aspects but specifically including: the ammonia fuel supply system, leak detection, ammonia fuel containment and ammonia bunkering including hazard identification (HAZID) workshops.

Vassilios Dimoulas, Bureau Veritas Technology and Innovation Director said that this is an important project to work with the owner and shipyard to provide a safe pathway to enable a ship designed to carry ammonia, to run on ammonia as fuel.



"The challenges are specific to ammonia but the process of using a risk based approach and alternative design concepts are ones proven with our decades of work in the seaborne trade in LNG and LNG as fuel – but, we must emphasize, the challenges of ammonia are very different to those of LNG," said Dimoulas.

Using the Bureau Veritas ammonia rules is critical given that international regulatory requirements for ammonia as a fuel are still in development.

In November 2023, Naftomar Shipping & Trading confirmed an order at Hanwha Ocean for four 93,000 cbm VLACs for delivery starting in 2026.

Continued from page 1

## Can regulation change the world?

He further pointed out that even comparatively simple regulations are challenging to implement. "Ending the practice of "sail fast to wait" by slowing ships down to reach the port at an optimal time while ensuring a buffer for the terminal, is so simple a five-year-old will get it immediately.

"However, we don't seem to have the appetite or willingness to implement this practice which would reduce operational emissions by 10-15%." Perhaps slow steaming could be considered one workaround. George Procopiou, founder of Dynacom Tankers, told the Capital Link audience: "I mentioned that seven years ago, but that's why I said that is a great policy. If seven years ago they said that we reduce speeds by two knots we would have saved millions of tonnes of CO2 emissions over these years and our friends from Scandinavia would have a better market for their ships."

Andrian Dacy, MD and group head global transportation group JP Morgan Asset Management, and on the same panel as Procopiou, believes: "The industry needs some ways to group together to have a dialogue with regulators. I think some goals, while they're great and aspirational, may be difficult to achieve if we don't have that dialogue."

Even so, Procopiou argues that there is "a great hypocrisy in the world regarding emissions and the way to go." He believes that shipping should be applauded for its efficiency compared to other industries.

Crawford-Brunt, however, believes: "The commercial side of the business needs to have greater awareness and understanding of the new trading and market elements that EU ETS and FuelEU introduce, beyond avoiding cost surprises, to the opportunities they present to position oneself favourably."



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## Deglobalisation – a major shipping threat

Instead, we live in a “multi-polar world,” which is complex and very challenging and has delivered many so-called black-swan events.

Harry Vafias, founder of Stealth Gas, said that wars had proved to be positive for shipping although he emphasised, he did not like war.

This decade had started off badly said another panel member, Nikos Tsakos, who pointed to Covid, Ukraine and the Gaza conflict as disruptive events.

Although Chao pointed out that after a series of black swan events they cease to be black swan occurrences.

Meanwhile, Coustas also took aim at the green transition, claiming: “No-one is thinking about who pays the bill.”

He said there has been no significant premium from shippers who are the ones that are supposed to be driving the transition, he said.



## KR awards AIPs in ammonia and smart-ship technology

BY PAUL BARTLETT

**The Korean Register (KR) has awarded approval in principle (AiP) for an ammonia-fuelled pure car and truck carrier (PCTC) to HD Hyundai Heavy Industries in collaboration with Hyundai Glovis and G-Marine Service.**

**T**he HD HHI-designed ship will have the company’s membrane-type AICON fuel containment system, specially designed to handle the toxicity and corrosive properties of ammonia. KR verified the suitability of the system based on classification rules, and domestic and international regulations. Hyundai Glovis and G-Marine Service assisted in the risk assessment process.

KR’s Head of Plan Approval Yeon Kyujin, said: “The AiP has laid an important foundation for the commercialisation of ammonia-fuelled car carrier ship technology. Based on this, KR will work to support not only ammonia fuel propulsion technologies, but also decarbonisation technologies for our customers.”

Separately, the classification society has signed a Memorandum of Understanding with HD Hyundai to collaborate on a pilot project involving a cloud-based smart ship solution, ISS 2.0. Parties involved include HD HHI, HD Korea Shipbuilding & Offshore Engineering, HD Hyundai Marine Solution, and Sinokor Merchant Marine. KR will undertake technical reviews based on class rules and relevant regulations.



**The system has a range of innovative features. They include optimal route guidance, crew task support, and an accident video analysis capability.**

Jeon Seunggho, HD HHI’s Senior Executive Vice President, said: “HD Hyundai is striving to secure user-centred digital solution technology. The next-generation smart ship solution developed this time allows continuous remote onshore software management and updates to new solutions, even after delivery to a ship. We will continue to enhance digital ship

development by upgrading and adding cloud-based AI operation guide functions to make it easier for crews to operate equipment.”

KR’s Chairman and CEO, Lee Hyungchul, said: “As digitalisation and the integration of smart technologies become increasingly important in the shipbuilding industry, we will make the most of our accumulated technological capabilities to support this collaborative project ... We will continue to enhance digital ship development by upgrading and adding cloud-based AI operation guide functions to make it easier for crews to operate equipment.”



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# Tankerska makes digital leap forward with Metis and Kongsberg Digital

BY GARY HOWARD

**A collaboration between Metis, Kongsberg Digital, and Tankerska plovodba has advanced the Croatian owner's strategy of using real-time analytics to enhance fleet efficiency and reduce ship emissions.**

**T**ankerska's 49,990 dwt ship Vukovar has been installed with an integrated Metis-Kongsberg package. The solution imports data acquired through Kongsberg Digital's vessel-to-cloud infrastructure Vessel Insight into the advanced vessel and fleet performance analytics platform developed by Metis.

Vessel Insight captures data from shipboard control systems and sensors, translating it into clear, usable sets. With an edge computer on the ship, data is aggregated, compressed and cached, then uploaded to a secure location in the cloud. Once accessed by the Metis platform, it can be analysed for machinery and hull performance, ship emissions, or any other parameter set by the owner. Information is presented to the user via live dashboards and performance updates.

For Vukovar, the Metis platform offers real-time monitoring of the ship's machinery and operational status, with analytics covering fuel oil consumption, main engine and diesel generators, operational profile and performance, and electrical power utilisation.

Mario Pavić, CEO Tankerska, said: "This integrated solution is both state-of-the-art and straightforward to apply, while the Metis-Kongsberg combination of expertise and experience has met our support needs at every step of the project."

Panos Theodossopoulos, CEO, Metis, said: "The collaborative nature of the project is reflected in the owner's requirements for scheduled technical and noon reports, while the IMO's Carbon Intensity Indicator (CII) scheme is also included in the analytics. This project also brought an opportunity for Metis to offer enhanced voyage planning, with accurate weather predictions used to optimise fuel oil consumption, ETA and carbon intensity expectations."

"This collaboration enhances Tankerska plovodba's digital fleet management capabilities and sets a standard for utilising real-time data to support sustainable operations. Leveraging data from the vessel's sensors and systems is important in running their operations efficiently and effectively," said Kim Evanger, Director of Ecosystem P&A at Kongsberg Digital.

## ABS 2024 Outlook highlights active shift in fleet composition toward more sustainable fuel alternatives



■ According to the latest ABS research, geopolitical instability, scalability of fuel production and retrofits to existing vessels are key factors impacting the shipping industry's journey to net zero by 2050.

The sixth in an annual series, the 2024 Outlook, Beyond the Horizon, Carbon Neutral Fuel Pathways and Transformational Technologies, investigates carbon-neutral fuel pathways and transformative technologies. It also features an update of ABS' long-term energy forecast that explores the constraints and opportunities in the evolving global trade dynamics that will shape the future of shipping.

According to Christopher J. Wiernicki, ABS Chairman and CEO: "The 2024 outlook delivers unprecedented visibility into the 'ecosystem' of shipping underscoring the

collaborative efforts required to retrofit existing fleets and to enhance the capacity of shipyards for new, greener vessels to deliver the scale and pace of change that we will need.

"As we look to the future, achieving the industry's commitment to a sustainable transformation will require continued diligence, innovation and global cooperation to effectively overcome the technical and economic challenges highlighted in this report."

The report highlights an active shift in the composition of the global fleet toward more sustainable energy sources, with about 50 percent of the current orderbook

(in gross tonnage), featuring dual-fuel engines and a shift to a more diversified set of fuels, particularly LNG, methanol and ammonia, in the orderbook.

**A copy of the 2024 ABS Outlook, Beyond the Horizon, Carbon Neutral Fuel Pathways and Transformational Technologies is available for download from: [www.eagle.org/2024outlook](http://www.eagle.org/2024outlook)**





# Charting Transition to Zero-Emission

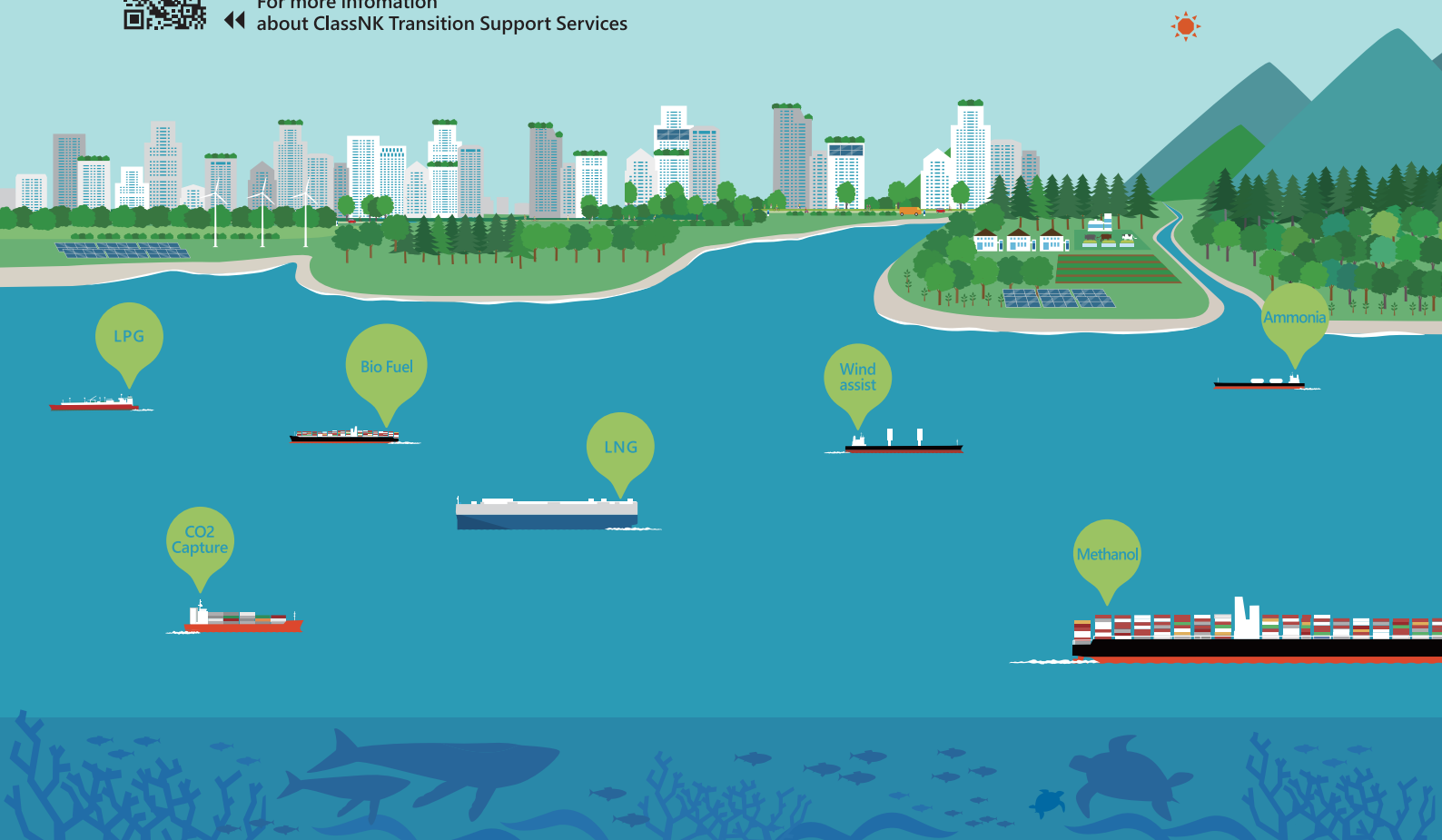
Revised IMO targets to reduce GHG emissions and the EU's expanded climate policy package are driving increasingly stringent regulations for shipping. In the meantime, the infrastructure for supplying zero-emission fuels is still under development. In the immediate term, shipping stakeholders seeking to make progress towards zero-emission need to select GHG reduction measures based on their circumstances and the specifics of their individual vessels.

To support its clients' ongoing efforts to reduce GHG emissions, ClassNK is extending its "ClassNK Transition Support Services." Based on a holistic assessment of customer needs and implementation strategies to achieve optimal solutions, the expanded service focuses on three types of GHG emissions reduction measures: the introduction of alternative fuels for ships; energy efficiency improvement technologies; and the use of onboard CCS.

ClassNK is committed to making a full contribution to charting a course towards zero-emission for our clients and society.



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■ Continued from page 1

## East Med is a shipping powerhouse

"The work that has been done in Cyprus, whether it's from the Deputy Shipping Ministry, or the Cyprus Shipping Chamber, everything is really pioneering and pushing the name of Cyprus," Atef Abhou Merhi, managing director of Cyprus-based Pelagic Partners told Posidonia Today.

Pelagic Partners has invested in around 30 vessels since its foundation, and currently has ships across the dry bulk, offshore, tanker and offshore wind sectors.

Under its First Fund and Yield Fund, Pelagic Partners has exposure to five product tankers and three bulk carriers. With such a strong market for product tankers, Abhou Merhi said it was natural to consider disposing of the assets, but after acquiring the ships at a low value, they are in no hurry to sell.

"One of the tankers is on a long-term time charter with International Seaways and others are trading between the Norden and Hafnia pools. So, we

have a very good, diversified exposure on how we are dealing with the tankers."

Abhou Merhi said the company had also timed the market right in the offshore market, with exposure to nine PSVs through its investments in Golden Energy Offshore and Borealis Maritime.

"We cannot complain about our PSV exposure, it has been perfect timing and the fundamentals have been very good," said Abhou Merhi.



In offshore wind, the company's order for 2+2+2 CSOVs will see the first ship delivered by Cochin Shipyard in a year's time, and the second a few months later.

"We're having discussions now with the yard to extend the option period for the for the vessels. We did not raise any money for the CSOVs, the two firm vessels are mainly financed by the founders of Pelagic. Once we have employment on those two vessels and we have good visibility on cash flow, then we can go ahead and increase the commitment. We don't want just run for size for the sake of it," said Abhou Merhi.

The next event for Pelagic Partners is the imminent publication of its first ESG report, an exercise Abhou Merhi said will help benchmark its current performance against ESG criteria and identify any areas for improvement. "We will have a lot of data on what our stakeholders require us to do going forward, and it's not just investors: employees, ship managers, crew on board, everybody wants to know this information and have expectations on progress to be made on this front," said Abhou Merhi.



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# Finding and retaining qualified crew is an ongoing concern

BY JOHN CARR

## Posidonia Today talks to *John Cotzias, President of Hellenic Shipbrokers Association & co-founder of Xclusiv Shipbrokers Inc*

**S**hipping continues to face great challenges. How is the industry, and particularly the Greek sector, facing them?

Indeed, the shipping industry is navigating a complex sea of several significant challenges, including economic instability, regulatory changes, environmental concerns, and technological advancements. The global economy is experiencing fluctuations due to factors like inflation, geopolitical tensions, and changes in trade policies. This unpredictability affects shipping demand and freight rates.

Over the years, and in particular the days and year to come, he International Maritime Organization (IMO) is tightening regulations to reduce the industry's environmental footprint, with stricter limits on air emission, cleaner fuels and stricter ballast water management.

Greek shipping companies have shown desire to comply and over the past years have invested in cleaner technologies like scrubbers and were some of the early adopters of dual fueled LNG (liquefied natural gas) propulsion to meet these standards and reduce carbon footprint.

At the same time the industry has been embracing digital technologies like AI and automation which is crucial for efficiency and optimization. This includes the adoption of digital platforms for fleet management, real-time tracking, and the use of AI for predictive maintenance and optimization of shipping routes. Greece is seeing investments in port infrastructure and digitalization initiatives to streamline operations and improve data management.

Recent ongoing geopolitical tensions, trade wars and political instability which disrupts trade routes and at the same time increase operational costs is a serious challenge, but we feel that the Greek shipping industry, with its vast experience and geographically diverse fleet, is well-positioned to adapt to shifting trade patterns.

Rising costs, due to inflation and market forces, which include fuel prices to new

ship builds, operational expenses are on the rise. Greek owners are known for their cost-conscious approach, but they also need to balance this with investments in new technologies and sustainability measures.

Many Greek shipowners are modernizing their fleets to improve fuel efficiency and reduce emissions. This includes retrofitting existing vessels with new technologies and ordering new ships designed with advanced, environmentally-friendly features.

New technologies, new automations, require more skilled labour both on ships and ashore. Finding and retaining qualified crew is an ongoing concern.

Greece has a long maritime tradition, but competition for skilled seafarers is tough and will surely become fierce in the future. Greek shipping companies are focusing on improving crew welfare and training programs to attract and retain talent.

Despite these challenges, the Greek shipping sector has a history of resilience and innovation. By embracing new technologies, prioritizing sustainability, and focusing on its human resources, Greece is well-positioned to navigate these rough waters and remain a leader in global shipping. Greek shipowners are known for their strategic acumen and resilience.

They are navigating economic uncertainties by diversifying their fleets, entering new markets, and leveraging their experience in managing cyclical downturns in the shipping market. Collaborations and partnerships with technological firms, research institutions, and other maritime stakeholders are being pursued to stay ahead in innovation and regulatory compliance.

■ Can you comment on the Greek orderbook currently standing at some 500 despite the big investment involved?

China is first in the newbuilding orderbook, with 544 orders, followed by the Greeks with 525 orders and in third place is the Japanese with 435. The investments of Greece in the current order book for the 4 main categories amount to approximately \$ 41 billion.

More specifically, in the bulk carrier sector, Greece has 167 orders (14% of

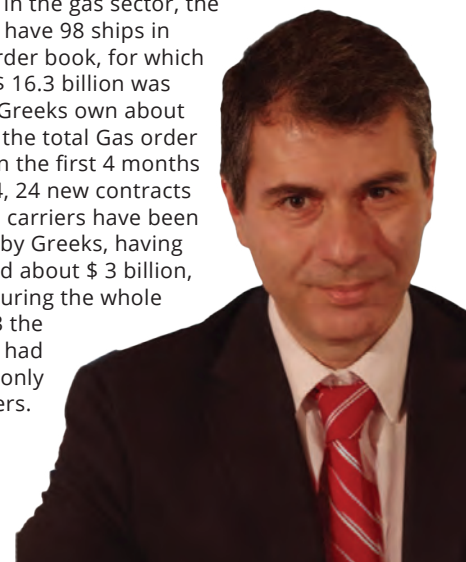
the total Bulk Carrier orderbook), having invested approximately \$6 billion. The top preference of Greek shipowners is the Kamsarmax sector with 87 orders (estimated at approximately \$ 3.1 billion), followed by the Ultramax sector with 49 orders (for which a total of approximately \$ 1.6 billion has been invested).

During the first 4 months of 2024, the Greeks have invested approximately \$ 545 million for 15 Bulk Carriers.

Further to that, Greece is behind 222 tanker orders, holding about 30% of total tanker orders, with their investments reaching \$15.6 billion. The main preference of Greeks is the Aframax sector, with 90 orders, for which a total of about \$ 6 billion has been invested, followed by the Suezmax sector with 62 orders, whose investments reach approximately \$ 5.5 billion. From January to April 2024, 37 orders have been placed by Greeks with a total value of about \$3 billion.

In the Container sector, Greeks are behind 38 orders, having invested about \$2.6 billion, with most of them having entered during 2022. Greeks hold a fairly small percentage of the total container order book, just 5%, which is the smallest compared to all other sectors. As for the first four months of 2024, Greeks have placed just 4 orders.

Finally, in the gas sector, the Greeks have 98 ships in their order book, for which about \$ 16.3 billion was spent. Greeks own about 17% of the total Gas order book. In the first 4 months of 2024, 24 new contracts for Gas carriers have been signed by Greeks, having invested about \$ 3 billion, while during the whole of 2023 the Greeks had placed only 35 orders.



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# Stolt Tankers expands fleet application of Shipshave's ITCH™

**S**tolt Tankers is expanding implementation of Shipshave's In-Transit Cleaning of Hulls (ITCH) solution across its fleet after seeing significant fuel savings of over 10% from initial trials of the innovative technology to boost energy efficiency, reduce its carbon footprint and cut emission costs.

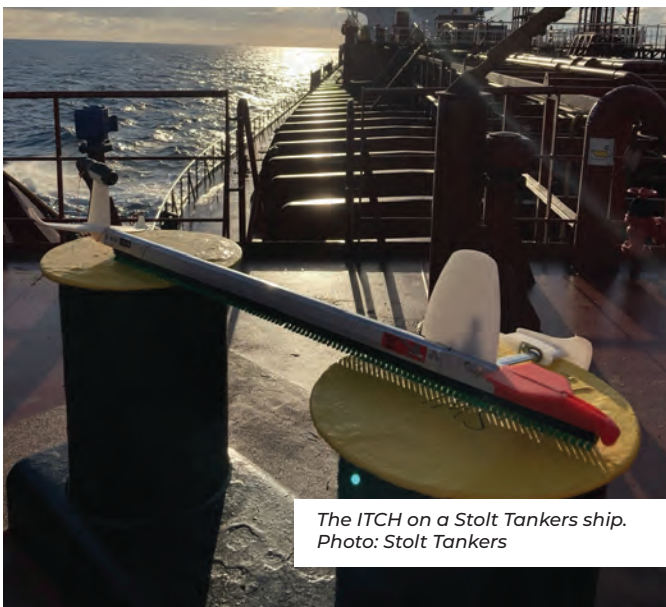
As the world's largest operator of chemical tankers, Stolt Tankers is adopting a range of technologies to enhance the sustainability of its fleet towards the goal of reducing the carbon intensity of its ship

operations by 50% by 2030, compared with a 2008 baseline, as part of wider efforts to curb marine pollution.

Among these initiatives is the ITCH that contributes to improving the energy efficiency of existing vessels amid rising fuel expenses and new regulations for shipping such as the EU Emissions Trading System (EU ETS) that will result in higher fuel-related costs due to the need to compensate for emissions.

"We see proactive hull cleaning as a simple way to achieve rapid emission cuts at relatively low cost. The ITCH has therefore become an important technology in our toolbox after piloting the system on the Stolt Acer, along with five other ships, that yielded reductions in fuel consumption exceeding 10%," says Stolt Tankers' Energy and Conservation Manager Jose Gonzalez Celis.

Consequently, the Norwegian shipowner is expanding application of the technology on its fleet by doubling its tally of units to 20, which will allow it to deploy the recently upgraded ITCH on a commensurate number of ships.



The ITCH on a Stolt Tankers ship. Photo: Stolt Tankers



Shipshave's the ITCH in action. Photo: Stolt Tankers



The crew of the Stolt Acer preparing to deploy the ITCH during trials. Photo: Stolt Tankers



# Zero-carbon fuel supply crucial to meeting GHG reduction targets, says ClassNK

BY GARY HOWARD

As *ClassNK* approaches its 50th anniversary in the Greek market, *Posidonia Today* spoke to CEO *Hiroaki Sakashita* about the longstanding relationship between the class society and Greek shipping.



**A**pproaching global regulations on greenhouse gas emissions reductions are essential and indispensable to the future of international shipping, *ClassNK* CEO *Hiroaki Sakashita* told *Posidonia Today*, but reaching the goals of the revised IMO GHG reduction strategy will take investment and determination.

The class society's analysis of the revised IMO strategy highlighted the development of supply capacity of carbon-free fuels as the most crucial issue in meeting its targets. "Huge investment shall be made in this sector.

However, for the time being, we cannot expect sufficient supply of carbon-free fuel," said *Sakashita*. "Thus, I assume that we have to utilise every possible measure to reduce GHG emission for the next decade.

The measures may include utilisation of biofuels such as bio-methanol and bio-diesel, energy saving

devices including wind-assisted propulsion, and carbon capture and storage."

With a daunting array of regulations governing shipping, and a range of technologies both on the market and under development to help meet regulatory targets, *ClassNK* developed its comprehensive transition support services to assist shipowners and operators on their decarbonisation journey.

As a part of this service, *ClassNK* published its *ClassNK Alternative Fuel Insight* to support future fuel selection, outlining the main factors to consider with each fuel type, their prominence in the orderbook, and forecasts of their performance under global and regional regulations.

While there are many variables that impact the commercial decision to invest in a particular fuel such as carbon costs, fuel availability and fuel pricing, it is important to model these factors and give shipowners the best decision support possible, said *Sakashita*.

The publication also serves to highlight *Sakashita's* view on alternative fuel availability. Its graphs on green and blue fuel production projects for methanol, ammonia, and hydrogen show that most remain in the concept and feasibility

study phase, with few yet to reach the more advanced final investment decision, construction or operational stages.

With around 1,000 Greek vessels under class, Japan's *ClassNK* is the leading classification society for Greek owners by vessel number, and its roots in Greece reach back to 1975 when its Piraeus office opened. The office now has 21 staff and handles around 600 vessel surveys per year.

"It is a great honor to be chosen in Greece, one of the world's leading maritime countries, and we believe this reflects the high evaluation of *ClassNK's* services," said *Sakashita*.

While it holds a strong position in the Greek market, *Sakashita* was aware of how close other classification societies were to *ClassNK's* market share, a factor which drives a focus on improvement. "Enhancing service in Greece is of utmost importance to us, and we keep offering various functions, not only classification surveys and audits, but also daily technical support, providing information, and support for training and education and more.

"I expect that the role of classification societies will expand along with business transformation in maritime sector. *ClassNK* is now expanding its services beyond conventional class services with the slogan "Charting the future". Charting the future together with partners is my biggest challenge," said *Sakashita*.





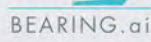
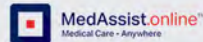
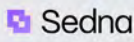
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# Armada Technologies secures \$3.2 million in seed funding for 2nd generation air lubrication system

Armada's energy-efficient, compressor-less system helps shipowners reduce ship's drag and use less fuel ultimately lowering carbon emissions.



**A**rmada Technologies (Armada) announced the successful close of its seed funding round, raising a total of \$3.2 million. This includes contributions from both strategic partners and traditional financial investors to advance eco-friendly maritime solutions to support shipowners in achieving their decarbonization objectives.

Cool Company Management Ltd. (CoolCo), a strategic partner within the LNG space, is to part-fund Armada equipment that will be installed on its vessels with this seed round. Ecochlor, Inc. continues to provide investment and technical support to the company as its Growth Partner. Future Planet Capital, through its Blue Ocean Fund, and Founders Factory, through the Blue Action Accelerator, are also joining the round, with both investors focused on decarbonization within the broader maritime and ocean space. Armada is also pleased to receive continued support from the Oxford entrepreneurial network, having Oxford Seed Fund participate in the round.

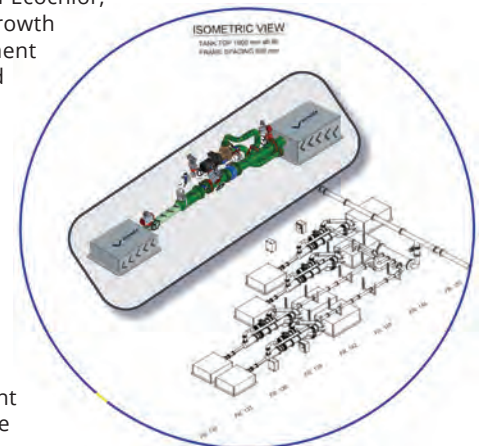
This funding round marks a pivotal moment for Armada, underlining the industry's confidence in the company's second generation, Passive Air Lubrication System (PALS). PALS represents a major innovation in hull air lubrication technology by using a venturi system, partnered with the vessel's forward motion, naturally forming an optimal bubble spread that ensures thorough lubrication of the hull without using compressors. Armada's PALS is tailored to adapt bubble production precisely to a ship's type and operating conditions — be it speed, depth, or weather — offering a continuous bubble layer, even with deeper draft vessels and lower speeds.

Johann van der Merwe, CFO of Armada said: "This capital will be utilized to enhance operations, grow our team, and bolster project execution capabilities, thereby accelerating the adoption of cleaner, more efficient technologies within the maritime industry."

Alex Routledge, CEO of Armada, expressed his enthusiasm, stating: "This funding is a strong validation of our vision, the quality of our technology and importantly, our team. With the support of our investors, we're set to increase options for owners searching for a more effective and energy-efficient technology for their ships."

Richard Tyrrell, CEO of CoolCo, highlighted the technology's potential to boost operational efficiency and promote the clean maritime agenda crucial for achieving maritime decarbonization objectives. Mr. Tyrrell added: "We are proud to collaborate in the development of this exciting technology and help Armada deliver on its potential."

Andrew Marshall, CEO of Ecochlor, Inc., emphasized their growth partnership and investment with Armada as a shared dedication to offering sustainable maritime technologies to the market whilst also aiding shipowners in reducing carbon emissions. Ecochlor serves as Armada's global sales team, supporting the introduction of PALS and other energy-efficient solutions to the maritime industry.



## PPG confirms 40% reduction in coating overspray

■ PPG has announced that EDR Antwerp shipyard achieved a 40 per cent reduction in overspray with the electrostatic application of PPG SIGMAGLIDE® 2390 fouling release coating. The project was carried out on the underwater hull of the RoRo passenger vessel Stena Transporter from Stena Line and is the second successful electrostatic application project for EDR.

“Ship owners and shipyards are being encouraged to look for innovative solutions in order to comply with stricter environmental regulations and meet their sustainability goals,” said Sijmen Visser, PPG sales director, Marine EMEA, Protective and Marine Coatings. “We see an increased demand not only for biocide-free and copper-free hull coatings to reduce vessel emissions, but also for more sustainable application procedures by yards. We strongly believe in the sustainable concept of electrostatic application and are promoting the concept in shipyards in Europe, Singapore and China.”



## Retrofitting needed for decarb target

■ Greek vessels and installations need a lot of re-retrofitting to be able to win what is turning out to be a race to decarbonize, says Eleni Polychronopoulou, president of Hemexpo, the Association of Marine Equipment Manufacturers.

Speaking to John Carr from Posidonia Today, she said: “Whatever it takes, we’re here to support Greek shipping,”

Erma First, her Perama-based company, specialises in ballast water treatment systems, carbon capture, energy-saving devices for hull and propeller, and cold ironing.

She added that “obstacles remain, including sluggish official red tape and obsolete rules which advancing technology has left behind.”



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# Ammonia the focus of a series of LR deals

BY PAUL BARTLETT

**Lloyd's Register has revealed a series of deals in which it has approved ships designed both to carry ammonia and to use the chemical as fuel.**

**T**he classification society has awarded approval in principle (AiP) to HD Hyundai Mipo & HD KSOE for a 1,300TEU feeder ship to be equipped with an Amogy Powerpack designed to convert ammonia to hydrogen for the ship's fuel cell.

The ship design is the result of a joint development project aiming to assess the feasibility and design of a vessel using fuel cell electric propulsion through a combination of Amogy's ammonia-cracking technology and HD KSOE's Electric Propulsion system. The design incorporates an 8,000kW Amogy system for both main and auxiliary propulsion.

LR has also awarded an AiP for the largest pure car and truck carrier (PCTC) design yet – a 12,800 CEU vessel that will use only marginally more fuel than one of the largest 9-10,000 CEU ships today. The vessel will have an advanced ammonia fuel power system and will be capable of using both solar energy and batteries. By using green ammonia, greenhouse gas emissions can be slashed by 89%, LR said. The AiP was granted to the Marine Design & Research Institute of China (MARIC).

The classification society has also awarded an AiP to MARIC for a 360,000dwt ammonia-fuelled very large ore carrier. The dual-fuel carrier is designed for the transport of iron ore and bauxite and is suitable for trades including Brazil and West Africa.

Two Type C ammonia tanks will be installed in the wing tanks of the cargo hold area, with a fuel preparation room on deck in the same area, LR said. Bunker stations will be open type, with top cover providing protection from cargo drop. The ship will have an open loop scrubber option to reduce fuel costs as well as a series of energy saving devices.

In another deal, LR has awarded an AiP to China Shipping Development Company (CSDC) for a Newcastlemax bulk carrier with a carbon capture system (CCS). The 210,000dwt bulker has been developed jointly by CSDC, Sinotech Energy, and LR. Carbon dioxide emissions from the ship's exhaust gas will be captured using an amine solution which will then be regenerated to release the captured gas for compression, storage, and subsequent utilisation or disposal.

Meanwhile the classification society has signed a joint development project with Guangzhou Shipyard International for the design of a very large ammonia carrier. The largest such vessel yet will have a capacity of 100,000m3 with IMO Type B tanks.



LR's Chief Executive, Nick Brown, commented: "LR is proud to work with GSI on this historic design for the world's largest ammonia carrier. As major economies look to co-fire ammonia in their coal power stations to reduce the CO2 footprint of their national energy mix, shipping will play a key role in distributing clean hydrogen-based commodities such as ammonia, thereby supporting nations to meet their Paris Agreement commitments."

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## LIST OF CONFERENCES AND SEMINARS

	Organiser	Event Title	Posidonia Venue	Time	Contact Organiser
	Royal Norwegian Embassy in Athens and Norwegian Maritime Authority	<b>Quality Flag Breakfast</b>	Ploes Floating Venue	<b>10:00-11:30</b>	ansa@sdir.no
	Hellenic Marine Environment Protection Association (HELMEPA)	<b>Shipping Resilience to Climate Change</b>	Posidonia Conference Hall	<b>10:30-14:30</b>	helvepa@helvepa.gr
	BIMCO	<b>Today's contractual solutions for your decarbonisation voyage</b>	Posidonia Seminar Room Central	<b>11:30-13:30</b>	et@bimco.org
	LALIZAS	<b>Safety is not just a product, it is an ongoing process</b>	Posidonia Seminar Room 1A - Sponsored by S&P Global Commodity Insights	<b>10:45-12:30</b>	communication@lalizas.com
	Shanghai Qiyao Environmental Technology	<b>Green fuel or CCUS? It's not a question</b>	Posidonia Seminar Room 1B	<b>10:45-12:30</b>	yaoping@ccpitmsc.org
	DNV	<b>DNV Expert Talks "Energy Efficiency - Tankers &amp; Bulkers in focus"</b>	Posidonia Seminar Room 2A	<b>10:45-12:30</b>	georgina.vranaki@dnv.com
	Danelec	<b>Leading the Way for Safe and Sustainable Maritime Strategies</b>	Posidonia Seminar Room 2B - Sponsored by UES Marine	<b>10:45-14:30</b>	info@danelec.com
	Telematic Medical Applications	<b>AI Empowered Wellbeing in Shipping</b>	Posidonia Seminar Room 1B	<b>12:45-14:30</b>	aserafeim@tma.gr
	Green-Jakobsen A/S	<b>Using data to drive human performance</b>	Posidonia Seminar Room 2A	<b>12:45-14:30</b>	m.progoulaki@green-jakobsen.com
	Japan Ship Exporters' Association (JSEA)	<b>Japan Presentation</b>	JSEA Stand 4.202	<b>13:15 - 16:00</b>	posidonia@jsea.or.jp
	CMA D. ARGOUEDELIS & CO S.A.	<b>Innovative energy &amp; digital solutions for shipping</b>	Posidonia Seminar Room 1B	<b>14:45-16:30</b>	k.georgiou@cmagreece.com
June 5th	RINA	<b>Decarbonization: An Ocean of Opportunities</b>	Posidonia Seminar Room 1A - Sponsored by S&P Global Commodity Insights	<b>14:45-16:30</b>	angeliki.Xylaki@rina.org
	CMA D. ARGOUEDELIS & CO S.A.	<b>Innovative energy &amp; digital solutions for shipping</b>	Posidonia Seminar Room 1B	<b>14:45-16:30</b>	k.georgiou@cmagreece.com
	WISTA Hellas	<b>A People-Centered Decarbonization Concept Beyond Sea Level Boundaries - In the framework of METAVASEA project</b>	Posidonia Seminar Room 2A	<b>14:45-16:30</b>	wistahellas@wista.gr
	Danica Crewing Specialists and Ocean Technologies Group	<b>Beating the talent time-bomb: Strategies for Recruiting, and Retaining Top Maritime Talent</b>	Posidonia Seminar Room 2B - Sponsored by UES Marine	<b>14:45-16:30</b>	jensen@danica-crewing.com
	Embassy of the Republic of Korea to the Hellenic Republic, IOBE (Foundation for Economic & Industrial Research)	<b>4th Korean-Hellenic Maritime Cooperation Forum</b>	Posidonia Seminar Room Central	<b>15:30-19:00</b>	wvasileiou@mofa.or.kr
	SNAME Greek Section	<b>Nuclear Energy in Maritime. A presentation of Fission and Fusion</b>	Posidonia Seminar Room 1A - Sponsored by S&P Global Commodity Insights	<b>16:45-18:30</b>	harilaos@pnpmarine.com
	Damen	<b>Navigating together towards zero emissions</b>	Posidonia Seminar Room 1B	<b>16:45-18:30</b>	events@damen.com
	Hellenic Electricity Distribution Network Operator (HEDNO S.A.)	<b>Initiatives of HEDNO to support the electrification of the maritime sector</b>	Posidonia Seminar Room 2A	<b>16:45-18:30</b>	jprousal@naval.ntua.gr melinakalampoka@yahoo.gr
	SQ Learn	<b>Navigating Vetting Inspections: How to Prepare, Perform &amp; Succeed</b>	Posidonia Seminar Room 2B - Sponsored by UES Marine	<b>16:45-18:30</b>	accountmanagers@sqlearn.gr
	ABS	<b>Hellenic Ship Safety Center: A New Era of Training</b>	Venue National Gallery - Alexandros Soutsos Museum	<b>15:00-17:00</b>	absevents@eagle.org
June 6th	Hamburg Messe und Congress	<b>SMM 2024 - Press Talk: Driving the maritime transition</b>	Posidonia Meeting Room 1	<b>10:45-12:30</b>	nele.bruns@hamburg-messe.de
	Newsfront/ Naftiliaki under the auspices of MARTECMA (Marine Technical Managers Association)	<b>Greener Shipping Summit 2024 - New Technologies and Education</b>	Posidonia Conference Hall	<b>10:30-16:00</b>	natvas@otenet.gr
	American-Hellenic Chamber of Commerce (AmChamGR)/ North American Marine Environment Protection Association (NAMEPA)/ U.S. Embassy Athens	<b>"4th Trading in U.S. Waters Seminar &amp; the Shark Tank Event "Future Trends &amp; Innovations in the Maritime Sector""</b>	Posidonia Seminar Room Central	<b>10:30-16:30</b>	"v.tseritzoglou@amcham.gr executivedirector@namepa.net Maria.Georgousi@trade.gov "
	90POE	<b>Achieving Maritime Excellence Through the Adoption of Digital Technologies.</b>	Posidonia Seminar Room 1A - Sponsored by S&P Global Commodity Insights	<b>10:45-12:30</b>	posidonia@90poe.io
	Hellenic Institute of Marine Technology (HIMT)	<b>Shipping Decarbonization</b>	Posidonia Seminar Room 1B	<b>10:45-12:30</b>	info@elint.org.gr



June 6th	Hellenic Marine Equipment Manufacturers & Exporters (HEMEXPO)	<b>SEA Europe Press Conference: The European Shipbuilding Strategy</b>	Posidonia Seminar Room 2B - Sponsored by UES Marine	<b>10:45-12:30</b>	info@hemexpo.gr
	RetroFIT55 Consortium	<b>RetroFIT55 Forum 2024</b>	Posidonia Seminar Room 2A	<b>10:45-12:30</b>	alessandro.iafrati@cnr.it vzagkas@simfwd.com
	University of Piraeus	<b>Shaping Maritime Careers: University education of the future</b>	Posidonia Seminar Room 1B	<b>12:45-14:30</b>	ilagoudis@unipi.gr
	EMICERT Ltd.	<b>Challenges and Opportunities from EU's Climate Change Policies for the Shipping Industry</b>	Posidonia Seminar Room 2A	<b>12:45-14:30</b>	e.koutsouki@emicert.com
	UES Marine	<b>The Ferry Experience, Operator</b>	Posidonia Seminar Room 2B - Sponsored by UES Marine	<b>12:45-14:30</b>	bpetersen@uesint.com
	ITA - Italian Trade Agency, Athens Office Trade Promotion Office of the Italian Embass	<b>The Digitisation Process in the Maritime Sector: The Italian Experience</b>	Posidonia Seminar Room 1A - Sponsored by S&P Global Commodity Insights	<b>14:45-16:30</b>	atene@ice.it
	MAST Maritime Services S.A.	<b>Optimizing Vessel Performance with Energy Saving Technologies</b>	Posidonia Seminar Room 1B	<b>14:45-16:30</b>	info@mastms.gr
	Learning Seaman	<b>Seafarers' Mental Health and Wellbeing</b>	Posidonia Seminar Room 2A	<b>14:45-16:30</b>	info@learningseaman.com
	Fleetwork - Everything You Need to Manage Your Fleet	<b>The Cloud Shipping ERP Era is NOW</b>	Posidonia Seminar Room 2B - Sponsored by UES Marine	<b>14:45-16:30</b>	pchytioglou@fleetwork.io
	Orca AI in cooperation with DeepSea AI	<b>AI and Connectivity: Fueling Maritime's Transformation</b>	Posidonia Seminar Room 1A - Sponsored by S&P Global Commodity Insights	<b>16:45-18:30</b>	shay.nir@orca-ai.io s.bogunovic@deepsea.ai
	Maritime Research Institute Netherlands (MARIN)	<b>Sustainable shipping is more than alternative fuels</b>	Posidonia Seminar Room 1B	<b>16:45-18:30</b>	P.M.Hooijmans@marin.nl
	FORBES GREECE	<b>Forbes List: Greece's Top Shipowners - Perspectives and Challenges</b>	Posidonia Seminar Room 2A	<b>16:45-18:30</b>	pavlaki@atticamedia.gr
June 7th	ABB Marine & Ports	<b>Maritime is Electrifying</b>	Posidonia Seminar Room 2B - Sponsored by UES Marine	<b>16:45-18:30</b>	antonis.asimakopoulos@gr.abb.com
	Young Executives & Students (YES) Forum	<b>YES to Shipping Forum 2024</b>	Posidonia Conference Hall	<b>10:30-17:00</b>	info@yes-forum.com
	ABS	<b>ABS's innovation projects</b>	Posidonia Seminar Room 1B	<b>10:45-12:30</b>	asoulioti@eagle.org
	Sustainable Blue Economy Partnership	<b>Blue Economy – The key towards Mediterranean Regional Sustainability</b>	Posidonia Seminar Room 1A - Sponsored by S&P Global Commodity Insights	<b>10:45-17:00</b>	s.dimitropoulou@gsrt.gr
	Samyoung Machinery Co., Ltd.	<b>Metal Casting innovation with sand 3D printing technology</b>	Posidonia Seminar Room 2A	<b>10:45-12:30</b>	kanghoon.lee@sym.co.kr
	UES Marine	<b>Experience Australia</b>	Posidonia Seminar Room 2B - Sponsored by UES Marine	<b>10:45-12:30</b>	bpetersen@uesint.com
	Union of Greek Shipowners	<b>UGS Press Conference</b>	Posidonia Seminar Room Central	<b>12:00-13:30</b>	posidoniapress@extrovert.gr
	Dynamic Group of Companies	<b>Anchoring Maritime Resilience: Innovative Repair Strategies, Steel Surfaces Maintenance, and Efficiency Optimization</b>	Posidonia Seminar Room 1B	<b>12:45-14:30</b>	purchasing@dynamicco.com
	Hellenic Logistics Association (EEL)	<b>Unlocking the potential from freight decarbonization: The role of zero emission transport modes</b>	Posidonia Seminar Room 2A	<b>12:45-14:30</b>	info@eel.gr; mbougioukas@eel.gr
	Hydrus Engineering	<b>LH2CRAFT Project - Safe and Efficient Marine Transportation of Liquid Hydrogen</b>	Posidonia Seminar Room 2B - Sponsored by UES Marine	<b>12:45-14:30</b>	j.vlavianos@hydrus-eng.com
	University of the Aegean, Department of Shipping Trade and Transport	<b>Blue economy and the role of multidisciplinary research in Multi-use of Space (MUSICA)</b>	Posidonia Seminar Room 1B	<b>14:45-16:30</b>	lilas@aegean.gr
	PROJECT CONNECT	<b>Enhancing Youth Employability in the Shipping Industry, from an early age</b>	Posidonia Seminar Room 2A	<b>14:45-16:30</b>	events@project-connect.gr

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# A shape of things to come?

■ Kawasaki is showcasing its new projected liquefied hydrogen carrier - the LH2 - due to come on steam around 2030.

The LH2 will be able to carry about 160,000 metric tons of liquefied hydrogen loaded at its large new terminal next to Kobe international airport.



# The UK Pavilion – open for business!

■ Accounting for 16% of global gross tonnage, the Greek market is a maritime powerhouse. The UK Pavilion invites delegates to Stand 1.221 in Hall 1 to discuss how the UK maritime enterprise can help owners and operators meet their clean maritime objectives.



## POSIDONIA 2024 SHUTTLE BUS PROGRAMME

### Route 1: Athens International Airport Metro Station - Metropolitan Expo

#### Tuesday 4 to Thursday 6 June

Roundtrips throughout the day from 10:00 to 19:30

#### Friday 7 June

Roundtrips throughout the day from 10:00 to 18:00

Note: The Shuttle Bus runs every 30 minutes

Note 2: Route 1 services Sofitel at the Airport

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### Route 2: Syntagma Square (at the main entrance of the National Garden)- Metropolitan Expo

#### Tuesday 4 to Thursday 6 June

Departures from Syntagma Square: 9:00, 09:15, 9:30, 09:45 and 10:00

Return from Metropolitan Expo: 18:50, 18:55, 19:05, 19:15, 19:20 and 19:25

#### Friday 7 June

Departures from Syntagma Square: 9:00, 09:15, 9:30, 09:45 and 10:00

Return from Metropolitan Expo: 16:25, 16:40, 16:55, 17:15, 17:20 and 17:30

### Route 3: Doukissis Plakentias Metro Station - Metropolitan Expo

#### Tuesday 4 to Thursday 6 June

Roundtrips throughout the day from 09:30 to 19:30

#### Friday 7 June

Roundtrips throughout the day from 09:30 to 17:30

Note: The Shuttle Bus runs every 30 minutes

### Route 4: Glyfada Old City Hall (on Posidonos Avenue) - Metropolitan Expo

#### Tuesday 4 to Thursday 6 June

Departures from Glyfada Old City Hall (on Posidonos Avenue): 9:00 and 10:00

Return from Metropolitan Expo: 18:45 and 19:10

#### Friday 7 June

Departures from Glyfada Old City Hall (on Posidonos Avenue): 9:00 and 10:00

Return from Metropolitan Expo: 16:45 and 17:05

## EXHIBITION OPENING HOURS

Wednesday 5 June 10:30 to 19:00

Thursday 6 June 10:30 to 19:00

Friday 7 June 10:30 to 17:00

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