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**Paolo d' Amico**  
SIRE 2.0  
is a game changer

**Sabrina Chao**  
The crucial role of seafarers  
in shipping's future

**Dimitris Fafalios**  
Shipping's progress  
in the ESG requirements

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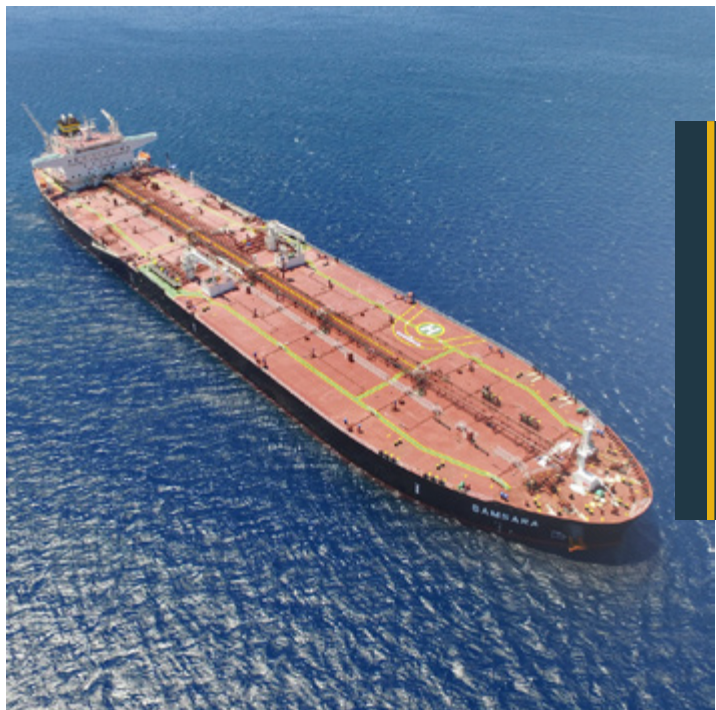


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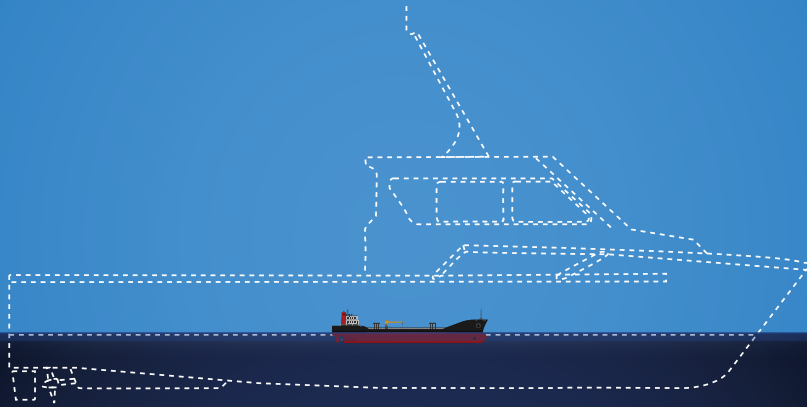


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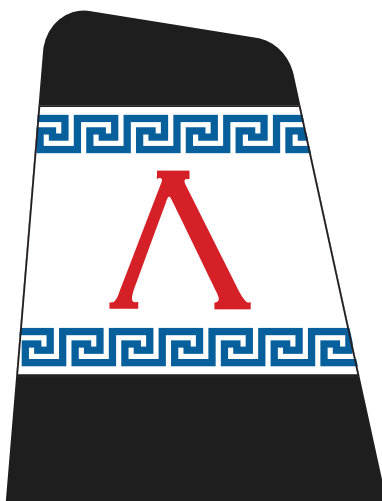
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In his interview with Naftika Chronika, the INTERTANKO Chairman discusses the prerequisites for the decarbonisation of the shipping industry, the need to attract more seafarers and the impact of the CII regulation. Mr d'Amico also refers to the tanker market outlook and the recent developments with regard to piracy.

# SIRE 2.0 IS A GAME CHANGER

Paolo d'Amico's  
interview with  
Giannis Theodoropoulos

## ① **As we gradually enter the post-pandemic era, what are your priorities as Chairman of INTERTANKO?**

As Chairman, INTERTANKO Members' priorities are also my priorities.

INTERTANKO prioritises decarbonisation, making the industry attractive for seafarers, the implementation of Russian sanctions, ESG reporting, and developing and introducing SIRE 2.0.

Regarding the current situation in Ukraine and, in particular, the imposition of sanctions on Russia, INTERTANKO is fully engaging with the G7 regulators on the oil price cap requirements to protect the interests of its members. Furthermore, to help members navigate sanctions, we have issued a series of clauses and developed due diligence questionnaires and a process template for all to use. INTERTANKO has also led the way in developing an ESG Reporting framework for the tanker industry and is now moving into the next phase of establishing more detailed industry standards for ESG. That was achieved through INTERTANKO's engagement with the regulators as the mandatory requirements for ESG and non-financial reporting began to take effect, especially here in Europe with the advent of the Corporate Sustainability Reporting Directive (CSRD).

Since the OCIMF's SIRE 2.0 project began,

INTERTANKO members have been engaged in its development and have provided invaluable input. Let's be clear, SIRE 2.0 is a game changer and focuses on the human element of the tanker crew and the operator's performance. We will also provide members with a Seafarers' Guide to SIRE 2.0 and organise awareness sessions for members to share their experiences throughout the transition phase.

## ② **Since shipping's decarbonisation is undoubtedly linked to technological developments, what initiatives will the Round Table promote to prepare seafarers for the industry's next day?**

Decarbonisation is a serious global challenge. Therefore, each INTERTANKO member is developing strategies to fit their trade. In general terms, INTERTANKO believes that ocean-going shipping will have limited access to low- and zero-carbon content fuels for the next 10 years or more. So, during this first period, the general strategy has been to improve ships' efficiency through better design, increased use of energy-saving devices, and enhanced trade logistics. New ships will be able to transition from fossil to renewable fuels when they are available on the market in sufficient quantities training seafarers properly and exchanging information about sustainable solutions is vital in this context.



In addition, shipping companies will develop training strategies depending on the choice of future energy sources. The Round Table commonly accepts all these aspects.

- ③ In recent years, seafarers have faced significant challenges, one of which is that despite their unwavering efforts, their role has not been adequately recognised by governments worldwide. With this in mind, do you think young people will be reluctant to join the maritime profession, increasing the global shortage of seafarers?**

Retention has been an issue for the industry post-pandemic, but if you look after your crew and are loyal to them, they will, in turn, reward you with their loyalty.

In the future, we must ensure we offer young seafarers a life that is fit for the role we need them to fulfil but also meets their expectations. So, we must treat them well, respect their capabilities, pay them attractive salaries, and give them access to things expected in their home life. The internet, for example, can no longer be considered a luxury but a necessity for everyone. Then, we need to offer them careers, not just 5-month employment periods. To understand what makes a career at sea attractive, we are asking seafarers their opinion in a wide-ranging questionnaire. Once we have those findings,

we can then look to address any other issues. Finally, we cannot ignore 50% of the population – we need to increase the number of women at sea.

- ④ Members of the international shipping community have criticised the metrics and implementation of the CII. What is your opinion? Do you think the CII will create a two-tier market? What feedback have you received from charterers so far?**

Efforts were made to convince governments at the IMO that the CII rating concept would be inadequate for shipping. In any case, the CII regulation is now in place and work to minimise its challenges continues. I do not see a risk for a two-tier market because every ship faces the same rating challenges.

The CII rating does not consider that the same ship operated by the same company under different trade conditions would get different ratings that may not reflect its real inbuilt and operating efficiencies. Therefore, INTERTANKO has been urging regulators to move away from rating the ship's "carbon intensity" and towards targeting the reduction of net GHG emissions.

Moreover, in addition to the CII as a short-term measure, the shipping industry also needs governments to scale up the availability of renewable energy to produce alternative fuels on a





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well-to-wake basis so that the shipping industry can achieve the IMO's long-term GHG emission reduction targets.

We are also working on contractual issues faced by INTERTANKO members when trying to incorporate a CII clause into their charter parties.

In the spirit of assisting market adoption, INTERTANKO decided not to produce its own clause and instead put its support behind the CII Clause drafted by fellow RT Association BIMCO. Nevertheless, we believe that more clarity, awareness, and cooperation are required from charterers – some of whom are openly critical of the sole industry clause trying to establish a framework on the newly introduced Owner-Time Charterer relationship within the context of CII regulations. Disagreement over the CII regulations should not be confused with criticism over the sole industry clause that is trying to make sense of them.

## 5 How are the EU sanctions impacting the tanker market?

Sanctions have created a need for information and documentation across several new areas. INTERTANKO has developed and delivered best practices to establish basic quality criteria for the tanker fleet, including two model charter party clauses tailored to tankers, due diligence questionnaires for use during cargo loading and STS operations, and a template for due diligence procedures to facilitate a standard approach across the industry.

In addition, we are present at high-level EU meetings and regularly engage with representatives from HM Treasury and the European Commission (DG FISMA and DG MOVE).

We are also present at high-level EU meetings and regularly engage with HM Treasury and European Commission (DG FISMA and DG MOVE) representatives.

## 6 Although the Indian Ocean's High-Risk Area designation was removed on 1 January 2023, regional conflicts, intensified military activity and heightened political tensions continue to pose a threat to commercial vessels operating in this geographic region. What measures does INTERTANKO recommend to its members to avoid the risk of armed piracy?

The High-Risk Area designation had served its purpose by warning about the extra precautions required in that region; therefore, it had to be removed.

That being said, the threat to seafarers in many areas worldwide continues to exist, particularly in the Gulfs of Aden, Oman, and Guinea. In addition, the spillover from the Yemen war and the tension between states in the Middle East have resulted in ships being attacked and seafarers being killed. Using drones to attack ships in the Gulf of Oman to make a political point has to end. So, working with the military and others, we have created a guide for seafarers to help them stay safe.

Sadly, the risk of kidnapping in the Gulf of Guinea is again high. INTERTANKO and its partner organisations are working closely with Nigeria and other regional governments to address this unacceptable criminal behaviour.

Only through working collaboratively with our military and civilian partners can we ensure that the world's trade can flow freely and seafarers can go about their routine work without threat to their lives.

## 7 How can you incentivise large shipping groups to join INTERTANKO?

INTERTANKO represents quality tanker owners and welcomes new members regardless of size. Our Members wish to lead and influence how the tanker industry's priorities take shape now and in the future.

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New ships will be able to transition from fossil to renewable fuels when these are available on the market in sufficient quantities; training seafarers properly and exchanging information about sustainable solutions is vital in this context.

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The BIMCO President refers to the main topics the Round Table focuses on and shares her views on how the shipping industry can improve its public image. Ms Chao also discusses the BIMCO CII clause and the initiatives shipping should undertake to reskill/upskill young talent.

# SEAFARERS AND THEIR SKILLS ARE CRUCIAL FOR THE FUTURE OF SHIPPING

Sabrina Chao,  
in discussion with  
Giannis Theodoropoulos

## ① **The Chairs of the Round Table met recently in Athens for the first physical meeting since 2019. What were the main topics discussed?**

When the Chairs of the Round Table met in Athens in February, the first physical meeting since 2019 due to the pandemic, we discussed and agreed to work together to prioritise seafarers. We unanimously agreed to emphasise the importance of our seafaring community to prevent the criminalisation of seafarers, learn lessons from the pandemic, and improve the attractiveness of seafaring careers to ensure the future availability of skilled mariners. Seafarers and their skills are crucial for the future of shipping and for a successful transition as we work towards decarbonisation.

In addition, we debated members' positions on key industry topics ranging from decarbonisation and ship recycling to eliminating marine pollution. As Round Table participants, we believe it is crucial that we work together on issues where a combined effort can achieve more than individual efforts. Other current issues requiring member coordination include piracy, MARPOL Annex VI, greenhouse gas emissions from ships, reception facilities, ballast water management, corruption and more.

## ② **How can the shipping industry improve its public image?**

I believe we can increase our collective efforts to inform the world outside of shipping about all the initiatives and work being done to decarbonise our industry. While some corners of the industry are already raising awareness, there is potential for more to be done. Some industries are further ahead when it comes to communicating their progress, whilst we still have a major task ahead of us to show the rest of the world what we are doing.

We must continue to remind and inform policy-makers, the public, consumers, and financiers of the crucial role that shipping plays in all our lives. This key message has still not landed consistently everywhere. We saw examples of this during the pandemic when seafarers were not granted key worker status by many countries. We are responsible for transporting about 90 per cent of world trade. Doing this in an increasingly sustainable manner is crucial, and informing the world outside shipping about it is very important.

At BIMCO, we have now launched three films: "Ships Make the World Go", "Seafarers Deserve Support", and "No Turning Back" with the aim of raising awareness about our industry and the challenges we face.

Much is being done on the digitalisation



agenda: driving efficiency and improving operations are important examples of the currently available ready-to-go solutions that can help cut our GHG emissions without delay. The Blue Visby Solution, which BIMCO supports, challenging the “sail fast then wait” approach and moving towards Just-In-Time arrivals, are prime examples of solutions we as an industry can adopt and support right now. Such initiatives also demonstrate to the world outside of shipping that we are committed to reducing our carbon footprint and taking already important steps towards decarbonising.

**③ Charterers have openly expressed their opposition to the BIMCO CII clause. What are your thoughts on that? How has the clause impacted the business relations between ship owners and charterers?**

When we published the CII Operations Clause for Time Charter Parties at the end of last year, the regulation had yet to come into force. The clause serves as a starting point for negotiations for owners and charterers who have different roles but must nonetheless share the task of reducing our industry's carbon emissions. This task requires both parties to be committed and collaborate, and I believe both parties are working to do that. As with all new regulations, the industry needs some time to adapt, and the CII regulation is particularly challenging as many questions still need addressing.

Our industry will no doubt be facing more regulations from the IMO and the EU, and the need for new contracts and clauses will continue to develop along with it. We will therefore continue

to develop new contracts as the industry's needs change and to review and update existing contracts.

**④ What initiatives should the shipping industry undertake for the reskilling/upskilling of young talent as the industry moves onward towards a greener and more digital era?**

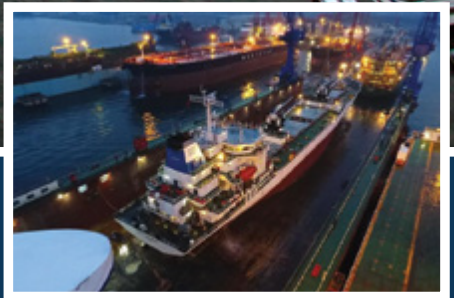
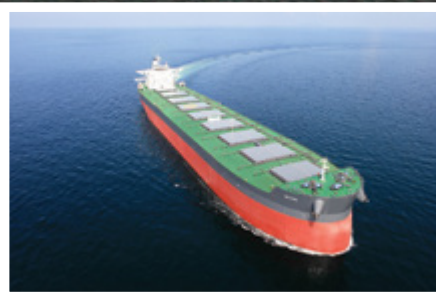
Our industry is facing increased demand for the diverse skills needed for a more sustainable and digitally-connected future. Challenges include updating skills in areas such as alternative fuels and propulsion systems, circularity, leadership, a safe working environment, and seafarer welfare. The Seafarer Workforce Report published by BIMCO and the ICS in July last year warned that we must significantly increase training and recruitment levels if we are to avoid severe shortages in the total supply of officers by 2026. The report indicated that demand for seafarers in 2021 had outpaced supply and predicted a need for an additional 89,510 officers by 2026 to operate the world merchant fleet. It is crucial that we find solutions now, together with governments of seafaring nations.

There is a decline in the number of young people aiming for a career at sea, spending many months away from their families. Companies could look at options offering shorter contract periods for younger seafarers, better digital connectivity, and better access to shore leaves, which would be in cooperation with port authorities. In addition, training could be further developed to be more “hands-on” and include the latest technologies, such as simulators and Virtual Reality, although



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such technologies cannot directly replace time at sea and hands-on experience on board ships. Lastly, we must ensure that all cadets who begin training complete the program. Companies could increasingly consider having dedicated training ships or allocating space on their fleets' ships, when available, to cadets supervised by a dedicated cadet training officer.

Meanwhile, it is important not to forget challenges on the shore side where more IT specialists will be needed to manage the increasing number of digital systems, equipment, and big-data analysis within all areas, including technical, operations, commercial, HR, and marketing.

### ⑤ **The need for ship recycling will rise in the coming years. What is BIMCO's view on ship recycling and why?**

Ship recycling is one of the topics that is very high on the agenda at BIMCO. In October last year, a report commissioned by BIMCO showed that whilst the EU list of approved ship recycling facilities continues to grow, new additions have not added significant capacity to meet the demands of the global shipping industry.

We, therefore, believe that the focus must shift towards adding facilities outside of the EU. EU member state facilities, in general, provide either bespoke local solutions to a niche recycling market or are focused on offshore decommissioning; they are not dedicated to recycling large ocean-going ships.

Today, there are still no facilities from the leading recycling countries such as India, Bangladesh or Pakistan on the EU list to meet the demand for recycling larger ships. That is despite many of these yards having made significant efforts toward upgrading their facilities. We believe the focus on adding some of these facilities to the list should be increased if they meet the standards of the Hong Kong Convention. We believe the Hong Kong Convention should be ratified as soon as possible.

There is significant potential for the ship recycling industry to contribute to the circular economy because it supplies large quantities of scrap metal to the steel and iron industries, which reduces the need to produce primary metals. To take one example, a study commissioned by the World Bank in 2009 found that Bangladesh satisfied 50% of its steel needs from national ship recycling.

It is estimated that more than 15,000 ships will be recycled in the next decade, so the potential of ship recycling to contribute to the circular in a manner that is sustainable and safe for workers and the environment is tremendous. The Hong Kong Convention will allow for the safe and environmentally sound recycling of ships internationally; therefore, shipowners should choose to recycle at yards that follow the standards and live up to the Convention. To raise awareness of this critical issue, we are working on a short industry film about ship recycling which will be published later this year.





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The Chairman of INTERCARGO discusses the initiatives Round Table will undertake to attract more young people to the seafaring profession and the impact of the CII on dry bulk shipping. He also shares his thoughts on the outlook of the bulk carriers' freight market and the progress of shipping ESG-related issues.

# SHIPPING COMPANIES ARE QUICKLY ADAPTING TO ESG REQUIREMENTS

An open discussion  
with **Dimitris Fafalios**,  
Chairman of INTERCARGO

**① Seafarers have faced significant challenges in recent years. How can INTERCARGO capitalise on the lessons learned from the pandemic in its efforts to improve the welfare of seafarers?**

The pandemic has brought closer collaboration with the ILO and the ITF. This was predominantly achieved by the ICS and supported by the Round Table of International Shipping Associations (RT) members, including INTERCARGO.

Before the pandemic, shipowners' organisations and RT members were principally able to communicate mainly with governments at the Ministry of Transport or Ministry of Shipping level. However, the pandemic has shown us that we needed to liaise at the Ministry of Health level or higher, even reaching the prime-ministerial level, to resolve the crew change and crew health issues suffered during the COVID pandemic. The pandemic has highlighted the need to address mental health issues amongst seafarers, which the RT members are also investigating.

**② What initiatives will the Round Table undertake to attract more young people to the seafaring profession?**

The RT recognises the challenges in attracting more young people to the sea, which existed before the pandemic and continue to exist.

Seafarer recruitment is usually dealt with by shipowners' associations and governments.

The RT organisation, comprised of the world's major shipowners' associations, is acutely aware of the seafarer shortage issue and finds that the most effective method to address it is to support the International Chamber of Shipping (ICS) initiatives.

The ICS is working closely with the Maritime Just Transition Taskforce established by labour organisations to ensure seafarers are adequately trained on the new technologies and fuels necessary for the world fleet's decarbonisation. The safety of seafarers and ships when consuming alternative fuels such as ammonia, methanol, hydrogen, and biofuels cannot be emphasised enough. It is noteworthy that the RT organisations supported the Neptune declaration.

**③ How will dry bulk shipping be affected by the implementation of CII, given that it seems to favour longer-haul voyages and less time spent at port? Will the smaller bulk carriers, such as Handysizes and Handymaxes, which represent approx. 62% of the bulk carrier fleet face greater challenges?**

CII measurements will be grouped together at IMO during the experience-building phase, which will last until 2026.



The Round Table is acutely aware of the seafarer shortage issue and finds that the most effective method to address it is to support the International Chamber of Shipping initiatives.

However, there does not seem to be a particular dry-bulk sector which is more or less affected by poor CII ratings. Instead, poor CII ratings are principally brought about by long port and anchorage waiting times, dry-docking times, and other instances where both owner and charterer cannot exercise any control. Each sector of the dry-bulk fleet is subject to the same probability of these scenarios taking place. Port congestion is unpredictable and can affect all bulk carrier sizes. Although owners and charterers agreed to a CII clause at BIMCO, there has been extremely limited acceptance of this clause by charterers. Overall, the CII will bring further reductions in ship speeds, and it is hoped that this will not compromise vessel safety.

#### 4 What are your thoughts on the EEOI vs AER debate?

Perhaps the debate on the EEOI and AER is missing the point! The CII's dominant distorting factors

are port and anchorage waiting times, especially in the laden condition. Due to this excessive time in port or at anchor, we will not be able to overcome negative CII ratings whether we use EEOI or AER.

We should concentrate on the navigational element of the CII, where both charterers and owners can work together to reduce the carbon intensity of the voyage.

#### 5 What is the outlook for the bulk carrier freight market? Do you think China's influence on this market be the same as before the pandemic when the country reopens and eases restrictions?

The bulk carrier market has always been among the most difficult to predict. However, speed reductions brought about by the EEOI and CII will soak up capacity and lower carbon intensity.

China's long-term economic planning should make it easier to gauge its effects on the shipping market. However, experience has shown that the speed and method of implementation of Beijing's policies often vary from province to province. Currently, indications are that China may not be able to sustain pre-pandemic levels of growth.

#### 6 How is the shipping industry progressing as far as ESG-related issues go?

Regarding ESG, shipping companies are adapting quickly, although many consultants are trying to impose land-based ESG on shipping companies, which operate in an entirely different framework. Shipping companies can be large and corporate, but most are small and medium-sized enterprises (SMEs), often family-run. Many of these shipping SMEs already have a strong ESG record, even if this has not been formally stated. This remains to be completed in the coming years. But, in essence, they have already walked the talk!





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H.E. the President of the Hellenic Republic Katerina Sakellariopoulou addresses the audience during the inauguration proceedings of the Forum.

# THE DYNAMIC VOICE OF THE GREEK SHIPOWNERS' REPRESENTATIVES



THE PRESIDENT AND MEMBERS OF THE UGS EXECUTIVE COMMITTEES, REPRESENTING THE UNITED VOICE OF GREEK SHIPOWNERS, DISCUSSED THE MAIN CHALLENGES OF THEIR INDUSTRY WITH LEADING POLITICAL AND BUSINESS PERSONALITIES



In the context of the Delphi Economic Forum, a high-level conference held between 26 and 29 April, prominent economists and industry stakeholders gathered to discuss emerging challenges, review national and regional agendas and promote sustainable and socially responsible growth policies for Europe, the wider Eastern Mediterranean and Greece.

Inaugurating the proceedings of the 8th Economic Forum of Delphi on Wednesday 26 April, the President of the Hellenic Republic, Mrs Katerina Sakellaropoulou, gave the opening speech, underlining that "in a climate of geopolitical reorganisation, Greece looks to the future with optimism and self-confidence."

Referring to the improvement in relations between Greece and Turkey after February's devastating earthquakes and the aid sent by Greece, she argued that it "brings the two neighbouring peoples closer together and creates hope for a new, better era in bilateral relations."

She also pointed out that "in a world of tectonic changes, in which the dense timing [of events] often tests our ability to predict or understand them, Greece is called upon to coordinate and change as well, in order to remain a force of European stability and consistency in its area."

During her speech, she also pointed out that "from the first moment, Greece, as an organic part of Europe and the West, hastened to defend the values of international law against aggressive revisionism. Supporting the Ukrainian people, whose future is in a democratic Europe of peace and prosperity, remains a commitment of the West."

"The Russian invasion marked the geopolitical maturing of the European Union. Europe realised that economic and energy interdependence with authoritarian regimes is not enough to ensure peace. Thus, it is rapidly advancing both in strengthening its armour and defence consolidation, as well



as in strengthening and expanding the North Atlantic Alliance, with two new members. It is in the interests of our transatlantic allies and NATO for a strong, coherent and credible European pillar to emerge within a solid Euro-Atlantic Alliance, especially given concerns about China's rapprochement with Russia," the president said.

During the Forum, prominent members of the UGS board represented their association and spoke about the commitment of its representative body towards a closer communication with Greek and international economic actors/players.

More specifically, after the speeches of the President of the Hellenic Republic Katerina Sakellaropoulou and the organizers, the president of the Union of Greek Shipowners, Ms Melina Travlos, welcomed the international forum of Delphi and elaborated on the present and the future of Greek shipping.

In the presence of representatives of international bodies and personalities from the political, economic, diplomatic, and cultural world and a packed auditorium, Ms Travlos spoke about the superiority of Greek shipping and the international recognition it receives by presenting numerical data. It was the first time that distinguished personalities of the UGS board, such as Vice-President A. Lemos, Secretary D. Fafalios, and Treasurer J. Xylas, participated in this international forum. Former President and current member of the UGS J. Lyras was also present.

Ms. Melina Travlos, President of the Union of Greek Shipowners, institutionally representing Greek shipping as the leading sector of the national economy, stated at the Opening Session:

"Greek shipping is Europe's superweapon. It is a national economic partner, providing billions of euros in maritime foreign exchange and hundreds of thousands of direct and indirect jobs, steadily investing in various sectors of our national economy. It is a national asset; it is our national pride. The national beneficence and social solidarity towards the motherland and the Greeks are consistent, silent, and broad. Our

seamanship is our history. This new era has a new challenge, a new philosophy. The one where "business" and "well-being" coexist. The one where the human is in the epicenter. The one where the "I" recedes and the "we" retakes its place. Sustainable growth requires sustainable people. So, let us put the parameter of 'well-being' at the heart of development in this new era. The challenge, but also the solution, is to protect human value and coexistence. Our future, the future of humanity, is humans themselves. The future is us!"

During the Delphi Economic Forum Fireside Chat session, the Vice President of the Union of Greek Shipowners, A. Lemos, stated, among other things, the following:

"EU horizontal policies and regulations often fails to take into consideration the unique features of the shipping industry and the socio-economic impacts of said regulations. There are shortcomings in the revised EU ETS which includes shipping. It is vital to try to shape the new regulations so that they can achieve their goals, without overly burdening EU citizens who are ultimately the end-consumer. Greek shipping is well-placed to



respond and adapt to the new era as it has done with all past regulatory developments. It will continue its deep-rooted commitment to the protection of the environment.

Shipping brings untold benefits to the world. The most important is its contribution to global trade and by extension globalisation, which is one of the great contributors to a more peaceful, fraternal world, one in which disparate societies can co-exist to each other's mutual benefit. This is because global trade, 90% of which is transported by sea, connects people, countries and economies.

It is characteristic that, despite enormous challenges, shipping was the only industry that continued to function throughout the COVID-19 pandemic, at a great cost for the seafarers and their families who are too often overlooked by the international community."

During the "Charting a Course to a Sustainable & Efficient Industry" session in which he participated, Mr D. J. Fafalios pointed out the following:

"The Greek shipping community is committed to shipping's decarbonisation and has always supported global policies based on sustainable, viable and workable solutions adopted at the IMO. Global regulations are necessary to avoid distortion of competition. The shipping industry will fully embrace new technologies as they became mature but there must be also a balance between efficiency and decarbonisation.

Most importantly, it is vital that safety is paramount as the guiding principle in all environmental regulations. Alternative fuels and technologies must be safe, cost-effective, fit-for-purpose and available worldwide in sufficient quantities. And these new tools must come from out of the shipping sector stakeholders, under whose remit their production and supply falls. In any case, there cannot be protection of the environment without protection of safety at sea, that is, safety of crews, safety of vessels, safety of fuels."



L-R: Despina Panayiotou Theodosiou, Philippos Philis, Dimitrios Fafalios, Jan Dieleman.





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Mr J. C. Lyras, UGS Board Member, stated during his participation in the “Overlook and Franco-Hellenic Perspectives on The Maritime Industries” session:

“The shipping industry, which is already by far the most energy efficient mode of transport, is fully committed to its decarbonisation, notwithstanding that it is a fossil fuel captive and hard-to-abate sector. Its decarbonisation, primarily requires the production in adequate quantities of alternative sustainable fuels and technologies which are, as yet, unavailable and the cooperation and commitment of a significant number of other stakeholders, like fuel producers and suppliers, shipyards and engine manufacturers. Bulk/tramp shipping, carrying 86% of the world’s seaborne trade in fuels, raw materials, cereals, and other agricultural products, faces extra challenges due to its global itinerant nature and its modus operandi, which includes the structural role of the commercial operator – charterer.

The strategic role of EU shipping, which guarantees the security of supply and the diversity of the sources of EU’s energy and other essential goods must be better acknowledged by the EU institutions and policy makers. They can do so by regulating shipping with a primarily Flag State perspective and with due regard to EU shipping’s need to remain sustainable and globally competitive.”



L-R: Thibaut de Saint Lager, John C. Lyras, Philippe Louis-Dreyfus, Cyrille Bret.



During the “The Growing Pressure & Urgency for Change” session, Mr J. Xylas, Treasurer of the UGS, said:

“The commitment and coordination of all relevant stakeholders is vital for shipping’s decarbonisation. Collaboration is necessary among all in order to come up with feasible and fit-for purpose solutions. We need better regulation, not more regulation. Proliferation of private initiatives risks seriously damaging the efficiency of a vital internationally regulated regime.

The shipping industry has a lot of specialized expertise about what can be workable for the needs and the modus operandi of each sector. Not one size fits all.

The human element is obviously crucial and seafarer safety is the first priority. Crews and shore-based personnel in shipping companies and ports will need to be retrained and follow the technological developments.”





## How can you simultaneously maximize profitability **and** promote sustainability?

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# 1<sup>st</sup> COSTA CARRAS EUROPEAN CITIZENS AWARD

HONORING AN ICONIC FIGURE IN THE PROTECTION OF THE  
ENVIRONMENT AND CULTURAL HERITAGE IN GREECE







On Wednesday 26 April 2023, in the presence of H.E. President of the Hellenic Republic, Ms Katerina Sakellariopoulou, the ceremony for the presentation of the 1st Costa Carras European Citizens Award for the Safeguard of Endangered Cultural and Natural Heritage took place. The hall welcomed over 100 participants to honour the winners and the memory of Costa Carras, founding President of Elliniki Etairia and long-time Vice-President of Europa Nostra. The award ceremony was organised within the framework of the Delphi Economic Forum 2023 and was moderated by Jimmy Jamar, Head of the Brussels Office of Europa Nostra.

The Award was given to the Romanian NGO A.R.A. - Architecture. Restoration. Archaeology for its exemplary work in mobilising citizens locally and across the country for the protection and promotion of Roşia Montană, in the region of Transylvania (Romania).

The Award was instituted this year by Europa

perpetuate the memory of this great European who was always ahead of our time. A brilliant mind and legendary voice, who has been calling for "Paradigm Shifts" ever since he founded Elliniki Etairia together with his wife Lydia and a small group of visionaries 50 years ago! For Europa Nostra, this is also a symbolic gesture to honour the legacy of one of our greatest leaders, and this in the year in which we celebrate our 60th anniversary. But this award is so much more than a tribute to our Costa, this is the way to encourage present and future generations of Europe's citizens to follow his power of example." Andreas Zompanakis, Board Member of ELLET, highlighted everyone's satisfaction with the establishment of this important Award that celebrates the life and work of Costa Carras and is an inspiration for those who continue his work. He also recalled Costa Carras' "deep belief in the transformative power of civil society".



The Founder and President of the Delphi Economic Forum, Symeon Tsomokos, thanked the Secretary General of Europa Nostra, Sneska Quaedvlieg-Mihailovic, and the President of the Elliniki Etairia, Lydia Carras, and referred to the work of Costas Carras with warm words: "Costa has been undoubtedly a particularly rare bright personality – a truly great Greek of all time. He will not remain in the collective memory only for his inexhaustible passion and his vision for the protection of the cultural heritage of our country and Europe, for the protection of nature and the environment, but also for the deep philosophical attitude to life that he had throughout his life". He also proudly announced "We are ready and willing for the Costa Carras Award to be granted every year during the Delphi Economic Forum".

Nostra and Elliniki Etairia for the Environment and Cultural Heritage (ELLET) in memory of Costa Carras, an iconic figure in the protection of the environment and cultural heritage in Greece as well as in Europe and beyond. Founding Partners are the A.G. Leventis Foundation, the Delphi Economic Forum and the European Investment Bank Institute.

During the award ceremony, Europa Nostra's Secretary General Sneska Quaedvlieg-Mihailovic pointed out:

"By launching this European Award we wish to

In his video message, Anastasios P. Leventis, President of the A.G. Leventis Foundation said: "It is a special pleasure for us to support this prestigious award in memory of such an important person for the preservation of cultural and natural heritage". He also emphasised that the European character of the Award is in absolute agreement with the most important international dimension of Costa Carras' action. Maria Nathanail, the European Investment Bank Representative, expressed her institution's strong appreciation for the Costa Carras European Citizens Award initiative. She emphasised that the EIB - whose Institute is the proud



partner of the 7 Most Endangered programme run by Europa Nostra - considers cultural heritage to be an integral part of sustainable economic and developmental practices and pledged to support similar initiatives that promote and preserve Europe's cultural and natural heritage.

Presenting the Award to the representatives of the winning organisation A.R.A., Lydia Carras, President of ELLET, read the citation of the Jury and added: "Costa would be very happy that A.R.A. from Romania won the unanimous vote of the European Jury for their tireless efforts for Roşia Montană. As he often did himself, they fought against all odds; they persevered and they did not give up. This award is handed in Delphi, a place he loved, as this landscape - loaded with history and culture - gave him strength. He would also be very happy with an award for European citizens for endangered heri-

tage and nature. He deeply believed in the role of citizens for democracy as well as for heritage and environment."

Receiving the Costa Carras Award 2023, Claudia Apostol, representative of the A.R.A. gave a moving and powerful speech during which she briefly presented the 16 years of action of this organisation dedicated to the preservation of the cultural heritage of the historic mining landscape of Roşia Montană "For all this, and for the award we are so deeply honoured to receive today, we thank Europa Nostra for the continuous support, Elliniki Etairia, and all our partners and collaborators but most of all, our very active local community partners. We can't wait to go back to Roşia Montană next weekend to share the joy of this award with all and each of them." she concluded.

A congratulatory message from Adriana Ciamba, Chargé d'Affaires of the Embassy of Romania, was read at the end of the Ceremony. She paid a special tribute to A.R.A. NGO for their tireless efforts and commitment to the preservation of Roşia Montană which she characterised as "little Romania" due to its multicultural character and millenary history.

The winning organisation A.R.A. will receive a monetary prize of 10.000 Euro which they have pledged to use for the restoration of the Chapel of the Roman-Catholic cemetery in Roşia Montană.

The heritage importance of Roşia Montană Situated in the western area of the Carpathian Mountains, the landscape of Roşia Montană has been gradually transformed by gold and silver mining, from prehistoric surface works to deep underground galleries, continued in mediaeval and modern times, up to the 1970's. Along centuries,

the settlers coming from various parts of Europe created communities of an interesting cultural diversity, to mention only the 5 denominations (Catholic, Orthodox, Greek Catholic, Unitarian and Calvinist), whose churches and houses are still witnesses of their way of life. All the surface features - paths, roads, reservoirs, water channels, stamping areas and Roşia Montană in itself - demonstrate a positive interaction between man and the environment, which has resulted in one of the most representative mining landscapes in Europe. The site as a whole and 50 of its components are listed as historic monuments and two geological formations as natural monuments. In 2021, the historic mining landscape of Roşia Montană was simultaneously inscribed on UNESCO's World Heritage List and on the World Heritage List in Danger.







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# ON

Edited by:  
Giannis Theodoropoulos,  
Manos Charitos

## **SURVEY SUGGESTS A MULTI-FUEL FUTURE FOR THE SHIPPING INDUSTRY ON THE PATH TO ZERO EMISSIONS**

Encouraged by regulation, customer demand, investor pressure, and internal goals, shipping companies are searching for ways to find greener fuel alternatives and reduce their greenhouse gas emissions by 2050.

To understand how shipping industry leaders are thinking about future fuels and what their plans and projections are to adopt cleaner fuels and efficiency-boosting technologies, the Global Maritime Forum, the Global Centre for Maritime Decarbonisation, and the Mærsk McKinney Møller Center for Zero Carbon Shipping conducted a survey of major shipping companies, with analytical support by McKinsey & Company. As the shipping industry is in a period of experimentation and exploration to understand the implications of adopting different green fuels, surveys like this play a crucial role in informing the industry and the public and supporting shipping's transition to a zero-emissions future," says Professor Lynn Loo, CEO of the Global Centre for Maritime Decarbonisation.

The most striking result from the survey is a multi-fuel future: the need to prepare for fleets operating on three or more fuel "families." The most common mix by 2050, represented by forty-five per cent of respondents, is a fleet concurrently running vessels on fuel oil/biodiesel, methane, methanol, and ammonia—a step-change in fuel diversity.

Other survey findings suggest that internal combustion engines will remain the preferred technology through 2050 and that the speed of the shipping industry's adoption of alternative fuels will be a function of the cost gap with fossil fuels and the degree of availability of such greener alternatives at ports worldwide.

Ports and bunker suppliers might prioritise the availability of individual fuels in the short term. But in the longer-term, ports that wish to attract the greatest possible number of future vessels should prepare for the need to offer multiple fuel types.

The single most important factor in fuel choice will likely be the rate of decarbonisation required by regulators. Policymakers and regulators can help close the cost gap between green and fossil fuels and create a "level playing field" for all shipping companies to accelerate their adoption of green fuels.

# THE SEAFRONT





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### **ECSA: EARMARKED REVENUES CAN MARK A TURNING POINT FOR SHIPPING'S DECARBONISATION**

European shipowners welcomed the formal approval of the new EU ETS law on 18 April by the plenary of the European Parliament. Earmarking around €2bn of the revenues of the Innovation Fund for the maritime sector can mark a turning point in the decarbonisation of the industry.

Importantly, the Parliament and the Council have embraced the calls of the industry stakeholders to earmark EU ETS revenues back to the maritime sector to support the uptake of clean fuels and foster innovation. At least 20 million ETS allowances, which correspond to around €2bn under the current ETS carbon price, will be allocated to maritime projects under the Innovation Fund. "Addressing the climate crisis and decarbonising shipping is not a question of 'if' but of 'how'. Setting aside part of the ETS revenues for maritime is a victory for the energy transition of the sector. Dedicated Innovation Fund support is key to bridging the price gap with clean fuels," says Sotiris Raptis, ECSA's Secretary General.

ECSA also welcomed the upholding of the "polluter-pays principle" through mandatory requirements for the pass-through of the EU ETS costs

to the commercial operators of the vessels. The phase-in period and the gradual inclusion of emissions from shipping over a three-year period are also crucial to ensure a smooth transition for the sector. The co-legislators also agreed on special provisions for ice-class vessels, small islands and outermost regions.

While the new ETS marks an important step in the decarbonisation of the industry, sufficient amounts of low- and zero-carbon fuels will need to be available at an affordable price to maintain the industry's global competitiveness. This should be a top priority of the proposed Net Zero Industry Act. As shipping is one of the most difficult to decarbonise sectors, the upscaling of affordable low- and zero-carbon fuels and technologies for the sector is key.

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### **FSO SAFER: CALL FOR EQUIPMENT FOR OIL SPILL RESPONSE PREPAREDNESS**

IMO is urging Member States to contribute equipment to help UN-led efforts to prevent a possible catastrophic oil spill from the FSO SAFER, an ageing and rapidly decaying floating storage offshore (FSO) unit moored 4.8 nautical miles off the Red Sea coast of Yemen. IMO is providing expertise in oil spill preparedness and response as part



of the contingency planning for a possible oil spill from the FSO SAFER, in line with its mandate set out in the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC).

The FSO SAFER, a converted supertanker, contains an estimated 150,000 metric tonnes (approximately 1.1 million barrels) of crude oil, four times the amount spilled during the Exxon Valdez incident in 1989. It has been moored at Ras Isa since 1988, where it received, stored and exported crude oil flowing from the Marib oil fields. But in 2015, due to the war in Yemen, production, offloading and maintenance operations on the FSO SAFER were suspended.

FSO SAFER has not been inspected since then, but all assessments of its structural integrity suggest it has now deteriorated to the extent that it is beyond repair and at imminent risk of breaking up or exploding. The danger with an oil spill of such magnitude is that it would surpass Yemen's resources and capacity to respond effectively.

On 9 March, the UN Development Programme (UNDP) signed an agreement to purchase a very large crude carrier (VLCC), the Nautica, to take on the oil from the FSO SAFER by emergency ship-to-ship transfer. Such operations are complex and inherently risky.

The Nautica left Zhousha in China on 6 April.

Contingency planning for the transfer operation is, therefore, intensifying. However, a critical gap identified in Yemen's preparedness to respond to an oil spill is the lack of specialised equipment within the country.

Because of lengthy lead times for manufacturing and acquiring oil spill response equipment, IMO is asking for contributions of used or near-end-of-life spill response equipment that can be transported to the region within weeks.

### **INDIA EXPECTED TO OVERTAKE CHINA AS THE WORLD'S MOST POPULOUS COUNTRY**

The UN announcement that India will overtake China as the most populous country on the planet has sparked a debate on whether India will also surpass China in economic power. According to a recent Xclusiv Shipbrokers report, India will take many years to overtake China in the economic arena despite its strong population growth. For example, even if China's growth remained constant from 2023 onwards, it would take almost two decades for the Indian economy to catch up, even if it grew at a rate of 10% per year.

At the same time, despite the prevailing pessimism about the Chinese economy's sluggish growth, it disproved forecasts, growing at a faster-than-expected rate in the first quarter of 2023, i.e., by 4.5%

on a base level, much higher than the growth rate recorded in the fourth quarter of 2022 and well above analysts' predictions of 4%.

Taking into account China's economic performance in Q1 2023, JP Morgan and Citi revised their full-year China growth estimates upward to 6.4% and 6.1%, respectively.

### **CHINESE SHIPYARDS MAINTAIN TOP POSITION IN Q1 2023 ORDERS**

The continued increase in Chinese shipyard capacity is intensifying international competition, with China and South Korea vying for the industry crown. China's shipbuilding industry continued to lead globally in the first quarter of this year, garnering higher percentages in both the new orders and the global order book categories.

Based on data from China's Ministry of Industry and Information Technology (MIIT), Chinese shipyards won 62.9% of the orders placed in the first quarter in terms of dwt, while 50.8% of the pending orders globally are for vessels currently being or to be built in the future in Chinese shipyards.

Furthermore, of the ships built in the first quarter of 2023, 43.5% were constructed by Chinese shipyards. These ships had a total capacity of 9.17 million dwt and are the reason the output of Chinese shipyards decreased by 4.6% compared to the corresponding period in 2022.

### **DENMARK LIFTS BAN IN THE NORD STREAM AREA**

Denmark has lifted the ban on sailing the waters near the Nord Stream pipeline in the Baltic Sea, where leaks had occurred last September.

The Danish Maritime Authority (DMA) lifted the ban at the recommendation of the Danish Energy Agency, assuring that it was no longer dangerous for ships to navigate in the area. However, it continues to discourage anchoring, fishing, and seabed works within one nautical mile of the site where the leaks occurred due to "underwater obstacles". The leaks in Nord Stream 1 and Nord Stream 2 pipelines connecting Germany and Russia occurred in the exclusive economic zones of Sweden and Denmark. Since then, the West and Russia have blamed each other for the leaks.

### **THE REASON RUSSIA IS BETTING ON THE NORTHERN PASSAGE**

Moscow continues to publish impressive predictions about the Northern Passage Sea Route's development, reflecting its ambitious plans.

According to Rosatom's projections, in 2035, the goods transported through the Northern Passage will reach 270 million tonnes, a tenfold increase compared to 2022. To understand the volume of





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these goods, it suffices to say that the goods transported through the Suez Canal last year reached 1.27 billion tons. A few years ago, forecasts that the Arctic route would take 20% of the shipping traffic away from Suez seemed overly optimistic. However, based on Rosatom's data, Russian officials state that these goals are achievable.

Rosatom reports that Rosatomflot's nuclear-powered icebreaker fleet will provide support services to 1,747 commercial voyages in 2024 and that by 2035, their number will have increased to 3,895. However, Russia's ambitious plans for the Northern Passage depend on the progress of Novatek's production-related project and Rosneft's Vostok Oil project. At the same time, Russia's shipbuilding industry will play a vital role in the construction of ice-class ships that meet the requirements of the Northern Passage's demanding environment. Russia's Arctic fleet comprises 29 ice-class merchant ships, while another 41 are under construction. Alexander Novak, the Deputy Prime Minister of Russia, recently stated that by 2030 the country's Arctic fleet will consist of 132 ice-class ships.

### THE KEY FACTORS THAT WILL IMPACT THE FUTURE OF GAS CARRIERS

LNG and LPG carriers have caught the shipping industry's interest in recent years, given their short-term benefits in the decarbonisation drive and the high demand for the cargo they carry.

In this context, 46 Very Large and 20 Medium Gas Carriers are expected to be delivered in 2023, which may negatively affect the LPG carrier market, according to Clarksons. In any event, environmental regulations are expected to lead to lower speeds. At the same time, demand for the commodities carried by LPGCs, especially smaller sizes, will remain strong. In any event, environmental regulations are expected to lead to lower speeds. At the same time, demand for the commodities carried by LPGCs, especially smaller sizes, will remain strong.

In terms of LNG carriers, in 2022, the orderbook reached the record level of 182 vessels, while fleet capacity increased by 4.3%, according to Clarksons. In addition, strong order rates should persist in the coming years, but the same factors that will benefit LPG carriers will also positively affect LNGCs' supply-demand equilibrium.

### SURGE IN INDONESIAN COAL EXPORTS SUPPORTING PANAMAX AND SUPRAMAX FREIGHT RATES

During the first four months of 2023, Indonesian coal exports to China had risen 65% y/y. The Chinese economy is performing significantly better than last year when strict COVID restrictions

were in place. As a result, industrial activity has increased, boosting coal demand. Coal supply has also improved as Indonesian coal exports have not been restricted by an export ban which was in place in January 2022.

"Indonesian seaborne coal exports are expected to surpass 170 million tonnes by the end of April, up 32% on the same period last year. The rise is partly due to improved economic conditions in China, leading to increased energy demand. The surge in coal exports is supporting rates for Panamax and Supramax ships which transport 85% of Indonesian coal. Earnings in both segments remain higher than pre-COVID levels but have weakened significantly compared to 2022," says Filipe Gouveia, a shipping analyst at BIMCO.

Indonesian coal exports account for 19% and 11% of all cargo transported by Panamax and Supramax ships, respectively. The higher coal volumes have helped offset weaker grain and minor bulk volumes. However, due to shorter coal hauls, freight rates for the two segments have still been impacted negatively.

Higher demand for Indonesian coal has also been seen in other smaller economies in East and South-east Asia. As a result, coal prices have started to cool from record high levels in 2022, improving its attractiveness in price-sensitive economies such as the Philippines and Vietnam. Additionally, spillover effects of China's economic recovery have been seen in South Korea. Chinese demand for South Korean industrial goods has increased, leading to higher South Korean coal imports.

India is the second largest destination for Indonesian coal, but unlike other destinations, exports from Indonesia have slightly decreased so far this year. Although India's total coal imports have increased, Indonesian coal face increased competition from Russian coal. Since voyages to India from Russia are double the distance compared to those from Indonesia, ships are employed for longer.

"High temperatures in India are already causing record-high electricity demand. As the summer approaches, electricity demand could further firm up in both India and China due to air conditioning. This, coupled with China's economic recovery, could ensure high coal exports from Indonesia during the coming months," says Gouveia.

### WEST TO EAST CONTAINER SHIFT IN THE USA

Over one million TEUs in import containers per year have shifted away from U.S. West Coast ports, with Gulf Coast ports being the biggest beneficiaries, according to a new report by Descartes Systems Group.



East Coast ports have generally outperformed those of the West Coast in terms of growth rates over the past several years due to the steady eastward shift of inbound cargo volumes that began with the expansion of the Panama Canal in late 2016. However, this trend has changed in recent years, given the abovementioned developments.

On 17 April 2023, Piraeus welcomed the “OOCL SPAIN” - one of the world’s largest container ships

The “OOCL SPAIN”, whose construction was completed in 2023, has an overall length of 399.9 meters, a moulded width of 61.3 meters, and a nominal container capacity of 24,188 TEUs. In addition, the vessel has been awarded “Smart Ship” notations recognising that its use of the latest intelligent technology on board and big data acquisition will optimise operations, enabling fuel efficiency improvements and long-term navigational safety.

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## **EUROPOL'S AUTOPSY ON SMUGGLING IN EUROPE'S PORTS**

Europol has launched a joint analysis report with the Security Steering Committee of the ports of Antwerp, Hamburg/Bremerhaven and Rotterdam that looks into the risk and challenges for law enforcement posed by criminal networks in EU ports.

The EU's critical infrastructure - notably highways, railways and ports - enables the EU way of life; the free movement of goods and people is a major foundational factor for economic growth, personal freedom, and prosperity. Unfortunately, criminal networks driven by the constant desire to increase profits and expand their illegal activities are increasingly working toward infiltrating and controlling major logistical points. EU ports are examples of such major crime hubs, which is why the Security Steering Committee of the ports of Antwerp, Hamburg/Bremerhaven and Rotterdam, together with Europol, agreed to draft a joint analysis report assessing the threat of infiltration of port infrastructure by organised crime in the EU.

Main findings:

- Misappropriated container reference codes (or PIN code fraud) are gaining traction among criminal networks as a modus operandi for extracting illicit goods from ports.
- Criminal networks arrange the infiltration of ports by coordinating local networks of corrupted port insiders.
- As a side effect of the criminal operations in ports and the rivalry it entails, violence often spills out of major transportation hubs onto the streets of surrounding cities, where competition for distribution takes place.

## **THE IMPORTANCE OF METAL MINING IN THE GLOBAL ENERGY TRANSITION**

Trafigura's Executive Chairman and CEO, Jeremy Weir, recently analysed the contribution of mineral and metal mining to the global economy's decarbonisation at the sidelines of the CRU World Copper Conference 2023.

"It is important that we don't just focus on electric vehicles when it comes to the discussion about critical metals. For example, a wind farm requires nine times more copper than a coal-fired power generation, and solar power requires five times more copper" commented Mr Weir, adding that the supply of copper is a necessary condition for the global energy transition.

"I don't think broader society fully realises the importance of mining and copper when it comes to climate change. And there is a role for gov-

ernments to play by making people aware of just how important mining is. If we want to decarbonise, we're going to need metals to do that. We're going to have to develop resources," he concluded.

At the same conference, Graeme Train, Commodities Analyst at Trafigura, spoke about the drivers in copper demand and emerging new sources of demand beyond electric vehicles and renewable energy sources. "Requirements for data storage are doubling every three years, and therefore the need to build new data centres and related infrastructure is great. There is, therefore, high demand for copper from a whole new sector," he commented.

## **IMB RECORDS THE LOWEST LEVEL OF Q1 PIRACY SINCE 1993**

The ICC International Maritime Bureau (IMB) calls for a continued, robust and coordinated regional and international naval presence to act as a deterrent to prevent and respond to piracy. The ICC International Maritime Bureau (IMB) has recorded the lowest reported global piracy and armed robbery incidents since 1993 but calls for continued vigilance and naval response in its first quarter piracy and armed robbery report for 2023.

The report reveals that 27 incidents were reported in the year's first quarter, representing a marked decline from 37 incidents for the same period in 2022.

Of the 27 incidents, perpetrators boarded the victims' vessels in 24 cases; two vessels reported attempted incidents, and one vessel was hijacked. Despite the drop in numbers, the threat of violence remains – six crew members were kidnapped, two were taken hostage, two threatened, and one assaulted.

### **Gulf of Guinea**

Pirate and armed robbery activity continue to decrease in the Gulf of Guinea, an area which had become a relative hotbed for this crime in recent history. Just five incidents were reported in Q1 2023 compared to eight in 2022 and 16 in 2021.

Despite these improvements, the IMB Piracy Reporting Centre is calling for coastal response agencies and international navies to maintain efforts in the region. On 25 March, a product tanker was hijacked 140nm WSW of Pointe Noire, The Congo. The vessel effectively lost all communications for nearly five days, and when located by a French naval asset, six crew were reported as kidnapped. This highlights the continued need for vigilance and swift naval responses when incidents are reported.





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## RECENT PORT STATE CONTROL TRENDS

The Piraeus office of International Registries, Inc. (IRI) hosted a Port State Control (PSC) Seminar presented by the Registry's global inspections team on Thursday, 27 April 2023. More than 170 owners, operators, and industry stakeholders from around Europe and the Mediterranean attended the PSC Seminar. Theo Xenakoudis, Chief Commercial Officer and Managing Director of IRI's Piraeus office, welcomed stakeholders to the seminar, highlighting the importance of information sharing and collaboration as the industry addresses the challenges of the future. Simon Bonnett, Chief Maritime Officer (London) provided an overview of the Registry's Maritime Services Group and current initiatives. Brian Poskaitis, Senior Vice President, Fleet Operations (Baltimore/Annapolis) and Thomas Bremer, Vice President, Fleet Quality and Compliance (Baltimore/Annapolis) gave participants an overview of the Registry's worldwide reach, highlighting the depth and range of the global inspections team.

Regional overviews of PSC trends and data were provided by Captain Theodore Lalas,

Fleet Operations Manager (Piraeus); Gerald Annuss, Deputy Fleet Operations Manager (Hamburg) and Chris van Tiel, Fleet Operations Manager (Roosendaal); Hans Krijger, General Manager (Roosendaal) on behalf of R.Vinod Kumar, Fleet Operations Manager (Mumbai), Captain Sascha Dyker, Fleet Operations Manager (Hong Kong); James Maupin, Fleet Operations Manager (Houston) and Davis Kong, Vice President, Fleet Operations (Fort Lauderdale). Following the presentations, attendees participated in discussion and knowledge sharing during Q&A sessions.

## SURVEY REVEALS GROWING FRUSTRATIONS AND CHALLENGES FACED BY SEAFARERS

The Seafarers Happiness Index (SHI) is a quarterly survey conducted by the Mission to Seafarers to gauge the sentiment of seafarers at sea. The survey asks seafarers around the world ten key questions about various aspects of their life and work. Their anonymous answers provide valuable insights into the challenges and opportunities facing seafarers.

The latest SHI report reveals that overall satisfaction levels among seafarers have fallen to 7.1 out of 10 from 7.69/10 in Q4 2022.

Covering 10 key areas of life at sea, the report identifies concerns surrounding access to shore leave and onshore welfare services as the most significant challenges facing seafarers. Between Q4 2022 and Q1 2023, the former fell from 6.76/10 to 6.23/10, while the latter dropped from 7.41/10 to 6.49/10. On a more positive note, the same period saw satisfaction regarding onboard connectivity rise from 7.4/10 to 7.56/10, reflecting a generally positive response from seafarers on the ability to maintain contact with family.

The SHI report also identified several other challenges facing seafarers, including a growing wellness gap between companies that provide health and well-being programs and those that do not, access to dental care in some ports but not others, and limited access to mental health support, medical advisory services, and physical well-being consultations. Seafarers also expressed concerns about salaries, the cost of living, and potential obstacles to career advancement.





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News from the seas of the world

# INTERNATIONAL

## SHIPPING ENTREPRENEURSHIP DEVELOPMENTS

### **CMA CGM GROUP TO ACQUIRE BOLLORÉ LOGISTICS**

The Bolloré Group received a spontaneous offer from the CMA CGM Group to acquire its transportation and logistics activities held through Bolloré Logistics based on a €5 billion cash-free/debt-free enterprise value.

Following this offer, the Bolloré Group and the CMA CGM Group entered into exclusive talks to enable a confirmatory due diligence process and engage in contractual negotiations of a put option.

In any event, the transaction will remain

subject to regulatory approvals, and no decision to sell will be taken until the end of the information and consultation procedures of the competent employee representative bodies, notes the Bolloré Group.

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### **MAERSK TANKERS LAUNCHES VOYAGE MANAGEMENT SERVICE**

Maersk Tankers is expanding its services to shipowners with a new voyage management service. The service will help ship operators and owners achieve greater economic and environmental efficiency





# WATERS

Edited by:  
Giannis Theodoropoulos, Manos Charitos

in day-to-day operations, building on the company's expertise in commercial vessel operations and fuel optimisation. The first customer is Petredec, a leading global LPG shipping and trading company. Maersk Tankers will initially take over the voyage management of seven Petredec Global-owned LPG carriers. The service includes day-to-day vessel operations, fuel optimisation and claims handling, covering full post-fixtured support from the time the vessel is fixed for a voyage, through its successful execution, to the closure of the voyage books.

## HAPAG-LLOYD INVESTS IN THE TERMINAL SECTOR

Hapag-Lloyd completed its acquisition of 40% shareholding in J M Baxi Ports & Logistics Limited (JMBPL), previously approved by the relevant antitrust authority. In January 2023, Hapag-Lloyd signed an agreement to this effect with an affiliate of Bain Capital Private Equity, which held a 35% stake in JMBPL, and the Kotak family, which is the majority shareholder of JMBPL. In driving its Strategy 2023, Hapag-Lloyd has continuously expanded its involvement in the terminal sector, inter alia through an agreement to acquire the terminal business of Chile-based SM SAAM. In addition, Hapag-Lloyd holds stakes in the Italy-based Spinelli Group, Container Terminal Wilhelmshaven, the Container Terminal Altenwerder in Hamburg, Terminal TC3 in Tangier, and Terminal 2 in Damietta, Egypt, which is currently under construction. By acquiring a stake in JMBPL, Hapag-Lloyd is strengthening its presence in the attractive growth market of India while expanding its terminal and infrastructure business at the same time.

## BERLIN HAVING SECOND THOUGHTS ABOUT COSCO'S INVESTMENT

Germany appears to be having second thoughts regarding its decision to sell to Cosco an equity stake in the Hamburg terminal, a spokesperson for the

German Economy Ministry recently told Reuters.

This development comes after Hamburg's Tollerort Container Terminal was classified as critical infrastructure earlier this year, as the risk of political confrontation over increased Chinese investment in the German economy is visible.

Chancellor Olaf Scholz gave the green light to Cosco's acquisition of 24.9% of the terminal last October, and according to an official source, his position does not appear to have changed.

## ADNOC L&S ENHANCES ITS FLEET BY DEPLOYING FIVE VLGCs

ADNOC Logistics & Services, the shipping and maritime logistics arm of ADNOC, announced today the deployment of five new-build Very Large Gas Carriers (VLGCs). The gas carriers were built at Jiangnan Shipyard in Shanghai, China, and will be owned and operated by AW Shipping, an ADNOC L&S joint venture with Wanhua Chemical Group (Wanhua).

As natural gas plays a critical role as a lower carbon-intensity fuel for the energy transition, the VLGCs, which transport liquified petroleum gas (LPG), will provide ADNOC L&S greater flexibility to meet growing global gas demand.

The five VLGCs (Al Ain, Zakher, Rabdan, Al Salam and Baynounah), each with a capacity of 86,000 cubic meters, have

dual-fuel engine technology and use LPG as their primary fuel source, making them among the lowest-emission vessels of this type. AW Shipping will own and operate the VLGCs, transporting LPG cargoes sourced from ADNOC and other global suppliers to Wanhua's manufacturing bases in China and around the world. AW Shipping was formed in 2020 to support a 10-year LPG supply contract signed in 2018 between ADNOC and Wanhua.

#### **PSA EXPANDS CARGO SOLUTIONS NETWORK IN TÜRKİYE**

PSA International Pte Ltd ("PSA"), through its fully-owned subsidiary, PSA-BDP Turkey Supply Chain Solutions Pte Ltd, has signed an Agreement to acquire 75% of the shares of privately-held ALISAN Logistics A.S. ("ALISAN"). ALISAN is a logistics company located in Türkiye active in fast-moving consumer goods (FMCG), chemicals, automotive industries and agro-business. Upon transaction completion, ALISAN will be grouped under PSA's cargo solutions arm, PSA BDP.

Headquartered in Istanbul, ALISAN is a family-owned Turkish logistics service provider whose owners play an active role in the day-to-day operations. With more than 1,600 employees and 39 warehousing sites located near chemical producers, ALISAN's scope of services includes (but is not limited to) international and domestic packed distribution, bulk liquid & dry bulk distribution, warehouse operations and value-added services (VAS).

The voluntary incentive program ran from May 1, 2022, through December 15, 2022. Participation was greater than any previous year and increased from eighteen shipping companies participating in 2021.

Shipping companies received recognition and financial awards based on the per cent of distance travelled by their vessels through the Vessel Speed Reduction (VSR) zones at 10 knots or less and with an average speed of 12 knots or less.

The ten-knot target complements the National Oceanic and Atmospheric Administration (NOAA), US Coast Guard, and Environmental Protection Agency requests for all vessels (300 gross tonnes or larger) to reduce speeds during the months of peak air pollution and endangered blue, humpback, and fin whale abundance to protect these whales from ship strikes.

Ship strikes are a major threat to whales globally and the recovery of endangered blue, fin, and humpback whales in California waters.

#### **INVESTEU: €28 MILLION FUNDING FOR THE BLUE GROWTH OF PORTUGAL**

At the end of March, the Growth Blue I fund was signed in Portugal – the first fund signed under the new InvestEU Blue Economy instrument focusing on southern Europe. Growth Blue will be funded with €28 million from both national public resources through Fundo Azul and European Investment Fund (EIF) resources supported by the InvestEU Blue Economy instrument. It will invest in SMEs and small Mid Caps, primarily from Portugal and Spain, aiming to support the growth and internationalisation of mature blue economy companies focusing on sustainability, climate action, and the blue economy sectors. Launched in October 2020, PORTUGAL BLUE is a partnership between the European Investment Fund (EIF) – the venture capital arm of the EIB Group –, Banco Português de Fomento (BPF) and the Portuguese Government through Fundo Azul. The Programme is focused on blue economy investments with climate impact and sustainable development goals. It was created to attract private capital from public and institutional investors into the local blue economy landscape through venture capital and private equity funds managed by Portuguese-based teams.

The fund targets a total of €50m, including funding from Portugal Blue, InvestEU, and private commitments from strategic institutional investors. Growth Blue Fund aims at investing

## **BLUE ECONOMY**

#### **GLOBAL SHIPPING COMPANIES RECOGNISED FOR REDUCING SPEEDS OFF THE CALIFORNIA COAST TO PROTECT BLUE WHALES AND BLUE SKIES**

Twenty-three shipping companies participated in Protecting Blue Whales & Blue Skies vessel speed reduction program in 2022, contributing to cleaner air, safer whales, and a quieter ocean. Companies are recognised for their vessels transiting at ten knots or less in the San Francisco Bay Area and the Southern California region. The program's Southern California region extends from Point Arguello (in Santa Barbara County) to waters near Port Hueneme and Dana Point (by the Ports of Los Angeles and Long Beach).



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in 8 to 12 companies with equity and quasi-equity tickets above €1.5m. The fund has a broad sectorial focus with a preference for companies operating in the value chain of seafood, offshore energy, shipping, ports and blue biotechnology, contributing to decarbonisation, reducing ocean contamination and conservation of marine ecosystems.

The EU Commissioner for the Environment, Oceans and Fisheries, Virginijus Sinkevičius, stated:

"Portugal has a robust blue economy sector that keeps growing fast. Today's signing of the Growth Blue I - the first fund signed under the new InvestEU Blue Economy instrument- means we can build our competitive edge of blue and sustainable technologies by strengthening financing opportunities for innovative companies. They need our support to succeed and grow in the European Union and beyond. This is our objective with the BlueInvest initiative and our partnership with the EIB Group, which will give the right impetus in the whole sector".

#### **A NEW PARTNERSHIP AIMS TO DECARBONISE PORTS THROUGH SHIP ELECTRIFICATION**

Shell Marine and the Hamburg Port Authority (HPA) have signed a Memorandum of Strategic Partnership (MSP) to explore the decarbonisation of ports by focusing on vessel electrification and the development of charging networks.

Port ecosystems are complex, and their energy transition requires the involvement of several industry stakeholders, including port authorities, port operators, terminal managers, shipowners and ship managers, and energy supply companies.

The signing of this memorandum demonstrates Shell's commitment to the zero emissions goals and is a critical milestone in the Port of Hamburg's journey towards climate neutrality.

In December 2021, the Hamburg City Council commissioned the HPA to install an electricity supply system in the port's terminals. The HPA has contracted Siemens AG to construct the relevant infrastructure to deliver green electricity from the public grid to ships starting in 2023.

#### **NEW EU-NORWAY GREEN ALLIANCE TO DEEPEN COOPERATION ON CLIMATE, ENVIRONMENT, ENERGY, AND CLEAN INDUSTRY**

The EU and Norway have established a Green

Alliance to strengthen their joint climate action, environmental protection efforts, and cooperation on the clean energy and industrial transition. The agreement was signed in Brussels by the President of the European Commission, Ursula von der Leyen, and Norway's Prime Minister, Jonas Gahr Støre.

President von der Leyen said: "Norway is a long-standing and reliable partner to the EU, and we share a common vision for building a climate-neutral continent. We want our societies and economies to prosper while reducing emissions, protecting nature, decarbonising our energy systems, and greening our industries. This Green Alliance makes our bond even stronger and allows us to design a better common future."

Both sides reiterate their commitment to their 2030 targets of at least 55% greenhouse gas emission reductions compared to 1990 and to achieving climate neutrality by 2050 at the latest. They aim to keep global temperature rise within the 1.5C limit under the Paris Agreement while ensuring energy security, environmental protection and human rights. The EU and Norway will work closely to ensure the successful implementation of the Paris Agreement and the historic biodiversity agreement reached during the UN Biodiversity Conference COP15.

## **GEOPOLITICS**

#### **RUSSIA AND VENEZUELA TO ESTABLISH A JOINT SHIPPING COMPANY**

Russia and Venezuela's joint trade plans reflect the two countries' excellent bilateral relations amid the recent geopolitical realignments.

According to Russian media, Moscow and Caracas plan to establish a joint Russian-Venezuelan dry bulk shipping company to boost trade between the two heavily-sanctioned nations. Hampered by Western sanctions, Russia is trying to find ways to export not only its energy goods but also agricultural products, such as grains and fertilisers. According to officials from the two countries, the joint shipping company will attempt to circumvent such obstacles.

The new company will create a transport corridor between the two nations linking Puerto Cabello in Venezuela with one of the three port options currently being examined on the

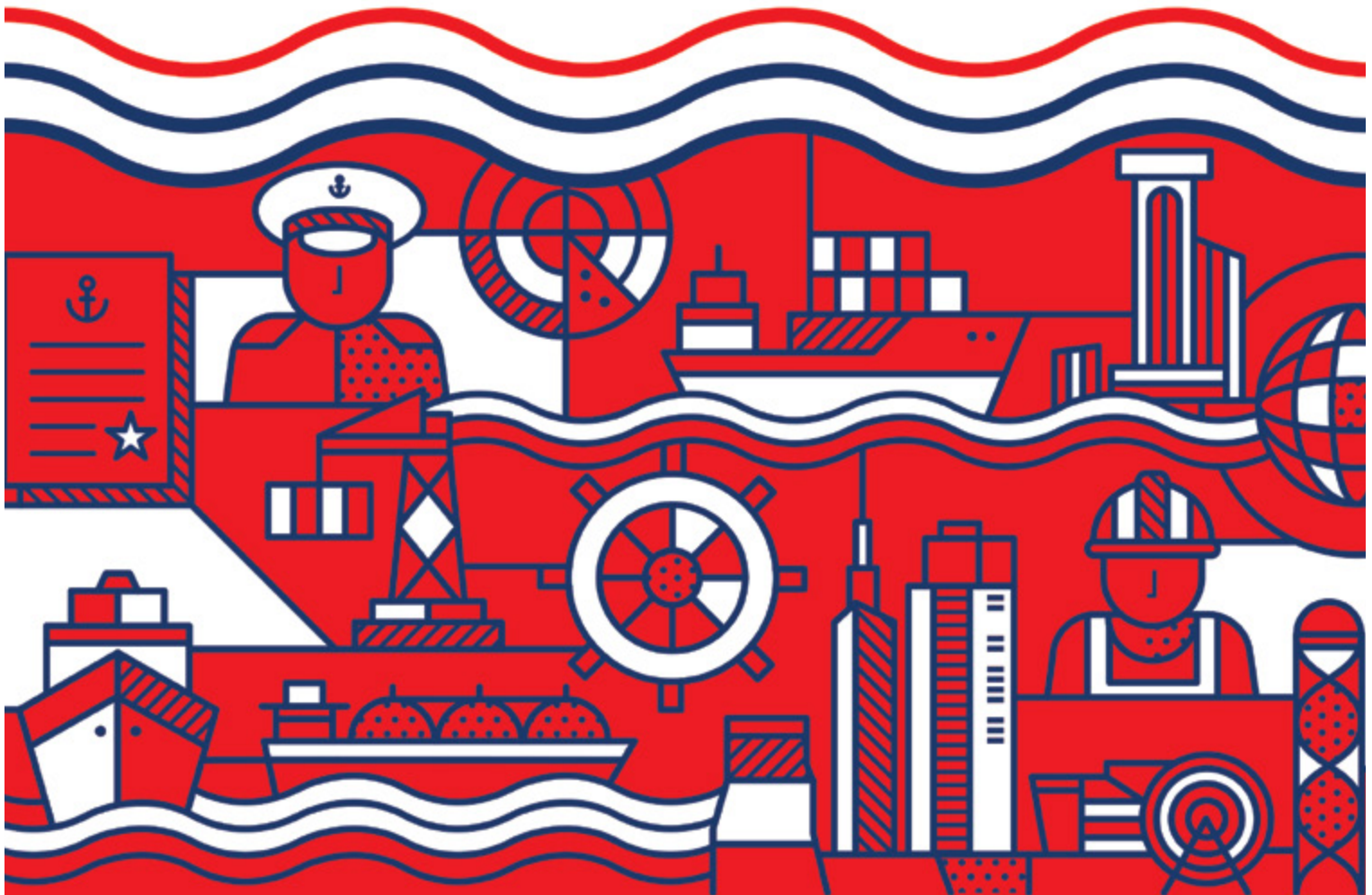




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Russian end, namely Saint Petersburg, Novorossiysk, or Sevastopol, which is in Russian-occupied Crimea. Puerto Cabello could become a hub for importing agricultural products from Venezuela and other parts of Latin America. The Russian Agricultural Bank, which has been cut off from the SWIFT interbank payment system following Western sanctions, has expressed interest in financing the project.

### **THREE TURKISH SHIPS ON THE US "BLACKLIST"**

The United States has imposed sanctions on three Turkish-flagged bulk carriers and the company that owns in the White House's attempt to cut off Russia from the international financial system. The Office of Foreign Assets Control (OFAC) of the US Treasury Department proceeded with sanctions against the Artvin Denizcilik ve Ticaret company and three of the bulk carriers it manages, namely "Alara", "Ipsala" and "Ula".

"As the Kremlin looks for ways to circumvent the extensive multilateral sanctions and export controls imposed on Russia for its war against Ukraine, the United States and our allies and partners will continue to disrupt plans that support Putin in the field of combat," said Brian E. Nelson, Treasury Under Secretary for Terrorism and Financial Intelligence.

The US blacklisted Artvin and its vessels due to their connection to Pola Raiz, a St Petersburg-based ship-owning company. 'Alara', 'Ipsala' and 'Ula' were owned by Pola Rise from July to October 2022 before being reflagged to Turkey and owned and commercially managed by Artvin. The technical management of the ships was undertaken by Salda Management Denizcilik, which is also subject to sanctions.

In addition to the three Turkish ships, sanctions were imposed on 16 Russian-flagged ships: eleven general cargo, three product tankers, one Ro-Ro and one RoPax, none of whose capacity exceeds 10,000 dwt.

### **WORLD MILITARY EXPENDITURE REACHES NEW RECORD HIGH AS EUROPEAN SPENDING SURGES**

Total global military expenditure increased by 3.7 per cent in real terms in 2022 to reach a new high of \$2240 billion. Military spending in Europe saw its steepest year-on-year increase in at least 30 years. The three largest spenders in 2022—the United States, China and Russia—accounted for 56 per cent of the world total, according to new data on global military spending published recently by the Stockholm International Peace Research Institute (SIPRI).

By far, the sharpest rise in spending (+13 per cent) was seen in Europe and was primarily accounted for by Russian and Ukrainian spending. However, military aid to Ukraine and concerns about a heightened threat from Russia strongly influenced many other states' spending decisions, as did tensions in East Asia.

'The continuous rise in global military expenditure in recent years is a sign that we are living in an increasingly insecure world,' said Dr Nan Tian, Senior Researcher with SIPRI's Military Expenditure and Arms Production Programme. 'States are bolstering military strength in response to a deteriorating security environment, which they do not foresee improving in the near future.'

The combined military expenditure of countries in Asia and Oceania was \$575 billion. That was 2.7 per cent more than in 2021 and 45 per cent more than in 2013, continuing an uninterrupted upward trend dating back to at least 1989.

China remained the world's second-largest military spender, allocating an estimated \$292 billion in 2022. This was 4.2 per cent more than in 2021 and 63 per cent more than in 2013. China's military expenditure has been increasing for 28 consecutive years.

Japan's military spending increased by 5.9 per





cent between 2021 and 2022, reaching \$46.0 billion, or 1.1 per cent of the GDP, the highest level since 1960. In addition, a new national security strategy published in 2022 sets out ambitious plans to increase Japan's military capability over the coming decade in response to perceived growing threats from China, North Korea and Russia.

"Japan is undergoing a profound shift in its military policy," said Xiao Liang, Researcher with SIPRI's Military Expenditure and Arms Production Programme. "The post-war restraints Japan imposed on its military spending and military capabilities seem to be loosening," he added.

## PASSENGER SHIPPING

### CRUISE INDUSTRY HERALDS GREECE'S ROLE AS AN IMPORTANT CRUISE HUB

As the international cruise sector continues its 2023 positive growth trajectory, the 7th Posidonia Sea Tourism Forum, which brought together

industry leaders from all over the world, was an ideal platform for Cruise Lines International Association (CLIA) to address the major topics, challenges and opportunities that will shape the industry's agenda in coming years.

The Forum held on 25-26 April in Thessaloniki at a pivotal moment for Greece, whose role in the safe resumption of cruising creates a unique opportunity for the country to optimise its position on the global cruise map.

The Forum was opened by a keynote speech delivered by Mr Pierfrancesco Vago, Global Chairman of CLIA and Executive Chairman of MSC Cruises. In the keynote, Mr Vago revealed an action plan for sustainable growth that emphasised the need to invest in infrastructure to maintain smooth operations and enhance the attractiveness of Greece as a cruise hub.

"Greece is an important cruise hub in the Mediterranean, with great potential for further growth. Having developed its homeporting capabilities, the priority now is for ports, cruise operators and authorities to work together to create the right infrastructure and operating environment for the long-term", said Mr Vago during his keynote speech that opened the Forum today.

The key actions proposed are working together







to: promote new destinations, create the proper port infrastructure and operating environment, develop sustainable tourism practices, introduce onshore solutions to match environmental technologies deployed onboard and support the development of new fuels, and build the skills of the next generation of seafarers.

The importance of the Mediterranean region in post-pandemic cruising was among the top issues discussed at the opening of the Forum. "With such vibrancy and diversity of cultures, the Mediterranean region is one of the world's favourite places to visit. And this magnificent region still offers many more places to discover, best to be discovered by sea. Cruise tourism is a real opportunity for new destinations like remote islands and coastline areas, bringing important social and economic benefits to more communities", said Marie-Caroline Laurent, Director General of CLIA

#### **EUROPEAN COUNCIL ADOPTS LEGISLATION FOR SAFER JOURNEYS WITH FERRIES IN EUROPE**

The European Council adopted a new law to improve stability requirements for the so-called 'ro-ro' (roll-on/roll-off) passenger ships, known as ferries. The new directive will play an important role in ensuring the safety of both vessels and their passengers in the EU, in accordance with the new international standards in the field.

'Ro-ro' passenger ships provide numerous maritime links within member states, between member states and with third countries. They are therefore of major importance to passenger and freight transport in Europe. The proposal to revise the existing directive originates from maritime accidents, such as the sinking of the 'Estonia' in 1994.

The revised directive ensures, as far as possible, consistency with the applicable international standards for the stability of damaged passenger ships recently updated by the International Maritime Organization (IMO) under its 2020 International Convention for the Safety of Life at Sea (SOLAS Convention). The IMO has recently introduced a new model for assessing the survivability of damaged 'ro-ro' passenger ships, as well as new related requirements. However, these new international standards are not completely in line with the requirements already in force in the Union for smaller new vessels. Therefore, the new law maintains a level of safety requirements equivalent to existing Union law for those ships.

The revised directive also aims to strengthen fleet entry requirements within the Union for existing large vessels that have not yet been certified in the Union. The text of the new directive maintains the general purpose of the initial Commission proposal, except for the extension of the transposition deadline from 12 to 18 months.

#### **OPTIMISTIC FORECAST FOR THE UK CRUISE SECTOR**

Figures released by Cruise Britain show that the cruise sector's post-Covid 'year of transition' was a success for ports and service providers around the UK and has provided the strongest possible springboard for a projected record season in 2023.

2019 was the UK's previous record season, and 2022's 2176 cruise calls only showed a drop of 22% on that record year. In terms of transit passengers enjoying a day ashore in the UK, ports welcomed nearly 1.4 million guests, around 80% of the 2019 figure. With each transit passenger worth an average of £70 to the local economy every time they step ashore, the visitor figure for 2022 means a tourism injection of around £100m to Britain's coastal economies. The 2022 embarkation figure of 1.04 m passengers setting sail from a UK port constitutes a rebound to 94% of 2019 figures. 'Looking ahead to this year, we see a robust projected growth of 8% in port calls across





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the UK. Some regions such as South West and North West England and Scotland are reporting likely figures in excess of this national growth rate, said Ian McQuade, Chair, Cruise Britain.

In 2022, cruise passengers arrived for the day or embarked through 58 cruise ports aboard 107 individual ships, from Kirkwall and Aberdeen in the north to Guernsey in the English Channel, with the vast majority of ships calling on multiple occasions. Fifty-two different cruise lines were welcomed, and ships visited UK ports as diverse as Belfast and Bristol, Portland and Portsmouth, Douglas (Isle of Man), Dover, and many more. "The UK offers an incredibly diverse cruise holiday experience for guests, and this is one of the most powerful reasons for the growth projections that we are seeing," commented McQuade. "Cruise Britain and all its members continue to work with cruise

lines, industry partners and stakeholders, and government to support the development of cruise as a resilient and profitable travel industry sector."

### NEW YORK CITY'S FIRST PUBLIC, HYBRID-ELECTRIC FERRY

New York City Mayor Eric Adams and Trust for Governors Island President and CEO Clare Newman introduced New York City's first public, hybrid-electric ferry. The new ferry, the first vessel of its kind to provide public transportation within New York Harbor, will be equipped with a hybrid propulsion system that will reduce air pollution by allowing it to toggle between zero-emission battery-only power and battery-assisted hybrid with diesel backup. The battery-assist mode will allow the new ferry to reduce carbon dioxide emissions by approximately 600 tonnes annually. In addition, future plans for rapid vessel charging installation will enable the ferry to operate with zero-emission battery-only propulsion, at which point emissions will drop to nearly zero.

"Visiting Governors Island is a great way to support cutting-edge climate solutions, and soon, visitors will be able to go one step further just by travelling there," said Mayor Adams. "As New Yorkers transition to greener forms of transportation, the city and our partners are leading the way with cleaner, more efficient ways to go just about anywhere. The next generation deserves a green city and a vibrant Governors Island, and this first-of-its-kind ferry will help us deliver both."

"Governors Island continues its commitment to a more accessible and environmentally friendly future, exemplified in today's announcement of the first hybrid-electric ferry in its fleet for public transportation," said Deputy Mayor for Economic and Workforce Development Maria Torres-Springer. "I encourage all New Yorkers to use this new, cleaner ferry to visit the island in New York Harbor beginning next summer."

The new ferry will be able to serve up to 1,200 passengers at a time. It has a cruising speed of 10 knots and features modern passenger amenities, including a lower-level ADA-accessible lounge and restrooms on each level. It will replace the diesel-powered Lt. Samuel S. Coursen, the Trust's current vehicle and passenger ferry, which was commissioned by the U.S. Army in 1956 and has been in continuous use since.





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In his interview with Naftika Chronika, Mr Håkan Agnevall shares his thoughts on shipping's currently available decarbonisation solutions and outlines Wärtsilä's plan for the Greek market.

# THE WORLD WILL GET MORE COMPLEX

Håkan Agnevall,  
President and CEO of  
Wärtsilä Corporation,  
in discussion

with  
Giannis Theodoropoulos

❶ **Which of the available decarbonisation technologies and solutions do you believe have more potential and will be preferred by owners who wish to invest in upgrading their existing fleets in order to minimise their environmental footprint? Besides LNG and methanol, what other alternative fuels does Wärtsilä believe might be efficient and competitive enough to be considered viable options for the shipping sector?**

As you know, Wärtsilä is active in both the marine and the energy business. When we look at the marine side, there are two sets of driving forces. One set is the regulatory framework, including IMO regulations such as the CII. Owner and operator interest in decarbonisation has increased significantly in the last two years. When the sulphur cap was implemented a few years ago, owners and operators followed a "wait and see" approach regarding scrubber installation, etc. In contrast, today, we see a more proactive approach and shipping stakeholders thinking strategically. The IMO regulations are moving slowly, but they are coming.

At the same time, there is a small but growing market in green transport. Its driving force, which may become even stronger in the coming years, is consumer goods companies that want to pro-

vide a sustainable customer offering. That is why we see companies like Nike or IKEA strategically investing in green transport. But there is another kind of customer growth in green transport: the numerous industrial companies similar to Wärtsilä that have committed to decarbonisation targets or set science-based targets. And when you make such a commitment, you need to examine the whole value chain (supply chain, transport, etc.) so these two forces come together.

We should recognise that shipping's energy transition will take time, even decades. We have a saying in Wärtsilä "green is not black or white". There are no single simple solutions. Looking forward, we believe there will be many different marine fuels. Fossil fuels will still be there, and gas consumption will grow. There was a stigmatisation of gas in Europe after the Russian invasion of Ukraine, but if you take a longer-term perspective, gas needs to be there, and prices will come down. Then there is also the alternative of carbon-neutral solutions such as biofuels. As far as methanol is concerned, the technology is mature enough, and we see an ever-increasing number of methanol-ready vessel orders. What we are developing now is zero-carbon fuels. These are ammonia and hydrogen. This year we will present a technical concept for ammonia and, later on, in 2025, for hydrogen. These are some of the "fuel avenues" going forward, but

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The technology is or will be available in the relatively near future. The critical challenge is to create a level playing field to offset the cost of fuel and technology, which will be higher.

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decarbonisation is not only about fuels. The most immediate thing that will happen is ships reducing their speeds. But I think this is not a financially viable solution in the long run, and the shipping community will be looking at energy-saving solutions. One key technology will be hybrid systems - combining combustion engines with batteries. This solution can be applied in newbuildings and second-hand vessels with retrofits to optimise fuel consumption.

Another "avenue" is carbon-capture technology, which requires the development of an entire carbon management system both onshore and offshore. Our customers' biggest challenge is deciding which "avenue" to follow. It's a strategic choice as vessel orders are a capital-intensive investment with a long-term time frame. As Wärtsilä, we provide the engines, but this is one piece of the ecosystem. Vessel designs will need to be adapted as the energy density of the various fuels is entirely different. The availability of fuels is of paramount importance as well and requires investments. Our approach in this volatile landscape consists of two parts. Fuel flexibility and fuel efficiency are two things we are focusing on.

**② How can shipowners formulate a clear fleet development strategy amid today's great uncertainty;**

I think they need to work with partners with a future-oriented perspective with whom they feel they can have a fruitful dialogue regarding technology. Flexibility is critical because no one knows what the future holds. We know there will be different fuels in the future. We can already see this because major stakeholders are putting a lot of focus on ammonia, LNG, biomethane, methanol, etc.

**③ Is electric propulsion a potential solution for decarbonising oceangoing vessels, or should it only be considered for smaller-sized ships operating on shorter routes;**

Let's delve into electrical solutions. Firstly, we should discuss hybrid solutions combining combustion engines and batteries. Such solutions are appropriate for newbuildings or retrofits and are an option mainly for cruise ships but also merchant vessels such as LNGCs, for example. But if you look at solutions using only batteries, these fit exclusively on smaller vessels because battery density with today's technology is insufficient for bigger vessels. So fully-electric propulsion will be available but only for smaller vessels.

We have a hybrid-electric concept applied to 4-stroke engines that will compete with 2-stroke engines in certain applications. When working with the CII, you must continuously decrease your energy consumption to maintain a specific rating. And we all know that the 2-stroke is very efficient around a working point. If we start moving away from this working point, the 2-stroke is less efficient. And here is where the whole logic for hybrid electric 4-stroke comes in. You have several engines; you switch them around and use the battery for power reserve.

**④ Looking at the technologies and fuels currently being developed/tested, how likely is it that shipping will manage to cut its annual greenhouse gas emissions by at least half by 2050? Do you believe the industry will need more time to achieve its environmental goals?**

The technology is or will be available in the relatively near future. The critical challenge is to create





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a level playing field to offset the cost of fuel and technology, which will be higher. Therefore, the challenge is how to create a level playing field so that it makes sense for shipowners to invest in new technologies. The EU is moving ahead with its plans, and, as stated in the “Fit for 55” package, the shipping sector will be brought into the carbon tax regime. Looking at it in terms of sustainability and meeting the goals of the Paris Agreement, the IMO goals are too conservative and slow. We need to accelerate, which makes the challenge all the greater as fuel availability is limited, and the shipping industry is a big consumer. So if you want to accelerate the shift, you must make the fuels available. And we have the same challenges on the energy side. If you are looking to decarbonise the energy system or produce green fuels, you need to accelerate the adoption of renewables. That will take time and requires an appropriate regulatory framework. In Europe, the biggest challenge right now regarding renewables is permitting. Everyone needs green power but “not in their backyard.” It is not a technical issue but a political one. My prediction is that the world will become more complex. That is something we have to deal with. And what you need when faced with increased uncertainty is flexibility and trusted partners.

**5 What are your strategic goals for the Greek market?**

We have a strong presence in Greece and Cyprus

and work closely with customers on decarbonisation. Everything we have discussed so far is relevant to our Greek customers. We can create value for our Greek customers by entering into agreements with them regarding improving their fuel consumption and system reliability. Of course, the Greek market is part of our strategy. Wärtsilä has a strong local representation. We add value to the local market through the technology solutions we provide, supporting the Greek customers to maintain their competitiveness in a dynamic global environment. Moreover, we safeguard our customers’ operations in terms of needed services availability and cost.

**6 Will the development projects of domestic shipyards, such as Elefsis, Skaramagas, etc., enhance your portfolio?**

Absolutely. We keep a close eye on the efforts to revive the domestic shipyards. Wärtsilä solutions are branded and used by local shipyards to attract customers and provide high-end services incorporating our solutions. There is also the option of Wärtsilä providing a standard package of solutions directly to the shipyards’ customers. Hopefully, Greek shipyards will be energised pretty soon. Overall, we believe this development will strengthen our position in the Greek market, and we are ready to support the shipyards’ ambitious plans.





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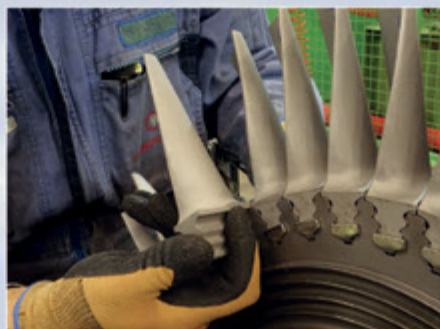
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# GREEN



# SHIPPING

The way ahead



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Under the auspices of MARTECMA:  
Marine Technical Managers Association in  
Greece



The future of ship propulsion and the fuels and technologies that will render decarbonisation possible are vital issues that have been puzzling both the shipping industry and the global economy. In this context, Naftika Chronika conducted a survey on green shipping, delving into the fuels and technologies of the future, the challenges ahead, and the initiatives taken by the EU and IMO thus far. In the second part of this report, experienced shipping industry members present their views on our survey's findings, analyse current trends, and discuss the way forward for shipping's decarbonisation.



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
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# FOCUSING ON THE MARITIME FUELS AND TECHNOLOGIES OF THE FUTURE

A research conducted by  
Manos Charitos and Nikos Vergounis

## MARTECMA members' views on shipping's decarbonisation roadmap

Due to environmental concerns and technological advances in the highly competitive and constantly evolving shipping industry, changes to the industry's status quo are becoming necessary. In recent years, the industry's agenda has revolved around decarbonisation, but opinions are divided as to how it can be achieved, given that the shipping industry is fragmented.

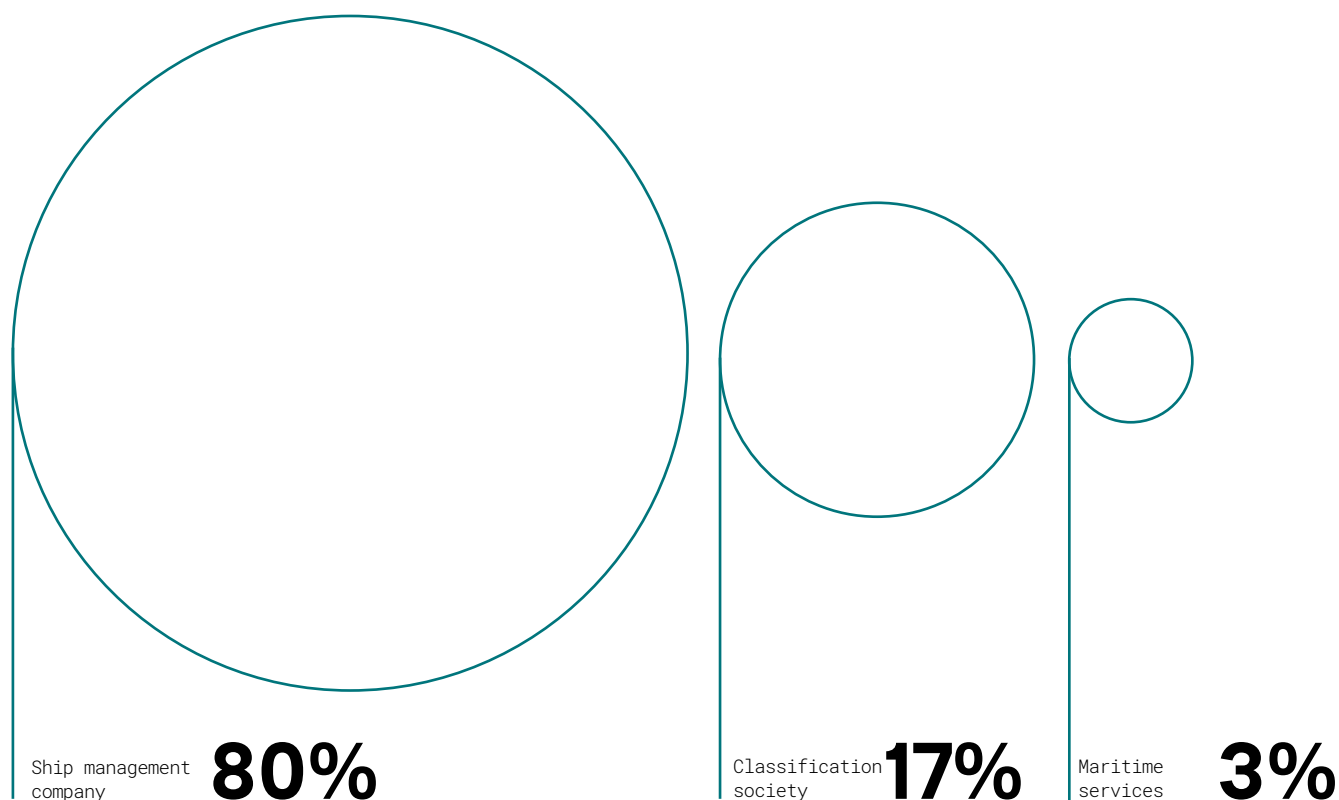
The ever-increasing rate at which new technologies, fuels, and new regulations are being introduced in the shipping industry to reduce the environmental footprint of ships is causing uncertainty for the next day of shipping. Therefore, it

is no coincidence that the good performance of the charter markets in recent years has resulted from the limited new-building orders, as shipowners cannot be sure which fuel or technology will prevail in the coming years.

In this context, Naftika Chronika has conducted a survey on "Green Shipping" based on the responses of MARTECMA members to a related questionnaire. A total of 75 people participated in the survey, of which 60 are representatives of shipping companies, 13 work for classification societies, and two in companies that provide services to the wider shipping industry.

This research aims to record experts' opinions on the emerging trends driven

Graph 1  
Distribution of the survey participants based on the type of company they work for





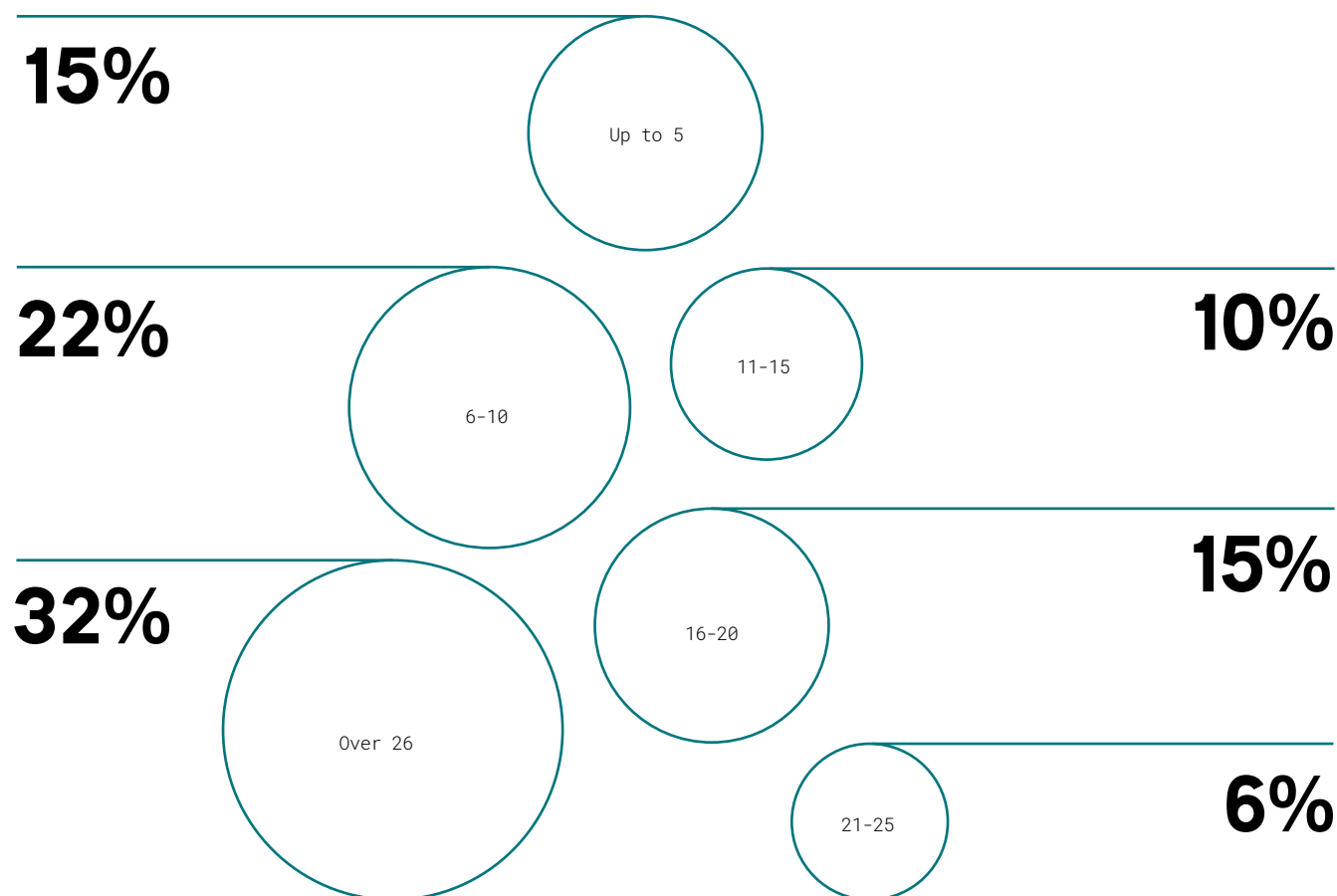
by the need to reduce shipping's environmental footprint and to draw conclusions about their impact on the industry's decarbonisation. Which marine fuels will prevail, and what technologies will be used to reduce fuel consumption and, ultimately, ships' emissions? We hope the responses to these and other questions posed to the survey's participants will trigger a meaningful dialogue among industry stakeholders as shipping begins its journey towards decarbonisation.

#### DISTRIBUTION OF THE SURVEY PARTICIPANTS BASED ON THE NUMBER AND TYPE OF SHIPS MANAGED BY THE COMPANY THEY REPRESENT

As indicated in Graph 1, 80% of the survey participants represent shipping companies of various sizes, categorised according to the number of vessels they manage. The company size category with the highest representation is companies managing more than 25 vessels. There are 19 such companies in the sample, representing 32% of the total (Graph 2).

To facilitate comparisons based on the size of the shipping companies represented in the survey, we have included two additional categories: representatives of companies with a fleet of up to 15 ships and representatives of companies with a fleet of more than 15 ships. 28 of the company representatives belong to the first category of shipping companies, while 32 belong to the second. Another axis of survey participant categorisation is the type of vessels their companies manage. The critical role of bulk carriers and tankers in the Piraeus/Athens fleet is again evident. Of the survey's 60 shipping company representatives, 17 work in companies that exclusively manage bulk carriers and 18 in companies that exclusively manage tankers. Thus, 58% of the participants work in companies that exclusively manage one of the two main types of bulk shipping vessels. At the same time, a significant 37% of participants represent companies managing diversified fleets (Graph 3). It is worth noting that four companies appear to be managing four different

Graph 2  
Distribution of the survey participants based on the number of ships managed by the company they represent







# Fuel for thought

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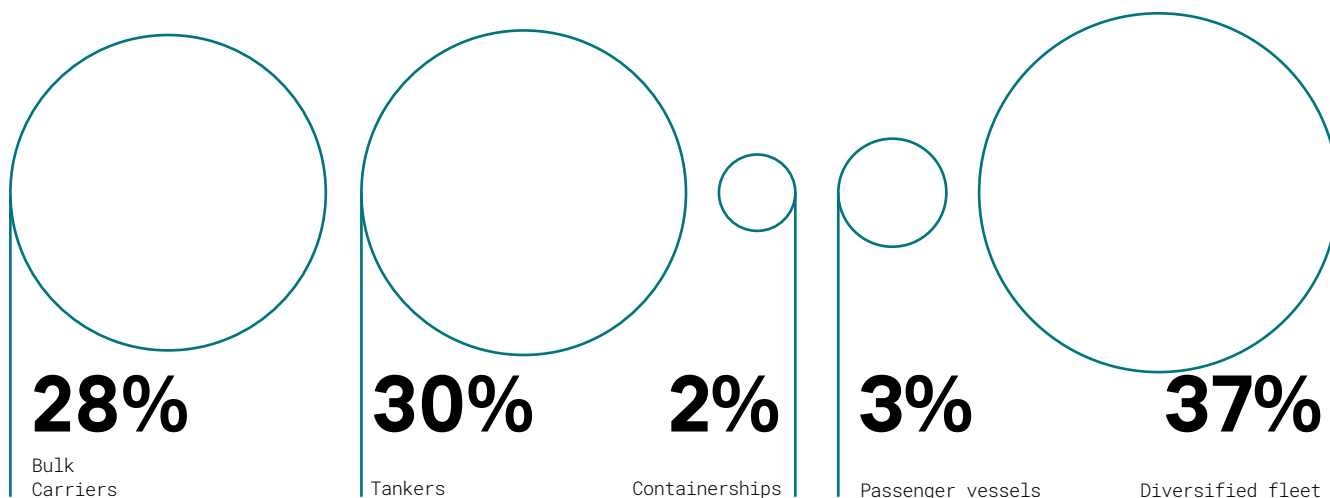


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Graph 3 Distribution of the shipping company representatives based on the types of ships managed by the company they work



types of vessels: bulk carriers, tankers, containerships, and gas carriers. On the other hand, 12 participants represent companies managing only bulk carriers and tankers.

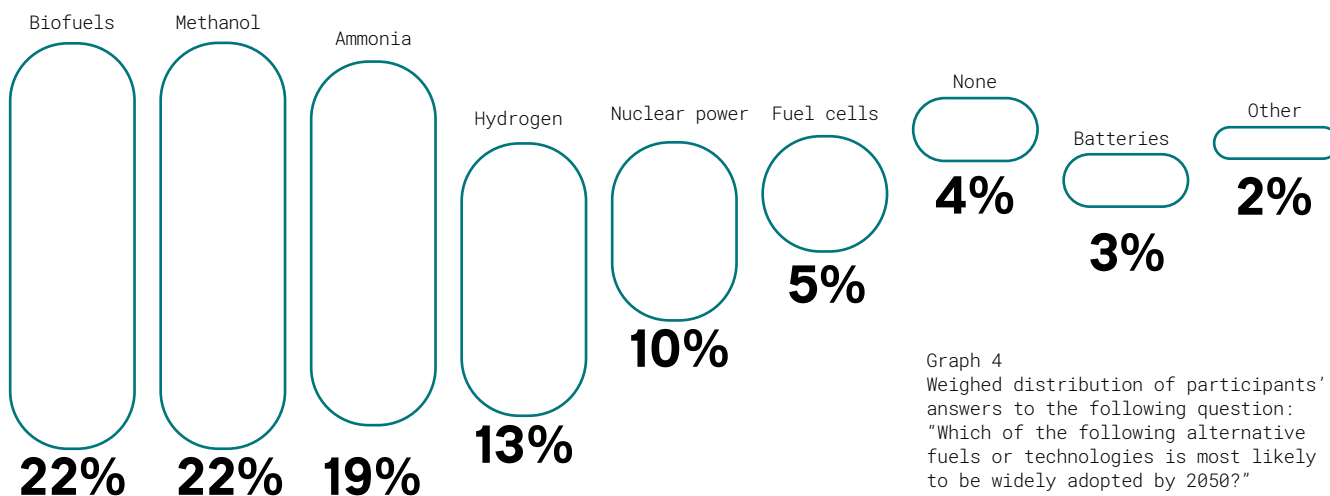
### THE FUELS OF THE FUTURE

One of the first questions participants were asked to answer was about the fuels and technologies most likely to lead the shipping industry to decarbonisation by 2050.

In the relevant question, the participants could select up to three options; 49 out of 75 (65.3%) selected three answers to this question, 16% two, and 18.7% one.

At this point, it is essential to highlight the logic behind the way the results of this question are presented in Graph 4. First, each one of the participants is of

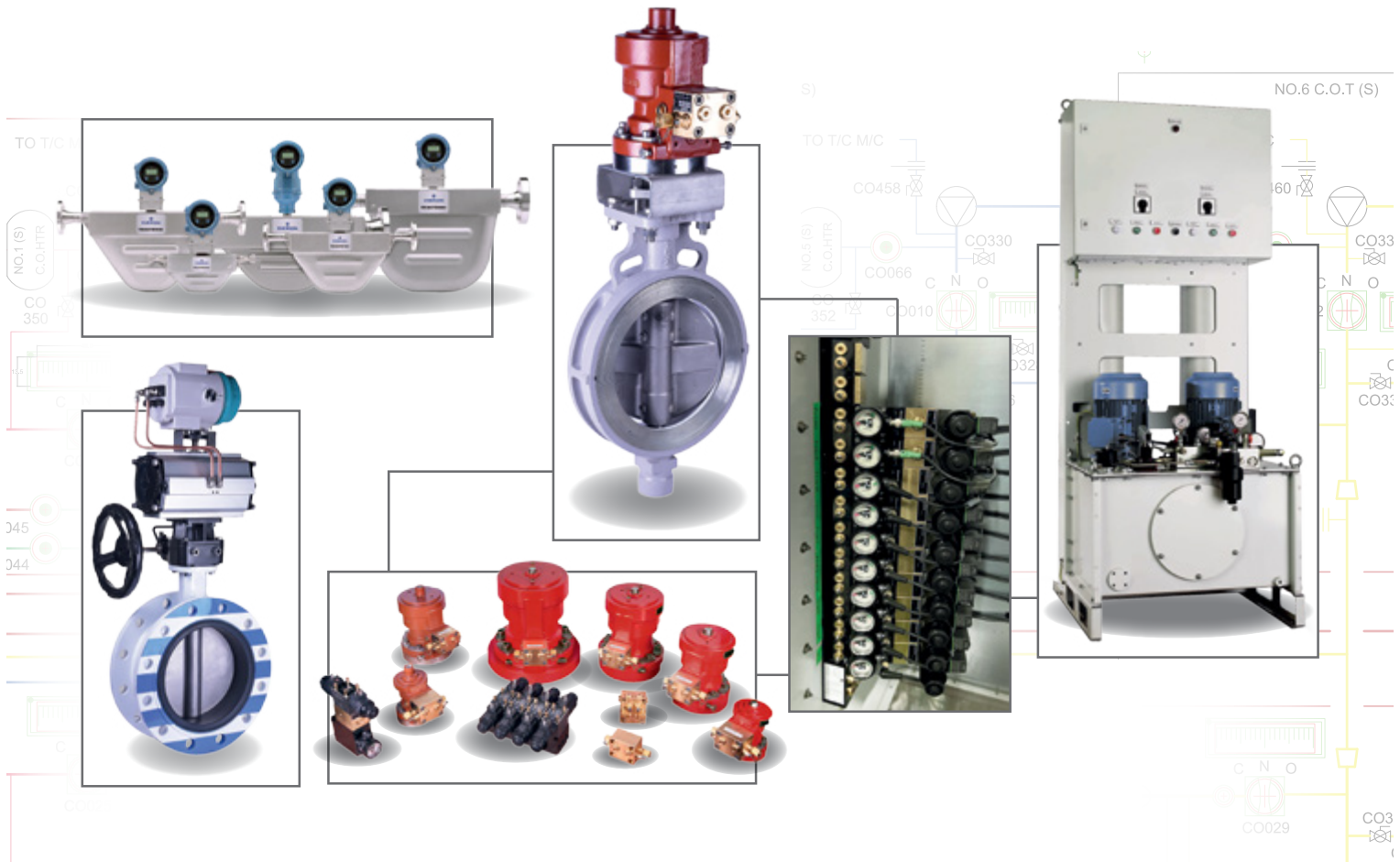
“equal value”, so when someone had only selected one of the possible options, the weight of that option equalled 1. At the same time, when someone had selected two of the possible options, each one of them got a weight of 1/2. Last, in cases where participants chose three options, each one got a weight of 1/3. This method assumes that for the participants who gave multiple answers to a question, each of the answers was of equal value to them, which may not necessarily be true. Everything mentioned above also applies to Graph 5. It is worth noting that the way the alternative fuels are produced is not taken into consideration. That is the reason why there weren't multiple possible answers for each fuel (e.g., “brown ammonia”, “grey ammonia”, “blue ammonia”, “green ammonia”, etc.).



Graph 4  
Weighed distribution of participants' answers to the following question:  
“Which of the following alternative fuels or technologies is most likely to be widely adopted by 2050?”  
(Up to three choices)



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Based on the answers given by the 75 representatives of shipping companies, classification societies, and service providers participating in the survey, biofuels, methanol, and ammonia are considered the most feasible options for the future. Biofuels are described as an up-and-coming carbon-neutral fuel solution that can quickly enter the global market and help meet the IMO's targets for reducing greenhouse gas emissions from 2030 onwards. In recent years, companies that manage a substantial number of ships, including ships of Greek interests, have been testing biofuels and investigating the potential of these fuels for the next day. At the same time, both methanol and ammonia are viewed as feasible fuels for widespread adoption by 2050, while methanol, in particular, appears to be the "favourite" choice for containership newbuildings; its proponents include their easy handling and storage and the reduction of tank-to-wake carbon emissions in the benefits it provides.

It is worth noting that hydrogen and nuclear power are also considered options that can play a vital role in the shipping industry's decarbonisation.

In any case, most respondents consider that several options have a 2050 implementation horizon, supporting the argument of many industry stakeholders that suggest a multi-fuel future for shipping as there is no one-fits-all solution.

## THE TECHNOLOGIES OF THE FUTURE

The race towards decarbonisation is taking place on multiple fronts. One concerns the fuel that will prevail in the future, and another the technologies to be used on ships to reduce emissions. In a related question, participants were asked which technology/technologies they consider most likely to be widely adopted in the shipping industry. 61 participants chose two of the possible options, and the remaining 14 chose only one.

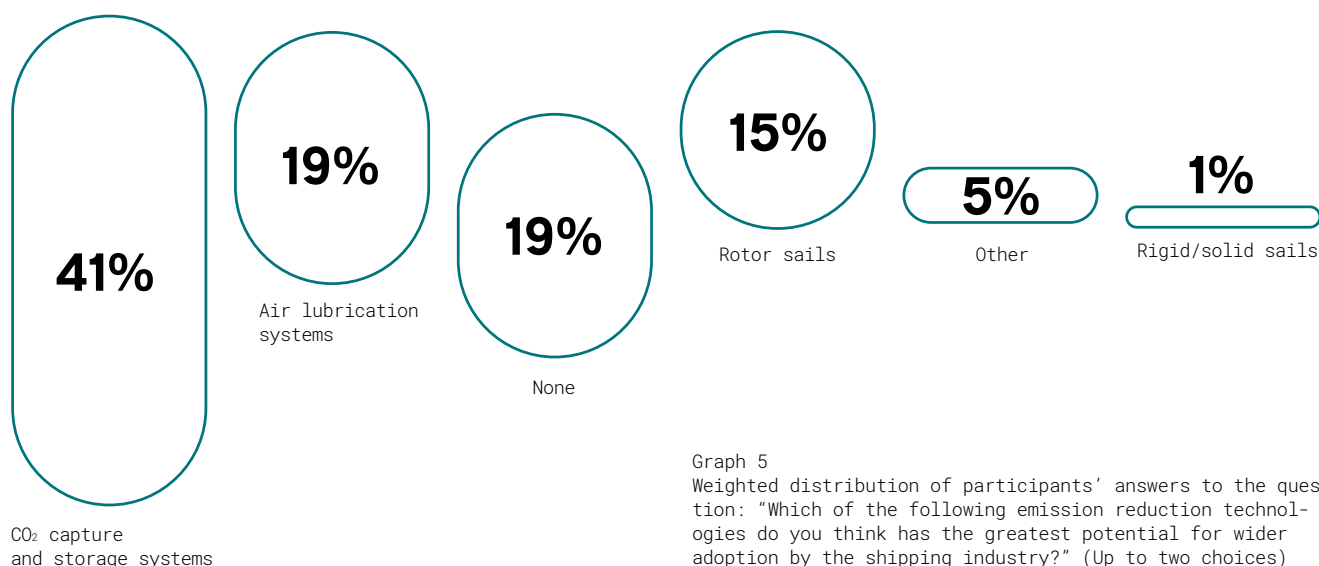
Based on their answers, the technological solution projected to play the most critical role is "CO<sub>2</sub> capture and storage systems". This technology is becoming increasingly popular in recent years, with a multitude of JVs, cooperations, and MoUs being announced.

The second most popular technology is "air lubrication systems", while the third most popular is "none"; Based on the participants' answers, there is a high level of uncertainty regarding the feasibility of the widespread adoption of a specific technology in the foreseeable future.

A small part of the participants proposed different technological solutions that weren't part of the questionnaire, such as "photosynthesising hydrogen" and "silicon coatings".

## THE ROLE OF LNG AS A LONG-TERM MARINE FUEL

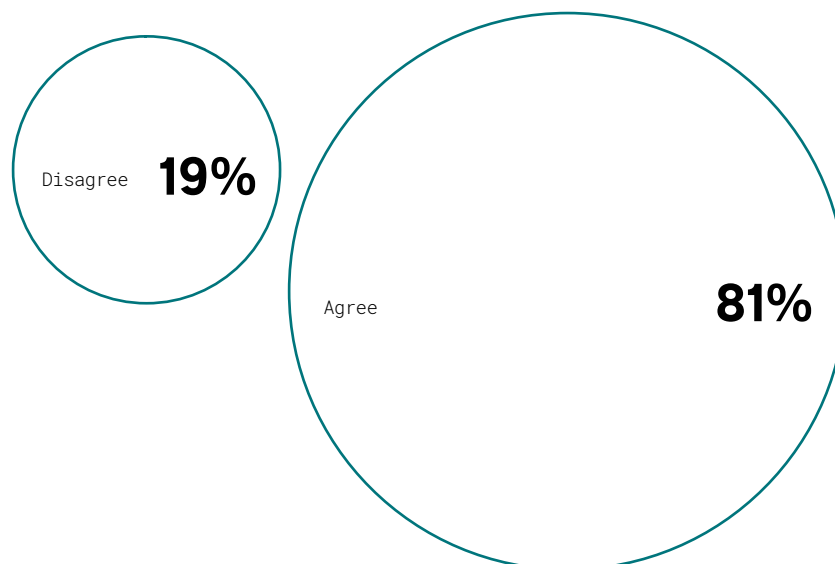
One of the main issues that cause concern in the shipping community is the energy transition and the fuels of the future. In





Graph 6

Distribution of participants based on their response to the statement: "LNG is just a transition fuel whose use will be greatly reduced, if not eliminated, by the end of the century"



this context, the role of LNG as a fuel monopolises interest: quite a few industry stakeholders argue that in the short and medium term, LNG will be the fuel that will allow shipping to limit the greenhouse gas emissions of ships. This claim is confirmed by the orderbook developments, with approximately 60% of the orders placed since the beginning of 2022 (in terms of GT) concerning vessels consuming alternative fuels mainly LNG. However, with the end of the century in mind, opinions are divided. Although most believe that LNG is a transition fuel and its role will have been eliminated by 2100, several express the opposite view.

In the related question, 81% of the participants agreed that "LNG is just a

transition fuel, and its use will be significantly reduced, if not eliminated, by the end of the century", while 19% disagreed.

In this category, the most notable finding is that of the survey participants working in the 28 shipping companies whose managed fleet does not exceed 15 ships, 93% agreed with this statement. However, for those working in the 32 shipping companies managing fleets numbering at least 16 ships, the percentage that agrees amounted to 79%, which is not significantly different from that of the entire sample (81%).

#### FIRST MOVERS AND THE LACK OF INCENTIVES CHALLENGE

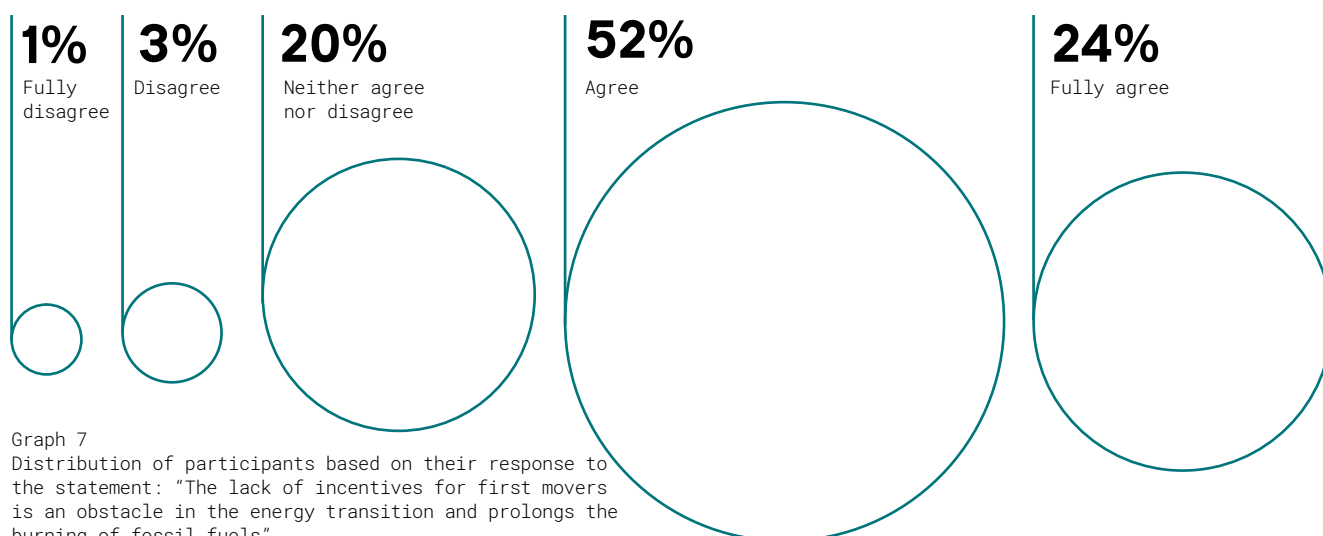
In the quest for the fuel of the future but also the technological innova-

tions that will enable its exploitation, one of the most critical challenges is the lack of incentives for those willing to take the first steps.

Especially in shipping, where the cost of ordering a ship starts at about \$30 million and can well exceed \$250 million, taking initiatives also means taking a significant risk.

The findings of this research indicate that the lack of incentives for first movers is an obstacle to the energy transition and prolongs the burning of fossil fuels. In this context, the International Chamber of Shipping highlights the need to develop incentives for early movers at every opportunity.

About three out of four participants



Graph 7

Distribution of participants based on their response to the statement: "The lack of incentives for first movers is an obstacle in the energy transition and prolongs the burning of fossil fuels"

agreed or strongly agreed with this statement. However, it is worth noting if the size of the company the participants work for is taken into account, these percentages do not differ significantly. Furthermore, none of the representatives of shipping companies answered that they completely disagreed with this statement.

### THE EFFECTIVENESS OF THE ENVIRONMENTAL MEASURES IMPOSED ON EUROPEAN SHIPPING

Amid the broader effort being made for the energy transition of the global economy, maritime transport, despite its limited contribution to global greenhouse gas emissions and pivotal role in international trade, has not escaped the “eye” of the legislators, especially those in Europe. Given the industry’s global nature, the overall sentiment among survey participants was that EU initiatives are insufficient to reduce shipping’s environmental footprint, even at the European level, which is in line with the prevailing feeling among shipping stakeholders who believe that effective measures can only be taken at the IMO level.

Only 11% of the participants consider that the ETS is an effective measure to reduce the environmental footprint of European shipping, while the corresponding percentage for the fuel levy is 25%. On the other hand, 64% of participants consider slow steaming a more effective solution. In the past, in view of the implementation of the sulfur cap from 1 January 2020, many shipowners and managers in international fora had advocated reducing ship speed as an immediate and realistic option and wondered why the legislators did not promote it as it is a measure with zero costs and quick results.

Notably, the above percentages do not vary significantly from respondents’ working for bulk carrier or tanker managing companies or those based on the sample distribution by company size.

### TARGET

In addition to the significant ambitions set for 2050, the IMO has imposed a 40% carbon intensity reduction target by 2030. However, this short to medium-term target has been causing considerable concern in the international shipping community, as most remain uncertain about whether it is achievable.

Almost half of the participants are undecided about whether such a goal is achievable: 53% responded that they consider it “doubtful” that this goal will be achieved, 21% think it is “possible”, while 21% “rather unlikely.” Notably, these percentages do not differ significantly, even if only the answers of the respondents who consider LNG a transitional fuel or those who think slow steaming is the most effective solution to reduce the environmental footprint of European shipping are taken into account.

### CONCLUDING REMARKS

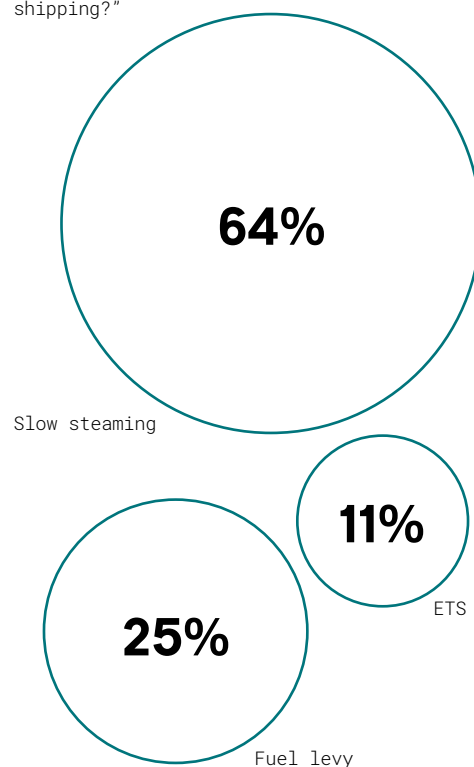
This research is our first attempt to capture the opinions of Greek shipping community members with a solid technical background on the environmental and regulatory path followed by the industry in its effort to reduce its carbon footprint. It reflects similar views to those expressed in most international fora regarding the range of potential marine fuels and technologies that could, under certain conditions, contribute to shipping’s energy transition.

Regarding LNG, the majority of the survey respondents, like most shipping industry stakeholders, consider it a transitional fuel whose uptake will be limited -if not eliminated- by 2100.

The fact that only 11% of this survey’s participants consider the ETS an effective measure should raise the alarm in Brussels decision-making centres regarding the policies they are promoting to reduce the environmental footprint of European shipping. The messages about whether the IMO’s 2030 targets will be met are mixed.

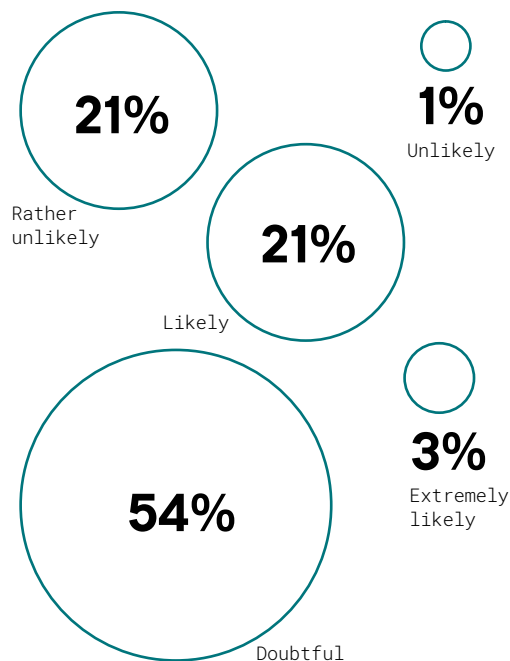
Graph 8

Distribution of participants based on their response to the question: “Which of the following measures do you consider most effective in enforcing the reduction of the environmental footprint of European shipping?”



Graph 9

Distribution of participants based on their response to the question: “How likely do you think it is that the targets set by the IMO to reduce carbon intensity by 40% by 2030 will be achieved?”



### THE IMO’S 2030 EMISSIONS





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The recently conducted MARTECMA survey reflects the shipping industry's diverse opinions and approaches to decarbonisation, as companies of various sizes and assets strive to achieve the International Maritime Organization's (IMO) emission reduction targets.

# THE PATH TO DECARBONISATION IS UNDENIABLY CHALLENGING

An introduction by  
Assoc. Prof. **Dimitrios V. Lyridis**  
and **Dimitrios Polymenopoulos**  
Laboratory for Maritime Transport  
School of Naval Architecture and Marine  
Engineering  
National Technical University of Athens



The survey results highlight a variety of alternative fuels, including biofuels, methanol, ammonia, hydrogen, nuclear power, electricity (batteries) and fuel cells, with no one-size-fits-all solution emerging as the clear winner. However, rather unexpectedly, hydrogen is considered quite realistic. As a result, shipping companies must tailor their decarbonisation strategies to specific vessel types and operational requirements while considering potential risks, such as stranded assets, if certain fuels lose favour or fail to meet long-term sustainability goals.

Regarding fuels, according to the survey, biofuels are generally easier to adopt for both large and small companies due to their compatibility with existing engines and infrastructure. However, although using them may presently seem feasible, scaling up these solutions may be a problem. Additionally, the limited availability and higher cost of biofuels may pose challenges, particularly for smaller companies. The overall environmental performance of biofuels is subject to debate, as they can lead to lower greenhouse gas emissions compared to fossil fuels. Still, the production process can be energy-intensive and gen-

erate significant emissions. Moreover, increasing biofuel demand can exacerbate deforestation, land-use change, and biodiversity loss, potentially compromising food security.

The high cost and limited availability of fuel cell technology may limit its adoption, particularly for smaller companies. On the other hand, nuclear power is more likely to be adopted by companies with the necessary resources and expertise to manage the complex regulatory, safety, and public perception issues surrounding it. In addition, nuclear power may be more suitable for certain ship types, such as icebreakers or large cargo vessels operating on long-haul routes. As for hydrogen and ammonia, their handling and storage require specialised infrastructure and safety measures, which may be more challenging for smaller companies to implement. Surprisingly enough, batteries are not considered very relevant, although technically, they should represent a viable alternative for short-sea connections.

Regarding various ship types, according to the survey, decarbonising bulk carriers requires addressing their energy consumption and emissions,



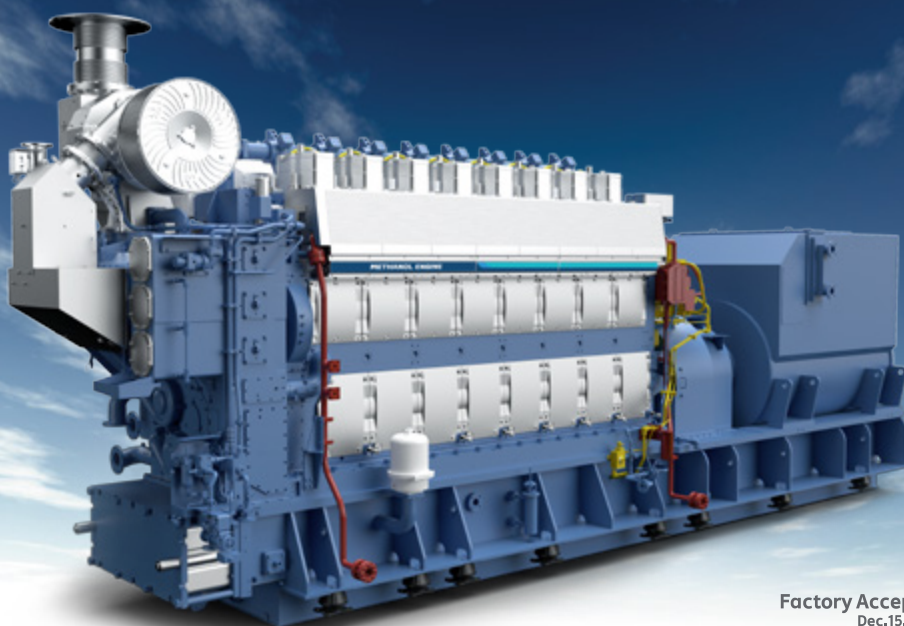
which can be achieved through measures such as slow steaming, hull and propeller optimisation, and adopting alternative fuels like ammonia or hydrogen. However, bulk carrier routes' long-haul nature and high fuel consumption may pose challenges in finding cost-effective and readily available low-carbon alternatives. The specific cargo characteristics of tankers, such as the need for heating or cooling, may necessitate additional considerations in decarbonisation strategies. The use of LNG as a transition fuel may be more feasible for tankers than for bulk carriers, given its compatibility with their cargo and infrastructure requirements.

Stranded assets pose challenges for both large and small shipping companies, albeit in different ways. Large shipping companies face potential losses due to their extensive investments in assets at risk of becoming stranded but may have the resources and flexibility to manage these risks effectively. In contrast, small shipping companies may be more vulnerable to

the impacts of stranded assets due to their limited financial resources and inability to diversify investments.

Understanding the differences between large and small companies can help policymakers and industry stakeholders develop targeted strategies to support the shipping industry's transition towards decarbonisation. CO<sub>2</sub> capture seems to be favourable in the short term, as it adopts a business-as-usual approach that is solved using existing technical and financial tools. However, lifecycle emissions of carbon capture technology, including the emissions generated during the production, transportation, and disposal of the systems, must be considered when evaluating its overall environmental impact.

First movers in the shipping industry are forward-thinking, financially strong, maintain strategic partnerships, prioritise ESG performance, comply with regulations, foster an innovative culture, and have experience with alternative fuels. These characteristics enable



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them not to expect regulatory bodies to make the first move but to try to navigate the complex landscape of decarbonisation themselves.

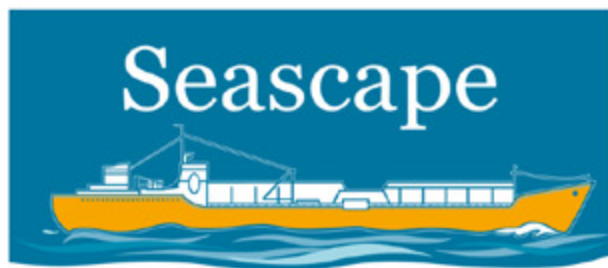
Despite the survey respondents' unfavourable views, the recent decision to include shipping in the EU Emissions Trading System (ETS) demonstrates the growing momentum towards regulating shipping emissions. This could lead to increased investments in green technologies and alternative fuels as shipowners face the financial implications of emissions allowances. The ETS decision also underscores the importance of coordinated international efforts to ensure that environmental regulations and targets are universally applicable and enforceable.

The G7 will push member states at the International Maritime Organization (IMO) to introduce intermediate targets for 2030 and 2040 for the revised IMO GHG reduction strategy during the upcoming 80th session of the Marine Environment Protection Committee (MEPC80), in line with efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

Decarbonisation will generally be tougher on smaller companies from a financial and technical standpoint. For instance, it will be harder for a single technical director to work on old and new technology vessels simultaneously. Classification societies have a role to play here by identifying affordable technologies and practices that deliver meaningful emissions reductions without compromising the competitiveness of smaller companies. They can also help small companies identify and exploit funding opportunities, tax incentives, or other financial support available for decarbonisation projects. This assistance can make green investments more feasible for their smaller budgets.

Behind the MARTECMA survey about shipping's decarbonisation is a complex and diverse landscape, with various alternative fuels and strategies emerging as potential solutions. Shipping companies of all sizes and vessel types must carefully assess their options and tailor their decarbonisation strategies to their specific needs and operational requirements. Ultimately, it must be remembered that shipping is not one industry only! The ocean-going vessels of various types (tankers, bulk carriers, container ships, Ro-Ro vessels, LNG carriers, etc.) and missions (charter vessels or liners), short-sea shipping's smaller vessels (calling at smaller ports in a specific sea region), the liner ferries covering greater distances (Ro-Pax, etc.) the vessels serving short-sea connections (open-ended ferries common in Greece and other countries), the special vessels operating in ports (tug boats, etc.), other support vessels (OSV's), cruise vessels, daily cruisers, private yachts, etc. all are part of the shipping industry. Each category will require a different decarbonisation strategy. The path to decarbonisation is undeniably challenging. However, with collaboration, innovation, which may include an updated business model, and targeted support, the shipping industry can navigate this complex journey and play a crucial role in decarbonisation and mitigating climate change.



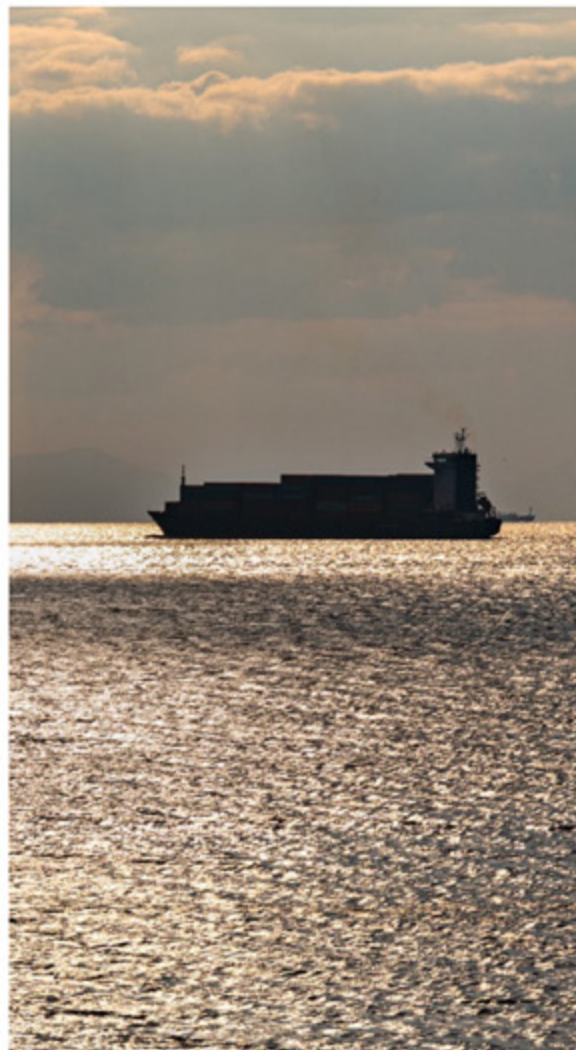


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Mr Stavros Hatzigrigoris outlines the carbon capture technologies being developed and explains the CCSUS process.

# CCS PROJECTS ARE GAINING MOMENTUM

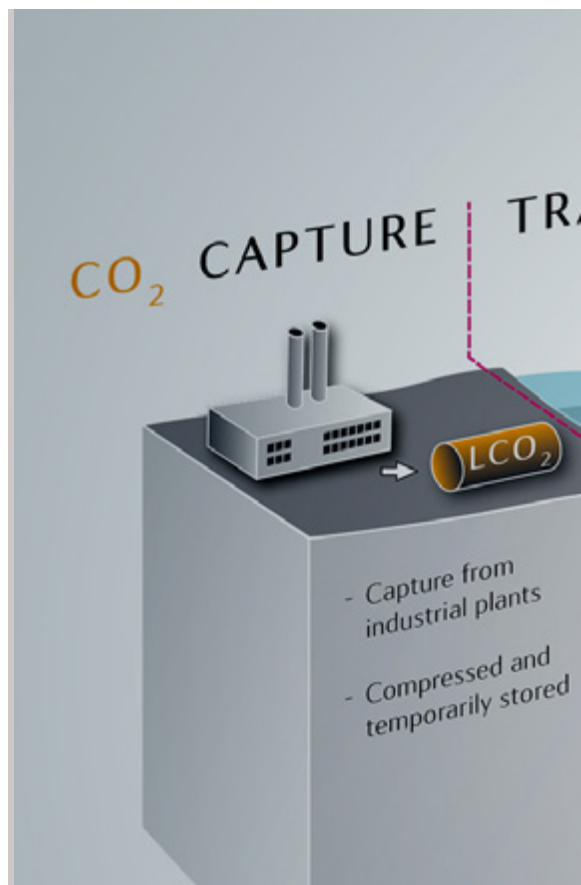


by **Stavros Hatzigrigoris**,  
Advanced Engineering Services;  
Zodiac Maritime

Carbon capture utilization and storage (CCSUS) is a process that involves capturing carbon dioxide (CO<sub>2</sub>) emissions from industrial processes or power generation (including the possibility of applying same processes for ship-board plants), utilizing the CO<sub>2</sub>, temporarily storing, transporting the CO<sub>2</sub> to a storage site, and then storing it securely underground or in other long-term storage facilities. Depending on impurities, the captured CO<sub>2</sub> can also be utilized in the food industry and other important processes such as the production of green fuels.

The goal of CCS is to reduce the amount of CO<sub>2</sub> which is a major contributor to the climate change. By capturing and storing CO<sub>2</sub>, CCS can help to reduce greenhouse gas emissions and mitigate the effects of global warming. There are several carbon capture technologies currently in use or under development. The most common of them are the following:

1. Absorption: Absorption, also known as amine-based absorption, is the most widely used carbon





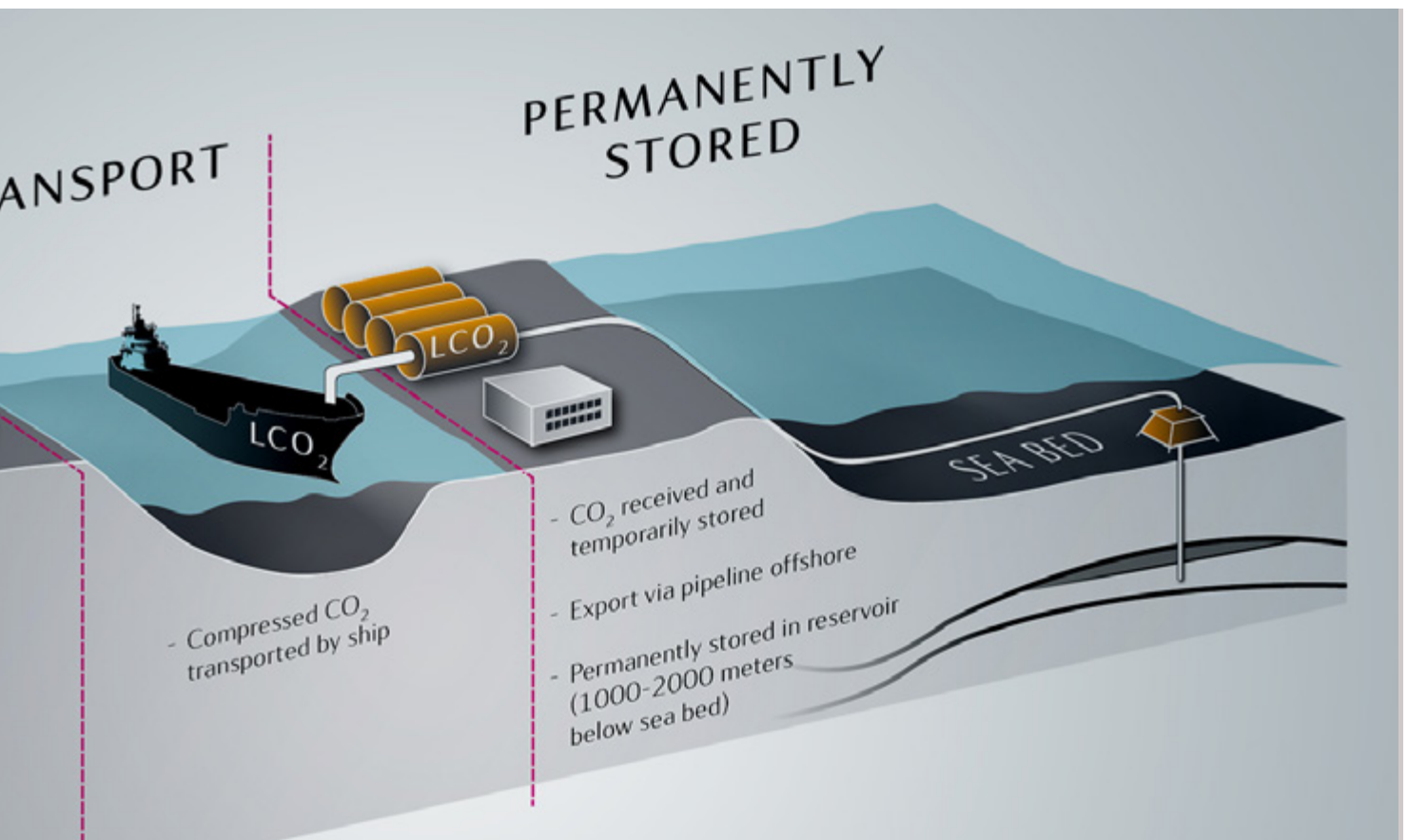
capture technology. It involves using a liquid solvent, typically an amine compound, to absorb CO<sub>2</sub> from flue gas. The process occurs in an absorption tower where the flue gas is brought into contact with the solvent, which selectively captures the CO<sub>2</sub>. Afterward, the solvent is heated to release the captured CO<sub>2</sub>, which can be liquified or compressed and stored or utilized in other industrial processes.

2. **Adsorption:** Adsorption-based carbon capture involves the use of solid materials, such as activated carbon or zeolites, to adsorb CO<sub>2</sub> from flue gas. The process relies on the principle of adsorption, which is the binding of gas molecules onto the surface of a solid material. Adsorption can be performed using fixed-bed adsorbers or fluidized-bed systems. Once the adsorbent material reaches its saturation point, CO<sub>2</sub> can be desorbed by reducing the pressure or increasing the temperature, allowing the material to be reused.
3. **Chemical Looping:** Chemical looping is an innovative carbon capture technology that utilizes metal oxide particles as an oxygen carrier. The process involves the separation of oxygen from air using a metal oxide material, which reacts with the fuel in a fuel

reactor to produce CO<sub>2</sub> and steam. The CO<sub>2</sub> can be easily captured from the flue gas by condensing the steam, while the metal oxide particles can be regenerated by reacting with air, releasing concentrated CO<sub>2</sub> for storage.

4. **Membrane Separation:** Membrane separation involves the use of specialized membranes to separate CO<sub>2</sub> from flue gas based on its molecular properties. These membranes have selective permeability, allowing CO<sub>2</sub> to pass through while blocking other gases. Membrane separation can be carried out using various types of membranes, such as polymeric membranes, ceramic membranes, or mixed matrix membranes. This technology offers advantages like simplicity, compactness, and potential for lower energy requirements.
5. **Gas hydrate formation:** Gas hydrate formation, also known as gas hydrate crystallization or gas hydrate clathrate formation, is a carbon capture technology that involves the capture of CO<sub>2</sub> by forming gas hydrates. Gas hydrates are crystalline structures composed of water molecules that form cages around gas molecules, such as CO<sub>2</sub>, methane, or other gases.
6. **Cryogenic Separation:** Cryogenic separation

Northern Lights  
illustration  
(Photo: Equinor)





involves cooling the flue gas to extremely low temperatures, typically below -78 degrees Celsius, where CO<sub>2</sub> can be condensed and separated. The process relies on the different boiling points of CO<sub>2</sub> and other gases in the flue gas mixture. By cooling and pressurizing the flue gas, CO<sub>2</sub> can be captured and subsequently released by reducing the pressure. Cryogenic separation is energy-intensive but has the advantage of producing a relatively high-purity CO<sub>2</sub> stream.

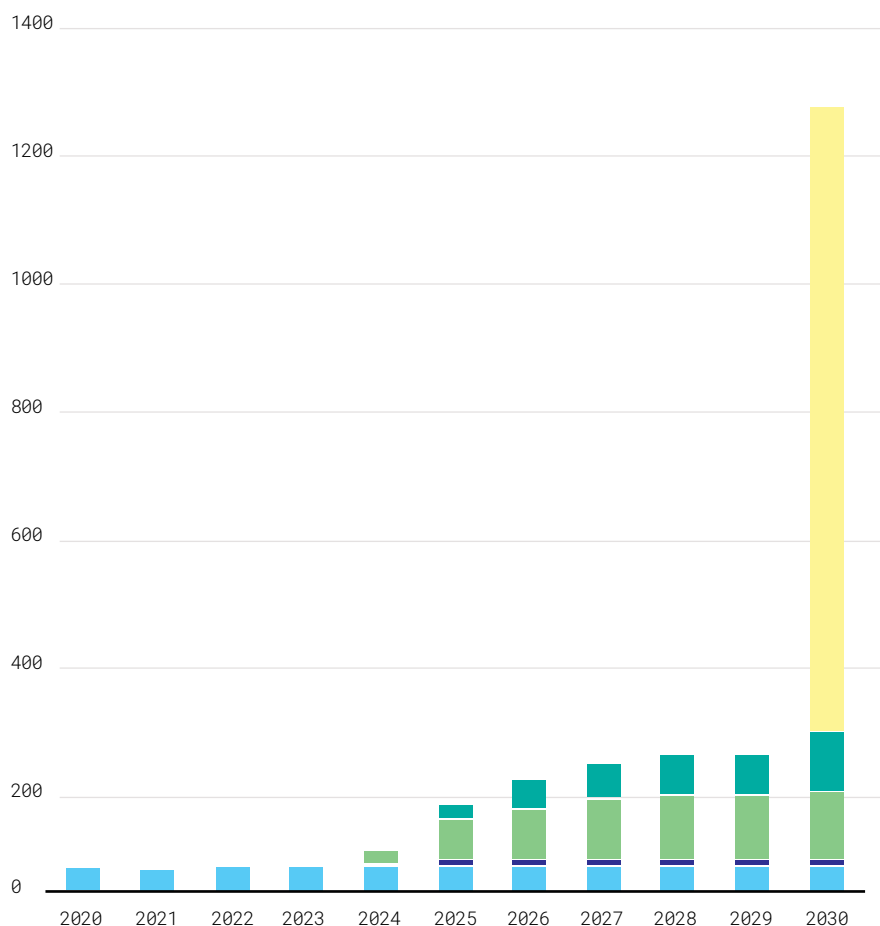
Carbon capture technology onboard ships is a developing field; more than 30 companies (many of them sponsored by Green funds available from their national governments) are now trying to develop and test onboard CCS systems that will enable to capture and store CO<sub>2</sub> at economically competitive costs in relation to carbon trading. From the several methods indicated above, most of the vendors are

focusing on CO<sub>2</sub> absorption by utilizing chemicals to trap the CO<sub>2</sub>, then releasing it storing it in liquid or solid form. Carbon capture could be anything from 30 % to 100 % in order to meet the statutory requirements of keeping the CO<sub>2</sub> trading costs low. One MT of fuel will be generating more than 3.2 MT of CO<sub>2</sub> excluding the additional fuel that will have to be consumed during the carbon capture and storage process.

Apart from the use of amines, one of the most promising technologies is CO<sub>2</sub> absorption using Ammonium hydroxide. In this process, the flue gas containing CO<sub>2</sub> is passed through an absorber column where it comes into contact with a stream of NH<sub>4</sub>OH solution. The CO<sub>2</sub> reacts with NH<sub>4</sub>OH to form ammonium bicarbonate (NH<sub>4</sub>HCO<sub>3</sub>), which is then separated from the solution. The solution is then regenerated by heating it, which releases the CO<sub>2</sub> and water vapor, leaving the NH<sub>4</sub>OH to be reused for further CO<sub>2</sub> absorption. The CO<sub>2</sub> is stored as powder of CaCO<sub>3</sub> which according to a research carried out by the Korean government can be dumped directly into the sea.

Currently, according to data retrieved from the International Energy Agency (IEA), there are about 35 commercial facilities applying CCUS (carbon capture, utilization, and storage) in industrial processes, fuel conversion, and power generation, with a combined annual CO<sub>2</sub> capture capacity of nearly 45 million metric tons. Although CCS projects have not been utilized in a large scale in the past, it is today gaining significant momentum with approximately 300 projects in various stages of development. Over 200 new capture facilities have been announced to be operational by 2030, with the ability to capture over 220 million metric tons of CO<sub>2</sub> per year. For 2050 the International Energy Agency (a UN body) is expecting that more than 1.3 billion tones originating from the use of fossil fuels and other industrial processes will be still be polluting the atmosphere and will have to be captured, transported and stored. This may generate the need of operating a large number of liquid CO<sub>2</sub> carrying ships.

Capacity of large-scale CO<sub>2</sub> capture projects, current and planned vs. the Net Zero Scenario, 2020-2030







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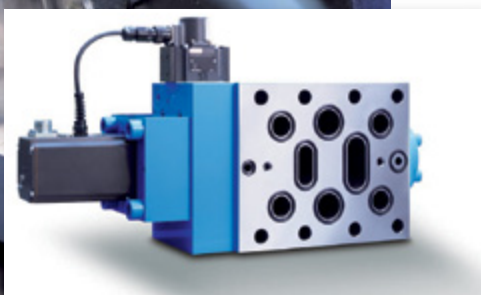
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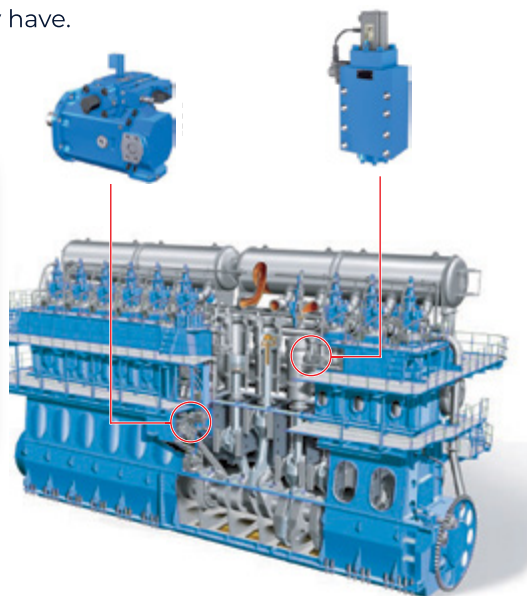
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Mr Christos Hadjigeorgiou answers the million-dollar question about the barriers to adopting new technologies on ships. He also discusses the possibility that LNG will persist beyond the end of the century.

# THE GREATEST CHALLENGE IS THE LACK OF FOCUS

**Although initiatives focused on developing emission reduction technologies are increasing dramatically, the survey findings indicate that industry experts consider it doubtful that any such technology will be widely adopted by 2050. What are the main challenges standing in the way of developing such solutions, and what is a realistic timeframe for their widespread adoption in shipping?**

The so-called “emission reduction technologies” can be split into two broad categories, one that deals with the effects of using fossil fuels, such as carbon capture and storage/use and the other that deals with reducing power requirements.

The first category is expected to be widely accepted, as it will allow the use of fossil fuels for much longer, particularly if acceptable, realistic alternatives are not developed. The second category falls, until now, under the methods of “marketing” ideas that have some effect but no real impact. For example, through the EEDI regulatory framework, the IMO is pushing for a continuous reduction of ship powering requirements. However, some of these technologies will possibly be used by designers and shipyards on a large scale to meet future EEDI requirements.

The greatest challenge is the lack of focus. Multimillion ideas are floating in the air, with some very large companies testing some of them to include them in their ESG reports, investigate whether any real benefit can be ascertained, or both. This lack of focus is probably due to the method used, i.e., setting the target but not the method to achieve it.



by **Christos Hadjigeorgiou**,  
Managing Director  
at Almi Marine Management SA





KONGSBERG

**Regarding the goals set by the IMO for 2030, 21% of the respondents consider their achievement likely and 3% extremely likely. What exactly is required to achieve these goals, and why does the shipping community doubt they will be attained?**

The 2030 targets have not yet been finalised. Much of the attention has been focused on the implementation and adjustment of the CII regulations have drawn negative criticism from across the industry as an ineffective means of achieving the objectives.

**19% of the participants believe that using LNG as a fuel will persist even after the end of the century. In your opinion, what are the uncertainty factors leading to this particular claim?**

LNG has been met with scepticism from the outset of its introduction, mainly because of its potential to cause much more environmental damage when it slips (methane slip) into the atmosphere. However, to answer the question, the following must be considered:

- LNG exists in huge quantities, and massive investment has been put into extracting, distributing, and using it on the entire planet.
- It is perceived as a cleaner fuel than fuel oil.

Based on the above, it is likely that LNG use may persist even after the end of the century. However, this will clearly depend on the alternatives that may have been developed by that time and the methods developed to contain the methane slip. If a new fuel can be found that can utilise the entire or part of the LNG infrastructure, that will speed up the demise of LNG and the dominance of that fuel in the years to come.

**A small percentage of the survey participants consider ETS the most effective measure in enforcing the reduction of the environmental footprint of European shipping. Which are the hurdles to the successful implementation of ETS?**

The EU has come forward with emissions taxation, which is a double-edged sword. By taxing emissions, shipowners and charterers are given incentives to invest in ships and fuels that will result in lower emissions. On the other hand, the cost of transporting goods to, within, and from the EU will increase.

So far, the steps for the implementation of the ETS appear to be reasonable. "Successful" implementation means that this whole process will deliver results in accordance with expectations. The greatest hurdle will be the possible ingenuity of the parties concerned to circumvent the regulation to a lesser or greater extent. That remains to be seen and evaluated against expectations in the coming years.

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Mr Panos Zachariadis analyses the pros and cons of nuclear energy, hydrogen, ammonia, methanol and biofuels.

# EVEN IF GREEN HYDROGEN WAS AVAILABLE, WOULD ANY BE LEFT FOR SHIPS?

Regarding which alternative fuel they considered more likely to be widely adopted by the shipping industry by 2050, the most popular answers in descending order were biofuels, methanol, ammonia, hydrogen, and nuclear energy. In your view, what are the advantages and disadvantages of the above fuels?

Let us start from the least chosen to the most chosen.

**Nuclear energy:** Although it is not clear by the question which “nuclear energy” it refers to (i.e., the current or the new 4th generation), the technical members are well aware of the new emerging technology in this area. 4th generation nuclear energy is practically 100% safe with small amounts of radioactivity. It is now in the prototype manufacturing stage and is expected to be available in a few years. The advantage of nuclear energy is, of course, its capacity to produce huge amounts of emission-free electricity, which in turn can be used to produce green hydrogen from water electrolysis. Furthermore, due to the high temperatures involved in 4th generation nuclear power, thermochemical water splitting can be used without the need for electrolysis. Lastly, 4th generation closed mini reactors could be used on board ships for propulsion and electricity generation. Their simplicity, no requirements for cooling water, no need for maintenance, and low risk may make them viable for such purpose.

**Hydrogen:** Hydrogen is the mother of most other alternative fuels. Hydrogen is difficult to store and handle, requiring  $-260^{\circ}\text{C}$  to be liquefied, and is explosive. Even as a liquid, it requires 10 times larger tanks for the same range as conventional



by **Panos Zachariadis**,  
Technical Director,  
Atlantic Bulk Carriers Management Ltd.



fuels. It may be suitable for small vessels on relatively short distances. But for large ships, the “hydrogen carriers” methanol and ammonia are easier to handle and have a higher energy density.

**Ammonia:** It is produced from hydrogen by adding nitrogen but needs only -34° C to remain liquid, so it is easier than hydrogen to store. It does not emit any carbon when burnt but releases a lot of NOx. In engines, it requires pilot fuel, whereas such engines are still in development. Among its negatives is that the infrastructure for using ammonia as marine fuel does not exist. However, its biggest deterrent is its toxicity. Only a 0.5% air concentration kills a human instantly, whereas a tank spill at sea will decimate a few cubic kilometres of any sea life.

**Methanol:** Among its negatives is the fact that it is hard to make green methanol since CO<sub>2</sub> must be added to green hydrogen. The sourcing of CO<sub>2</sub> and the cost of the process is a challenge. Other than that, the positives outweigh the negatives. It is easy to use even on existing ships using the existing bunkering infrastructure since it is liquid at ambient conditions and is harmless to the marine environment.

**Biofuels:** They can easily be used as drop-in fuels to conventional marine fuels. Thus, they will be the first and easiest method to reduce emissions in the near future and to comply with some upcoming regulations, like Fuel-EU, which require a gradual reduction of the carbon content of ships’ fuel. A challenge will be their proper certification and ensuring their production does not compete with food sources. So, we see that the members’ choices have properly ranked each fuel primarily based on its practicality and technological readiness.

**Considering that we are talking about green fuels, how is the issue complicated by the need for green hydrogen to produce green ammonia and green methanol?**

98% of current hydrogen production is from natural gas or even coal! Only 2% is from water electrolysis, and even a smaller amount, perhaps 1%, is really green, where the electricity used is from renewable sources (wind or solar). Indeed, for ammonia and methanol to be green, they need to be produced from green hydrogen. And here lies the challenge. The current and future projected renewable electricity is insufficient to produce the enormous quantities of green hydrogen required by shipping. Not only that, but a recent study submitted to IMO shows that even if, theoretically, those quantities were produced, the CO<sub>2</sub> reduction by supplying them to other industries (such as land transportation and factories) would be 8 times larger than supplying them to ships. So, the question is, even if green hydrogen was available, would any be left for ships? Here nuclear energy could help to produce the green hydrogen required. But in the end, we need new technology, such as better batteries and cheaper and faster methods to produce green fuels.



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Mr Miltiadis Synefias discusses the potential of LNG as a transitional option towards the 2030 & 2050 environmental targets, the hurdles to the successful implementation of ETS and analyses the various technological solutions for shipping's decarbonisation.

# THERE IS A LONG WAY AHEAD

**Although initiatives focused on developing emission reduction technologies are increasing dramatically, the survey findings indicate that industry experts consider it doubtful that any such technology will be widely adopted by 2050. What main challenges stand in the way of developing such solutions, and what is a realistic timeframe for their widespread adoption in shipping?**

Regretfully, we have to repeat comments such as the regulations being issued long before the technical compliance solutions can be offered. It is evident that the industry will have to go through adopting hybrid solutions that include fuel oil and another fuel with a reduced CO<sub>2</sub> footprint. Solutions such as the VLSFO\_LNG DF may be technically available today but are not techno-economically feasible - a fact confirmed by the majority of MARTECMA members who voted in favour of slow steaming as the most effective measure imposed on European shipping. Furthermore, other alternative fuels may also be available, but the supply chain infrastructure and the legal/safety aspects still require development. Therefore, the ship owner/operator is once again asked to invest in and test the offered solutions, which, in their majority, are incomplete and expensive.

**Regarding the goals set by the IMO for 2030, 21% of the respondents consider their achievement likely and 3% extremely likely. What exactly is required to achieve these goals, and why does the shipping community doubt they will be attained?**

The industry requires clear and transparent solutions, well developed in terms of safety, legal framework, supply chain infrastructure, and availability of an adequately trained workforce for worldwide operation. Even more important, the solutions should make sense in meeting the environmental compliance regulations, with transparent processes for evaluating the well-to-wake CO<sub>2</sub> footprint of each fuel.



by **Miltiadis Synefias**,  
Technical Director,  
Pleiades Shipping Agents SA





During the transition phase, the industry is reluctant in its majority to adopt hybrid solutions and, demonstrating an inherent inertia, continues using HFO. This is evident from most MARTECMA members voting for CO<sub>2</sub> capture options to reduce the CO<sub>2</sub> footprint further. However, even these technologies are in the development stage and require a considerable amount of energy.

LNG is just a transition fuel whose use will decline significantly if not eliminated by the end of the century. Although LNG has a marginally superior well-to-wake CO<sub>2</sub> footprint than HFO, it is currently the only alternative fuel with which the industry is more familiar and has the best-developed supply infrastructure. Nevertheless, the high techno-economics and geopolitical uncertainty factors make the decision to adopt it even more difficult.

**19% of the participants believe that using LNG as a fuel will persist even after the end of the century. In your opinion, what are the uncertainty factors leading to this particular claim?**

In the absence of any other viable alternative fuel solutions, LNG is currently the only option. However, being marginally superior to HFO in terms of well-to-wake CO<sub>2</sub> footprint, and having a considerably inferior energy density than HFO, make it only a transitional option towards the 2030 & 2050 environmental targets. Furthermore, geopolitical uncertainty factors may influence the availability and price of LNG in a totally unpredictable manner, making the techno-economic evaluation and decision about its adoption in an NB even more difficult.

**A small percentage of the survey participants consider ETS the most effective measure in enforcing the reduction of the environmental footprint of European shipping. What are the hurdles to the successful implementation of ETS?**

Theoretically, a global ETS would be an effective measure to enforce environmental footprint reduction. However, such a system, ideally imposed at the IMO level for better effectiveness, would require common interpretation at the national level and, most importantly, a common entity for collecting and managing the money collected and investing it in research into alternative CO<sub>2</sub>-neutral fuel solutions.

Mr Mikal Bøe discusses the recent developments for nuclear power on the regulatory front and the main challenges and opportunities for the wider adoption of atomic propulsion in the shipping sector.

# BUILDING BRIDGES BETWEEN NUCLEAR & MARITIME REGULATORS



by **Mikal Bøe**,  
CEO,  
Core Power

Deployment of marinised nuclear power requires a concerted effort by both nuclear and maritime regulators to establish an exceptional standard for nuclear-powered ships that will be acceptable to stakeholders in maritime communities and governments.

The current chapter of IMO's Safety of Life at Sea Convention (SOLAS) that concerns nuclear commercial vessels was passed in 1981 and specifies standards for ships using conventional naval style Pressurised Water Reactors feeding a steam cycle which directly drives the propellers.

Advanced nuclear-powered ships would be nuclear-electric where the reactors are used to drive turbines that generate electricity to power the vessel. For SOLAS to be updated, an alliance of key nations such as the US, UK and others would need to develop revised terms and propose a modernisation of the rules to reflect 42 years of advancement in both nuclear and maritime safety standards.

Regulatory development will also have to be supported on the nuclear side for the next generation of nuclear reactors to be fully marinised. The Molten Chloride Fast Reactor and the Heat Pipe reactors both have essential design characteristics that enable walk away safety allowing for an appropriate reduction in the Emergency Planning Zone (EPZ) size.

## **First step made by UK Government**

In November of 2022, the UK Government passed the 'Merchant Shipping (Nuclear Ships) Regulation of 2022 incorporating Resolution A.491(XII) of SOLAS into law. The law contains an ambulatory reference meaning any change made at IMO is automatically adopted into UK Law.



This was a significant step forward to bring regulations pertaining to nuclear-powered commercial ships up to date. The World Nuclear Transport Institute (WNTI), is working hard with groups at the IMO and the IAEA to ensure there are no gaps in regulations and providing a bridge between the shipping and nuclear industry regulatory bodies.

#### **MNAG lays out US-UK roadmap**

In parallel, the Marine Nuclear Application Group (MNAG), a working group set up by the US Dept of Energy to establish a pathway for the deployment of new nuclear for maritime, last year published a report, 'Introduction to Advanced Commercial Nuclear for Maritime', which highlights the readiness of the regulatory frameworks, infrastructure and technologies within the US and the UK to develop advanced nuclear solutions for other national and international maritime applications.

MNAG members include the National Reactor Innovation Center (NRIC) at Idaho National Laboratory, the American Bureau of Shipping (ABS), Morgan, Lewis, and Bockius LLP and stakeholders from across both the nuclear and maritime industries. MNAG is also providing a 'bridge' for the nuclear and maritime industries to understand the composition, dynamics and mechanics of ocean transportation so that both sectors can explore the opportunities and challenges that lie ahead.

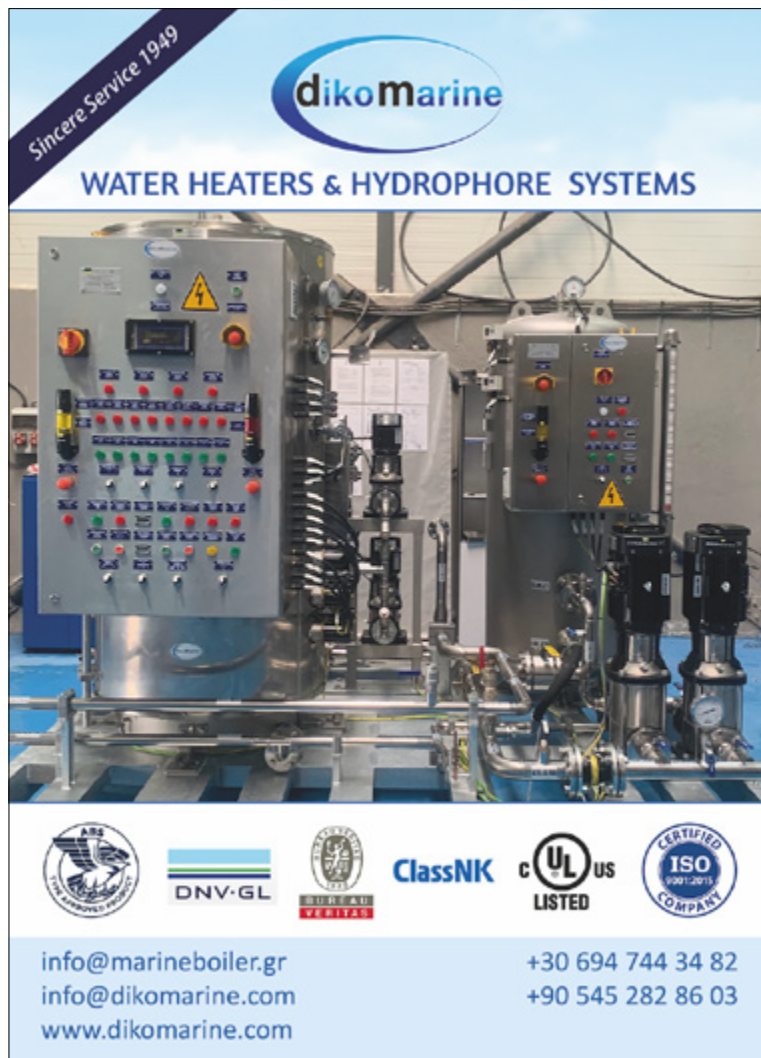
The key criterion for success in the maritime industry is developing a greater understanding of how advanced nuclear solutions can successfully integrate with marine applications.

The MNAG report, which can be downloaded at <https://corepower.energy/mnag>, provides a roadmap of how regulations, infrastructure and technology will need to develop, in parallel, in the U.S. and the U.K. in order to deliver the advanced nuclear applications needed to provide an emission free, long-term energy solution for shipping.

#### **Core Power achieves funding milestone**

To meet the funding requirements of the first generation of new nuclear technology for maritime, Core Power has reached its US\$100m funding milestone, providing the company's share in a US\$600m programme by the US government to build a test reactor. The first reactor will be built by 2026.

The funding is to build the world's first molten chloride fast reactor which will change the way that nuclear power works and with it potentially the way that mar-



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itime works.

The \$100m has been invested by maritime industry stakeholders, such as ship-owners, charterers, shipyards, trading houses, banks and insurance companies, rather than venture capital or financiers.

Japanese companies account for around 25% of the investment.

Investors see a potential for a good financial return and the opportunity for owners to be the first customers.

The development programme envisages the first deployment of the technology around 2030 – 2035. Core Power's aim is for shipyard manufactured floating nuclear power plants that would produce zero emission power to produce green hydrogen and synthetic marine fuels from seawater and nitrogen and carbon feedstocks. These plants could be anchored offshore at key bunkering ports meaning that fuels are produced locally rather than having to be imported.

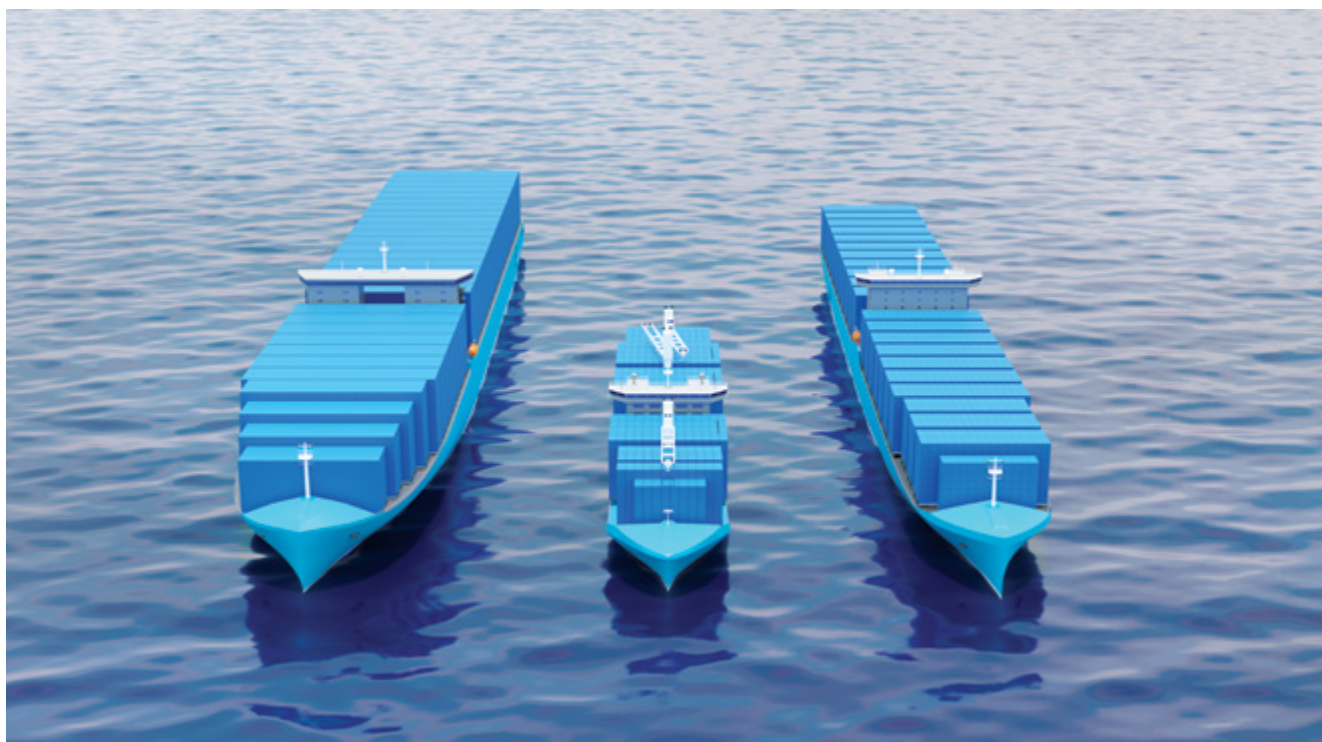
For green fuels, nuclear energy could take production costs down from a prohibitive \$7,000 per tonne marine equivalent to a level on a par with fossil fuels plus a carbon tax of around \$1,000 - \$1,200 per tonne and produce those fuels where they are needed, rather than in a central location.

### **Challenges and opportunities**

In 2023, there is strong momentum building among leaders in chartering, cargo owners, shippers, receivers, ship owners and operators who are going to transition to a form of nuclear. There's a realisation that new nuclear is the end game of the energy transition providing it's, done right.

### **Public Opinion Shifting**

Most of the opposition to nuclear energy comes from a lack of knowledge. We're starting to see a very strong shift in opinion amongst young people who are now favouring nuclear energy. Politicians are also starting to see this, in the United States and United Kingdom as well as Japan, Korea and countries in the Middle East. Developing new nuclear technologies that are fit for purpose in maritime is the most viable way to achieve zero emissions from ocean transportation whilst maintaining the competitive advantages our industry so badly needs.





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Mr Antonis Trakakis focuses on the technological challenges faced by the shipping industry and the necessary steps to achieve the IMO targets.

# SHIPPING'S LEGISLATIVE AND COMMERCIAL GOALS MUST LOOK IN THE SAME DIRECTION

**Although initiatives focused on developing emission reduction technologies are increasing dramatically, the survey findings indicate that industry experts consider it doubtful that any such technology will be widely adopted by 2050. What are the main challenges standing in the way of developing such solutions, and what is a realistic timeframe for their widespread adoption in shipping?**

The biggest challenge seems to be that many of the solutions under consideration, although they can all help in meeting the targets of shipping industry, are either not particularly suitable for shipping or are considered only by shipping.

For example, post combustion carbon capture is a technology which is expected to have wide application ashore but cannot perform the same way on board a ship. These systems are very space consuming, expensive and require manning and experience which still needs to be built in the sector. It also requires steady state conditions, unlike the constantly changing load of a propulsion engine on board ships.

On the other hand, the use of alternative fuels is less explored by other sectors. If for example the power sector, which emits the biggest amount of CO<sub>2</sub> globally, would consider alternative fuels, this solution would be easily applicable to shipping as well. This results in an upscale of production and development of bunkering infrastructure that is unrealistic to expect to happen only for shipping.

Nuclear energy may also be a solution, but it is probably to be



by **Antonis Trakakis**,  
RINA Technical Director



considered for the longer term since the cost involved appears to be very high compared to other options.

**Regarding the goals set by the IMO for 2030, 21% of the respondents consider their achievement likely and 3% extremely likely. What exactly is required to achieve these goals, and why does the shipping community doubt they will be attained?**

Reducing CO<sub>2</sub> is an unprecedented challenge; it mandates moving away from traditional solutions, and people are reluctant to leave their comfort zone. Also, meeting the targets involves ticking more than one box, and it isn't easy to meet all the requirements at once, especially in the short time before 2030.

Shipping's legislative and commercial goals must look in the same direction.

The legislation should be tight and allow no gaps or deviation from the target, while the commercial part has to support the effort. At this point in time, none of those two is satisfied.

Shipping has to be provided with a prescriptive solution. Elaborating between many options proves to be confusing and time consuming. It is not in the role of shipping companies to elaborate between so many technologies and bear the total responsibility, for example, for the availability of new fuels that were never used before.

Even people who wish to make steps forward are not reassured that their investment will pay back, while early movers are not encouraged.

Today, the strongest incentive for the reduction of CO<sub>2</sub> emissions is the carbon tax, which could be surely paired with other forms of support.



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Right: 158,000 DWT Tanker *Milos*  
Owner: *Kyklades Maritime*  
**Becker Mewis Duct®**



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**19% of the participants believe that using LNG as a fuel will persist even after the end of the century. In your opinion, what are the uncertainty factors leading to this particular claim?**

LNG is a fossil fuel, with substantially less CO<sub>2</sub> emissions than conventional liquid fuel. As such, it can be a good starting point for the transition but cannot be considered the definitive solution beyond 2050.

As the focus is on of CO<sub>2</sub> emissions and not its production per se, this allows to conclude that whether its use will go beyond 2100 really depends on what technologies and solutions can support its extended use.

Most studies agree that post combustion carbon capture involves less energy consumption on board LNG fueled ships.

LNG reforming to produce hydrogen while capturing the CO<sub>2</sub> with a physical process (unlike to chemical absorption of post combustion technique) is also another solution. The industry is rightly concerned about the emission of unburnt methane to the atmosphere. This is a good reason for many to avoid its use.

**A small percentage of the survey participants consider ETS the most effective measure in enforcing the reduction of the environmental footprint of European shipping. Which are the hurdles to the successful implementation of ETS?**

ETS is meant to correct a fault. It assumes that there will be ships which emit more than others. Therefore, in the ideal case that all ships reduce their emissions at same pace, it becomes ineffective.

If other countries or regions adopt a similar strategy (EU alone is not enough) a global agreement will be required: a misalignment may cause less ships calling EU ports (carbon leakage) and transfer of freight transportation to trains (negative impact to shipping as an industry).

By setting a cap and issuing a corresponding number of allowances, an ETS (cap-and-trade) system achieves a set environmental goal, but the cost of reaching that goal is determined by market forces. Reduced economic growth would lower allowance prices and reduce the incentive

The use of revenues from ETS is still unknown. Depending on who pays the tax or is responsible for holding allowances, the ones that are directly impacted by this system can vary considerably.



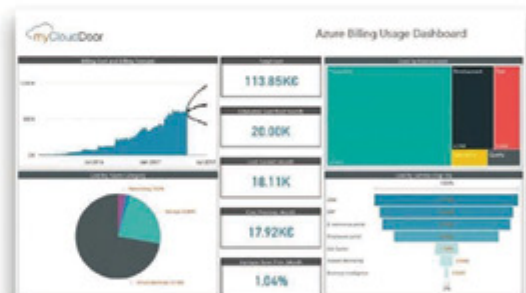
# HOW TO CONTROL CO<sub>2</sub> EMISSIONS

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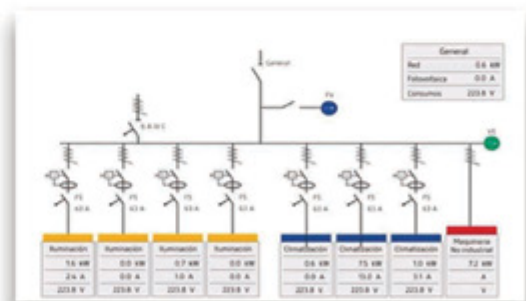
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Mr Panos Koutsourakis talks about the need of alternative fuel adoption.

# WE WILL HAVE A MULTI-FUEL FUTURE

**Regarding which alternative fuel they considered more likely to be widely adopted by the shipping industry by 2050, the most popular answers in descending order were biofuels, methanol, ammonia, hydrogen, and nuclear energy. In your view, what are the advantages and disadvantages of the above fuels?**

The survey respondents accurately reflect the predicted uptake of alternative fuels in maritime. We will have a multi-fuel future with different fuels finding favour in specific applications, regions and trade routes. Each has some advantages and most have some challenges, the uptake of each will be at a different point along the timeline to 2050 and beyond.

Biofuels are of increasing interest to owners for their ability to reduce carbon emissions on a drop-in basis which makes them flexible for ships with diverse trading patterns. Tests have shown they can significantly reduce emissions and offer a short-term means of achieving compliance. Methanol is also proven as marine fuel, a simple liquid which is relatively easy to handle and offers carbon reductions, though not their elimination. Its main drawback is energy content relative to fuel oil but as a liquid fuel, existing bunkering infrastructure, engines and fuel supply systems could be converted with relative ease to handle methanol instead of fuel oil.

Ammonia's principal advantage is its ability to reduce carbon emissions and because it contains no carbon molecule, to offer zero carbon operations, providing its feedstock is fully renewable. Its primary drawback is competition; conventional ammonia is in high demand and green ammonia does not exist at any scale useful for shipping. Because it is highly toxic, dedicated handling, bunkering and onboard processes will need to be developed and these are only likely in newbuilding applications.

Hydrogen, like ammonia, is a fuel of the future in the sense that at present, its use in marine applications is limited to one or two small pilot projects and industry evaluations that are assessing its suitability. Hydrogen creates no carbon emissions when used as a fuel, provided it is produced from renewable sources, but a hydrogen economy is still some years away.



by **Panos Koutsourakis**,  
VP Global Sustainability,  
ABS



Hydrogen as fuel is cryogenic, requiring storage, transport and handling more complex than LNG and therefore a completely new chain of supply, distribution, bunkering and handling.

It is important to remember that such fuels are only part of the story. For example, ammonia is an effective carrier of hydrogen and can be used to provide the feedstock for hydrogen fuel cells. Such systems have grown in size, scale and complexity from providing auxiliary power to main engine power in smaller craft, sometimes in combination with battery systems.

**Considering that we are talking about green fuels, how is the issue complicated by the need for green hydrogen to produce green ammonia and green methanol?**

Critical to the maritime industry's energy transition are two related trajectories; the evolution of regulation and the availability of renewable feedstocks from which to produce fully sustainable fuels.

The International Maritime Organization is set to further discuss the criteria under which it measures carbon emissions, potentially moving from the current (well-to-tank) measure to one based on the lifecycle emissions of a fuel (well-to-wake). Though these discussions are not final, they indicate a direction of travel towards lifecycle assessment and when agreed and adopted, they will increase the pressure on availability of green feedstocks for alternative fuels.

At present the majority of alternative fuels are still produced from fossil sources, so even though they offer lower carbon emissions in service, their lifecycle emissions will mean they have a higher overall carbon contribution.

The greenhouse gas intensity of these fuels can be dramatically reduced by deploying technology solutions to reduce upstream process emissions, such as capturing CO<sub>2</sub> to produce so-called 'blue' fuels as an intermediate step.

Even if more of the fleet was able to use alternative fuels available today, the vast majority would be produced either directly from fossil fuels or indirectly through carbon capture and recycling into blue fuels.

The use of blue methanol for example could provide time for capacity of green methanol production to grow.

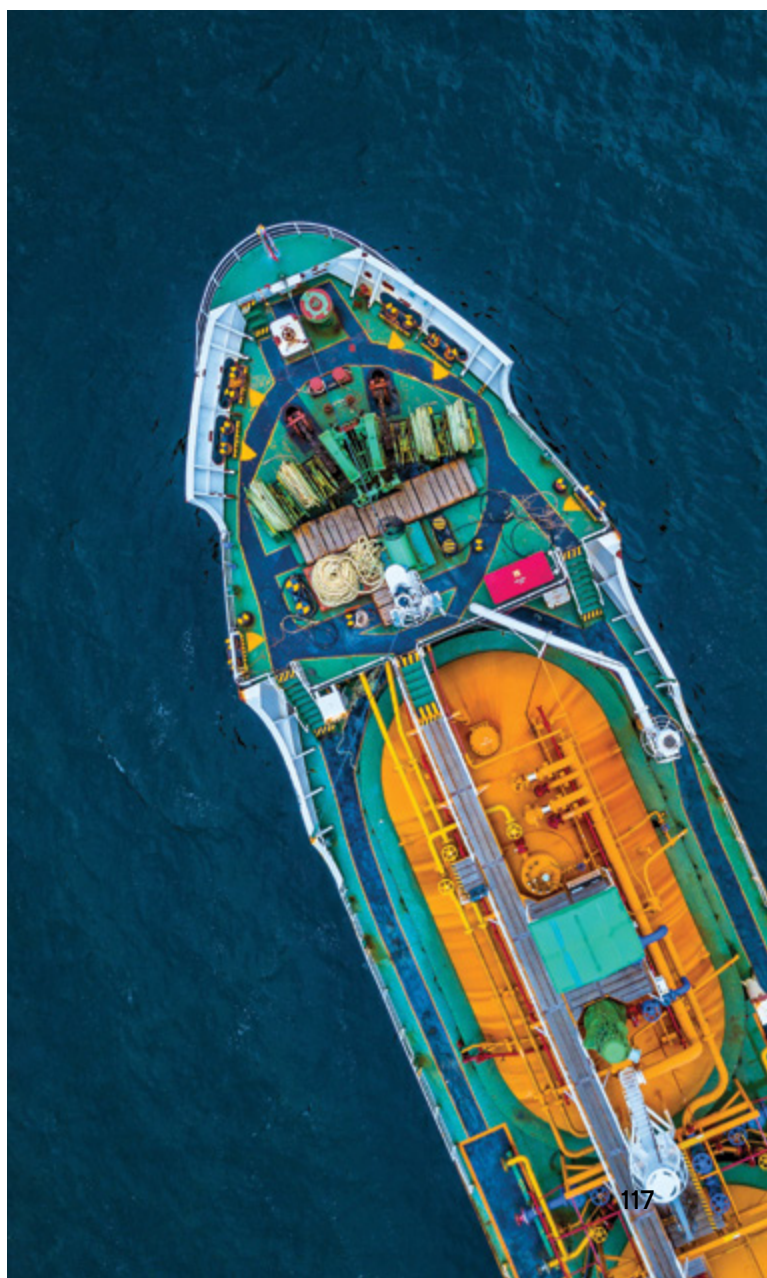
Ideally, the transition would be straight to green fuels, but as the early adopters have discovered, adopting alternative fuels requires securing the supply chain that bears little comparison to current bunkering practice. At present the availability of feedstocks of green hydrogen are limited and where they are available it is likely that offtake agreements are used to allocate them.

Change is happening. The much-touted 'green cor-

ridor' concept is founded on the availability of low and carbon-neutral fuels at pre-determined points in the global supply chain, providing owners with the confidence that the fuels they need will be available to bunker their vessels.

Ports can help to provide the locations, the facilities and in some cases the carbon sources that could be used to create a sustainable supply of blue and green hydrogen for production of ammonia and methanol. Alongside their traditional cargo handling and distribution functions this will increasingly include production sites for renewable fuels using electricity produced from offshore wind and onshore facilities that can create clean fuel.

Numerous projects are already planned or under construction at ports ranging from Europe to the US with others set to follow. The efforts by policymakers around the world to transition the global economy to a sustainable footing will see projects of this type continue to grow and scale as we progress beyond 2030 and closer to 2050.



Mr Jan-Erik Räsänen analyses the potential of batteries to decarbonise shipping.

# THERE IS A GAP THAT BATTERIES CAN TAKE ADVANTAGE OF

**Which type of vessel can benefit more from a shipboard battery system, and does the installation/maintenance cost make it appropriate for older vessels (10+ years)?**

There is an obvious ship type on which batteries are mostly applicable. The starting point back in 2011-2012 was short-sea, point-to-point ferries, which can charge the batteries when entering a port. We can see the same point-to-point philosophy still applied today but the difference is that ships are getting larger and distances longer. New battery types definitely have an advantage, and there has been a lot of discussion over the years about next generation of chemistry entering the industry. From our perspective, we expect to see similar types of batteries serving the industry five years from now, but prices will be lower. Eventually, increased power density will lead to longer battery-powered ship transits.

To gain the maximum benefit from batteries, you need the appropriate port infrastructure to charge them. Otherwise, if you have a hybrid solution, you will record savings of roughly 2.5%-3%, depending on the ship type, which would make a battery installation something of a luxury for a larger ship with a 2-stroke engine. However, batteries will develop their own niche market, with an increasing number of vessels to benefit. If the port infrastructure is in place, larger ships such as container ships will also benefit, but perhaps not to the same extent as short sea vessels.

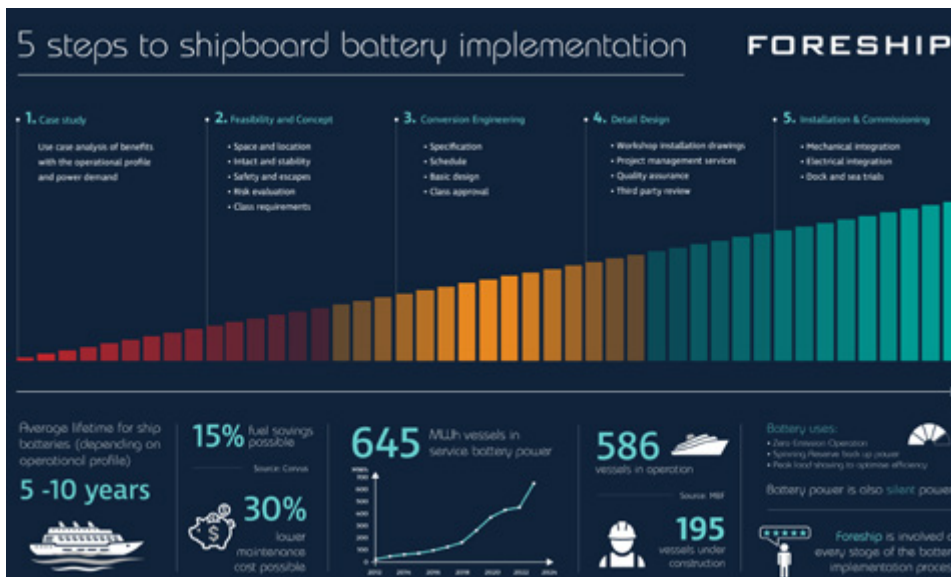


by Jan-Erik Räsänen,  
CTO at Foreship



**Will we see purely electric-powered oceangoing vessels, or do you believe that batteries will only be established as a supplementary emission-reduction technology for the long term?**

I don't think we will see fully electric-powered ocean-going vessels, at least not in the near future. We have just published a guide that compares onboard storage requirements for a number of alternative fuelling options that would help meet decarbonisation goals, including battery implementation. In a case of a cruise ship using batteries exclusively, that ship would sink if it was ever built.

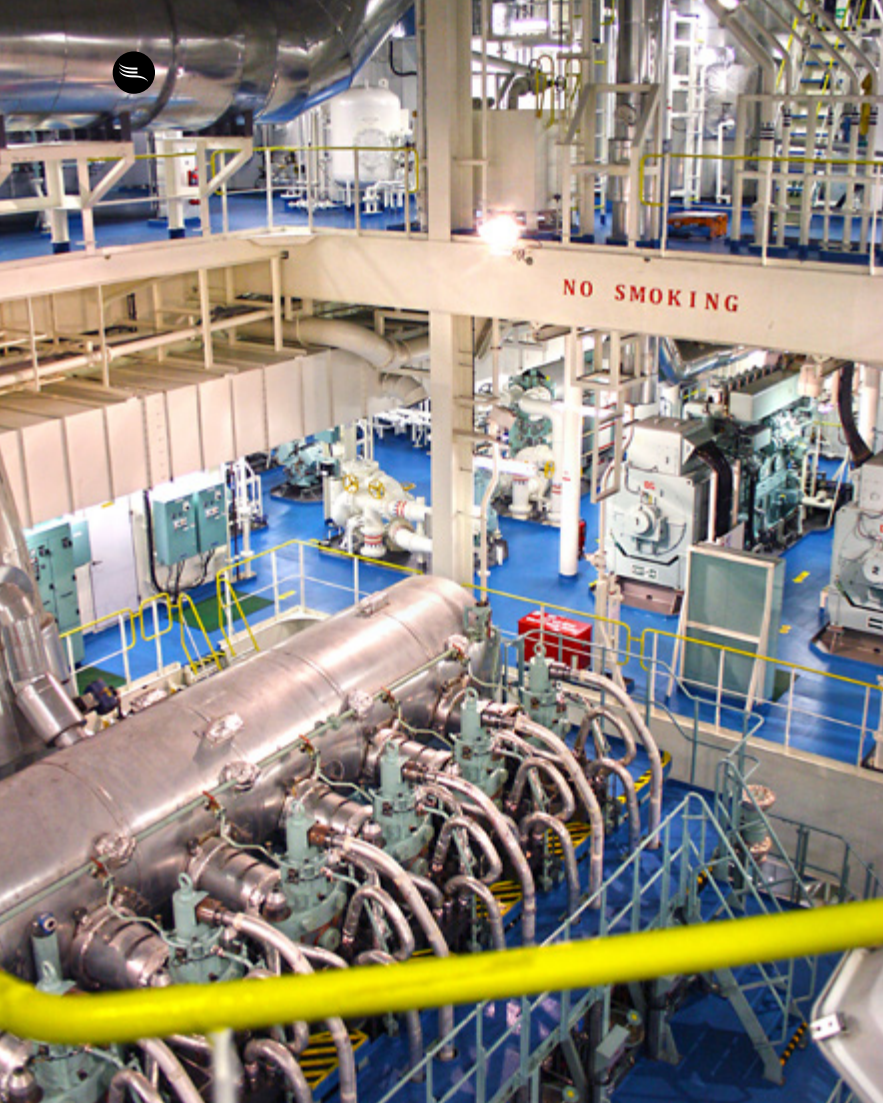


**Would using batteries be enough to ensure a vessel's compliance with the upcoming emission reduction schemes (CII, EEXI, etc.) or should it be combined with other emission reduction technologies/measures?**

The CII is directly linked with a ship's fuel consumption and the nautical miles travelled per year, so having a hydrodynamically efficient hull is a main priority. We can also advise on making changes to the ship's propellers or to other features to reduce fuel consumption. Ship performance is also highly reliant on crew competence, operating conditions and the level of technology used on board. Batteries are a good supplementary tool to help a vessel comply with emissions reduction regulations, depending on the vessel type, but if we need to charge them with combustion engines their impact may be limited. Therefore, the main focus to encourage the contribution to decarbonisation of this technology should be on charging stations in ports. For example, in the EU, shore power is considered zero emission. Whatever you can charge from port or land infrastructure can lead to direct benefits regarding the CII requirements but will probably not help to achieve EEXI goals.

**Is the service/supply network today sufficient to support the widespread use of battery systems onboard seagoing vessels?**

The supply network exists if you are only looking at the battery aspect, although most battery suppliers would tell you that the delivery time is at least one year - so, delivery times are quite long. Then you have alternative suppliers saying they can provide batteries within 24



weeks. But just buying the batteries is not enough: that's the easy part. There is also a regulatory aspect to installation, because batteries need to be integrated onboard ship. That is usually the most challenging and time-consuming part of the process.

**What is the most common setup an owner would need to consider when installing batteries onboard their vessel?**

The first step before choosing this technology is to understand what you need to achieve using batteries. The first question to ask yourself is whether you want to supplement your existing setup and not operate solely on batteries. That's the hybrid solution, which differs from operating exclusively on batteries. If you want to achieve a zero-emission operation, you should take into account class notations. These will offer the entire regulatory package required.

On the other hand, if you aim to

support your existing infrastructure and have no intention of going for a zero-emission operation, there is a different class notations setup. One of the headaches for large shipowners who own hundreds of ships is that they are classed by different classification societies and fly different flags. What we see today is that each flag state treats battery installation differently. So, you need to understand the different perspectives of class societies and flag states. This can be complex – in fact, it's a jungle, even though it shouldn't be: but we can guide the owners together with the class societies and the flag states.

**What kind of savings will this offer compared to switching to an alternative fuel type via an engine retrofit, for example?**

There have been a lot of studies on the transition to alternative fuels. Some suggest that batteries are not a fully viable option, but others acknowledge that the availability of alternative fuels, regardless of what they are, will only start picking up from 2035. So today, the availability of these fuels (e-methanol, e-ammonia, etc.) is minimal, whereas batteries are widely available. For me, there is a transition gap between where we are today and what regulations are asking for. As long as this gap exists, there will be plenty of opportunities for batteries. They have a role to play as there is no fuel stability.

Another thing we've been looking into for a long time is fuel cells. If you wanted to buy an ammonia-ready engine today, you would not be able to find one. The same actually goes for methanol, where engines are approved in principle but not in fact. Of course, we know that engine makers are not far away with new methanol engines but many ships out there need to be converted to use this fuel type. At the end of the day, we think there will be room for alternative fuels, batteries and fuel cells.

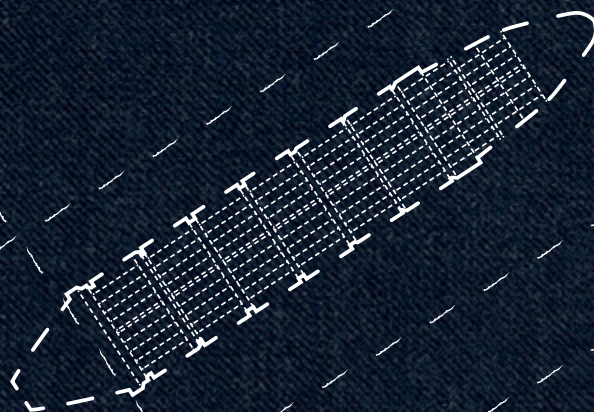




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Panagiotis Flesouras talks about Ecostart's portfolio of services and elaborates how a Greek company can become competitive in international markets.

# KEEPING UP



An interview with **Panagiotis Flesouras**,  
Co-founder, CEO of Ecostart SA

## **What does Ecostart's portfolio of services include?**

Ecostart provides a wide range of services, which is essentially divided into three pillars: Inventory of Hazardous Materials (IHM), asbestos removal and decarbonisation.

For the IHM, Ecostart undertakes the process of onboard sampling, writing, and submitting the final report, as well as maintaining it (IHM maintenance) until the end of the ship's life cycle using its online platform, Ecovessel.

Asbestos removal and air monitoring is carried anywhere in the world, if it is legal of course according to local legislation, by a network of certified partners.

In terms of decarbonisation, we are proud to have developed our own greenhouse gas daily emission calculation and prediction software, Ecosphere.

Finally, we offer complimentary services like, Hull Cleaning, Air lubrication, MED, and Ballast Water Analysis Services all under the umbrella of our environmental services for the marine sector.

## **Has the Greek shipping industry as a market accepted your company?**

We are proud to say that our company has been well-received by the Greek shipping industry and we are grateful for the opportunities to collaborate and contribute to this dynamic market.

Since entering the marine sector, we have provided our services for over 600 vessels. It is great to see that the Greek shipping industry is open to new and innovative companies like ours. It's a testament to the quality of our products and services and the hard work our team has put



# WITH THE LATEST TRENDS IS CRUCIAL

in. Building relationships and gaining acceptance in a competitive market takes time, but with persistence and dedication, we have proven that we are on a path to success.

## **How can a Greek company like Ecostart become competitive in international markets?**

Ecostart is already competitive and has a presence in international markets, as we offer services to companies of foreign interests. We have achieved this with our competitive prices, unparalleled customer service, wide range of services, and guaranteed results.

To stay ahead of the competition, Ecostart continually improves its products and services, as well as invests in research and development to create innovative solutions that meet the changing needs of the market. Keeping up with the latest trends and innovations in the marine industry is crucial for Ecostart to remain competitive. After all, shipping is global, and we used this way of thinking as a frontline since the inception the company.

## **Ecostart's online platforms offer a range of services to help businesses and organizations manage their environmental impact. Can you describe the key features of the Ecosphere platform and the advantages it provides for ship operators amid shipping's green transition?**

As mentioned before, Ecosphere is the brainchild of our engineering team. It was developed with making everyday use easy and straightforward for ship operators in mind, as the team consists of Naval and Environmental Engineers.

Ecosphere is a cutting-edge solution that allows you to accurately measure your daily emissions calculations and predict future emissions, as requested for the EU Emissions Trading System (EU ETS).

Apart from daily emission calculations, our platform also provides you with access to the results of your annual CII measurements, data to be used for ESG or Sustainability Reports regarding total fleet emissions and MRV & DCS in all requested forms.

In conclusion, Ecosphere is an online service ready to be compatible with your present and future demands through continuous consulting, online updating and revisions of data.

## **How do you think the new European Climate Law will affect the shipping industry on a Greek and global level?**

The new directive ETS will be challenging for the shipping industry, as it will require tracking and reporting of emissions data. The regulation sets a cap on the amount of CO<sub>2</sub> that ships can emit per year, and shipowners will need to buy emissions allowances to cover their emissions. Moreover, it could require new investments in monitoring and reporting systems, and companies will need to ensure that they have accurate data to avoid penalties for non-compliance. Thus, there may be greater challenges for companies that have not yet made significant investments in cleaner technologies, as they will need to factor in the cost of emissions allowances to their operations.



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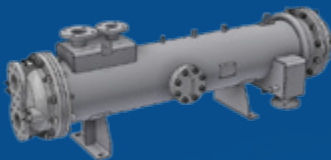
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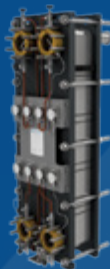
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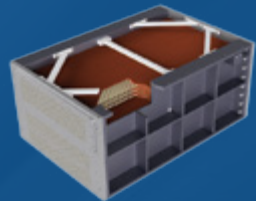
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On 8 March 2023, the European Maritime Law Organisation (EML0), an independent forum for debate and research on EU maritime law affairs, devoted a second webinar to maritime taxonomy. Dr Anna Bredima, Senior Policy Advisor on European Affairs, Cyprus Union of Shipowners, interviewed Dr Katalin Dobranszky, Senior Director of Innovation, Finance, and Fiscal Affairs, European Community Shipowners Associations.

# TAXONOMY AND ITS EFFECTS ON SHIPOWNERS, SHIP FINANCING, MARINE INSURERS AND CHARTERERS



Dr. Anna Bredima,  
Senior Policy Advisor on European  
Affairs, Cyprus Union of Shipowners

In 2020, the European Commission (EC) adopted a regulatory framework to facilitate sustainable investment, known as the European Taxonomy Regulation, which is part of a horizontal legislative package on sustainable finance aiming to contribute to the European Green Deal (2020). Taxonomy comes from the Greek word “taxinomia,” meaning “the science of classification”. The European Taxonomy Regulation defines which economic activities are considered green for investment purposes. A offered insight into legislative developments and the challenges and opportunities faced by shipping as a sector in transition. In the following discussion, Finance expert Dr Katalin Dobranszky will guide us through the legal maze of taxonomy.



Dr. Katalin Dobranszky,  
Senior Director of Innovation, Finance,  
and Fiscal Affairs, European Community  
Shipowners Associations

A.M. **The European Taxonomy Regulation (852/2020) provides the framework, but the details are defined via delegated regulation. What additional regulatory acts have been adopted?**

K.D. Article 8 Delegated Act defines the reporting requirements of taxonomy-eligible and taxonomy-aligned economic activities, which are to be calculated in terms of turnover, CAPEX, and OPEX. The Environmental Delegated Act (TDA1) recognises that shipping can substantially contribute to climate change mitigation and defines the technical screening criteria (TSC) for vessels. Vessels are considered green if they have zero tailpipe emissions -or comply with somewhat less stringent transitional criteria until 2025- and are not dedicated to fossil fuel transport. If the transitional criteria are not extended beyond 2025, only vessels with zero tailpipe emissions will be defined as green, creating difficulties given the currently available technology. An amendment to TDA1 addressing transitional criteria post-2025 is in the pipeline. On the other hand, the restrictions on cargo carried are



problematic since shipowners will be penalised under the TSC even if their vessel is green. ECSA has argued that cargo transported is dictated by market demand and should not be targeted under the TSC.

A.M. **The legislative process regarding taxonomy revealed a lack of maritime expertise in the Sustainable Finance Platform (SFP) advising the EC, which initially did not include shipping experts. However, following pressure from the industry, ECSA joined the SFP as an ad-hoc expert. The SFP submitted its report in November 2022. What is expected next?**

K.D. The Platform was established to help investors identify sustainable investments by categorising green economic activities. Initially, the expert group was mainly made up of financial experts. However, as Taxonomy grew into an important tool for the Green Deal, the Platform had to deal with various other technical matters, and for this purpose, it is now working with ad-hoc experts.

A.M. **Professor Daniel Guéguen tweeted on 24 November 2020: "The EC's sustainable finance taxonomy bears all the hallmarks of failed governance: in short, it's an Orwellian mechanism." At the first EMLO Webinar, borrowing an expression stemming from Greek mythology, I remarked that taxonomy had put shipping on the "Procrustean bed" and is trying to fit it into its technical screening criteria. Do you think these criticisms are justified?**

K.D. Yes and no. It must be remembered that taxonomy was initially designed to identify best-in-class economic activities. However, after taxonomy became a political priority, markets began to perceive any economic activities that were not considered eligible as "black economic activities". Although not initially within the taxonomy's scope, shipping has since been recognised as taxonomy-eligible and as a sector in transition. We have come a long way.

A.M. **What will be the implications of taxonomy at the international level?**

K.D. Is not devising EU regional standards a dangerous precedent for a global industry like shipping? International regulations are key for international businesses, but we have to acknowledge that sustainability is a political priority for the EU. We are on a learning curve, so we must face fragmented solutions until we reach the final outcome.

A.M. **Taxonomy definitions regarding eligible activities should take into account the diversity of maritime activities where a "one size fits all" approach is a recipe for disaster. There is a diversity of activities, segments, ship sizes, ship types, and business**



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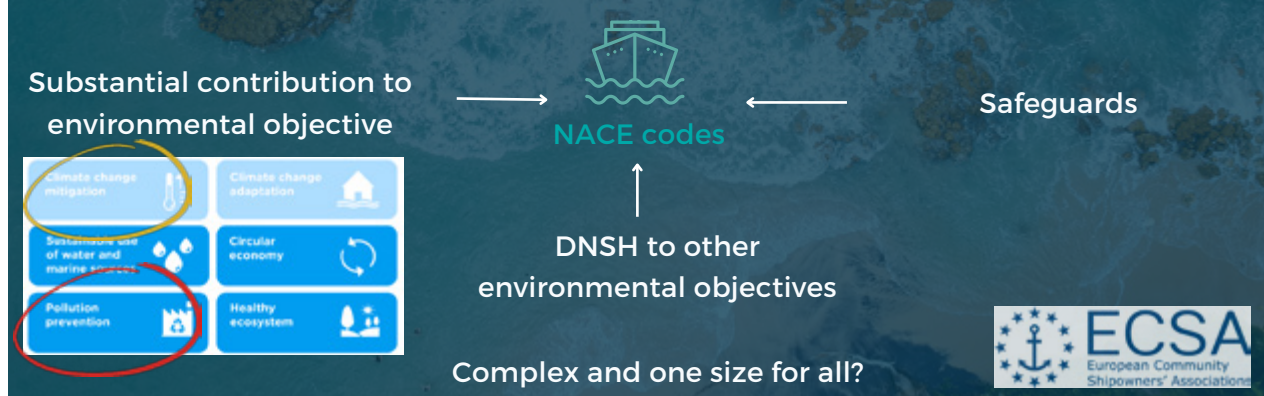
# EU Taxonomy: green economic activities

**Taxonomy Regulation** (Regulation (EU) 2020/852): framework

**Delegated Act Article 8**: reporting on taxonomy eligibility and alignment in terms of Turnover, CAPEX and OPEX

**Delegated Act Envi 1**: technical screening criteria up to 2025 (SC+DNSH)

**Delegated Act Envi 2**: in the pipeline



## models. What guidance would you give policymakers?

K.D. A "one size fits all" approach does not work. TDA1 recognises this diversity in the definition of shipping economic activities, giving flexibility for future additions. However, the TSC is not yet taking this fully into account.

reduce finance/funding sources. We have seen a negative trend in ship financing in past years due to underlining market misperceptions and regulatory requirements for banks. Most recently, we have seen a better understanding of the purpose of taxonomy.

A.M. **The Sustainable Finance Platform did not identify the speed-limit-related operational criteria as the appropriate technical requirements. Is it confirmed that speed limits and underwater noise will be excluded from the taxonomy process due to a lack of relevant information?**

A.M. **Sustainability reporting standards are gaining ground worldwide in ship financing. However, the proliferation of arbitrary private initiatives is leading to fragmentation. What hurdles do you anticipate in this process?**

K.D. The TDA1 only covers the objective of climate mitigation. All the above relates to the pollution prevention objective, which will require further discussions.

K.D. As mentioned, this regulation is in the making. Certain segments are not covered, so this market gap leaves room for private initiatives. However, private initiatives may undermine stability, which is key to financing.

A.M. **Will the taxonomy process facilitate or complicate EU shipowners' lives by reducing finance opportunities and driving them to consolidations? What will be the implications of cumbersome administrative reporting formalities for SMEs?**

K.D. While the Taxonomy Regulation does not cover SMEs, they will be indirectly impacted by the reporting requirements placed on financial institutions. However, as long as Taxonomy is used for its original purpose, it should not

## CONCLUSIONS

Maritime Taxonomy is horizontal and complex. It is a reporting and disclosure tool providing investors with information about green investments. While the goal of decarbonisation is certain, regulatory and technological developments bring uncertainty. On the one hand, success lies in predictability and stability by classification. On the other hand, taxonomy is a challenge and an opportunity. If we get it right, it can be a useful tool.



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# DEEP DECARBONISATION IN SHIPPING

Achieving the deep decarbonisation of the shipping sector necessitates the revision of the Fit for 55 provisions for 2030 and the IMO provisions for 2050 relating to the size of the industry, the global fleet, the corresponding transport work they perform, and the radical changes required to achieve these over-ambitious goals within the framework of global economic activity. It is perhaps the right time we reviewed much of what we have taken for granted, which derives from simulations, scenarios, and predictions developed to serve visions, missions, and aspirations. It is now vital to capitalise on the enhanced knowledge and experience gained in this long journey towards carbon neutrality.

**Why should we step out of our 'comfort zone' and think 'outside the box'?**

**Well, this includes several reasons, such as:**

Slow steaming seems a viable solution; however, it forces existing marine propulsion engines to operate in conditions they are not designed for; therefore, this measure worsens their performance. Nevertheless, we can apply slow steaming on newbuildings or appropriately re-designed ships given their life cycle analysis, the time

required for retrofits, and what fleet renewal involves, always keeping in mind that the need for transport work is inelastic and will probably increase in the coming decades.

The proposed marine fuel alternatives (hydrogen, ammonia, methanol, syngas, gaseous and liquid biofuels) look promising when conducting a tank-to-wake analysis; however, the results are refuted when the well-to-tank part of the supply chain is also considered. Although the most critical indicator in alternative fuels evaluation is their carbon footprint, additional criteria need to be included, such as the availability of sufficient quantities, worldwide distribution, and the technologies' maturity for a safe and effective implementation, also considering space, weight, and other limitations.

E-fuels are a distant and possibly uncertain solution if we consider (a) the capital that must be invested and the raw materials that should be used to secure sufficient electric power from renewable energy sources, (b) the energy conversions required, which reduce a vessel's overall efficiency, and (c) its life cycle analysis. Moreover, energy storage systems that support electric propulsion show the same disadvantages as e-fuels and, in addition, have practical limitations that do not



by Prof. **Elias Yfantis**,  
Senior Scientist,  
Cyprus Marine  
and Maritime Institute



allow their widespread use beyond small vessels and short-sea shipping. As expected, there is competition among industrial sectors, especially those facing difficulties adopting the proposed solutions. In our case, bio-fuels are a potentially feasible and advantageous solution to mitigate the carbon footprint for shipping and aviation (both are “hard-to-abate” sectors). Considering both industries, and by comparing grams of CO<sub>2</sub> emitted per transport work unit will prioritise aviation.

Financially wise, all proposed solutions become relatively competitive due to political decisions, national and international regulations, and market-based measures that penalise fossil fuel use and GHG emissions or incentivise carbon-free energy use. However, their substantial “extra cost” negatively impacts production and the supply chain, and can potentially lead to economic recession. In addition, tangible results based on facts and figures are required for the civic society to be convinced by the narratives of the Green Deal and Green Growth.

Consequently, shipping's deep decarbonisation now requires that the global shipping community reviews and rationalises its priorities and objectives and focuses its efforts on facilitating the effective implementation of solutions, taking into account the limitations arising from the shipping sector's characteristics and its comparatively small contribution to greenhouse gas emissions (less than 3% on a global scale). Otherwise, we will continue to see extreme paradoxes like ships paying carbon taxes to transport coal (one end of the paradox) and electric cars, solar panels, and wind turbine blades (the other end).

The scientific community continuously monitors the global warming phenomenon, measuring the average global temperature and recording the effects of the climate crisis on human and natural systems while observing and highlighting their capacity, vulnerabilities, and limitations to adapt to climate change. In parallel, research teams worldwide are looking at options for creating a sus-



tainable future through an equitable and integrated approach to mitigation and adaptation efforts at all scales.

**Regarding our contribution, the CMMI team is conducting research aiming to:**

- Develop solutions for vessel performance optimisation (including digital twinning).
- Design and build small zero-emissions vessels.
- Combine shore-side electricity applications with alternative fuels.
- Develop carbon capture technologies, synthetic fuels, and waste heat recovery systems.



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# MARITIME INDUSTRY BENEVOLENCE

Edited by:  
Panagiotis Korakas

## **COLUMBIA UNIVERSITY LAUNCHES CENTER FOR PRECISION PSYCHIATRY & MENTAL HEALTH WITH \$75 MILLION GRANT FROM SNF**

On the 25th of April, Columbia University announced the establishment of the Stavros Niarchos Foundation (SNF) Center for Precision Psychiatry & Mental Health at Columbia University. The center will catalyze the scientific innovation and clinical implementation of precision medicine to advance mental illness prevention, diagnosis, and treatment. The center is being established through a \$75 million grant from the Stavros Niarchos Foundation (SNF), an international philanthropic organization, as part of SNF's Global Health Initiative (GHI).

The SNF Center is a joint effort of the Department of Psychiatry at Columbia University Vagelos College of Physicians and Surgeons and Columbia's Zuckerman Mind Brain Behavior Institute. It will be embedded within Columbia University's unique ecosystem of research and clinical services and will draw upon expertise from the Columbia-affiliated New York Genome Center and the New York State Office of Mental Health.

The increasing sophistication of precision medicine allows scientists and healthcare providers to integrate each person's unique genomic, physiologic, and health profiles to create optimized prevention and treatment strategies. Columbia





University has been at the forefront of recent efforts to elucidate the genetic and biological changes that cause many major mental illnesses. The SNF Center for Precision Psychiatry & Mental Health will build upon and expand this knowledge by accumulating massive datasets of genomic sequences and longitudinal medical records. At the same time, by harnessing interdisciplinary expertise from biologists to clinicians, the center will enable the rapid advent, from bench to bedside, of new therapeutic and prevention approaches based upon defined etiologies shared by distinct subgroups of patients. “The insights provided by genomics and precision medicine are proving of tremendous value in improving people’s health and lives,” said Columbia University President Lee C. Bollinger. “Through this new center, our researchers will meet an urgent human need by harnessing precision medicine to promote mental health for all. We are enormously grateful to the Stavros Niarchos Foundation for joining Columbia in meeting this profound scientific and humanitarian challenge.”

“The significant progress we have made in caring for our physical health in recent decades is apparent, but just as clear is the fact that we have left behind our mental health,” said SNF Co-President Andreas Dracopoulos. “All of us at SNF are proud to support the doctors, scientists, and mental health professionals at Columbia in bringing together deep expertise with an equally deep sense of humanity to address one of the most critical issues of our time.”

The collaboration between Columbia and SNF arose from a joint vision for helping to reduce the individual and societal toll of mental illness and to combat social inequality, stigma, and discrimination in mental health care. The ecosystem of knowledge and practice at Columbia University brings together research and clinical services and connects the public and private sectors. By driving innovation in mental health research and sharing advances as widely as possible, Columbia and SNF will work to help ensure that improved treatments are equally available to everyone.

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### **"HAPPY HEART" –ONASSIS CARDIAC SURGERY CENTER LAUNCHES ITS NEW AWARENESS AND PREVENTION CAMPAIGN FIGHTING AGAINST CARDIOVASCULAR DISEASE**

"Happy Heart" –a new Onassis Cardiac Surgery Center campaign fighting against cardiovascular disease– is heading out onto the streets, appearing in newspapers and magazines, and popping up on our screens to remind everyone that prevention is the only path to a healthy heart, and to good health overall.

Through a series of amusing set-ups, the campaign urges everyone to adopt healthy habits. It makes clear that hearts are kept strong by the everyday decisions we make, which is why they must be the right ones.

The research is clear: heart disease is the number one cause of death and illness worldwide, with its effects increasing significantly with age. And in Greece, these numbers are relentlessly on the rise.

Boasting over one million patient appointments and tens of thousands of heart operations since opening its doors in 1993, the Onassis Cardiac Surgery Center knows the importance of good habits in keeping our hearts healthy and strong. This campaign builds on three full decades of

work achieved by a hospital donated to the Greek state – one that has transformed the public healthcare landscape in Greece and continues to help advance the medical sciences on an international level.

### **ONEX NEORION SHIPYARDS AND INTERAMERICAN RENEW THEIR COOPERATION FOR THE PROVISION OF IMMEDIATE MEDICAL ASSISTANCE TO THE RESIDENTS OF SYROS**

ONEX Neorion wanting to remain a steadfast supporter of critical services for the community of Syros, has renewed its partnership with Interamerican for a second year, insuring, through sponsorship, all residents of the island of Syros with the company's Immediate Medical Assistance program.

The agreement is an initiative of ONEX NEORION SHIPYARDS as part of ONEX Group's social contribution. It provides a number of critical emergency medical assistance services to the local community of Syros, such as:

- Emergency air transport service, complementary to the public health system, upon medical advice, for cases requiring immediate medical treatment in hospitals on the mainland. The Syros General Hospital doctors activate the service according to the protocol for serious cases of illness or accident that need to be transferred if the National Centre for Emergency Care's air transport is unavailable.

- 24-hour medical consultation services through Interamerican's 1010 telephone line.

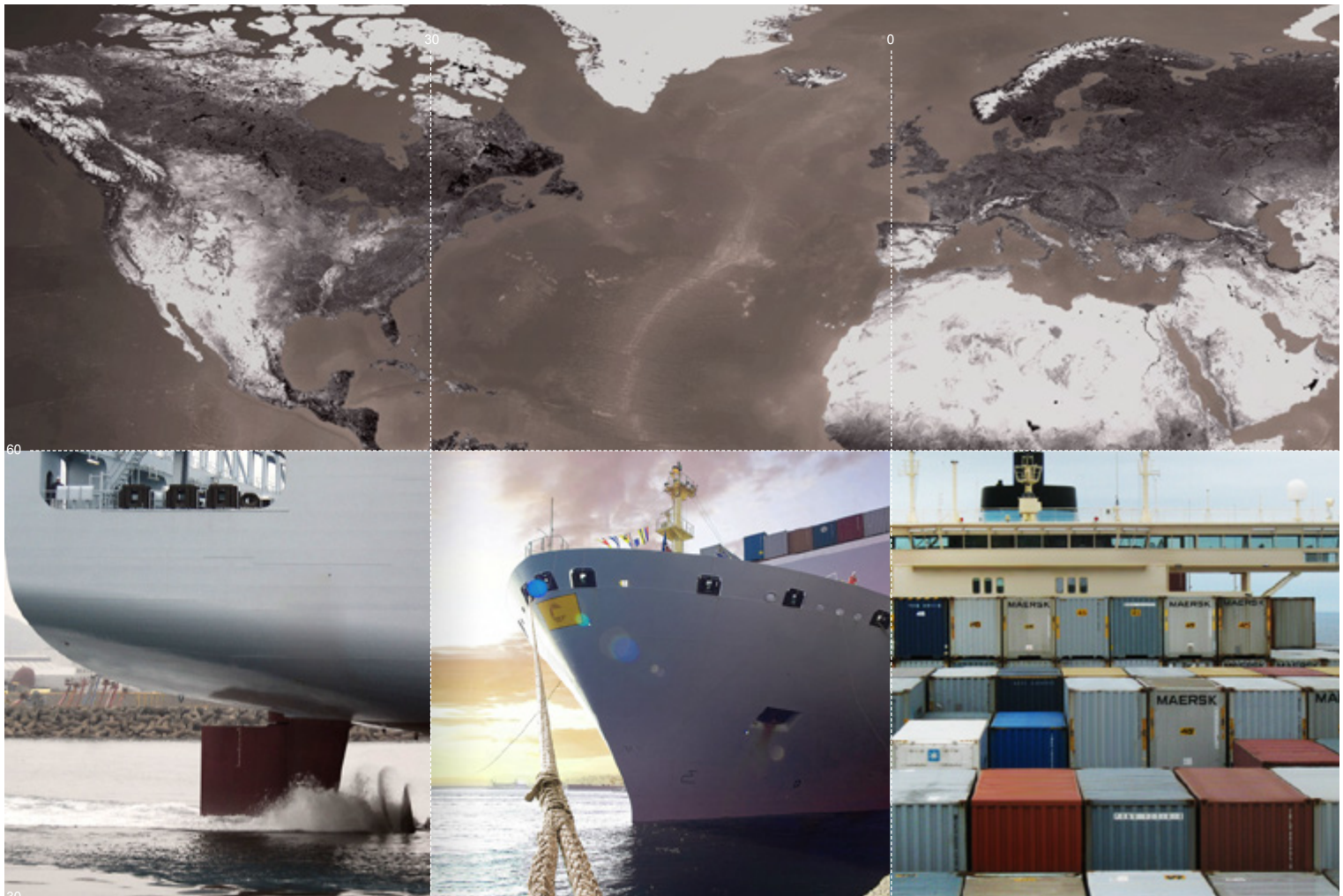
The insurance coverage program for Syros' residents by ONEX Neorion Shipyards and Interamerican has contributed greatly to local citizens' critical incident care and medical assistance. By way of example, since the implementation of the group insurance policy last year, three emergency airlifts were carried out, of which two were carried out by aircraft and one by helicopter. All cases were evacuated to Athens.

### **JOHN D. PATERAS FOUNDATION: FOUR SCHOLARSHIPS FOR THE 2022-2023 ACADEMIC YEAR**

The John D. Pateras Foundation recently announced its 2022-2023 academic year scholarships. More specifically, by decision of the Board of Directors and after final approval of the competent State Agency, the John D. Pateras Foundation has announced a total of 4 scholarships for undergraduate studies at domestic universities. As announced, scholarship applicants will be personally notified of the outcome of their application.







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## Other Highlights of our Programs

**Business relevance:** Programs have been designed in line with the most recent developments in the shipping industry and in consultation with the Alba Shipping Business Advisory Committee (BAC): a group of select senior shipping professionals!

**Scholarships:** Financial support through named scholarships full and part-time scholarships dedicated to the Shipping program are offered in collaboration with: Hellenic Shipbrokers Association, Masters and Mates Union of Greek Mer-

chant Marine, International Propeller Club Piraeus, Green Award, Wista Hellas, Tsakos Group, Seanergy

**Internships:** Students with no prior working experience in Shipping have the opportunity to acquire experience through the Alba internship shipping network in some of the most well-known shipping companies.

**Field Trip:** Alba's field trips (within Greece and also aboard) provide the opportunity to get a true understanding of the

sector's mechanisms, benefits, rules, and history, as well as begin to feel a part of it.

**Internationalization/Program Rankings:** Our shipping programs have an international recognition. Every year, students from all over the world are attending our programs while many of our graduates find a job in Greece, Norway, UK, Singapore, Dubai, Malta, Cyprus etc. Moreover, our MSc in Shipping Management program is ranked No 12th worldwide according to "Eduniversal Best Master Ranking 2022".



# NAVIGATING LEARNING/WHERE EXECUTIVE DEVELOPMENT MEETS SHIPPING



Executive  
Development



In recent years, the demand for Executive Development programs has grown in parallel to the interest shipping companies traditionally had for academic/postgraduate degrees. These tailor-made programs are created in collaboration with the company and aim to add value to the organization by equipping executives with contemporary knowledge and skills. The Alba - Thenamaris Executive Certificate in Shipping Management attended so far by more of 50 participants from all departments and functions of the Organization, is a great example of such co-creation.

In the post-pandemic years, companies operating in the shipping industry, are increasingly interested in leadership focused programs. Most recently, Alba Executive Development co-designed a Leadership Development Program in collaboration with the Human Resources department of Euronav, while during the last year, ERMA FIRST has been collaborating with Alba in the design of its Leadership Excellence Academy.

On top of companies, several networks and collective initiatives related to Shipping, are equally interested in training and education. Alba Executive Development collaborates with organizations like HEMEXPO (Hellenic Marine Equipment Manufacturers & Exporters) and WISTA Hellas (Women's International Shipping and Trading Association) to offer training and development programs designed exclusively for their members.

Having a mutual learning mentality in its core, Alba Executive Development (EXED) celebrates and encompasses the "lessons" learned by its cooperation with the shipping industry: a community with high-quality standards, a group of executives showcasing resilience in their demanding work, agility to constant changes in their work environment, and above all great dedication and commitment to their industry.

Leading and managing a shipping company has become ever more challenging with a continuously increasing list of items on the busy agenda. Shipping is now not just about moving cargo but includes Environment, Social and Governance (ESG) aspects, sustainability, decarbonisation, new technologies, and responding to world events.

# GET THE SAFETY RIGHT... GET EVERYTHING RIGHT

There is, however, one area that has slipped down the agenda in recent years, which also receives little attention in the world shipping media, and that is safety. Yet safety remains the single greatest risk to shipping and the solution to managing the many challenges.

Shipping is one of the world's most hazardous industries. The Allianz report shows an increasing number of shipping incidents, and according to Lloyd's List Intelligence data, in Q3 2022, shipping recorded the highest number of casualties in a quarter in 14 years. There is also a rising number of seafarers reported as killed or missing.

At the same time, other industries have recorded substantial safety improvements, an example being the 85% reduction in accidents and fatalities on commercial airlines in the last 10 years reported by the International Civil Aviation Organisation. Although very different from shipping, the progress made by the airline industry demonstrates what can be achieved when safety is placed at the top of the agenda.



by **Dr Grahaeme Henderson**  
OBE FREng,  
Chairman at Together in Safety

Another critical aspect of safety that is little understood is that companies with a strong safety performance also have a strong business performance. Simply put, if you get the safety right...you get everything right. The reason is that safety is central to everything we do, both at work and in our daily lives, because it is about people, our families and children, but also our seafarers who also have families and children. Our employees are the lifeblood of our companies, and we must put their safety at the very heart of shipping.

Getting our safety programmes right is imperative today and vital to the future success of any shipping company. Safety ensures the shipping industry's future sustainability and attracts high-quality talent. In addition, shipping's decarbonisation will not be possible without a strong safety focus. Finally, safety allows us to develop a mindset of learning from each other and enables teams to collaborate, generate fresh ideas, and deliver solutions to a host of challenges.

If there is an incident, it will cost a company dearly in terms of both direct and indirect costs. Insurance may cover some of the costs, but the company will incur the



cost of delays while investigations take place, loss of revenue, compensation costs, management time, and more.

There are also indirect costs, such as the negative impact of publicity on the company, how the employees feel and react, and the damage to the owners and the leadership team's reputation.

From another perspective, having a strong safety focus allows the management and the entire organisation to focus on the positive aspects of incident prevention, with the added advantage of a strong commercial performance. It is also recognised that the traits of a great safety leader are the same as those of a great business leader. That is because both roles require the ability to envision, develop, and deploy an effective strategy and take accountability for its results; leaders with empathy who can empower and inspire employees; leaders that ask questions, listen, and value the contribution of others.

A good safety performance energises and motivates staff to perform better and increases trust from the very top of the company to the seafarer on the ship. In addition, it builds a strong reputation for the company and its employees while encouraging a positive approach to everyday work.

So, how do we make the necessary changes to make safety the top item on the agenda for all involved? Shipping has many important and influential industry groups, ship owners and managers, and related supporting businesses. But what has become apparent from speaking to those groups about safety is that something else needs to be done. Something that will bring all the various groups together and unite the shipping industry around safety which will not result in more regulation but will draw on the collective expertise of the industry.

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From these beginnings, the Together in Safety coalition was formed four years ago, bringing together all shipping industry groups, including the International Chamber of Shipping, BIMCO, OCIMF, Intertanko, Intercargo, Interferry, Cruise Liners International, and the World Shipping Council. In addition, it includes many major shipping companies, insurance companies, classification societies, and country representatives.

The Together in Safety Coalition's core objective is to protect seafarers' lives while delivering improved business efficiency and commercial effectiveness, and is fundamental to safeguarding shipping's future success.

A detailed strategic analysis of shipping incidents carried out by Together in Safety has shown three fundamental root causes for such incidents. The first of these is leadership. Visible safety leadership must stem from the top down, with the right behaviours and mindset modelled by the company's CEO and leadership team. Starting every con-

versation with safety, visiting people on the front line, reviewing progress, and taking corrective action where required is crucial. Together in Safety provides safety training modules and guidelines to help leaders develop a vision and plan, improve engagement, and facilitate collaboration.

The second root cause is poor incident prevention. A detailed analysis of major shipping incidents during the past years across all shipping sectors performed by Together in Safety has concluded that they are always the same types of incidents, i.e., collisions, groundings, ships on fire, lost containers, and people falling overboard. It is important to note that these are not accidents but repeated events that could and should have been avoided. They result in unnecessary loss of seafarers' lives, pollution, and excessive expenditure.

Together in Safety focuses on 14 categories of major incident types involving casualties or high-cost insurance claims. A set of 'Golden Safety Rules' have been outlined for each incident type, including guidelines and best practices, training, engagement tools, and checklists for the work areas known to experience significant safety issues.

The third root cause is a company's ineffective well-being and care policy. The Together in Safety initiative includes recommendations on delivering a high-quality well-being and care programme and improving seafarers' mental health. This is key to developing a healthy, happy and high-performing team. There are also guidelines to help promote and integrate mental health and wellness strategies, tools, and techniques into your organisation's safety policy, including ways to promote seafarer safety and respond to physical and mental well-being issues.

A key aspect of Together in Safety is that it helps companies move quickly towards delivering improved and sustainable safety and business performance. Its material and best practices are designed to complement and augment existing safety programmes and are freely available on the Together in Safety website.

The Together in Safety coalition is working with shipping groups to help them introduce the concepts mentioned above in order to improve their safety performance.

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Through a seafarer's eyes

# HORIZON FROM

by Capt. George Georgoulis



## THE IMO GUIDELINES OF CORRECTION FACTORS AND VOYAGE ADJUSTMENTS FOR THE CARBON INTENSITY INDICATOR (CII)

The IMO has introduced the Carbon Intensity Indicator (CII) requirements for ships as a short-term GHG reduction measure. It has also allowed for voyage adjustment and correction factors for certain ship types, operational profiles, or voyages to enhance, as appropriate, the CII Guidelines. The corrections factors and voyage adjustments which may be applied to the calculation of the attained annual operational carbon intensity indicator are described in the CII Guidelines.

A correction factor means a factor in the numerator or denominator of the CII formula which adjusts the calculation of the attained CII. A voyage adjustment deducts relevant fuel consumption, as well as the associated distance travelled, from the calculation of attained CII for a defined period subject to certain threshold conditions being met.

IMO has prescribed a specific formula for CII calculation to be used when the corrections factors and voyage adjustments are applied. Accurate data and supporting evidence must be collected for submission to the verifier if the corrections factors and voyage adjustments are applied.

Data and supporting evidence must be collected as per the approved SEEMP II or III for submission to the verifier if the corrections factors and

voyage adjustments are applied to the calculation of attained CII.

### Vessels are to report the total distance & fuel consumed during the following situations:

- Voyages through ice (applicable to Ice Class vessels only)
- Voyages for the purpose of securing the safety of a ship, e.g., when a vessel at anchorage needs to go out to sea to avoid an impending storm or deviate during a voyage to take shelter
- Voyages for saving life at sea, e.g., rescue operation voyages or deviations to disembark seriously sick crew
- Voyages undertaken due to damage to the ship or its equipment, e.g. direct voyages to a repair yard after damage to the propeller, steering gear, shafting, etc.

The ship's logbook should include data entries for the voyage period with the date, time, and ship position at the commencement and end of a voyage. In addition, for voyages through ice conditions, the date, time, and ship's position when it encountered and left the ice conditions should be recorded.

Fuel consumption may be recorded by flowmeter reading or fuel tank monitoring at the start and end of a voyage, as per whichever method is approved in SEEMP II or III. Photo evidence of logbook entry for flowmeter readings or tank sounding at the start and end of a voyage (Logbook entry) is to be maintained for evidence. For





# THE BRIDGE

distance travelled records, deck logbook entries, ECDIS track, or similar can be used as evidence. It is imperative to accurately capture and record the data needed for applying the correction factors and voyage adjustments throughout the CII reporting period. Proper evidence also needs to be maintained. Obtaining the data and evidence will be tedious if left until the end of the reporting period.

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## **GUIDELINES FOR MINIMISING THE RISKS OF CARRYING LITHIUM-ION BATTERIES**

The shipping industry generally recognises the need for greater commitment to health, safety, security, and the environment. The need for business, government and non-governmental organisations to work together to tackle the most pressing issues and societal challenges has never been more apparent.

New energy sources and storage methodologies are urgently needed to reduce the environmental impact of fossil fuels and our dependency on them. The development and use of lithium-ion batteries are crucial in this context. However, these batteries can present a significant risk to people, property, and the environment if not properly handled, packaged, classified, and declared. Consequently, safety issues are one of the main obstacles restricting their broader application.

Lithium-ion batteries are a relatively new technology, so there is still no consensus on the best

design and manufacturing methods for their use in electric vehicles (EVs) and other applications requiring high-density energy. Nevertheless, there has been a significant increase in the carriage of lithium-ion batteries because of policies and trends for the “electrification of everything”. They are commonly used in EVs and a wide range of other products and equipment. However, there have recently been many fires on ships and ashore, demonstrating the significant risks resulting from the potential thermal instability of high-energy lithium-ion batteries installed in EVs and as standalone cargo. Standard Club’s Cargo Incident Notification System and Network (CINS) has developed guidelines highlighting the risks that lithium-ion batteries can present and providing suggestions on identifying those risks and ensuring their safe carriage. All stakeholders involved in the carriage of lithium-ion batteries in containers have been asked to carefully review these guidelines to determine if they can be implemented and applied to their specific operations and requirements.

In particular, shippers and stakeholders handling, offering and providing storage or transport of lithium-ion batteries should review their safe carriage together with their customers, manufacturers, and suppliers to plan their transportation and communicate the relevant information and documentation to all stakeholders in the supply chain to comply with international safety, health, and environmental legislation including, but not limited to:



- International Maritime Dangerous Goods (IMDG) Code, Code of Practice for Packing of Cargo Transport Units (CTU Code) and Cargo Stowage and Securing (CSS) Codes, amongst others
- national applicable legislation
- training and knowledge of the associated risks and hazards when a lithium-ion battery fails and goes into thermal runaway.
- fault/failure detection and related required actions
- suppressing, extinguishing and post-fire management

Technology is constantly evolving; therefore, risk control factors also require constant updates to deal with both the risks and the opportunities. Furthermore, human risk control factors are particularly unpredictable, which is why any system must constantly take account of both the technological and human elements, new technologies, systems and devices, and human judgement and behaviours. The CINS addresses the technical and human aspects of risk control for the carriage of lithium-ion batteries.

#### STOWAWAYS: PREVENTIVE MEASURES AND DEALING WITH STOWAWAYS FOUND ONBOARD

Stowaways seem to be an ever-present problem for the shipping industry, particularly for those trading on the coast of West Africa, in Central America, Colombia, Venezuela, and the

Dominican Republic. In addition to vessels' trade patterns, this problem is also closely linked to vessel or cargo type, as well as to the security training and awareness of the crew. The lion's share of stowaways is found on board bulk, container, and general cargo vessels. Car carriers are also over-represented compared to other vessel types. The costs involved in looking after and repatriating stowaways can be substantial. The repatriation of stowaways generally involves moving reluctant people across several continents, and problems can easily occur. In 2002, the average cost of each stowaway case was approximately USD 7,000. By 2008, this figure had increased significantly to just over USD 18,000. If more than one stowaway gains access to the vessel, the costs have been known to escalate to USD 100,000 or more, simply because repatriation is usually only permitted with two security guards escorting each stowaway. Shipowners and masters face the problem of identifying the presence of stowaways before a ship leaves port or preventing their boarding of the vessel in the first place. However, most stowaways are only discovered once a ship has sailed. Therefore, dealing with an incident involves the master and owner in time-consuming negotiations with P&I Clubs, agents and authorities. The cost of disruptions to the ship's schedule alone can be considerable. There are a number of preventive measures the master and crew can take before the ship enters





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port, during the stay in port, and after departure. Prior to and during a ship's call at any port, the following steps are recommended:

- All relevant sections of the ISPS Code should be implemented, particularly regarding the ship's gangway and dock areas, and all access points should be secured.
- A crew member should always man the gangway and closely monitor all persons embarking and disembarking. On ro-ro vessels, the ramp should be monitored at all times, and all access points on deck should be locked so the vessel cannot be penetrated.
- Agents should obtain and provide the ship with a list from the stevedore company that clearly identifies the number of stevedores working on the ship. It is essential that stevedores only embark and disembark by the ship's gangway and that their movements are constantly monitored whilst onboard.
- The master of the ship, the crew member assigned runway watch duty, and the agents should be notified about all the visitors expected on the ship, their expected arrival time, and precise details of their business on board.
- All visitors should be instructed to report to the crew member assigned to gangway watch duties in the first instance.
- The crew should be vigilant about any persons who may be trying to board the ship by mooring ropes or small boats at the water's edge. This is particularly important when the ship is berthed at night.
- The ship, including all its dark and difficult-to-access areas, should be searched before departure. This search should include areas that are thought to be locked/secured.
- Empty bays on container vessels and empty holds on bulk/general cargo vessels should be searched. In some cases, it may be prudent to engage an external search company to assist with a search before the ship's departure.

If a stowaway is found onboard, the following measures should be taken:

- Once the presence of a stowaway has been detected, it is crucial to inform the owners and the port agents.
- The agent is responsible for advising the local authorities of the stowaway's presence.
- Searching the area where the stowaway

was found can be very useful.

- Ensure that the stowaway's clothing has been searched.
- The stowaway must be photographed and interviewed.
- Once the above information has been obtained, it should be reported to the P&I Club.
- While the stowaway remains onboard, he should be fed and allowed access to essential items such as a bed and toilet.
- It is necessary to keep the stowaway secure at all times.
- The stowaway should not be assigned any duties on board.

Any master who has had to deal with a stowaway situation on board will agree that time and money invested in preventing stowaways from boarding a vessel is time and money well spent. Therefore, it is hoped that the advice provided will assist ship officers and crews in avoiding the problem altogether or at least ensure a swift resolution to a situation that poses a challenge to owners/operators in many cases.

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### ENCLOSED SPACE ENTRY PROCEDURES

An enclosed space is a space with poor or no natural ventilation which is not designed for continuous occupancy, where access is limited, and which may contain a dangerous atmosphere. Enclosed spaces include but are not limited to cargo tanks, double bottoms, cargo pumprooms, duct keels, ballast tanks, void areas, peak tanks, cofferdams, chain lockers, bunker tanks, freshwater tanks, machinery internals, and other spaces normally kept closed.

An enclosed space may include a deck area with poor or limited access due to its construction and location and where a dangerous atmosphere may accumulate. The hazards identified below may be present around such a deck area.

Enclosed space atmospheres can be hazardous due to one or a combination of the following conditions:

- oxygen deficiency
- the presence of inert gas, including nitrogen
- the presence of toxic or flammable gases
- an accumulation of toxic or heavy gases at the lower levels of the space, or oxygen enrichment.

The following contributory factors have been frequently identified following enclosed space accident investigations:

- non-compliance with procedures
- poor supervision
- complacency and over-familiarity, lead-





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ing to shortcuts being taken

- monitoring equipment not used or not working properly; and
- improper action in an emergency

Prior to entering an enclosed space, all personnel who are to be involved in the work should meet to:

- define the purpose of entering the space
- identify the steps required to achieve the purpose
- identify the risks involved
- develop a plan of action and agree on responsibilities

Before allowing personnel to enter an enclosed space, an entry permit should be issued. It is recommended that the permit be signed by the master or a designated officer with sufficient knowledge and experience on the procedure's compliance requirements.

The entry permit should contain a clear indication as to its maximum period of validity, which should not exceed 8 hours. It should also describe the maximum permitted time between

testing the atmosphere and personnel entry into the space. A single permit for entry into more than one enclosed space may be issued as defined in the company's SMS. However, this should only be applicable for entry into cargo tanks. While working in enclosed spaces, ventilation should be continuous while personnel are inside the space, and the atmosphere should be monitored at appropriate intervals, including using personal multi-gas detectors. If personnel begin to feel dizzy or unwell, they should leave the space immediately.


In particular, tests should be done before resuming work after a break and prior to re-entry. When personnel need rescue from an enclosed space, the first action of the person assigned as the attendant should be to raise the alarm. Although speed is often vital in saving a life, rescue operations should not be attempted until assistance has arrived and a planned approach can be made. There are many examples of lives lost over the years through hasty, ill-prepared rescue attempts. The rescue team should comprise dedicated personnel appropriately drilled and trained in all aspects of enclosed space rescue, including resuscitation equipment. All team members should be familiar with the ship's SMS and operating and emergency procedures. Although a dedicated team offers major advantages, it is essential to designate backup personnel that can replace a member(s) of the dedicated team when they are unavailable. Regular training of the emergency rescue team is essential to ensure a successful enclosed space rescue. Emergency rescue team members should be:

- prepared for the physical and technical demands of enclosed space rescue
- well trained in all rescue team duties
- familiar with the use and deployment of rescue equipment that should be of a size and weight to allow its ready deployment into the enclosed space and placement in any location where work may take place
- capable of fulfilling any role within the rescue team

Enclosed spaces on board ships are an insidious enemy that lurks and waits for the error of any crew member. Our greatest ally in neutralising this enemy and minimising the possibility of human error is the continuous training of seafarers - especially those serving on dry cargo ships - in following the entry procedure but, most importantly, in observing the entry prohibition unless a special permit has been issued and the chief officer has ordered the entry.







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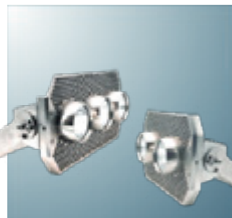
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# STARLINK: A WIND OF CHANGE

by Manos Charitos



Elon Musk is undoubtedly a controversial figure who has often made the headlines due to his bold statements, interaction with his social media followers, his ambitions to colonise Mars, and grand plans for fully self-driving electric cars. However, his critics often overlook his remarkable scientific and technological achievements that have transformed entire industries and inspired millions.

One of Elon Musk's strongest attributes is his entrepreneurial acumen— especially his talent for choosing investments and recognising opportunities. At a time when the role of the internet is becoming increasingly essential to the global economy, and while most parts of the world do not have adequate or reliable connections, Elon Musk launched Starlink. Starlink's website emphasises that it is the world's most advanced broadband satellite internet system. It leverages low-orbit satellites and promises reliable and fast internet in every part of the world.

One of the reasons for the Starlink Satellite System's instant fame was that, shortly after the start of the Russian war on

Ukraine, Elon Musk agreed to allow Kyiv free access to Starlink's satellite internet service, thus providing Ukraine's military with impressive internet capabilities. For this reason, according to an intelligence report obtained by the Washington Post, Moscow is developing weapons to sabotage Ukrainian forces' internet access by targeting Starlink satellite operations.

However, Starlink was not developed with the needs of military forces in times of war in mind but rather to meet civilian needs in an increasingly internet-dependent world. And in this light, shipping is no exception.

Starlink is attracting the shipping industry's interest for many reasons. Firstly, a reliable, uninterrupted, fast Internet connection is essential in safely performing remote ship operations. Secondly, a reliable connectivity system is critical as cyberattack threats in shipping are increasing.

In addition to the benefits mentioned above, Starlink's internet services increase crew satisfaction - one of the perennial complaints of seafarers, which has now become more intense,



ELON MUSK'S SATELLITE CONSTELLATION SYSTEM,  
A VEHICLE FOR THE SHIPPING INDUSTRY'S DIGITALISATION

# IN INTERNET CONNECTIVITY



is the lack of quality, uninterrupted internet access.

In a related survey by Isalos.net in which first-year students from the Merchant Marine Academies of Greece participated, it became evident that the internet plays a leading role in the lives of aspiring seafarers. More specifically, 53% said they use the internet between three and five hours a day, while 16% answered that they use it for at least six hours a day. In addition, nearly three out of four participants (74%) responded that internet access on board is “very” or “extremely” important.

#### **Companies that have already embraced Starlink**

Japanese Mitsui O.S.K. Lines was among the first companies to switch to Starlink. At the end of last year, the company signed a relevant memorandum of cooperation with Starlink for a trial use of the system. Tototheo Maritime followed suit, concluding a similar agreement with Starlink at the end of 2022. In 2023, Columbia Ship Management, Costamare, Enesel, NYK, and even Carnival joined the list of well-known

shipping companies that have “embraced” Starlink.

Andreas Panagiotaras, IT Manager for Enesel S.A., said, “We are always interested in exploring ways to keep our modern fleet at the forefront of technological innovations, so trying Starlink is a natural step for us”.

Themis Sardis, Head of IT for Costamare, said the company was excited to explore the potential of Starlink, which could “enable completely new ways of working in terms of the technological tools we can implement across our fleet”.

“For many of our guests, it is becoming increasingly important to maintain the kind of connectivity at sea they have become accustomed to at home and to share their cruise experiences with friends and family,” Carnival Corp chief executive Josh Weinstein said.

The above statements reflect Starlink’s strengths as a service seeking to increase its share in the maritime industry. The benefits it can offer include providing fast, high-quality connectivity, facilitating the digital transition, and enhancing crew and passenger satisfaction and entertainment.



During the past 15 years, the shipping finance market has been no stranger to significant changes to the financing landscape and 2023 has already proven to be no exception.

# THE RECENT BANKING CRISIS AND ITS IMPACT ON THE GREEK SHIPPING SECTOR



by **Evi Platsidaki**,  
Partner, Solicitor, qualified  
in England & Wales Norton Rose  
Fulbright Greece

As with any reshuffling, this means both challenges and opportunities.

Over the years, a range of factors has led to banks and other financiers leaving the maritime sector. This includes banks' nationalisation (rendering lending to the maritime sector a hard sell to its new stakeholders), greenwashing concerns, overexposure to a sector that's underperforming (for instance at the time of the offshore crisis) and general concerns about the inevitable cyclicity and volatility of the market which can negatively impact financiers' balance sheets.

In respect of banks, the sector's saving grace is often that shipping is usually a small and relatively uncorrelated part of their portfolio. Fluctuations will therefore not necessarily have a significant impact or be affected by general policy changes.

Usually, when a bank/financier looks to leave the maritime sector, it will ideally aim to sell its business as a whole. However, this has generally proven to be difficult to achieve, typically leading to banks selling their portfolio either as a whole or, more commonly, piecemeal. From a legal perspective, this will usually be a rather straightforward exercise, particularly for syndicated transactions which are built to cater for this eventuality. However, particular regard needs to be had to matters such as the bank's disclosure rights (eg to potential transferees) and any consent or notice requirements vis-a-vis their borrower and to the transfer of the security. Such transfer will need to be effected in accor-



dance with local law requirements and formalities. Much has been said about the events leading up to UBS's recent acquisition of Credit Suisse (reported to be the biggest lender to Greek shipping and the 10th largest ship lender overall) and of the expected impact this might have on the shipping finance market. The events can be seen from a glass half empty or half full perspective. Some have issued stark warnings of what is to come or what could have been but others have focused on how quickly the Central Bank reacted and the reassuring messages that have been provided. It is clear that no rushed decisions are being made and the fact that the financing is invariably tied to deposits (and therefore the wealth management business) could act as a strong disincentive to selling the portfolio. It remains to be seen whether a bank that has so far not been invested in the sector will see this as an opportunity to develop that expertise further by taking on new business and onboarding new clients going forward.

Additionally, the closure of HSBC's Greek office marks the departure of a prominent lender to the Greek shipping market. Its portfolio has been reported to have been successfully transferred to other banks, which is a good indicator but means that its former clients will have to look elsewhere for their financing needs going forward.

On the other hand, a large number of financiers have familiarized themselves with the Greek shipping market over the past few years and many have indicated an appetite to become more entrenched in the market. Additionally, the large majority of Greek shipowners have made sure to have a diversified lender base. The result of this is that, at least the top end of the market, usually benefits from a plethora of financing options.

Perhaps what is most impactful however at the moment is neither of the above events relating to the supply of ship finance but rather changes on the demand side. I'm referring to the current high financing costs (caused by the banks' own high funding costs) which, coupled with strong profits in certain sectors over the past few years, seems to have resulted in lower demand for shipping finance transactions at the moment. If anything, I would suspect that the repayments of existing facilities made in the past 6-months have reached a record high. Companies have sought to rid themselves of expensive debt, taking advantage of the liquidity that resulted from strong markets recently. The relatively low orderbook at the moment also contributes to that effect. This should mean that many banks will actually be more hungry for business

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opportunities. It is therefore arguably perfect timing for shipowning companies to form new relationships, though this will come at a higher price. Some prominent market players have warned that the higher financing cost is here to stay. This could mean a number of things. For instance, cash heavy groups might opt to finance their acquisitions through equity or joint venture arrangements, possibly leaving room for the financiers' liquidity to be diverted elsewhere. This could be a welcome change for medium-sized companies that have seen part of their lender base largely divert their funds to bigger tickets in the higher end of the market. Another factor going forward, at least so far as tankers are concerned, will be banks' (particularly European ones) environmental sensitivities and restrictions. In some cases this will mean a blanket restriction on lending for this asset group. This now seems to have also impacted the framework for JOLCOs, whose new regulatory framework largely supports environmentally friendlier vessels. LNG finance however seems to remain strong.

But we would only be presenting a fraction of the market if we limited the conversation in question to the activity of the banks. The ship financier landscape goes far beyond that and

Greek owners have become much more agile and accustomed to alternative finance structures.

Interestingly, the banks that have left the shipping market in the recent past have largely been banks which also catered to the medium to small size range of the market (RBS, DVB and UniCredit for instance come to mind). This has caused their former shipping clients to consider what other financing options are available to them, beyond the typical bank financing.

Two options in particular stand out the most: Greek shipowners are no strangers to joint ventures (JVs) with private equity firms which they have often had recourse to in the absence of liquidity and available financing. Such ventures will generally be more complex than the typical shipping finance transaction companies may be accustomed to requiring legal advice on corporate matters. As legal counsel to both private equity firms and shipping companies active in JVs, we would provide specialist advice on the relevant workstreams. These would include advising on the jurisdiction suitable for the JV vehicle, the shareholders' agreement, tax considerations and consideration of sensitive commercial matters. The documentation will need to clearly set out parties' objectives and address



# IT'S UP TO US TO NAVIGATE THIS ISSUE

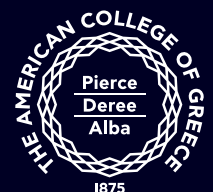
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In a mature shipping market such as the Greek shipping market, financing opportunities go well beyond bank debt and while crises may temporarily lead to the lack of liquidity, they also typically lead to a reshuffling.

parties' recourse in the eventuality of a falling out. The shareholders' agreement will provide for the relevant exit and share transfer provisions as well as remedies available in the case of an event of default. In fact, Norton Rose Fulbright's "Joint Venture Survey" in 2021, found that "determination of management and control" and "deadlock resolution" were the most controversial matters to be negotiated in the context of JVs.

Secondly, sale and leaseback transactions have proven to be a popular option with the pool of lessors increasing over the years. Interestingly, it seems that recently several companies have sought to exercise their purchase options under sale and leaseback transactions previously entered into, having identified cheaper refinancing opportunities or because of available equity. However, others are looking to enter into sale and leaseback transactions as an alternative to typical bank financing.

For the shipping company (the seller and lessee in the context of such transactions), from a commercial perspective one might take issue with having less flexibility to exit the transaction as exercising the purchase option will typically be more expensive (typically the purchase price in this case will include a prepayment fee). Also, the documentation and underlying issues may be less familiar so can be more onerous for in house legal teams.

For the financier (buyer and lessor in this case), seeing as they are stepping into the shoes of the owner, there will be a range of issues to consider and to document which will differ to those relevant to a typical financing scenario. For instance, there will be regulatory and tax matters to consider that may be relevant to financial leases in the relevant jurisdiction. Also, seeing as the financier will become the owner of the vessel, it's recourse is no longer one of exercising a ship mortgage and arresting the vessel. Rather regard will need to be had to the legal framework for repossessing the vessel in case of an event of default. The lessor may also look to obtain financing on the back of the relevant vessel and this will then require tripartite arrangements between the lessee, the lessor and its financier.

In conclusion, in our experience, in a mature shipping market such as the Greek shipping market, financing opportunities go well beyond bank debt and while crises may temporarily lead to the lack of liquidity, they also typically lead to a reshuffling. Funding gaps are usually quickly identified by other players and viewed as an opportunity to enter the market.



An aerial photograph of the Piraeus port and the city of Athens, Greece, taken during the golden hour of sunset. The port is filled with numerous ships, including large cargo vessels and smaller ferries. The city's dense urban landscape is visible in the background, with the Acropolis and other ancient ruins perched on a hill overlooking the sea. The water is a deep blue, and the sky is a warm orange and yellow.

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Besides the ports/locations that we cover via our offices appearing on the relevant list, Mylaki Shipping Agency Ltd covers all Greek and Cypriot ports through our local correspondence.

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## NEWBUILDINGS

# ALPHA GAS: "ENERGY FIDELITY"

### VESSEL PARTICULARS

**Name**

Energy Fidelity

**Type**

LNG CARRIER

**IMO No.**

9540089

**DWT**

174,000 cbm

**Shipyard**

HYUNDAI SAMHO

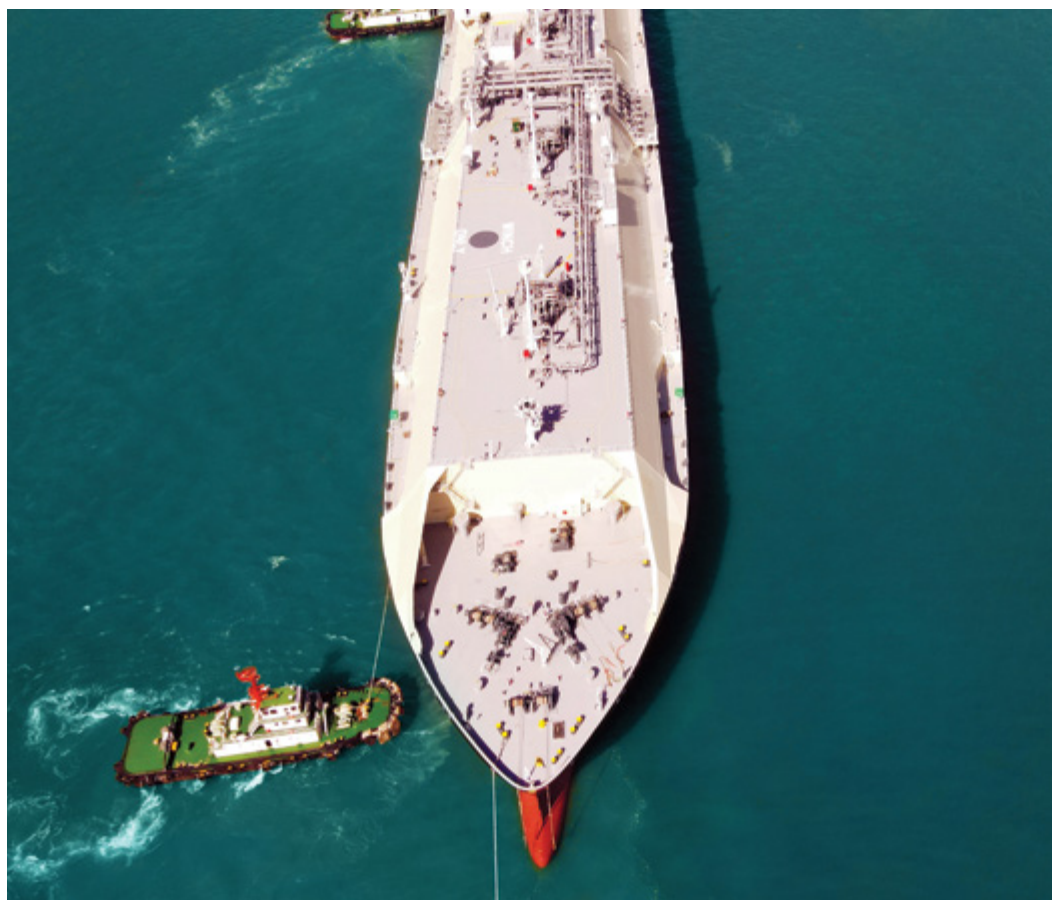
**Date of delivery**

21st of April 2023

Alpha Gas S.A. took delivery of the LNG carrier Energy Fidelity, built by HYUNDAI SAMHO H.I. (HSHI), adding another latest design LNG carrier to its portfolio of wholly owned assets under its in-house Commercial and Technical Management. Today, Alpha Gas S.A. operates a very modern fleet of six LNG carriers with diverse and highly efficient main engine technologies (TFDE, MEGI and XDF) enabling the company to offer a very competitive and unique value proposition to its customers.

Energy Fidelity is the first LNG carrier propelled with XDF engines to join Alpha Gas's fleet, from a series of three to be delivered to the company by HSHI within 2023-2024. With a cargo capacity of 174,000 cbm, the vessel is equipped with the latest technologies, including; a high capacity and highly efficient Reliquefaction plant, Air Lubrication System (ALS), two Shaft Generators (PTO) and Air Resistance Shield.

Energy Fidelity was delivered from the yard straight into her first employment (medium-term charter) with a world-class Far East based charterer.









## NEWBUILDINGS

# ANGELICOUSSIS GROUP

# MARAN DRY MANAGEMENT "UBUNTU COMMUNITY"

Maran Dry Management enhanced its fleet with its second Capesize dual-fuel, Ubuntu Community – the sister ship of Ubuntu Unity.

The DNV-class vessel was delivered on 18 April 2023 by Shanghai Waigaoqiao Shipbuilding Co., Ltd. (SWS) and will fly the Greek flag.

She is 299.80 metres long, 47.5 metres wide and 24.70 metres deep. The use of LNG will lead to significant reductions in CO<sub>2</sub> and NO<sub>x</sub>, while almost eliminating SO<sub>x</sub> and particulate matter emissions. With a combination of dual-fuel, hull optimizations and energy efficiency measures, the vessels have a very advantageous and low EEDI rating, much lower than the baseline.

### VESSEL PARTICULARS

<b>Name</b>	<b>DWT</b>	<b>Date of delivery</b>
Ubuntu Community	190,000	18 April 2023
<b>Type</b>	<b>Shipyard</b>	<b>Flag</b>
CAPE SIZE BULK CARRIER	SHANGHAI WAIGAOQIAO SHIPBUILDING	GREEK
<b>IMO No.</b>		
9956991		





# MARAN TANKERS MANAGEMENT "MARAN DANAЕ"

Maran Tankers Management welcomed its third Dual Fuel VLCC, Maran Danae, to its fleet.

The ABS-class vessel was delivered on 27 April by Samsung Heavy Industries (SHI) and will fly the Greek flag. With a cargo capacity of 320,500 DWT, she embodies reliability, efficiency, and operational flexibility, like her sister ships Antonis I. Angelicoussis and Maria A. Angelicoussis. All three vessels are leading the way in energy efficiency, as they are equipped with the latest-generation dual-fuel MAN ES 7G80 ME-GI Tier III main engine, modern diesel generators, dual-fuel auxiliary boilers, a shaft generator, hydrodynamic hull and propeller design, advanced anti-fouling technology and energy saving devices.



## VESSEL PARTICULARS

<b>Name</b>	<b>DWT</b>	<b>Date of delivery</b>
Maran Danae	320,500	27 April 2023
<b>Type</b>	<b>Shipyard</b>	<b>Flag</b>
VLCC TANKER	SAMSUNG HEAVY INDUSTRIES	GREEK
<b>IMO No.</b>		
9930791		



# A Hub of Marine and Offshore Equipment Systems



S&SYS was established as a spin-off company from the Machinery & Electric System team of Samsung Heavy Industries on September 1, 2017.

Based on technologies and knowhow accumulated over 28 years in the shipbuilding and marine business, S&SYS has developed key equipment such as Ballast Water Treatment System, Ship Automation System, Marine Switchboard, Fuel Gas Supply System and Energy Storage System.

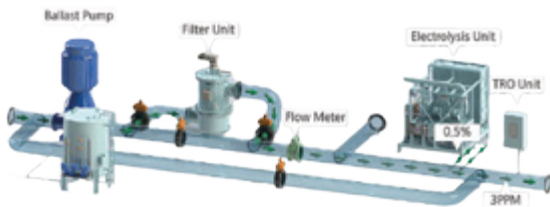
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### Ballast system / Automation system / Switchboard / FGSS / ESS

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#### PURIMAR™, Ballast Water Treatment System

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- Less power consumption, Less neutralizer consumption
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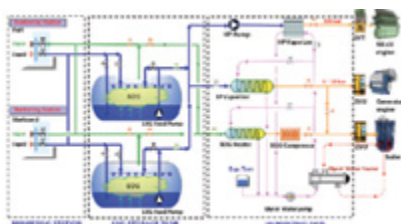
#### Energy Storage System

- DNV type approval in 2019, KR type approval in 2021 respectively
- Two products (2.5C, 1C) available acc. to ship's configuration
- ESS installation retrofit based on each ship's electric load analysis
- ECO ship supply package including ship's design, installation and supervision



#### PURIGAS™, Fuel Gas Storage & Supply System

- Total Package Service for Engineering & Supply
- Engineering support with proven technology and operating experience for various ship types
- Much engineering data for ship design relevant to FGSS



#### SSAS Master – Integrated Automation System

- Specialized for LNG control
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## CHEVRON AND THE ANGELICOUSSIS GROUP ANNOUNCE AMMONIA CARRIER JOINT STUDY AGREEMENT

Chevron Corporation, through its subsidiary Chevron Shipping Company LLC, and the Angelicoussis Group, through its Energy Transition division, Green Ships, announced a Joint Study Agreement (JSA) to explore how tankers can be used to transport ammonia, a potential lower carbon marine fuel. The initial study will evaluate the ammonia transportation market, existing infrastructure, the safety aspects of ammonia, potential next-generation vessel requirements and a preliminary system to transport ammonia between the U.S. Gulf Coast and Europe. Future opportunities will focus on additional global markets.

Ammonia is a carrier of hydrogen and is believed to have the potential to lower the marine

industry's carbon intensity. Through the JSA, the Angelicoussis Group and Chevron aim to advance ammonia's technical and commercial feasibility at scale, particularly as an export for petrochemicals, power, and mobility markets.

"We are pleased to collaborate with the Angelicoussis Group on this study, help advance lower carbon energy at scale and progress marine transportation of ammonia," said Mark Ross, President of Chevron Shipping Company. "I'm proud of the collaboration between Chevron Shipping, Chevron New Energies and the Angelicoussis Group and look forward to driving progress toward our energy transition goals."

"Through collaborating with Chevron Shipping Company on this study, we aim to make a meaningful contribution to prepare our industries for the transition towards lower carbon operations," said Maria Angelicoussis, CEO of



Recent trends in marine technology and innovation

# TECHNOLOGY



the Angelicoussis Group. “Combining our many years of experience in seaborne transport of liquid and gaseous energy sources with Chevron’s vast experience in the energy business provides a solid basis for this endeavor.”

---

**LASKARIDIS SHIPPING BECOMES  
THE FIRST GREEK SHIP OWNER  
TO IMPLEMENT SHIPIN SYSTEMS’  
FLEETVISION™**

Laskaridis Shipping Company Ltd announced that they have signed with maritime technology company ShipIn Systems, the world’s first FleetVision™ Platform. Laskaridis will roll out ShipIn’s FleetVision™ Platform across the fleet in the coming months.

The innovative visual analytics solution provides a digital bridge between ship and shore, enabling real-time collaboration between

ship owners, managers, and crew onboard to enhance vessel safety and productivity.

Laskaridis Shipping controls a fleet of 90 vessels on which ShipIn’s team will install AI-powered CCTV cameras to detect discrete events like maintenance, navigation, and cargo operations. The platform will automatically alert the Laskaridis team both onboard and onshore about any safety or security risks, creating a digital source of truth that rolls up to powerful, fleet-wide analytics.

“We’re proud to be the very first ship management company in Greece to implement this innovative technology solution,” said Laskaridis Shipping COO Georgios Christopoulos. “The FleetVision™ system will become an important part of our digitalization strategy and will help us better pursue our policy towards operational excellence.”



Edited by: Nikos Vergounis

# & SHIPBUILDING

### **J. LAURITZEN ORDERS TWO METHANOL DUAL-FUEL KAMSARMAX BULK CARRIERS IN PARTNERSHIP WITH CARGILL**

J. Lauritzen has recently signed a letter of intent for constructing a minimum of two methanol dual-fuel 81,200 dwt Kamsarmax bulk carriers, which will be built by Tsuneishi Shipbuilding, Japan, capable of trading with zero carbon emissions when powered by green methanol and biodiesel.

The vessels will be among the world's very first zero-emission bulk carriers and fully owned by a newly established entity called 'Lauritzen NexGen Shipping', which J. Lauritzen and Lauritzen Bulkers will use as a platform for further zero-carbon investments and future-proof-assets for the shipping industry.

The vessels have been ordered in partnership with Cargill, which will operate them for a minimum of seven years.

The partnership is facilitated by Copenhagen Commercial Platform (CCP), which will also be involved in operating and further developing the partnership.

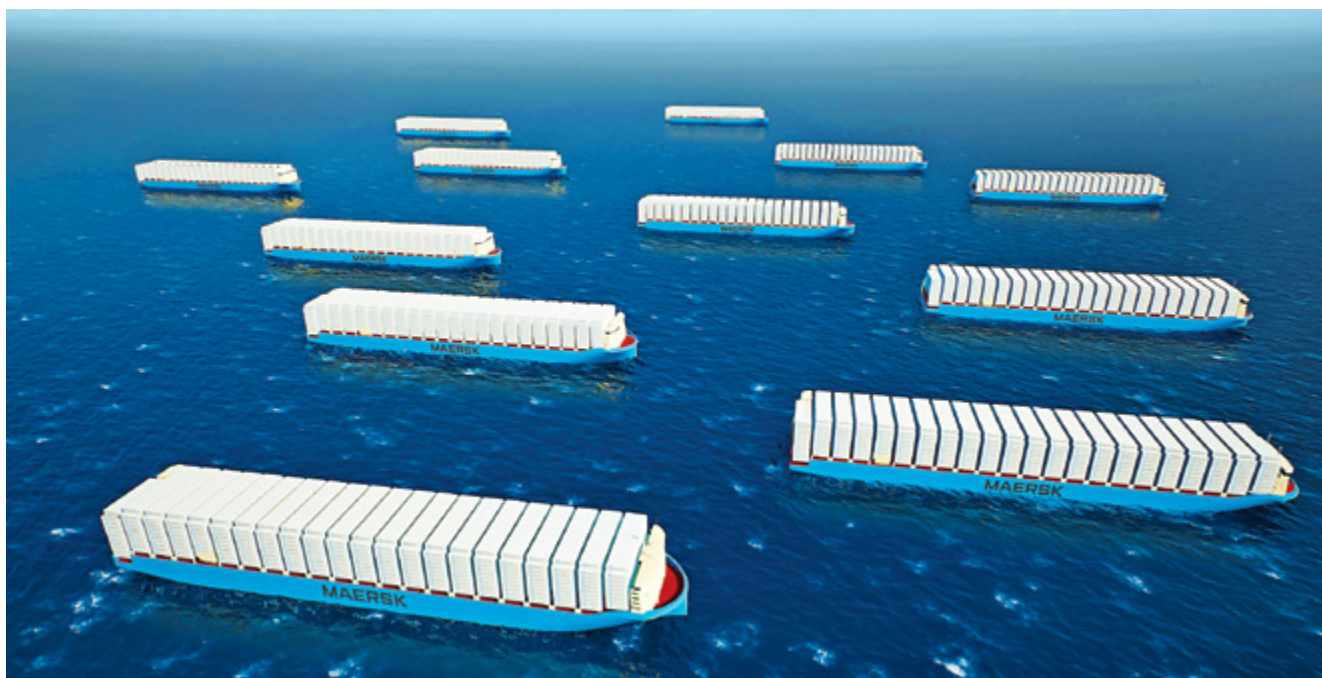
### **MARITIME INDUSTRY LEADERS TO EXPLORE AMMONIA AS A MARINE FUEL ON THE U.S. EAST COAST**

American Bureau of Shipping, A.P. Moller – Maersk, Fleet Management Limited, Georgia Ports Authority, Maersk Mc-Kinney Moller Center for Zero Carbon Shipping, Savage Services, Sumitomo Corporation and TOTE Services announced the execution of a Memorandum of Understand-

ing (MOU) to jointly conduct a feasibility study (hereinafter, "Study") with the aim to be one of the pioneers in establishing a comprehensive and competitive supply chain for the provision of green ammonia ship-to-ship bunkering on the U.S. East Coast. This Study will be conducted at the Port of Savannah, the third busiest gateway for containerized trade in America.

The Port of Savannah, home to Garden City Terminal, the largest single container terminal in the U.S., can serve numerous ammonia-fueled Ultra Large Container Ships (ULCSs), which could lead to fast and high-efficient decarbonisation in the container shipping industry. The rapidly growing port is advancing with its Big Berth/Big Ship program to accommodate six 14,000 TEU vessels simultaneously by 2024 and is planning to add 60% more capacity by 2025. In addition, Savannah's proximity to the Ports of Brunswick and Jacksonville – among the nation's busiest vehicle handling ports – may also help decarbonisation efforts in the automotive shipping industry.

The Study aims to cover the entire end-to-end supply chain of ammonia bunkering, which includes the development of a cost-effective green ammonia supply chain and designing an Ammonia Bunkering Articulated Tug-Barge (AB-ATB), as well as related supply chain infrastructure. In addition, safety assessments are critical to formulating standards for using ammonia as a marine fuel. Therefore, relevant government agencies and experts in the U.S. will be engaged in working towards the standardization of safe operations and regulations.







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### **A DEMONSTRATION TEST SHIP FOR LIQUEFIED CO<sub>2</sub> TRANSPORT**

Mitsubishi Shipbuilding Co., Ltd. recently held a launch ceremony for a demonstration test ship for the transport of liquefied carbon dioxide (LCO<sub>2</sub>), to be utilized in conjunction with initiatives by the New Energy and Industrial Technology Development Organization (NEDO) for its demonstration projects (CCUS R&D and Demonstration Related Project / Large-scale CCUS Demonstration in Tomakomai / Demonstration Project on CO<sub>2</sub>Transportation / R&D and Demonstration Project for CO<sub>2</sub> Marine Transportation). The ceremony, conducted in the presence of representatives of the ship's owner Sanyu Kisen Co., Ltd. and other partners, was held at the Enoura Plant of MHI's Shimonoseki Shipyard & Machinery Works in Shimonoseki, Yamaguchi Prefecture.

The Engineering Advancement Association of Japan (ENAA), one of the consignees for the NEDO demonstration projects, will charter the ship from Sanyu Kisen and install and operate the LCO<sub>2</sub> marine tank system used to conduct research and development. Furthermore, three additional project partners, Kawasaki Kisen Kaisha, Ltd. ("K" LINE), Nippon Gas Line Co., Ltd., and Ochanomizu University, will be commissioned by ENAA to conduct R&D on the pressure control and stability of the LCO<sub>2</sub> transported on the ship, and plan demonstration experiments, as well as develop and demonstrate technologies for safe and low-cost CO<sub>2</sub> transport.

Mitsubishi Shipbuilding is in charge of all aspects from the ship design through construction, including the cargo containment system, applying its gas handling technologies and expertise cultivated through the construction of liquefied gas carriers (for both LPG and LNG types).

Carbon dioxide capture, utilization, and storage (CCUS) is gaining attention as an effective means of achieving a carbon-neutral society. Because the sources of CO<sub>2</sub> emissions are often located distant from the sites selected for carbon utilization or storage, demand is expected to increase for LCO<sub>2</sub> carriers able to transport such cargo safely and economically. Mitsubishi Shipbuilding will draw on its experience constructing this vessel to bolster its business for MHI Group's energy transition strategy. In addition, it will develop the various technologies for LCO<sub>2</sub> vessels necessary to establish a CCUS value chain.

### **THE SECOND OF JAPAN'S FIRST TWO LNG-FUELED FERRIES ENTERED SERVICE**

Mitsui O.S.K. Lines, Ltd. recently announced that the second of Japan's first two LNG-fueled fer-

ries, the Sunflower Murasaki, owned by MOL and operated by its group company Ferry Sunflower Co., Ltd, entered service on April 14. The vessel is a sister ship to the Sunflower Kurenai, which began operation in January and will ply the Osaka-Beppu route between Sunflower Ferry Terminal and Beppu International Tourist Port as a replacement for the existing vessel Sunflower Cobalt.

Compared to earlier ferries, the new vessel offers greater transport capacity and convenience for cargo and passenger transport. In freight transportation, it has a greater capacity to load trucks and provides a larger, more comfortable room for truck drivers. In addition, the floor area of the Grand Bathroom has been doubled, the number of seats in the restaurant has increased by 1.5 times, and spacious and open public areas, including a three-layer atrium, have been added.

### **GTT, TOTALENERGIES, LMG MARIN AND BUREAU VERITAS JOIN FORCES TO DEVELOP A LARGE-SCALE LH<sub>2</sub> CARRIER**

GTT, TotalEnergies, LMG Marin and Bureau Veritas have signed an agreement for a Joint Development Project (JDP) to develop a 150,000 m<sup>3</sup> capacity liquid hydrogen (LH<sub>2</sub>) carrier concept design fitted with GTT's membrane-type containment system.

Low-carbon hydrogen offers a promising solution to decarbonise hard-to-electrify industries, as well as heavy-duty terrestrial mobility, long-distance aviation and maritime shipping. Hydrogen is also a solution for large-scale energy storage and could be used to generate distributable power to complement intermittent solar and wind power sources. In the future, continents such as Europe or some Asian countries may need to import hydrogen on a large scale to complement domestic production.

The ability to transport by sea very large volumes of hydrogen in liquefied form at -253°C is one of the major technological challenges to be overcome to set up a reliable, efficient and competitive global carbon-free hydrogen value chain.

The JDP partners will leverage their combined expertise and know-how to develop a large-scale LH<sub>2</sub> carrier concept that can be implemented on an industrial scale for the maritime transport of liquefied hydrogen.

-TotalEnergies will work on defining the vessel's specifications including operational profile;

-GTT will design the membrane containment system, considering the constraints related to liquefied hydrogen;

-LMG Marin will define the concept design of the LH<sub>2</sub> carrier adapted to TotalEnergies' speci-



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fications and taking into account the constraints related to the membrane containment system;  
-Bureau Veritas will conduct a risk assessment and review the design in accordance with the latest regulatory requirements and will ensure it meets Bureau Veritas' rules with the goal to deliver an Approval in Principle.

#### **HMM ANNOUNCES FIELD TESTS OF ONBOARD CARBON CAPTURE SYSTEM FOR CONTAINERSHIPS**

HMM announced that it plans to conduct field tests of an onboard carbon capture system (OCCS) for containerships along with SHI (Samsung Heavy Industries) and PANASIA in the second half of this year.

OCCS is an advanced technology to capture CO<sub>2</sub> from greenhouse gas emissions generated during vessel operation, ensuring it is not emitted into the atmosphere. This solution has the potential to play a significant role in reducing CO<sub>2</sub> emissions. HMM has performed a feasibility study with PANASIA on OCCS for its MPV (Multi-purpose vessel) since both companies signed a Memorandum of Understanding (MoU) last September.

The study revealed that OCCS could be installed without changing the existing equipment of the ship and does not hinder the stability of vessel operation. The collected carbon becomes liquefied in a pressurized tank and can be used for manufacturing dry ice or smart farm on land.

Based on these findings, HMM will fit OCCS in its containership for an operational test with SHI and PANASIA later this year. HMM will take charge of the operation of OCCS, while the others will provide engineering support.

In addition, HMM decided to replace the propellers of six containerships with more efficient ones specially designed for slow steaming. The replacement process will start in 2024, and HMM expects to increase energy efficiency by 8-9%.

#### **WÄRTSILÄ AND THE MARITIME AND PORT AUTHORITY OF SINGAPORE TO COLLABORATE IN ACCELERATING MARITIME DECARBONISATION AND DIGITALISATION**

Technology group Wärtsilä and the Maritime and Port Authority of Singapore (MPA) have signed a Memorandum of Understanding (MoU) aimed at collaborating in mutually beneficial areas to enable the introduction of next generation renewable fuels, optimise digital port operations, and develop future talent.

Under the MoU, signed in April, MPA and Wärtsilä will explore renewable fuel technologies and seek partnerships with various stakeholders to develop green fuel safety concepts and procedures to ensure the safe handling and operation of future fuels. Insights gained will support the development of global standards for maritime fuel safety. The parties will seek to make port operations more efficient by developing reliable, secure, and cost-effective data exchanges between vessels and port operations. Sharing data at scale, including real-time data, has the potential of unlocking insights to optimise port and vessel operations such as Just-in-Time planning. It can also greatly enhance data-based value generation, including the development of new capabilities and operational processes. The development of an operational concept for vessels and harbour craft utilising AI-based monitoring, tracking, and incident response is also planned. Big data from Wärtsilä's Navi-Port system, MPA's digital platforms and other relevant sources will be at the core of the algorithms to power the AI.

MPA and Wärtsilä will also collaborate on assessing cyber threats and risks to shipboard systems, ship-shore system communications and MPA's digital platforms.



# 10


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
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The latest developments on the energy front

# ENERGY &

Edited by:  
Giannis Theodoropoulos



# NATURAL RESOURCES



## EUROPEAN COUNTRIES PLEDGE TO MULTIPLY THE CAPACITY OF OFFSHORE WIND FARMS IN THE NORTH SEA

The second North Sea Summit, on the theme of green energy, was hosted on April 24 at the port of Ostend, Belgium, with the participation of European countries.

During the summit, it was agreed to increase the combined North Sea offshore wind capacity to



120GW by 2030 and 300GW by 2050 with the aim of making the North Sea "Europe's biggest green power plant". That will be an eightfold increase compared to the current power produced. The heads of state of nine countries (Belgium, France, Germany, the Netherlands, Luxembourg, Denmark, Ireland, the United Kingdom, and Norway) participated in the Summit. It was also attended by EC President Ursula von der Leyen, Energy Ministers, Energy Commissioner Kadri Simson,

and a delegation of executives from about one hundred of the sector's companies.

According to the Belgian business newspaper "L'Echo", the signing of the declaration by the nine countries essentially translates into creating Europe's biggest cross-border electricity link connected to an offshore wind farm, increasing the production capacity of electricity at sea, and integrating the production of green hydrogen in the process. In addition, the nine countries will combine their already identified projects as a basis for their shared vision to create an energy transition hub. Many interconnections are already on the cards (Nautilus between Belgium and the UK, Triton Link connecting the energy islands of Belgium and Denmark, Celtic interconnection connecting France and Ireland, etc.). Also, the countries announced they would make every effort to lighten the administrative procedures, especially the reception. The Belgian press describes the Summit that took place in Ostend as a "historic" move for energy.

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## GREECE TO BECOME AN ENERGY GATEWAY FOR THE BALKANS

Greece's expanded role as a natural gas supply hub for the wider Balkan region is leading to a doubling of the natural gas transmission system, thus strengthening the country's geopolitical position.

More specifically, The National Natural Gas System Operator (DESFA) is gauging investor interest in developing the infrastructure for supplying natural gas to neighbouring countries to record the project's needs and then submit investment proposals to the Regulatory Energy Authority (REA) for approval. A critical issue is the sharing of the costs of the investments since they are primarily aimed at supplying countries in SE Europe.

As DESFA pointed out during an informative event on the upgrade of the Greek system held recently, part of the cost can be covered by Greek consumers through user fees as the new projects are improving Greece's security of supply by diversifying its natural gas sources. But the final decision on the matter will be taken by the REA.

According to the data presented, natural gas exports quadrupled in 2022 compared to the previous year, reaching 29.5 terawatt hours from 7.6 terawatt hours in 2021, and were mainly directed to Bulgaria, which was facing a supply cut from Russian Gazprom. That natural gas was imported to the Revithoussa Station in liquefied form and then channelled to the Balkans through the Greek system.

The war in Ukraine, the decarbonisation of

energy production, and the shift to hydrogen in the future are some of the factors causing increased demand in the broader region and the need for new gas transit and transport infrastructures. As already known, there is a floating station for Liquefied Natural Gas (FSRU) in Alexandroupolis, and the prospect of installing four others in Corinth, Volos, and Thessaloniki and one more in Alexandroupolis, which will be mainly for export purposes, is being explored. In addition, all new infrastructures built by DESFA have the potential to transport hydrogen.

---

### **HYDROGEN PIPELINES STARTING TO MATERIALISE IN EUROPE**

New hydrogen infrastructure is starting to materialise as the world seeks to accelerate its path to net zero. However, there are few shortcuts to a sustainable future, and switching existing oil and gas infrastructure to hydrogen is not always viable. At the heart of this challenge is physics: hydrogen has a high gravimetric energy density and a low volumetric energy density. That means that between hydrogen pipelines and ships, the former will be a far better option for moving hydrogen over short to medium distances.

Today, there are already over 4,300 kilometres of pipelines for hydrogen transportation, with over 90% located in Europe and North America. Rystad Energy estimates that there are about 91 planned pipeline projects worldwide, totalling 30,300 kilometres and due to come online by around 2035.

In cases where hydrogen will be shipped (as hydrogen or its derivatives), it will eventually be distributed on land using hydrogen pipelines, which makes transport via pipelines a critical transportation mode for the gas. Hydrogen pipelines are already used to supply industrial hubs (at petrochemical plants, for example). As supply scales up and moves from areas with abundant and renewable energy to demand centres, long transmission lines will be a necessity, and these pipelines would require larger diameters and higher pressure for cost-effectiveness and, consequently, higher steel grades. Globally, Europe is at the forefront of efforts to produce and import green hydrogen and is now turning its attention to building the necessary infrastructure to get it to demand centres. According to Rystad Energy research, Spain, France, and Germany are among the countries committed to or considering cross-border pipelines to facilitate energy flows. At the

same time, with its extensive gas grid, the UK finds itself in a fantastic position to switch from natural gas to hydrogen.

---

### **FLOATING NUCLEAR POWER CONSORTIUM TAKES SHAPE**

Korea Hydro & Nuclear Power (KHNP), Samsung Heavy Industries (SHI) and Seaborg Technologies have announced a consortium to develop floating nuclear power plants with Seaborg Technologies' innovative molten salt reactor technology. The power plants will be installed on barges with a modular design able to deliver from 200MWe to 800MWe, with the consortium's first project expected to be a 200MWe power barge.

The consortium aims to enable timely commercialisation and a scalable export of factory-produced CMSR-based floating nuclear power plants worldwide, offering improved efficiency and inherent safety characteristics. With KHNP's extensive experience in nuclear power generation, SHI's offshore construction expertise and Seaborg Technologies' innovative technology, the consortium is well-positioned to meet the growing demand for clean and reliable energy.

The agreement marks a significant worldwide milestone for floating nuclear solutions: each 200MWe of generation capacity is expected to save over 26 million tons of carbon dioxide emissions over its 24-year lifetime compared with a coal-fired power plant.

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### **BP STARTS OIL PRODUCTION AT ARGOS PLATFORM IN THE GULF OF MEXICO**

BP has successfully started oil production at its Argos offshore platform, delivering more energy at a critical time and strengthening BP's position as a leading producer in the deepwater US Gulf of Mexico.

With a gross production capacity of up to 140,000 barrels of oil per day, Argos is BP's fifth platform in the Gulf of Mexico and the first new BP-operated production facility in the region since 2008. The semi-submersible platform will ultimately increase BP's gross operated production capacity in the Gulf of Mexico by an estimated 20%. BP expects to safely and systematically ramp up production from Argos through 2023.

Argos is the centerpiece of BP's Mad Dog Phase 2 project, which extends the life of the super-giant oil field discovered in 1998. It is one of nine high-margin major projects that BP plans start up by the end of 2025 globally.



Photo 21-1-2019, 1:00pm, "M/V MAERSK ENPING"-L.A.

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# THE BULK CARRIER

A BRIEF REVIEW OF Q1 2023

Edited by Giannis Theodoropoulos  
Based on data from VesselsValue

The bulk carrier freight market may not have started the year in the best possible way, but since March, there has been a recovery, and the outlook for the rest of the year is positive.

This optimism stems mainly from the supply front, as the orderbook represents approximately 7% of the current fleet. It is also confirmed by the public statements of Greek shipowners, who say that the uncertainty about environmental regulations keeps orders at low levels and brings smiles to the market. At the same time, the CII implementation is expected to reduce ship speeds and, therefore, available capacity.

On the demand side, China is opening up to seaborne dry cargo trade, with coal and iron ore imports registering a significant rise in Q1. At the same time, in the first four months of 2023, Indonesia's coal exports to China are estimated to have increased by 65% year-on-year. In addition, Chinese industrial activity has increased, boosting demand for coal. In the following pages, we present the bulk carrier freight market fundamentals for Q1 based on data from VesselsValue.





# FREIGHT MARKET

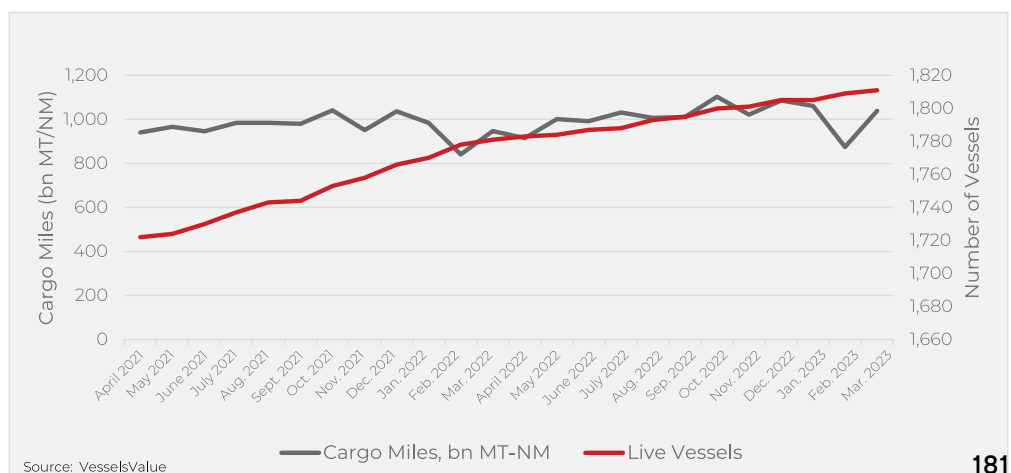
## TRADE Capesize

Capesize cargo miles have shown an overall downward trend in the first quarter of 2023 from 1061.35 bn MT/NM in January to 1,035.12 bn MT/NM in March, (around 2.5% decrease) whereas supply has gone from 1,805 vessels in January to 1811 in March an increase of around 0.3%. Average speeds have shown a mixed trend over the first quarter of 2023, with the average laden speed in January was around 10.43 kts and around 10.75kts in March showing an increase of around 3%

whereas the ballast laden speeds were 11.73kts in January and 11.67kts in March showing a decrease of 0.5% With the overall cargo miles demand going down potentially we will see both Laden and Ballast averages decrease over the next quarter.

The top 5 exporting countries in terms of tonnage for the first quarter of 2023 were Australia (250.8m MT), Brazil (70m MT), China (35.6m MT), Guinea (26.4m MT) and South Africa (22m MT).

Capesize Demand  
vs Supply





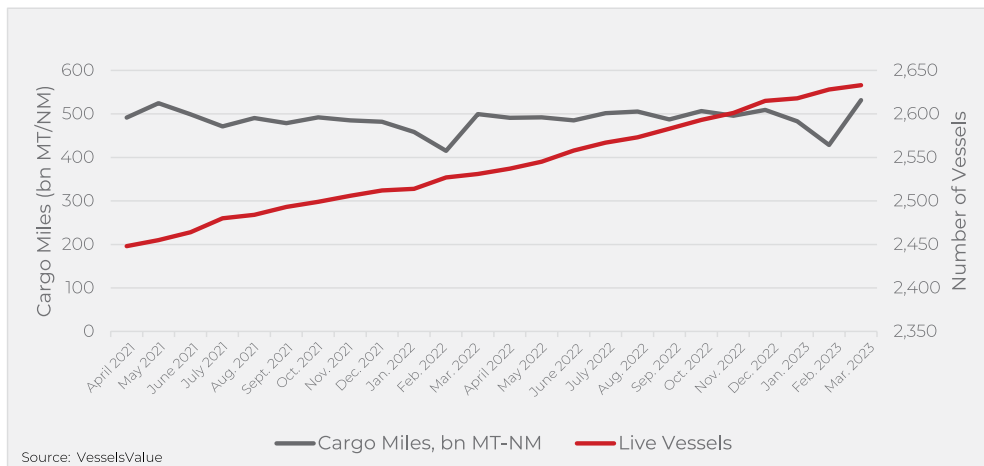
### Panamax

Panamax cargo miles have shown an overall upward trend in the first quarter of 2023 from 483.1 bn MT/NM in January to 521.2 bn MT/NM in March, (around 8% increase) whereas supply has gone from 2,618 vessels in January to 2,633 in March an increase of around 0.5%.

Average speeds have shown an upward trend over the first quarter of 2023, with the average laden speed in January was around 10.95 kts and around 11.17kts in March showing an

increase of around 2% whereas the ballast laden speeds were 11.84kts in January and 12kts in March showing an increase of 1.3% With the overall cargo miles demand going up potentially we will see both Laden and Ballast averages increase over the next quarter.

The top 5 exporting countries in terms of tonnage for the first quarter of 2023 were China (81.4m MT), Indonesia (62.1m MT), Australia (44.1m MT), Brazil (42.7m MT) and USA (28.9m MT).



Panamax Demand vs Supply

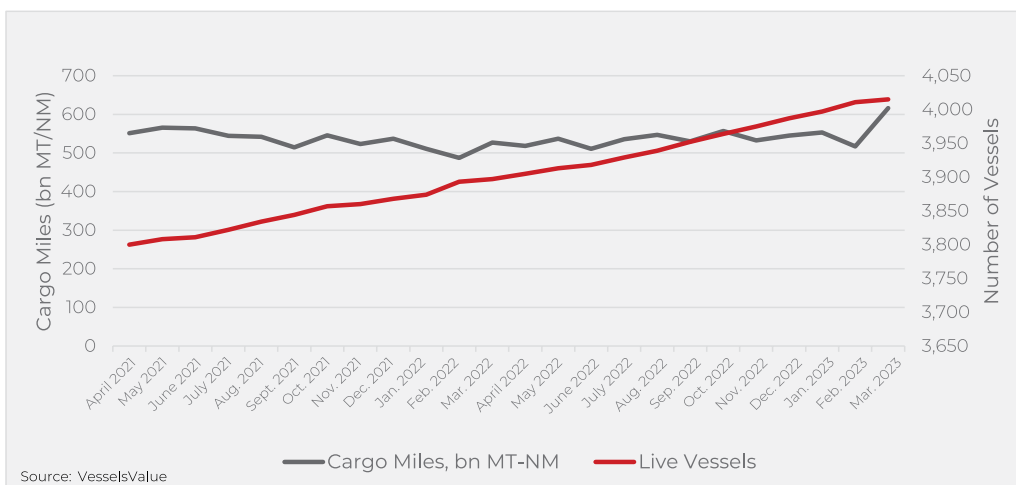
### Supramax

Supramax cargo miles have shown an overall upward trend in the first quarter of 2023 from 291.85 bn MT/NM in January to 322.3 bn MT/NM in March (around 10% increase), whereas supply has gone from 2,182 vessels in January to 2,189 in March, an increase of around 0.3%.

Average speeds have shown an upward trend over the first quarter of 2023, with the average laden speed in January was around 11.12kts and around 11.26kts in March showing an increase of around

1.2% whereas the ballast laden speeds were 11.76kts in January and 12kts in March showing an increase of 2% With the overall cargo miles demand going up potentially we will see both Laden and Ballast averages increase over the next quarter.

The top 5 exporting countries in terms of tonnage for the first quarter of 2023 were China (73.6m MT), Indonesia (42.3m MT), India (18.8m, USA (14.1m MT), Russia (12.9m MT).



Supramax Demand vs Supply





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## VALUE CHANGES SINCE Q4 2022

Built	Capesize	Panamax	Supramax	Handy
-3	+1.8% 180k	+7.2% 82k	+1.1% 62k	+7.5% 38k
0	+29.1% 180k	+3.1% 82k	+8.3% 60k	+1.3% 38k
5	+24.6% 180k	+3.3% 80k	+8.4% 60k	+15.5% 35k
10	+23.4% 180k	+7.3% 80k	+9.6% 60k	+9.0% 32k
15	+15.4% 180k	+8.0% 75k	+3.1% 55k	+2.4% 30k

Bulker values firmed across all sub sectors and age categories during Q1 2023 due to improved dry bulk fundamentals as China recovers from Covid-19, combined with increased coal demand. Changing trade flows of coal due to the sanctions on Russia have also strengthened tonne mile demand for Bulkers.

Capesize values saw the most dramatic improvements with 0YO vessels up by c. 29%. Sale and purchased activity is also up by c.86% YoY. Some notable transactions are listed below:

- Capesize BC: Rosebank (177,000 DWT, Aug 2010, New Times Shipbuilding) sold to unknown UAE buyers for USD 23 mil, VV value USD 23.73 mil.
- Capesize BC: MP The Vrabel (208,300 DWT, Jan 2021, Jiangsu Yangzi) and MP The Bruschi (208,200 DWT, Aug 2020, Jiangsu Yangzi) Sold TC inc. to Tomini Shipping for en bloc for USD 121 mil, VV Value USD 109.81 mil.

Panamax sale and purchase activity was down by c.58% YoY. However, values continued to rise based on recent benchmark sales as Panamax freight rates hit a multi month high. Some notable transactions are listed below:

- Panamax BC: Efrossini (75,000 DWT, Feb 2012, Sasebo) Sold under TC back arrangement to Undisclosed buyers for USD 22.5 mil VV Value USD 21.16 mil.
- Panamax BC: Magic Moon (76,600 DWT, Aug 2005, Imabari) sold to KC Maritime for USD 13.95 mil VV Value USD 13.87 mil.

Supramax values increased for most age categories in Q1 2023, with values for 10YO vessels of 60,000 DWT up by c.9.6% from the previous quarter. Some notable transactions are listed below:

- Supramax BC: Haut Brion (57,100 DWT, Dec 2011, Taizhou Sanfu) sold to undisclosed buyers for USD 14.0 mil VV Value USD 14.40 mil.
- Supramax BC: Amis Orchid (58,100 DWT, Jul 2012, Tsuneishi Cebu) sold TC inc. to Greek buyers for USD 19.5 mil VV Value USD 19.46 mil.

Handysize sale and purchase activity in Q1 2023 dropped by c.27% YoY compared to the highs of Q1 2022. However, values firmed across most age categories, 5YO vessels of 38,000 DWT were up by c.15.5% from the start of the year. Some notable transactions are listed below:

- Handy BC: Eldoris (36,100 DWT, Oct 2011, Hyundai Mipo) sold to undisclosed for USD 16.5 mil VV Value USD 17.11 mil.
- Handy BC: MP Atlantic (22,000 DWT, May 1994, Saiki) sold to undisclosed buyers for USD 3.5 mil VV Value USD 3.17 mil.







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From production to seaborne transport and consumption

# COMMODITIES

Edited by:

Giannis Theodoropoulos

AN INSIGHT INTO SUPPLY AND DEMAND TRENDS

## DRY BULK CARGOES

### COAL

#### **Australian government forecasts three-year peak in exports**

Global thermal coal trade is beyond its peak. That's what Australia's Department of Industry, Science and Resources has signalled in its March 2023 Resources and Energy Quarterly, which states that "the overall peak in global thermal coal trade is likely to have passed".

While actual thermal coal shipments have underperformed recent forecasts, the March quarterly forecasts growth of 12% or 22 million tonnes (Mt) up to 2026. The department's most recent data shows that Australian thermal coal made up 17% of global trade in 2022, and this is forecast to increase for another three years to 20% by 2026. Its outlook also points to supply-side issues, such as persistent weather-related disruptions, curtailing 2022 exports and highlights future growth markets for Australian coal.

Australia's largest export coal markets – Japan, South Korea and Taiwan (JKT) – are in decline. This market underpins most Australian coal producers' profits. However, according to producers' annual reports, it represents a massive concentration risk, with over two-thirds of Australian coal going to this market. The department's latest outlook also notes that in Japan, Australia's largest single market, the government "has released plans to close 100 coal plants over the next seven years".

Japan, South Korea and Taiwan are the only nations that import the highest calorific value (CV) thermal coal (6,000 kcal/kg NAR), which makes up a significant chunk of Australian exports. The outlook assumes, however, that other





markets for Australia's high-CV coal will make up the shortfall. It states that "over the longer term, coal markets are likely to gravitate towards higher grades of coal, as efforts to reduce carbon emissions and transform global energy markets continue".

Despite China resuming coal trade with Australia, Chinese imports are in structural decline, according to the department and "Australian exporters are largely expected to hold to their new and more diverse supply chains". Domestic coal supply could match domestic coal consumption by the 2030s but raises a risk that this import market could fall away entirely in the longer term beyond its forecast outlook.

India has been identified as a major growth market for seaborne thermal coal, with significant upward revision on previous forecasts. The department estimates 30% growth for 2023 volumes and 60% growth by 2027 (of 98 Mt). This is in response to India's continued economic growth and dependence on coal-based energy.

#### **India to join the club of exporting countries**

It appears that India will be joining the coal

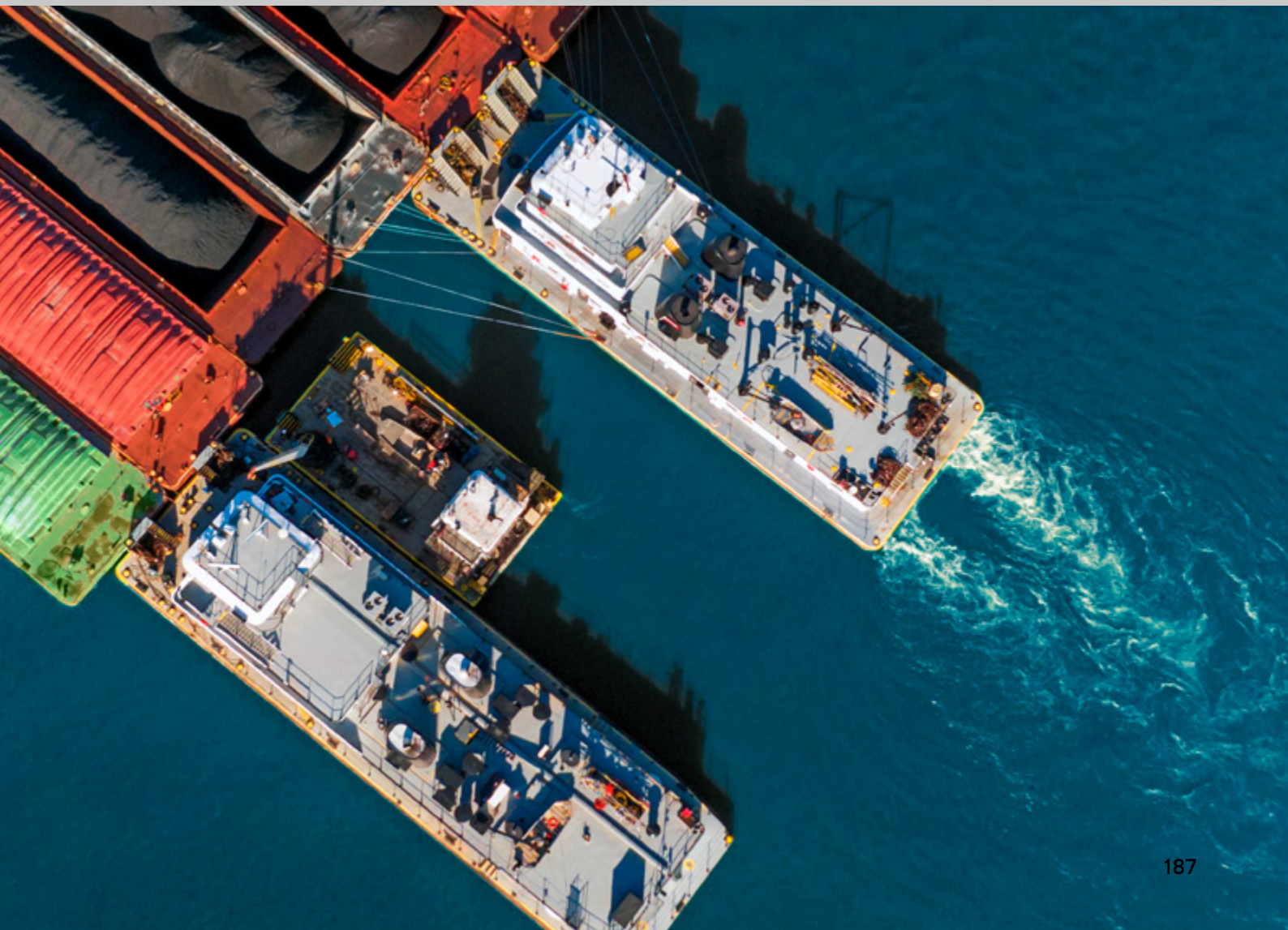
exporters club by 2026, according to what Shri Pralhad Joshi, India's coal minister, has recently said.

India has significant coal reserves and is moving from being a net importer to becoming a net exporter of thermal coal, said Joshi, on the sidelines of the seventh round of the auctions for the commercial exploitation of a coal block. "Except for metallurgical coal, we will stop importing thermal coal within the next three years, he said. "We have had a record coal production of nearly 900 million tonnes in the financial year 2023, and we have coal stock of 116-117 million tonnes at present. Furthermore, he made assurances that in the coming months, when the demand will be high, the supply of coal will be uninterrupted, and phenomena like those of last year will be avoided.

In the current financial year, India's domestic demand for coal will be 1.087 billion tonnes, and a large part of its needs will be met through imports this year.

#### **Chinese imports set to increase**

China's March coal imports closed on a positive note, as the Asian country imported 41.17 million



tonnes, the highest figure since January 2020. That compares to an average of 30.32 million tonnes per month in the January-February period and represents an increase of 151% from March last year. Analysts attribute the impressive rise to China's return to economic activity and the improvement of its (trade) relations with Australia. In fact, they estimate that coal import flows will be strong in the second quarter as well. Considering China's role in these ships, the data on coal imports brings smiles to the bulk carrier market.

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## IRON ORE-STEEL

### The short-term outlook for steel demand

The World Steel Association has recently released its Short-Range Outlook (SRO) steel demand forecast for 2023 and 2024. The World Steel Association forecasts that this year, demand will see a 2.3% rebound to reach 1,822.3 Mt. Steel demand is forecast to grow by 1.7% in 2024 to reach 1,854.0 Mt. Manufacturing is expected to lead the recovery. Still, high interest rates will continue to weigh on steel demand. Next year, growth is likely to accelerate in most regions, but deceleration is expected in China. After declining by 3.5% in 2022, China's total steel demand is expected to grow by 2.0% in 2023 and stay flat in 2024.

Steel demand in the developed economies suffered a sizable contraction in 2022 because of monetary tightening and high energy costs. After falling by 6.2% in 2022, it is expected to increase by 1.3% in 2023. In 2024, a recovery of 3.2% is foreseen.

The strong post-pandemic rebound of the US economy has run its course with the Fed's steep interest rate hikes to tackle inflation. Growth in 2023-2024 is expected to be subdued by recessionary pressure. Furthermore, the spillover from the recent SVB bankruptcy needs to be watched. After a fall of 2.6% in 2022, steel demand is expected to grow by 1.3% in 2023 and then by 2.5% in 2024.

Steel demand dynamics in emerging and developing economies are diverging, with developing Asia, excluding China, showing more resilience than elsewhere. After falling by 0.3% in 2022, steel demand in emerging and developing economies, excluding China, will show growth of 3.6% in 2023 and 3.9% in 2024.

### Chinese demand driving iron ore prices

Morgan Stanley sees iron ore prices falling as much as 28% by the end of 2023, given the decline in Chinese steel demand and production.

"Our baseline estimate for the year's second half is \$90/tonne," says Marius van Straaten, Commodities Strategist at Morgan Stanley. This is a 28% drop from the current iron ore price of \$126/ton. On the same wavelength, the Commonwealth Bank of Australia estimates that iron ore prices will drop to \$100/ton by the fourth quarter.

In the longer term, Fitch Solutions estimates that Chinese steel demand will slow over the next decade as the country shifts towards the service sector and reduces its economic reliance on heavy industry. Nevertheless, China's demand for iron ore has also been challenged by a shift to scrap, which is also used as an alternative to steel production. Morgan Stanley estimates that for every 1% increase in scrap use, iron ore consumption falls by 17 million tonnes annually.

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## GRAINS

### Global trade revised down for 2022-2023

FAO's latest forecast for world cereal utilisation in 2022/23 stands at 2,779 million tonnes, down 1.0 million tonnes since the last report and still pointing to a decline of 0.7 per cent from the 2021/22 level. Lower anticipated feed use of maize, especially in the European Union, and minor adjustments made for several importing countries on account of smaller expected imports, is the main driver behind this month's 1.5-million-tonne downward revision to global coarse grain utilisation. Now pegged at 1,479 million tonnes, global coarse grain utilisation in 2022/23 is forecast to fall 1.6 per cent below the 2021/22 level. Global wheat utilisation is pegged at 780 million tonnes, fractionally up this month, reflecting higher than previously anticipated feed use of wheat in China, and now 0.9 per cent above the 2021/22 level. FAO's forecast for world rice utilisation in 2022/23 has changed little since March, pointing to global rice use amounting to 519.9 million tonnes, just 0.3 per cent less than the 2021/22 peak.

FAO's forecast for world cereal stocks by the close of the 2023 seasons has been raised by 5.8 million tonnes to 850 million tonnes, but still pointing to a decline of 0.3 per cent below their opening levels. Global coarse grain stocks are still seen heading for a 4.3 per cent fall from their opening levels despite a 2.2-million-tonne upward revision this month. Most of this month's upward revision reflects expectations of higher maize stocks in major maize exporting countries due to lower export prospects for Argentina and the United States of America and an upward revision to the production estimate in Ukraine. The forecast for global wheat stocks was also raised





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this month by 3.9 million tonnes, further amplifying the anticipated rise above the opening levels to 5.3 per cent. Similar to coarse grains, this month's upward revision to wheat stocks is also concentrated in major exporters, including Australia (due to a higher production estimate), the European Union (official balance revisions), and the Russian Federation (due to lower export expectations). Forecast at 469 million tonnes, world trade in cereals in 2022/23 is predicted to fall by 2.7 per cent below its 2021/22 level following a 4.1-million-tonne downward revision this month. This revision stems from a 6.1-million-tonne cut to the world coarse grain trade forecast for 2022/23, now pegged at 217 million tonnes, down 6.1 per cent from 2021/22. Foreseen smaller maize sales from Argentina and the United States of America, both based on sluggish export pace, outweighed larger than anticipated exports by Brazil. Along with reduced purchases by several countries on the import side, these revisions resulted in a 4.9-million-tonne cut this month to the global maize trade forecast, now pointing to a 3.0 per cent decline from the 2021/22 level. Slow sales of sorghum by the United States of America underpinned a 1-million-tonne downward revision to the global sorghum trade forecast, now 36 per cent below the 2021/22 level. By contrast, FAO's global wheat trade forecast for 2022/23 has been raised this month by 1.6 million tonnes, mainly reflecting stronger than previously anticipated demand from China and larger sales by Australia and Kazakhstan, and is set to reach an all-time high of 199 million tonnes, up 1.9 per cent from 2021/22.

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## WHEAT

### The latest projections on supply and demand

The US Department of Agriculture (USDA) recently published its April "World Agricultural Supply and Demand Estimates" report.

The global wheat outlook for 2022/23 is for increased supplies, higher consumption, and reduced trade and stocks. Supplies are raised by 0.7 million tonnes to 1,061.1 million, primarily on higher beginning stocks for Syria and increased production for Ethiopia. Global consumption is increased by 2.9 million tonnes to 796.1 million, mainly on higher food, seed, and industrial use for India and increased feed and residual use for China and the EU.

World trade is lowered by 1.2 million tonnes to 212.7 million on reduced exports by the EU, Argentina, and Brazil, more than offsetting increases for Russia and Ukraine. China's wheat imports are raised by 2.0 million tonnes to 12.0 million, which would be the highest imports for China since

1995/96. China's imports are raised on strong imports to date, particularly from Australia; China is now the leading 2022/23 global wheat importer. Projected 2022/23 world ending stocks are lowered by 2.1 million tonnes to 265.1 million, the lowest since 2015/16. This month, India, the Philippines, and Ukraine are projected to have lower stocks, more than offsetting increases for Syria, the EU, and the United States.

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## SOYBEAN

### Steady growth in production

Reflecting adjustments for South American producers, the International Grains Council (IGC) forecasts that world soybean output will be unchanged m/m. With a further downgrading of consumption, carryovers are raised by 2m t m/m, while trade is pegged marginally higher. The 2023/24 production outlook is uprated by 2m t, with availabilities also boosted by higher opening stocks figures – channelled to increased projections for uptake and inventories. Trade is predicted fractionally higher m/m, at 174m t (+3%).

With a huge Brazilian crop more than offsetting declines elsewhere, 2022/23 world soybean output is forecast to expand by 4% y/y, notes the IGC. While record uptake is seen in some key consumers, a sharp contraction in Argentina – despite heavy imports – means that utilisation is placed steady y/y, at 366m t. Trade is forecast to expand solidly (+8% y/y). With gains predicted for the three majors, a record world outturn is foreseen in 2023/24, with total use projected at a new high on gains in Asia and the Americas. Stock accumulation is anticipated, while trade could advance to a new peak.

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## SUGAR

### An overview of global supply

The latest data from the Indian Sugar Mills Association (ISMA) shows that cumulative domestic sugar production fell 5.4% YoY to 31.1mt up to 15 April. The group added that just 132 mills were still crushing cane by mid-April compared to 305 mills at the same time last year. Sugar has seen significant strength so far this year, with prices up more than 20% YTD. Indian and Thai sugar output has fallen short of expectations, whilst El Nino weather risks are raising concerns about these two important producers' production next season. CS Brazil is expected to produce its second-largest crop on record this season, which one would think would help ease concerns. However, logistics out of Brazil could be a problem, given that Brazil is also dealing with record corn and soybean crops.





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# WET BULK CARGOES

## CRUDE OIL

### OPEC's demand projection

OPEC has kept its forecast of global oil demand growth unchanged for 2023. According to its latest report, oil demand will increase by 2.32 million bpd in 2023 to reach 101.9 million barrels per day (Mbpd). OPEC also sees a 0.1 Mbpd increase in OECD countries' demand and an increase of 2.2 Mbpd for non-OECD countries.

At the same time, the OPEC report focuses on the improvements recorded in the tanker market, particularly in larger-size vessels such as VLCCs and Suezmaxes. According to OPEC, activity in the Mediterranean significantly supports the market west of Suez.

OPEC estimates that global demand for OPEC-produced crude oil for 2023 will amount to 29.3 Mbpd, up 0.8 Mbpd compared to 2022.

### Russia sets target to produce 9.6 million barrels of oil per day in 2023

Russia's oil production this year is expected to reach 480 million tonnes or about 9.6 Mbpd, as a government source familiar with the data told Reuters.

This figure, which excludes natural gas condensates, is in line with Russia's pledge to cut production by 500,000 bpd to 9.5 Mbpd between March and the end of the year, according to Reuters' source.

"If you make the calculations for the whole year, production will be 480 million tonnes," the source told Reuters on condition of anonymity due to the sensitive nature of the data.

### OPEC's share in India's imports declines

OPEC's share in India's total oil imports in the 2022-2023 fiscal year (1 April 2022 – 31 March 2023) recorded a significant drop as India switched to cheaper Russian oil. As a result, OPEC's share of India's oil imports reached a 22-year low.

In the fiscal year 2021-2022, 72% of India's oil imports came from OPEC member countries. In 2022-2023, the corresponding figure stood at 59%. India's top oil supplier was Russia, followed by Iraq and Saudi Arabia. In total, India imported about 4.65 million barrels of oil per day, 23% of which 1.6 Mbpd came from Russia.

### The developments in the Russian oil cap

The results of imposing a cap on the price of Russian oil have been positive, but the volatility of the prices in the international markets could cause oil trade headaches. Initially, the price cap was deemed effective as Russian crude continues to







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be sold at lower prices on the international markets, improving the factors that create demand and supply equilibrium while limiting Moscow's revenues.

However, the latest estimates on Russian Urals' prices exceed, in some cases, \$60/barrel, thus placing them in a grey zone. In this context, a recent report by Gibson Shipbrokers examines the possibility that this development will discourage the transport of Russian oil. After all, if prices exceed the threshold, ships –and, by extension, companies– carrying Russian energy goods can be considered to be in breach of the sanctions imposed. At the moment, however, the number of ships carrying Russian oil does not seem to be decreasing, but on the contrary, they are increasing.

At the same time, the price rise is a concern for ships carrying Russian oil companies offering insurance and other services to those ships, and even companies that provide oil transportation through pipelines.

In this context, the US Treasury Department has issued a warning to US companies, noting that they may unknowingly have provided services to transport Russian oil not sold within the limits of the cap. Reuters reports that fines cannot be ruled out if companies fail to take appropriate action.

### **Output in Mexico stabilises after years of decline**

After nearly two decades of steady decline, Mexico's petroleum and liquid fuels production has remained stable since 2019. As the US Energy Information Administration (EIA) forecasts, production in Mexico will remain relatively flat through 2024. Private companies have increased petroleum production in Mexico over the past five years. In 2022, Mexican government data show that private production contributed more than 5% of Mexico's total, a large increase from the 0.5% oil contribution that private companies produced in 2016.

Mexico's petroleum and liquid fuels production peaked at 3.9 million barrels per day (b/d) in 2004 and decreased yearly until 2019 when production stabilised around 1.9 million b/d. According to EIA's Short-Term Energy Outlook (STEO), petroleum and liquid fuels production in Mexico is expected to remain at about 1.9 million b/d through to the end of 2024. Several dynamics have led to production stability. For example, decreasing production of the historically top-producing shallow-water fields of the Sureste Basin (formerly known as the Campeche Basin) on the south-eastern coast of Mexico has

been replaced by recent field developments in other sections of the Sureste Basin, such as the 133,000 b/d from the Quesqui field in 2022.

Historically, Mexico's petroleum and liquid fuels production outpaced its domestic use, making Mexico a net exporter of petroleum and liquid fuels. However, when Mexico's output declined to 1.9 million b/d in 2019, consumption exceeded production for the first time. Mexico was a net importer for only one year because of a sharp decrease in petroleum consumption in 2020. In 2022, the post-pandemic economic recovery led consumption and production to each end of the year at about 1.9 million b/d, according to our STEO.

Woodside Energy, an Australian firm, has committed to producing Mexico's first deepwater oil in the Trion field. The Gulf of Mexico could provide significant potential for deepwater production if Mexico's large offshore shallow-water production in the Gulf of Mexico is any indication of its deep-sea reserves. The Mexican government has plans to capitalise on deep-sea reserves, and future development plans make additional growth in private investment likely.

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## **LIQUEFIED NATURAL GAS (LNG)**

### **Sinopec to join Qatar's mega-project**

China Petroleum & Chemical Corporation signed an equity participation agreement with QatarEnergy on 12 April to take 1.25 per cent shares in Qatar's North Field East (NFE) expansion project, currently the largest Liquefied Natural Gas (LNG) project in the world.

The event marks another milestone after Sinopec and QatarEnergy inked a 27-year long-term LNG purchase and sales agreement in November 2022 for the annual supply of 4 million tons of LNG to Sinopec and achieved integrated cooperation on the NFE expansion project.

Sinopec Chairman Yongsheng Ma and Qatari Minister of State for Energy Affairs, President and CEO of QatarEnergy, H.E. Saad Sherida Al-Kaabi, formally signed the agreement at a signing ceremony in QatarEnergy's headquarters in Doha.

"QatarEnergy, a world-leading LNG producer, is one of Sinopec's most important partners; the cooperation between the two companies will further optimise China's energy consumption pattern and improve the security, stability, and reliability of clean energy supply. With the solid foundation of our partnership, we hope to explore new LNG collaboration opportunities and expand new grounds for cooperation to achieve mutual benefit and win-win progress," said Ma.



Sinopec is the first Asian stakeholder of the NFE project, and the event marks a model of Sino-Qatar cooperation.

With a total investment of USD 28.75 billion, the NFE project is projected to increase Qatar's annual LNG export volume from 77 million to 110 million tonnes.

Sinopec and QatarEnergy's partnerships will help to meet the demand for natural gas in the Chinese market and continue to advance green, low-carbon, safe, and sustainable energy development.

#### **First cargo bound for Bulgaria arrives in Turkey**

The first cargo of LNG arrived in mid-April at a Turkish terminal for delivery to Bulgarian Bulgargaz as part of an agreement signed with Turkey's Botas.

More specifically, US LNG exporting giant Cheniere sent the cargo on the MOL Hestia ship to the Marmara Ereğlisi terminal before it was transported to the north of Bulgaria via a pipeline.

It is reminded that the two partners, Bulgargaz and Botas, signed a 13-year agreement in January, allowing the Bulgarian company access to Turkey's gas transmission network and five LNG terminals.

At the special ceremony that took place as part of the first cargo's delivery, Bulgarian Energy Minister Rosen Hristov noted that up to ten LNG carriers can arrive in Bulgaria every year, thanks to the agreement with Botas.

Bulgargaz already imports LNG through the terminal on the island of Revithoussa and has also booked additional capacity in the Alexandroupolis FSRU terminal expected to start operations this year.

#### **A new Asian LNG buyers alliance**

JERA Co., Inc. has signed a Memorandum of Understanding with the Korean Gas Corporation (KOGAS) regarding cooperation in the LNG business.

According to this MOU, to ensure LNG supply stability, JERA and KOGAS have agreed to discuss opportunities for mutual collaboration in the LNG business, including LNG swaps, trading, ship optimisation, and market view exchange.

Russia's invasion of Ukraine has created major disruptions in the energy environment, such as the reduction of pipeline gas supply to Europe, thus drastically increasing the uncertainty regarding global energy supplies.

Responding to these circumstances, JERA and KOGAS, which are among the largest buyers

in the global LNG market, have pledged under this MOU to strengthen their strategic relationship and look into developing cooperation schemes regarding their LNG supply & demand to enhance a stable energy supply in Japan and Korea.

As a long-term matter, there is the acceleration of the energy transition to a carbon-neutral future in which LNG will play an even more critical role as a transitional fuel in Europe as well as Asia.

In the context of these significant changes, to ensure a stable energy supply in Japan, JERA will continue to work together with LNG buyers and other leading companies both within and outside Japan, such as KOGAS, as it looks into ways to gain even greater flexibility in procurement.

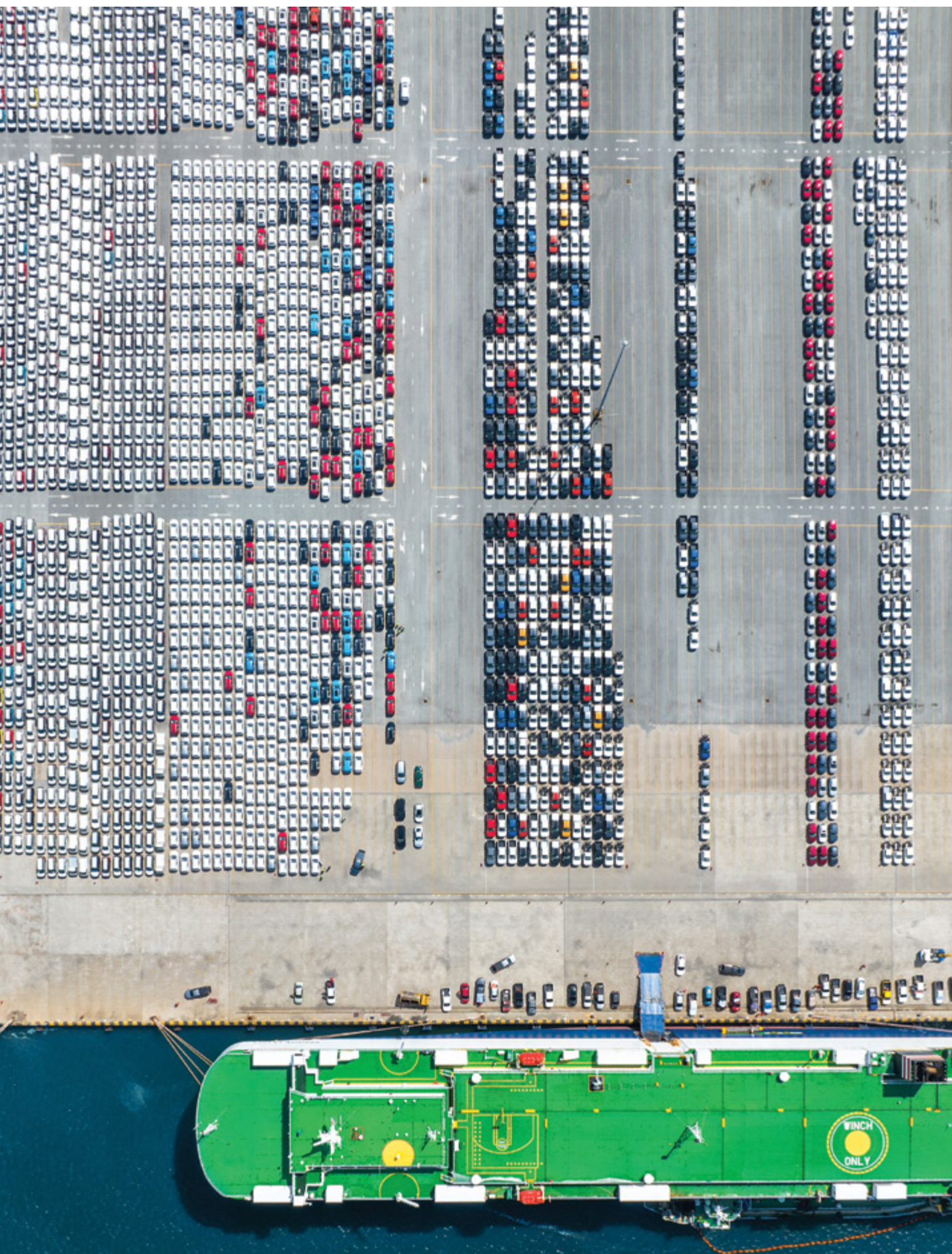
# YOUR GLOBAL MARITIME SOLUTIONS PROVIDER



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# CAR CARRIERS A NEW INVESTMENT MAGNET

by Giannis Theodoropoulos

In recent months, there has been increased investor interest in the acquisition of cars due to the auto industry's rebound after a period in which it was hit by challenges such as the pandemic and microcircuit shortages. As a result, companies like Toyota and GM posted double-digit annual growth in Q1 2023.

In addition to the traditional car-carrier owners and managers like NYK and Wallenius Wilhelmsen, companies operating in other segments have expressed considerable interest in such investments. A typical example is Cosco, which acquired 24 PCTCs through its newly-established car carrier division. Moreover, the international press reports that French container carrier CMA CGM has already invested in this shipping market as part of its diversification strategy, while HMM is considering a similar investment.

At the same time, given the positive outlook for maritime transport, electric vehicle manufacturers are developing their supply chains through vertical integration. A case in point is SAIC Anji Logistics, the shipping arm of SAIC Motor, which launched a new regular route between Southeast Asia and Mexico to transport 1,000 vehicles. In addition, last January, BYD, another electric vehicle manufacturer, ordered two dual-fuel LNG PCTCs with a transport capacity of 7,000 CEUs, in addition to the car carrier orders it had placed the previous year.

Increased car sales in key markets, such as the USA, have increased the transportation needs of Japanese and South Korean automakers. The recent trend in China, which, although traditionally an importer of cars, is now exporting electric

vehicles to Western economies, is also a tailwind for the car carrier industry. According to Chinese customs data, the Asian country exported 500,000 electric cars in 2021, and that number has been doubling every year. Consequently, car carrier supply cannot absorb demand, with increased freight rates and ship values being the most realistic scenario. After all, car carrier rates have recently broken all records, according to information from Hoegh Autoliner. The Norwegian company's earnings reached \$96.10/cbm in March, marking an 11% increase compared to the fourth quarter of 2022. On the supply front, according to a recent VesselsValue report, 65 vehicle carrier orders were placed in 2022, exceeding \$6 billion in total value, i.e., the number of vessels ordered has increased by 20%, while their value increased by 32%. In addition, it is worth noting that the average tonnage of ships increased by 14%, equaling 7,982 CEUs. A particularly interesting conclusion of the report is that the growth trend regarding car carriers is due, to some extent, to the increased demand for electric vehicles, which are generally bigger and heavier than conventional combustion engine vehicles. This fact leads to a need for increased car carrier capacity to transport the same number of electric vehicles.

It is also noteworthy that the car carriers ordered were not small or medium-sized vessels. Consequently, there is concern regarding regional trade in Europe and Asia.

Based on the above, rates will likely hover at elevated levels in 2023. However, the increased supply predicted for 2024 due to ship deliveries may result in a rate correction.

# PRO/RO



The marine fuels market is undergoing significant transformation, and understanding the financial health of counterparties is vital to minimising risk.

# EFFECTIVE COUNTERPARTY RISK MANAGEMENT STARTS WITH ASKING THE RIGHT QUESTIONS

The best place to start is to ask the right questions of your counterpart and build a transparent, trustful relationship.

Today's high fuel prices, inflation, increasing interest rates and constrained credit, in conjunction with the transition to cleaner sources of energy, is creating volatility and more risk within the marine fuels market. This is having an impact on credit availability and raising the spectre of more disruption amongst marine fuel companies.

Another trend that KPI OceanConnect has recognised in the marine fuels market is the increasing numbers of traders acting in a single chain. This increase in the counterparty chain can be a challenge for ship owners. If there is a mismatch in the payment terms between the physical supplier and the end customer, small traders will have to include another trader in the counterparty chain to be able to finance the end customer. This creates a high level of uncertainty because it reduces transparency as well as efficiency and also increases risk for both buyers and suppliers.

In addition, shipping's green transition requires ship owners and operators to choose from a growing portfolio of products. Choosing the right pathway for each vessel will require financial and technical analysis. For some, this will be mostly related to capital access or claims and invoice handling, while for others there will be a greater focus on the transparency requirements that enable access to credit and insurance.

As the marine fuels market transforms and becomes more complex and volatile,

understanding the financial health of counterparties and increasing transparency is vital in order to minimise risk and exposure. There needs to be increased due diligence within the fuel supply and transaction process where there is a detailed understanding and in-depth risk assessment of the financial strength of the companies that you are dealing with.

Each business is unique and will require its own strategy, but in the aftermath of OW Bunker, BIMCO created a list of questions that it recommended marine fuel buyers ask their counterparty before contracting with them. Along with the key question of pledging, they also included: Who are you dealing with and who is the legal entity? What terms and conditions will you enter into? Does the counterparty have credit insurance? Is the counterparty covered for product liability and have professional indemnity? Does the counterparty have a compliance programme? And, is the counterparty financially strong?

These questions are all equally sensible and important. If an owner asks a prospective counterparty these questions and gets credible answers and supporting evidence, it provides a level of confidence that are working with a viable partner.

Marine fuel providers have a key role to play by providing counsel and a clear pathway for the solutions available on the journey to a decarbonised shipping world in 2050 and beyond. Partnering with a transparent, innovative partner is critical for shipowners and operators looking to be guided through this evolving market.



by **Michalis Manassakis**,  
Managing Director at KPI OceanConnect  
in Athens



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GET STC and SKF wrapped up their partnership with a new agreement

# GET STC AND SKF CONCLUDE AN IMPORTANT PARTNERSHIP AGREEMENT

At a special event held at A General Group's offices in January 2023, GET STC, a member of A General Group, was appointed as an official distributor of the SKF RecondOil filter system.

Today, most companies use their industrial oil until it degrades, which means it eventually has to be discarded and replaced with new oil. But since machinery owners want to get the most out of their oil, they often run their machines with contaminated oil for long periods – a common cause of premature equipment failure. In this context, RecondOil is a system that uses advanced filtration technology to remove impurities from used oil, restoring it to a “like-new” condition that meets or exceeds the quality of new oil. This process can extend the life of oil and reduce the need for new oil purchases while minimising its environmental impact and equipment wear and tear.

The RecondOil service includes on-site equip-

ment installation, operation, and maintenance and is designed to be a cost-effective solution for industry, including the marine sector. More specifically, SKF RecondOil filter technology removes all types of contaminants from oil, such as soft and hard particles, bacteria, water (free, bound, or emulsified), sludge, insoluble substances (varnish), soluble substances (pre-varnish), and oxidation products.

The SKF RecondOil technology makes the circular use of oil possible, providing benefits to its users such as sustainability improvement, oil cost reduction, and performance improvement.

Through their collaboration, GET STC and SKF will look for new ways to promote the RecondOil filter technology, given the increased demand for greener solutions and sustainability requirements of the marine industry.

L-R:  
Konstantinos Filippou,  
Marine Sales Manager  
Greece, Cyprus & Malta, SKF and  
Vasilios Chrysopoulos,  
Head of Legal Department,  
A General Group.





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Shipping is a particularly sensitive industry regarding the climate crisis, which is now unquestionably accepted by the vast majority of scientists who study the atmosphere and the climate.

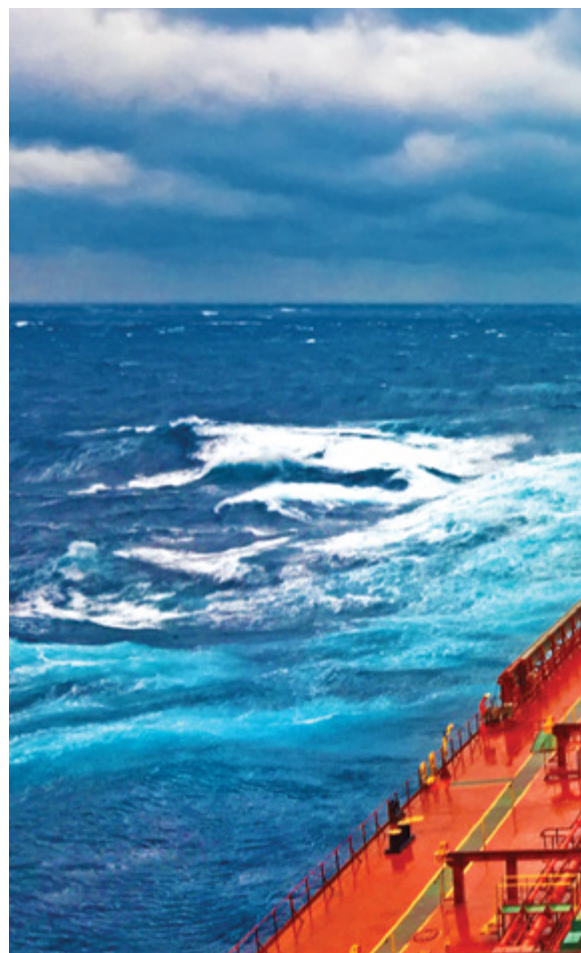
# THE CONSEQUENCES OF CLIMATE CHANGE ON THE SMOOTH OPERATION OF THE MARITIME INDUSTRY



By Dr **Nikos Mazarakis**,  
PhD, General Manager  
at StormGeo Greece

Compared to three decades ago, the direct or indirect consequences of climate change create huge disruptions in the smooth operation of the maritime industry in many cases and different areas of the world. But how does climate change affect the shipping industry?

One of the most severe consequences of climate change is perhaps the increased frequency of extreme weather events, such as heat waves, torrential rainfalls with very high precipitation rates, and tropical cyclones in oceanic regions. For instance, in 2020, the number of tropical systems formed in the North Atlantic Ocean broke all previous records, reaching a total of 30, surpassing the previous record of 25 in 2005. In fact, their number was so large that the National Hurricane Center (NHC) decided to stop using the Greek alphabet when the number of storms exceeded 21 in a hurricane season. The reason behind the abolition of the Greek alphabet used in naming tropical lows was that names such as “Theta”, “Iota”, etc. which were used at the time, created enormous confusion for American citizens unfamiliar with Greek letters. In addition, there has





been an increase in the number of Major Hurricanes, where winds in their interior exceed 96 knots. So, in the 1851 – 1996 period, only in 13 out of 144 years did the number of Major Hurricanes exceed 3 per year. However, in the 27 years from 1997, when climate change began to concern our world more intensely, until today, we have had 11 years with more than three Major Hurricanes. Extreme droughts also create direct and indirect problems. For example, one of their direct consequences is the dramatic drop in the level of navigable rivers, as in the case of the Rhine in the summer of 2022. However, the indirect effects are even more severe since extremely high temperatures and water shortages reduce agricultural production, leading to reduced transport work due to decreased availability of products. On the other hand, extreme rainfalls can also cause significant problems. A case in

point is the Vale Dam collapse in Brazil in January 2019. This disaster resulted in the death of 270 people and severely impacted the local ecosystem and livelihood of many people in the region who depend on agriculture and fishing. In addition, the Vale Dam disaster significantly disturbed the iron ore market for many months due to reduced iron ore quantities available for China's markets.

But there is also another side effect of climate change that involves imposing stricter environmental regulations aimed at reducing the emissions of commercial ships. These regulations have increased operating costs and created additional work for crews as they have brought about changes in the reporting process. At the same time, introducing the Carbon Intensity Index (CII) on 1 January 2023 has completely changed the charter market landscape. From now on, the

value of ships will be directly linked to the amount of CO<sub>2</sub> they emit. This fact makes the calculation and prediction of the CII, the latter based on the future operational profile of the ship, a necessary procedure. Climate change is a fact, so immediate and realistic solutions are needed to mitigate it. Although the shipping industry is only responsible for 2.2% of global greenhouse gas emissions, it has undergone enormous changes in the last 7 years. The IMO's target of reducing emissions by 40% in 2030 compared to 2008 levels appears unrealistic. Undoubtedly, the biggest challenge is our world's heavy dependence on hydrocarbons. Ammonia for fertilizers, steel, concrete and plastics are the mainstays of the modern world. Their production requires vast amounts of energy or the direct use of hydrocarbons. In any event, renewable sources of energy and recycling cannot cover the gradual increase of energy demand on a global scale. Instead, humanity should focus on either CO<sub>2</sub> capture systems or nuclear power. After the painful experience of the Chernobyl nuclear disaster in 1986, the latter is considered heretical. However, comparing the number of deaths due to air pollution, mainly caused by burning fossil fuels (about 7,000,000 deaths per year, according to a 2020 scientific study published in the medical journal "The Lancet") with the death toll of nuclear accidents from the Chernobyl accident onwards (4,000 – 93,000 direct or indirect deaths), we easily understand that there is no comparison. There is no doubt that the shipping industry has made significant strides in reducing greenhouse gas emissions in recent years by implementing new technologies and systems. However, even if the IMO's emissions reduction targets are achieved, more serious steps must be taken, and brave decisions must be made by all the industry sectors of the modern world.





Legendary ship owners and milestone events in the history of Greek shipping

Edited by:

Panagiotis Korakas

# LEGENDS & MILESTONES



A floating workshop, retrofitted and lengthened for ARAMCO in 1963 by the Hellenic Shipyards in Skaramagas



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MAY 2023



The launching ceremony of the “World Grace” tanker at the Greek Shipyards of Skaramagos in 1965 after a so-called “T-type” conversion (a new middle section was added, and the main deck was raised to increase the vessel’s dwt from 32,500 to 45,000 and its length from 663 to 742 feet)



The restaurant of the Merchant Marine Academy of Aspropyrgos in 1956. The Aspropyrgos MMA began its operation on 22 October 1956, with 135 students enrolled

Constantinos Caroussis, Ioannis A. Angelicoussis, Stathis M. Kulukundis and Spyros M. Polemis photographed during the visit of Minister of Mercantile Marine Christos Papoutsis to the offices of the Greek Shipping Co-operation Committee in London in 2001



The "Gerogiannis M." launching ceremony at the Neorion Shipyards in Syros in 1963. The "Gerogiannis M." was a short- sea tanker with 1,000 dwt capacity and the largest vessel built until then by the Syros shipyards. The ship was ordered by N. Rethymnis, the owner of the Syros shipyards at that time.





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Edited by: Manos Charitos

# AVIATION



## PREMIUM CLASS AIR TRAVEL RECOVERS AHEAD OF TOTAL PASSENGER TRAFFIC

According to IATA data, the total number of air passengers in February 2023 was approaching pre-pandemic levels. It is interesting to note that on a global scale, premium traffic has recovered faster than total passenger traffic. The data refers to the premium cabin class, encompassing first and business class, but does not enlighten us as to the purpose of travel and might thus include leisure travellers who choose to travel in greater comfort.

The Asia-Pacific region, which faced significant travel restrictions during the pandemic, had a 65.9% recovery rate for premium passengers in February 2023 compared to February 2019. IATA notes that this is a considerable improvement from February 2022, when this recovery rate was only 10.7%. The region's total passenger numbers have also shown progress, reflecting the positive impacts of eased travel restrictions and increased business activity in countries such as China and India.

Europe and North America both reported strong recovery rates in premium passenger numbers. Europe's premium passenger recovery rate in February 2023 was 93.1%, a significant increase from 56.3% in February 2022. In North America, the same number reached 107.7% in February 2023, thus surpassing pre-pandemic levels and up from 75.3% in February 2022. These outcomes indicate that demand for premium travel has benefited from the economic recovery and pent-up demand for travel.

While it is still unclear if consumer preferences and business travel patterns have been durably affected by the pandemic, the overall trend continues to suggest a positive trajectory for premium-class air travel.

## THE STRONG DEMAND FOR AIR TRAVEL IS A DRIVER FOR AIRLINES

The outlook for the airline industry this summer remains optimistic, with the latest example being the UK's EasyJet, which has revised its profit forecast upward for the second time this year. This development is based not only on increased passenger demand but also on the fact that passengers are willing to pay more.

Ryanair CEO Michael O'Leary has predicted that the expected 15% rise in airfares will not affect bookings this summer as demand for air transport in Europe in 2023 is now predicted to exceed pre-pandemic levels.

At the same time, Airbus CEO Guillaume Faury has stated that passenger traffic is on course to surpass pre-pandemic levels, led mainly by China's lifting of the pandemic restrictions.



# INDUSTRY

In this context, many airlines have placed orders to renew their fleets or increase their transport capacity. However, the director general of IATA claims delays in new aircraft deliveries mean airlines' options will remain limited until 2025.

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## INCREASED PASSENGER TRAFFIC AT "EL. VENIZELOS"

Total passenger traffic at the Athens International Airport recorded a 40% increase compared to the 2022 levels, with passengers reaching 1.67 million.

More specifically, in March 2023, the airport's passenger traffic amounted to 1,670,716 passengers compared to 1,188,823 passengers in March 2022, when the effects of the COVID-19 pandemic on air travel were still visible. Overall, during the first three months of the year, the airport's passenger traffic reached 4.5 million, up 60% compared to 2022 (2.7 million) and up 2.4% compared to 2019.

According to the same AIA statistics, flights during the first three months of 2023 reached 41,087, representing a 21.8% increase compared to 2022 and a 2.2% increase compared to 2019.

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## THE INDIAN AIRLINE THAT WANTS TO CONQUER THE SKIES

India's fast-growing economy continues to attract international attention as India is expected to become the world's third-largest economy by the end of the decade.

In this context, the international expansion ambitions of IndiGo, India's largest airline, give rise to scenarios of yet another powerful player entering the airways market. According to a report by the Financial Times, citing statements by IndiGo's CEO, Pieter Elbers, the company is going through a growth and expansion phase, with the penetration of the international market at the top of its priorities.

IndiGo, although less well-known than other Asian airlines, such as AirAsia, Japan Airlines, and All Nippon Airways, carried nearly twice as many passengers as those carriers in 2022.

IndiGo's ambition comes as competition within India heats up. Air India has placed an enormous order for 470 aircraft, several of which can make long-haul flights. Akasa Air has also placed extensive orders, while IndiGo itself is expected to take delivery of 500 aircraft by 2030.

However, IndiGo's aspiration to expand internationally will be challenging since analysts predict that such a move will lead to a price war in the industry, which IndiGo will have to win to achieve its expansion ambitions.





# MARITIME NUMBERS



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## 27

the number of reported global piracy and armed robbery incidents during Q1

---

## 24,188 TEUs

the carrying capacity of "OOCL SPAIN", one of the largest container ships in the world, which recently called at Piraeus Port

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## 3.3%

the expected growth in seaborne energy trade in 2023, according to Clarksons

---

## 850

the expected cruise ship arrivals at the port of Piraeus in 2023

---

## \$10.5 MILLION

the value of the ship orders secured by South Korean shipyards during Q1

---

## 29

the number of ice-class commercial ships in the Russian Arctic fleet

---

## 1,397

the Ro-Ro vessels comprising the world fleet

---

## 67%

the average increase in five-year-old tanker values since 2020

---

## 593

the number of ships repaired in Greek shipyard facilities in 2022





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