

WORLD



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BUNKERING

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IBIA AT IMO

KEY VOICE ON BUNKER FUEL ISSUES



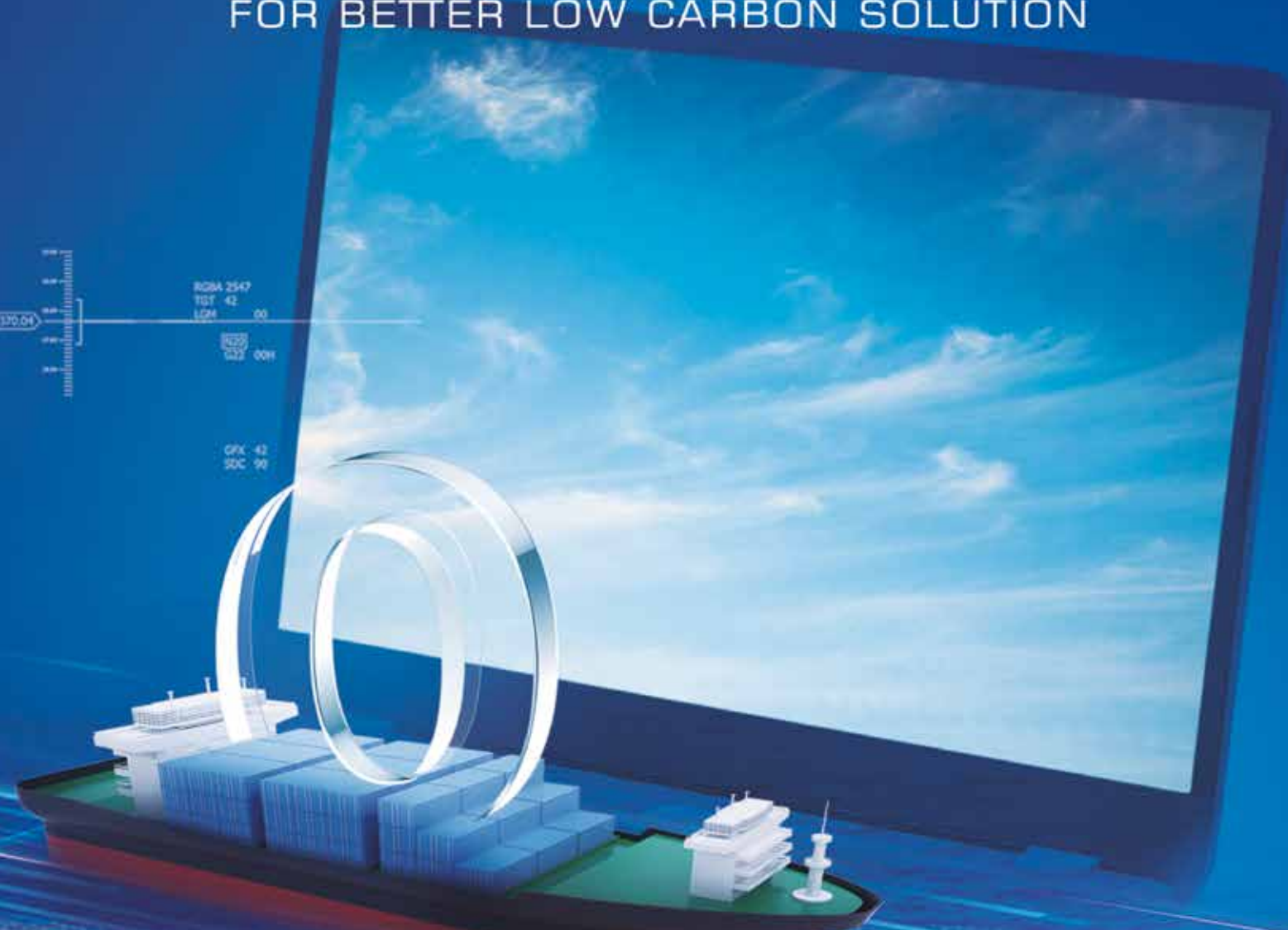
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ICS PROMOTES FUND AND REWARD PROPOSAL
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EU ETS ASSESSED



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FUND AND REWARD?

Dear Reader

We are fast approaching the crucial IMO meeting that, it is hoped by many, will commit shipping to a much more ambitious decarbonisation pathway.

One of the key proposals to be debated at the 80th session of IMO's Marine Environment Protection Committee (MEPC) in early July is a for a Fund and Reward scheme. This has been formulated and strongly advocated by the International Chamber of Shipping (ICS) and is supported by several IMO member states.

So, appropriately, this issue's interview is with ICS's Deputy Secretary General, Simon Bennett. He makes the case very strongly that achieving a renewed, strengthened IMO decarbonisation strategy is vital. He says the alternative is the prospect of maritime transport being rationed and a chaotic piecemeal patchwork of unilateral regulation. IMO could, he warns, be reduced to a "shadow of its current self".

As it happens, ICS features quite prominently in this issue as, close going to print, it issued two reports that are carried in our Environmental News pages. One of them highlights the danger that political realities could derail progress on decarbonisation. I freely admit that I had completely missed the EU's Carbon Border Adjustment Mechanism (CBAM), which is now grinding its way through the lawmaking process, let alone understood the far-reaching ramifications of this proposal. It looks like a strong contender for a 'Be Careful What You Wish For' award.

Decarbonisation and the potential move to alternative fuels and new technologies, as is now normal, dominates many of our pages and certainly is a major focus of IBIA's work at IMO. But that is far from being the whole story. In recent weeks IBIA Director and IMO representative Unni Einemo has been hard at work making sure the bunker industry has an input on several

very important issues. One is the old chestnut of where a fuel sample should be taken – on the barge or on the ship. She has reported developments at IMO in two separate articles. One is a report from the Sub-Committee on Pollution Prevention and Response (PPR 10), the other a preview of an upcoming meeting of the Maritime Safety Committee, which meets for its 107th session (MSC 107) starting on 31 May.

A read of the two articles should dispel any doubts about a just how important it is to get the bunker industry voice heard when new regulations are being drawn up.

One subject that has been covered in *World Bunkering's* pages too many times, appears yet again, in our Industry News section and Africa feature. That is of course piracy. Thankfully, just as *World Bunkering* was being put to bed, news came that six crew members from a Monjasa tanker had been freed, "in relatively good health condition", but only after being held hostage for more than five weeks.

There was, however, also much that was positive for our correspondent John Rickards to cover in his Africa feature. That comes over clearly too in Tahra Sergeant's IBIA Africa Report. Meanwhile Siti Noraini Zaini's IBIA Asia Report depicts just how busy the regional manager has been since taking over the position. And the signs are there will be no let up in the pace of activity there, quite the opposite.

Talking of geographic coverage in this issue, John also writes on how the Eastern Mediterranean's bunker industry is coping with a war raging on its doorstep. Reasonably well in the circumstances is broadly his answer to that question.

Turning once again to decarbonisation, many pages describe technical developments that have the potential of

taking us towards eliminating greenhouse gas emissions from shipping. One theme that occurs quite a bit is building in flexibility. More ships are being built with engines capable of burning one or more zero carbon fuels while some scrubbers are now being installed with the capability to be adapted at future date to include carbon capture.

Returning to Simon Bennett's warning about a patchwork of regional schemes, on our Legal pages we carry extracts from a paper on the legal implications the EU's Emissions Trading Scheme (ETS), written by Watson Farley & Williams' Nick Walker and Valentina Keys.

I believe this this issue once again provides a great deal of food of food for thought. Enjoy the read!

Best wishes

David Hughes
Editor





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Dear IBIA Members and Friends,

As I look back at the past 3 months, I cannot but feel grateful for what IBIA – through its team, its Board of Directors, Regional Boards and Working Groups – has achieved.

The IBIA Dinners in London and Singapore were both sold out events and provided our members with an opportunity to reconnect, engage and network. Seeing a (huge!) room full of key industry players and friends was truly special and served as a reminder of how central our Association is to the marine fuel world.

We said “thank you and goodbye” to Peter Beekhuis and Mustafa Muhtaroglu who have served on IBIA's Board of Directors, through the years, showing true commitment, and professionalism. At the same time, we welcomed new Board Members Claudia Beumer and Jeroen De Vos as well as a dear friend of the Association, Nigel Draffin, who has re-joined the Board of Directors.

Having a strong and healthy pipeline of 'champions' who are keen and willing to join the leadership of our organisation, volunteering their time and skills, is the key for IBIA to continue to prosper and add value to its members and to the industry as a whole. Being part of this team is for me both fulfilling and motivating, and I appreciate the support I receive from my fellow Board Members, the Secretariat and IBIA members.

In April we had the opportunity to bring an outstanding event to my home city, Genoa. I cannot deny that it was for me very special to welcome IBIA members and friends in Italy and to be part of engaging and interesting discussions on hot topics such as decarbonisation and regional dynamics. Being able to host an industry leader like Soren Toft (CEO of MSC) provided further value to the conversation and highlighted once again that IBIA plays a key role in facilitating important discussion among those who steer the shipping world.

Our IBIA Director Unni Einemo has shared in her letter about her involvement at the IMO and I would like to underline how crucial and value-adding her work is in being the voice of our industry in the forums where decisions are taken, impacting our industry and the way we work.

Looking ahead, our team is working tirelessly to curate more members meeting and to deliver an outstanding IBIA Convention in Dubai in November.

On a separate note, I am also proud to report that we have worked to update our Association byelaws. This change is a significant part of our ongoing commitment to uphold the highest standards of ethical conduct and transparency within the bunker industry, aligning with the strategy that we outlined at the start of my term as IBIA Chair.

The revised byelaws mandate that the Global Board members strictly comply to the IBIA Code of Conduct ensuring our leadership sets a shining example of ethical behaviour in our industry.

The IBIA Code of Conduct outlines the responsibilities and proper practices

for our members, reinforcing our commitment to fostering integrity, transparency, and professionalism in all our operations and interactions. By adhering to these principles, we can further enhance our credibility, influence and impact within the global bunker industry.

We strongly believe that this amendment will bolster our collective efforts to improve industry standards and promote transparency, which is vital for the healthy growth and development of our industry.

As we move forward, we firmly believe that together, we can continue making significant strides in promoting ethical business practices in our industry.

It is an exciting time to be part of the marine fuel industry: things are happening, changes and uncertainty dominate the scene and we – IBIA – are here to support our members through the challenges.

Ciao

**Timothy Cosulich,
Chair**





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IMO SEASON FOR IBIA

The first half of 2023 has been dominated by IMO-related work in preparation for key meetings dealing with various aspects that have a direct impact on our members

The last time I wrote this column for *World Bunkering*, we were preparing for our Annual Dinner and the celebration of IBIA's 30th anniversary. We were proud to have two distinguished IMO guests of honour attending: Arsenio Dominguez, Director of the Marine Environment Division, and Harry T Conway, Chair of the IMO's Marine Environment Protection Committee (MEPC).

Celebrating IBIA's 30th anniversary was an opportunity to reflect on where we came from, what we do now, and where we are going. One of the highlights of IBIA's 30-year history was achieving NGO consultative status with the IMO in 2005. It came at a crucial time because it coincided with MARPOL Annex VI entering into force, and the start of continuous amendments to this hugely important IMO regulation. First came increasingly tight sulphur emission limits in emission control areas (ECAs), then came IMO 2020. The sulphur emission reductions were primarily aimed at improving air quality, but MARPOL Annex VI is also the regulation that deals with reduction of greenhouse gas (GHG) emissions. Energy efficiency regulations were first adopted in 2011; further regulatory tools have since been added to the mix, most recently the EEXI and the CII. These will support the achievement of the first target in the IMO's Initial GHG Strategy (adopted in 2018), namely to reduce the carbon intensity of the existing fleet by 40% by 2030.

Going forward, we can expect further amendments to MARPOL Annex VI that will drive significant changes in our industry. These will come to support the achievement of the IMO's Revised GHG Strategy that should be adopted at MEPC 80 in July, likely bringing in much higher ambitions to accelerate GHG emission reductions from international shipping.

Preparations for that crucial MEPC meeting have been underway for a long time. The so-called Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG) has met for week-

long sessions 14 times already, most recently in March this year, and will meet for the 15th time in the week preceding MEPC 80. IBIA has been to them all, and we will be at the 15th session to present a paper we have been working on with alternative fuel producers. The ISWG-GHG is instrumental in making progress on the complex and political debates surrounding the revision of the IMO's GHG Strategy, both the higher ambitions and the selection of policy tools needed to achieve those ambitions.

Another part of MEPC 80 preparations that IBIA has taken part in is the Correspondence Group on Marine Fuel Life Cycle GHG Analysis. This incredibly complex and time-consuming work has been completed over seven rounds, culminating in a huge report to MEPC 80 and a request to consider, finalise and adopt guidelines on life cycle GHG intensity of marine fuels (LCA Guidelines). The impact on future marine fuel supply, in particular documentation and certification of a fuel's GHG profile, will be profound.

MEPC is not the only IMO committee discussing issues with an impact on IBIA's members. In April, IBIA attended the sub-committee on Pollution Prevention and Response, where we were co-sponsors on a proposal aimed at ensuring bunker delivery notes (BDNs) in electronic form are acceptable under MARPOL Annex VI. We also took part in discussions on how to reduce environmental damage caused by marine fuels in the Arctic. A full report is available in this issue (Q2, 2023) of *World Bunkering*.

An IBIA delegation will be at the IMO again from 31 May to 9 June to take part in the 107th session of the IMO's Maritime Safety Committee (MSC 107). In the run-up to MSC 107, IBIA has taken a very active part in the 'Correspondence Group on Development of further measures to enhance the safety of ships relating to the use of fuel oil'. We have also submitted several documents to MSC 107, both as co-sponsors and on our own, in a bid

to make the regulatory framework and supporting guidelines on this important subject more fit for purpose, pragmatic and supportive of good industry practice.

We are very grateful to the experts in the IBIA Technical Working Group for their support and input to all this work, in particular the work relating to MSC and fuel safety. We are also very grateful to other IBIA members who are working with us to help identify and promote solutions with potential to reduce man-made GHG emissions from shipping now, and in the future.

Input to the IMO's work is only one part of what IBIA does, but with so many crucial subjects up for discussion at IMO meetings during the first half of this year and into July, this is very much the season for IBIA to focus on it.

Unni Einemo,
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CELEBRATING 30 YEARS OF PROGRESS

Marking our 30th anniversary, we reflect on the year's milestones, fostering innovation and shaping the future of the industry in 2023

In February, the IBIA Secretariat and its Board of Directors took the opportunity to express their heartfelt appreciation to our members and their guests at the IBIA Annual Dinner 2023. The dinner which celebrated our 30-year anniversary, welcomed over 1,000 attendees to an enchanting evening at the Park Plaza Westminster Bridge.

The dinner's success can be attributed to the generous support of our members and sponsors, including Sing Fuels, Arte Bunkering, BP Marine, Sea Crown Services DMCC, Gulf Petrol Supplies, O Bunkering, Green Fuels, Zero North, Baseblue, Drumo Coin, Petro Inspect, Propeller Fuels, Reseaworld, and Terpel. In addition, our invaluable partnership with media partners contributed to a delightful and memorable evening.

The Annual Dinner served as a platform for industry professionals to celebrate the IBIA's milestones and reflect on the future of the bunker industry. The strong turnout and positive atmosphere demonstrated the unwavering commitment and unity of IBIA's members, instilling confidence in the continued growth and evolution of the industry in the years to come.

Just a few weeks ago we hosted the IBIA Mediterranean Energy and Shipping Conference in Genoa, Italy. The conference brought together industry leaders and experts from across the region to discuss the challenges and opportunities facing the Mediterranean bunker industry. Delegates included shipowners, bunker suppliers, port operators, and regulators, who participated in panel discussions and a delightful dinner held at the Villa lo Zerbino.

One of the highlights of the conference was the session hosted by IBIA's Chair, Timothy Cosulich when Soren Toft, CEO of Mediterranean Shipping Company (MSC) provided his insights into the challenges and opportunities facing the shipping industry. His informative and thought-provoking comments and presence at the conference underscored the importance of collaboration and dialogue between industry leaders.

The conference covered a range of topics relevant to the industry, including the regulatory landscape, bunker fuel quality, and the latest developments in sustainable fuels. Attendees had the opportunity to learn from leading experts and discuss the challenges facing the industry in a collaborative setting. The conference was a great success and demonstrated the value of bringing together industry leaders to discuss important issues facing the industry.

In addition to our physical events, IBIA is committed to providing our members with access to online resources and events. The upcoming IBIA Member meeting will focus on training in the bunker industry and promoting diversity in the workforce. This member meeting is an important opportunity for members to discuss these important topics and share best practices for promoting a diverse and skilled workforce in the industry.

We are also excited to announce the upcoming IBIA Convention in Dubai. This event will bring together industry leaders from around the globe to discuss the latest developments and challenges in the bunker industry. The convention will feature panel discussions, presentations, and networking opportunities that will help to foster collaboration and innovation in the industry. We encourage all stakeholders in the industry to join us in Dubai for what promises to be a valuable and productive event.

In addition to our events, IBIA is also committed to providing our members with access to a range of online resources. These resources include industry news, training materials, and working groups. IBIA is committed to promoting collaboration and innovation in our industry and is working hard to provide our members with these resources.

Finally, we would like to highlight the success of our recent IBIA Americas Town Hall Meeting. This virtual event brought together the IBIA Americas Regional board, members and industry players from

across the Americas to discuss the latest developments and challenges faced in the Americas bunker industry. The meeting was a great success and demonstrated the value of online events in promoting collaboration and innovation in the industry.

We are committed to providing our members and industry with access to valuable resources and events that promote collaboration and innovation in the bunker industry. From physical events like the recent Mediterranean Energy and Shipping Conference to online resources and events, we are working to provide our members with the tools and knowledge they need to succeed in this ever-changing industry. We encourage all members to stay engaged and participate in the many events and resources available through IBIA.

We want to express our heartfelt appreciation for your steadfast commitment and enduring support. Your remarkable contributions have made the start of 2023 an outstanding one, marked by the launch of numerous successful initiatives. As we move forward, we are excited to sustain this momentum of success and advancement. We are confident that, united, we will continue to drive innovation and growth in the bunker industry. Thank you for your loyalty and for being a vital part of our continued progress.

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5 MODULES TO PURCHASE	The IBIA Basic Bunkering Course	Online at www.ibia.net
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20 - 21	2 Days Advanced Bunkering Course	Singapore, Asia
27 - 28	2 Days Bunkering Course	Singapore, Asia
JULY		
13	IBIA LNG Masterclass	Singapore, Asia
SEPTEMBER		
5 - 7	5th IBIA Africa Energy and Shipping Conference	Accra, Ghana
NOVEMBER		
7 - 9	IBIA Annual Convention 2023	Dubai, UAE

BUNKER INDUSTRY EVENTS 2023/2024

JUNE		
12 - 14	Maritime Week Americas	New Orleans, United States of America
26 - 30	Maritime Week Gibraltar	Gibraltar
JULY		
12 - 13	7th Clean Marine Fuel Forum 2023	Singapore, Asia
AUGUST		
24	3rd Marine & Offshore Congress	Singapore, Asia
SEPTEMBER		
3	Transparency in Bunkering	London, United Kingdom
11 - 15	London International Shipping Week	London, United Kingdom
20 - 21	Transport Evolution Africa Forum and Expo	Durban, South Africa
OCTOBER		
17 - 18	Marine Energy Transition Forum	Antwerp, Belgium
19 - 20	ARACON	Rotterdam, Netherlands
NOVEMBER		
21 - 23	Propulsion & Future Fuels Conference 2023	Hamburg, Germany

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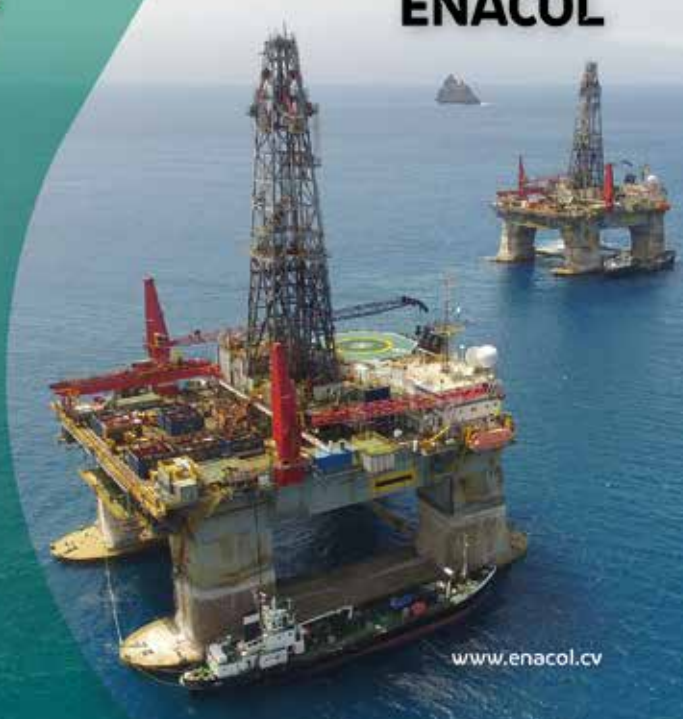
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IBIA AFRICA PROMOTES SUSTAINABLE GROWTH IN THE REGION

As opportunities and challenges arise in the African bunker industry, IBIA Africa is promoting sustainable growth through collaboration and innovation

The African bunker industry faces its fair share of challenges, from inadequate infrastructure to regulatory hurdles. However, I believe that with collaboration, innovation, and a positive outlook, we can promote sustainable growth in the industry and drive positive change.

While there are certainly obstacles to overcome, it's important to remember that there are also significant opportunities for growth and development in the African bunker industry. As the African economy continues to grow rapidly, there is increasing demand for energy and shipping services, which creates opportunities for investment, job creation, and sustainable development.

The IBIA Africa Regional Board and I are committed to addressing the challenges in the industry and promoting sustainable growth through collaboration and innovation. We are proud to provide a platform for stakeholders in the African bunker industry to come together and drive positive change.

One of the key ways that we are addressing the challenges in the industry is through the upcoming 5th Africa Energy and Shipping Conference in Accra, Ghana from 5-7 September 2023. This conference will bring together industry experts, policymakers and investors from across the region and around the world to discuss the latest developments and challenges in the energy and shipping sectors.

One of the key themes of the conference is sustainability. The African bunker industry needs to become more sustainable in order to ensure that it can continue to grow and develop in the future. This means exploring new technologies and fuels, such as liquefied natural gas (LNG), and developing

sustainable practices for bunkering operations.

Another key theme of the conference is the supply chain in Africa. We will explore the regional dynamics, from South Africa (in-port vs. offshore, east coast Mozambique channel, West Africa offshore vs. in-port) to Kenya and Morocco. The discussion will encompass the availability of products and suitable bunkering vessels, cost-benefit analysis for owners and charterers, bunkering area suitability, environmental considerations, and quality and quantity concerns during ship-to-ship and in-port operations. Additionally, we will examine government initiatives aimed at promoting bunkering and their potential impact on increasing the region's attractiveness to shippers.

Finally, the conference will address regulatory issues. The African bunker industry needs to have a clear regulatory framework in order to operate effectively. This means working with policymakers to develop regulations that are fair and effective, and that promote sustainable growth in the industry.

The African bunker industry may face challenges, but there are also significant opportunities for growth and development in the region. We are committed to promoting sustainable growth in the industry through collaboration and innovation. We believe that the upcoming 5th Africa Energy and Shipping Conference in Accra, Ghana will be a key platform for stakeholders in the industry to come together and drive positive change.

As the African economy continues to grow and demand for energy and shipping services increases, it is important that we work together to create a sustainable and efficient industry that supports the

growth and development of the African economy. We are proud to be part of this effort and we look forward to working with our members and partners to promote sustainable growth in the industry.

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IBIA ASIA AT SINGAPORE MARITIME WEEK (SWM)

I am writing my report straight after the Singapore Maritime Week (SMW) and our IBIA Asia Dinner 2023

The theme for this year's SMWI was Ambition Meets Action. It has been a week of whirlwind of thought-provoking discussions and presentations centred around accelerating decarbonisation and digitalisation in the maritime industry.

There's truly nothing like the hustle and bustle of Singapore Maritime Week where good company, good food, good cheers, and even greater minds and ideas converge.

Held physically for the first time since 2019, I was very pleased to see the overwhelming support for the IBIA Asia Dinner. It was a little less grand than our dinner in London, but I hope our members and guests enjoyed catching up with industry partners and friends at the cosy and intimate setting.

In my opening remarks, I shared with our members the two priorities which I set for myself here in Asia: training and engagement.

Training

When I first joined IBIA nine months ago, one of the top priorities was to resume our training programme. Training remains a key priority for us here at IBIA as we move towards a greener and sustainable future. I spoke about the need for IBIA to work together with our members, and

relevant stakeholders, towards talent transformation. That means asking how can we not only train our future manpower but also how can we train our existing people. They will need to adapt the changes that are happening in the bunker industry, especially on the decarbonisation pathway.

We want to be part of your journey, so please do reach out to me to share your thoughts on how we can do so together.

Engagement

Engagement is another priority I set for myself. Over the past few months I have taken the opportunity to meet some of you, to introduce myself and more importantly, to understand how IBIA can support, and work together with you in this region. I will continue to do just that. It is also crucial, now more than ever, for the industry to be prepared for and face the new challenges associated with a greener and sustainable future. I hope IBIA can be the avenue to that future for our members.

I'd like to express our greatest appreciation once again to our IBIA Asia Dinner sponsors – our gold sponsor, Equatorial Marine Fuels Services Management Ltd and our silver sponsors, Oilmar DMCC and TFG Marine Pte Ltd.

Most importantly, to you, all our members, thank you for your support in our activities in Asia, especially for our courses. We are a small team here in Asia, but we want to be part of your journey so thank you for giving us the opportunity to do so.

I look forward to meeting some you in Dubai in November at our IBIA Annual Convention 2023!

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IBIA's Director and IMO Representative Unni Einemo addressing PPR 10

ELECTRONIC BDNs, ARCTIC BUNKER FUEL POLLUTION AND MARPOL SAMPLES

IBIA was actively engaged at the 10th session of the IMO's Sub-Committee on Pollution Prevention and Response (PPR 10). IBIA's Director and IMO Representative, Unni Einemo, shares the highlights

PPR 10, which met for a week at the end of April, had several subjects on the agenda of particular relevance to our members. Outcomes of the sub-committee's deliberations will be reported to the 80th session of the Marine Environment Protection Committee (MEPC 80) for formal approval. Usually, recommendations from PPR are rubber-stamped by MEPC.

IBIA is pleased to report PPR 10 agreed that bunker delivery notes (BDNs) are acceptable in either hard copy or digital form, providing they meet the relevant requirements of MARPOL Annex VI. It follows a proposal made to PPR 10 by the UK, co-sponsored by IACS and IBIA. Our proposal, contained in document **PPR 10/14**, was made to give industry certainty and alleviate challenges during port state control (PSC) regarding the acceptability of an electronic BDN as opposed to a paper copy. Instances have been reported where this was an issue.

The proposal was discussed at length during PPR 10, both in plenary and in the Working Group on Air Pollution (WG) convened during PPR 10. Moreover, IBIA had the opportunity to make a short lunch-time presentation with the title

"BDNs: The future is paperless" - to highlight the benefits of using an electronic BDN. Longstanding IBIA member Jeff Mildner of Vortex Development Group joined the IBIA delegation to PPR 10 to provide an example of how electronic BDNs can work in practice.

Key benefits of an electronic BDN highlighted during this live demonstration was that the system has built-in safeguards to ensure the BDN is correctly filled in and completed, thereby ensuring all the necessary information is included. Most importantly, as it is generated and then distributed in real-time, copies can go to all relevant stakeholders simultaneously, thus making it almost impossible for any one party to falsify the documentation. Other information that helps with verifying details of the delivery and the veracity of the BDN are also built in.

IBIA's main objective in doing the presentation at PPR 10 was to address concerns about whether electronic BDNs can be manipulated and falsified. We believe electronic BDNs are more tamper-proof than paper copies, but some Member States needed convincing.

Other benefits of digitalising the BDN include improved efficiency and less resources used on paper copies and physical filing facilities. There is also great potential for adding more data about the delivery than the current minimum regulatory requirements, and for sharing the BDN and hence the data it contains on bunker quantity and fuel types with relevant authorities.

During the presentation, we received questions about potential future requirements for information to be included in the BDN, such as well to wake carbon factors for various fuel types for calculation of GHG emissions. We suggested that this would make electronic solutions even more relevant than having to carry multiple-page paper copies to cover a range of scenarios. Electronic BDNs can more readily be adapted to meet the relevant criteria and include further relevant information as attachments.

Returning to the actual proposal in **PPR 10/14** - what is the issue we aimed to resolve? It boils down to the fact that Regulation 18.5 of MARPOL Annex VI requires details of fuel oil intended for combustion purposes to be recorded by



IBIA took the podium at IMO during PPR 10 to demonstrate the benefits of electronic BDNs. Jeff Mildner on the left, Unni Einemo on the right

means of the BDN, which is to contain at least the information in appendix V of MARPOL Annex VI. Regulation 18.6 of MARPOL Annex VI requires the BDN to be kept onboard the ship and to be readily available for inspection at all reasonable times. The regulation does not specify the form (physical hard copy or digital), but BDNs are still predominantly saved and presented as a hard copy paper document.

Our proposal was for a so-called Unified Interpretation (UI) to clarify that electronic BDNs are also acceptable. During PPR 10, this principle was generally supported, but there was a lot of debate about exactly how to move forward with this, and whether our proposed UI would be the right way. It was clear that concerns about the authenticity of an electronic BDN needed to be addressed. Several delegations mentioned the legal importance of BDNs for documentation purposes, and that BDNs will become increasingly important as part of the documentation supporting IMO policies to reduce GHG emissions from ships. Some delegations expressed concerns that developing a UI might not provide sufficient security and accountability guarantees.

In the end, it was understood that the UI was only dealing with the current requirements under regulation 18.5 and 18.6 of MARPOL Annex VI, but should include text about how to ensure electronic BDNs would be tamper-proof. After discussion in the WG, the delegations who had proposed the unified interpretation (United Kingdom, IBIA, IACS) were tasked with amending the text to address these concerns. We worked late

and came up with new text which was subsequently approved by PPR 10.

The UI agreed at PPR 10, which will be presented to MEPC 80 in July for approval, is as follows:

Applicability of the requirements for a bunker delivery note

Regulation 18 *Fuel oil availability and quality*

2 In the annex to circular MEPC.1/ Circ.795/Rev.7, it is proposed to add a new interpretation after paragraph 12.1 as follows:

"12.2 The Bunker Delivery Note (BDN) required by regulation 18.5 is acceptable in either hard copy or electronic format provided it contains at least the information specified in appendix V to MARPOL Annex VI and is retained and made available on board in accordance with regulation 18.6.

In addition, an electronic BDN should be protected from edits, modifications or revisions and authentication be possible by a verification method such as a tracking number, watermark, date and time stamp, QR code, GPS coordinates or other verification methods."

IBIA is happy with this outcome and hopes MEPC 80 will approve the interpretation so the industry can have confidence in using electronic BDNs.

Black Carbon & the role of fuel quality

The IMO has been wrangling for over a decade with how to reduce the impact

on the Arctic from emissions of Black Carbon (essentially soot) from international shipping. The subject has become highly politicised because of the link to climate change, as soot contributes to accelerating snow and ice melt in the Arctic and, consequently, global warming.

PPR 10 had a range of proposals to discuss, including the outcome of long and complex deliberations in the Correspondence Group on Prevention of Air Pollution from Ships. IBIA has taken part in this Correspondence Group and expressed our views on various aspects and ideas put forward for consideration.

Environmental NGOs represented at the IMO have focused their efforts on insisting that the IMO should adopt a mandatory switch to distillate fuels or other cleaner alternative fuels "in or near the Arctic" as an immediate measure to reduce Black Carbon (BC) emissions.

PPR 10 saw proposals to define "near the Arctic" to include areas well beyond the area defined as "Arctic waters" in IMO regulations. The IMO has previously agreed to prohibit the use and carriage for use of heavy fuel oil (HFO) as fuel by ships in Arctic waters with effect from July 2024.

Member States at the IMO preferred, however, to focus on further developments of voluntary measures in the short term, building on Resolution MEPC 342(77), *Protecting the Arctic from shipping Black carbon emissions*. Longer term measures may include new regulations, but that would require more work, including BC emission data collection.

IBIA has on several occasions said we support Resolution MEPC 342(77) calling for ships to use distillates or other safe, clean fuel and technologies as a short-term measure to reduce Black Carbon emissions in the Arctic. While fuel is only one of the factors influencing BC formation, with all else being equal, a shift from HFO to distillates should produce less of it, we told PPR 10. IBIA has also expressed confidence that sufficient distillates would be available for ships operating in the Arctic. However, when discussing extending the geographic scope for BC reduction measures to areas near the Arctic, we cautioned PPR 10 that



this would have a significant impact on the amount of distillate fuels being required to meet demand and would need careful consideration.

After further discussion on the geographic scope of potential BC mitigation measures, the Chair of PPR concluded that this was in fact outside the scope of the sub-committee, and that any further discussion on defining a geographical scope would have to be proposed and discussed at MEPC.

After extensive discussion, the sub-committee agreed to establish a Correspondence Group to “further develop, with a view to finalization, draft guidelines on recommendatory goal-based control measures to reduce the impact on the Arctic of Black Carbon emissions from international shipping,” and submit a report to PPR 11 (scheduled to meet in February 2024).

The guidelines under development are recommendations for collection and reporting of BC emission data, and recommendatory goal-based, technology-neutral control measures, ideally also being able to quantify their effectiveness. This means discussion will continue in the Correspondence Group but with a reduced scope compared to earlier. It will now develop draft recommendatory guidelines on goal-based control measures, and not discuss potential regulatory measures. Potential BC control measures that have been discussed in the Correspondence Group previously have included setting up an Arctic emission control area (ECA), engine certification for new ships, the use of BC reduction technology such as particulate filters, and a new fuel standard based on aromatic content.

Those who have been involved in the BC discussion at the IMO for a while will recall a debate about the impact of aromatic content in the fuel used. This became particularly heated when, in late 2019, a study was published suggesting that the very low sulphur fuel oil (VLSFO) blends being developed to meet the 0.50% sulphur limit in 2020 would have a very high aromatic content and hence would emit even more BC than the high sulphur HFOs they were replacing.

This theory was debunked by IBIA and other industry groups with representation at the IMO during PPR 7 in February 2020. There was, however, calls for a new fuel standard based on aromatic content to help indicate a fuel's propensity for emitting BC during combustion.

ISO has taken this into account and, during PPR 10, gave an update on the work undertaken on the **ISO 8217** standard by ISO/TC 28/SC 4/WG6 (ISO WG6) to provide the maritime industry with an indicator to characterise whether a marine fuel tends to be more paraffinic or aromatic in nature. The approach taken was to find - and apply - a well-established method already used by the petroleum industry to characterise fuels in terms of their paraffinic or aromatic nature. ISO WG6 has identified the ‘Viscosity Gravity Constant’ (VGC) as a straightforward approach as it can be calculated using routinely analysed parameters (viscosity and density). ISO told PPR 10 that the intention is to incorporate this indicator in the 7th edition of ISO 8217, which is expected to be published in the first quarter of 2024.

Despite this update from ISO, some Member States asked ISO to reconsider, and insisted that a H/C ratio should be included in the ISO 8217 revision as an indicator of fuel aromaticity.

Developing a fuel standard based on aromatic content is one of several proposals for potential ways to regulate BC emissions in the future. While some are supportive of developing a fuel standard, it has been pointed out that it would require additional data on fuel characteristics.

At the same time, in a related agenda item aimed at protecting the Arctic from HFO spills, proposals have been put forward to specify “polar fuel oils” that are acceptable for use and carriage in the Arctic.

Will HFO ban prevent VLSFO spills in the Arctic?

The IMO's ban on the use and carriage of HFO as fuel by ships in Arctic waters is due to take effect on July 1, 2024. The carriage ban is intended to protect the vulnerable Arctic environment from accidental HFO spills.

Last year, Norway and Iceland submitted a proposal to MEPC 78 to change the IMO's regulatory definition of HFO to include an upper pour point limit. Their document, **MEPC 78/14/1**, highlighted that the VLSFO blends that have been developed to meet the IMO 2020 0.50% sulphur limit are difficult to clean up in cold conditions because the paraffinic components solidify, preventing effective use of skimmers.

They speculated that once the HFO in the Arctic comes into effect, the density of VLSFO (and maybe 0.10% sulphur residual fuel grades known as ULSFO) can be adjusted by adding more paraffinic components, which in turn would make the pour point of the fuel higher and hence more difficult to clean up in the event of a spill in cold Arctic waters. IBIA was among those questioning aspects of the proposal at MEPC 78, which was forwarded to PPR 10 for further consideration.

Norway submitted a new document to PPR 10 with an alternative proposal to address the concerns about the nature of fuels carried for use in the Arctic, suggesting that instead of amending the IMO's HFO definition, IMO could define “polar fuel oils” that are acceptable to be carried for use as fuels in Arctic waters in a similar manner to requirements implemented by Norway in the *Svalbard Environmental Act*.

IBIA was pleased to see Norway's new take on the issue and told PPR 10 that we supported their proposal to develop a new definition for “polar fuel oils”. This would mean ships would not be allowed to use or have on board petroleum-based fuel with a higher viscosity, density or pour point than permitted for marine gas oil, and we believe this would be a better option than changing the definition of HFO.

The proposal led to some interesting discussions, during which one delegation suggested that the bunker industry had failed to take into account the environmental damage new low sulphur fuel formulations would cause in the Arctic. Responding to this accusation, IBIA told PPR 10 that VLSFOs had been developed in response to the IMO 2020 sulphur limit to provide shipping with compliant and cost-effective fuels, and that sulphur was

now the primary blend target. We pointed out that these fuels are produced for the purpose of being burnt in ship engines, not on the basis of how they behave when they end up in water. We reminded PPR 10 about fuel testing data IBIA had highlighted during previous IMO discussions on the subject, showing that around 95% of VLSFOs in the market tested up to the end of February 2021 would be classified as HFO, mainly due to the density being higher than the maximum allowed for use and carriage in the Arctic. More recent data suggested maybe even less than 5% of VLSFOs currently in the market could be used once the HFO ban takes effect. Hopefully, this would alleviate some of the concerns raised about the potential for VLSFOs to be used and accidentally spilled in the Arctic.

We then pointed to an information document, **PPR 10/ INF.12** by Australia, containing a study on responding to VLSFO spills, which highlights that spill responders must plan to use a variety of different equipment to deal with such spills and not rely solely on skimmers.

While IBIA was supportive of the proposal to develop a new definition for "polar fuel oils", the Member States that spoke were not in favour. Nor did they want to amend the definition of HFO to include an upper pour point limit at this stage in light of the fact that the HFO use and carriage ban is due to take effect next year. It was seen

as important to see the actual effects of the regulation before introducing any additional elements.

PPR 10 therefore agreed to revisit this matter in 2025 at PPR 12, when the HFO use and carriage ban will have been in effect for just over seven months. Moreover, PPR 10 invited Member States and international organisations to submit information to future sessions of the Sub-Committee on bunker fuel properties available for Arctic shipping, including any trends in viscosity, density and pour point in the lead up to 1 July 2024, and also after that date.

While the Arctic HFO use and carriage ban takes effect next year, there are exemptions for ships with fuel tanks protected by double hulls, and waivers for ships flying the flag of countries with a coastline bordering on Arctic, that will allow these ships to continue carry HFO for use until 1 July, 2029. This will delay the full effect of the HFO ban.

IMO guidelines for in-use MARPOL samples

PPR 10 discussed proposals to amend the IMO's *2019 Guidelines for On Board Sampling for the Verification of the Sulphur Content of the Fuel Oil Used onboard Ships* (MEPC.1/ Circ.864/Rev.1). The guidelines provide advice on how to obtain samples of fuels actually in use onboard ships in order to verify their sulphur content.

One proposal was to establish a protocol for the emergency generator fuel oil tank sampling point. That was deemed unnecessary because fuel for emergency generator will be distillate fuel grades (DMA or DMX gas oil) that typically have sulphur content below 0.10% and it was unlikely that PSC officers would need to take in-use samples from emergency generators.

The other proposal aimed to address sampling of fuels with potentially poor cold flow properties when navigating in cold regions, and to provide specifications for Administrations on sample handling and size.

In response to that proposal, several delegations highlighted that drawing in-use samples for sulphur verification in cold climates was not an issue because in-use samples should be drawn downstream of the in-use fuel oil service tank, at which stage the fuel is heated and flowing well. They also felt the sample size could be determined by the inspector using professional competence in consultation with analysing laboratories.

In summary, the sub-committee saw no practical or operational reasons to take the proposals forward, and agreed to keep the existing guidelines for taking onboard samples of the fuel in use unchanged.





FUEL SAFETY UNDER SCRUTINY AT IMO

IBIA has submitted several proposals to the IMO in a bid to improve understanding and workability of new flashpoint regulations, including joint MSC-MEPC sampling guidelines. We also aim to improve general understanding of fuel quality in a joint submission with ISO. IBIA's Director and IMO Representative Unni Einemo explains

As this issue of *World Bunkering* goes to press, IBIA is preparing for several important meetings at the IMO. The most highly anticipated meeting is the 80th session of the IMO's Marine Environment Protection Committee (MEPC 80) in July, where the IMO is expected to adopt a revised greenhouse gas (GHG) strategy with much higher ambitions to accelerate GHG emission reductions from international shipping. This will be preceded by a week-long GHG working group meeting to try to bridge gaps and secure consensus to allow MEPC 80 to adopt a revised IMO GHG Strategy. We covered those expectations in the Q1 issue of *World Bunkering* so won't go into that here. We'll be back with an update on the outcome in the Q3 issue.

MEPC is probably the IMO committee that gets most attention in the maritime sector, but the IMO's Maritime Safety Committee, which meets for its 107th session (MSC 107) from 31 May to 9 June, is arguably more powerful. Promoting safety at sea was a founding principle for the IMO, and remains a top priority. Several of the environmental regulations adopted or

discussed at MEPC come under scrutiny over safety concerns; this is where MEPC and MSC agendas sometimes overlap.

MSC 107 will have several documents on its agenda linked to MEPC's existing environmental regulations and future ambitions.

One is **MSC 107/17/21**, where IBIA is one of multiple co-sponsors alongside IMO Member States and other NGOs. It proposes that MSC takes on a new agenda item to develop a road map to support the safe delivery of the IMO's GHG strategy. The aim is to undertake a regulatory assessment of safety aspects and facilitate the safe deployment of fuels and technologies needed in the industry's transition to using low and zero GHG fuels and technologies.

IBIA has authored four submissions to MSC 107 under an agenda item which MSC has been working on for a few years, namely *Development of further measures to enhance the safety of ships relating to the use of fuel oil*. This MSC agenda item was to a large extent set in motion in response

to concerns about fuel quality changes resulting from new low-sulphur fuel oil blends coming into the market to meet demand for IMO 2020-compliant fuels. In essence, the aim is to introduce increased control on the supply of bunker fuels. The initial focus was on flashpoint, and new regulations have been adopted in this regard.

However, work on this item – which has been developed between MSC sessions in a Correspondence Group – has also included collecting information on other quality issues. Recent major fuel contamination cases, such as those originating in Houston in 2018, and the chlorinated hydrocarbon cases in Singapore in 2022, have caused a stir. This means discussions are also going on about “possible measures related to oil fuel parameters other than flashpoint.”

Confusion around flashpoint documentation

In November 2022, MSC 106 adopted Resolution MSC.520(106) containing amendments to Chapter II-2 of SOLAS regarding flashpoint “to further enhance



the safety of ships using conventional oil-based fuel oils". These will enter into force on 1 January, 2026. These amendments require relevant authorities to report instances where bunker suppliers have delivered fuel with non-compliant flashpoint, and to "take action as appropriate" against them.

Most relevant for bunker suppliers are new requirements in SOLAS Chapter II-2, Regulation 4 for the oil fuel supplier's representative to provide the following documentation in a new sub-paragraph (4.6):

.6 ships carrying oil fuel shall prior to bunkering be provided with a declaration signed and certified by the oil fuel supplier's representative, that the oil fuel to be supplied is in conformity with paragraph 2.1 of this regulation, and the test method used for determining the flashpoint. A bunker delivery note for the oil fuel delivered to the ship shall contain either the flashpoint specified in accordance with standards acceptable to the Organization, or a statement that the flashpoint has been measured at or above 70°C;***

The first footnote (*) refers to ISO 2719:2016, Determination of flash point – Pensky-Martens closed cup method, Procedure A (for Distillate Fuels) or Procedure B (for Residual Fuels). The second footnote (**) says: "This information may be included in the bunker delivery note according to MARPOL Annex VI/18."

A corresponding requirement, amending appendix V of MARPOL Annex VI (Information to be included in the bunker delivery note), was adopted at MEPC 79 in December 2022 in resolution MEPC.362(79). This is due to enter into force on 1 May, 2024.

The MARPOL Annex VI amendment says the BDN must contain:
"The flashpoint (°C) specified in accordance with standards acceptable to the Organization, or a statement that the flashpoint has been measured at or above 70°C."*

The text of these amendments is the outcome of detailed deliberations at several MSC working group meetings

and in the intersessional Correspondence Group, as well as in the Drafting Group at MSC 106 prior to adoption. IBIA took part in all these discussions; in fact, we were instrumental in ensuring that it didn't become a requirement to measure flashpoint beyond 70°C – as that is not necessary to guarantee that the minimum 60°C flashpoint limit in SOLAS has been met. However, there is a problem. In **MSC 107/6/2**, IBIA proposes a unified interpretation (UI) of SOLAS chapter II-2 to help clarify the meaning of the regulatory text, and asks MSC to request MEPC to adopt a corresponding UI for appendix V of MARPOL Annex VI.

In MSC 107/6/2, IBIA explains: " During deliberations at the Drafting Group at MSC 106 prior to adoption of the amendments, and subsequently in interactions with industry participants, it has become evident that while this is perfectly clear and logical to those who have participated in developing the regulatory text, it is not equally clear to relevant stakeholders who are not familiar with the thinking behind it; including port state control officers, ship engineers and oil fuel suppliers. That means the amendments could be open to misunderstandings, which is concerning and unhelpful if various parties have different ideas about what the regulation actually means."

MSC 107/6/2 therefore proposes the following interpretation of Regulation 4.6: *"The test method will provide a specified temperature when an ignition source produces a 'flash' in the sample. If this flash occurs when the sample has been heated to a temperature below 70°C, this temperature should be reported on the bunker delivery note. If, however, the sample is heated to 70°C and then tested without producing a flash, there will not be an actual measured flashpoint temperature to report, but this is sufficient to establish that the flashpoint is above the 60°C minimum and thus allow for a statement to be made that the flashpoint has been measured at or above 70°C. If heating and testing of the sample has been carried out beyond 70°C and produced a flash, there will be a specific temperature that can be reported, but it should be understood that undertaking or continuing the test beyond 70°C is not required."*

In discussion we have had with other IMO delegations, several have agreed that the regulatory text is confusing, and we hope there will be support during MSC 107 for the UI. We believe this would help alleviate confusion prior to the regulation entering into force. This is already set to happen on 1 May, 2024 under MARPOL Annex VI, so we hope MSC 107 – if the UI is agreed – will send a request to MEPC 80 to adopt a corresponding UI.



New regulations seek to enhance compliance with the 60°C flashpoint limit ¹Stock



Sampling guidelines

In connection with the SOLAS amendments introducing new flashpoint regulations, MSC agreed to develop a joint MSC-MEPC circular to set up a common fuel sampling regime under SOLAS and MARPOL Conventions, taking into account resolution MEPC.182(59), which contains the 2009 Guidelines for the sampling of fuel oil under MARPOL Annex VI. Draft joint MSC-MEPC guidelines have been developed in the MSC Correspondence Group, and will be presented to MSC 107 for finalisation and approval. The draft MSC-MEPC joint sampling guidelines, just like the 2009 Guidelines under MARPOL, contain references to collecting a primary sample at the bunker manifold of the receiving ship.

IBIA has submitted proposals in **MSC 107/6/5** to the draft MSC-MEPC guidelines regarding the sampling location to take into account safety, practicality and alignment with established industry practice. We argue that the most important aspect of the statutory sample to be retained by the ship is that it is representative of the fuel delivered, so it is essential that the sample is drawn by skilled personnel.

MSC 107/6/5 states: "The sampling location outlined in MEPC.182(59) has always been a bone of contention. Shipping companies want the primary sample to be drawn at the bunker inlet manifold of the receiving ship, where the ship's crew may also obtain samples for their own fuel quality testing purposes. Fuel oil suppliers want to draw a primary sample from the bunker outlet manifold of the bunker tanker during delivery for both practical and safety reasons."

The paper highlights that bunker tanker crew routinely draw samples as part of their daily work, hence are best placed to be in charge of the sampling process. It isn't always practical or safe for a bunker tanker representative to come onboard the receiving ship to oversee the sampling process. MSC 107/6/5 explains problems with the one-sided approach to the sampling location in the guidelines. It also recommends the use of independent

surveyors to witness the sampling process if it is difficult for crew from the receiving ship and/or bunker delivery vessel to be present.

Our paper, having described the issues in detail, concludes by proposing that the joint MSC-MEPC Guidelines to obtain a representative sample of the bunkers delivered should be amended, to state that: "Representatives for the receiving ship and the oil fuel supplier should agree on a mutually acceptable way of taking samples in a safe manner, and the sampling location, prior to commencing the bunkering operation, taking into account local conditions and regulations." Regarding the sampling location, we propose that the sampling equipment should be positioned at the bunker manifold of either the receiving ship or the bunker tanker, as agreed between the receiving ship and supplier prior to operation.

IBIA has also submitted another document; **MSC 107/6/3**, which proposes modifications to the draft MSC-MEPC sampling guidelines to reflect practical considerations regarding sample integrity and sample bottle size. In this paper, we point out that a 400 ml sample is sufficient to undertake both flashpoint testing, as well as subsequent testing for sulphur, if that were to be required. We also propose adding a sentence to the guidelines to ensure there are no traces of low-flashpoint solvents used to clean the sampler and the primary sample container prior to use. This can contaminate the sample and result in a misleading flashpoint test result that does not reflect the actual flashpoint of the oil fuel as supplied.

Regulating "other parameters"

Following new SOLAS regulations to tighten control of flashpoint, MSC is also considering possible measures related to other oil fuel parameters. This has been extensively discussed both during MSC meetings and in the Correspondence Group between meetings.

One of the proposals that has come forward is to either add a general regulation in SOLAS in line with Regulation 18 of MARPOL Annex VI. The latter is based on Clause 5 of ISO 8217:2005 and states that fuel oil "shall be free from inorganic acid" and "shall not include any added substance or chemical waste" that can jeopardise the safety of ship and crew. An alternative proposal put forward is to reference a fuel standard, which would in essence make compliance with ISO 8217:2017 mandatory.

IBIA and ISO have submitted a joint paper, **MSC 107/6/4**, which advises against mandating ISO 8217, as this would likely generate many unjustified demands for debunkering fuel which are either perfectly safe, or may be safely managed onboard with due care and attention. The paper states that ISO 8217, despite being non-mandatory, is used as the basis for commercial contracts and has proven effective in ensuring that the vast majority of fuels are of acceptable quality and safe to use provided the fuel is appropriately managed onboard.

The paper also provides a brief explanation of 95% confidence and ISO 4259 to address some common misconceptions, and goes on to explain the difficulties in establishing which chemical components pose a safety risk, and why it is considered unadvisable to regulate oil fuel parameters other than flashpoint due to uncertainties in establishing clear and consistent links between specific oil fuel parameters and the safety of ships.

ISO and IBIA will do a joint presentation during MSC 107 on the issues covered in MSC 107/6/4, involving some of the experts that take part in the IBIA Technical Working Group. This group has been consulted during all of IBIA's work at the IMO relating to fuel safety and other fuel technical issues. We are hugely grateful to the IBIA Technical Working Group, which includes top industry experts, for providing relevant expertise to our work.

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STAYING GLOBAL

Long-serving Deputy Secretary General of the International Chamber of Shipping (ICS) Simon Bennett explains to David Hughes why he believes achieving a renewed, strengthened IMO decarbonisation strategy is vital

DH: Can you sketch out your career at ICS and what your current role entails.

SB: I currently have the grand title of Deputy Secretary General, and working with our Secretary General, Guy Platten, I co-ordinate the agenda of the ICS Board of our 40 member national shipowner associations and help ensure that ICS policy making departments - which make representations to a wide range of intergovernmental bodies that impact shipping in addition to IMO - are delivering a consistent message. I have actually been at ICS for over 30 years – my only proper job except taxi driving and working in what was then the world's largest pizza factory. For ICS, I originally worked on industrial relations and training issues, including what was then called the 1995 revision of the IMO STCW Convention and ILO meetings. I then moved into what we call 'shipping policy' which is primarily about maintaining the level playing field, free trade principles and matters like taxation and competition regulation, working with bodies such as the UN in New York, OECD and WTO. Today though, about 70% of my time is taken up with the CO₂ reduction negotiations at IMO, which reflects how this is by far the most important issue affecting shipowners, as if governments get this wrong it could mess up the entire structure of the industry and its ability to provide the world economy with sustainable low-cost marine transportation.

DH: You have been involved in the debate over how to reduce shipping's carbon footprint for several years now. When do you think balance within senior levels in the shipping industry tipped towards accepting the need for decarbonisation? Is there a genuine commitment in the industry to achieve net zero or is it a superficial gloss?

SB: It's been an incremental process, but the Paris Agreement of 2015 followed by the adaptation of IMO in response to this of its first set of shipping GHG targets in 2018 made the direction of travel absolutely clear, as will the ambitious new targets we expect governments to agree at IMO this July. Given the truly huge enormity



Simon Bennett

of the challenge, the shipping industry's support for a net zero target for 2050 may sound to some with a more cynical bent as unrealistic virtue signalling, but we genuinely believe this is possible if governments provide us with the regulatory framework we need to achieve this.

Our support for this ambitious net zero target reflects the political reality that if we don't make dramatic progress on GHG reduction now, we may be faced with the prospect of maritime transport being rationed and a chaotic piecemeal patchwork of unilateral regulation, with IMO as our global regulator being reduced to shadow of its current self. This is what is at stake.

DH: Are you frustrated by accusations by green campaigners and in the press that shipping is a particularly 'dirty' industry?

SB: Green campaigners have to do their job, which is campaigning to draw attention to important issues like climate

change and we respect that, and actually have a fairly cordial relationship with the green NGOs at IMO. More frustrating is when certain governments that like to style themselves as "high ambition states" refuse to acknowledge the real progress that has been made by shipping on GHG reduction in the past 15 years, or the scale of the challenge – saying that something must be done without nuance or coming forward with calls for action with our workable technical solutions or taking steps to ensure the availability of new green fuels, without which the transition cannot happen.

DH: One of ICS's key arguments when pushing for an IMO bunker levy to boost research and development on alternative fuels was that not enough effort was being put into that area. ICS is now proposing an IMO Fund and Reward scheme, a form of Market Based Measure, to boost decarbonisation. Does that mean ICS accepts that the technology for net zero will be available but adopting it will depend on costs?



SB: The need for more R&D funding to increase technology readiness levels is still important and forms part the ICS Fund and Reward proposal. But the political debate at IMO has moved on and the key to decarbonisation of shipping will be the widespread availability in ports worldwide of the new green zero-carbon fuels.

DH: The EU has just decided to push ahead with including shipping in its Emissions Trading System under the Fit for 55 package. Meanwhile, MEPC 80 this July is expected to adopt a revised IMO Strategy for Reduction of GHG Emissions from Ships. How optimistic are you that IMO will adopt the Fund and Reward proposal? More generally, how important is getting a more ambitious GHG strategy at IMO this year? What could happen if this is not achieved?

SB: We think our Fund and Reward proposal is gaining traction at IMO and the EU states have said they can support it - or something similar - if it's complemented

by a global fuel standard whereby the permitted GHG intensity of marine fuels will be progressively reduced over time – something which ICS also supports and on which it is about to come forward with its own proposal. But we need the Fund and Reward system too, to provide the necessary incentives to first movers to help shipping reach a take-off point by 2030 for production and the use of new fuels so that a net zero goal for 2050 remains plausible. We need to narrow the price gap between conventional fuels and green fuels - and this is what the Fund and Reward proposal - which is backed by the entire shipping industry - is designed to achieve.

A global scheme such as the ICS's fund & reward proposal is preferable to unilateral, regional applications of Market Based Measures such as the EU ETS, which will only apply to about 7.5% of global shipping emissions, ultimately failing to reduce global emissions to the extent

required. Only via a global solution at IMO can we deliver the scale of transition needed.

DH: Finally, and changing the subject, IBIA is promoting the licensing of bunker suppliers and the introduction of mandatory quantity measurement (as through mass flow meters). Where does ICS stand on these issues?

SB: We fully agree with the need to licence bunker suppliers and have been advocating this at IMO for many years. Apart from fuel quality issues and compliance with the IMO sulphur cap, this issue will become ever more urgent when it comes to the labelling of sustainable bio-fuels for example, or green methanol or ammonia as opposed to that produced with fossil feedstocks. But with notable exceptions like Singapore, most governments have been somewhat reluctant to take on this responsibility.

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IBIA Code of Conduct

Abiding by this Code of Conduct shows that members support our common goal: to promote the widespread adoption of a common set of ethical values within our industry. We believe that when the entire industry acts with the highest ethical standards that this will be to the benefit of us all.

Fair Business

- We conduct our business in a fair and transparent manner
- We will always act in the best interest of each business partner and are honest with the stakeholders involved in our business
- We only engage in business using compliant products, and deliver the quality and quantity agreed with our business partners
- We always act in good faith

Best Practice

- We always act in accordance with applicable legislation, including sanctions
- We always meet contractual obligations in a timely manner
- We always do our best to avoid disputes and seek resolution promptly if disputes occur
- We comply with all applicable competition and anti-corruption laws
- We respect confidential information and do not unlawfully use any intellectual property

Social responsibility

- We seek to minimise our environmental impact and the risk of environmental damage
- We will always ensure employees' health, safety and security
- We offer equal opportunities, prohibit unlawful discrimination and respect human rights
- We offer the same opportunities for professional development to all our employees

Transparency

- Our accounts and records are kept accurately and reflect the true state of the company and its operations
- During audits or investigations, we fully cooperate with the authorities
- We will not receive or give any gift or entertainment of disproportionate value
- We are fully committed to preventing both money laundering and terrorist financing

This Code of Conduct is endorsed by the International Bunker Industry Association (IBIA). IBIA encourages members to abide by this Code of Conduct and to endorse it.



THE BIMCO & IBIA SHIPMASTER'S BUNKERING MANUAL 2022

The Shipmaster's Bunkering Manual 2022 is the first practical industry guide for both owners and suppliers, seeking to create a common understanding of best practices when bunkering to facilitate a smoother process and safe bunkering globally

The manual is a unique result of cooperation between IBIA and BIMCO to create insight and practical understanding of bunkering across the shipping sectors.

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Totalling 4 chapters and phases of the bunkering process, the manual covers the following topics:



Chapter 1: Background insight on fuel types and key regulation

Everything you need know from fuel oil types, safety, and environmental regulations to ISO standards and contractual issues related to bunkering.



Chapter 3: Bunkering procedures

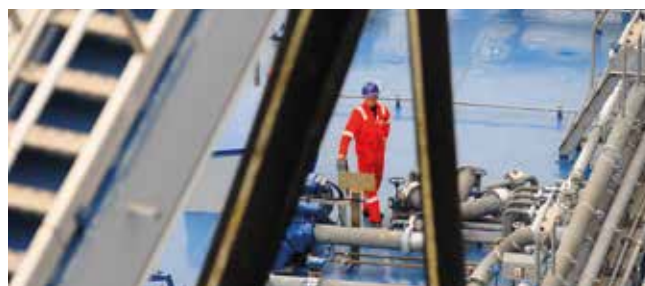
Bunker sampling is one of the most important aspects of bunkering. This chapter covers preparations, practical issues and what to do if something goes wrong. Details of the role each stakeholder ashore and on board undertakes during the process including actions required before, during and after the bunkering.

The book is available to buy from Witherbys on this link:

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Nigel Draffin



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Nelson Mandela Bay should be South Africa's biggest green hydrogen fuel hub ^{©flowcomm}

OLD PROBLEMS, NEW SOLUTIONS

Economic challenges have hit many African states, but there are still lights on the horizon, as John Rickards reports

Russia's invasion of Ukraine and the subsequent western block on Russian oil has seen African production filling some of that gap. However, old problems in West Africa have left the overall picture less rosy than it might have been.

The hijackings of the bunker tanker *Monjasa Reformer* in late March and the products tanker *Success 9* (located by another *Monjasa* vessel a few days later) have served as reminders of the sometimes dicey security situation faced by ships operating in and around the Gulf of Guinea.

And in April, the president of the Nigerian Chamber of Shipping blamed soaring freight rates on a 50% drop in the number of foreign vessels operating in Nigerian waters since the start of 2022. This decline in ship calls was partly due to repositioning, to account for post-invasion trade shifts and a cabotage law passed in December 2022 but also partly to the ongoing security situation in the country and the need for foreign ships to carry war risk insurance as a result of continuing instability.

Even South Africa has been dogged by issues, with Transnet's ports hit by strikes over wages and the country's president Cyril Ramaphosa - while calling for US\$111

billion in foreign investment over the next five years - telling attendees at April's South African Investment Conference that "we are confronted with the consequences of years of underinvestment, mismanagement and corruption in the electricity and rail sectors". The rail network is also run by an arm of Transnet and is the main freight connection to and from many of the country's ports.

Cargo throughput at South African ports was down 3.1% last year compared to 2021, container traffic down similarly to 4.2 million TEUs - though compared to pre-pandemic levels in 2019, these figures were down 9.5% and just over 6% respectively.

The outlook isn't entirely gloomy, however. The Coega 3GW green ammonia project in Nelson Mandela Bay, under development by UK-based Hive Energy, is still on track, having been granted "special integrated project" status in December last year, prioritising it for development. Actual ground breaking is scheduled for 2025, with 2028 pencilled in for full operation, producing up to 950,000 tonnes per year of fuel, primarily for shipping.

Denise Van Huysteen, CEO of the Nelson Mandela Bay Business Chamber, hailed the move, saying: "This will be the most significant project yet to come to Nelson Mandela Bay and will generate much

needed investment and jobs in our local economy. We have been engaging with Hive for some time and their commitment to aligning their Just Energy Transition objectives with those of the Business Chamber's strategic priorities are most welcome. In particular, we see the company as being a critical contributor towards advancing our climate change strategy, which among other areas promotes the green economy and the initiation of renewable energy solutions. With Hive as an anchor, we have no doubt that this will expand and unlock our metro's potential to become a key renewable energy hub on the continent as an exporter to major markets like the Far East, Europe and the United States. We are ideally placed as a Metro with good wind and solar sources, a spacious industrial development zone and a world class deep-water port. We are looking forward to collaborating with Hive to revive our local economy and create thousands of direct and indirect jobs."

Looking back along the coast, the Angolan port of Luanda has put forward long-term expansion plans which would nearly quadruple its container capacity and allow for the possibility of a cruise pier, as well as substantially overhauling and modernising the port's other facilities. While the plans are more of a strategic ambition than



anything set in stone, they represent clear confidence in traffic growth and the appeal of Luanda for outside investment. The country has seen high demand for oil and gas in the past year, though the government expects production to drop back a little over the next year - as indeed it seems to be doing, with Q1 exports down nearly 15% - and Angola is still navigating the economic aftershocks of the pandemic.

As is Ghana, which is trying to pick its way out of its worst financial crisis for decades. In November last year, to counter currency pressure, the government announced a plan to pay for oil imports using gold rather than dollars. However, its impact has been very limited, and the volume of oil purchases relatively small.

Instead, there are now growing calls to re-attract foreign investment - the past five years have seen several oil companies pull out of Ghana and of the three remaining, two are in arbitration with the government and the third is in the middle of shuttering its Ghanaian operations - in both upstream exploration and refining at Tema Oil Refinery to reduce the country's reliance on more expensive imported refined products. TOR, the country's only refinery, has been largely mothballed since 2018, lacking feedstock (the refinery is unable to process Ghana's own higher-grade crude), riddled by disputes with management, and needing upgrades to its equipment which estimates have put at between US\$500 million to-US\$1 billion. Opposition presidential candidate John Dramani Mahama has pledged to revive the refinery if he wins next year's presidential election.

Tema itself isn't devoid of fresh investment. National oil company GOIL is in the process of building a new gas plant in the port and another in Kumasi, and with the company continuing to serve as the highest profile bunker supplier in Ghana, any boost to local production and fuel availability can only be to its benefit.

With such a mixed picture and complex set of competing pressures in West Africa as a whole, and the increased demand for African fuels from Europe, the ports of the Canary Islands on the border between the



Carlos E. González Pérez

latter and the former hold somewhat of a unique position. And with the islands keen to boost their profile as a bunkering and cargo hub, they should be well equipped to take advantage of it. *World Bunkering* spoke to Carlos E. González Pérez, president of the Port Authority of Tenerife, to find out how things currently stand on the ground.

WB: The last year has been a challenging one, given spikes in oil prices and changes in demand and trading patterns. Have Tenerife's ports managed to handle these challenges well?

CGP: Undoubtedly it was a difficult year, but despite this at Ports of Tenerife we supplied fuel to more than 4,000 ships, 19% more than in the previous year. Furthermore, this figure is even higher than the one achieved in 2019, the pre-COVID year, when 3,871 ships were supplied with fuel at our ports. As a result, we went from supplying 373,000 tonnes of fuel in 2021 to 476,000 in 2022, a 27.7% increase. These upward trends were also evident in the number of foreign trade vessels that called at our ports, which increased by 50% compared to 2021, with nearly 1,200 units, and consequently in the total traffic tonnage with which we closed the year, surpassing 12.2 million tons.

WB: West Africa has been steadily becoming more competitive in recent years. Does your position almost at the

junction between Africa and Europe give you an advantage in that respect?

CGP: Certainly, our strategic location as a nexus between three continents gives us a competitive advantage that we want our clients to benefit from, mainly by boosting the commercial routes that pass through our ports. In this regard, I consider the spectacular increase that we have recorded in transit TEU to be especially noteworthy; we saw only 12,500 units in 2019 and have already surpassed 66,000 in 2022.

Thus, the Port of Tenerife is increasingly becoming an international redistribution centre for goods mainly bound towards West Africa, with direct connections to most of the coastal countries in this region, from Morocco to Nigeria, passing through Mauritania, Senegal, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Benin, and the Ivory Coast.

Thanks to this privileged location, the Ports of Tenerife are also positioned as a hub for naval repair services for shipowners or vessel owners who require assistance on the West Coast of Africa, ensuring comprehensive attention for any type of fleet. Tenerife has over 60 experienced companies that provide the highest quality, competence, and efficiency in ship repair services and required technical assistance.

Both Grimaldi Lines and Maersk Line have been increasing their international transit calls in our port since 2019, and the volume of goods moved reached over 1.3 million tonnes of transshipment cargo between 2019 and 2022.

It should also be noted that we are a European port in Africa, which also benefits us from the European legislation applied to our ports, with very attractive tax incentives in the Free Trade Zone and Canary Islands Special Zone for new companies established here.

WB: Tenerife is obviously a major cruise destination, and the cruise industry took a long time to return to operations following the pandemic. How much of an impact has it been to see normal service resume?



CGP: The Ports of Tenerife launched successful pilot tests at a European level, along with Las Palmas Ports, between October 2020 and June 2021, to reactivate cruise traffic in the Canary Islands. It was later demonstrated that the specific COVID health protocol that emerged from this experience served as the basis for the rest of the Spanish ports to start cruise activity, a sector that is already a major part of tourism in our region. Currently, we are once again occupying a leading position nationally in the movement of cruise passengers, with 760,000 tourists at the end of last year. We officially placed among the top five port authorities in the country for highest growth in this category in 2022. It seems that the pandemic is finally behind us for our ports, and this year we hope to surpass the 700,000 cruise passengers registered last year, as the shipping companies that dock at our ports begin to increase the maximum passenger occupancy on their ships.

WB: What are your hopes for business in the coming months? Are there any particular opportunities Tenerife's ports would like to take advantage of, or ways the market could improve?

CGP: Our vision is to continue driving the transition towards newer, more environmentally friendly fuels and to facilitate compliance with increasingly stringent sustainability requirements for ships, while positioning our ports as leading providers of clean energy.

The efforts in this area started in 2019, when our ports became pioneers in conducting ship-to-ship operations to supply LNG to the largest cruise ships calling or based in the port of Santa Cruz de Tenerife.

Back to cruise traffic, and as all of our islands have a lot to offer to this tourist segment, at the Port Authority of Santa Cruz de Tenerife, we aspire to work to increase services for cruise passengers. We are progressing in a project that will offer them the possibility of taking tourist flights by seaplane departing and arriving at the port of Tenerife, which will be the first in Spain to offer such a service.

But there is much more. We are called to play an important role in the development of projects and technologies related to the decarbonisation of maritime transport. We already offer regular passenger traffic

vessels the possibility of connecting to the port's electrical grid, thus reducing the use of fossil fuels, and acoustic pollution and direct CO₂ emissions into the atmosphere. We were pioneers in this service at the national level, and it will also be extended to cruise traffic initially in the port of Tenerife.

On the other hand, at the port of Granadilla, a facility that will be the key to decarbonisation in the Canary Islands, there are investment commitments of around €615 million, with 2% guarantees already provided. Among the proposed projects is a natural gas and green hydrogen power plant, the installation of a floating liquefied natural gas storage unit, and the installation of the first offshore wind farm in Spain, consisting of five 10 MW wind turbines capable of generating up to 50 MW of power.



Ghana is enduring a tough time, but Tema remains a key fuel port. ©USN



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IndianOil (Mauritius) Ltd is a fully owned subsidiary of IndianOil Corporation Ltd. As a major player in the bunkering business in Mauritius, IOML is widely known for its strategic location in Port-Louis and excellent bunker infrastructure for supplying products via both barge and pipeline

Bunker Fuel Grades

- Intermediate Fuel Oil (IFO) 180 centistokes (RME)
- Marine Gas Oil (MGO) (DMA)

SERVO Marine Lubricant Grades

- **SERVO** Marine 0530
- **SERVO** Marine K1030, K1040
- **SERVO** Marine K3030, K3040, K4040, 4050 M, 7050
- **SERVO** Pride Supreme / Pride XL 15W40
- **SERVO** Hydraulic Oils System HLP 32,46,68,100
- **SERVO** Wire Rope Grease COAT 120, Grease Ep2
- **SERVO** 2T OBM (Outboard Motors)





SOUTHBOND SHIPPING AGENCY LTD (SSAL)

YOUR TRUSTED SHIPPING AGENCY

World Bunkering recently spoke to Gulshan Jugroo from Southbond Shipping Agency Ltd to discuss how recent world events have affected them and how they are navigating these times.

WB: Russia's invasion of Ukraine has caused a spike in oil prices, as well as shifts in global trading patterns and supply-demand, that doesn't show much sign of easing any time soon. With Mauritius on the main Asia-Africa-Europe trade rather than northward through Suez, but at the same time a developing bunker hub, has SSAL and Mauritius seen any impact on demand or shipping levels from oil price shifts and other changes?

GJ: Yes, SSAL's clients have been greatly affected by the spike in prices. More importantly many of our European clients with Russian flag vessels have been penalized by physical bunker supplier with European Principals who refuse to service any Russian flag vessels. Our clients hence skipped Port Louis to other ports where they would be serviced.

WB: On a very broad global level, shipping traffic and trade seems to have largely recovered from the worst of the pandemic, though some of the main Asian port states have seen fresh waves of cases. Has traffic and demand for ship services on a local level recovered too, though, or are there still difficulties to overcome?

GJ: Yes, definitely Port Louis is seeing more traffic in port activities since the end of the pandemic. Port authorities have also eased up on restriction and our clients are slowly making their way back.

WB: What do you think the overall outlook for the coming months is? Are there any particular challenges or opportunities on the horizon?

GJ: Activities in Port Louis will continue to grow steadily. Port Louis is still gearing up to be a bunker hub with major international players. Although Covid-19 has showed down the spike of interest which was there before the outbreak.

As far as SSAL is concerned, the next coming months are quite exciting as our clients are coming back more often to Port Louis for crew changes, provisions, provision of private maritime security services. The challenges remain, of course, flight connectivity and bunker & provisions prices.

Flight connectivity seems to be getting better as more and more destinations are being served from Mauritius. Bunker prices is dependent on world market and physical suppliers to price their products against neighbouring ports.

We also have to note that the US Dollar has taken a big jump with the devaluation of the Mauritian rupee.

This has an impact on all provisions being imported by ship chandlers.

www.ssalmru.com



PORTS OF TENERIFE: THE WEST AFRICA GATEWAY

Tenerife is a gateway to three continents thanks to its privileged geographical location

This strategic position in the Atlantic Ocean, located amid the major trade routes, allows the island to offer a wide range of services for bunkering supply, offshore projects and repairs, containerized and general cargo transshipment and, of course, for the cruise and tourism industries.

The Port Authority of Santa Cruz de Tenerife is the public body in charge of the management of a total of six ports in the western province of the Canary Islands, among them those located in Santa Cruz and Granadilla, being Santa Cruz the main hub in the province handling different types of maritime traffic, and Granadilla the most recent and relevant development in terms of port infrastructure in the Canary Islands in recent years.

Historically, the Port of Santa Cruz de Tenerife has been a key port of call for bunkering supplies, ranking among the top 5 Spanish ports in 2021 and with an excellent forecast and challenging opportunities for the upcoming years. The Port Authority is also fully committed to further developing the bunkering operations and have approved attractive discounts off the ship tax of up to 30% for bunkering only operations.

And even not only that: our port has modern and safe means to carry out these operations, both at berthing points and for ships at anchor. Various types of fuel can be supplied 24 hours a day and 365 days a year thanks to our weather conditions and anchorage area.

Anchorage area and fuel available

The anchorage area of the Port of Santa Cruz de Tenerife is located in the Northeast of the port. That is, about five miles from the green light of the East Dock.

This area is well sheltered and protected from the prevailing winds in the Canary Islands and counts with natural protection thanks to the Anaga mountain range, offering outstanding conditions for bunkering supply and other operations at anchor. Also the conditions of its sandy bottom with hardly any obstacles are highly appreciated by seafarers from all over the world.

Thanks to the excellent sea and weather conditions the anchorage area ensures a 98% operational rate for bunkering operations.

But not only excellent natural conditions play a role: Tenerife and its province make available a first class port infrastructure, with more than 17 kilometres of quays and drafts of up to 24 metres

There is also a wide range of fuel available, such as MGO, VLSFO, HSFO, IFO's, VLSFO, GO's, and LNG.

Energy transition

Our vision is to keep promoting switching to more environmentally friendly types of fuel and make easier for ships to meet the increasingly demanding sustainability requirements, and to position our ports as safe suppliers of cleaner energies.

Our efforts in this line go back at least as far as the 2017-2018 season, where our ports were pioneers in carrying out ship-to-ship operations for the LNG supply to the biggest cruises using Tenerife as port of call or home port.

Also, the aforementioned port of Granadilla presents itself a strategic logistic enclave for the energy transition: LNG, hydrogen and offshore wind, increase the importance

of the island as a key logistic hub in this Mid-Atlantic area.

European Legislation and tax advantages for industry operators

Finally, it should be noted that Tenerife has always had differentiated tax benefits within Spain and the EU. This unique economic and tax system provides excellent conditions to foster investment and trade.

Its economic and social development as a member of the European Union, make it the best destination for doing business, and offers a safe, stable and fully reliable economic framework.

Investors count with tools such as the Tenerife Free Zone (ZFT) or the ZEC (Canary Islands Special Zone), whereby companies meeting certain requirements and registering within the ZEC automatically and permanently benefit from a 4 % corporate rate applied on the gross tax base on operations carried out materially and effectively in or from the Canary Islands, among other advantages.

<https://www.puertosdetenerife.org/commercial@tenerifeport.org>





PREMIUM FUEL

FASTER, CLEANER & MORE COST EFFECTIVE

IndianOil (Mauritius) Ltd (IOML) is a fully owned subsidiary of Indian Oil Corporation Ltd. IOML was incorporated in Mauritius in 2001 and began physical operation in 2004

IOML currently has a total of 31 filling stations across the island with the latest one commissioned in March 2023.

IOML is the leading supplier of Jet Fuel in Mauritius. Within a short span of time, it has become the most preferred aviation fuel supplier in Mauritius.

BUNKERING

IndianOil (Mauritius) Ltd is firmly present in the bunkering segment and has been successfully supplying vessels routing through the Indian Ocean specifically from Port Louis. With the objective to ensure the highest quality, the fully automated State of the Art Terminal has dedicated pipelines for each type of fuel it handles.

For bunkering IOML has laid 250 mm diameter pipelines for both Fuel Oil (VLSFO) and Gas Oil (MGO) on its quays of operation. IOML has installed high-capacity pumps that can deliver Fuel Oil (180cst) at a rate of 125 cubic M/Hr, and Marine Gas Oil at a rate of 75 cubic M/Hr reducing bunkering time.

Marine Lubricants

Apart from the usual SERVO Marine grades marketed in Mauritius, IOML is also marketing IMO 2020 compliant grades of SERVO lubricants. The international Maritime Organisation (IMO) has mandated a global 0.5% cap on maximum level of Sulphur in Marine Fuel since January 2020.

SERVO is the sixth oil brand in the world and the first from the Asia-Pacific region to have been approved by marine engine builders like MAN B&W and Wartsila-Sulzer. IOML markets the below different grades of SERVO Marine Lubricants on any quay in Port-Louis. Main Engine Oils, Auxiliary Engine Oils, Hydraulic Oils and Compressor Oils can be arranged.

SERVO Marine Lubricant Grades

- SERVO Marine 0530
- SERVO Marine K1030, K1040
- SERVO Marine K3030, K3040, K4040, 4050 M, 7050
- SERVO Pride Supreme / Pride XL 15W40
- SERVO Hydraulic Oils System HLP 32,46,68,100
- SERVO Wire Rope Grease COAT 120, Grease EP2
- SERVO 2T OBM (Outboard Motors)

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GROUP MAIL: bunkers@ioml.mu
Website: <http://www.ioml.mu/>

The Barge characteristics are as follows:

Name	ASK Progress
Flag	Mauritian
Classification Society	Bureau Veritas
Capacity	5,000 MTs
FO	3,800 MTs
MGO	1,200 MTs
Discharge Rate	
FO	400-500 cbm/hr
MGO	250-300 cbm/hr
LOA	103 Metres
Draft	8 Metres

IOML also delivers ex-pipeline at various Quays (Q 1, 2, 3 & 4 & NOJ)



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A LEGAL PERSPECTIVE ON ETS

Partner Nick Walker and Senior Associate Valentina Keys at law firm Watson Farley & Williams (WFW) have written a paper on the legal implications the EU's Emissions Trading Scheme (ETS). The following is a shortened version of the paper, reproduced with permission

On 18 April 2023, the European Parliament voted in favour of the legislative amendments published on 8 February 2023 to the EU Emissions Trading Directive (the Amendment) to include the maritime sector in the EU's Emissions Trading Scheme ("EU ETS"). The inclusion of the maritime sector in the EU ETS has been on the horizon for at least two years while the final form of the proposed amendment to Directive 2003/87/EC (the "ETS Directive") establishing a system for greenhouse gas emission allowance trading within the EU had gone back and forth between the European Commission, the Council of the European Union and the European Parliament.

At long last those stakeholders can plan their operations with a greater degree of certainty and some of the multifaceted ramifications of this development are set out below. The EU ETS will be extended to cover maritime transport in respect of (i) 100% of the emissions from intra-EU maritime voyages; (ii) 100% of emissions from ships at berth in EU ports; and (iii) 50% of emissions from voyages which start or end at EU ports, where the other destination is outside of the EU."

Update on carbon trading

Carbon allowances hit an all-time high in mid-February 2023 by trading at €101 per carbon tonne. As of 18 April 2023, allowances were trading at €95.31/tonne. The secondary market for carbon

is therefore both lucrative and costly depending on the carbon intensity of an entity's operations. Emissions will be verified in compliance with data produced under the EU Monitoring, Reporting and Verification Framework (MRV) for carbon dioxide emissions.

Preparing for 2024

Ships above 5000 GT and transporting cargo or passengers for commercial purposes ("Maritime Transport") will be covered from 1 January 2024, while ships between 400 and 5000 GT fall outside of the EU ETS. However, in line with the inclusion of these exempt ships under the EU MRV from 2024, the Commission will review the possibility of including the exempt ships by the end of 2024.

The Commission will then present a report to the EU Parliament and the Council by the end of 2026 on the possibility of including exempt ships within the EU ETS.

The Amendment also provides that if the IMO fails to introduce a global market-based mechanism (MBM) similar to the EU ETS or in the form of a global carbon levy then the Commission will consider whether to capture more than 50% of international emissions from ships after 2028. This aspect of the Amendment has been watered down from the originally proposed 100% of international emissions being captured from ships in the absence of an IMO MBM.

The Amendment also amends the definition of "port of call" to exclude a stop at a neighbouring container transshipment port less than 300 nautical miles from a port inside the EU, therefore preventing ships from calling at a nearby non-EU port and surrendering a much smaller amount of allowances in respect of the short voyage from the nearby port to the EU. It is expected that the Commission will publish a list of such neighbouring ports through implementing acts by the end of 2023 and these will be updated every two years.

The Amendment also contains some geographical exemptions, for example a voyage between a port in an outermost region of a Member State to another port within the same Member State.

The emissions covered from 2024 will be carbon dioxide from Maritime Transport. However, from 1 January 2026, emissions under the EU ETS will be extended to cover methane and nitrous oxide.

Phased surrender and allowances

A shipping company will be required to surrender allowances by 30 September of each year incrementally as follows:

- (i) 40% of emissions in 2025, for its 2024 verified emissions;
- (ii) 70% of emissions in 2026, for its 2025 verified emissions; and
- (iii) 100% of emissions in 2027 (and thereafter), for its 2026 verified emissions (and each year thereafter).



In June 2022, it was proposed that as of 2024, 100% of the verified emissions of shipping companies reported for the previous year would have to be surrendered. The reintroduction of the incremental phase-in is intended to allow the maritime sector to adjust to its obligations and incorporate these into future operations more smoothly.

The Amendment proposes that 78.4 million allowances will be allocated to Maritime Transport by auction and, unlike aviation, there will be no free allocation of allowances. Surplus allowances not yet auctioned will be cancelled rather than available for trading on the secondary market.

Who is responsible for compliance?

The “shipping company” in the Amendment (in line with the EU MRV) is defined widely as the shipowner or any other organisation or person, such as the manager or bareboat charterer of a ship, that has assumed (contractually) the responsibility for the operation of the ship from the shipowner and that, on assuming such responsibility, has agreed to take over all the duties and responsibilities imposed by the International Management Code for the Safe Operation of Ships and for Pollution Prevention. This is usually the entity responsible for the choice of fuel, route and speed of the ship – i.e. the factors affecting the emissions of the ship – however arrangements may vary depending on what has been agreed in the ship management services agreements and/or the charter parties applicable to the ship.

Early preparation ahead of the 2024 start date is key. Significant emissions reporting procedures will have to be put in place, potentially at significant cost, to prepare for and manage the administrative aspect of EU ETS compliance.

Article 3gc cements the polluter pays principle in the EU ETS by empowering ship owners with the right to recover EU ETS compliance costs from the entity that is ultimately responsible for the operation of the ship. This applies where there is a contractual arrangement between the shipping company (such as a ship manager) and the entity ultimately responsible for the purchase of the fuel and/or the operation of the ship. “Operation of the ship” means

determining the cargo carried by, or the route or speed of, the ship.

The Amendment imposes an obligation on Member States to transpose the Amendment into national legislation by 31 December 2023 which will mandate the EU ETS costs clause. This is intended to ensure that the shipping company is reimbursed by the entity responsible for the operation of the ship for the costs arising from the surrender of EU ETS allowances. The Amendment calls for a mandatory EU ETS costs clause to be introduced into contractual arrangements.

However, it is unclear how this will work in practice – particularly if the parties to a contract fail to include an EU ETS costs clause or include a provision that does not satisfy the mandatory requirements. Further uncertainty stems from the fact that most international maritime management and employment contracts are governed by English law, which – since Brexit – falls outside the EU sphere.

What is certain, however, is that regulatory responsibility sits with the shipping company. Whilst a contractual mechanism is provided for reimbursement, a shipping company cannot contract out of a liability for compliance with EU ETS – the shipping company that registers as an EU ETS participant in the EU Registry will remain the responsible entity for surrendering allowances and overall compliance with each applicable Member State’s national law. This means that even though liability can be apportioned contractually, ultimate responsibility to the EU lies with the registered shipping company, which is, therefore, taking commercial risk on its counterparties.

Innovation Fund

Previous proposed amendments to the ETS Directive considered establishing an Ocean Fund dedicated to supporting the transition to energy efficiency and climate resilience in the EU maritime sector. The spirit of the Ocean Fund has been wrapped up into the existing Innovation Fund under the Amendment but with a focus on innovation in low and zero carbon technologies that would contribute significantly to

decarbonisation of the maritime sector and to which the Commission would give special attention to in its call for proposals. The fund would also cover investment in the energy efficiency of ships, ports and short-sea shipping and in sustainable alternative fuels. The dedication of 15% of the fund to contribute to the protection, restoration and better management of marine ecosystems impacted by global warming, however, has been scrapped.

The Amendment proposes allocation of an additional 20 million allowances specifically for maritime for the period up to 2030 (bringing the total to 80 million allowances which could be auctioned and 345 million which could be allocated for free). The funds raised from the auction of such allowances will be used for the purposes referred to in the preceding paragraph. This is a significant drop from the proposal under the Ocean Fund to earmark 75% of revenues from allowances under the EU ETS and the FuelEU Maritime initiative to decarbonise the maritime sector.

Implications

Early preparation ahead of the 2024 start date is key. Significant emissions reporting procedures will have to be put in place, potentially at significant cost, to prepare for and manage the administrative aspect of EU ETS compliance.

From a risk management perspective, shipping companies that put in place new data management systems, which take on or train designated personnel and which include robust costs recovery and other protection mechanisms in their contracts will be best prepared for the 2024 start date. Careful consideration should be afforded to all operational contracts (existing and future), including ship management, service and employment agreement terms. This will necessitate an assessment of existing arrangements from a fresh perspective in addition to the need to take these factors into account in the future.

A full version of this paper and other articles on the ETS are available of the WFW website (<https://www.wfw.com/>)

MANAGING BIOFUELS

The use of biofuels instead conventional marine fuels is growing quickly, but there are challenges when using them onboard ships

As a European Maritime Safety Agency (EMSA) report noted in 2022, the possibility to replace conventional petroleum-refined hydrocarbons with biofuels without substantial modifications (and in some cases, without any modification) to engines, fuel tanks, pumps or supply systems, may offer an immediate, attractive and cost-effective solution, for the existing fleet.

That is reflected by the increasing number of ships taking on biofuel. However, as a comprehensive 2017 report by the University of Copenhagen for the International Energy Agency (IEA) noted, biofuel does present management challenges.

These include a tendency to oxidize and degrade during long-term storage of 6 to 10 months. The report noted: "As biofuels are derived from natural sources, they tend to degrade in water faster than conventional fossil-based fuels. This is positive in case of an oil spill, but would cause problems for long-term storage of the fuel."

Fuel lubricity and conductivity are also areas of concern. Fuel lubricity is important in a diesel engine as the moving parts are often lubricated by the fuel. On the other hand, as the report also noted, this is also the case for ULSGO, which requires different additional lubricity additives. Even though biodiesel acts as a good lubricant, it loses its lubricity over time due to oxidation of unsaturated molecules present in the fuel and increased water from moisture absorption.

The report also points out that electrical conductivity is important for fuel as static charges can build up as the fuel is pumped through pipelines and so requiring the use of anti-static additives to prevent static discharge during transfer, transport, and pumping.

More recently, in February this year, classification society DNV produced a paper entitled Use of biofuels in shipping. It notes: "The use of biofuels or biofuel blends is

one of many ways to comply with the IMO's strategy on the reduction of GHG emissions from ships, and DNV has seen an increasing interest in these new fuels."

DNV notes some possible consequences from the use of biofuels:

Microbial growth: Bacteria and mould may grow, causing filters and piping to clog.

Oxygen degradation: Biodiesel could form deposits in piping and engine, compromising operational performance.

Low temperature: The higher cloud point may lead to the clogging of filters at lower temperatures.

Corrosion: Some types of hoses and gaskets could degrade, leading to loss of integrity, and interact with some metallic material to form deposits.

Possible degeneration of rubber sealings, gaskets and hoses: Important to verify that these components can be used together with biofuel.

Conversion: When switching from diesel to biofuel, fuel filters can become clogged.

Meanwhile, the Indian Register of Shipping has issued a Technical Circular (No: 058/2022) on the *Use of Biofuel and its Blend as fuel on board Indian Flagged Ships*. This follows an Indian government decision to allow biofuels on vessels flagged in the country.

Among several requirements listed, a Vessel Specific Risk Analysis is to be carried out for use of bio-fuel blends. It also cautions that the significant presence of fatty acid methyl ester (FAME) requires additional fuel management focus on addressing the propensity of FAME to retain water, accelerate oxidation, microbial growth, and filtration problems. It advises long term storage should be avoided during the trial phase. Settling and service tanks should be regularly drained of water. Tank and fuel system materials (any tank coatings used that may not be compatible to substances such as FAME) should be assessed for suitability of storage and handling of this fuel. It is advisable to ensure the tanks to be loaded with the Bio-diesel are emptied, and cleaned of any excess sludge.

IRS says that a shipboard operational procedure is to be prepared and can part of the safety management system (SMS) manual and is to include procedure for procurement, availability test result, storage of biofuel blend, frequency of cleaning of fuel filters, inspection of storage tanks, monitoring of transfer lines and associated piping & fittings and any other requirements specified by the manufacturers of engines/equipment. The procedure is to also include logging/monitoring of all relevant engine parameters, maintenance, and checks in consultation with equipment manufacturer.

The circular also instructs that no Biofuel blend is to be used for emergency equipment including lifeboat engines, emergency generator engines or emergency fire pump motors.

In another development, equipment manufacturer Alfa Laval is now producing biofuel-ready separators. The company notes that biofuels such as HVO (hydrotreated vegetable oil) and FAME can be used by diesel engines without major engine modifications. "They can be a carbon-neutral alternative if produced from the right biomass, Alfa Laval notes, "but they must still be cleaned effectively to prevent performance issues and expensive engine wear."

Claiming "a marine industry first", Alfa Laval says its high-speed separators are now compatible with HVO (EN15940) and with FAME (EN14214 or ASTM D6751) blends comprising residual fuel and/or distillate.



Alfa Laval's biofuel-ready separator. ©Alfa Laval

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ADDING CARBON CAPTURE

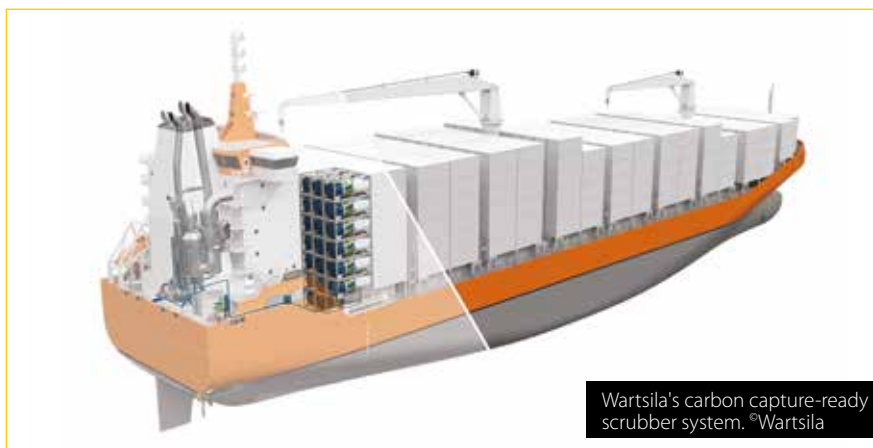
Shipowner orders SOx scrubber with potential for retrofit to remove CO₂

In what could be the start of a trend, an undisclosed shipowner has ordered carbon capture and storage-ready scrubber systems (CCS-ready) scrubbers from Finnish technology group Wärtsilä. Although announced recently, the order was placed in November 2022 and the delivery is expected to take place in 2023.

Wärtsilä is currently testing its CCS system at 70% capture rate and a pilot installation will take place within the next twelve months

Four 8,200 TEU container vessels, being built at an Asian-based yard, will be fitted with Wärtsilä's CCS-Ready 35MW scrubber in an open loop configuration.

Wärtsilä says the scrubbers are called CCS-Ready because, as part of their installation, it will perform additional design and engineering work to ensure that future retrofits for a full CCS system on the vessels have already been accounted for during the newbuilding construction stage. This includes ensuring adequate space for the future installation of a CCS system, incorporating considerations for minimising idle load and optimising



Wärtsilä's carbon capture-ready scrubber system. ©Wärtsilä

utilities and preparing the control and automation system accordingly. CCS-ready scrubbers will also be designed for integration with a particulate matter filter.

The scrubber manufacturer says that having a CCS-Ready solution assures that the undisclosed shipowner has continued regulatory compliance for SOx emissions today and opens the door to smooth CCS system adoption in the future. It adds that, by installing scrubbers that have been designed with the space and capabilities to have a CCS unit added, it is enabling shipowners to future proof their existing

assets, while remaining competitive and compliant.

Scott Oh, Director at Wärtsilä's Exhaust Treatment Asia, said: "We are very excited to announce this world-first order for our CCS-Ready scrubber solution. By investing in a CCS-Ready scrubber, ship owners will future proof their assets and enable a smooth transition to CCS adoption once the technology is mature in the very near future. CCS is one of the key solutions to enable maritime decarbonisation in a short time frame, and we look forward to progressing our technology further."

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PROP PITCH AND ENGINE POWER OPTIMISATION

Propulsion optimisation system achieves “over 10% fuel savings”

According to two tanker companies; Norwegian Rederiet Stenersen and Swedish Ektank, their vessels fitted with Yara Marine Technologies' propulsion optimisation system FuelOpt have achieved fuel savings of 10% and above.

Yara says the claim has been independently analysed and confirmed by the Finland-based software and data services company NAPA. The findings documented a 17.9% increase in fuel savings for Stenersen's Sten Bothnia over 12 months, while Ektank's *Ektford* achieved 10.3% fuel savings over 24 months.

The tankers involved in the study by NAPA were equipped with controllable pitch propellers, and the main savings from the FuelOpt system on these vessels came from efficiency gains through dynamic optimization of propeller pitch and engine power.

Compared to a combinator curve, where each lever position is used for setting a predetermined pitch and RPM combination, FuelOpt regulates propeller pitch and engine power separately and dynamically to operate the engine and propeller at optimal conditions. This means the system is able to combine any pitch with any RPM, and allows the system to utilize this flexibility to optimize energy use by achieving the maximum amount of propeller thrust with the minimum amount of power spent.

Yara says its system allows the bridge team to have direct control of the vessel's speed, fuel consumption, or engine power – or a combination thereof – via an intuitive and easy-to-use panel on the bridge. Once activated, the system controls the vessel's propulsion based on the commands set by the crew, and also adapts propulsive power to changing environmental conditions, thereby removing costly variations in speed and power. This increases operational efficiency and results in real-time fuel savings and emissions reductions,



both for vessels with controllable pitch propellers and vessels with fixed propellers. Depending on the trade, operating conditions, and vessel setup, vessels with controllable pitch propellers typically see fuel savings between 5% and 15%.

Accurate measurements

US-based technology company FuelTrust has announced results of its work with Ridgebury Tankers to validate emissions reductions for its fleet. Using FuelTrust's AI technology, Ridgebury has established a carbon baseline for its suezmax tanker *Ridgebury John Zipser* and assessed improvements in the vessel's performance following a retrofit in 2019. FuelTrust says this demonstrated return on an investment in scrubbers as well as carbon savings.

Ridgebury appointed FuelTrust to assess fuel and operations data from past years for its tanker, comparing month-by-month and year-by-year performance to establish a baseline for carbon emissions, from which they could measure vessel improvements. The analysis also showed the value of a scrubber retrofit for the vessel and the impact of HFO fuel quality on carbon emissions.

Analysis using FuelTrust's AI-based Carbon Baseline solution has, it says, helped Ridgebury to understand, to the kilogram, the entire emissions stack of the vessel, covering CO₂, NOx, SOx, CAP and HAP emissions. Ridgebury has been able to analyse the effects on vessel performance of installing a scrubber, a silicone hull coating, and buying higher quality fuels.

FuelTrust uses its patented artificial intelligence technology to trace the links between fuel bunkers at source, through combustion and subsequently emissions. This “quickly and reliably delivers insights into the quality, density, GHG emissions, and the provenance of fuel”.

The company uses AI-based virtual models of engines, scrubbers, coatings, and other clean technology when it analyses ship performance. This allows a particular virtual technology to be switched on or off and observe outcomes for past and future investments. It can therefore provide insights into investments in technology, changes to operational practices and fuel choices, and accurately model the benefits of combining these decisions.

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The Turkish market has had a rough year ©Hans Birger Nilsen/CC-BY

ROAD TO RECOVERY

The invasion of Ukraine continues to impact the Eastern Mediterranean, but the region is also looking to the future, John Rickards writes

Probably no market outside the Black Sea itself has been as affected by the ongoing war in Ukraine as the eastern Med, with traffic through the Bosphorus crashing last year in the wake of Russia's invasion and a degree of oil cargo chaos caused by sanctions and insurers and financiers pulling support for anything connected with Russian products. A demand by the Turkish government back in December requiring ships to have P&I cover to remain in place under "any circumstances", including breach of international sanctions, was roundly criticised and rejected by insurers. The situation in Turkey was further complicated earlier this year by the disastrous earthquake in Hatay, in the far southeast of the country.

To get a clear idea of how things stand now, *World Bunkering* spoke to Energy Petrol CEO Mustafa Muhtaroglu.

WB: Turkey's had to contend with the earthquake in the south of the country and restrictions on oil cargoes from Russia - amongst other things. How has this impacted business, or the normal running of your bunkering operations?

MM: In both the last two years we've faced two big issues, both in February: the war near us started on 24.02.2022 and the big disaster earthquake happened on 06.02.2023, both of course affecting us very much.

We lost a huge number of people through the earthquake affecting 10-12 cities with some 13 million people living in them and producing over 10% of Turkey's GDP.

Furthermore, we have large industry there exporting serious amounts which has been interrupted for a while. In the meantime, it will cost us over 100 billion dollars to rebuild the area. I say we have to work more to recover soon.

Turkey does not apply any sanctions but cargo flow is of course very much affected by the current situation since banks are not paying for Russian cargoes. In the meantime, many European bunker traders have stopped supplying ships coming from or going to Russia, which has of course lowered demand.

All of these have very much affected the bunker industry in Turkey.

WB: Is Black Sea traffic still as heavily impacted by the war as it was this time last year, or have things like the grain deal improved matters at all?

MM: The war and the stoppage of Ukrainian ports have affected us very seriously. There used to be over 13,500 ships loading from Ukraine per annum who were our main clients in the Istanbul bunker market. We lost all of them. Lately, some ships are coming under the grain control agreement, but they can never compensate for business we lost.

Turkey is not applying any sanctions to these countries, however it's of course affecting business flow in the area. The bunker industry has been the most affected area by the war due to the sharp decrease in the number of ships coming from Ukraine. It has been a little bit

compensated by increasing traffic from Romania, Bulgaria, the River Danube and Georgia, but it can never create the same bunker demand for Turkey.

Grain corridor ships are bringing some demand but it has its own difficulties due to JCC control so it can never help to recover the demand we lost. Traffic from other ports have gone up, supporting our business, however total volume is dramatically down to 2.25 million tonnes from 2.5 million in 2021 and 3 million in 2018, the largest volume ever.

WB: How is the Turkish sector looking in general now?

MM: It's quite stable. The market has adapted to the new dynamics, waiting for things to normalise. We are very much looking forward to the end of war and the 2025 SECA application for the Mediterranean Sea.

WB: What do you see, or hope to see, in the coming months?

MM: No big surprises. We will try to overcome this period with minimum losses. Thankfully in the market in general margins are healthy so that we can keep surviving and looking forward to seeing the end of the war.

Meanwhile, Vitol Bunkers has announced that, through its affiliate Petrol Ofisi, it is now offering bunkering services in Turkey to its global shipping customer base. With a fleet of 16 barges, Petrol Ofisi makes more than 3,000 bunker deliveries each



Greek shipping groups are pushing for decarbonisation ©Herbert Frank

year. In a sign of optimism in the future of the country's bunkering market, the two companies say they are now "working in close alignment to provide bunkering and marine decarbonisation solutions to the world largest container liners, dry bulkers, oil tankers, LNG carriers, car carriers & cruise liners in Turkey".

Across the Aegean, Greek shipping is also very much looking forward, with many of its biggest players looking to push themselves to the front line of decarbonisation in the years ahead.

At the end of last year, the Union of Greek Shipowners came out in broad favour of the agreed form of the EU's Emissions Trading System, as it had largely been throughout the development of the ETS, but called for the expansion of measures to cover other parts of the industry, including bunker suppliers. In a statement it said: "The UGS is firmly committed to the decarbonisation of the shipping industry. To this end, it highlights again the importance of committing all the relevant out-of-sector stakeholders to this challenging undertaking. Effective mandatory measures for the other stakeholders, such as fuel producers and suppliers, are also necessary."

In late March this year, the UGS was similarly positive about the development of the EU Green Deal Industrial Plan, describing shipping's role in decarbonisation of European industry as "self-evident".

However, the UGS called for the plan to support alternative fuel development and infrastructure on an equitable basis as a matter of urgency, as well as greater consultation with the shipping industry. "The GDIP must cater for their speedy

and sufficient development and supply by out of sector stakeholders. Equally, implementation of the GDIP should not lead to distortion of competition and major inequities among EU Member States," the UGS said in a statement.

UGS president Melina Travlos continued: "Without shipping there can be neither green transition nor strategic autonomy for the EU. The path to the decarbonisation of our sector must be ambitious but also realistic. This is the absolute minimum to safeguard the international competitiveness and sustainability of EU shipping."

The Hellenic Decarbonisation Committee, a Greek and Cypriot industry discussion forum with an obvious focus and backed strongly by Italian class society RINA, is focusing more on the immediate term, though. At its most recent meeting, aimed mostly at addressing SEEMP and CII impacts on shipowners, RINA's deputy marine operations executive vice president Massimo Volta, said: "Decarbonization is not a theoretical exercise. We need feasible solutions in line with the feedback from shipowners, in respect to both the environment and the people involved."

HDC chair Ioanna Procopiou, CEO of Sea Traders and founder of Prominence Maritime, echoed this in its opening session: "Alternative fuels will not be the dominant solution during the transition period. We will need to look to other solutions, including carbon capture."

Giosuè Vezzuto, executive vice president marine at RINA concluded: "We do not know what fuels or technologies will become winning options for the future, but we need to develop now if we are going to meet targets in the future. The industry

cannot stand still and, indeed, as a class society, neither can RINA. We are working proactively to support the transition and facilitate approaches to safety and risk assessments as we wait for prescriptive rules to follow developments."

Fellow class society ABS has been touting the values of methanol as one of those winning options to Greek operators at its Methanol Forum in April. ABS' vice president of global sustainability, Panos Koutsourakis, said: "Methanol is increasingly being recognized as a compelling alternative pathway for owners and operators. With practical benefits related to ease of storage and handling, tank-to-wake carbon intensity reduction, as well as a pathway to carbon neutrality through green methanol, methanol presents an immediate and promising solution." ABS has been pushing methanol for a while now, and clearly sees the packed Greek shipping industry as a cornerstone of the adoption of those fuels.

The class society has at the same time also promoted drop-in biofuels as an easy way of improving a vessel's CII rating, this time to Cypriot industry leaders. ABS Vassilios Kroustallis described them as "a powerful new tool for shipowners and operators to accelerate fleet decarbonization and improve their CII trajectory today" - though he did also note that supply and regulatory questions still need to be addressed.

If green fuels - and despite the HDC's hedging of its bets, methanol from green hydrogen now looks like a clear front-runner - are to become a major factor of the eastern Med's fuel picture, particularly once the SECA comes into effect in 2025, production and supply infrastructure will have to keep up.

Here, the Suez Canal Economic Zone (SCZONE) and its developments around the Mediterranean end of the canal are hoping to bridge that gap.

SCZONE has been ramping up its interest in hydrogen production in recent months. Organisation chairman Waleid Gamal El-Dien led a delegation to Japan aiming to attract Japanese business earlier this year but also took the chance to meet with the chairman of Kawasaki Heavy Industries



The Med end of the Suez Canal could become a green fuel hub ©SCZONE

Yoshinori Kanehana specifically to discuss green hydrogen production and supply, as KHI has experience in the field across the board, from power generation to shipping.

“SCZONE has various available investment opportunities, especially in green fuel production, where we are going to establish a global centre for the production of green fuel and exporting purposes,” El-Dien said. “We are also focusing on future needs of applications for the use of green fuel within the local market as well.”

The trip also included visits to high-capacity water pump manufacturer Torishima with a view to installation as well as longer-term maintenance.

The Egyptian government has been very keen in the last couple of years to draw investment in hydrogen production, and that shows no sign of abating. SCZONE itself used its presence at last year’s COP27 talks as a springboard for inking several

agreements and ten final agreements in connection with alternative fuel production, though it’s remained a little coy as to with whom; it says it aims “to be the most important regional hub for green energy”. The two companies it did name as holding discussions with were Saudi Arabia’s ACWA Power group and India’s Acme Group for Renewable Energy, which it says aims to work with SCZONE for the production of green fuel.

“The steps and procedures which has taken by SCZONE towards the localization of green fuel industries are based on our readiness through robust infrastructure and proximity to renewable energy sources which are necessary for the industrialization process, in addition to the ports that will play a pivotal role in the Export and ships’ bunkering purposes,” El-Dien said.

SCZONE is also increasing its available port capacity. The Al-Arish port

development, aimed principally at dry bulk construction and stone goods for export primarily around the eastern Med, should be up and running from Q1 next year. According to El-Dien: “The development works achieved progress of many working companies, one of them is working on implementing a project to establish 6 silos to store black and white Sinai cement with a storage capacity of 75 thousand tons. During the next year 2024, it will reach 1.5 million tons, with a total investment cost of 830 million pounds. It is expected that revenues from trading ships in this project will achieve approximately 28 million dollars.”

The organisation is also building a new multi-purpose terminal and industrial zone in East Port Said with two different consortia. No timetable has been announced for the terminal.

“The East Port Said integrated zone is witnessing several development projects in the port and the dry bulk station project for grains, in addition to the vision for industrial development,” SCZONE said, “which [will make] the East Port Said Industrial Zone a distinguished location and qualified to be one of the most important hub of heavy industries in Egypt as well as one of the most important commercial [hubs] due to the potential of the port.”



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DERATING TWO-STROKE ENGINES

New system aims to extend the CII compliance lifetime of merchant vessels

Technology group Wärtsilä has introduced what it describes as a “new radical derating retrofit solution”. Wärtsilä Fit4Power is said to extend the Carbon Intensity Indicator (CII) compliance lifetime of an average ship by three to five years.

It says the retrofit solution enables shipowners to reduce the bore size of two-stroke engines by 25% while significantly improving combustion efficiency, which in turn reduces both fuel consumption and greenhouse gas emissions. Wärtsilä says this will improve the efficiency of their existing fleet, ensuring compliance with CII regulations and, it claims, future-proofing assets against future environmental measures.

As a pilot, Wärtsilä 2-Stroke Services installed Wärtsilä Fit4Power on a container ship with a large-bore two-stroke main engine last year. According to Wärtsilä, the results proved that a vessel with this kind of main engine, that is now oversized for today’s operating patterns, can save 2,000 tonnes of fuel and reduce at least 6,000 tonnes of CO₂ emissions annually thanks to this retrofit solution. Fit4Power received certificate of product design assessment from American Bureau of Shipping (ABS) in 2022.

Wärtsilä asserts that, while conventional derating merely tunes engines for operation at lower loads, its system involves reducing the bore diameter of engine cylinders and introducing a new combustion chamber design, enabling the engine to run at optimal loads and with state-of-the-art fuel efficiency. The higher compression ratios and firing pressure achieved mean that the modified engine offers far greater efficiency than either conventionally derated engines or unmodified engines run at much lower loads.

Without modification, according to Wärtsilä, more than 80% of the global merchant fleet could fall into the lowest CII rating by 2030. This would require

mandatory corrective action and risking losing business to more efficient vessels. Improving engine efficiency and optimisation with solutions such as Fit4Power is one of the simplest and most cost-effective means of reducing emissions, according to Wärtsilä.

The new solution has been designed to be compatible with Wärtsilä Fit4Fuels (Wärtsilä’s Two-stroke future fuels conversion platform), that enables vessels to use LNG, methanol and ammonia fuels.

Injection systems for new fuels

German engine injection system manufacturer Woodward says it is developing a comprehensive new range of injection systems applicable for new and future-fuel powered engines, including engines running on methanol and ammonia.

According to Woodward, the new systems are being designed to support the global energy transition to low carbon fuels. The comprehensive portfolio of injection systems for P2X fuels in large engines will range from 100 kW/Cylinder to over

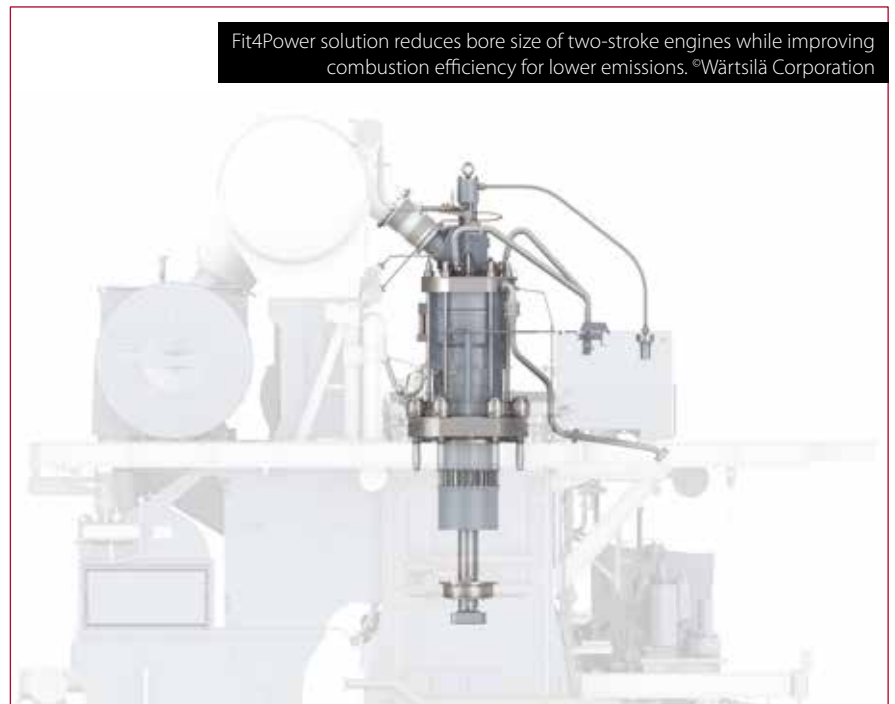
1000 kW/Cylinder – to enable all possible combustion concepts.

For applications that require the highest levels of power density and efficiency, Woodward is developing a High-Pressure Dual-Fuel (HPDF) platform for methanol and ammonia injection with full diesel backup capability.

Woodward claims: “The new range of direct solenoid actuated injection systems is perfectly tailored to meet market requirements for simpler and retrofitted systems, including methanol injection systems for Port Fuel Injection (PFI) and Direct Injection (DI). The injectors are designed for optimal atomization of the fuel to enable good mixing and minimize wall wetting.”

For gas engines that are adapted to run on gaseous P2X fuels such as hydrogen and ammonia, Woodward’s SOGAV gas admission valves are also being optimised to withstand the properties of these fuels such as poor lubricity, corrosion behaviour and hydrogen embrittlement.

Fit4Power solution reduces bore size of two-stroke engines while improving combustion efficiency for lower emissions. ©Wärtsilä Corporation



ENVIRONMENTAL NEWS

Our regular round-up of shipping's 'green scene'

Political instability “threatens decarbonisation”

A new report from the International Chamber of Shipping (ICS) warns that political instability is a “risk multiplier” that is “putting a successful green energy transition in maritime in jeopardy”.

The *ICS Maritime Barometer Report 2022-2023* highlights that there are changing attitudes towards the fuels of the future from industry leaders, but reliance on fossil fuels remains high without global political and regulatory clarity. It says that “clear direction from governments is needed to accelerate the green energy transition”.

The report finds that uncertainty over fuel availability and infrastructure puts at risk ambitions to meet decarbonisation targets, reinforcing the need for a clear plan of action to mitigate risk.

ICS says that its inaugural report is the first full-scale annual survey of risk and confidence among maritime leaders. It adds that more than 130 ‘C-suite’ decision makers, half of them shipowners and approximately 35% consisting of ship managers, provided insight into the issues preoccupying them and how they are placed to manage their impact.

According to ICS, respondents’ views on decarbonisation factors highlight a maturing of the shipping industry’s understanding of the complex implications of the energy transition. While the practical implications of new greenhouse gas reduction regulations have continued to be the biggest concern for two years in a row, respondents demonstrated evolving opinions on the fuel landscape. This includes a shift in attitudes towards wind and nuclear power as potential, viable energy sources.

Green lobby supports EU fuel policy, until it reads the small print

When, in March, all the EU relevant bodies and member states agreed on the details of the bloc’s FuelEU Maritime regulation, environmental campaign group Transport & Environment (T&E) applauded it.

Delphine Gozillon, sustainable shipping officer at T&E, said: “Today’s decision marks the beginning of the end of dirty fuels in shipping. The EU is charting the way with the

most ambitious package of green shipping laws ever adopted. This success should inspire other countries to do the same.”

In its initial response, T&E did however warn that “loopholes risk letting biofuels and low-carbon fuels in the backdoor”. T&E said it called on the EU to fix these when it revises the law by 2028.

By early April, T&E was focusing on a newly updated EU Commission list of sustainable investments, or Taxonomy, that T&E asserted could see “green funds being funnelled to big polluters like Airbus, Ryanair, MSC and Carnival Cruises”.

Faig Abbasov, shipping director at T&E, claimed: “The inclusion of polluting planes and ships is the nail in the coffin of the EU’s Taxonomy. If planes running on oil and ships running on gas are now considered sustainable, there is little hope for the Taxonomy. Europe’s lawmakers must vote down this measure and save what’s left of it.”

T&E argued that the update to the Taxonomy provided a “loophole” for LNG-powered container and cruise ships. It said: “On paper, LNG-powered ships emit less CO₂ than traditional shipping fuels, hence their inclusion in the Taxonomy. However, the EU’s criteria ignore methane slips and downstream emissions from LNG, which often make them worse for the climate than the traditional fuels they replace. This provides no incentive for shipping giants such as MSC and Carnival Cruises to invest in green shipping fuels as they will continue to benefit from green financing for ships fully powered by fossil fuels.”

See Legal, Page 48, for an analysis of the EU package

ICS raises alarm over plan to put carbon price on EU imports

A new measure to stop emissions being shifted to countries outside the European Union Emissions Trading Scheme (EU ETS) will have a significant impact on trade flows in several key industrial sectors, a European Commission assessment has revealed. The Carbon Border Adjustment Mechanism (CBAM) is expected to reduce the combined import value of iron, steel, cement, fertilisers, aluminium, electricity and hydrogen by 11.9% by 2030.

CBAM gained provisional approval from European Council and Parliament negotiators in December. If signed off by Parliament and EU member states, it will impose a carbon price on imports based on the emissions involved in their production. The mechanism will be phased in this year, starting with data collection, with the new tariffs being introduced from 2026. Free allowances under the EU ETS, implemented to prevent EU countries from outsourcing high-emissions processes to outside countries, will be gradually phased out once import tariffs are imposed.

Sources involved in the regulatory process confirmed that there will be no direct impact on ship operators. Emissions from transport are not yet covered and the administrative burden will fall on the ‘declarant’, the entity placing the goods on the European market.

However, the indirect impact on ship operators could be dramatic given the changing flow of trade both into and out of the Union. A Commission impact assessment published in July 2021 shows that fertilisers will be the most affected, with imports in 2030 cut by more than 26%. In the least affected sector, aluminium, imports will fall by under 5%.

Fredrik Roald Brun, Associate at law firm Wikborg Rein, told ICS that the full implications of CBAM could not be assessed until a final draft is produced. But he said that ship operators could be exposed to CBAM costs through their purchases. “If you are a European shipyard that relies heavily on aluminium imported from China, for example, the carbon pricing will make that aluminium more expensive,” he said. That would likely have an impact on the cost of buying ships in Europe.

Brun reported that ship operators are more focused on other elements of European legislation, such as shipping’s inclusion in the EU ETS, and IMO efficiency measures introduced this year. But he pointed out the impact of CBAM could be a bigger issue in the future; the European Council, Commission and Parliament appear to have agreed to assess extending CBAM to cover embedded emissions from transportation services before the end of the transition period in 2026.



Exports from the EU will also be affected due to the higher costs of either using CBAM-exposed imports as raw materials, or replacing them with more expensive locally sourced materials. The impact assessment projects that EU exports in CBAM sectors will be reduced by 6.9% in 2030.

Tonje Hagen Geiran, Associate and Special Adviser at Wikborg Rein, explained that much of the discussion about CBAM in the business community has been around export competitiveness. European industrial producers have argued that the mechanism could be better designed to protect exports from Europe, and that current measures against carbon leakage are more effective than the new mechanism.

“For companies that have a market outside of the EU, they will risk losing some of that market. The capability of regulators to accurately allocate all indirect, Scope 3 emissions, is also being questioned,” Geiran added. “There are so many elements in Scope 3 emissions and they can be difficult to measure. Perhaps they will have to be measured by assumptions.”

The EU is not alone in considering a CBAM. In feedback to the initial proposal, Canada reported that it is already consulting citizens on a similar measure. Additionally, Brazil’s Ministry of Foreign Affairs has registered concern about the impact CBAM would have on non-EU companies trading into the EU, and on existing trade agreements and rules. “There are elements of the legislative proposal that indicate that the measure, either in its current design or in its implementation, could violate the obligations assumed by the European Union in the trade sphere,” the ministry wrote in its feedback.

Salvors prevent at least 11 bunker spills

Members of the International Salvage Union (ISU) prevented bunker spills in at least 11 cases where ships had more than 2,000 tonnes of bunkers on board. According to ISU’s Annual Pollution Prevention Survey for operations in 2022, the total amount of bunkers involved was 108,112 tonnes. However, ISU says that figure is likely to be an underestimate as some services noted in the survey did not record the quantity of bunkers.

The survey shows that ISU-member salvors provided 186 services to vessels carrying 2.6 million tonnes of potentially polluting cargo and fuel during operations in 2022. “Clearly showing the critical role of professional salvors in protecting the marine environment,” ISU notes.

ISU president, Captain Nicholas Sloane, says: “We are all now so much more aware of, and careful about, the environment. But we all need shipping and incidents like the Suez Canal blockage demonstrated that reliance. The shipping and insurance industries recognise their responsibilities and the importance of maintaining their “licence to operate” and the availability of emergency response services is a critical part of meeting those responsibilities.”

He adds: “The ESG (Environment, Social and Governance) agenda is so important for shipowners and insurers and we need to ensure that the capability, and willingness, of commercial salvors to provide vital services around the world is valued and not eroded.”

Klaveness aims for 45% carbon intensity cut

Norway-based Klaveness Combination Carriers has set itself a target of a 45% reduction in carbon intensity by 2030 compared against 2018, driven “largely by substantial efficiency improvements” it says. “With our combination trading already delivering 30-40% lower carbon intensity than our competitors, we are front and centre to deliver on the transition to cost-effective, low carbon shipping,” says CEO Engebret Dahm (pictured below).



Dahm’s assertion is based on the trading pattern of the company’s fleet of 16 combination carriers, owning and operating eight CABU and eight CLEANBU combination carriers that carry

both wet and dry bulk cargoes and are “operated in trades where the vessels efficiently combine dry and wet cargoes with minimum ballast”. The company claims, through their high utilization and efficiency, its vessels emit up to 40% less CO₂ per transported tonne compared to standard tanker and dry bulk vessels.

The company says, to achieve its target it will employ the following “key levers”: Introduce biofuels – sustainable biofuels shall constitute a minimum 15% the fuel mix; phase in zero emissions fuels and vessels – fleet renewal with an ambition to see the introduction of the first zero emission vessel within 2030 and seek regulatory and customer support to spur the fuel transition.

Klaveness says that, based on regulatory and customer support, it intends to get the first zero-emission vessel in service and start using zero-emission fuels in daily operations but it cautions that it “is unlikely to succeed advancing far with the targeted fuel transition on its own”.

Hempel joins GIA

Danish coatings manufacturer Hempel has joined IMO’s Global Industry Alliance (GIA) for marine biosafety. GIA aims to work with industry to support shipping’s emissions reduction pathway and to mitigate against the spread of invasive species. The GIA is a public-private partnership with the GEF-UNDP-IMO GloFouling Partnerships project.

Following Hempel’s membership, the GIA comprises 13 private companies that work with governments, the IMO and other non-governmental organisations to increase awareness of the environmental implications and risks associated with biofouling on ships’ hulls, identify common issues, and foster solutions for mitigation. The alliance also informs policy developments and shares technical expertise within NGOs.

In a statement Hempel comments: “The programme is also in line with the IMO strategy to reduce greenhouse gas (GHG) emissions from shipping by at least 50% by 2050. By limiting biofouling on a ship’s hull, GHG emissions are reduced and operational efficiencies can be achieved.”

CARBON CAPTURE DEPENDS ON ECONOMIC CASE

New LR report indicates adoption of onboard carbon capture systems is dependent on the economic feasibility for maritime supply chain stakeholders

The Lloyd's Register (LR) Maritime Decarbonisation Hub's Zero-Carbon Fuel Monitor reports that "technology readiness of onboard carbon capture points to a potential route for reducing emissions and increasing vessel lifetime". However, it asserts that although technology readiness is high, the formation of viable economic cases for each player in the supply chain is needed to scale up adoption of Onboard Carbon Capture Utilisation and Storage (OCCUS).

The research has found that technology readiness for OCCUS is significantly higher than its investment and community readiness, largely due to the development and usage of carbon capture technology outside of the maritime industry.

According to LR, to see the potential benefits of OCCUS adoption, the readiness assessment highlights that regulations will need to be updated to address the practical challenges, including carbon accounting and how OCCUS aligns with MARPOL regulations. There is also a need for significant infrastructure scaling and investment for onboard and offloading solutions to drive adoption. Additionally, safety and operational factors surrounding offloading of liquefied CO₂ as a result of the carbon capture process need to be considered.

Outlining the need for an increase in investment readiness for OCCUS, the report concludes that evidence is required to validate the real-world performance of onboard capture technology, to ensure adopters can be assured of the technology's emission reduction credentials.

LR's research suggests the solutions could play a significant role in the shipping industry's journey towards zero carbon emissions, with OCCUS considered as a mid-term 'step' for ship operators and owners. OCCUS technology has potential for existing vessels where conversion to zero carbon fuel is cost prohibitive, thus increasing the lifetime of an asset.

Charles Haskell, Director, LR Maritime Decarbonisation Hub said: "The maritime industry needs decarbonisation solutions that reduce emissions in the short to mid-term, and carbon capture can be a transitional tool for operators and owners to do this. LR Maritime Decarbonisation Hub's research emphasises the need to focus on providing demonstrable evidence that OCCUS systems can help owners in meeting interim emissions regulations with existing vessels. The research also underlines the need for maritime supply chain stakeholders to come together, to ensure that the required infrastructure is developed and implemented to allow the industry to use the solutions which score high on technology readiness."

LR has been contracted by the Global Centre for Maritime Decarbonisation (GCMD) to carry out a concept study into offloading liquefied CO₂ as part of the carbon capture process, addressing the requirement for infrastructure and safety as part of the OCCUS process. LR has also been involved in a number of other carbon capture projects, including the Approval in Principle for Value Maritime's Filtree system and Rotoboo's pre-combustion carbon capture solution.

Nordic hydrogen production company Rotoboo's pre-combustion Carbon Capture System (CCS) Rotobox uses thermocatalytic decomposition process (TCD) onboard ships. Part of the natural gas fuel supply is converted into hydrogen and graphite with a liquid catalyst. The TCD process significantly reduces CO₂ emissions, particulate matter and methane slip by producing hydrogen while capturing carbon in its solid form. Rotobox is said to have the capacity to reduce overall carbon emissions by up to 100%, depending on the heating method used. Converted hydrogen from the CCS can be used for fuel cells or as blend-in fuel for combustion engines or gas-fired boilers.

ClassNK's CO₂ capture guidelines

ClassNK has released "Guidelines for Shipboard CO₂ Capture and Storage



CC unit installed on a K Line vessel "K Line"

Systems" which include a class notation for vessels equipped with CO₂ capture and storage systems or designed as "ready" for their installation.

The Japanese classification society ClassNK is part of the Carbon Capture on the Ocean (CC-Ocean) project together with Mitsubishi Shipbuilding and Kawasaki Kisen Kaisha. According to ClassNK, the project has included the world's first marine-based CO₂ capture system on an actual voyage and it has been involved in the evaluation and verification of the entire project from a safety perspective.

Incorporating the experience gained, ClassNK's guidelines cover an overview of shipboard CO₂ capture and storage systems, including safety requirements related to the systems and their installation on the ships, and provisions for the notation indicating the vessels are equipped with such systems or designed as 'ready' for their installation.

ClassNK advises that, when utilising shipboard CO₂ capture and storage systems, consideration should be given not only to additional equipment installation space, including for CO₂ absorption units and CO₂ storage tanks, but also for additional energy for heating the amine solutions and driving pumps. The guidelines' appendix provides the methods for estimating both the dimensions of principal additional equipment and additional energy requirements.



INDUSTRY NEWS

Latest developments from around the global marine fuel sector

Bunker tanker crew kidnapped

Six of the 16-strong crew of the Liberian-flag bunker tanker *Monjasa Reformer* were kidnapped and held hostage for five weeks after the ship was boarded by pirates on 25 March, about 140 nautical miles West of Port Pointe-Noire, Democratic Republic of Congo. The vessel went missing for six days before being located by the French Navy, when it was discovered that the men were missing. The ship's owner, Danish-based Monjasa announced in early May that they had been freed.

Monjasa CEO Anders Ostergaard said in a statement: "All recovered crew members are in relatively good health condition given the difficult circumstances they have been under in the last more than five weeks. They have all been receiving medical checks and are now being repatriated to their home countries to reunite with their families."

On 10 April, a second tanker, the Singapore-flag *Success 9*, was boarded by unidentified persons at about 300 nautical miles off the Abidjan Coast, Cote d'Ivoire. The Maritime and Port Authority of Singapore (MPA) reported that there were 20 crew of various nationalities onboard the vessel, including a Singapore citizen. It was subsequently reported that all her crew, including the Singaporean, were safe and in good health and that the ship had arrived safely at Abidjan.

These latest incidents occurred just as the ICC International Maritime Bureau (IMB) had recorded the lowest level of reported global piracy and armed robbery incidents since 1993 in its first quarter piracy and armed robbery report for 2023. But, presciently, the report calls for "continued vigilance and naval response".

According to IMB, 27 incidents were reported in the first quarter of the year, representing a marked decline from 37 incidents for the same period in 2022. The anti-maritime crime agency noted that, 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. It says that six crew (from the *Monjasa Reformer*) had been kidnapped, two others were known to have been taken hostage, two threatened and one assaulted.

Despite the latest incidents, the trend still appears to be that piracy and armed robbery is decreasing in the Gulf of Guinea, an area the IMB describes as having 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.

KPI launches training programme

Danish-based KPI OceanConnect has launched a two-year trader trainee programme designed to "cultivate and

empower school and college graduates for a career in marine fuel trading".

The programme will provide new hires with an immersive learning experience, including comprehensive training in marine fuel trading, supply and logistics, and the opportunity to work with industry-leading experts. Trainees will have the opportunity to travel and participate in team building activities with the purpose of creating and nurturing relationships with global colleagues. In addition, trainees will also have the chance to relocate to one of KPI OceanConnect's 16 offices worldwide, where they can learn about different cultures, establish their own network, and work with colleagues from various backgrounds.

Additionally, the programme will include courses at the Danish Maritime Academy in Copenhagen from September 2023, leading to a foundation degree in shipping and the official qualification of Bunker Trader.

KPI OceanConnect's managing director and creator of the programme, Patrick Hoe, commented: "We are excited to launch our new trainee programme "get fuelled" to provide young talent with the opportunity to embark on a career in the dynamic and fast-paced world of marine fuel trading. This programme is a testament to KPI OceanConnect's commitment to investing in the next generation of



young professionals and supporting the development of innovative and sustainable solutions for the shipping industry."

Singapore bunker firm loses licence

In a Port Marine Circular, the Maritime and Port Authority of Singapore (MPA) has announced that it will not be renewing the bunker craft operator licence of New Maritime Pte Ltd, which expires on 16 June 2023.

While the circular gives no reason for MPA's action, it does say that the "MPA has zero-tolerance for any type of fraud, corruption or bunkering malpractice". The circular reminds all bunker licence holders (including bunker suppliers and bunker craft operators) to comply strictly with all the terms and conditions of the respective bunker licence(s).

It warns: "MPA will not hesitate to take firm action against any bunker supplier or bunker craft operator that contravenes any of its bunker licence terms and conditions, including taking into account such contraventions in considering whether to renew the bunker licence(s), suspending or cancelling the bunker licence(s), and/or taking enforcement action against such bunker licensee."

Peninsula renews credit facility

Independent marine energy supplier Peninsula has confirmed a two-year renewal of its syndicated European credit facility and an increase from US\$350 million to US\$450 million.

A Peninsula statement says that, together with the group's Asian syndicated facility and other bilateral lines, this increase in the European credit facility provides it with a total funding package in excess of \$1.3 billion. It adds: "Peninsula continues to focus on the delivery of low carbon fuels to customers, and this facility has been amended to enable the finance of these products, not just traditional fuels. The additional liquidity generated will be deployed in support of these products."

John A Bassadone, CEO of Peninsula said: "At a time when decarbonisation is at the top of everyone's agenda, our commitment to the supply of lower carbon fuels resonates with our stakeholders to attract

the highest quality banking partners. This additional funding will allow us to deliver lower carbon solutions to our customers across the globe."

O Bunkering at Duqm

Omani-based O Bunkering has signed an agreement with Marsa Al Duqm Investments (MARSA), a subsidiary of Fisheries Development Oman (FDO), to provide bunker services and build and operate a bunkering station in Duqm.

The company's CEO, Ali Amur Al-Shaibani, said that his company will undertake the design and construction of the bunker station in Duqm Fishing Port "in accordance with international standards, ensuring the highest levels of safety and reliability for their customers".

WFS Q1 profits rise

World Fuel Services Corporation Q1 gross profit increased 14% year-on-year, to US\$263 million, of which marine fuel sales accounted for \$52 million, an increase of 11%, "principally as a result of market dynamics driven by the higher interest rate environment," according to the company.

"Our core businesses performed well in the first quarter, a reflection of our broader strategy to maximize returns in our core businesses while also growing our sustainability and digital solutions for our customers," said Michael J Kasbar, chairman

and chief executive officer. "Our customers' requirements for more solutions to support their energy transition journeys represents a strategic opportunity for our business to thrive in a world that is increasingly prioritizing lower-carbon alternatives and solutions."

Axiom wins IOCL Award

UAE-based bunker supply and oil trading company Axiom Global, won the Indian Oil Corporation Ltd (IOCL) award for the Highest Bunker Volume in 2022 at the Institutional Business Customers Meet at IOCL in Haldia, India, in April.

"Since the inception of the company in 2019, we have been working very closely with IOCL and have strived hard to maintain our strong ties. The award we have just won is evidence of our growth and I take this opportunity to thank IOCL for their support as well as our own team for the efforts they have put in for us to achieve this accolade," said Praveen Jaiswal, CEO and Managing Director of Axiom Global.

Previously, in 2021, Axiom had been recognised for achieving the highest HSFO sales in year 2020. The company says it "continues to grow its global reach and has made significant progress in UAE, India, and other Middle Eastern ports".



From L-R: Himanshu Ranjan, Chief General Manager, Institutional Business, IOCL, L.K.S. Chauhan, Executive Director & State Head, WBSO, IOCL, Sanjeev Kumar, Operations Manager, Axiom Global and Kshitij Jaiswal, Trader, Axiom Global



Switch to Zero participants show off their certificates ©RoyBorghoutsFotografie-280323

BIOFUEL 'INSETTING'

GoodShipping and Samskip offer shippers CO₂ reduction

Dutch company GoodShipping says that 17 shippers will together save 2023 tonnes of CO₂ this year by providing several vessels owned by shipping company Samskip with biofuel. It asserts that companies that import or export their freight by vessel generally have little influence on the container shipping company's fuel choice. GoodShipping aims to change this with its 'insetting' concept.

In December, the Port of Rotterdam Authority and GoodShipping announced the 'Switch to Zero' campaign to encourage companies to have their sea freight transported using sustainable fuel.

According to Port of Rotterdam, Insetting reduces carbon dioxide emissions by using sustainable fuel for shipping. It explains: "This in contrast to offsetting, which involves CO₂ being compensated by, for instance, planting trees. Shippers often transport small numbers of containers on different vessels and can use insetting to reduce a certain amount of CO₂ via GoodShipping, which allows for the CO₂ neutral transport of cargo. GoodShipping ensures that this CO₂ reduction is achieved by providing a vessel with sustainable fuel. This does not need to be the same vessel on which the containers are transported."

The port and GoodShipping's associated company GoodFuels claim this

approach makes it easy for sea freight shipping companies to make a concrete contribution to reducing CO₂ emissions. GoodShipping says it will ensure that several Samskip vessels are provided with biofuels, which will achieve a CO₂ reduction of 2023 tonnes. This is said to be comparable with the amount of CO₂ released when transporting some 15,000 TEU containers between Rotterdam and Gothenburg.

The participating companies are Dille & Kamille, Swinkels Family Brewers, Yogi Tea, Beiersdorf, Bugaboo, Otto Group, K2 Forwarding, Yumeko, NINE & Co., De Kleine Keuken, Royal van Whije Verf, Intersteel, OMyBag, Regent Ingredients, Dopper, Johnny Cashew and Anchor International.

Allard Castelein, Port of Rotterdam Authority CEO says: "Shipping is not yet on schedule to be CO₂ neutral by 2050, even though it is technically feasible. It is therefore good that shipping, as well as industry, in Europe will soon pay for CO₂ emissions through the ETS. This encourages sustainability, as it makes environment- and climate-friendly alternatives more attractive financially. However, this is only possible if such alternative options are offered. Therefore, we are working with partners to develop initiatives to help make logistics more sustainable: from battery-powered inland

shipping to shore power for sea-going vessels, and from bio-kerosene production for aviation to so-called Green Corridors for sea-going vessels. This initiative with GoodShipping and the 17 companies is part of that programme."

Dirk Kronemeijer, CEO GoodShipping explains: "We've seen a huge acceleration in the pace of the energy transition brought about by shippers over the past two years, which is why we want to give more companies the opportunity to have their freight shipped sustainably. The offer made by the Port of Rotterdam Authority, which aims to be the world's most sustainable port, to support us in this was therefore easy to accept. With the Switch to Zero campaign, we're making it easy for companies to enhance the sustainability of their transport without complex supply chain adaptations."

Adriaan Thierry, CEO of Bugaboo, says: "At Bugaboo we are actively reducing, not compensating, our carbon emissions through our Push to Zero program. Lowering emissions from ocean freight is part of our plan. In partnership with GoodShipping, we want to move towards a 100% reduction of our ocean freight emission. Joining the Switch to Zero campaign is another step towards this goal."



Wärtsilä methanol engines offer a route to maritime decarbonisation. © Wärtsilä

GETTING READY, STAYING FLEXIBLE

As methanol bunkering becomes a reality, Singapore is preparing for the possibility of a methanol bunker spill. Meanwhile, methanol is starting to be seen as an option for the cruise industry

The Maritime and Port Authority of Singapore (MPA) is preparing for the eventuality of a methanol spill. It organised a table-top exercise (TTX) at the 13th biennial International Chemical and Oil Pollution Conference and Exhibition (ICOPCE) in April. This was to review new safeguards, clarify roles and responsibilities, and strengthen cross-agency coordination for an effective response.

The scenario involved a methanol spill at sea to prepare for methanol bunkering in the Port of Singapore later this year. A modelling study of plume clouds that could form when methanol is suddenly released into the atmosphere during an incident or emergency was presented by MPA's port chemist.

Participants also learnt about the specific hazards of methanol where a methanol flame is difficult to detect by sight, possible safety measures that could be adopted when handling the fuel, effective measures to detect and put out a methanol fire onboard a vessel, and the training of seafarers, operators, and engineers to reduce the risks of methanol handling.

Panos Koutsourakis, Vice President, Global Sustainability from ABS, said, "ABS is committed to supporting the safe adoption of methanol by the industry and today's event is an important aspect of that. This year's ICOPCE TTX provided participants with insights into the behaviour of methanol in a maritime operating environment and helped build

confidence of how the maritime industry can safely manage its risks and hazards while achieving net-zero emissions. By working together to examine challenges and explore solutions, we can keep our industry in the forefront of the energy transition."

The Singapore Chemical Industry Council has formed a working group, in consultation with MPA, to develop a Technical Reference (TR) for methanol bunkering for Singapore. The TR will cover custody transfer requirements for delivery of methanol from the bunker tanker to receiving vessels, operational and safety requirements for methanol bunkering as well as crew training and competency. The TR is expected to be ready in 2024.

According to MPA, since 2022, Singapore has completed more than 70 methanol loading and discharging operations for industrial use, measuring a total of more than 400,000 tonnes. These operations were conducted across 10 storage tanks at Jurong Island of varying capacities at Vopak Terminals, Stolthaven Terminal, Petrochemical Corporation of Singapore (PCS) Terminal, and Chevron Oronite Terminal. These tanks can also be used to store methanol for bunkering requirements.

Meanwhile, the latest of its Edge series cruise ships ordered by Celebrity Cruises will be fitted with ship two Wärtsilä 46F engines converted to run on methanol as well as "two other conventional fuel types",

according to the engine manufacturer. It says the move involves close cooperation between it, Celebrity Cruises' parent company Royal Caribbean Group and the Chantiers de l'Atlantique shipyard.

The engine order was placed in January 2023 and the vessel is scheduled for delivery from the yard in 2025. The incorporation of methanol-ready engines represents Celebrity's next step towards achieving Destination Net Zero, its vision for net zero emissions by 2050.

"With the launch of our Edge Series of ships in 2018, we set ambitious sustainability goals to make these ships the most energy efficient large vessels at sea," said Celebrity Cruises President and CEO Lisa Lutoff-Perlo. "Working collaboratively with our expert partners, we have continued to develop new technologies and achieve breakthroughs with each subsequent ship."

"Wärtsilä has invested heavily into researching viable future carbon-neutral fuels for the marine industry, and methanol has emerged as one of the most promising candidates. This will be the second methanol-fuelled engine conversion that we have undertaken, and the first with the Wärtsilä 46F engine. We share a commitment to decarbonise shipping, and the transparent partnership between our three companies for this newbuild project represents an important milestone along the path to achieving this goal," commented Håkan Agnevall, President and CEO of Wärtsilä.



Höegh LNG's fleet ©Höegh Vessels

GETTING READY

A significant portion of the shipping industry is gearing up for the large-scale use of ammonia as marine fuel, with more research being launched and engines being developed to be dual fuel ammonia-ready

Technology group Wärtsilä, Norway-based Höegh LNG, Institute for Energy Technology (IFE), University of South-East Norway, Sustainable Energy and BASF SE have jointly received funding of about EUR 5.9 million from the Norwegian Government. The funding is for the development of ammonia as a hydrogen carrier for the energy market and is a part of Norway's Green Platform programme of initiatives and amounts to approximate 50% of the total budget for the project.

The aim is to enhance the availability of large-scale storage and transportation capabilities of clean energy. Wärtsilä notes: "Hydrogen is emerging as a viable future fuel for addressing the move away from fossil fuels. However, it is difficult to store and transport due to its low volumetric energy density and with potential large vaporisation losses. Ammonia is significantly better suited than hydrogen for this purpose, since it can be stored in liquid form at moderate pressures and temperatures. The objective of the project is to enable ammonia to be converted back to hydrogen at the receiving destination."

As a carbon-neutral renewable energy carrier, 'green' ammonia is produced from hydrogen, via electrolysis of water, and nitrogen from the air.

The project aims to develop a system to convert ammonia back to hydrogen, which will then be installed onboard a Höegh LNG vessel. This will provide a floating receiving terminal capable of being relocated as needed, requiring minimal use of coastal land and a solution resulting in lower overall cost, improved safety and competitive hydrogen prices.

Ammonia bunker tanker for Singapore

RINA has issued an Approval-in-Principle (AiP) for the design of a 21,000 cubic metre ammonia bunker tanker jointly developed by SeaTech Solutions and Fratelli Cosulich Bunkers Singapore.

The Italian classification society says: "Low or zero-carbon ammonia has the potential to support Singapore and the wider shipping industry's efforts towards decarbonisation and, as more and more ammonia-ready newbuild orders are being placed, the industry needs ammonia bunker tankers to bring the fuel from storage facilities to the ships."

The AiP for the ammonia bunker tanker followed the *RINA Guide for Approval in Principle of Novel Technologies*, based on the technical criteria of the RINA Rules for the Classification of Ships (2023), IGF Code and IGC Code, as amended.

A RINA statement adds: "The AiP marks a significant milestone for the joint development project (JDP) that started in November 2021. Having achieved this critical step of the project, all parties are confident that they can support Singapore's ambition to make ammonia bunkering a reality in the region."

Simone Manca, Marine Asia Senior Director at RINA, says, "Ammonia offers potential for the decarbonisation of the marine sector, and this AiP brings the practicality of its use as an alternative fuel a step closer. We are delighted to be able to support this innovation. RINA will continue to follow technological and regulatory developments to meet the needs and expectations of the shipping industry and to promote all possible pathways to net zero."

Guido Cardullo, Head of Business Development at Fratelli Cosulich, said: "Fratelli Cosulich is committed to playing a critical role in reducing greenhouse gas emissions in the shipping industry by facilitating the adoption of low-carbon or carbon-free alternatives fuels, such as green ammonia, which has received much attention recently due to its established production technology, distribution infrastructure, and satisfactory energy density as a marine fuel."



The 12,000 cbm Seapeak Vision, due to join Titan's fleet in March 2023. ©Titan

CUTTING METHANE EMISSIONS

More major companies join the Methane Abatement in Maritime Innovation Initiative

A cross sectoral initiative tasked with reducing methane emissions across the maritime industry that was formed in September last year has added seven major players to its membership.

New members of the Methane Abatement in Maritime Innovation Initiative (MAMII), announced at a Lloyd's Register LNG Forum in Doha, Qatar include CoolCo, United Overseas Management, Capital Gas, Celsius Tankers, Global Meridian Holdings, Mitsui O.S.K. Lines, and TMS Cardiff Gas.

The MAMII already included Safetytech Accelerator, MAMII's current members include Maran Gas Maritime, Mediterranean Shipping Company, Carnival Corporation & Plc, Seaspan Corporation, Shell, Lloyd's Register and Knutsen Group.

The companies aim to work together to identify, accelerate and advocate technology solutions for the maritime industry to measure and manage methane emissions. MAMII aims to minimise the environmental impact of liquefied natural gas (LNG) in shipping, whilst aiding the transition to future fuel solutions.

The initiative was launched against the background of increasing criticism and opposition to the use of LNG as marine fuel on the one hand, and to claims that LNG is best pathway to decarbonisation on the other.

In a statement MAMII says: "Compared with traditional marine fuels, LNG is widely understood to generate less carbon dioxide (CO₂), and emit less nitrogen

oxides, sulphur dioxide, and particulate matter, for the same propulsion power. This makes it a popular and widely used transition fuel. However, analysis has indicated that the environmental benefits of using LNG could be partially negated due to any unburned methane passing through the combustion process. Methane is a potent greenhouse gas, estimated to have a Global Warming Potential of 27-30 over 100 years, while CO₂ has a GWP of 1 regardless of time period used.

According to MAMII, in its first six months it has already mapped the LNG fuel landscape from the well to the ship, identified key measurements required, and has identified a range of potential new technologies for measurement onboard ships. It notes: "The progress of MAMII comes at a time when methane abatement initiatives are gaining traction globally, such as the Green Ray project which recently won funding from the European Union".

The initiative is chaired by Panos Mitrou, Lloyd's Register's Global Gas Director, and directed by Safetytech Accelerator's Head of Partnerships, Steve Price.

Steve Price, Head of Partnerships at Safetytech Accelerator, says: "We are looking forward to the next few months when we move from analysis and research into piloting new methane measurement technology on ships. Measuring actual emissions is a critical step in the decarbonisation of the shipping journey".

Panos Mitrou, Global Gas Director at Lloyd's Register, adds: "The doubling of MAMII's

membership in the six months since its launch is a sign of the maritime industry's commitment to addressing methane emissions. It also indicates the important role of technology in measuring and managing methane emissions activity. As the chairman of the MAMII initiative, I am delighted that so many significant shipping leaders have joined the ranks."

Titan leases small LNG carriers

US-based LNG and liquefied biomethane (LBM) supplier Titan has acquired two small scale LNG carriers and has retrofitted them with bunkering capability.

The two ships, *Seapeak Unikum* and *Seapeak Vision* were acquired from Seapeak, formerly Teekay LNG. Titan says the vessels will be retrofitted to ensure suitable LNG bunkering capabilities, enabling them to both transport and bunker LNG, LBM, and in the longer-term hydrogen derived e-methane (e-LNG).

Both sister vessels have a cargo capacity of 12,000 cubic metres (cbm). They will operate in the Mediterranean and Northwestern Europe and will cater for increased demand for LNG and LBM (bio-LNG) in these regions.

The vessels and the retrofit were financed by Sole Shipping Group through a long-term bareboat charter leasing structure. Sole Shipping Group is a European provider of financial leasing structures. Titan was advised on this transaction by Endegeest Consulting.



Liquid hydrogen powered ferry Hydra. ©Norled

CRUISING ON HYDROGEN

Norwegian fuel cell projects take hydrogen power into cruise and ferry sectors

Norwegian zero-emission cruise venture Northern Xplorer has joined four specialist companies to form a consortium to design and operate a zero-emission cruise ship featuring fuel cells and electric propulsion. The company has signed a letter of intent with Portuguese shipbuilder West Sea for the construction of what will be its first vessel, with delivery slated for the start of the 2025/2026 cruise season.

The other consortium members are hydrogen provider Norwegian Hydrogen, high-capacity hydrogen transfer system supplier HYON, ship designers Multi Maritime, and hydrogen storage system provider Hexagon Purus Maritime. The consortium says it will also make hydrogen available to the wider maritime market “at a time of urgent pressure to reduce emissions”.

NX CEO Rolf A Sandvik says using hydrogen as the energy carrier will enable cruise ships to continue to access vulnerable regions such as Norway’s world heritage fjords, which by government regulation will be closed to ships burning fossil fuels from 2026. Other regions both in Norway and elsewhere will likely follow suit in future.

Meanwhile, Norwegian ferry company Norled has taken delivery of the *Hydra*, said to be the world’s first liquid hydrogen powered ship. The ferry was designed by LMG Marin and built by Norway’s Westcon and classed by DNV.

The ferry uses liquid hydrogen, two 200 Kw fuel cells, a 1.36 MWh battery, and two 440 Kw diesel generators. The hydrogen tanks and the fuel cells are located on top of the ferry. The hydrogen is trucked from Leipzig in Germany.

With a length of 82 metres long, *Hydra* can carry 300 passengers and 80 cars at 9 knots using Shottel thrusters. The liquid hydrogen comes from German industrial gas and energy company Linde.

Electric plus green methanol power

Dubai-based P&O Maritime Logistics plans to convert one of its multi-carrying vessels into a cable-laying vessel powered by a combination of batteries and green methanol.

Set to start operations in the third quarter of 2024, the converted vessel will be equipped with a “state-of-the-art” battery

system, as well as a low fuel consumption propulsion layout for green methanol fuel.

Martin Helweg, CEO of P&O Maritime Logistics said: “The conversion of our vessel is a real step change. It means, apart from expanding our existing services and products into a more specialised offering, that we can also make a positive contribution to the decarbonisation of our industry. One way of doing this is by using alternative energy to power the converted vessel. The other important contribution is that the Cable Laying Vessel will predominately support the construction, development, and maintenance of existing and prospective wind farms. Lastly, and by repurposing an existing vessel, we are able to extend the lifetime of this particular product quite significantly to keep up with the increasing demand in the sector.”

The newly converted vessel will have the ability to host up to 64 seafarers and features a single basket cable carousel with an outside diameter of 24 metres.



LISBON AND SINES FOR BUNKERS ONLY CALL

Lisbon and Sines are able to offer special conditions for bunkers only call

Calling Lisbon represents a short deviation, it is a sheltered port with protected anchorage (inside port limits) during the whole year for safe bunkering by barge. Draft restrictions – 14 m wp. Calling Lisbon for bunkers only gives our clients the opportunity to do other activities without extra costs, namely changing crews, loading spare parts, food and water, lubricants or making small repairs, with all the resources of an European Capital.

A few miles south of Lisbon the deep waters Port of Sines can receive for bunkers only call almost all type of vessels.

Clients can find in this port the particular advantage of being able to berth the ship with no extra costs if weather and /or sea conditions are not the safest for anchorage supply.

Contact the Galp bunkers team for further details.

+351 963 407 650

bunkers@galp.com





SALALAH BUNKERS

Fujairah Engineering Company LLC (FECO), which was established in 2004 in Oman and has since been operating the bunkering facility of 110,000 m³ storage capacity, leased the now called FECO bunkering facility and has been supplying bunkers at Salalah Port since April 2022.

M/T Sea Dweller, a 2002 built bunker barge stationed in Salalah, with a 800MT per hour pumping capability, and 3,420 DWT, supplies Low Sulphur (0.1%) Marine Gasoil ISO 8217 and Very Low Sulphur Fuel Oil (VLSFO) ISO 8217 with plans to introduce High Sulphur Fuel Oil in the future.

In addition to deliveries by barge, FECO has the ability to deliver Marine Gas Oil and VLSFO via pipe and LSMGO via road tankers at certain Salalah Port berths.

Marketing of the products will be done exclusively by Oil Marketing & Trading International D.M.C.C. (O.M.T.I.) and all customers' enquiries will be handled by Dimitri Martinuzzi available at the following contact details:

bunkers@feco-oman.com · oman@oil-marketing.com
Tel: +971 4 4350500 · Mob: +971 50 433 0507

Complimenting the company's bunker supply operations, FECO, with its 110,000 m³ capacity terminal inside Salalah port and its 18-year experience in trading and chartering, is able to offer the following services:

- Tanker Chartering
- Cargo Trading
- De-bunkering
- Third Party Oil Storage

For all enquiries, you can contact:

bunkers@feco-oman.com & terminal@feco-oman.com





ATH TRADING

FROM ANGOLA TO THE WORLD

Based and focused in Angola, ATH is a physical bunker trader delivering tailored solutions to maritime clients across the globe

ATH Trading is an independent, privately owned commodity trading company that commercializes crude distillates of marine use: MGO and VLSFO.

With extensive experience providing reliable bunkering services, ATH is owner of the vessel ATH Lemba (6000 DWT), available for freights in the WAF region and for the local bunkering activity in all ports of Angola.

ATH has a diversified portfolio of clients ranging from international fishing fleets, general cargo companies or international oil companies.



Angola is set to become one of the next bunkering hubs in the WAF region due to four key points:

1. Angola produces an excellent quality of light sweet crude oil containing low volumes of Sulphur (<0.5%);
2. Angola is in a privileged position to attract the maritime traffic of both South Africa – Lomé and Continent – Middle East routes;
3. Low port call costs and availability to receive bunkers at berth;
4. Increase in volumes in the near future with the incorporation of up to 3 more refineries.



ATH is driven by the objective of providing the best tailored bunkering solutions to clients at the highest standards.

We guarantee product quality and quantity – from sourcing to delivery and offer the best competitive prices

Email: bunker@ath-trading.net





PureteQ is the world's largest service provider for all brands of scrubbers both on-site and via remote access.

ONBOARD CARBON-CAPTURE-READY SCRUBBER SYSTEMS

PureteQ – A simple solution to a global challenge

Energy is a scarce resource, and we need to be energy efficient in every way possible. At PureteQ we believe in the reutilization of CO₂ to minimize the consumption of fossil fuels, because despite the ongoing development of green energy sources, fossil fuels will still be in demand. Accordingly, a special focus on reducing CO₂ emission from exhaust gas is necessary, as well as using carbon capture and storage (CCS) technologies.

CCS plays an important role in achieving climate objectives, as the CCS technology contributes to reducing emissions that are difficult to reduce by other means. According to the International Panel of Climate Change (IPCC), the world will not only need to reach net zero emissions by 2050, but must become 'carbon negative' i.e., remove CO₂ from the atmosphere. Exhaust gas scrubber technologies are a prerequisite for succeeding with onboard carbon capture.

In view of the scarcity of energy, it is of great importance that we all become more energy efficient and make use of whatever technology is available to reduce climate impact. PureteQ is committed to continuously invest in R&D to optimize existing technologies and to develop new technologies within the fields of carbon capture and Power-to-X. PureteQ Maritime Scrubbers therefore now come as onboard carbon-capture-ready – scrubber systems with a solvent-based **Onboard Carbon Capture (OCC)** integration resulting in a

CO₂ reduction of 30-60% of a ship's exhaust gas, depending on ship type.

THE BEST TON OF FUEL IS THE TON NOT CONSUMED

The shipping industry is now included in the European Carbon Trading System - an additional incentive to buying new fuels or investing in OCC, none of which exist in any worth mentioning scale today. Furthermore, implementation of a Carbon Intensity Indicator (CII) has by now caused many shipowners to invest in energy saving technologies to prolong life of existing assets, such as air lubrication, solar panels, rudders, new paint, sails, and foils.

The majority of existing ships will be forced to lower their speed by derating engines, which in turn means less trade and further focus on saving costs. Cost of energy in any form is very high and cost of new fuels even higher. Furthermore, shipowners realize that it may take some years before alternative fuel and onboard carbon capture technologies become available for shipping.

THE WISE CHOICE

One should not choose a specific brand of scrubber for the wrong reasons. If a system promises new features such as OCC, be sure to ask the cost per ton of CO₂, as well





as the amount of CO₂ being captured and energy consumption of such a system. Most scrubbers may be retrofitted with a carbon capture feature when such technologies become readily available for energy efficient OCC and the infrastructure for handling CO₂ becomes available. A SOx scrubber is considered a pre-requisite for installing any kind of solvent-based carbon capture.

HOW TO CHOOSE A COST-EFFECTIVE SCRUBBER DESIGN

It has become ever-more complicated to choose a scrubber design to match the ship's actual trade pattern. The most important factor for many shipowners is **capital expenditure (CAPEX)**, but once installed, **operating expenditure (OPEX)**, **technical performance** and **after-sales support** become important factors.

CAPEX – In principle, there are three costs that comprise the total cost of installation:

1. Cost of the scrubber system, including main components
2. Cost of installing the plant, including cabling and piping, as well as structural work
3. Cost of off-hire

Consider the total installation cost and not merely individual costs when selecting which maker or design is the best for the vessel. Because of high freight rates, the off-hire costs are, in many cases, by far the highest cost when installing a scrubber system. It is therefore of outmost importance to choose a scrubber design that is easy and fast to install and requires minimum changes to existing structures.

OPEX – The highest cost is fuel consumption of operating the seawater pumps, zero leak air fans and other scrubber-related equipment. First priority should therefore be to evaluate the energy efficiency of the scrubber system, its ability to measure and report energy consumption and thereby provide proof of actual power consumption at various loads. Second priority is to ensure that the scrubber maker has been diligent when choosing components with the lowest possible life cost – not just the cheapest purchasing price.



PureteQ's scrubber systems can support ships of any size or trade pattern and handle a load of up to 100MW. PureteQ Maritime Scrubbers now come as onboard carbon-capture-ready scrubbers.

Technical performance – The first priority is to ensure that the scrubber system can regulate automatically for the lowest possible energy consumption at various loads, matching the trade pattern of the vessel. Some designs have constraints on how much the waterflow can be regulated and still clean the gas. Others have constraints in the functionality of the software, which is not easily fixed. Most scrubber makers have outsourced software to third-party suppliers who not always understand the needs onboard a ship.

At PureteQ we take great pride in developing and supporting the most advanced software in-house by our proficient engineers. It is not always necessary to be in physical attendance, as many issues most likely can be supported or fixed remotely. Additionally, the PureteQ system is designed to automatically upload data to a cloud-based platform for optimization and reporting of system

performance across your scrubber fitted ships to provide peace of mind to shipowners and operators.

After sales support – PureteQ has offices in Europe and Asia and from there, our trained marine engineers are dispatched from the nearest location. In Japan and Singapore, we have moved from shared offices to our own facilities with better equipped and larger offices, training rooms and workshops. We have facilities to refurbish cells and sensors in both locations, as well as in Europe, and the service business is steadily growing.

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www.pureteq.com



HEADWAY TO MAKE BREAKTHROUGH IN DECARBONIZATION SOLUTIONS

Headway Technology Group has been at the forefront of providing innovative solutions for decarbonizing the shipping industry

The company has made significant strides in this area, including the development of a methanol fuel supply system and a marine exhaust gas cleaning system. These milestones demonstrate Headway's commitment to providing sustainable solutions for the maritime industry. With a focus on innovation and technology, Headway continues to push the boundaries of what is possible in the pursuit of a greener future for shipping.

Headway recently made history by becoming the first Chinese company to provide a Methanol Fuel Supply System. This was achieved through securing an order for the Methanol Dual-Fuel Low-Speed Marine Engine testing platform built by Dalian Marine Diesel Co., Ltd. (DMD). The order includes a customized fuel supply solution that covers major

methanol-powered engines including MAN 9G95ME-LGIM, 7G80ME-LGIM, 7S60ME-LGIM, and 6G50ME-LGIM. The collaboration with DMD represents a major milestone for Headway, demonstrating the company has won approval from major alternative fuel-powered engine manufacturers and making them the first Chinese solution provider to receive orders for Methanol Fuel Supply System.

Headway Technology Group will offer a comprehensive "One-Stop Solution" to DMD, that comprises Methanol Fuel Supply Skid, Auxiliary Heat Exchange System, Nitrogen Generation System, and Control & Safety System. The entire system is set to be delivered by late 2023. Independently developed by Headway Technology Group, OceanGuard® Methanol Fuel Supply System is adaptable for both ocean-going

and inland waterway vessels. The system has completed the initial prototype tests in the laboratory and is currently on the joint-test verification on an independent test platform.

Dalian Marine Diesel Co., Ltd. (DMD) is a premier marine engine manufacturer in China, renowned for manufacturing the complete range of MAN and WinGD Low-Speed marine engines. With a global service network, prompt technical support and maintenance services, DMD has earned a reputation as one of the top-level suppliers powering tens of millions of gross tonnages around the world.

Furthermore, Headway Technology Group has established itself as a thought leader in marine decarbonization through its contributions to technical seminars on



marine Exhaust Gas Cleaning Systems. By sharing expertise and insights gained through years of experience, the company has helped to shape the direction of the industry towards more sustainable and environmentally-friendly solutions. Titled "Embracing the Future: Building Your Roadmap to Green Shipping", the seminar brought together representatives from major shipping companies, shipyards and ship designing Institutes in the Shanghai region. The participants engaged in in-depth discussions and exchanged ideas on the planning, installation, and application of marine EGCS, as well as the latest trends in emission control technologies. Headway's OceanGuard® Exhaust Gas Cleaning System's retrofitting case study left a strong impression on the participants.

The seminar was designed to facilitate communication and collaboration among different stakeholders. Attendees from shipyards, design institutes and manufacturers provided in-depth insights into SOx scrubbers, emission control and energy efficiency management from their respective perspectives. They shared their expertise and experience, fostering an open and informative dialogue on the latest trends and best practices in the industry.



During the seminar, a representative from shipyard delivered a keynote presentation addressing the concerns raised by various parties. With their extensive experience in EGCS retrofitting, the keynote presentation shared the protocols and best practices for the installation of EGCS.

Mr. Zhuo Zhang, representing Shanghai Merchant Ship Design and Research Institute (SDARI), made a subsequent presentation on the SDARI's latest developments in low-carbon shipping and new ship-type design. He also shared SDARI's perspective on some recent EGCS retrofitting projects. The presentation was well-received by the attendees, who found it to be insightful and thought-provoking.

As the closing keynote speaker, Mr. Zongkai Zhang, a representative from Headway, presented Headway's innovative breakthroughs and results in low-carbon shipping. In his presentation, Zongkai introduced Headway's independently developed OceanGuard® EGCS can provide U-Type, I-Type and L-Type scrubbers based on the internal onboard space. He also highlighted the system's "micro-atomization technology", which enables it to provide Open-Loop, Closed-Loop and Hybrid solutions with low OPEX, low backpressure, less consumption and optimized space utilization.

As the industry progresses further toward decarbonization, hashtags such as "Low Carbon", "Green Shipping" and "Eco Friendly" are gaining traction due to advancements in technology, industry development and regulatory improvement. The milestones represents a significant step forward in the pursuit of maritime decarbonization and underscores the Headway's commitment to providing reliable and sustainable solutions on alternative marine fuels for global customers.

About Headway:

Headway Technology Group (Qingdao) Co., Ltd. is a high-tech enterprise that takes technological innovation as the purpose, specializes in the research, manufacturing, sales of high-tech marine equipment with comprehensive global after-sales service network.

www.headwaytech.com





PROVIDING THE BEST SERVICES



Big enough to be powerful, small enough to be agile

Our aim, at Bunkeroil, is to offer our clients a truly competitive advantage by providing the best services in terms of maritime transport, delivery & sale of oil products and the relationship between shipowners and port operations.

We offer bespoke solutions with a high added value when it comes to operational flexibility and financial conditions.

Since the company was founded in Livorno in 1980, our history has always been marked by constant growth and focus on the quality of our products and services, as well as on client satisfaction. This has made us one of the key players in bunker and marine lubricants sale, both nationally and in the Mediterranean.

From the port of Livorno, our marine fuel and lubricant distribution operation began to expand into all Italian ports, in order to meet the diverse needs of our clients in an increasingly comprehensive way.

From the outset, our shipping activity in the transportation of petroleum products in the Mediterranean has run alongside the Bunker service, and in the early 2000s we upgraded our fleet.

During the same period, we launched the Clearing and Shipping Agency service in the port of Livorno,

whilst our international expansion in the lubricant sector began in the second half of the 2000s. Today, we cover all of the world's main ports as bunker and lubricant traders, of course with a greater focus on the Mediterranean Sea.

In 2018 we launched a constantly stocked lubricants storage service as leading ExxonMobil Distributors for local market in the territories of Italy and Malta.

The cornerstones of our work.

Being a supplier is not enough, and that is why we strive to form partnerships with our clients, through:

- the best products in terms of quality;
- maximum operational flexibility;
- problem solving;
- bespoke financial solutions.

With years of experience in the industry, we have developed a well-established network that enables us to respond to client requests promptly. We offer our clients:

- availability of the product or equivalent alternatives;
- 24/7 service;
- the most competitive price on the market, thanks to our greater purchasing power.

BUNKEROIL CONTACTS:

Address: Via Pietro Paleocapa 11, 57123, Livorno, ITALY.
 Phone: + 39 0586 219214
 Bunker enquiries: bunker@bunkeroil.it
 Lubricant enquires: lubricant@bunkeroil.it
 Please visit: www.bunkeroil.it
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ENACOL, CONNECTING CONTINENTS

Based in Cape Verde, strategically located on the main maritime routes between Europe, West Africa and the Americas

ENACOL, offers high quality fuels and lubricants and ensures efficient delivery service to all types of vessels:

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- IMO 2020 Compliant Fuel Oil with max 0.5% Sulphur Content
- Competitive prices in the region
- Safe and efficient supply service
- Fleet compliant with international standards: MARPOL, SOLAS, ISPS and ISM
- High quality lubricants in partnership with GALP-LUBMARINE

Enacol can deliver bunker fuels to international fleets in Cape Verdian main ports of **Mindelo** (alongside berth and anchorage) and **Praia** (service alongside berth only) by barge, truck or pipeline.

Mindelo have been reinforcing its position as a recognized and specialized “bunker-only” port due to its perfect anchorage conditions for a safe and efficient quick turnaround bunker operation without congestion, bad weather or security risks.

The port, supported by an international airport nearby and quality hotels for accommodations, offers a wide range of

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We look forward for your enquiries!

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GOIL COMPANY LIMITED (GOIL)



GOIL Company Limited (GOIL) is a Public listed Oil Marketing firm

The company is ISO 9001:2015 as well as ISO 14001:2015 Certified. GOIL has as its subsidiaries, GO Energy, a Bulk Distribution Company Limited and GOIL Offshore Limited to cater for its upstream business.

GOIL is currently the market leader in additivated premium quality fuel (Super XP RON 95 and Diesel XP) and has the largest and growing retail network in Ghana with over 400 stations. The marketing arm is represented in seven zones country-wide. GOIL also supplies Mining Diesel to mining firms in the country and the leading LPG marketer in Ghana.

GOIL presently supplies MGO ex-pipe and RTW from three main ports, Tema and Takoradi Ports as well as the Sekondi Naval Base and markets premium Lubricants some of which are blended locally.

The rest are imported. GOIL also supplies aviation fuel to major airlines.

www.goil.com.gh



WORLD BUNKERING

Q3 2023... NOW OPEN FOR BOOKINGS

Q3 2023

SPECIAL FEATURES:

Fuel Quality

While much attention has been on the development of new fuels, the quality of fuel oils – MGO, VLSFO, ULSFO and HSFO – remain an immediate concern for ship operators. We look at recent quality issues. Is there a quality problem?

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GEOGRAPHICAL FOCUS:

Indian Subcontinent

To what extent are VLSFO and ULSFO available in the region and are HSFO sales, to scrubber-equipped ships, holding up? Are the countries of the region ready to meet demand for an increasingly wide range of fuels, including LNG?

Middle East

This year's IBIA Annual Convention will be in Dubai so *World Bunkering* will be highlighting the issues and challenges that concern this crucial region for shipping and bunkering.

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Regular Features

IBIA News, Views & Analysis

Plus: Interview – Industry News – Environment – Testing – LNG – Lubricants – Innovation – Legal News – Equipment and Services – Diary – Event Previews & Reviews



DIARY 23

12 – 13 JULY 2023

**IBIA LNG MASTER CLASS
SINGAPORE, ASIA**

The 1-day LNG Master Class aims to allow course participants to understand the benefits and challenges of LNG bunkering, current trends, infrastructure and equipment as well as regulatory framework required for LNG bunkering. Trainers include Mr. Saunak Rain, IBIA Asia Board Member and Head of FuelLNG.

For more information email: siti@ibia.net / noraini@ibia.net

12 – 13 JULY 2023

**7TH CLEAN MARINE FUEL FORUM
SINGAPORE, ASIA**

The 7th annual LNG & Clean Marine Fuel Forum in Singapore focuses on "Sustainable Marine Fuels for the Future." Continuing its tradition, the event offers expert presentations, panel discussions, and networking opportunities for stakeholders. Supported by the Royal Norwegian Embassy Singapore, Innovation Norway, MPA, and others, attendees include shipyards, ship and ferry owners, MPA officials, gas producers, associations, class societies, service providers, and banks.

For more information: <https://petrominonline.com/clean-marine-fuels-forum-2023-registration/>

24 AUGUST 2023

**3RD MARINE & OFFSHORE CONGRESS
SINGAPORE, ASIA**

This event unites industry professionals, marine and offshore experts, academics, and connoisseurs for a day of knowledge sharing on current topics and future insights. Offering networking opportunities, insider takeaways, and updates on industry developments, this jam-packed day promises to be valuable for all participants.

For more information: info@mediacomz.com

5 – 7 SEPTEMBER 2023

**5TH IBIA AFRICA ENERGY AND SHIPPING
CONFERENCE
ACCRA, GHANA**

The 5th IBIA Africa Energy and Shipping Conference is a highly anticipated event that will take place in Accra, Ghana from 5 - 7 September 2023. It will bring together industry specialists from the African region and around the globe to discuss the latest developments and challenges in the energy and shipping sectors. With Accra's status as a key maritime hub in West Africa, attendees will have the opportunity to explore opportunities and challenges related to the industry in the region. The conference will cover a range of topics related to physical supply chain, financing the marine industry, future fuels in bunkering, bunker quality and quantity, and regulatory issues. Attendees will also have the opportunity to network and learn from leading experts in the field.

For more information on speaking and sponsorship opportunities or registration: tahra.serjeant@ibia.net

11 – 15 SEPTEMBER 2023

**LONDON INTERNATIONAL SHIPPING WEEK
LONDON, UNITED KINGDOM**

Since its inception in 2023, London International Shipping Week (LISW) has grown consistently and is set to become an even bigger event in 2023, when the shipping world is once again able to meet in person.

For more information:
<https://londoninternationalshippingweek.com/>

20 – 21 SEPTEMBER 2023

**TRANSPORT EVOLUTION AFRICA FORUM AND EXPO
DURBAN, SOUTH AFRICA**

The 11th annual Transport Evolution Africa Forum & Expo, the continent's premier port, rail, and road event, takes place in Durban, South Africa in 2023. This event unites local, regional, and international stakeholders involved in planning, investing, and supplying Africa's transport infrastructure. Amidst an industry transformation driven by digitisation, climate change, and structural changes, the event showcases the latest projects, products, and networking opportunities to shape the industry's current and future outlooks. Focused on partnership development, knowledge sharing, and project expansion, participants collaborate to initiate new projects and implement visionary objectives.

For more information: <https://transportevolution.com/>

19 – 20 OCTOBER 2023

ARACON

ROTTERDAM, NETHERLANDS

The prominent ARACON bunkering conference returns to Rotterdam on 19-20 October, providing a comprehensive and candid overview of the marine fuels and shipping sectors. Drawing major bunker suppliers, barging companies, shipowners, and managers from the ARA region and Northwest Europe, the 2023 event promises engaging content, lively debates, and exceptional networking opportunities. The conference culminates in a reception and dinner at the exquisite Royal Maas Yacht Club.

For more information: <https://www.petrospot.com/events/aracon-2023>

7 – 9 NOVEMBER 2023

**IBIA ANNUAL CONVENTION 2023
DUBAI, UNITED ARAB EMIRATES**

Don't miss the highly anticipated IBIA Annual Convention 2023 in Dubai, United Arab Emirates from 7 - 9 November. Join industry leaders, experts, and professionals to discuss the latest developments and challenges in the marine fuel industry, and learn about the latest trends and technologies in the field. With a comprehensive program of keynote speeches, panel discussions, and networking opportunities, attendees will have the chance to engage with industry peers, forge new business relationships, and connect with suppliers and service providers.

For speaker and sponsorship opportunities, and registration contact tahra.serjeant@ibia.net.

All dates were correct at time of going to print but may be subject to change, please review the related websites



BUNKERING BY TRUCK OR BY BARGE IN WEST EUROPE

FOR ALL YOUR ENQUIRIES OR QUESTIONS PLEASE CONTACT US ON:
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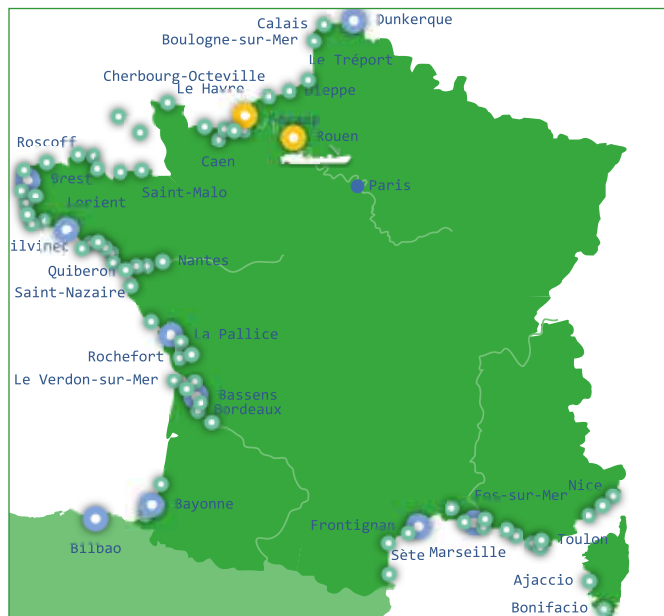
- Marine bunkering Operations
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- Delivery from 10 m³ to 880m³
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Atlantic Energy was founded in 1999 and has been fully concentrating on selling bunkers to vessels.

Our Marine fuels and Services consist of Low sulfur Fuels oils, Liquified Natural Gas (LNG), Distillate Marine Fuels , Lubricants with Truck capacity 36m³.

We manage with local vessel agents for the whole supply chain - from our terminal to vessel.

Deliveries are made by own barge inner le Havre and Rouen Port (24/7 365 days a year) and we are able to supply by truck in all French ports.



Belgium



The Netherlands



Ireland



Norway



Spain



Bunker Office

15 Rue Auguste Girard, 13300 Salon-de-Provence, France

Head Office

3 Quai du Confluent, Immeuble Le Beaupré, 78700 Conflans-Sainte-Honorine, France



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Takoradi Port MGO Facility



Sekondi Naval Base MGO Facility



GOIL BUNKERING

GOIL supplies Marine Gas Oil (MGO) to ocean-going vessels in Tema, Takoradi and Sekondi. In the provision of these services the Company lays emphasis on Product Quality, Product Availability and stringent Environmental, Health & Safety (EHS) standards.

Our MGO meets the requirements of our esteemed clients in accordance with ISO 8217-2010 fuel standard. GOIL is IMO 2020 Low Sulfur Fuel (0.5% Max) compliant.

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GOIL BUNKERING is a team of highly skilled professionals with expertise who work passionately to give you a world class satisfactory service.

QUALITY AND QUANTITY

We don't compromise on the quality of our products. Delivering premium quality and equitable distribution (quantity) is our mantra.

GOIL OFFSHORE TANKER FOR FAST AND FLEXIBLE DELIVERY

You don't have to sweat when you're in Ghanaian waters, GOIL Offshore Tanker is very close to serve you. We are able to guarantee fast delivery and large volumes of fuel with our tanker. We save you time because we know you don't have time for berthing.

EFFICIENT, RESPONSIVE, RELIABLE AND AVAILABLE

You can always rely on GOIL Bunkering for high premium quality fuel. If reliability is your challenge, then that is our drive. We are always on our toes to keep you moving. We are always happy to keep you going.

LONG TERM BUSINESS RELATIONSHIP IS OUR PRIDE

We take pride in personalizing and customizing bunkering. Customers' expectations drive us to always do more and better. Our aim is to establish and maintain long term business relationships. We have a continuous focus on delivering value for money. GOIL Bunkering is the solution to your bunkering needs.

HEALTH, SAFETY AND ENVIRONMENT

We believe that, safety and security don't just happen; they are the result of collective consensus and public investment. For safety is not a gadget but a state of mind. Therefore our team of expert prepares and prevent, they don't repair and repent.

24-hour Contact on:

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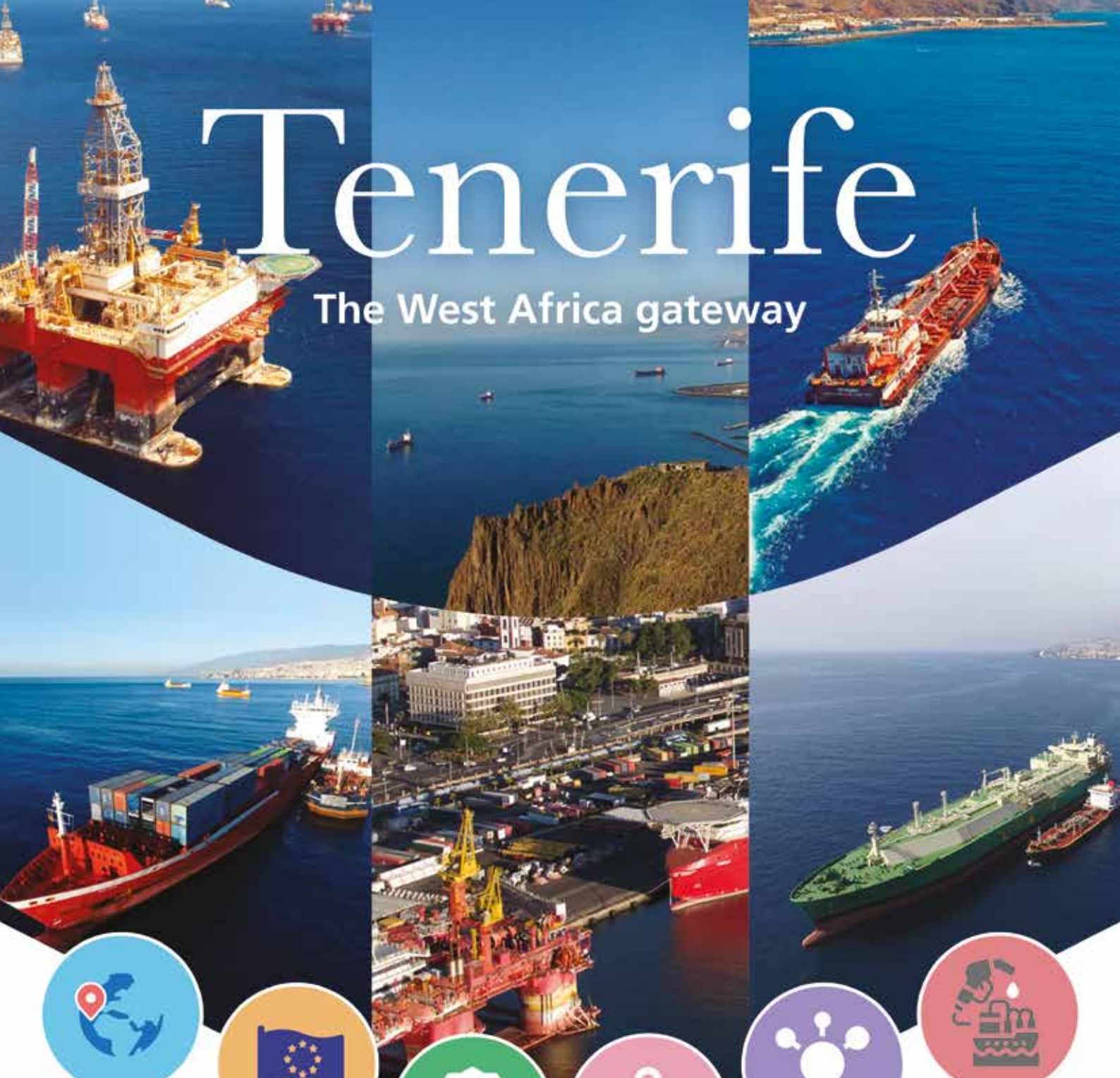
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