

**WORLD**

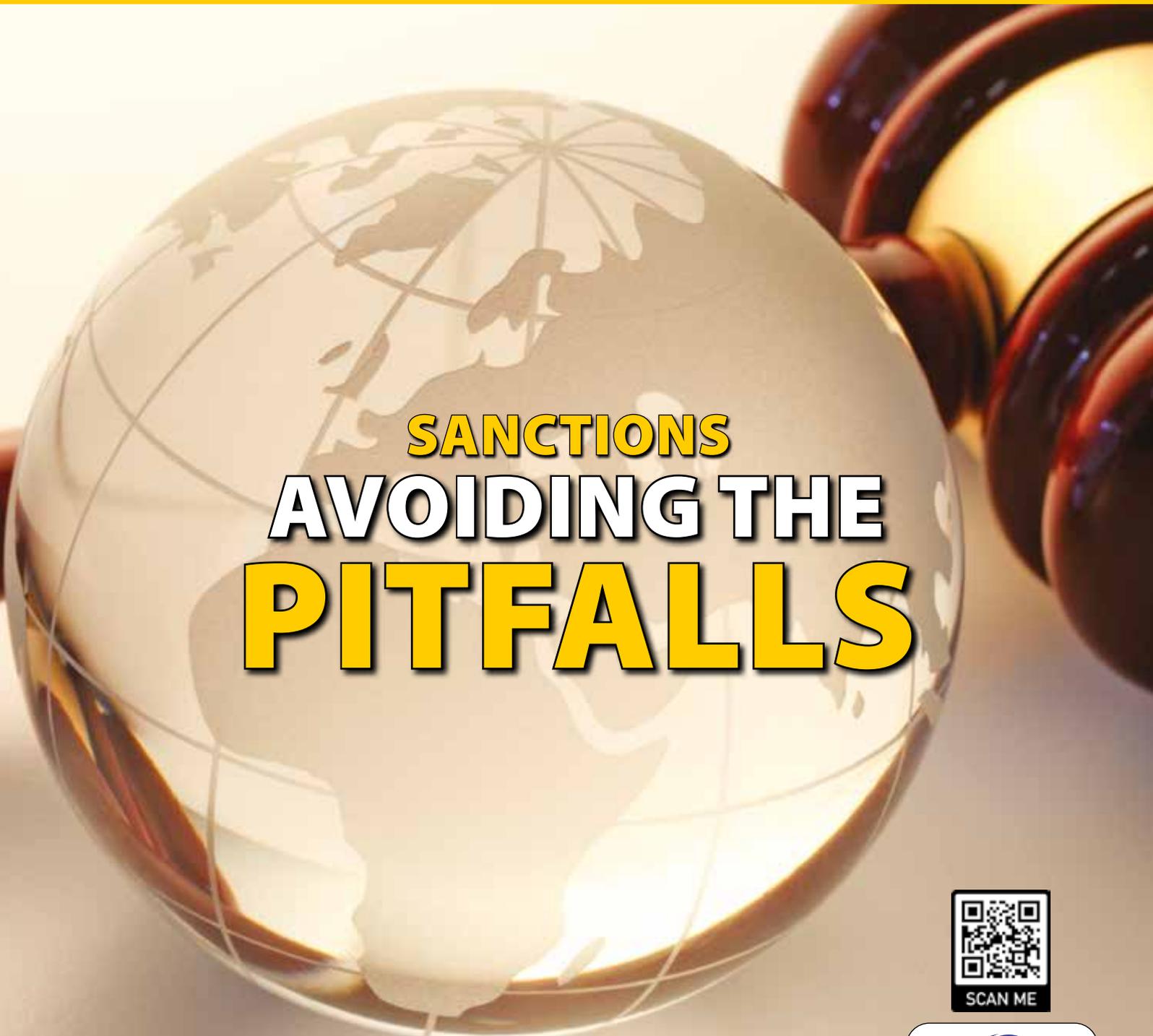


Q1 2024

PUBLISHED SINCE 1997

# BUNKERING

THE OFFICIAL MAGAZINE OF IBIA



## SANCTIONS AVOIDING THE PITFALLS



SCAN ME

### INSIDE THIS ISSUE:

IT - ELECTRONIC REVOLUTION ON THE WAY

IMO UPDATE

ALTERNATIVE FUELS AND TECHNOLOGIES



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## Dear Reader

You do not need me to tell you that a lot has happened since the last issue of *World Bunkering*.

The world has certainly become a more dangerous place and, at least as I write this, there seems little prospect of the Red Sea crisis abating quickly. As shipping always does, it has adapted. As reported in *Industry News*, about 60% of vessels are now sailing around the Cape of Good Hope instead of through the Suez Canal.

For those of a certain age, yours truly included, going the long way round would not be a novel experience. The Canal was of course closed from 1967 to 1975. Now it would seem shipping may have to get used to a new normal, once again. As is usually the case, disruption brings with it opportunities and bunker suppliers around the African coast have suddenly found themselves with a much larger market sailing past their ports.

Adaptation and seizing opportunities are not always a good thing. In this issue we look at the impact of sanctions against some countries, notably Iran, North Korea and Russia. IBIA Board member and maritime lawyer Stephen Sims explains in detail what sanctions mean for the bunker business. Coming back to adaptation, a significant group of players in the shipping industry have turned themselves into operators of a shadowy Dark Fleet that evades sanctions. In a second article on the topic of sanctions Capt. Steve Bomgardner of Pole Star Global looks in detail at the Dark Fleet and AIS 'spoofing'. His company is one of several that can shed light on this murky part of the industry.

Ships operating outside normal protocols and practices of the shipping industry are a concern not least because the safety of all involved at sea and ashore, as well as environmental protection, are being put at risk when the comprehensive framework of

regulation that IMO has built up over the years is ignored.

Talking of IMO, we again have a thought-provoking contribution from IBIA's representative at the UN Specialist Agency, Edmund Hughes. He looks at possible regulation coming the bunker sector's way if various proposals are accepted this year. You might have thought the marine fuel business, and its decarbonisation are already subject to considerable regulation but just look at what is on the table.

The shipping industry's commitment to decarbonisation is why a large chunk of *World Bunkering* is these days devoted to Alternative Fuels and Technologies. We introduce this section with an interview with Kristian Korsgaard Pedersen, Sales & Business Development Manager at major physical supplier of marine fuel, Bunker One. He explains how his company is approaching the adoption of new fuels.

It is often said that there is no single solution to replacing conventional fossil fuels, and our section highlights developments in several different fuels and technologies. However, SEA-LNG once again asserts that, more or less, only LNG is a practical pathway to net zero for most shipping. It dismisses the use of nuclear propulsion as a "moonshot". Funnily enough we also feature nuclear power and note Lloyd's Register, Zodiac Maritime, HD KSOE and KEPCO E&C are in a joint project for the research and development of nuclear-propelled ship designs, including bulk carriers and container ships – but not space ships!

So far, we have focused on fuels and technologies that could by themselves get us at least a long way to net zero but this issue includes details of a technology that won't do that but apparently could considerably reduce emissions right now and so make IMO intermediate goals more attainable. In

Innovation we report that classification society RINA has issued type approval for a stand-alone retrofit design that uses hydrogen to reduce emissions and improve fuel efficiency on marine engines.

There is much else in this issue including our extensive geographical reports, covering North, Central and South America as well as the Caribbean and Western Mediterranean.

This issue coincides with the prestigious IBIA Dinner at Grosvenor House Hotel in London's Mayfair. I look forward to seeing you there.

Best wishes  
**David Hughes**  
**Editor**





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# OPENING A NEW CHAPTER IN 2024

*IBIA Chair Timothy Cosulich welcomes a new year, with new team members and new challenges*

**B**uongiorno,

As we step into the new year, it brings me great pleasure to extend my warmest greetings to all the members, partners, and stakeholders of IBIA. The beginning of 2024 marks not only the start of a new chapter but also an opportunity to reflect on the significant milestones achieved in our industry and chart our course for the future.

In the pages of this issue of *World Bunkering*, we find ourselves at the intersection of challenges and opportunities that define the bunker industry today. Our commitment to fostering sustainable practices and innovation remains unwavering. It is with this commitment in mind that I wish to share some insights on the state of our industry and the direction in which IBIA is heading.

First and foremost, the bunker industry is undergoing a profound transformation. The focus on environmental sustainability, regulatory compliance, and the pursuit of cleaner fuels is reshaping the way we operate. IBIA continues to play a pivotal role in these changes, advocating for environmentally responsible practices and working closely with regulators to ensure a smooth transition towards cleaner energy sources.

IBIA actively supports the IMO's goals, recognising the importance of a coordinated global effort to tackle climate change in our industry.

Our association remains dedicated to supporting our members in adapting to these changes. Through educational initiatives, advocacy efforts, and information sharing, we aim to equip all stakeholders with the knowledge and tools they need to navigate the evolving landscape of the bunker industry.

In the past two years, IBIA has undergone remarkable growth and improvement. We have expanded our global presence and intensified our efforts to engage with industry stakeholders.

This growth is a testament to the dedication and hard work of our members, partners, and the entire IBIA Secretariat. It reflects our collective commitment to driving positive change in the bunker industry.

In 2023, IBIA welcomed two new additions to our team who have both proven to be of great value to the association, its members, and the industry. Alexander Prokopakis joined IBIA as our Executive Director and Edmund Hughes joined us as IBIA IMO Representative.

Alexander's leadership and vision will be instrumental in guiding IBIA towards greater success, and I am confident that he will continue to do a great job in the years to come.

Edmund has allowed our association to significantly up its game when it comes to submitting papers and interacting with other associations at the IMO.

Looking ahead, 2024 promises to be another year of progress and innovation. IBIA will continue to be at the forefront of discussions surrounding alternative fuels, emission reduction technologies, and the implementation of new regulations.

In February 2024, we eagerly anticipate the election of two new board members. These elections are a crucial part of our democratic process, and I look forward to the results with great anticipation. The individuals who will join the board will play an important role in shaping the direction of IBIA and ensuring that we continue to represent the interests of our members effectively.

March 2024 will also bring my term as Chair of IBIA to a close. It has been a privilege and an honour to serve as Chair, and I am deeply grateful for the trust and support of our members throughout my two-year tenure.

I am pleased to announce that I will be handing over the role to Constantinos Capetanakis. Constantinos brings a wealth

of experience and a strong commitment to the values and objectives of IBIA. I have spent the past two years closely working with Constantinos and I had the opportunity to appreciate his strong integrity and industry knowledge.

I have full confidence in his ability to lead the association into the future, and I want to take this opportunity to wish him every success in his new role.

As I reflect on my two years as Chair, I am filled with gratitude for the opportunity to work alongside dedicated professionals who are passionate about our industry. Together, we have achieved significant milestones, and I am proud of what we have accomplished.

As we navigate the challenges and opportunities that lie ahead, I am confident that IBIA will remain a trusted and influential voice in the global bunker sector. Together, we will continue to shape the future of our industry in a way that benefits us all and contributes to a more sustainable world.

Thank you for your support and dedication to the goals of IBIA. I look forward to a year of collaboration, growth, and positive change. As we face the challenges of the future, let us do so with the knowledge that our industry has the capacity for innovation and adaptation.

Ciao

**Timothy Cosulich,  
Chair**





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# WELCOME TO AN EXCITING 2024

*A message from IBIA's Executive Director, Alexander Prokopakis*

As we embark on a promising 2024, I am thrilled to welcome you back to another year of growth and influence at IBIA. This year is poised to be a landmark one for us, as we continue to fortify IBIA's position in the industry with the support and collaboration of our esteemed members.

We kick off the year with the pivotal IBIA Board elections, opening two seats due to the departure of Steve Simms, Principal of Simms Showers LLP, and a previous resignation in 2023. I extend my heartfelt gratitude to Steve for his unwavering commitment and significant contributions to IBIA. His legacy continues as a valued member of our community. Last year, we witnessed an impressive 60% voting participation from our membership, and this year, we aim even higher. As this article reaches you, we will be at the IBIA Annual Dinner 2024, eagerly announcing our new board members.

The last quarter of 2023 marked a milestone for IBIA with a substantial increase in our membership. This surge reflects the industry's trust and the value IBIA brings to the table. Our goal for 2024 is not just to maintain this momentum but to broaden our reach. We are setting sights on expanding our membership in the Americas, Asia, and particularly within the buyers' segment, ensuring a truly global representation of the bunker value chain.

Following the successful launch of our Middle East Regional Board in November 2023, we are now gearing up for the announcement of our final Regional Board in Europe at the IBIA Annual Convention 2024. This expansion underscores our commitment to being a truly global organisation, responsive to the needs and dynamics of different regions.

In April 2024, I am looking forward to visiting Singapore, a key location for our industry and an important region for IBIA.

This visit will be a fantastic opportunity to meet and engage with our Asia-based members. I am particularly excited about attending the IBIA Asia Gala Dinner 2024, an event that promises to be a highlight for our Asian members and an excellent occasion for networking and discussing industry developments. I'll return in October for SIBCON, the premier and most impactful event in the Marine Fuels industry. SIBCON 2024 promises to offer knowledge, engagement, and abundant opportunities for collaboration.

Speaking of global gatherings, I am delighted to announce that the IBIA Annual Convention 2024 will be held in Athens, Greece, a city close to my heart and a pivotal hub in the global shipping industry. Our Conventions have consistently grown in popularity, and we anticipate a fully packed event this year. We look forward to welcoming our members and industry stakeholders to Athens for an enriching and engaging Convention in November.

As the industry evolves into the digital era, so does IBIA. We are actively exploring ways to upscale our offerings, aligning with the global trend of digital solutions. Our aim is to ensure that our members benefit from the latest technological advancements and industry insights.

I am proud to acknowledge the growth of the IBIA team. Their dedication and expertise are invaluable in our mission to advocate for and protect the interests of our members. This team's strength is a testament to our collective commitment to excellence and service.

We extend our thanks to Timothy Cosulich for his outstanding leadership as our Chair. As Timothy's tenure concludes in March 2024, it's important to recognise the remarkable impact he has made. His commitment to transparency has been a guiding light, and his expertise as a multinational leader has propelled IBIA to unprecedented heights.

The standard of excellence Timothy has set will serve as a lasting benchmark for us. His vision and dedication will continue to inspire our path forward, ensuring that IBIA remains at the forefront of the industry.

Finally, I want to reaffirm my commitment to open communication. My door is always open, not just to our members, but to the broader industry and associated organisations. Let's collaborate and communicate openly to steer IBIA towards greater heights in the next 12 months.

In conclusion, let us all join hands in making 2024 a year of unprecedented growth and success for IBIA. Together, we can achieve greater milestones and continue to make a meaningful impact in the bunker and shipping industry.

Sincerely,

**Alexander Prokopakis**  
IBIA Executive Director  
[alexander.prokopakis@ibia.net](mailto:alexander.prokopakis@ibia.net)





2024

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# ELEVATING INDUSTRY ENGAGEMENT: IBIA'S EVENTFUL 2024 CALENDAR

**An exhilarating line-up of events and engagements set to invigorate the bunker industry in 2024**

As I have recently taken on the role of Global Head of Events, I would like to extend my heartfelt thanks to our members for their continued and unwavering support of IBIA's event initiatives over the years. Together with the Board, Regional Boards, Secretariat and the Events Working Group, we are eager to provide high-level engagements for our members throughout 2024.

Our year starts with a bang at the IBIA Annual Dinner 2024, currently being hosted at the prestigious Grosvenor House Hotel in Mayfair, London. This event epitomises the strength and unity of our community, with over 1,100 members and guests in attendance. We would like to express our gratitude to our generous sponsors, including Gold sponsors Arte Bunkering, Sea Crown, Oilmar, and Sohar Port, Silver sponsors Gulf Petroleum Supplies and Cockett Marine, as well as our Advertising sponsors, Terpel, Drumo Coin, Bridge, Oldendorff, Unerco and Port of Tenerife. We eagerly anticipate showcasing the event highlights in the next edition of *World Bunkering*.

Looking ahead, we start April with an IBIA Member Meeting. Our Digitalisation Working Group will provide updates and engage members in discussions about their recent work and the opportunities for further involvement. Our commitment is to host these informative and interactive meetings quarterly, if not more frequently, to keep our members connected and informed.

A key event in our calendar is the IBIA Asia Gala Dinner 2024, a significant networking event in Asia, set to take place on Wednesday 17 April at the

PARKROYAL COLLECTION Marina Bay, Singapore. Following the tremendous success of the previous year, we anticipate around 200 key industry players to grace this gala, a highlight of the Singapore Maritime Week.

The year continues with a Cocktail Reception in Athens at the onset of Posidonia in June and a notable presence at SIBCON in Singapore in October. These events offer unparalleled opportunities for networking and industry engagement. Detailed information will be made available to our members soon.

We are delighted to announce that the IBIA Annual Convention will be hosted in Athens, Greece. Given the city's status as a global shipping hub, we expect a fully packed convention. Scheduled for 5 – 7 November, this event promises to be a melting pot of ideas, innovations, and networking opportunities.

As part of our ongoing commitment, IBIA supports numerous regional events throughout the year. Members can stay informed about these events through our Calendar pages and the Diary section in our publication, as well as our IBIA website.

We encourage our members to actively participate in our events. Whether you wish to speak, contribute, or sponsor, IBIA provides a robust platform for engaging with industry peers and leaders. Your involvement is essential in shaping these events into dynamic and meaningful experiences.

As we navigate an exciting year, don't miss the chance to be an integral part of our conferences and engagements.

For those interested in speaking or supporting our initiatives, please feel free to reach out to me directly.

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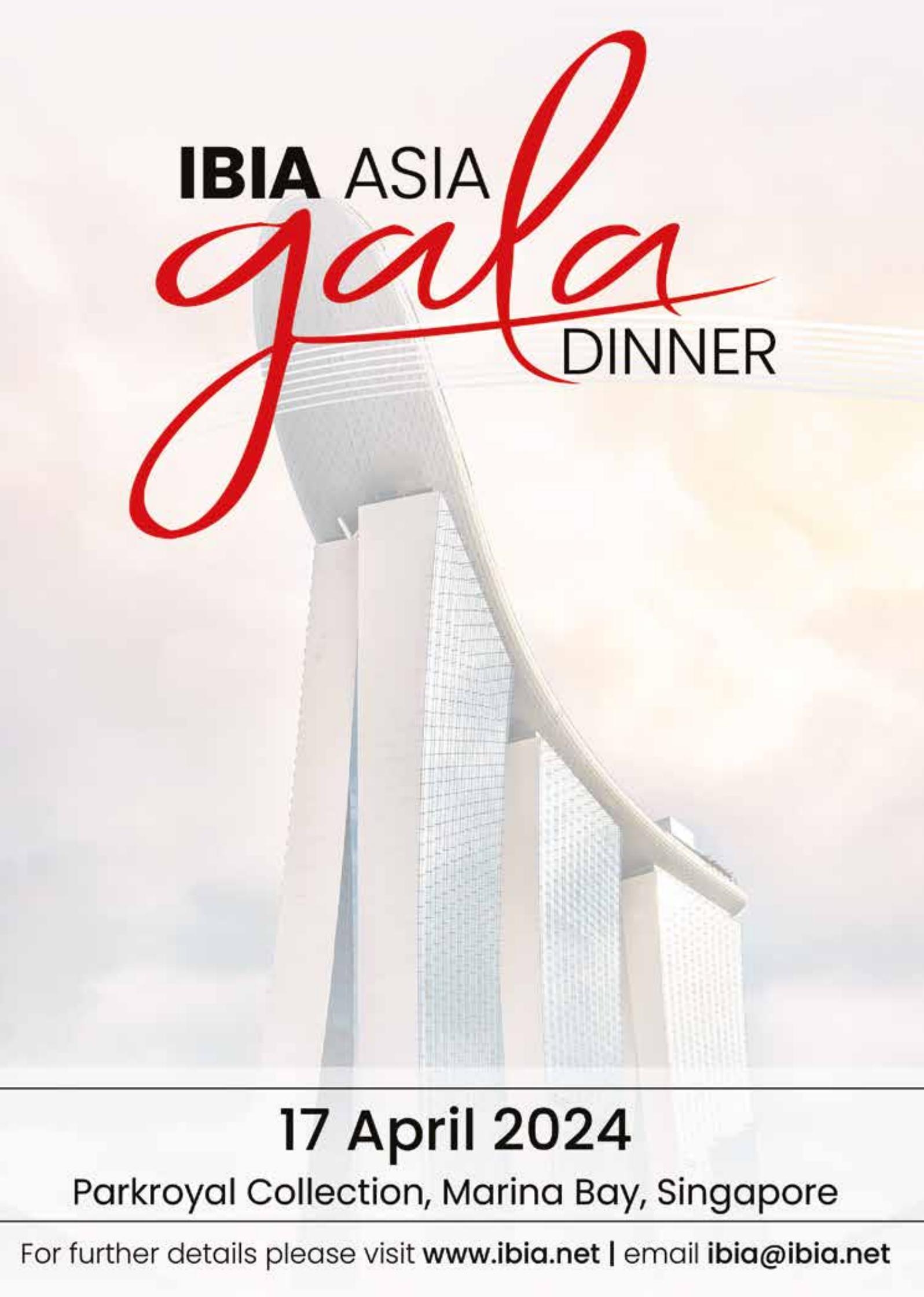
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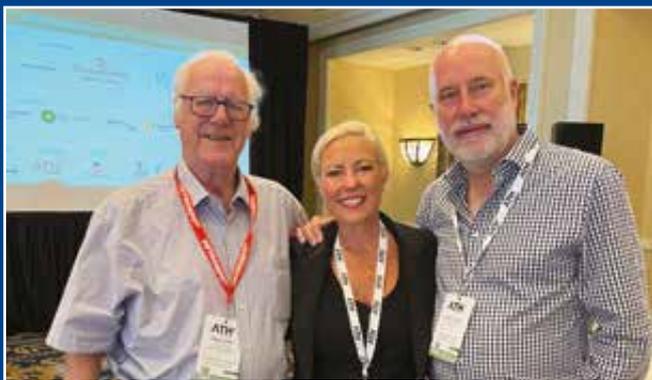
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MODULE 8 TO PURCHASE	Quantity measurement – The principles of quantity measurement including Mass Flow Metering	Online at <a href="http://www.ibia.net">www.ibia.net</a>
MODULE 9 TO PURCHASE	Sampling – The basics of sampling, sampling methods and sample handling	Online at <a href="http://www.ibia.net">www.ibia.net</a>
MODULE 10 TO PURCHASE	Fuel quality – Impact on storage, treatment and use in the engine	Online at <a href="http://www.ibia.net">www.ibia.net</a>
MODULE 11 TO PURCHASE	Alternative Fuels	Online at <a href="http://www.ibia.net">www.ibia.net</a>
MODULE 12 TO PURCHASE	Bio Fuels	Online at <a href="http://www.ibia.net">www.ibia.net</a>
MODULE 13 TO PURCHASE	Exhaust Emissions	Online at <a href="http://www.ibia.net">www.ibia.net</a>
MODULE 14 TO PURCHASE	Introduction to LNG Bunkers	Online at <a href="http://www.ibia.net">www.ibia.net</a>
COURSE TO PURCHASE	The IBIA Basic Bunkering Course	Online at <a href="http://www.ibia.net">www.ibia.net</a>
MARCH		
20	IBIA Methanol Bunkering Workshop	Singapore, Asia
27 & 28	2 Days Advanced Bunkering Course SS600:2022 & SS684:2019	Singapore, Asia
APRIL		
17	IBIA Asia Annual Dinner	Singapore, Asia
24 & 25	2 Days Basic Bunkering Course SS600:2022 & SS684:2019	Singapore, Asia
MAY		
29 & 30	2 Days Advanced Bunkering Course SS600:2022 & SS684:2019	Singapore, Asia
JUNE		
2	IBIA Cocktail Reception	Athens, Greece
12 & 13	2 Days Basic Bunkering Course SS600:2022 & SS684:2019	Singapore, Asia
NOVEMBER		
5 - 7	IBIA Annual Convention 2024	Athens, Greece

# BUNKER INDUSTRY EVENTS 2024

MARCH		
6	1st Safety4Sea Dubai Forum	Dubai, United Arab Emirates
12 - 14	CMA Shipping	Stamford, United States of America
APRIL		
15 - 19	Singapore Maritime Week	Singapore, Asia
23 - 25	IBC (International Bunker Conference)	Oslo, Norway
MAY		
6 - 9	Portugal Shipping Week	Lisbon, Portugal
8 - 9	Green Ports and Shipping Congress	Singapore, Asia
21 - 23	Maritime Week Americas	Panama
20 - 22	31st Annual Middle East Petroleum & Gas Conference (MPGC)	Dubai, United Arab Emirates
JUNE		
3 - 7	Posidonia	Athens, Greece
17 - 19	Maritime Week Las Palmas	Las Palmas de Gran Canaria
26 - 27	8th Clean Marine Fuel Forum 2024 & Methanol Bunkering Masterclass	Singapore, Asia
SEPTEMBER		
11 - 12	7th edition of Oil Spill India (OSI 2024)	Delhi, India
OCTOBER		
8 - 10	SIBCON	Singapore, Asia

MARITIME WEEK AFRICA



# NAVIGATING NEW WATERS: AFRICA'S ROLE IN GLOBAL BUNKERING

*Spending a week in Cape Town with the regional and global bunker industry, taking a look at the opportunities and pitfalls of bunkering in Africa*

**A**midst maritime tensions and regional disruptions, Africa's eastern coast is emerging as a new hub for bunkering services, signalling a pivotal shift in the marine fuels sector.

In recent times, the maritime industry has found itself navigating through a sea of challenges and changes, particularly with the persistent tensions in the Red Sea region. These geopolitical ripples have led to a strategic re-routing of vessels around the Cape of Good Hope, spotlighting the potential of African nations such as Djibouti, Kenya, Tanzania, and Mozambique to significantly bolster their bunkering services. This development is not merely a response to circumstances but a testament to the continent's burgeoning capability to redefine its position within the global maritime economy.

Ambassador Nancy Karigithu, Kenya's Special Envoy and Presidential Advisor for Maritime and Blue Economy, has been at the forefront of advocating for this transformative vision. Speaking at Maritime Week Africa, she emphasised the need for substantial investment in maritime infrastructure, including the development of storage tanks, pipelines, and terminals. Such enhancements are crucial for accommodating the increasing demand for bunkering services, thereby attracting international investors and stimulating economic growth along Africa's east coast.

Ambassador Karigithu underscored the importance of collaborative ventures in this evolving landscape. She proposed that African bunkering companies forge partnerships with international shipping and fuel suppliers to leverage collective expertise, technology, and market access. This collaborative approach is pivotal for driving growth in Africa's marine fuels sector, making it more resilient and adaptable to the dynamic demands of global shipping.

The call for bolstered maritime security was another critical point raised by Ambassador Karigithu, especially in the wake of recent shipping attacks in the Red Sea.

Enhancing security measures is essential for building confidence among shipping operators, which, in turn, would lead to an increased utilisation of African bunkering services. A secure and reliable maritime environment is foundational for the sustainable growth of the bunkering sector.

The repercussions of these geopolitical and strategic shifts are already evident in the changing bunkering volumes across various African ports. For instance, the closure of Algoa Bay resulted in an immediate spike in volumes at Port Louis and Walvis Bay. Port Louis, in particular, saw its bunkering volume double, propelled by its competitive market and the presence of high-quality, low-cost VLSFO suppliers. This saturation and competitiveness are beneficial for keeping prices favourable for shipping companies and for Mauritius, enhancing its allure as a bunkering destination.

Durban port witnessed a modest increase in bunkering activities, primarily from vessels already scheduled to call at the port. The challenges faced by Durban, particularly in selling imported MGO duty-free for export due to tax legislation issues, highlight the broader need for modernising customs and tax laws to support efficient bunkering operations in South Africa.

Cape Town and Luanda are also reaping the benefits of the current maritime shifts. Cape Town has seen significant increases in bunkering volumes, aided by the addition of two barges, despite the high local prices. Luanda, with its local refinery, has become an attractive option for buyers seeking the continent's cheapest VLSFO, despite the uncertainties surrounding supply operations.

The emergence of Walvis Bay as a key player in capturing the rerouted trade further illustrates the dynamic changes within the African bunkering landscape. The steady increase in volumes since September, with a notable surge post-December, underscores the port's growing significance in the industry.

These developments call for a concerted effort to modernise customs legislation and improve port operations across Africa. Such reforms are crucial for enhancing the continent's attractiveness as a bunkering location and fostering a more efficient and competitive bunkering sector. Engaging with legislative processes and advocating for private partnerships in port management are essential steps toward achieving this goal.

As the Regional Manager (Africa), I am witnessing an era of potential growth and transformation in Africa's bunkering sector. The continent's strategic response to recent maritime challenges, coupled with a proactive approach to infrastructure development and international collaboration, will set the stage for a more prominent role in the global maritime economy. The current momentum not only presents an opportunity for Africa to cement its position as a bunkering hub but also serves as a call to action for stakeholders to navigate these new waters with foresight, cooperation, and a shared vision for a prosperous maritime future.

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# IBIA POSIDONIA RECEPTION



# SAVE THE DATE

2 June 2024  
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# IBIA

INTERNATIONAL BUNKER INDUSTRY ASSOCIATION

# The IBIA Basic Bunkering Course



**IBIA**  
ONLINE  
EDUCATION

## **Module 1**

*Introduction*

## **Module 2**

*Basic commercial*

## **Module 3**

*Basic Technical*

## **Module 4**

*Basic Operations*

## **Module 5**

*Real life*

The **IBIA Basic Bunkering Course** is a programme of training modules designed to introduce new entrants or staff with limited knowledge of the bunker industry to the most important aspects of the bunker industry.

It consists of 5 modules each lasting just over 1 hour presented by IBIA Board member, Nigel Draffin, the renowned bunker industry expert, Author of 12 books on Bunkering.

The course materials have been peer reviewed by members of the relevant IBIA Working Groups.

The **Online training** course is recorded video content, it is not live. The duration of each module is up to 60 minutes. The modules can be attended as stand-alone modules, however students will gain the best value by taking all five modules in the order suggested. On completion of the course, students will receive the '**IBIA Certificate of Attendance**'.

**Nigel Draffin**



Consultant and IBIA Board Member



**IBIA**

INTERNATIONAL BUNKER INDUSTRY ASSOCIATION

# 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.



## Are you looking for a **Leading Bunkering Company?**

**Quality Fuel Oils and Lubricants  
at reasonable rates!**

Over the past 25 years, **Aditya Marine** has overcome challenges, embraced opportunities, and stood tall amidst industry fluctuations.

Aditya Marine has expanded its operations to ports in the UK and UAE, serving a diverse clientele that includes both local and international clients.

At the core of Aditya Marine's operations is a commitment to safety and security during bunkering. The company diligently monitors and updates clients throughout the supply process, adhering strictly to ISO standards.

*Our commitment to quality and service has been the cornerstone of our success.*

For more information please visit: **www.adioil.com**

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# HELLO ALL AND HAPPY NEW YEAR!

*At the time of print, we will be two months into the New Year.*

*Time has just flown by, and I am excited to share with our IBIA members the activities for IBIA Asia in 2024*

## Methanol Bunkering Workshop

As shared in the previous quarter, together with Green Marine, we are developing a training programme on methanol bunkering. Developing effective training programmes involves adhering to standards and best practices in ensuring that the training is well-designed, impactful, and aligned with international standards and regulations. Whilst we wait for standards for methanol as a marine fuel to be available, we are pleased to share that we will conduct our first methanol bunkering workshop on 20 March 2024, in Singapore.

Designed to provide an understanding of methanol as a marine fuel, the course will be delivered by experienced facilitators who have been ship captains and chief engineers of dual-powered vessels. They will bring real world insights into ship design, building, and operation with methanol.

I eagerly anticipate kickstarting this workshop and I will share with you more details on it shortly. We will subsequently roll out this workshop to other parts of Asia this year.

## IBIA Asia Dinner 2024

Following the success of the IBIA Asia Dinner last year, I am also pleased to share that we will be having our IBIA Asia dinner 2024 on 17 April, as part of the Singapore Maritime Week (SMW). While the dinner in Asia may not be as big and grand as our prestigious London Gala Dinner, members can look forward to a night of networking and good food and drinks! Our IBIA Executive Director, Mr. Alexander Prokopakis will also join us in the Lion City, and we look forward to hosting our Asia members that evening. As seats are limited, I would like to strongly encourage you to get your tickets early!

## SIBCON 2024

The biennial event will return to Singapore on the 8-10 October 2024. SIBCON is a significant event in not only the bunkering industry, but also in the maritime and shipping industries. During the conference, professionals, stakeholders, and experts in the bunkering and maritime sectors gather to discuss industry trends, share knowledge, and explore business opportunities. IBIA is honoured to be invited to be part of the SIBCON Steering Committee where we are given the opportunity to help shape the conference programme.

These activities reflect IBIA Asia's commitment to education, training, and collaboration within the bunkering and maritime sectors and I look forward to your support and continuous engagement throughout the year.

**Siti Noraini Zaini**  
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# Oil Marketing & Trading International

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# NEW IBIA MEMBERS

## CORPORATE A

Bunker Trader

**Kevin Alameda**

**Clipper Oil**

Americas

Supplier (Physical), Broker

**Paul Musgrave**

**Standard Fuel Oils Ltd**

Europe

Other

**Hila Sasson**

**Windward**

Middle East

Bunker Trader, Broker

**Marina Jakobsen**

**Marine Brokers APS**

Europe

Surveyor

**Aizat Hamid**

**Frontier Marine**

**Services Pte Ltd**

Asia

Surveyor, Agent

**Ravi Sinha**

**Aregius Marine**

**Services Pte Ltd**

Asia

Port

**Haitham Al Tamimi**

**Sohar Port and Freezone**

Middle East

Supplier, Trader

**Ahmet Emre Yaldiz**

**Temar Denizcilik ve Tic. A.S.**

Europe

Other

**Trevor Brown**

**Ammonia Energy**

**Association**

Americas

Ship Owner, Ship Manager

**Michael McNamara**

**Carnival Corporation & PLC**

Americas

Ship Owner, Ship Manager

**David Hart**

**Proman AG**

Europe

## CORPORATE B

Supplier, Trader

**Alessandra Boccone**

**Delta Energy Monaco S.A.R.L**

Europe

Trader, Broker

**Paul Wilson**

**River Marine Fuels Ltd**

Europe

## INDIVIDUAL

Trader, Broker

**Marco Carbone**

**Riviers Marine Sam**

Europe

Media

**Catherine Caulfield**

**Argus Media Ltd**

Europe

Bunker Trader

**Viet Hoang**

**Sea Guardian Marine**

**(Singapore) Pte Ltd**

Asia

Bunker Trader, Surveyor

**Cesar Gallegos**

**Prime Marine**

**Solutions S.A.S.**

Americas

Other, Ship Manager

**Periklis Grymplas**

**Webmarine Limited**

Europe

Bunker Trader

**Andreas Lasczyk**

**Heinrich Wegener & Sohn**

**Bunkergesellschaft mbH**

Europe

Service

**Claudia Beumer**

**C4 fuel BV**

Europe

Bunker Trader, Charterer

**Min Kyoo Kim**

**Star Fuel Korea Co., Ltd**

Asia

Bunker Trader, Broker

**Yassine Zaramdini**

**Zeramdini Bunker Service**

Europe

Bunker Supplier, Broker

**John Canel**

**Lindsay-Blee Americas LLC**

Americas

Service

**Evagelia Mante**

**Spectrumlabs S.A.**

Europe

# Join IBIA today

to play an integral part in the sustainable future of the bunker industry

**B**y joining IBIA you will become part of a global network of bunker industry experts who collectively form one of the world's leading authority on bunkers. Not only will you have access to a wealth of information and insight (we publish newsletters and industry updates on current issues) which offer pragmatic advice for managing the industry's challenges; members also have the potential to shape and influence both international and local legislation. This happens through IBIA's Working Groups which are responsible for developing industry guidance, participation in IMO correspondence groups, solving long-term industry issues, and addressing both commercial and technical aspects.

## INDIVIDUAL £350

- IBIA Board Member eligibility
- The right to 1 vote for Board Member Elections
- IBIA Working Group eligibility
- Access to all IBIA Members Meetings
- Discounted IBIA training courses/ conferences/seminars events/conventions
- Individual discounts on other industry events
- Subscription to World Bunkering magazine
- Representation at IMO (International Maritime Organisation)
- Access to IBIA's member networking platform
- Eligible to book up to 4 tickets at the prestigious IBIA Annual Dinner
- IBIA mediation and dispute resolution
- IBIA membership certificate

## CORPORATE £1750

### ALL THE BENEFITS OF INDIVIDUAL+

- Register up to two offices anywhere in the world
- The right to 2 votes for Board Member Elections
- 5 user registrations on the IBIA portal per registered office
- 2 subscriptions per office to World Bunkering magazine, sent to all registered offices
- Eligible to book up to 4 tables at the prestigious IBIA Annual Dinner
- Eligible to add further offices for a reduced fee of £600 per office
- Use of the IBIA Members' logo on your website and stationery

**CORPORATE ADDITIONAL MEMBERS GET ALL THE BENEFITS OF THE CORPORATE MEMBERSHIP WITH THE EXCEPTION OF THE RIGHT TO VOTE FOR BOARD MEMBER ELECTIONS.**

You can add as many additional offices as you pay for. Affiliation with the primary Corporate member must be authorised. Special cases can be negotiated individually with the IBIA membership management team.

## USEFUL INFORMATION

- 15% discount for 3 years membership, (Paid in one instalment) –
- Guarantee no membership price increases for the next 3 years.
- Unregistered offices will not get IBIA benefits



# REGULATORY ROUND-UP

*Edmund Hughes, IBIA's representative at IMO reports on developments*

It is a great pleasure to find myself writing this as your representative to the IMO

2024 is going to be another important year in the regulation of emissions from international shipping and will result in ramifications, some of them significant, for the marine fuel supply chain.

Indeed, the year has already got off to a notable start. On the 1 January shipping was brought into the European Union's Emission Trading Scheme (EU-ETS). This, as part of the EU's "Fit for 55" package of measures, will be joined by the Fuel EU Maritime initiative from 1 January 2025.

Both these regional regulatory instruments will impact international shipping and the fuels used by ships in the short term and will add to the international requirements such as the IMO's Carbon Intensity Indicator (CII) in driving demand in this decade for alternative fuels such as biofuels and methanol.

However, it is the adoption by IMO last July of the 2023 Strategy for the reduction of GHG emissions from ships that was not only the most significant event last year concerning efforts to address GHG emissions from international shipping but is likely, in the mid- to long term, to have even greater significance.

For example, for all engaged in the bunker fuel supply chain the following paragraph from the 2023 Strategy is likely to have one of the most consequential effects over the coming decades:

"3.2 The levels of ambition and indicative checkpoints should take into account the well-to-wake GHG emissions of marine fuels as addressed in the Guidelines on Life cycle GHG intensity of marine fuels (LCA guidelines) developed by the Organization<sup>1</sup> with the overall objective of reducing GHG emissions within the boundaries of the energy system of international shipping and preventing a shift of emissions to other sectors."

<sup>1</sup> Resolution MEPC.376(80)

Future regulatory measures currently under discussion at IMO, and timetabled to be agreed by mid-decade, including a global "fuel standard regulating the phased reduction of the marine fuel's GHG intensity" and a "maritime GHG emissions pricing mechanism", are expected to see this requirement built into them with significant implications for the whole marine fuel supply chain. The "Well-to-Wake" principle is already included in the Fuel EU Maritime requirements due to come into effect from next year and experience from other sectors already implementing GHG intensity requirements for fuels across their whole supply chain clearly illustrates that this could have major ramifications for the bunkering of global shipping!

This is because the concept of "Well-to-Wake" (WtW) means that the declared GHG intensity of marine fuel when used on board the ship, in terms of grams of CO<sub>2</sub> equivalent per Megajoule of energy (gCO<sub>2</sub>eq/MJ), will need to account fully for the CO<sub>2</sub> equivalent emissions and the energy used in the production and supply of the marine fuel to the ship.



So, in theory, the emissions from a bunker barge may need to be incorporated into the GHG intensity that is provided with the fuel bunkered to the ship! The bunker operator may need therefore, as an entity in the marine fuel supply chain, to not only monitor and calculate the  $gCO_2eq/MJ$  for each stem for the fuel supplied to the ship but also that this calculation be verified and certified by one of the bodies responsible for certifying “sustainability” of fuels that operate globally. There is even the possibility that bunker traders and indeed anyone engaged in the supply of bunkers and who has input into the final delivered product may need to be verified and certified by one of those bodies to assure the chain of custody.

We have seen already the beginnings of such requirements with the supply of biofuels and the adoption by the Marine Environment Protection Committee of IMO last July of MEPC.1/Circ.905 Interim Guidance on the use of Biofuels under Regulations 26, 27 and 28 of MARPOL Annex VI (DCS AND CII), that became applicable from 1 October 2023. In this guidance biofuels meeting the GHG reduction/sustainability criteria certified by an internationally recognised certification scheme e.g. International Sustainability and Carbon Certification (ISCC), Roundtable on Sustainable Biomaterials (RSB), etc.).

Indeed, IBIA is aware of a draft proposal that may go forward to IMO that identifies that reporting of low and zero carbon fuels from fuel producers or suppliers will eventually be carried out using an IMO mandated fuel certification scheme, as it is done currently in the international aviation sector under the ICAO’s CORSIA scheme.

The concern is that not only are regulatory measures being deliberated and, in my view, going to be agreed soon that will embody the WtW principle but that those considering the design of those measures do not consider current practices as an impediment to their adoption. For example, during a recent ad-hoc workshop on the Lifecycle Assessment (LCA) guidelines for marine fuels (MEPC.376(80)) held at IMO last December when IBIA, as represented by IBIA Board member Nigel Draffin, provided a description of the marine fuel supply chain in a presentation

to the workshop and referred to the current operation of bunker barges as “the milk round” it was indicated by a delegate from an IMO Member State that the way ships are currently bunkered may have to change!

This explains why, in part, IBIA agreed to co-sponsor the ICS proposal for a simplified global GHG fuel standard (see WB article, page 27, Q4, 2023) that has been submitted to the intersessional meeting of the working group on reduction of GHG emissions from ships (ISWG-GHG 16) that will meet in the week preceding MEPC 81 in March. Both ICS and IBIA recognise that an IMO GHG fuel standard for 2030 which will help to create a global market for marine fuels with a reduced GHG intensity but that the design of needs to be kept as simple as possible if, as identified by the 2023 IMO GHG Strategy, governments wish to have a workable system in place within the next 18 months, that can be uniformly and consistently implemented and that keeps the administrative burden for bunker operators and suppliers to a minimum.

The joint ICS and IBIA submission is also another example of the current mantra being espoused concerning the need for greater collaboration between entities in the marine fuel supply chain and indicates that it is not only true but a necessity.

Other initiatives such as the Clean Energy Maritime (CEM) Hubs Initiative partnership between the International Association of Ports and Harbors (IAPH), the Clean Energy Ministerial (CEM) and the International Chamber of Shipping (ICS), intended to accelerate the production, transport, and use of low-carbon fuels that will be transported by shipping for the world, is an example of collaborative efforts needed to support the ‘net-zero’ goal “by or around” 2050 that IMO has agreed.

The next few months will see some key meetings take place at IMO. In addition to the ISWG-GHG 16 and MEPC 81 meetings in March there is also the PPR Sub-Committee in February where items of interest to the bunkering community include possible further regulation of wash water discharges from Exhaust Gas Cleaning Systems (EGCS) and guidance for control of Black Carbon emissions including discussion about whether for fuel oil there should be H/C ratio testing and reporting. I look forward to reporting on the outcomes of these meetings in the next edition.

For now, though may I wish a fair wind and good seas to all.

Edmund Hughes  
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# 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.

Bunkering operations are routine, critical and high-risk operations which require accurate planning from both the owner and supplier to ensure a safe and successful operation. The publication consists of background information as well as checklists and key notes for the entire process for shipowners, masters and crew on how to prepare, execute and follow up on bunkering, including what to do when it goes wrong.

**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 2: Origin and supply chain of marine bunkers

An overview of bunker blends before the ship arrives for bunkering followed by a detailed description of the ship's preparation and planning prior to bunkering. Advice is also given on how to handle a situation if compliant fuel is unavailable in a specific port. Paperwork including the bunker delivery note and certificates of quality are described and recommendations are given that aim to help to use them correctly.



## 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.



## Chapter 4: Calculation of bunker quantity and after completion procedures

Details on how to create a solid background for calculating the bunker quantity and determine if the ordered bunker stem has been delivered. For ships carrying equipment to undertake onboard testing of marine fuels, testing procedures are referred to and detailed description of how to interpret test results provided. Keeping an accurate and up to date oil record book is, together with the bunker delivery note, important as records for internal and external use for example during port state control.

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

<https://shop.witherbys.com/shipmaster-s-bunkering-manual-2022/>

IBIA members receive a 20% discount on all publications.

Please enter "IBIA" in the "Coupon/Gift Certificate" box to receive your 20% IBIA member discount.



IBIA

INTERNATIONAL BUNKER INDUSTRY ASSOCIATION

# IBIA ANNUAL CONVENTION

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# ONLINE BUNKER TRAINING COURSE



- Module 1:**  
Bunker Market Regulations and Enforcement
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- Module 3:**  
Best practice for suppliers with VLSFO
- Module 4:**  
Best practices for users with VLSFO
- Module 5:**  
Adapting to a changing market
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- Module 11:**  
Alternative Fuels
- Module 12:**  
Biofuels
- Module 13:**  
Exhaust Emissions
- Module 14:**  
Introduction to LNG Bunkers

IBIA runs a series of online training courses to inform the members of our industry and help them to understand international regulations, guidance on how best practice and application of International standards can improve their ability to source, supply and use the fuels required now and in the medium term.

The training modules are aimed at all bunker industry stakeholders who are keen on gaining solid general knowledge of marine fuel. It will be of value to sellers, bunker deliverers, surveyors and ship operators. The course is delivered in clear, understandable language. Delegates will be able to ask questions and seek clarification on any topics covered.

The renowned bunker industry expert Nigel Draffin, Author of 12 books on Bunkering and IBIA's Treasurer, will run the online Bunker Training courses.

On completion of a module, students will receive the 'IBIA Certificate of Attendance'.

**Nigel Draffin**



Consultant and IBIA Board Member



### The International Bunker Industry Association (IBIA)

was formed in 1992 to provide an international forum to address the concerns of all sectors of the bunker industry.

IBIA is an international organisation with members in over 70 countries worldwide. Members comprise Shipowners, Charterers, Bunker Suppliers, Traders, Brokers, Barging Companies, Storage Companies, Surveyors, Port Authorities, Lawyers, Protection and Indemnity Clubs and Maritime Consultants.

As an association dedicated to its membership, IBIA reflects members' wishes and reacts to their needs – World Bunkering is the official journal of IBIA and a prime communication solution in complying with this vital requirement.

### Aims of the Association

- To provide an international forum to address the concerns of all sectors of the international bunker industry.
- To improve and clarify industry practices and documentation.
- To represent the industry in discussions with relevant governmental and non-governmental bodies and to make the concerns of the industry known to such bodies.
- To assist members in the event of disputes by identifying the options and exploring the alternatives open to them and eventually to provide a panel of suitably experienced mediators and arbitrators.
- To increase the professional understanding and competence of those working in the industry.

### WORLD BUNKERING CIRCULATION

World Bunkering has an international circulation to Ship Owners, Ship Managers, Ship Charterers, Ports, Suppliers, Traders, Brokers and Services, of which include both IBIA members and trusted non-members plus availability at various industry events.

World Bunkering is the only official magazine of The International Bunker Industry Association.

Northern Europe	27%
North and South America	20%
Asia Pacific, Middle East	20%
Scandinavia and the Baltic	15%
Mediterranean and Southern Europe	10%
Africa	8%

## EDITORIAL SYNOPSIS

### Q2 Summer 2024

#### SPECIAL FEATURES:

##### Fuel management

The challenges facing ship staff in managing fuel continue to increase as alternative fuels come into use. More and more, biofuels are seen as a way to achieve net zero but what are the associated issues? Meanwhile methanol- and ammonia-fuelled ships are now coming into service, again with their own challenges.

##### Scrubbers

While the focus of policy has shifted to the demands of decarbonisation the need to comply with IMO's sulphur in fuel regulations as economically as possible remains a high priority. We look at the scrubber scene and talk to manufacturers.

#### GEOGRAPHICAL FOCUS:

##### Western Mediterranean

Our annual survey of the bunkering ports in the Eastern Mediterranean region. This important region, normally located on the main East-West sea route, has seen the geopolitics of Middle East threaten to turn the Mediterranean into a huge cul-de-sac. What are the implications for the region's bunker industry?

##### Africa

For the first time since the mid-1970s sailing around the Cape of Good Hope has become normal practice for many vessels as owners avoid the dangers of the Red Sea. What does this mean for bunkering in South Africa, where Algoa Bay operations have been disrupted by government decisions?

Meanwhile, offshore, West Africa remains an important bunkering location. We look at the prospects and challenges.

#### REGULAR FEATURES

IBIA Africa Report, IBIA Asia Report, Industry News, Scrubbers, Environmental News, Innovation, Carbon Capture, Electric Propulsion, Methanol, Biofuels, Hydrogen, Ammonia, Equipment & Services, Alternate Fuels, Testing, LNG, Diary, Legal

# BRINGING HOPE AND HEALING MADAGASCAR 2024



Since 1978, Mercy Ships has empowered global change through floating hospital ships by delivering free, life-saving surgeries to under-served communities. In 2024, Mercy Ships is honored to partner with IBIA to bring hope and healing to those without access to safe, affordable surgery in Madagascar.

## How you can make a difference:

**Fuel Our Mission:** With the support of the bunkering community in providing fuel, you are ensuring Mercy Ships will be able to provide more than 1,150 free life-saving surgeries on board the Africa Mercy in 2024!

## Why Partner with Mercy Ships:

**Impact and Visibility:** Your partnership goes beyond financial support; it's an investment in a healthier, more equitable world. Partnering with Mercy Ships showcases your commitment to corporate social responsibility on a global stage. Joining hands with us means aligning your brand with a trusted and recognized organization dedicated to making a positive, transformative difference.

Please support Mercy Ships by helping to fuel our ships and transform lives.

Scan to support  
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# LIGHTING UP THE DARK FLEET

*Sanctions imposed on countries including Iran, North Korea and Russia have led to a parallel world where oil from those countries is traded in the shadows*

The operators of vessels that transport cargoes subject to sanctions go to great lengths to either be unseen on the surveillance systems, primarily AIS, that now monitor the world's oceans or to fool them. These deceptive shipping practices are becoming increasingly sophisticated.

However, a small number of specialist maritime intelligence companies monitor ships engaged in sanctions evasion using technology, a lot of thorough trawling through databases and a questioning approach to outward appearances.

*World Bunkering* talked to one of these companies, UK headquartered, Pole Star Global, to gauge to what extent sanctions evasion was an issue for the bunkering industry.

Its VP Commercial Markets, Capt. Steve Bomgardner explained the two key emerging sanctions concerns - the creation of a "Dark fleet" of tankers and proliferation of 'AIS spoofing'.

The Dark Fleet is a fleet of about 650-700 tankers owned and operated by people outside of jurisdictions that enforce sanctions. These ships have been acquired specifically for trading with Russia or other sanctioned countries. Owners will go to great lengths to disguise their stakes in these vessels. Pole Star goes to similar lengths to uncover them.

The US Office of Foreign Assets Control (OFAC) and other sanctions authorities have outlined an attestation process to document that Russian oil sales are within the price cap imposed by the G7 group of countries. However, according to Pole Star, this is not a mere record-keeping problem.

The current price cap for oil leaves very little room for margin, leading to attempts to falsify documentation, pass goods off as being of non-Russian origin, or violate other sanctions outside the price cap, (and with no safe harbour provisions), such as acting on behalf of a blocked party or attempting to export oil to a country that enforces sanctions.

Bomgardner said that many ship-to-ship (STS) transfers took place involving the Dark Fleet. However, it was difficult to say when a transfer of fuel broke sanctions or to prove that oil was sold above the price cap. It was also difficult to track fuel from illegal cargoes to eventual supply as bunkers. He said there was tendency to turn a blind eye to the origin of the fuel.

Another major concern is the use of spoofing or faking a vessel's position on AIS. He explained how AIS spoofing can work. A typical example would be tankers apparently, according to AIS, located off West Africa actually being in a Venezuelan port on the other side of the Atlantic loading oil in contravention of US sanctions.

Unsurprisingly the authorities in the US and elsewhere have warned businesses involved in shipping to be aware of evasion attempts. In April, OFAC specifically singled out P&I clubs, ship owners, flag registries, and commodities brokers to remain vigilant for deceptive shipping practices as evidence of sanctions evasion. Bomgardner said that while some service providers such as P&I clubs and flag registries had sprung up just to support the Dark Fleet some vessels posing a high risk continued to be served by reputable organisations.

There are complications. Dark Fleet vessels are not used exclusively for sanctioned trade – and not all vessels present the same level of risk. For instance, they may be shipping oil within the confines of the price cap. However, they do present an increased risk to those in the bunker business. The advice is to be careful when dealing with a Dark Fleet vessel and conduct enhanced due diligence on the provenance of the cargo, the buyer and the seller.

That is where companies like Pole Star come in. They can undertake checks that enable businesses to discharge their due diligence responsibilities. Given current geopolitics their services are likely to be needed for the foreseeable future.

However, Bomgardner concluded by saying that the risks of bunkering companies falling foul of sanctions enforcement could be reduced by using electronic documentation, as in electronic bunker delivery notes. As that is indeed the direction of travel in the bunker sector, perhaps there is some reason to be optimistic.





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# LOOK AHEAD, CONSTANTLY!

*IBIA board member and maritime lawyer Steve Simms advises on how sanctions are affecting bunker traders and suppliers*

"Look ahead - constantly" will in 2024 continue to be the best sanctions legal advice for bunker traders and suppliers. Sanctions continue to change quickly. As they do, traders and suppliers will have to change sources just as fast. They must also continue to consider their product sources.

The most recent quick change is US sanctions affecting purchases of Venezuelan petroleum. In October 2023 the US conditionally lifted sanctions. This in part was made to make more oil available after imposing the Russian oil price cap, following Russia's invasion of Ukraine. The condition was that the Venezuelan Maduro government allow open presidential elections. At the time of writing, the US Treasury Department's Office of Foreign Assets Control – OFAC – has just announced that Venezuela sanctions resume April 18, 2024 "absent progress" on Venezuela elections.

That is a short time for suppliers and traders looking ahead for bunker sources, to decide whether or not to buy Venezuelan-sourced product or to source elsewhere, so the product is positioned to sell as needed.

With this the February 2024 "Price Cap Coalition Oil Price Cap (OPC) Compliance and Enforcement Alert" issued by the US,

EU, UK and allied countries emphasises that they will continue to press enforcement of the price cap on Russian-sourced petroleum products, and prosecute transport of products priced above the cap.

To date though, sanctions on Russian petroleum trade don't – yet – apply to bunkering services (supplying fuel for use by ships) to vessels transporting Russian crude or petroleum products. That is, as long as the bunkers purchased aren't Russian-sourced, purchased by the supplier or trader at prices above the cap. And, that is, as long as the counterparties for the bunkering aren't sanctioned persons or entities.

If the goal ever were to become stopping Russian – or Venezuelan – oil trade altogether, though, the obvious sanctions target would be bunker suppliers and traders.

US and other sanctions of marine trade with Iran, for example, long have restricted bunkering of Iranian vessels or non-Iranian vessels carrying sanctionable goods to or from Iran. Similar bunkering restrictions apply to North Korea or Syria maritime trade. That hasn't ended trade with Iran, North Korea or Syria but that and other sanctions significantly restrict it.

A similar significant restriction could be applied to bunkering of vessels carrying Russian crude sold at prices above the cap. That hasn't happened, yet. But the potential disruptive effect of such a bunkering sanction is obvious. Bunker suppliers and traders would have to receive, prior to agreeing to bunker, reliable proof that a tanker cargo wasn't bought at above the cap price. What proof would be sufficiently reliable? What would a trader of supplier have to show to confirm that they had with due diligence, confirmed the proof?

This has, at least publicly, taken to much lower levels of bunker suppliers' purchases of Russian product for bunkering: any Russian product used for bunkering must be priced (with proof that the supplier can show for that) at or below the cap and purchased from a non-sanctioned entity.

It also has, however, led to ship-to-ship transfers (blending product so it's claimed to be not "Russian"), refining in third countries such as India, and documentation fraud. Some bunker suppliers, particularly where alternative product is priced higher or otherwise not as available, have bought this product (just as they have, product which ultimately was Iranian sourced, or Venezuelan-sourced before October 2023's sanctions lift and perhaps, if the US re-imposes Venezuela



sanctions in April 2024). But the risk of sanctions of buying this product still, anecdotally, has also limited its purchase by at least, prominent bunker suppliers.

Bunkering vessels carrying Russian crude hasn't apparently diminished with the cap, but if traders and suppliers had to prove they only bunkered vessels carrying cap-compliance cargos, that likely would cut the bunkering – by traders and suppliers subject to the sanctions – significantly.

Could that happen in 2024?

If governments don't consider their present sanctions to be effective enough, traders and suppliers should expect the sanctions may tighten, to further include them directly as "industry stakeholders" as they already do for Iran, Syria and North Korea.

"Looking ahead – constantly," though, shouldn't only be out of concern about being cited for violating present sanctions or even those which might be imposed. Experience to date suggests that possibility is unlikely. No bunker supplier or trader of marine fuels – yet – has been publicly prosecuted for violating sanctions related to marine fuels purchase or sale. Instead, bunker suppliers' and traders main concern about sanctions should focus on credit, customer relations, and reputational damage that might come from association with customers, counterparties or sources themselves subject to sanctions.

The first sanctions threat is financial. Suppliers and traders extending credit to sanctioned persons or entities face the significant risk of non-payment. If an entity is sanctioned, it may lose the ability to trade and thus to pay down extended credit.

For example, there have been increasing examples of tankers being seized or their owners or charterers sanctioned for carrying Russia-sourced product bought above the cap. There also have been several examples of the seizure of Iran-sourced crude and the tankers carrying it. If a supplier or trader has extended credit to the sanctioned owner or charterer, the supplier or trader might not be paid, at least in front of the payment that the

owner or charterer might be required to make to sanctioning authorities. If the sanctioning authorities seize and sell the vessel, any supplier or trader claim to arrest the vessel also will come after payment to the sanctioning authorities, which, if title to the bunkered product has passed, might also claim the bunkers.

Sanctions at the same time restrict access to USD, EUR, and GBP, limiting the ability of counterparties to convert local currency to usable funds.

Related is the question of insurance coverage. That is, sanctions frequently restrict insurers from extending coverage to sanctioned entities, for example, Russian, Iranian, and perhaps soon Venezuelan owners or charterers. What happens, if there is a spill during bunkering or personal injury during a bunkering operation which turns out to be uninsured because the counterparty, or vessel, either doesn't (despite assurances otherwise) have insurance or is "insured" by what turns out to be an undercapitalised or fake insurer? What happens if there is a quality dispute and damage, or claimed environmental violation, where the sanctioned entity has no funds available, and there is no insurance? The trader or supplier will have no benefit from the effectively non-existent insurance.

There also is the risk of tarnished image. Engaging with sanctioned entities can damage a supplier's reputation with banks, financiers, key partners, and the wider industry. This can lead to stricter credit terms, lost business opportunities, and difficulty securing future partnerships.

Closer to home is personal liability and reputation risk. For any individual working with a bunker trader or supplier, depending on one's role within the company, no matter how profitable the trade, no matter the volume of explanation that the person "never could have known" about the customer's violation or that "everyone else was selling to them," involvement in a sanctioned transaction is a bad career move bringing personal legal and financial risks.

This is how bunker suppliers and traders should, if they don't already, look ahead constantly in 2024, and if they do practice this advice, re-focus and reinforce it.

Traders and suppliers should continue to examine their "know your customer" – "KYC" mechanisms. Old methods won't be sufficient with the increasing efforts of counterparties to circumvent sanctions – which are certain to proliferate with the use of artificial intelligence (AI). There will be increased incidences of spoofed emails, changed wire instructions that look authentic, fake websites, and altered records, even, of records which purport to assure that they are secured and authentic. Traders and suppliers must continue to train their employees to seek out entities which reliably can confirm customer identities, including whether the customer and its ownership are subject to sanctions.

Also, there will always be the need – and value – for one central "KYC" practice, though: always pick up the telephone or better now, click into Teams or similar, and connect with the human you are selling to or buying from. Always voice or better still, voice and video confirm wire instructions – even if you have done hundreds of transactions with the person who seems to be exactly the same person with whom you've done hundreds of transactions before. And an even older "KYC" practice is arguably now even more important: meet the humans, in person, you are buying from or selling to. That is what IBIA – the organisation which of course sponsors the magazine with this article – encourages through a range of in-person meetings throughout the year.

It's important to remember that if you are getting paid in US dollars, all transactions move through US New York-based money centre banks which OFAC oversees. OFAC can instantly freeze accounts, which can be held for months or longer until the trader or supplier proves, to OFAC's satisfaction (or even longer) entity. While OFAC freezes the money, the legal expense (and lost interest) to get it released will be significant.

Traders and suppliers also should as part of their credit assessments, be aware of how sanctions might affect their customers, minimise credit exposure to sanctioned entities and avoid non-credit deals with uncertain outcomes. They also – again, with the foremost goal of increasing, not only maintaining reputation, maintain open communication with banks, partners, and authorities, demonstrating commitment to compliance and responsible business practices.

Traders and suppliers also should continue to look ahead for sources and counterparties in alternative markets outside of sanctioned jurisdictions to diversify risk and ensure their business continuity. Generally, if the deal seems to be too good to pass up, it probably should be passed up.

It is certain that into 2024 sanctions regimes will continue change, and likely be intensified including with authorities' efforts to detect violations.

At the time it also is certain that those who want to evade sanctions, will and do that with more and more difficult to detect stealth. It may be that bunker suppliers and traders continue to be outside of the main "crosshairs" of sanctions regimes (even though, they literally are central to "fuelling" many of the evasion of sanctions enabled by tankers carrying Russian, Iranian and, perhaps soon, Venezuelan product).

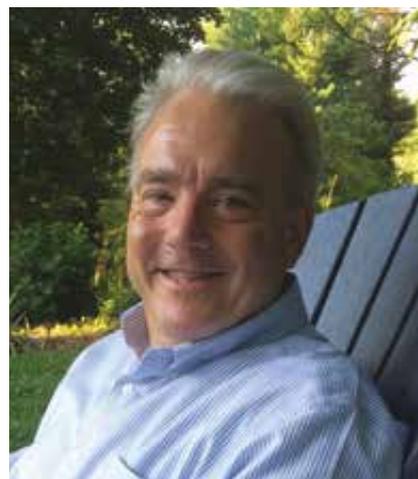
That doesn't mean that bunker traders and suppliers won't have direct and indirect financial losses if they are associated with others prosecuted for sanctions breached. That is why continuing into 2024, considering sanctions bunker traders and suppliers must continue to "look ahead – constantly."

J Stephen ("Steve") Simms is a principal of Simms Showers, LLP, an international US-based law firm representing bunker suppliers and traders world-wide. Steve Simms serves as Chair of the International Bunker Industry Association's (IBIA) Legal

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The opinions and recommendations in this article are the author's and not necessarily also those of IBIA or SEA/LNG, except if identified specifically as such.

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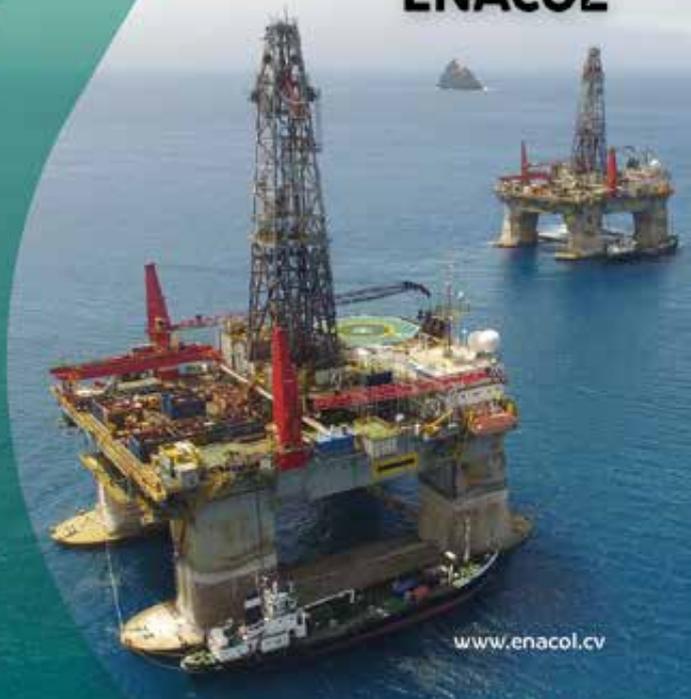
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Peninsula's new LNG bunker tanker has opened up the Strait market. ©Peninsula Petroleum

# GOING NOVA

**The Strait ports now have regular LNG bunkering services, and southern Spain will be big for methanol, as John Rickards reports**

While its nearby rivals have taken steps of their own with Spain keen to back the transitional fuel, Gibraltar has also joined the ranks of ports offering regular ship-to-ship LNG bunkering. Shell was handed the first LNG bunker licence by the territory in 2021 and there has been sporadic business there since, but it was the arrival of the LNG-powered cruise ship *Silver Nova* in September last year and consequent first supply (and first in-port supply) via Shell's tanker chartered from Anthony Veder, as well as the growing number of Med cruise ships in operation using LNG power, that seems to have been a tipping point for others to step up.

Peninsula Petroleum was awarded a LNG bunker license by the territory in October, with its newbuild 12,500 cbm bunker tanker *Levante LNG* able to serve both Gibraltar, Algeiras and other regional ports along the Spanish coast. The company promptly made the *Silver Nova* its first Gibraltar LNG customer too at the start of November.

(Indeed, the *Silver Nova* also accounted for Malaga's first LNG bunkering operation around the same time, with Repsol supplying it with LNG from trucks.)

At the start of January, the company made its first LNG bunker delivery across the bay at Algeiras, again to a Royal Caribbean group cruise ship, the *Icon of the Seas*. With a steady stream of cruise vessels bringing visitors to the relative warmth of the Mediterranean and the growing strength of local gas infrastructure, it seems clear that Peninsula spotted the available opportunity. *World Bunkering* spoke to the company to find out just how resilient the market is.

**WB:** Peninsula has just recently entered the LNG bunkering market in Gibraltar. Presumably the company's confident it'll be worth the time and investment, and I assume will form part of Peninsula's overall W Med/Spanish LNG offering with the *Levante LNG* servicing a wider area – and

there's obviously, certainly from the cruise sector, a market there – but how big do you think that market could get? Is it likely to remain a niche that a couple of suppliers can dominate quite quickly, or one with room for expansion?

**PP:** Current LNG powered vessels in operation stand at 534. This will increase to just under 1,000 by 2028.

Currently only 0.6% of the current global fleet burn alternative fuels with almost 0.5% of the fleet opting for LNG. When the current orderbook is completed, 15% of the global fleet will use alternative fuels with 10% opting for LNG. That leaves only 5% powered by other alternatives. This isn't to say that all these vessels will call at Western Mediterranean ports, however we can see there will already be a higher demand for LNG in the future.



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Cepsa's deal with C2X will create Europe's biggest green methanol plant. ©Cepsa

Due to the nature of the logistics, cost of dedicated assets and infrastructure, we don't see the LNG bunkering activity being carried out by a large number of operators. Peninsula has the assets, business expertise and access to supply infrastructure to build a successful LNG offering. The complexity and sophistication of the LNG business is such that we don't see the competitor landscape being as broad as the traditional fuel market.

**WB:** Competition for LNG bunkering from/ within Spanish ports is likely to be strong, as increasing numbers of them have begun to offer LNG supplies in the past year or

two. Does Gibraltar's position give it an edge, or is competitiveness likely to come down to a best price/best service contest?

**PP:** Aside from Gibraltar's strategic geographical location, it has the advantage of being a stone's throw from the Spanish regasification network whereby we are fully authorised wholesale operator. Specifically, as this is an entirely new product, Gibraltar has taken a significant lead to incorporate these operations to work alongside traditional operations. Gibraltar has been proactive in developing its own protocols and safety procedures to make sure LNG can be supplied in its waters.

In terms of market demand, it is more concentrated on specific ports on the Spanish coast and select ports in France and Italy. With regards to price, Southern Europe is more competitive than Central and Northern Europe. The ports where we see demand are all reputable international ports that have a strong track record, so service levels are in alignment with their protocols and standards. Our Levante LNG is a fully seagoing vessel so can cover all the aforementioned areas.

**WB:** What do you expect, or hope, to see in the coming months for this market?



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**PP:** It is difficult to say what to expect in the coming months. The level of demand for LNG will be partly dependant on the evolution of the price comparison vs VLSFO. It will also be determined by the impact that the emissions regulations will have on different fuel choices/adoption for the propulsion of the global fleet. Regardless, Peninsula is the only traditional independent bunker supplier that has developed a LNG bunker supply offer so can provide LNG solutions today.

Meanwhile Spain's major producers are continuing to steer heavily into true renewables as well as transitional fuels. In December, Repsol started refining first-gen biofuels at its plant in Cartagena, which is planned to produce 250,000 tonnes per year for either blending or use as pure renewable fuel.

But the bigger announcement was made at COP28, where Cepsa and AP Moller group green hydrogen arm C2X announced plans to build a €1bn green methanol plant in Huelva that will be the biggest in Europe and one of the five biggest in the world, producing up to 380,000 tonnes of the fuel per year. The project is the result of the Danish group's collaborative development with the Spanish government announced in 2022 as it aims to establish methanol production and infrastructure for its own ships and others. A final investment decision is expected in 2025, but it would seem unlikely in the current climate for the project to be dropped.

Cepsa CEO Maarten Wetselaar said: "This partnership is another milestone in our

strategy to make Spain a European hub for green molecules this decade, with viable projects to reduce emissions in sectors that are difficult and urgent to decarbonise. We will work with the Spanish government to develop the regulatory framework needed for this project to be successful and scalable."

C2X CEO Brian Davis added: "We see a growing demand for green methanol to help industries like shipping, aviation and chemicals move away from fossil carbon-based alternatives. While this project has strong fundamentals it will need an enabling framework to offer a competitive source of green methanol to its target customers. We look forward to working with Cepsa and the Spanish government as we develop the project."

Spain remains a step ahead of the rest of the region when it comes to most alternatives. LNG bunkering is available at Marseilles-Fos – TotalEnergies carried out its first such bunkering of one of MSC's 24,000 TEU box ships there last autumn – and in southern Italy in particular, there's a slowly growing investment in gas as a fuel; 2025 should see energy firm Axpo begin offering LNG bunkering in Naples via a ten-year supply deal with Gas and Heat SpA and a newbuild LNG bunkering barge to be built at Piombino shipyard. At a similar time, LNG-powered ferry services are expected to begin on Sicilian routes operating out of Palermo; the dual-fuel 1,000-pax, 200-car vessel is due to be built by Fincantieri.

Italy did, throughout 2023, announce funding for a tranche of green hydrogen projects across the country with likely build dates of 2025–26 or so, drawing on €450m in grants under the National Recovery and Resilience Plan. However, those announced so far – in part because grants are capped at €20m per project – are predominantly small production projects, many geared to industrial rather than transport use. The most extensive of them are unsurprisingly situated in the southern regions of Campania, Puglia and Calabria, and these are the most likely points where green methanol infrastructure might come in future – but it's still a way off.



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Eagle LNG is looking to establish an LNG bunkering fleet in the region. ©Eagle LNG

# COURT IN THE ACT

**While some aspects of the Caribbean bunker sector are seeing upgrades, it's a bitter set of legal disputes that grab the eye, as John Rickards reports**

There have been concrete developments in recent months across the Caribbean, particularly in terms of LNG bunkering. October saw Shell deploy an 18,000 cbm newbuild LNG bunker tanker to Jamaica to serve general clients. This is in addition to its ten-year deal with Zim to supply its ten LNG-fuelled box ships on the Asia-US East Coast trade out of the country. Earlier in the year, Florida's Jacksonville port, the state government, and Eagle LNG inked a deal with the Aruban government to strengthen ties, following on from Eagle agreeing a LNG supply deal with the island as part of efforts by Aruba to move away from oil for power generation and so modernise and bring down costs.

In October last year, Eagle LNG itself chartered its first LNG bunker tanker from Anthony Veder, the 10,000 cbm *Coral Favia*, to provide gas bunkering across the Caribbean basin. The company plans for this to be the first of a LNG bunker and transportation fleet, and with LNG-powered cruise vessels routinely plying the region's waters, and more gas infrastructure on many of the islands themselves, this seems like a strong niche to be in.

But it's the US Virgin Islands where the most interesting saga continues to play out.

Recapping for context, at the very end of 2021, the huge but ageing refinery on St Croix was bought at bankruptcy auction by – per the sale order – West Indies Petroleum (WIPL) and “a Virgin Islands limited liability limited partnership formed by West Indies Petroleum” called Port Hamilton Refining and Transportation (PHRT). The deal was only for the refinery unit; the attached oil terminal had been spun off into a separate business a couple of years before a succession of catastrophes meant the refinery was closed by the EPA. WIPL announced in summer 2022 that contrary to reports – including one of the company's own press releases – it didn't, in fact, have any ownership stake in the refinery (while the sale order passed the title of the refinery to PHRT only, both were defined as “purchasers”), and that WIPL was only “an initial participant in the bidding process”. Cue an urgent hauling before the islands' Committee on Economic Development and Agriculture, at which WIPL's Danville Walker described PHRT as a “legally separate and distinct organisation”, and Charles Chambers, co-CEO of PHRT – but also president and CEO of *legally separate company* WIPL (one of whose other four board members was also simultaneously an advisor and project manager for PHRT) – admitted under questioning that WIPL held 42% of PHRT's

shares (he was unable to name the “I believe five” other companies who held the rest) and said that some of the owners of WIPL “have an equity stake in the refinery”.

Then part of the plant caught fire, an EPA inspection found major issues including hazardous chemicals in imminent danger of “catastrophic release”, and the agency promptly announced the refinery would need new operating permits once clean-up was complete. By this point, a court had ordered that PHRT and WIPL should be substituted for the bankrupt refinery operator as defendants in ongoing litigation with the US government regarding the safe running of the plant, and the terminal operating company Ocean Point Terminals was suing PHRT for alleged non-payment of millions of dollars owed under a joint services agreement.

That's how things stood last time *World Bunkering* covered the region. The past twelve months have continued to be a rollercoaster.

Firstly, contractors arranged by PHRT successfully removed hundreds of thousands of gallons of LPG, anhydrous ammonia and liquid amine between March and July 2023 and shipped it off-island. In a second plus point in late July, an



appeals court ruled that the EPA overreached when it declared PHRT would need a new Clean Air Act permit, making potential restart faster.

The refinery would still need to meet standards, and the operator would be bound by a consent decree from a government lawsuit against Hovensa, owner-before-last, and the similar “joint stipulation” from another one against the bankrupt Limetree Bay Refinery company. The orders make those running the plant responsible for ensuring that any restart has air monitoring and protects public health, given the state of the facility in Hovensa’s final years and the disastrous attempt to restart it by LBR in 2021.

WIPL, by this point, was deep into courtroom attempts to claim that “purchaser” or not, it wasn’t an owner of the refinery and couldn’t be held responsible for its operation under the consent decree. It was also making a similar argument in the still-ongoing legal dispute between Ocean Point and PHRT.

In August, with the permitting case won, WIPL then went to the Virgin Islands Economic Development Commission to ask for tax benefits to launch a bunkering service, barging fuel from the refinery to cruise ships calling at neighbouring St Thomas, and eventually on St Croix too. WIPL said the tax relief would be needed as competition on costs was fierce and profit margins low. It also took the opportunity to again deny ownership of the refinery or PHRT.

(WIPL was approached for comment regarding its intended timescale (given the refinery isn’t operating yet and it’s unclear whether the barge would need the terminal facilities of Ocean Point – currently suing both WIPL and PHRT), but none was forthcoming.)

Then, in October, Judge Emile Henderson ruled firmly in the consent decree case that WIPL is a party to the decree and is a purchaser of the facility. He noted that WIPL CEO Charles Chambers told the original sale hearing that WIPL had provided 70% of the \$62m to buy the refinery, and noted that both WIPL and PHRT, as “purchasers”, were



WIPL said it was aiming to start bunkering cruise ships at St Thomas. ©Prayitno Photography/CC-BY

bound to the decree and joint stipulation by the sale order regardless of who held the deed.

He also noted that the government asked PHRT and WIPL in 2022 for “certain corporate documents, such as their formation documents, ownership structure, subsidiaries, officers, and investors, which neither entity [provided]” – perhaps not surprising anyone who’d seen Chambers’ committee testimony – and went on: “The Court finds it difficult to believe that WIPL investors provided over \$40 million to purchase the refinery assets but have no other stake (such as any liens) in those assets and that WIPL has disappeared from the picture after contributing its largesse to reopen the bid and pay the lion’s share of the purchase price.”

WIPL and PHRT continue to dispute this ruling.

By this point, in the *other* lawsuit, Ocean Point alleged services payments PHRT had made were routinely paid either by WIPL or by Excel Construction and Maintenance VI, part of the group which worked on the 2018 restoration of the site for LBR (Excel was reportedly owed millions when the refinery went bust). WIPL and Excel deny Ocean Point’s claims of any direct involvement with the refinery. Excel is headed by PHRT’s other co-CEO David Roberts, though Excel’s legal filings dispute both details and say he’s only “alleged to be Excel’s owner” – bizarrely, as everything from press to Excel’s social media to his

own LinkedIn profile calls him that – that he “also happens to be a manager and member of Virgin Islands Refining Company... the general partner of Port Hamilton” and that: “While as a member of the general partner of Port Hamilton, his role is not insignificant, he hardly qualifies as a ‘Principal’ [Ocean Point’s term]”. PHRT’s teaser pitch to investors of July 2022, given in its committee evidence, describes him however as both co-CEO of PHRT and “current president, owner and CEO of Excel Group”.

PHRT *then*, at the close of 2023, alleged Ocean Point was blocking workers from accessing the refinery by requiring them to sign a waiver against damages incurred crossing terminal property. Ocean Point counter-claimed that access had already been renewed and that the waiver was standard – though didn’t produce much to back this up. This acrimonious and incredibly messy case is set to begin a jury trial in July this year as settlement seemed unlikely.

Oh, and in November, more leftover LPG was found in the refinery; at time of writing that still needs to be assessed and removed prior to any restart.

Whether 2024 will see any movement towards the refinery restarting, WIPL or anyone else selling bunker fuel from it, the terminal and refinery coming to any kind of settlement, or any kind of clarity emerging is anyone’s guess, but maybe keep some popcorn to hand.



With Colombia looking beyond fossil fuels, Monjasa has begun offering biofuels from Cartagena. ©R Boed/CC-BY

# OVERDUE MOVES

***Under the Petro government, Colombia looks to be taking the future seriously, but Brazil and its own oil giant could do more, John Rickards writes***

Economic headwinds across much of South America have kept the overall trade and energy picture uncertain at best going into 2024. Argentina is in the depths of a financial crisis and annual inflation that could, at time of writing, top 200%, while the other Spanish-speaking states have pretty much all endured inflationary or debt woes to one degree or another. The US did agree to lift sanctions on Venezuelan oil until April this year, contingent on free elections going ahead, which could have some effects on both availability and cost of HSFO fuel in the Caribbean and US Gulf, but even that's a short-term fillip.

Colombia looks to be tentatively turning a corner, and while the wider reforms wanted by President Gustavo Petro have been made harder by losing regional elections last year, both the president and his government are still keen to wean the country off fossil fuels and decarbonise. This year will see its first ever offshore wind auction, under less restrictive rules than those first put forward; according to reports, an initial version would have mandated joint ventures with state-run Ecopetrol, rather than any state company from a wide array. Ecopetrol itself saw oil production in the first nine months of last year up 3.3% but the Petro government is planning to broaden it to cover a variety of energy sources including solar, wind and green hydrogen.

As much as Petro is a keen advocate of transitioning away from petrochemicals, alternative bunker fuel availability as a matter of course at Colombian ports still seems to be a long way off. However, last year saw Monjasa add the first bulk transitional fuels to the mix in the port of Cartagena.

Monjasa already supplies traditional marine fuels in Colombia and in September the company announced it was extending its local maritime logistics to include a monthly capacity of 5,000–7,000 metric tonnes of 2nd generation biofuel blends, primarily B20 and B30.

"Together with our partners, we have enabled biofuels supply not only for the Colombian market, but potentially also for the main ports across Latin America, including the Panama Canal," said Camilo Angulo Ferrand, trading manager at Monjasa Americas. "Looking at the current demand, it is the large container lines who are showing concrete interest and driving demand for biofuels in this market. Looking towards 2025, we expect that biofuels will become a broadly accepted option to comply with IMO's strategy on reducing CO<sub>2</sub>-emissions from maritime shipping." However, the company has noted that it's still awaiting the shift away from biofuel trial voyages to a broader pick-up in demand.

"The recent revised IMO 2050 climate strategy is a noticeable boost to the green fuels industry; however, more concrete and binding requirements are needed to ensure a broad fuel transition away from fossil fuels for the global merchant fleet," said Jesper Nielsen, the company's group responsibility director.

"Monjasa holds a unique position in the value chain between upstream fuel producers and downstream customers. Therefore, although our data indicates that the demand for biofuel blends is only emerging slowly, we keep preparing our global supply chains, fleet logistics and organisation for the fuel mix of tomorrow."

Biofuels testing and trial voyages have also been taking place in Brazil. State-run Petrobras followed up an earlier performance test in June with a test voyage in December on a cabotage box ship of a first-generation B24 blend certified to ISCC EU Renewable Energy Directive criteria, with the biofuel derived from waste animal fat. The company reported an estimated reduction in lifecycle GHG emissions of around 19%.

"After the completion of tests and validation of the bunker with renewable content produced by Petrobras, the expectation is that the market for this type of fuel will develop further," Petrobras said in a statement.

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The company is intending to spend US\$11.5bn on low-carbon products over the next five years, or US\$2.1bn per year; for context, its gross profits for the first nine months of 2023 alone were US\$39bn and its lowest carbon product currently is a premium all-fossil gasoline whose GHG emissions are simply offset by carbon credits, while biorefining for 5% blended fuel amounts for somewhere under 0.01% of its diesel sales, though “alcohols” including renewables accounts for a positively booming 0.2% of its petrochemical output. But I suppose you’ve got to start somewhere, and it has at east been making more moves in this direction of late.

In September, the company inked an MoU with the Brazilian arm Abu Dhabi-based Mubadala Capital to develop studies into “future business in the downstream segment, with emphasis on evaluating Petrobras’ participation in a biorefining project”. Mubadala Capital is in the process of developing an integrated biorefinery project in Bahia, focusing on the production of renewable diesel and sustainable jet fuel. In November last year, Petrobras announced that its Riograndense Petroleum Refinery had been able to successfully process two thousand tonnes of 100% soybean oil in a fluid catalytic cracking unit.

“This milestone was made possible through innovative technology developed by the Petrobras’ Research, Development, and Innovation Center (CENPES), processing 100% renewable feedstocks, adopting process and catalyst innovations, and generating fully renewable petrochemical products,” the company said in a statement. “This trial represents a groundbreaking achievement, marking the first of its kind worldwide.”

RPR, it said, is prepared to begin production of petrochemical feedstocks and renewable fuels, including bio-LPG, renewable marine fuels, renewable propylene, and bio-aromatic hydrocarbons (BTX – benzene, toluene, and xylene), crucial to producing synthetic rubber, nylon, and PVC. A second test is already scheduled for June this year, involving

the co-processing of a mineral load with advanced non-food biomass feedstock known as bio-oil, or biomass pyrolysis oil. This process will produce renewable propylene, gasoline, and diesel.

RPR’s superintendent Felipe Jorge said the technology makes biorefining an effective transition strategy for the future: “The first step has been taken. Petrobras’ licensed technology for Riograndense will enable us to produce renewables as early as next year while continuing to serve our current product and fuel market.”

The company has also signed a deal with Denmark’s European Energy to look into the possibilities of developing a green methanol plant in Brazil, with an eye particularly on bunkers. The agreement is non-binding and details about the timescale or range of options being considered weren’t available at the time of writing, but Petrobras president Jean Paul Prates was at least broadly positive: “Petrobras wants to focus on having good partners like European Energy. Established, reliable companies who are solid enough to work with us on large-scale projects. This partnership will benefit both sides. We can

provide our knowledge and help to bring both the companies and our countries closer together.”

It follows a similar arrangement between Petrobras and Vale that will investigate the options for sustainable bunker fuel production and decarbonisation across both companies as well as into the viability of CCS (a technology on which Petrobras is undeniably keen despite the question marks over it; it’s eyeing a pilot project in the north of Rio de Janeiro that can store 100,000 tonnes of CO<sub>2</sub> per year).

Vale CEO Eduardo Bartolomeo said: “Brazil has all the conditions to lead the large-scale development of low-carbon solutions and renewable fuels, such as green hydrogen and green methanol. Vale is fully committed to reduce its carbon footprint and, therefore, wants to be a protagonist in this journey, leveraging relevant actions for energy transition in Brazil.”

It would certainly be good to see serious moves in this direction. Brazil is ideally placed to be the continent’s green energy hub, if the will is there to do it, and Petrobras certainly has the financial clout.



Petrobras continues to trial biofuels, but the Amarket is not yet developed. ©Daniella Xu/Agencia Petrobras



California's emissions laws are strict; could a national carbon limit follow? ©Greg Fuderer

# COUNTING TO ZERO

**A long-shot US law could mandate rapid carbon cuts for the nation's shipping, but is the supply infrastructure there? John Rickards asks**

While there are individual green shoots, it's fair to say that the US hasn't yet seen the same interest in decarbonisation and alternative fuels as the other side of the Atlantic. The introduction in summer 2023 of a Congressional bill aiming to legislate for carbon reduction in shipping won't be welcomed by everyone, given the possibility of clashing standards with those IMO will eventually agree, but the reductions in the proposed Clean Shipping Act are at least in line with the Paris Accords.

If it became law – which is a big if, even ignoring the possibility of a Republican victory in this year's election; it's gone to the House Energy and Commerce Committee but no further at the time of writing – the bill would require CO<sub>2</sub> equivalent cuts of 20% by 2027, 45% by 2030, 80% by 2035 and 100% by 2040, as well as a complete cut in in-port emissions by 2030. There are provisions for scenarios where those reductions aren't practically achievable (just do the best you can) and for the unlikely event that IMO standards when they come are stricter than the proposed US ones (go with the IMO instead), an acceptance of cross-fleet averaging for shipowners as a practical measure, and the carbon measurements for the whole thing are based on fuel consumption and fuel type per covered voyage to or from US ports.

The bill was put forward by two Californian congresspeople and a California senator, all Democrats, and given California's greater environmental slant and more stringent rules on various shipping emissions that's probably no surprise. Nor is a surprise that it'd be welcomed by campaign groups and shoreside air quality advocates. It did have one particularly strong proponent from within the industry, though.

"Maersk continues to work actively to decarbonise our global operations by 2040, as demanded by many of our top global customers as well as governments and port communities. We appreciate and recognise the efforts by the United States to lead in climate and environmental progress and to establish structures to accelerate decarbonisation. We encourage the US Congress to act on this legislation and to establish processes to ensure the supply of the green fuels and energy essential to low emissions shipping and logistics. The need is pressing. This must be the decade of action," said Lee Kindberg, head of environment and sustainability for Maersk North America.

Maersk is obviously an outlier in terms of the strength of its own drive to reach zero carbon and the resources it has to do so, as well as how far along that path it is. But is the infrastructure and availability there to make even a 20% cut in US shipping emissions by 2027 feasible?

Well, no, probably not without a colossal uptick in production and supply of drop-in transitional fuels, but the past year has seen significant steps in the right direction.

In October, FincoEnergies, which owns the GoodFuels brand, announced it was expanding into the Americas through a new US office, its second expansion outside its northern European base after branching out into Singapore in 2022. The move should mean access to the company's biofuels at American ports if arrangements can be made or regular supply deals set up but as of the time of writing there have been no major moves on that score reported by the company.

FincoEnergies' managing director of business innovation Kimon Palinginis said: "Following our remarkable success in Europe as the industry leader in sustainable marine biofuels and scope 3 insetting services, and our entry into the Asian market, we are now poised to channel our efforts toward serving the rapidly emerging Americas market. We are committed to delivering the same high-quality sustainable solutions that our global clients have come to expect from us in Europe and Asia."



Heading up the office is Kimberly Westmoreland, formerly of Parkland USA and Royal Caribbean. She said: "I am genuinely inspired by the innovative mindset of FincoEnergies and the clear business achievements of GoodFuels and GoodShipping. I am proud to be at the forefront of the energy transition at FincoEnergies Americas, delivering solutions such as sustainable biofuels, carbon insetting and carbon offsetting that can make a tangible difference today on the environmental footprint of the maritime industry. I eagerly look forward to engaging with our valued customers and partners to deliver our vision of working together for a better world."

At the same time, PTL Marine has begun supplying Neste's renewable marine diesel in California, where commercial harbour craft vessels are required to use renewable fuel, while Stone Oil has begun offering renewable bunker blends from its base in Louisiana to inland and Gulf customers.

LNG bunkering has been somewhat restricted so far, with Port Canaveral and a couple of other Florida ports supplying dual-fuel cruise ships plying the Caribbean and Eagle LNG supplying gas primarily for TOTE and Crowley's LNG-powered box ships at Jaxport, GAC supplying LNG in Puget Sound, some availability in California, and then a smattering of more isolated arrangements elsewhere. (Canada, despite gas bunkering on some Vancouver-area ferry services, is only going to get its first dedicated LNG bunkering tanker later in 2024 from Seaspanspan.) However, the end of September saw Seapath and Pilot LNG announce a joint venture to develop, build and operate what they say will be the first dedicated LNG bunkering facility on the US Gulf coast in Galveston Bay.

Assuming a final investment decision on the US\$150m facility later this year passes without a hitch, operations are scheduled to begin in mid-2026. The 300,000-gallons-per-day plant is the first in a series of planned strategic investments by Seapath and Pilot to create a network of LNG facilities in areas of unmet need in the US, where the company notes "uptake has been slower".



Vancouver is due to get its first dedicated LNG bunker tanker this year.  
©Vancouver Fraser Port Authority; Colin Jewell Photography

"The infrastructure under development will provide LNG to a growing market seeking cleaner marine fuel, particularly as customers look for economical ways to comply with tightening emissions regulations, including regulations set by the IMO in 2020," said Seapath CEO Greg Otto. "We are pleased to be working with a first-class team in Pilot and with some of the leading ports in the United States to bring this critical LNG bunkering infrastructure to the Gulf Coast region where there is high demand for it. Thanks to our valuable partnership with Pilot, we look forward to developing more of these much-needed facilities in ports across the United States."

LNG bunkering has come to Galveston already, with Stabilis Solutions signing a two-year contract to supply LNG to the *Carnival Jubilee* from the company's Texas liquefaction facility and Seaside LNG carrying out bunkering operations to the cruise ship via its *Clean Jacksonville* barge, moved from Jacksonville to do so.

"Over the next three years, we anticipate the global fleet of LNG-fuelled vessels will increase materially, as operators seek to reduce carbon emissions through the adoption of lower-cost sustainable fuel sources," said Westy Ballard, president and CEO of Stabilis. "Our proven supply network and logistics assets well position Stabilis to serve this significant, growing addressable market, which remains in the early innings of a multi-year expansionary phase."

Green methanol, outside arrangements put in place by Maersk, is much further off, but last summer did see producer Carbon Sink LLC ink a deal with Jones Act shipowner Rose Cay Maritime to work together to bring the fuel to a general market in what RCM CEO Alex Parker described as "a material shift in the shipping industry's decarbonisation initiatives".

Even further out, in December, Crowley announced it was joining a pilot project using onboard carbon capture and storage on its box ship *Storm* with CCS company Carbon Ridge. The carbon capture system, a smaller version of what the full production version would be, will be housed in two 40-foot container units on the vessel's main deck and have an additional 20-foot ISO-certified tank for storing the captured liquid CO<sub>2</sub>. The pilot project is expected to capture one metric tonne per day from the vessel's main engine.

If more of these types of measure become commercial reality, North America's shipping could still be on course for significant CO<sub>2</sub> reductions whether legislated nationally or at IMO, but there's a lot of work to do.



Gatun Lake's desperately low water levels are a cause for concern. ©Amanderson/CC-BY

# OUT TO DRY

*After an El Niño-parched rainy season, Panama must face some awkward realities – but is at least starting to see more climate-friendly fuels, as John Rickards writes*

Going into 2024, Panama is looking down the barrel of something of an existential problem. Drought caused by El Niño – making 2023 the second driest year on record for the Canal watershed – saw water levels in Gatun Lake drop close to 79 feet by October last year, not far above the level at which neopanamax vessels can no longer transit the Canal even at minimum draft. Daily transits were cut from their normal 36-ship level to 24 in November, 22 in December, and were expected to drop to 20 and 18 in January and February. Auctioned-off booking slots were, at times, going for several million dollars each to avoid mounting queues. However, with November rain being better than feared and levels easing by a couple of feet, the latter two limits were raised in December back to 24 transits per day, 7 neopanamax and 17 panamax.

However, the rainy season is still a long way off and Canal Authority projections have water levels hitting 80 feet again by early March, well before the wetter season from May – if El Niño doesn't continue past April (at time of writing, the US National Oceanic and Atmospheric Administration projection is only 60/40 in favour of it

ending). Even if the ACP uses water from its second reservoir of Lake Alajuela – which itself fell below minimum normal operating levels last year – to keep Gatun topped up, it'd be a brave operator who'd have much confidence in traffic flowing normally by the middle of the year. And an equally bold bunker supplier who'd predict a bumper year for 2024 even if congestion has historically increased demand for fuel at Cristobal's outer anchorage, with some ships already diverting around Cape Horn instead to avoid bottlenecks, and more likely to follow suit if the problem continues, and "Canal special" cruises at the tail end of the year cancelled due to the waiting times.

And this isn't a new issue; the ACP has been taking water-saving measures for years, and local pressures between keeping Canal water levels up and ensuring sufficient drinking and agricultural water supply to Panama itself are longstanding – and increasing. Nor is it a problem with an easy fix. The ACP is probably doing as much as it can on the water conservation side beyond cutting transit numbers, and so in the long term it's going to come down to either permanent traffic reductions –

undesirable because of the revenue the Canal generates – or massive infrastructure work. The US Army Corps of Engineers is, at the time of writing, conducting a feasibility study on the possibility of damming the Indio River and then piping water from the new reservoir five miles through a mountain to Lake Gatun – a project that will need a couple of billion dollars and several years to complete, even if it eventually goes ahead over the protests of thousands of local farmers who stand to have their land flooded. And between population increases and the likely effect of climate change on local weather patterns over the coming decades, chances are any Indio dam would have to be followed by others just to keep up with demand for water.

The Canal might also start having competition from further north in the coming months too. While works to upgrade the ports of Salina Cruz in particular, and Coatzacoalcos are still to be completed, likewise with gas pipelines across the isthmus and oil refineries at either side, the long-coming rehabilitation of the Tehuantepec Isthmus Interoceanic Corridor rail route linking the Atlantic



and Pacific coasts of Mexico is drawing closer, with the first trial trains using the route at the end of 2023. Again, there has been stiff local opposition, particular from Indigenous communities angry at loss of land and environmental costs, and the degree of private commercial interest in the link seems set to remain hazy until completion, but it could become a contender for a chunk of Panamanian traffic in the coming years if all goes well – and has none of the vulnerability to drought that the Canal does.

While long-term challenges don't look likely to ease any time soon, Panama is due to see more transitional fuels – not something the local market has had in abundance – become available in the coming months. Two LNG bunker suppliers sealed arrangements late last year to begin LNG bunkering, one at either end of the Canal.

In October, Canada's Seaspan inked an MoU with energy company AES, which built and operates the new Costa Norte LNG terminal in Colón, to provide LNG bunkering from the second half of 2024. The Costa Norte facility was built in 2018 with bunkering earmarked for the future alongside LNG storage and regasification for the attached gas power plant, so it's good to see such plans come to fruition in a timely manner. The plant's ship loading facility should already be in operation by the time of going to print, and in January this year, Seaspan launched the 7,300 cbm LNG bunker tanker *Seaspan Garibaldi*, which will operate from the terminal once fitted out.

"Seaspan is proud to collaborate with AES to provide LNG bunkering in the Panama region and lead the way in providing energy transformation opportunities in the global marine sector. Together we will provide low-carbon solutions for ship owners who want to decarbonise their operations and transition to cleaner marine fuels," said Seaspan Energy president Ian McIver, president of Seaspan Energy.

"There is significant global interest in developing and investing in LNG bunkering solutions and Seaspan Energy is uniquely positioned to provide leadership in this growing market because of our advanced LNG capabilities and expertise. Developing an LNG bunkering business is a natural progression for Seaspan, as the company already provides traditional fuelling services and is a highly experienced LNG vessel operator with a fleet of hybrid ferries that operate primarily on LNG."

President of AES in Panama Miguel Bolinaga added: "We are on the doorstep of a new era in sustainable energy. The collaboration with our shipowner partner and the innovations at our Costa Norte Terminal position us as leaders in driving sustainable, efficient and affordable solutions to meet the growing demands of the market."

LNG, obviously, *isn't* "sustainable" outside the use of syngas or biomethane, and the latter only in relatively low volumes, but it is a transitional fuel with an established market – particularly in the cruise sector, which the Atlantic coast of Panama is well-situated to serve.

On the Pacific side, meanwhile, US-based Crowley is aiming to become the first company to offer LNG bunkering there. In late October last year, it was given an LNG bunkering permit by the Panama Maritime Authority and intends to launch ship-to-ship bunkering this year – though the company has not yet announced details of what shape this service will take.

"LNG is widely accepted as the most practical transitional alternative fuel for maritime shipping and to stay ahead of the rapid deployment of LNG-powered ships across the global market, Crowley is strategically growing its LNG bunkering operations across North and Central America," said James Fowler, senior vice president and general manager at Crowley Shipping. "The Panama Canal will become a key location for vessels to take on LNG, and Crowley's future Panamanian bunkering service will give international ship owners confidence to continue to adopt LNG across their fleets."

Crowley has a long track record in the LNG shipping field and was the first US company to win a small-scale export license as well as the first to establish an LNG supply chain to Puerto Rico. Piggybacking that experience and its existing presence in Panama should mean that Crowley's bunkering service launches smoothly – and hopefully into a relatively normal cruise season if rainfall returns to normal this year.



The *Seaspan Garibaldi* will supply LNG bunkers from Colón. ©Seaspan



## NAVIGATING THE WAVES OF CHANGE: ADAPTABILITY ENABLES BUNKER ONE TO OVERCOME DISRUPTIONS IN THE MARKET

**The bunker industry has faced multiple challenges, disrupting the usual flow in the market. Regulations, changes in customer demands, and geopolitical tensions have left a mark on the bunker industry. Handling these challenges, Bunker One has proved itself to be agile, quick to adapt, and customer-centered.**

Peter Fynsk, Head of Bunkering Africa at Bunker One, reflects on the past couple of years in the industry. And how Bunker One managed to overcome, for the most part, unpredictable disruptions in the market. Looking in the rearview mirror, it has undoubtedly been a challenging 'journey', yet both Bunker One and the entire industry have gained invaluable experience from it.

As of January 1, 2020, the IMO 2020 regulation regarding a limiting cap for using sulfur in fuel oils led to the first disruption in the market. However, this regulatory transition was announced ahead of time to ensure that all were on board when it would be effective by the new year. During this transition, the industry faced logistical challenges in ensuring product availability in the African region. Here, Bunker One transitioned efficiently from high-sulfur fuels to Very Low Sulfur Fuel Oil (VLSFO).

*"Everyone was all hands on deck, strongly focused on succeeding in this task as an internal task force was established to dive deep into the area of new fuels and solutions most optimal for our operations. In short, we spent much of 2019 pondering and preparing for this, and as it turned out, the industry handled the changes very well with viable solutions,"* says Peter Fynsk.

### Covid caused an increased demand

With the challenges of IMO2020 and limiting cap accomplished, yet another disruption emerged: COVID-19. An unforeseen challenge not to predict or prepare for.

*"We were prepared for 2020, or at least we thought so as we adjusted to the new regulations. No one knew that a pandemic was in sight. One might say that we were preparing for a little rain while a thunderstorm was on the way,"* says Peter Fynsk, who elaborates on how COVID naturally left a mark:

*"Obviously, we were affected by COVID and the following challenges. Everyone, everywhere, was affected."*

The global tensions of COVID-19 unfolded, impacting not only the bunker industry but all industries worldwide. The pandemic effectively brought the world to a standstill, leading to extraordinary pressure on containers and supply chains and causing an increased demand for bunkers - a new challenge that Bunker One had to cope with. And so, they did.

*"After all, the challenges of COVID proved to us that we are agile and quick to adapt - even in times of change. It showed that our business is built on a strong foundation, enabling it to stand strong through difficult times,"* states Peter Fynsk.

### Unforeseen challenges in Algoa Bay

In the aftermath of COVID-19, almost returning to a "new normal", another disruption made the boat rock for the bunkering industry. This was the situation in Algoa Bay/Port Elizabeth, where the bunkering operations were fully suspended. To fully grasp the resilience and adaptability required in the bunkering industry, it is crucial to understand the implications stemming from this. Peter Fynsk explains:

*"The Algoa Bay situation trapped many industry players and rendered their ships unable to deliver in parts of South Africa, halting activity. Consequently, customers who usually obtained bunker supplies in Algoa Bay were redirected to Port Louis, leading to significant implications."*

While the bunkering industry reassessed its strategies, Bunker One took a proactive approach, ensuring the capacity to meet the rising demand in the region.

This proactive approach was also evident when the invasion of Ukraine in 2022, before the Algoa Bay situation, resulted in international sanctions. Importantly, Bunker One had already set internal rules to avoid involvement with entities that could lead to sanctions violations.



## Geopolitical conflicts affecting the African bunker market

The resilience of Bunker One was tested once again when the geopolitical, conflictual situation occurred in the Red Sea. This led to increased demand for ships operating around the Cape instead of passing through the Suez Canal. Here, they found themselves strategically challenged and forced to take a proactive approach to reassess their operational positioning.

But Bunker One found itself to have an efficient operational business set up to handle even these challenges: Strategically, they have positioned themselves along the shipping routes rather than focusing solely on flow ports. This strategy enables them to offer alternatives. For instance, Bunker One is present in Port Louis, Mauritius, alongside the coast side Africa (WAF), and in Itaqui on the northern coast of Brazil. They quickly adapted their operations, deploying more ships to the area, acquiring additional products, and preparing for deliveries to West Africa.

*"Currently, we are witnessing a substantially increased demand in Africa, both in Port Louis and West Africa. Our supply network combined with a reputation as a reliable counterpart positions us favourably for business opportunities, providing access to various local and international shores,"* says Peter Fynsk, and adds:

*"Our focus remains on being where our customers are, optimising within the given trade parameters. Strategically positioning ourselves to meet this demand posed a significant challenge, prompting the relocation of our ships to Walvis Bay in Namibia. This move ensured our readiness for delivery and provided an additional layer of availability at Port Louis on the product side."*

The flexibility which Bunker One maintains between East and West Africa, facilitated by Port Louis and WAF, allows them to offer a unique product compared to competitors. This flexibility also enables them to redirect customers to the following location in case of critical weather in West Africa.

*"Our strength lies in this flexibility, emerging from the same operational setup, providing a single point of contact commercially and operationally – it is indeed a benefit for both us and our customers,"* says Peter Fynsk.



## Green fuels and decarbonisation

Targets for decarbonisation are also a challenge that Bunker One is heavily invested in successfully achieving. The previously mentioned task force, as of 2019, which focused on IMO 2020 regulations, has continued its strides, deep diving into the market of new fuels and green alternatives. Here, Peter Fynsk highlights both the environmental responsibilities but also customer demand:

*"At Bunker One, we acknowledge our corporate responsibility and strive not just to support but to stay ahead and lead the collective ambitions of our industry. Our task force has gathered a team of experts specialised in fuel solutions. We actively exchange knowledge through collaborative efforts within our organisation and our industry. As the saying goes, the more, the merrier,"* says the CEO at Bunker One, Peter Zachariassen, emphasising how they value collaborations and shared expertise. Although there is an increasing demand, this is still a transitional process, but Peter Fynsk affirms: *"We are ready when our customers are"*. Moreover, Bunker One will be ISCC-certified on all of its assets.

## Quick to adapt

According to Peter Fynsk, it all comes back to one thing: Adaptability.

*"In our constantly evolving world, change is an inevitable reality. As a result, the most important factor for business success, especially in our industry, is the ability to adapt quickly to new circumstances or conditions. This is indeed our strength and something we are very proud of,"* Peter Fynsk refers to the previously mentioned disruptions, which Bunker One managed to overcome.

Before achieving the ability to adapt, they take an analytical approach and remain very aware of market dynamics. This awareness is crucial for them to respond promptly and take appropriate action. Besides adaptability, navigating these disruptions also required experienced skills and an extraordinary logistical sense:

For example, we are increasing the number of ships or making necessary adaptations to address the current situation. From east to west, Bunker One offers a comprehensive one-stop solution along trade routes, enabling smooth service delivery to their customers. Peter Fynsk firmly states:

*"Our commitment is to ensure delivery, even during increased demand, solidifying our commitment to being as accessible, agile, and convenient as possible for our valued customers."*

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# MANAGING COMPLIANCE

*An increasingly wide range of online solutions is on offer to assist meeting regulatory requirements*

Japanese classification society ClassNK has released new features for its GHG Emissions Management Tool, ClassNK ZETA (Zero Emission Transition Accelerator).

ClassNK ZETA is a tool for visualising GHG emissions and carbon intensity indicator (CII) ratings of ships and is used by more than 5,000 ships. Based on data submitted to ClassNK's MRV (monitoring, reporting and verification) Portal, a system for fuel consumption reporting in compliance with regulations including IMO's Data Collection System (DCS) and EU-MRV, ClassNK ZETA is designed to provide accurate status and simulation for reducing GHG emissions from ships and supports response to various emission reduction requirements.

A new feature displays GHG emissions for the entire fleet and individual ships, which are subject to the EU-ETS\*1 and manages the emission allowances held by the company. It visualises the emissions under the EU-ETS, enabling consideration of necessary measures such as purchasing emission allowances.

The tool now also incorporates a feature that can be used to plan operations to achieve an agreed CII rating target based on a BIMCO's CII charter party.

ClassNK says it plans to add functions in readiness for the FuelEU Maritime3 regulation, which will be introduced for EU-related voyages from 2025.

Meanwhile Greece-based Technomar Shipping is to use RINA's SERTICA Vessel Reporting System (VRS) as a single system to cover all reporting requirements.

Theodore Baltatzis, General Manager of Technomar Shipping, said: "We wish to consolidate all our reporting needs into one efficient, flexible and future-proof system. As a starting point, we are already using the standard EU MRV and IMO DCS reports in SERTICA, but we are planning to soon create our own customised reports in the platform to simplify reporting even more."

SERTICA VRS is designed to monitor all key data and metrics from vessels in real-time through one platform. Shipowners can identify potential issues and deviations early on and take corrective actions to improve operational performance. Traditional reporting systems have limitations in terms of flexibility and configuration options, as well as in automatic validation of data inputs. SERTICA VRS is described as providing the "freedom to add validations and sanity checks that improve data quality and eliminate errors while reducing the effort needed from the seafarers".

In the run-up to the implementation of the EU ETS, Bernhard Schulte Shipmanagement (BSM) developed what it describes as "a comprehensive range of carbon compliance and EU ETS management services designed to support owners and operators mastering the complex regulation requirements and to reduce their carbon footprint and related costs".

BSM's Chief Financial Officer Sebastian von Hardenberg says, "Our approach not only encompasses EU ETS management and compliance services but also seeks to optimise ship and fleet performance to reduce CO<sub>2</sub> emissions and financial exposure."

BSM's services cover the monitoring, collection and reporting of required emission data, as well as verification for each voyage affected by EU ETS. The company has devised a highly automated, integrated end-to-end solution, enabling the creation of validated emission statements through the authorised third-party verifier DNV and calculation of equivalent allowances for regulatory compliance.

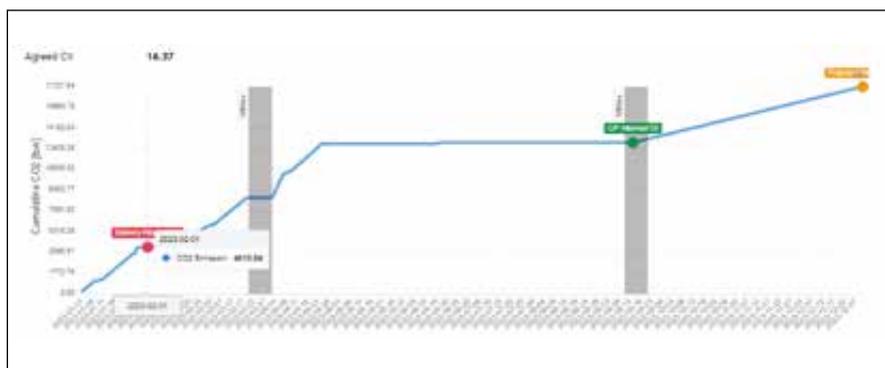
This includes streamlining interactions with EU authorities and administration of maritime operator holding accounts.

In addition, BSM facilitates market access and acquisition of emission allowances through its extensive network. BSM has opened EU registry trading accounts in Germany and Cyprus, taken on a network of providers and implemented EU allowance trading mechanism.

Sebastian von Hardenberg notes, "We have partnered with selected banks working on emission allowance deposit and safekeeping solutions and with carbon certificate brokers offering trading services."

Anil Jacob, Head of the Fleet Performance Centre, BSM's central unit supporting performance optimisation and decarbonisation of the managed ships, says, "We enable our crews onboard, shipowners and charterers to make data driven decisions for most efficient vessel operations that reduces their environmental impact and thus costs and comply with or even go beyond the requirements of international regulations. This has always been the core task of our Fleet Performance Centre but is now becoming even more of a focus for owners and charterers."

Through continued vessel performance monitoring, BSM tracks major fuel consumption contributors such as the hull, machinery, speed, route, and weather. This approach ensures voyage optimisation, regulatory compliance, and increased vessel energy efficiency. Inefficiencies are promptly identified, allowing for swift corrective actions.





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IMO Secretary-General Arsenio Dominguez: "Digitalisation is critical for greater efficiency in shipping." ©IMO

# DIGITAL REVOLUTION

*The days of physical bunker delivery notes are numbered*

On 1 January global shipping passed a milestone in the acceleration of digitalisation in the sector that may have gone unnoticed by many. Under the Convention on Facilitation of International Maritime Traffic (FAL), governments are now required to use a single digital platform, the Maritime Single Window, to share and exchange information with ships when they call at ports, effective 1 January 2024.

The intention is to streamline procedures to clear the arrival, stay and departure of ships and greatly enhance the efficiency of shipping worldwide. More than 4.6 million port calls were recorded globally in 2022.

IMO Secretary-General Arsenio Dominguez said: "Digitalisation is critical for greater efficiency in shipping. The Maritime Single Window delivers information between ships, ports and government agencies quickly, reliably and smoothly."

Meanwhile, in development directly affecting the bunker sector, the IMO has formally confirmed the use of Bunker Delivery Notes (BDN) in electronic format as an acceptable alternative to the conventional hard copy, if they conform to the regulations of MARPOL Annex VI.

This follows the 80th session of the Marine Environment Protection Committee last July, which agreed an additional unified

interpretation to regulations 18.5 and 18.6 of MARPOL Annex VI concerning BDN. It is now included in the updated consolidation circular MEPC.1/Circ.795/Rev.8.

The minimum information to be contained in the BDN remains the same in hard copy or electronic format and is specified in Appendix V of MARPOL Annex VI. An electronic BDN should be protected against any edits/modifications/revisions and a verification method used to make authentication possible. As with a paper BDN, an electronic format must be retained onboard for a period of not less than three years from the date of delivery and made readily available for inspection as required.

IMO notes in a statement: "Certain ports are looking to implement electronic BDN as part of a wider move towards digitalisation, including documentation related to bunkering operations. Ship officers should be aware of these changes such as the method to digitally transfer an electronic BDN from the bunker barge to the receiving ship and the subsequent means to securely retain that electronic record onboard for not less than the required time period."

In a sign of the way things are going, Singapore's Maritime & Port Authority has approved several suppliers to trial the use of electronic bunker delivery notes (eBDN).

Vitol Bunkers says, with its logistics arm V-bunkers, it is collaborating with technology company ZeroNorth to enhance the efficiency of the bunkering process in Singapore through digitalisation. V-Bunkers delivered over 7 million tonnes of bunker fuels in 2023 for its customers, which was also a record year for Singapore. Its barges delivered around 190,000 tonnes of biofuels, which is nearly 36% of total biofuels volume delivered in Singapore last year.

Rishab Bahl, Managing Director at V-Bunkers, said: "We have chosen ZeroNorth as our partner to help digitalise our delivery process with their eBDN solution. Their deep domain knowledge, a secure and strong solution, and commitment to continuous investments towards digitalisation align well with our objectives for a global roll-out."

Kenneth Juhls, Managing Director for ZeroNorth Bunker added: "Digitalising the bunker industry is a game-changer that accelerates the green transition. Our partnership with Vitol Bunkers marks significant strides towards innovative and sustainable industry practices, and we're excited to see how Singapore's leadership influences this globally."



Back in November last year ZeroNorth said it had enabled its customer Golden Island Diesel Oil Trading Pte Ltd (Golden Island) to become the first marine fuel supplier in Singapore to go 100% digital in its use of Electronic Bunker Delivery Notes (eBDN).

Commenting on the news, Tomohiro Yamano, General Manager, Marine Fuel Department at Golden Island said: "A month after the Maritime and Port Authority of Singapore (MPA) launched its digital bunkering initiative as the first port in the world to implement eBDN, we are proud to be the first company to fully switch to eBDN in the Singapore bunkering market. To achieve this, we required a solution that would facilitate a seamless workflow to enhance the productivity and efficiency of our marine fuel delivery operations.

Kenneth Juhls, Managing Director for ZeroNorth Bunker at ZeroNorth, added: "Bunker procurement has been a traditionally cumbersome process, burdened by manual documentation. We're delighted to be helping Golden Island eliminate these manual processes to streamline documentation, drive efficiencies and boost productivity across its operations as a global eBDN solution on the market.

In a separate development in the move towards shipping industry digitalisation, major container line Pacific International Lines (PIL) says it has completed full integration with the Singapore Trade Data Exchange (SGTraDex) platform, making it the first shipping line to do so. PIL says in a statement: "This achievement, realised through a collaborative effort with KPI OceanConnect, signifies a transformative step towards global digitisation in PIL's maritime operations."

According to PIL, the integration, initiated early last year and concluded in December, has enabled it to leverage SGTraDex to improve the way transactions are conducted with its stakeholders, including suppliers and financial institutions. This is another key step forward in improving efficiency and transparency in maritime operations.

As part of the integration, PIL successfully executed an overseas bunkering transaction with KPI OceanConnect, demonstrating the feasibility of using SGTraDex for transactions beyond Singapore. PIL says the transaction highlighted the data highway's potential to streamline complex processes and facilitate smoother collaborations between shipping lines and their beneficiary chain of organisations.

Since the successful overseas bunkering transaction, PIL has completed more than 40 transactions through SGTraDex. The adaptability of SGTraDex is evident in its ability to handle a diverse range of transactions, showcasing its relevance across the maritime sector.

Prior to this integration, PIL had to export and email documents to suppliers, who then manually uploaded key information onto the e-invoicing portal.

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Shipping bodies get ready for April meeting of IMO's Marine Environment Protection Committee (MEPC 81) IMO

# ENVIRONMENTAL NEWS

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

### Shipping bodies gear up for MEPC 81

Liner shipping body, the World Shipping Council (WSC), says the sector is committed to decarbonising quickly and efficiently, and has published a paper outlining four cornerstones critical to an effective IMO GHG agreement. It is intended to feed into discussions at the April meeting of IMO's Marine Environment Protection Committee (MEPC 81).

"Liner carriers are committed to delivering on the 2050 net zero target and are already investing in renewably propelled ships. To ensure there are renewable fuels available to run those ships in a competitive manner, energy providers must see regulations written in the next two years that demonstrate sufficient demand for new fuels to justify the massive investments needed in the immediate future. The challenge for member states at IMO is not just to agree, but to agree on regulations that will provide investment certainty. If we can get this right from the beginning, we will speed the energy transition and make it more affordable by avoiding stranded investments," says John Butler, President & CEO of the WSC.

The WSC paper MEPC 81/7/2 details the four cornerstones that WSC considers critical to an effective global legal instrument, as a formal contribution to IMO climate negotiations:

Firstly, decarbonising shipping will require billions in investments in technology development, vessels, renewable energy production, and supply.

Investments are only made if there is confidence and certainty in future requirements. This means that each of the GHG fuel-intensity standards that will apply between now and 2050 need to be defined up front, at the time the regulatory agreement is made.

Secondly, to reach its climate targets on time, IMO's financial measure must be strong enough to make it economically rational and attractive for both ship owners and energy providers to invest in fuels and technologies that deliver deep GHG reductions from the start. The measure or carbon price must be designed to provide a level playing field globally, so that vessels operating with the most advanced low-GHG technologies and energy sources can compete commercially with vessels running on traditional fuels.

Thirdly, a flexible approach to pooling will enable investments that would not be feasible if every vessel must perform at the same level at the same time and will help smaller carriers transition more efficiently.

Fourthly, regulations that are based on well-to-wake life cycle analysis of all fuels, including biofuels, will enable us to fully understand the climate impacts across fuel production and use. With a holistic view of all fuels, we can avoid stranded investments in fuels or technologies that divert emissions up- or downstream.

"Liner shipping wants to decarbonise our industry as soon as possible and we will continue to lead the way in enabling

shipping's transition to zero. But we cannot do this alone, and we cannot do it without the volumes of renewable energy and fuels this transition requires. If IMO member nations build upon these four cornerstones in developing the future greenhouse gas regulations, the shipping industry and fuel providers will have the necessary investment certainty to reach our goal. It is time to move from ambition to action and work together to deliver net zero by 2050," says Butler.

Meanwhile the International Chamber of Shipping (ICS) says it has submitted a detailed, "fit-for-purpose" proposal to shipping's global regulator, the UN International Maritime Organization (IMO), for a Zero Emission Shipping Fund (ZESF).

According to ICS, in recognition of the urgency to move forward with workable solutions to meet ambitious net zero targets, shipowners globally have agreed to mandatory contributions on GHG emissions to raise billions of dollars annually. The purpose is to accelerate transition by the global commercial shipping fleet to net zero emissions by 2050 and support the maritime GHG reduction efforts of developing countries.

The shipping industry's updated proposal is co-sponsored by the Bahamas and Liberia (two of the world's largest flag State administrations, measured in gross tonnage). The proposal builds on the 'feebate' concept put forward by the Government of Japan and support from EU States at IMO for a flat rate "levy-based" global contribution system.



ICS says: "Significantly, the updated proposal adds a structure for transparency and accountability for how the billions of dollars raised will be used, including those funds to be allocated for use in developing countries."

ICS Secretary General Guy Platten explains: "The transition to net zero shipping must be truly global. Otherwise, it will not succeed. ICS fully supports the net zero goal which IMO has agreed for shipping. The 2050 goal will only remain plausible if government negotiators now roll up their sleeves to develop the regulations needed to establish the Zero Emission Shipping Fund. A global GHG pricing mechanism for shipping urgently needs to be agreed on next year, which will de-risk investment in zero GHG marine fuels and provide billions of dollars of funds to support developing countries."

The Zero Emission Shipping Fund and the feebate mechanism will be considered by IMO Member States at their next round of GHG negotiations in March. Governments have already unanimously committed to developing a GHG pricing mechanism for international shipping by 2025. If governments agree, the ZESF will be approved next year to help achieve net zero GHG emissions from shipping by or close to 2050, in line with the ambitious GHG reduction targets adopted by IMO Member States.

Under the proposal, contributions from ships per tonne of CO<sub>2</sub> emitted will be used to reduce the significant cost gap between zero GHG fuels and conventional fuel oil, providing financial rewards (feebates) to ships for the GHG emissions prevented by use of these new marine fuels.

The transparent and accountable proposal will include support to produce zero/near-zero marine fuels and the roll-out of new bunkering infrastructure in developing countries' ports worldwide, as well as supporting training in the safe use of new fuels.

A detailed impact assessment has already been conducted by Clarksons Research for ICS highlighting that a contribution rate which adds a cost in a range between US\$20 to \$300 per tonne of fuel oil consumed would have no disproportionately negative impacts on national economies in terms of delivered cargo prices.

### Sustainable Marine Fuel Confidence Index

The Sustainable Marine Fuel Confidence Index launched in January, captures a 'moment in time' view of how confident shipping and marine fuel industry stakeholders are that the key components required for maritime's energy transition, such as technology and infrastructure, are already in place.

The inaugural Index was created at the Sustainable Marine Fuel Fest (SMF Fest), organised by uncommon conferences and ship.energy, which took place on 15-16 November 2023 in Valencia. This 'by industry for industry' event brought together stakeholders from across the marine fuel value chain who stress tested and then populated the SMF Confidence Index, which is based on a framework developed by SMF Fest industry partners who represent companies that are interested in, and responsible for, the delivery of shipping's energy transition. They include technology providers (Wärtsilä, GTT), a class society (Bureau Veritas), an industry association (The Society for Gas as a Marine Fuel), a marine energy supplier (Peninsula) and a shipowner (Hapag-Lloyd).

This first Index provides a baseline from which to chart and compare changes in industry confidence in shipping's energy transition according to four key criteria (Technology, Infrastructure, Commercial and Environmental Credentials) and using five deep sea vessel segments: container ships, dry cargo, gas carriers, passenger vessels and tankers. These criteria/vessel segments are considered in relation to the use of 12 marine fuels (including grey/blue/green variants).

Participants at SMF Fest were representatives of a broad cross-section of industry stakeholders, all of which have a sharp focus on decarbonisation and sustainability within their respective corporate strategies. The Index's confidence span ranged from 'not at all confident' to 'very confident' and a key takeaway from the exercise was that the contributors to the Index are cautious about the commercial and operational readiness of most of the new fuels and their perception is that there are currently significant gaps and challenges to be resolved in the development of these fuels across one or more of the criteria used for their assessment.

### Training seafarers for a decarbonised future

A new training project is intended to prepare seafarers for zero or near-zero emission ships, helping the global shipping industry decarbonise and ensure a just transition for seafarers.

Research commissioned by the Maritime Just Transition Task Force identified that 800,000 seafarers may require additional training by the mid-2030s to operate vessels run on zero or near-zero emission fuels.

With seafarers at the core of the shipping industry, this training is vital to ensure a successful and just transition to a new shipping landscape. The training framework, funded through the International Maritime Organization (IMO) and Lloyd's Register Foundation, will equip seafarers with skills in decarbonisation, and provide guidance for trainers and the industry.

Stephen Cotton, General Secretary of the International Transport Workers' Federation, explains: "Seafarers are at the heart of the just transition needed in the shipping industry, and training the current and future workforce is crucial to ensure that workers' expertise is front and centre as the industry transitions and decarbonises. We have heard the message loud and clear from seafarers around the world, they are ready to lead, they are ready to shape the training frameworks for the zero carbon fuels of the future."



## ABOUT US :

Orion Bunkers started its journey in 2004 with the name Orion Bunkers LLC and within a few years of its inception, the company grew to become one of the leading physical bunker suppliers in Pakistan. In 2016, the company moved a step ahead by changing the name (re-branding) as "Orion Bunkers Limited" In 2022, after considering this continued growth and success, the management of Orion Bunkers decided to introduce a new entity ORION BUNKERS DMCC for better exposure and target new customers.

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# BOOSTING EFFICIENCY WITH HYDROGEN

*Catalyst system reduces emissions and cuts fuel consumption*

Italian classification society RINA has issued full type approval for the EcoPro Fuel Catalyst System, a stand-alone retrofit design that uses hydrogen to reduce emissions and improve fuel efficiency on marine engines.

According to the manufacturer, the EcoPro system intelligently optimises the engine's fuel combustion, continuously monitoring engine requirements and ensuring that very specific quantities of hydrogen are produced at exactly the moment that the engine requires it.

This enables owners to utilise hydrogen to improve engine performance whilst avoiding the associated risks of high-pressure hoses and pressurised hydrogen storage systems. The "smart" system is monitored and remotely controlled by Ecomotus HQ, and vessel owners have access to a live online data feed.

Optimising the fuel burn, is said to result in a significant reduction in carbon deposits (PMs) as well as reducing NO<sub>x</sub>, CO and CO<sub>2</sub> at the point of ignition and reducing fuel consumption.

Among the proven benefits, the carbon reduction enables engine oils and components to remain cleaner for longer, with a visible decrease in black smoke emitted from the exhaust, and with fuel being burnt more efficiently, torque is optimised, increasing range.

With no requirement for hydrogen storage tanks or high-pressure systems, and with a small footprint, the modular EcoPro can be retrofitted to almost any engine, allowing owners to optimise their fuel burn and reduce their CO<sub>2</sub> footprint.

The EcoPro Hydrogen Electrolyser has so far been successfully installed on more than 30 marine engines.

Patrizio Di Francesco, EMEA Special Projects BD Manager at RINA, said: "RINA is delighted to have awarded the EcoPro Hydrogen Electrolyser with Full Type Approval. We believe that all technologies must be investigated and supported if we want to achieve decarbonisation goals. The EcoPro system provides an effective solution for reducing marine pollution and

emissions, focussing on applications for existing vessels engaged in short sea and inland navigation as well for yachts".

Jason Munro, Director of Innovation at Ecomotus, said: "The search for safe clean-energy solutions is well underway, but change is not going to happen overnight. The EcoPro bridges the gap between fossil fuels and the future of a hydrogen/electric economy, a way to use hydrogen safely to immediately reduce pollution and improve fuel consumption, cleaning up existing engines now".

According to the company, "based on third-party evidence following ISO 19030 and International Towing Tank Conference (ITTC) standards", its coating enables vessels to maintain a clean hull and reduce drag, achieving power savings of up to 20%, a speed loss performance of less than 1%, and up to 35% reduction in CO<sub>2</sub> emissions in comparison to traditional antifouling coatings. It adds that actual performance will depend on ship model and operating conditions.



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# RED SEA CRISIS

## IMO chief condemns attacks on shipping

At a press conference in February, IMO Secretary-General Arsenio Dominguez highlighted the threat posed by attacks on international shipping in the Red Sea, he condemned the attacks and underscored the paramount importance of protecting seafarers' lives. He continued to call for the de-escalation of tensions and the freedom of navigation of ships in the area.

He noted that trade volume going through the Suez Canal has fallen by 42% over the last two months, according to estimates by the United Nations Conference on Trade and Development (UNCTAD).

The Secretary-General underscored the resilience of shipping in the face of global challenges and confirmed that IMO was actively dialoguing with countries, industry partners and the international community to find solutions.

Container shipping, especially, has diverted to the Cape of Good Hope route. This has meant increased volumes for bunker suppliers around the African coast.



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In an analysis of the impact of the crisis, HSBC Research noted that, in the first half of January, overall transits via the Suez Canal dropped 63% compared to the first half of December, with container ships being most impacted (down 81%).

### Bunker prices rising in late-January

According to a report by Integr8 Fuels Bearish fundamentals and sentiment played out between mid-December and mid-January, with VLSFO prices on a downward slide. This was despite geopolitical tensions surrounding Houthi attacks on shipping in the Red Sea and the first US/UK air attack on Houthi targets on 11 January.

However, over the last two weeks of the month prices increased, back to early December levels. Integr8 says the main reasons behind the turning point have been - stronger than expected economic growth in the US; more positive indications for growth in Chinese oil demand; tighter product balances (because of disruptions to trade as ships re-route via the Cape of Good Hope and away from the Red Sea/Suez Canal); short-term crude production and refinery outages in the US because of cold weather.

Integr8 notes that the main impact on oil markets so far on ships re-routing has been on diesel and jet trade from the Middle East/West Coast of India to Europe, and the naphtha and fuel oil trade from Europe.

### Russian refinery drone strike

According to reports, an unmanned drone crashed into St Petersburg's Nevsky Mazut refinery, causing an explosion and a blaze that was put out by firefighters. It appears that the drone was hit by an anti-aircraft missile but still struck the refinery.

Built in 2001, Nevsky Mazut is an important producer of marine fuel. *Moscow Times* reports that St Petersburg Governor Alexander Beglov referred to the explosion as a "loud clap" and an "incident" in which he said no one was hurt. "There was no substantial damage to property," Beglov wrote on the messaging app Telegram.

*Moscow Times* notes that a series of drone strikes in January that were claimed by Ukraine sparked fires at oil and gas facilities in northwestern Russia's Leningrad region and St Petersburg.

### Dual-fuelled bunker tanker

Fratelli Cosulich Group has ordered its first methanol dual-fuelled chemical bunker tanker. The 7,990 DWT IMO Type II chemical vessel will be built at Taizhou Maple Leaf Shipbuilding Co, China. With a capacity of over 8,000 cubic metres, its cargo tanks will be coated to enable carrying both green methanol and biofuels.

The vessel will be delivered in the last quarter of 2025 and will be located at the Port of Singapore under a fixed-rate time charter contract with global commodities trader Trafigura. It will be deployed to deliver marine fuels for TFG Marine, Trafigura's international marine fuel supply and procurement joint venture with ship owning companies Frontline Ltd and Golden Ocean Group Ltd. Fratelli Cosulich Bunkers Singapore will oversee the technical management and operations of the vessel for TFG Marine.



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Samskip's new short-sea container vessels will be powered by hydrogen ©Naval Dynamics

# FUEL CELL DEVELOPMENTS

## Fuel cell-powered box ships to operate northern European route

Technology group ABB says it is to provide complete power, propulsion and automation systems for two newbuild short-sea container ships for Netherlands-based Samskip Group.

ABB is not saying how much the order, booked in the second quarter of 2023, is worth.

Built by Cochin Shipyard Ltd, the largest shipbuilding and maintenance facility in India, the 135-metre ships are due for delivery in Q3 and Q4 of 2025, respectively. Both vessels will be operating between Oslo Fjord and Rotterdam, a distance of approximately 700 nautical miles.

In addition to the integration of hydrogen fuel cells, ABB's package includes the new, compact version of ABB Onboard DC Grid power distribution system that will ensure the optimal use of energy on board. The vessels will also feature ABB's energy storage solution control, with the industry-leading automation technology, ABB Ability System 800xA, ensuring seamless operation of onboard equipment. ABB Ability Remote Diagnostic Systems will provide 24/7 remote support to optimise safety and performance.

ABB says: "Fuel cells turn the chemical energy from hydrogen into electricity through an electrochemical reaction. With the use of renewables to produce the hydrogen, the entire energy chain will be clean. Hydrogen fuel cell technology is considered as one of the most promising solutions to support the shipping industry's decarbonisation agenda, with the potential to significantly reduce greenhouse gas emissions and increase energy efficiency."

Samskip's vessels will each be powered by a 3.2 MW hydrogen fuel cell, with diesel generators installed for back-up. The logistics group, which aims to achieve net-zero by 2040, anticipates that each vessel will be able to avoid around 25,000 tonnes of CO<sub>2</sub> emissions a year when powered by fuel cells and by using green shore power at the port of call. According to ABB they are expected to perform at the same level as Samskip's conventional vessels.

Meanwhile the UK-Government funded HyTime project is reported to have completed real-world testing with lead partner Bramble Energy providing its fuel cell system along with custom engine builder Barrus.

Bramble Energy has designed, developed and deployed a unique marinised fuel cell system for use within a narrowboat – a first of its kind application.

The completed project demonstrates Bramble's printed circuit board fuel cell (PCBFC) technology in a real-world environment, serving the company says, "as a showcase of hydrogen's vast potential to decarbonise the marine sector".

The system is said to offer a solution to replace diesel engines in boats which could potentially save 12 tonnes of CO<sub>2</sub> annually per vessel.

The hydrogen-powered narrowboat will now begin a testing programme on UK inland waterways with data collected helping Bramble develop future marine PCBFCs.

Bramble says: "PCBFC technology provides a viable route for accessing the hydrogen economy as they can be manufactured in almost any size or arrangement at much greater speed and scale than traditional electrochemical stacks, at a much lower cost."



# NUCLEAR PROPULSION R&D PROJECT

*Classification society, shipping company and shipyard in joint development project with nuclear engineering company for R&D of nuclear-propelled ships*

Lloyd's Register (LR), Zodiac Maritime, HD KSOE and KEPCO E&C are in a joint development project for the research and development of nuclear-propelled ship designs, including bulk carriers and container ships. The parties signed an MOU at Korea's HD Hyundai Global R&D Center.

A new report commissioned by LNG-promoting group SEA-LNG described the plan for nuclear propulsion on merchant ships as a "moonshot". That probably reflects widespread views. However, LR says in a statement: "The move comes as the shipping industry looks more closely at nuclear as a future marine fuel in the context of the energy transition and decarbonisation targets. Under the JDP, HD KSOE and KEPCO E&C will provide designs for future vessels and its reactors while LR will assess rule requirements for safe operation and regulatory compliance models.

The JDP partners will work to address the challenges involved with nuclear propulsion, such as applying existing terrestrial nuclear technology to ships, and the project will enable Zodiac to evaluate ship specifications and voyage considerations around nuclear technology."

In a joint statement, Mr. Park, Sang-Min: Senior Vice President (Green Energy Technology), HD KSOE and Mr. Park, Beom-Seo: Executive Senior Vice President and Member of the Board, KEPCO E&C say: "As leading companies in the shipbuilding and nuclear industry, HD KSOE and KEPCO E&C, are collaborating on the design of a Nuclear propulsion ship. A Nuclear propulsion ship emits no carbon, and its paramount goal is to be designed with a life cycle cost (LCA) of less than half that of carbon neutral ships."

Sung-Gu Park, President North East Asia, LR comments: "Lloyd's Register believes there is huge opportunity for nuclear technology to support the maritime energy transition and provide long-term low- or zero-carbon fuel supply security. We have been assessing nuclear's potential over many decades and we are delighted to partner with Zodiac, HD KSOE and KEPCO on this R&D project for nuclear-propelled ships."

Stavros Hatzigrigoris, New Buildings Director, Zodiac Maritime, said: "The shipping industry is on an exciting but challenging journey as we transition towards a zero-carbon future. There is clearly great potential for nuclear technology to play a key part in achieving this mission, but the industry is only in the early stages of putting nuclear power to the test. We are therefore thrilled to partner with HD KSOE, KEPCO and LR on this JDP and help facilitate the research and development needed to accelerate nuclear power technology in shipping."



Ane Maersk naming ceremony. ©maersk

# METHANOL ROUND-UP

*Methanol is rapidly being taken up as an alternative on the path to decarbonisation*

## Maersk methanol boxship named

The *Ane Maersk*, the first of Maersk's 18 large methanol-enabled vessels that will be delivered between 2024 and 2025, was due to enter service as *World Bunkering* went to press.

She is the world's second methanol-enabled container vessel and will enter service on the AE7 string connecting Asia and Europe. The vessels in the new series have an "industry-first innovative" design with the bridge and accommodation placed right forward, "which ensures fuel efficient operations".

"This series of vessels will have a transformative impact on our ambition to progress on our industry-leading climate ambitions. It is a visual and operational proof of our commitment to a more sustainable industry. With *Ane Maersk* and her sister vessels we are expanding our offer to the growing number of businesses aiming to reduce emissions from their supply chains," says Vincent Clerc, Chief Executive Officer of A.P. Moller-Maersk.

The *Ane Maersk* was due to use green methanol on her maiden voyage. Maersk says it "continues to work diligently on 2024-2025 sourcing and bunkering solutions for its methanol-enabled vessel fleet".

Maersk defines "green" fuels as producing low to very low GHG emissions over their life cycle compared to fossil fuels. The liner operator defines "low" as being a fuel with 65-80% life cycle GHG reductions

compared to fossil fuels. "Very low" refers to fuels with 80-95% life cycle GHG reductions compared to fossil fuels.

## LR and Green Marine partnership

Lloyd's Register (LR) and Danish consulting service provider Green Marine are jointly offering solutions to maritime stakeholders who aim to build or retrofit and operate vessels with methanol-as-fuel technology, with a prime focus on training.

LR says that methanol, known for its lower carbon intensity and potential for renewable production, presents a promising pathway to propel the maritime industry towards a more sustainable future. But it adds: "As a new fuel in shipping, there is still limited operational experience of methanol as a marine fuel and its use presents challenges for seafarers and their upskilling, alongside shoreside competencies which are required in order to ensure safety and efficient use."

Green Marine has developed experienced-based training delivered by ex-captains and chief engineers with over 100,000 hours of onboard operational experience in methanol dual-fuelled ships.

Andy McKeran, Chief Commercial Officer, Lloyd's Register said: "This partnership reflects LR and Green Marine's shared commitment to advancing sustainable solutions in the maritime sector. By leveraging our technical expertise and working collaboratively with Green Marine, we aim to accelerate the adoption of methanol as a viable and environmentally

friendly fuel source, contributing to a greener and more sustainable future for the maritime industry."

## Methanol bunker tanker

Singapore-based Stellar Shipmanagement Services has taken delivery of a 4,000 DWT IMO Type 2 Chemical and Oil Tanker, classed by Bureau Veritas. The *Maple* is the first dedicated methanol bunkering tanker to operate in the port of Singapore.

Built by Sasaki Shipbuilding Co, Hiroshima, Japan. The vessel is equipped with twin-screw propulsion, flow boom and a mass flow metering system, and is compliant with MPA's current licensing requirements for Oil Product Bunker Tankers. The ship's cargo tanks are specifically coated with inorganic zinc silicates for the carriage of methanol. A dedicated team supervised the construction of the 4,000 DWT IMO Type 2 tanker.

Global Energy Trading is the trading arm of Global Energy Group (GET), a Singapore MPA-licensed and UAE-licensed bunker supplier.

With the first dedicated methanol bunkering tanker built, GET, Stellar Shipmanagement and Bureau Veritas are now part of a working group spearheaded by the Maritime & Port Authority of Singapore (MPA) to introduce a new bunkering procedure for the safe handling and delivery of methanol as a marine fuel to ships refuelling in the port of Singapore.



SFL Emden bunkers LNG in ship-to-ship transfer ©KPI OceanConnect

# “GO WITH LNG!”

*SEA-LNG puts its case that LNG is the best fuel pathway to net zero*

In a new paper *A View from the Bridge 2023-2024*, SEA-LNG says that here is a growing awareness of the fact that all the alternative fuels being discussed today share the same generic pathway: from fossil to bio-derived fuels, (or blue fuels using carbon capture and storage) and eventually to electro-fuels produced from renewable electricity. There is also a recognition that all these fuels are currently fossil, also known as grey.

SEA-LNG argues that the use of grey methanol, grey ammonia and grey hydrogen as marine fuels will generate more GHG emissions than the traditional marine fuels they are looking to replace. This means they are not viable solutions for decarbonisation even in the short term. By contrast, it asserts, grey LNG offers an immediate reduction in GHG emissions of up to 23%, after accounting for methane slip, for the two-stroke engines which are fitted to the vessels that move most of the world's shipping tonnage.

Consequently, the methanol, ammonia and hydrogen used by shipping will need to be green, or at least a blend with large

volumes of green fuels, simply to achieve parity with VLSFO (Very Low Sulphur Fuel Oil) and comply with regulations such as FuelEU Maritime.

SEA-LNG concludes: “With scaling green fuel supply a clear barrier to decarbonisation, we must make efficient use of scarce resources. With practicality in mind, we must also recognise that fuel availability is linked to the scale of supply infrastructure. Acknowledging these truths, it is clear the LNG pathway from LNG to bio-LNG to e-LNG represents the practical and realistic pathway to net zero shipping emissions.”

### LNG bunkering

KPI OceanConnect has collaborated with Titan Clean Fuels and SFL to complete the company's first LNG bunkering operation for the newly built car carrier, the Emden, taking place in the Port of Emden.

Executing an LNG cool down and bunkering operation entails different challenges, often requiring more time-consuming and detailed processes compared to a conventional fuel supply,

including compatibility assessments between the receiving vessel and the LNG bunkering vessel.

The companies say: “The success of the operation performed by Titan with the collaboration of KPI OceanConnect and SFL, highlights the flexibility and efficiency of all parties, and their shared commitment to ensuring a smooth bunkering process. Trusting in each other and continuing to be adaptable meant each stakeholder was able to play a pivotal role in guaranteeing the execution of the supply operation.”

Michael Schaap, Commercial Director, Titan, comments: “Demand for LNG is rising as it is becoming a mainstream fuel since it is widely available today and enables ship operators to reduce emissions now. This operation highlights our commitment to consistently serve our clients as a trustworthy provider of cleaner fuels and we look forward to continuing to enhance our LNG and bio-LNG bunkering capabilities as the market grows, enabling us to supply (bio)LNG to even larger vessels.”



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# HYDROGEN, LATEST DEVELOPMENTS

## A round-up of the hydrogen marine fuel scene

A new European Maritime Safety Agency (EMSA) publication provides a comprehensive analysis of the practical and technical issues surrounding the use of hydrogen to fuel ships. By examining the current production capacity for hydrogen, the existing regulatory landscape, fuel storage options, supply and power generation technologies – along with techno-economic analyses and risk-based case studies – *Potential of Hydrogen as Fuel for Shipping* has identified the potential for adopting hydrogen as a marine fuel.

In its introduction the report, written by authors from American Bureau of Shipping, CE Delft and Arcsilea, notes: “The maritime industry faces substantive challenges, many of which are driven by increasingly stricter air emissions and climate legislation as its practitioners navigate a course towards decarbonisation. Among the broad spectrum of technologies and fuel solutions being considered, hydrogen that is produced with renewable energy (green hydrogen) has been identified as a fuel that could offer a ‘near-zero’ carbon solution on a well-to-wake basis.”

The report asserts that, while shipping has limited experience using hydrogen as a fuel and some of the key technologies (such as engines) remain under development, there is sufficient land-based experience with its production and use that would serve as a sound basis for the transition to a marine fuel.

The EMSA publication states that there are some barriers, such as hydrogen’s low energy density (which would increase the storage needs onboard a ship), the cost of the equipment and significant need to

expand the global capacity to distribute and produce green hydrogen. In the end, hydrogen-fuelled vessels may prove to be a more appropriate solution for short-sea shipping rather than deep-sea.

The study can be downloaded at: <https://www.emsa.europa.eu/publications/item/5062-potential-of-hydrogen-as-fuel-for-shipping.html>

### Hydrogen-fuelled 4 stroke engine

Yanmar Power Technology Co. (YPT), a subsidiary of Yanmar Holdings has embarked on the development of a hydrogen-fuelled 4-stroke high-speed engine for power generation for coastal vessels in Japan as part of the Nippon Foundation’s zero emission ship demonstration experiment. The engine utilises hydrogen as a fuel, emitting no CO<sub>2</sub> during combustion.

In parallel with the hydrogen engine development, YPT will also work on the creation of a hydrogen engine-compatible hybrid electric propulsion vessel, combining hydrogen engine generators with batteries. This innovative vessel design incorporates a container unit-type hydrogen power generation system on its upper deck. Ship operator Uyeno TransTech will be responsible for the vessel’s development and construction.

To support the transition towards zero emissions in maritime operations, YPT aims to develop a pilot ignition engine that utilises a small amount of pilot biofuel and hydrogen co-combustion, as well as a spark ignition hydrogen-only engine. The company plans to commence onshore

verification tests in 2024 using a 6-cylinder hydrogen engine with pilot ignition, with the goal of conducting verification operations by 2026. Concurrently, YPT will conduct onshore verification tests using the spark ignition hydrogen-only engine. By approximately 2030, they aim to achieve zero emissions for coastal vessels by promoting the adoption of hydrogen energy-based propulsion systems.

### Hydrogen-fuelled harbour tug

The Port of Antwerp-Bruges and CMB.TECH have commissioned what is said to be the world’s first hydrogen-powered tug for service in the Antwerp port area.

The Hydrotug 1 uses BeHydro V12 dual fuel medium speed engines – each producing two megawatts – with the latest EU Stage V emissions after-treatment. According to the port, with these engines, the vessel uses clean fuels, resulting in an overall reduction of 65% of traditional fuel consumption and associated emissions in the tugboat’s overall cycle. The Hydrotug 1 can store 415kg of compressed hydrogen in six tanks installed on deck.

The *Hydrotug 1* is the world’s largest hydrogen-powered vessel, and it is “made in Europe”! We are delighted and grateful to have the Port of Antwerp-Bruges as our partner. Port of Antwerp-Bruges shares the same commitment as CMB.TECH to decarbonising shipping and showcasing technology that can be scaled. The Hydrotug 1 is another big step towards zero-carbon shipping and proves that there is a vibrant energy transition industry in Antwerp, Belgium and Europe.



# BUILDING A CO<sub>2</sub> INFRASTRUCTURE

*Carbon capture projects are well under way but for them to be viable the captured carbon needs to be either permanently locked away or put to good use in industrial processes*

Carbon capture is increasingly being seen as a realistic option for overall decarbonisation, either by directly treating emissions or by capturing CO<sub>2</sub> from the atmosphere with aim of selling offsets to CO<sub>2</sub> emitters.

In the shipping industry the emphasis so far has been on onboard carbon capture (OCC) with numerous projects reported by *World Bunkering* over the past couple of years.

The IMO's renewed decarbonisation strategy does not explicitly include offsetting but neither does it rule it out. So, a recent move by a major global commodities market player, and bunker supplier, into offsetting is significant.

Trafigura has agreed to purchase carbon dioxide removal (CDR) credits to be produced by carbon capture, utilisation and sequestration (CCUS) company 1PointFive at its first industrial-scale Direct Air Capture (DAC) facility, STRATOS, which is currently under construction in Texas.

Trafigura says that the deal is its "first transaction towards meeting its commitment as a Founding Member of the First Movers Coalition to purchase at least 50,000 tonnes of durable and scalable net carbon dioxide removal credits generated through advanced CDR technologies by 2030".

The STRATOS plant is designed to capture up to 500,000 tonnes of CO<sub>2</sub> annually when fully operational and is expected to be the largest facility of its kind in the world.

Importantly the captured CO<sub>2</sub> underlying Trafigura's removal credits are to be stored through durable subsurface saline sequestration.

Trafigura says: "The advance purchase of DAC credits from 1PointFive aligns with Trafigura's commitment to support early-stage technologies to enable high-quality carbon removal credits for its customers. It also marks the establishment of a relationship between 1PointFive and Trafigura to advance DAC as a practical, transparent and durable carbon removal solution."

It adds: "The agreement paves the way for the broader adoption of 1PointFive's CDR credits to help hard-to-abate industries address their emissions." Trafigura doesn't say so, but shipping surely comes into the "hard-to-abate" category.

Marine insurer Gard recently published a paper, written by its London-based Senior Executive, Industry Liaison, Neil Henderson on Carbon carriage: *Risks and opportunities*.

Henderson notes: "Traditionally, CCS has most often been used for the enhanced recovery of oil from depleted reservoirs. More recently, its profile has grown as a necessary solution to decarbonise hard-to-abate industries such as energy, cement and steel production. Shipping can be added to this, as onboard carbon capture is likely to be required as alternative zero emission fuels are unlikely to be available in the necessary quantities and prices to achieve the IMO's 2050 and interim targets. That captured CO<sub>2</sub> will need transporting from the capture site (whether that be an industrial installation or onboard a vessel) to the injection site, where it will be permanently stored in a subterranean or subsea geological formation."



Henderson says that estimates are that that global CCS capacity must increase 120 times from current levels by 2050, rising to at least 4.2 gigatonnes per annum, for countries to achieve their net-zero commitments. He comments: "Whilst pipelines will generally offer a more cost-efficient option where there is sufficient scale and regularity of supply of CO<sub>2</sub>, carriage by sea is more appropriate for longer distance transport (over approximately 350km), flexibility of quantity, source and injection locations. Estimates of global offshore storage capacity range from 2,000 to 13,000 gigatonnes of CO<sub>2</sub>. Regions such as Korea, Japan and the North Sea, which have subsea storage locations and coastal-based emissions, are likely to be suitable for seaborne carriage of CO<sub>2</sub>. If onboard carbon capture is widely adopted, this will require carriage by sea from temporary port-based to permanent storage locations."

As noted by Gard, one of the leading CCS schemes is the Norwegian government-sponsored Longship project. This includes capturing CO<sub>2</sub> from industrial sources in the Oslo-fjord region (from cement, chemicals and energy) and shipping liquid CO<sub>2</sub> from these industrial capture sites to an onshore terminal. From there, the CO<sub>2</sub> will be transported by pipeline to an offshore subsea storage location in the North Sea.

It has recently signed contracts to receive about 1.2 million tonnes CO<sub>2</sub> annually from the Netherlands (Yara Sluiskil) and Denmark (Orsted power stations). Northern Lights is responsible for developing and operating the CO<sub>2</sub> transport and storage facilities for the project. Phase one is due to be operational in 2024 with an annual storage capacity of up to 1.5 million tonnes of CO<sub>2</sub>.

So, it is clear that infrastructure based on the permanent underground storage of CO<sub>2</sub> is being put together. However, it is possible that a portion of recovered CO<sub>2</sub> could be used in production processes.

A new report, *Carbon Dioxide Utilization 2024-2044: Technologies, Market Forecasts, and Players*, from IDTechEx predicts that, by 2044, utilisation of waste CO<sub>2</sub> will reach 800 tonnes to create over 3,000 tonnes of useful products.

The research and consultancy firm says CO<sub>2</sub>-derived building materials and CO<sub>2</sub>-derived fuels represent the areas with high growth potential. It says carbon dioxide utilisation (CO<sub>2</sub>U) in building materials is the more straightforward technology, able to lower the carbon footprint of ready-mixed concrete, pre-cast concrete, and carbonate aggregates/supplementary cementitious materials through mineralisation reactions. Carbon dioxide can be permanently stored, and

cement use can be reduced. Growth, IDTechEx predicts, will be driven by new certifications, superior materials performance, and the ability to achieve price parity through waste disposal fees.

Compared to the gigatonnes of CO<sub>2</sub> that are expected to be captured in 20 years' time, the figures quoted by IDTechEx can appear insignificant. However, it says: "Revenue generated through CO<sub>2</sub>U over the next two decades will be vital to enabling the development of commercially viable CO<sub>2</sub> capture technologies for the future. In combination, carbon capture, utilization, and storage technologies are critical in supporting the decarbonization of the world's economy as countries strive to reach net zero goals."

The fleet that will carry captured CO<sub>2</sub> to permanent storage sites, or for industrial uses, is beginning to emerge. LR has announced it is to class its first newbuild project for mid-size low pressure ammonia-ready liquid CO<sub>2</sub> (LCO<sub>2</sub>) carriers ordered by Capital Gas Ship Management at Hyundai Mipo Dockyard

LR says the project follows a collaboration between Capital, HMD, and LR, paving the way for further orders of LCO<sub>2</sub> carriers, which it describes as "a crucial component to supporting the wider carbon capture and storage value chain".

WORLD



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# SAFETY FIRST

*New certification and safety standards set course for development of ammonia as marine fuel*

The certification framework for using ammonia as a fuel is starting to come together. Among recent developments classification society Bureau Veritas has granted approval in principle (AiP) to Swiss marine power company WinGD's X-DF-A dual-fuel engine's safety concept.

The safety concept describes how risks associated with using ammonia as a fuel are controlled under reasonably foreseeable abnormal conditions, as well as possible failure scenarios and their control measures.

It is therefore a key element for demonstrating a safe engine room concept and the capability for safe vessel operation using ammonia as fuel.

WinGD Director Sales Volkmar Galke commented: "Our steady and systematic approach to the new fuel technology coupled with collaborative efforts with esteemed partners like Bureau Veritas, reaffirms our commitment to safety, reliability, efficiency, and sustainability. This latest AiP underscores WinGD's leadership in introducing carbon-free ammonia power to the deep-sea fleet. Teaming up with expert partners, such as BV, ensures that these cutting-edge technologies will be available well ahead of emission targets, providing operators with essential planning space and valuable hands-on experience."

Bureau Veritas's Senior Vice President, Marine & Offshore North Asia & China, Alex Gregg-Smith, emphasised the crucial need for trust in new technologies within the maritime industry's ongoing evaluation of

diverse transition pathways. He said, "This AiP instils confidence in early adopters that, subject to careful considerations in design, build, integration, and operation, the ammonia two-stroke engine can effectively address the rising demand for sustainable solutions. BV is proud to have collaborated with WinGD on this groundbreaking development."

The AiP follows confirmed orders for X-DF-A in two bore sizes. The first engine to be developed, the 52-bore X52DF A, will be available for delivery from Q1 2025 and is applicable to a range of vessels including gas and bulk carriers.

WinGD noted: "As the industry moves at an accelerated pace towards a carbon-free future, the safety concept AiP is among the necessary steps giving shipowners the assurances they need to move ahead with ammonia-fuelled vessel designs. X-DF-A engines will operate on the Diesel principle in both diesel and ammonia modes, maintaining the same rating field as WinGD's existing X-engines.

Meanwhile the International Association of Classification Societies (IACS) has recently adopted a New Unified Requirement (URH1) on Control of Ammonia Releases on Ammonia Fuelled Vessels.

An IACS statement explained: "In recent years, ammonia has emerged as one of a number of promising carbon-free fuels due to its high energy density and its ability to be liquefied at ambient temperatures. While ammonia therefore has a significant potential as a marine fuel it also presents

safety challenges as it is highly toxic to human and aquatic life and it is therefore imperative to address the permissible limits to human exposure in ensuring the safety of onboard personnel. In light of this and with the aim of guiding the industry in its development of early projects using ammonia as fuel, IACS has developed a Unified Requirement (URH1) covering the release of ammonia from the onboard systems for bunkering, storing, preparing and using ammonia as fuel."

IACS URH1 aligns with the Recommendations from US National Institute for Occupational Safety and Health (NIOSH) and establishes that an Ammonia concentration of 300 ppm or more is immediately dangerous, and a concentration of 25 ppm or more is dangerous if the exposure is longer than 8 hours.

Additionally, it requires the system dealing with ammonia to be designed so as to prevent a direct release of ammonia to the atmosphere during normal operations and also, when possible, during any reasonably foreseeable abnormal scenario.

URH1 covers a number situations where a direct release is unavoidable under either a normal or abnormal scenario (such as the activation of a tank pressure relief valve). Among other design features it requires that the points where ammonia is expected to be released must be identified by the designer in a risk assessment and to be listed in the ship design documentation. The concentration resulting from such releases must not exceed a safe concentration (25 ppm) at locations of



the ship accessible to the crew and this is to be demonstrated through gas dispersion analysis.

This requirement is expected to result in the establishment of "toxic areas" (similar to hazardous areas on tankers) with access restrictions and other precautions, such as the absence of air intakes in that area.

IACS Secretary General, Robert Ashdown said: "URH1 on the control of ammonia releases on ammonia fuelled vessels is a first, but significant, step in providing industry with enhanced levels of

assurance for this new fuel type and will be supplemented with further complementary guidance in due course.

This work, together with the other work-streams underway within our Safe Decarbonisation Panel, demonstrates IACS' strong commitment to ensuring that safety remains at the forefront of the maritime industry's efforts to meet its decarbonisation targets."

In a separate development, Norwegian company Azane Fuel Solutions has launched an ammonia bunker vessel design and signed an MoU with ammonia-

to-power Amogy with the intention of including a zero-emissions power system for ammonia fuel onboard.

Azane has developed an ammonia fuel bunker vessel concept with a complete ammonia cargo handling system. The company is now looking for solutions to enable carbon free propulsion of the ammonia bunker vessel. When fully developed, Azane plans to offer the ammonia bunker vessels to ports including Hamburg, Rotterdam, Antwerp, Singapore and other key ports.

# HARNESSING THE WIND

## Latest trials and installations of wind-assist systems

Following a string of new wind power developments in recent months, container ship operator Ocean Network Express (ONE) has announced it will trial a wind-assisted propulsion system "as a sustainable solution for the maritime industry".

ONE says that, following the successful completion of a factory test, and in partnership with Dutch maritime wind-powered technology experts Econowind, it is set to install two containerised wind assist devices, known as VentoFoil containers, on the 1,036 TEU feeder container ship *Kalamazoo* that operates between Pusan, Yokohama, and Honolulu, and is owned by NORSE UK and operated by Goodwood Ship Management, Singapore.

The VentoFoil, which resemble aeroplane wings, are designed to harness wind energy, resulting in a significant reduction in fuel consumption and greenhouse gas emissions. Each VentoFoil is equipped with smart suction system that optimise airflow and maximise thrust and has the potential to generate up to 400kW of power, reducing fuel consumption by 5%. They are fully automatic, adjust for wind speed and direction, and can be started from the ship bridge.

"ONE is committed to minimising our environmental impact and achieving net-zero emissions by 2050," said Hiroki Tsujii, Managing Director at ONE. "This trial with Econowind is an important step forward in our efforts to explore innovative and sustainable solutions for the maritime industry."

The trial is a comprehensive study scheduled to run for approximately six months beginning January 2024, with ONE closely monitoring the performance of the VentoFoil. Data on fuel consumption, emissions reductions, and overall operational efficiency will be collected. The results of the trial will be used to assess the long-term viability of wind propulsion as a sustainable shipping solution.

ONE was created in July 2017 following the liner service integrations of Kawasaki Kisen Kaisha ("K" LINE), Mitsui O.S.K. Lines (MOL) and Nippon Yusen Kaisha (NYK). The resulting entity functions from its global headquarter in Singapore, supported by regional headquarters in Hong Kong, Singapore, the United Kingdom, the United States and Brazil. Operating more than 210 vessels, it offers an expeditious and a reliable international network of over 170 services to 120 countries and beyond. It is the world's sixth largest container carrier with a fleet size



of approximately 1.69 million TEU and is a member of THE Alliance (THEA), a global ocean carrier consortium.

Meanwhile Bernhard Schulte says its CO<sub>2</sub> tanker newbuilding at Dalian Shipbuilding Offshore (DSOC) will feature innovative technologies, including wind power systems, significantly reducing its carbon footprint.

The company says: "The primary fuel for the ships will be LNG. Combined with other proven technologies, such as wind-assisted rotor sail and air lubrication, the ships will have around 34% lower carbon footprint compared to conventional ships running on marine fuel. It is planned for delivery in 2026."



Deck house where sensitive equipment and PureteQ's outdoor u-type scrubber tower are placed

# NAVIGATING GREEN FUEL UNCERTAINTIES: SCRUBBER MARKET ON THE RISE

*The scrubber market is experiencing a resurgence due to uncertainties surrounding the availability of green fuel*

Predicting the type of fuel that will power ships has become nearly impossible, leading renowned ship owners to seek secure capacities. However, only a fraction of the needed capacity appears to be available in the foreseeable future. In the interim, ships must prioritize securing their seaborne logistics.

Taking advantage of the competitive situation in the scrubber market is MT Maritime and MTM Shipmanagement, who have successfully completed the installation and commissioning of their second scrubber from PureteQ on their vessel, the MTM NEW YORK.

This step follows the successful installation and commissioning of the company's first hybrid-ready scrubber system from PureteQ on the MTM NEW ORLEANS a few months ago. The second installation

was carried out under the continued stewardship of the Shipowner's representative and Technical Director, Mr. Prashant Lokhande, at the same Chengxi Ship Building and Repair yard in China.

## **PURETEQ RECOMMENDED AS THE SCRUBBER MAKER**

Mr. Lokhande, managing this project, recommended PureteQ as the scrubber system maker and project partner based on several crucial selection criteria.

The system had to be optimized for fast installation to minimize shipyard time, be the most energy-efficient on the market, possess an advanced control system with real-time remote access and onboard analytics, requiring minimum changes, if any, to the existing vessel structure, and offer professional and cost-effective service and spares throughout the asset's lifespan.



Installation of PureteQ scrubber tower



Quality was paramount, considering a scrubber being a significant investment meant to outlast the vessel.

The system design also needed to be suitable for upgrade to a hybrid/closed-loop system to meet more stringent legislations expected in the future, and aftersales service had to be available globally to ensure compliance and optimization.

The final requirement was reasonable CAPEX and minimum in-service OPEX cost projected over the first 10 years of the system's life.

The chosen scrubber from PureteQ fulfilled all the above requirements.

#### **INCREASING ENERGY EFFICIENCY AND MINIMIZING THE CARBON FOOTPRINT**

PureteQ's scrubber system was issued a type approval certificate from Class NK and commended for its automated control and monitoring systems reducing the need for human intervention to the bare minimum.

Installation of these scrubber systems will not only reduce fuel costs but also substantially reduce the emission of carbon particulate matter and black carbon, also emitting less CO<sub>2</sub> well-to-wake as a side benefit.

The PureteQ system is partly carbon capture ready and may thus be upgraded later if feasible and infrastructure for captured carbon is made available at major trading ports on a worldwide basis. "It is early days. Assessment needs more time in service, however, both scrubber systems are performing as intended, and operations have been trouble-free. While a few glitches did occur during installation, commissioning, and final certification post-commissioning went well. Overall, the owner's choice of PureteQ as makers has proven satisfactory," states Mr. Lokhande.

MTM New York is presently at sea between Singapore and Porto De Suape in Brazil with the scrubber in operation and saving fuel costs for the owner.

Anders Skibdal, CEO of PureteQ, is proud of being selected by MTM Shipmanagement and looks forward to possible more retrofits.

"We look forward to collaborating with MTM Shipmanagement in the future, not least to help them increase their ships' energy efficiency and thereby minimize their carbon footprint," Anders Skibdal said.

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# PureteQ

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PureteQ's maritime scrubber systems can support ships of any size or trade pattern and now come as onboard carbon-capture-ready scrubbers



# DELIVERING UNPARALLELED SERVICE

*For over two decades, OMTI has stood as a distinguished and privately-owned enterprise, demonstrating unwavering dedication to its customers*

Operating Uninterrupted for 22 years within the esteemed bunker hub of Fujairah, ranked among the world's top three, OMTI has consistently delivered unparalleled service to discerning clients. The company's commitment to being a dependable and adaptable partner in the Gulf region has solidified its reputation as a premier choice for those seeking superior service. Over 2000 vessels put their trust in OMTI in 2022 for their legacy of reliability and flexibility in an important hub of the global maritime industry.

Boasting a collective experience exceeding 150 years, OMTI's operations team expertly manages a dynamic fleet of SIRE approved and Oil Majors recognized vessels as well as a barge with a mass flow metre capable for quantity determination. Charterers can take pride in selecting OMTI's services, confident in the team's seasoned proficiency. To complement the operations team, strategically positioned offices in Fujairah, Dubai, Singapore, and Greece provide a 360° perspective and seamless contact with the majority of the world's

ports and clients. Experience unparalleled connectivity without delays or disruptions, as OMTI brings a global reach to clients' fingertips. Trust OMTI for a comprehensive maritime solution that seamlessly integrates operational excellence and strategic trading acumen.

OMTI ensures each interaction is marked by punctuality, personalization, and seamless execution. The company adopts a ONE-STOP shop approach, providing tailored fuel procurement, risk management, and bunkering solutions that meet the specific needs of each partner, reflecting OMTI's commitment to elevating clients' businesses.

In addition to its supplying operations, OMTI maintains a floating storage of 75,000MTs with a mass flow metre fitted for accuracy in quantity and enabling uninterrupted loading – supplying – loading cycles independent of terminal congestions and shortages. This strategic approach offers flexibility and assurance to both OMTI and its clients, aligning with

the practical needs of shipping companies. The proximity of neighbouring ports, Kalba and Khorfakkan, further expands supply options, accommodating the schedules and routes of OMTI's clientele. The company delivers a comprehensive and adaptable approach to fuelling success in the maritime industry, grounded in operational efficiency and strategic foresight.





OMTI specializes in the supply of all distillate and residual grades of bunkers, deploying experienced barge crews and officers for seamless operations. The company pioneered the provision of high-quality Very Low Sulphur Fuel Oil (VLSFO) following the enforcement of the IMO 2020 regulation, maintaining this commitment across all bunker grades.

Integral to OMTI's operational success is a robust supply chain management system that ensures the quality of its products. With meticulous oversight from sourcing to delivery, OMTI adheres to stringent quality standards at every stage. This dedication to a meticulous supply chain empowers the company to consistently deliver bunkering solutions that meet or exceed industry regulations. OMTI stands as a reliable and quality-focused leader in the Fujairah fuel sector.

Since April 2022, OMTI has strategically aligned with Fujairah Engineering Company (FECO), the exclusive fuel supplier in Salalah, Oman. As the operator of the port's bunker terminal and the sole



bunker barge in the region, FECO has been providing fuel and Marine Gas Oil (MGO) at the anchorage and berths of the bustling port since April 2022.

Remaining forward-focused, OMTI and FECO are well-prepared to address and fulfill the biofuel requirements of their clients. With established facilities and enduring relationships cultivated over

two decades, the forthcoming milestone in bunkering comes with the assurance of OMTI's steadfast commitment and guarantees.

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# BIG MARITIME SERVICES

## YOUR ASSIGNMENT OUR COMMITMENT

ONE OF THE WORLD'S LEADING MARITIME COMPANIES

Since our inception we are continuously investing in a unique combination of more than 40 years of collective Maritime Business Experience at global Leaders of Shipping & Trading with continuous Scientific Education and the extension of our worldwide suppliers/partners network, as well as utilizing the latest technology innovations, making our expertise unique worldwide, diversifying BIG maritime services from competition and placing our company at a leading position world-wide.

We at **BIG Maritime Services** have created and expanding a **specialized network** of major & local suppliers throughout the world, therefore we can successfully support prompt unpredictable fleet needs at any main or secondary port with the highest quality of products and services.

The suppliers / partners that we cooperate with, have been closely monitored and screened from our Expert procurement department in terms of offered service, quality of the products & proper quantities supplied.

We are able to fulfil the requirements of your fleet on a **spot or contract** basis through well-known major suppliers but also through a large number of local and regional reliable suppliers.

Therefore, we can find stock in areas that are not always covered by the conventional networks of major suppliers.

### OUR MISSION & VISION

- We aim to be the preferred choice for **Marine Bunkers & Lubricants, Supply Chain**, as well as **Re-Engineering** worldwide and our customers and partners top priority.
- We focus on **ENVIRONMENT PROTECTION** by promoting cost effective **CLEAN ENERGY** solutions.
- We think BIG and aim for our partners to think **BIG!**



**BIG maritime services**  
Worldwide Bunkers & Lubricants

**BIG Maritime Services Ltd.**  
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Konstantinou Str. 15124 Marousi,  
Athens, Greece.

+302162005227  
bunkers@bigmaritimeservices.com  
www.bigmaritimeservices.com



Dimitrios Bouzoukis, Chief Executive Officer



# KROHNE MARINE

*KROHNE Marine provides a diverse range of products, services, and solutions for all types of ships*

**K**ROHNE Marine is a global key division of the KROHNE Group which handles sales, engineering, R&D, after-sales support, and spare parts. With over 60 years of maritime expertise, our team of engineers has dedicated itself to providing the global marine industry with certified systems, instruments, and precise measurement solutions.

Cultivated through long-term collaboration with ship owners, managers, and shipyards, our systems and instruments are in vessels ranging from inland to the largest seagoing ships. At KROHNE Marine, we acknowledge the crucial importance of precise and dependable bunkering measurement in the industry. With a commitment to excellence, we provide precise certified systems and utilise premium straight-tube Coriolis mass flowmeters meticulously designed for high-capacity bulk measurement.

Our goal is to establish new benchmarks in bunkering measurement, guaranteeing precision, compliance, and operational efficiency. As part of our continuous dedication to sustainability through digitalisation, we offer comprehensive fluid monitoring solutions to ship operators and yards worldwide, promoting greener shipping operations. #measurethefacts

[www.krohne.com](http://www.krohne.com)





# TERPEL ORGANIZATION

**TERPEL ORGANIZATION is a company that sells Fuel in Colombia for automobiles, aircraft and vessels**

It also produces lubricants with international operations in Panama, Ecuador, Peru and the Dominican Republic in the aviation market.

In Colombia, we are market leaders in liquid fuels and natural gas retail. We also have the largest chain of gas stations and network across the whole nation.

We have a highly qualified team that makes our operations fast and safe for every customer.

The team of Terpel gathers 3,000 partners in five different countries: Colombia, Peru, Ecuador, Panama and Dominican Republic who commit every day to hard work and service, to keep industry and transportation moving. Our team is highly qualified and specialized in making our operations reliable, fast and secure for each of our customers.

Our team is constantly innovating our products to offer the best quality and price for you at all time. Therefore, we offer proposals that provide value to our customers at each service station, airport and maritime ports.

Our bunker business is located in Colombia and Panama where we deliver by barge, truck and pipeline. We provide marine diesel for passenger ships, fishing vessels, tuna seiners, dredges, general cargo ships, tugboats, and logistics support vessels on the high sea.

We offer Marine Gas Oil and marine lubricants with the best quality and the best prices, in the principal terminals in Colombia and in Panama.

We are proud to have earned the trust of our customers by offering quality products as well as constant innovation at the best price for you.

**If you need us, please contact us at [bunkers@terpel.com](mailto:bunkers@terpel.com) and check our web page [www.terpel.com](http://www.terpel.com)**

**AT YOUR SERVICE!  
Come with us as we continue to fulfill our dreams**





# PROFESSIONAL SERVICES

BUILT ON SAFETY, QUALITY, QUANTITY,  
PUNCTUALITY AND SUSTAINABILITY



شركة الصادق أحمد عيود باعبود للنقل البحري  
Al Sadik Ahmed A. Baaboud Shipping Co.

**AAAB has successfully established a reputation for itself as the most reliable supplier and associated services rendered promptly in all aspects**

**A**LSADIK AHMED ABOUT BAABOUD SHIPPING CO., (AAAB) is a leading Bunker supplier company by trucks, established in 2019 having its head office at Jeddah, Saudi Arabia. It is an extension of ideas of Sheikh Ahmed About Baaboud, who runs companies since 1972 as Owners, Operators and Ship Agents. We are one of the first company to become supply of Fuel Oil to ships for most of the Kingdom's ports.

(AAAB) means professional services built on Safety, Quality, Quantity, Punctuality and Sustainability.

We are licensed from the very inception of the company to operate kingdom wide as bunker supplier by trucks. The dedicated team of professional management is ably supported by highly qualified and experienced professional staff on land enable us to supply by truck on all ports of Saudi Arabia. Dedicated 24/7/365 support and operations monitoring and reporting to compliment the needs of your business.

AAAB means personal business in the Oil and Shipping industries. We have license to supply exclusively at JYC-Jeddah Yacht Club.

We are supplying to all Passenger vessels, Live Stock vessels, Tankers and Yachts, which are calling at Jeddah Islamic Port. AAAB fleets of trucks are all equipped with the very latest accurate flow meters on board and which allows us to supply exact quantity essentially seeing that we meet the precise requirement of our valued customers.

AAAB is leading the race for better bunker supplier and we offer extended ownership and documentation of the sourcing, shipping and supply of Low Sulphur MGO.

Our responsibility policy reflects our belief in building relationships through honesty, trust and respect.

Our bunker operations across core market in the Saudi Arabian Ports to meet the exacting requirements of our valued customers. Offshore operations need strong support at sea, onshore and alongside. AAAB group of companies in shipping, logistics and marine services with the power of our fleet of specialist staff to meet the demand for offshore support with planning and execution.

Our future plans are to increase our fleet of trucks to meet the requirement of Eastern Province bunkering services to include other Saudi Ports.

We are registered with Saudi Aramco and successfully supplying to all Government entity at Jeddah, Yanbu Rabigh and Gizan successfully. The company is fully owned by Shaikh AlSadik Ahmed About Baaboud. He is the founder, Owner and CEO.

## MISSION

Since the company was established AAAB have maintained a contractual agreement with SAUDI ARAMCO for the lifting of Marine Gas Oil and will continue to do so for the foreseeable future in line with our commitment to the industry and our clients.

## VISION

To provide outstanding value to our client's business partners by delivering an innovative tailored range of reliable, sustainable, environmentally friendly, safe and cost-effective industry services and solutions with the best people, systems and processes at all times and indeed the country Kingdoms 2030 Vision.

**Tel: +966 12 6271222**

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**E-mail: [info@aaab.co](mailto:info@aaab.co)**

**[sales@aaab.co](mailto:sales@aaab.co)**

**[sales2@aaab.co](mailto:sales2@aaab.co)**

**[www.aaab.co](http://www.aaab.co)**



# LEADING INDIA'S OFFSHORE PHYSICAL SUPPLY MARKET

*NV Rambabu, the visionary founder and proprietor of Aditya Marine, entered the bunkering industry in 1988, bringing with him a wealth of experience.*

In 1999, he founded Aditya Marine, marking the beginning of a journey marked by dedication and hard work.

Over the past 25 years, Aditya Marine has overcome challenges, embraced opportunities, and stood tall amidst industry fluctuations. Our commitment to quality and service has been the cornerstone of our success.

What started as a family business in East Coast India has now evolved into an international enterprise. Aditya Marine has expanded its operations to ports in the UK and UAE, serving a diverse clientele that includes both local and international clients.

Aditya Marine's vision extends beyond its current success. The company aims to further expand and develop its operations, reaching new locations and strengthening ties with local and international clients.

At the core of Aditya Marine's operations is a commitment to safety and security during bunkering. The company diligently monitors and updates clients throughout the supply process, adhering strictly to ISO standards.

The team at Aditya Marine is unwaveringly dedicated to the growth and development of the company. This commitment is reflected in the continuous pursuit of excellence in meeting customer requirements and ensuring timely delivery through a fleet of tank trucks and barges. Stayed informed with the latest trends and developments in the bunkering industry. Interviews with industry experts, analysis of market dynamics, and a glimpse into the future of maritime fuelling.

As we celebrate, we extend our heartfelt gratitude to our clients, whose trust has been the driving force behind our journey.

We also recognize and appreciate the dedication of our team members who have played a crucial role in our success.

As Aditya Marine looks toward the future, the legacy of NV Rambabu serves as a testament to the values that have shaped the company – resilience, dedication, and an unwavering commitment to quality and service.

**For more information please visit:**  
[www.adioil.com](http://www.adioil.com)



# ENACOL, CONNECTING CONTINENTS

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

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

#### **Guaranteed Marine fuels quality according with ISO 8217: 2017 standards:**

- LS MGO Max 0,1%S (constant availability)
- 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

maritime services, such as crew changes, spare parts supply, ship chandling, sludge disposal, fresh water, among others.

#### **We look forward for your enquiries!**

Phone: (+238) 5346065;

Mobile: (+238) 9968405; (+238) 991 5964

E-mail:

bunker@enacol.cv | energia@enacol.cv

[www.enacol.cv](http://www.enacol.cv)



**GOIL**  
Good energy

**GOIL PLC**  
PROFILE

GOIL PLC (GOIL) is a Public Listed Oil Marketing Company. The company is ISO 9001:2015 as well as ISO 14001:2015 Certified. GOIL has as its subsidiaries, GOEnergy Limited, a Bulk Distribution Company, GOIL Upstream Limited to cater for its offshore business and GOBITUMEN Limited, a joint venture bitumen production and distribution company.

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 440 stations. The marketing arm is represented in eight zones country-wide. GOIL also supplies Mining Diesel and lubricants to mining firms and the leading LPG marketer in Ghana.

GOIL supplies Marine Gas Oil, (MGO) at offshore and Anchorage through ship-to-ship (STS) via ex-pipe, and Road Tank Wagon (RTW) from three main ports, Tema and Takoradi as well as the Sekondi Naval Base and markets premium Lubricants some of which are blended locally. GOIL also supplies aviation fuel to major Airlines.

In line with GOIL's commitment to contribute towards building a resilient national economy with free-flow of goods and services, the company has taken steps to diversify its product range by constructing a 35-million-dollar Bitumen plant in Tema. The plant is expected to supply higher- grade Polymer Modified Bitumen (PMB) for the expansion of the nation's road network.



**BUNKEROIL**  
One partner, global services.

## TANK YOU.

For relying on our **40 years** of experience in marine bunkering in the Mediterranean and for realizing that this headline truly means what it says.

[BUNKEROIL.IT](http://BUNKEROIL.IT)

+39 0586 219214

[bunker@bunkeroil.it](mailto:bunker@bunkeroil.it)



# BUNKEROIL.

## PHYSICAL SUPPLIER AND BUNKER TRADER IN THE MEDITERRANEAN SEA

*Passionately engaged in the bunkering and supply of marine lubricants for over 40 years*

**T**hroughout this period, we have earned the trust of many prominent shipowners and have become the reference supplier in the Mediterranean, relied upon by foreign shipowners when they navigate our waters.

We work with passion, both as a physical supplier and as a trader, aiming to cover all ports where our clients need to refuel.

Our experience as a physical supplier in Italy has taught us that shipowners today place increasing importance on service, precise and timely communication, continuous management along the entire supply chain and expertise in proactively addressing any unexpected issue. In addition we ensure the maximum attention is paid to the quality of the products delivered.

Given the high price levels that marine fuels have reached in recent years, financial services enabling tailored and deferred payment conditions for the customer have become a decisive factor, allowing us to differentiate ourselves from competitors and expand our clientele.

In recent years, we have heavily invested in expanding our know-how and expertise in the field of alternative fuels and also managing the energy transition in the marine sector. As a result, we are now able to offer many clients, upon request, our consultancy service on alternative fuels.

In ports where we act as physical suppliers, we work to complement our comprehensive offering of traditional fuels with biofuels capable of immediately reducing greenhouse gas emissions.

Furthermore, in various ports where we operate as traders, we are collaborating with different suppliers to ensure that alternative fuels are increasingly integrated into the package of solutions offered to the customer.

We also operate as a physical supplier and as a trader of marine lubricants. In 2018 we launched a constantly stocked lubricants storage service as leading ExxonMobil Distributor for the local market in Italy.

### **BUNKEROIL CONTACTS:**

**For bunker enquiries please send an e-mail to: [bunker@bunkeroil.it](mailto:bunker@bunkeroil.it)**

**For lubricant enquiries please send an e-mail to: [lubricant@bunkeroil.it](mailto:lubricant@bunkeroil.it)**

**Phone: +39 0586 219214**

**Address: Via Pietro Paleocapa 11, 57123, Livorno, ITALY.**



# SEA CROWN MARINE SERVICES

*Serving the marine community since 2019*

**S**EA CROWN MARINE SERVICES DMCC is registered legal entity in Dubai, UAE and is the EXCLUSIVE PHYSICAL BUNKER SUPPLIER in Iraq Ports i.e. Basra, Khor-Al-Zubair and Umm Qasr and have started consistent Bunkering Operation from July 2019.

Sea Crown Marine Services has been serving the maritime community since 2019 and is one of the biggest marine agents in Iraq handling most of the tanker movements for Khor-Al-Zubair and Umm Qasr Ports and STS operations at KAZ OPL.

Sea Crown has contract with State Company for Maritime Transport (SCMT) since 2016. We are the only company to handle activities in Iraq related to Bunkering vessels and any floating units, Fresh Water, Provisions, Lubricants,

Husbandry Services, Spare Parts , Health Services for Marine Crews and performing Repair and Maintenance to all ships and floating maritime units.

Sea Crown Marine Services is trusted by world's leading shipping majors for their bunkering requirements for its competitive pricing and services on par with major bunkering ports in the world and currently doing Volume of 25,000 to 30,000 MT's per month with Major VLCC and Tanker Operators and Refiners. Sea Crown Marine Services has supplied more than 500 Vessels smoothly in last 6 months Majorly to VLCC, Suez-max and Afra-max arriving at Basra Oil Terminal for Crude oil operations.

Basra OPL is an ideal location for bunkering of VLCCs as there is no draft restrictions and NO CALLING CHARGES levied and NO

AGENT required for vessels coming to Iraq for BUNKER ONLY CALL. We are currently operating with two barges with a total barging capacity of 27kT and supplying all grades of marine fuels – VLSFO S MAX 0.5%, IFO 380cSt, IFO 180cSt, MGO S max 0.5% and LSMGO 0.1% at berth and anchorage of all Iraq ports.

**Telephone: +971 4589 6355**

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**Email: [marketing@seacrowndmcc.com](mailto:marketing@seacrowndmcc.com)  
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**Office 204, Indigo Icon Tower,  
Cluster F, Jumeirah Lake Towers,  
Dubai, United Arab Emirates,  
PO Box : 213204**





# 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](mailto:bunkers@galp.com)**



**6 MARCH 2024****1ST SAFETY4SEA DUBAI FORUM  
DUBAI, UNITED ARAB EMIRATES**

The 1st SAFETY4SEA Dubai Forum is scheduled as a full day event (09:00 – 15:30) on Wednesday 6th March 2024 at the Sofitel Dubai Downtown, Dubai, UAE.

This is a NON PROFIT event expected to attract a target group of approx. 200 delegates / 100 organisations attendance from Safety, Technical, Marine departments of shipping operators and other related industry stakeholders.

For more information:

<https://events.safety4sea.com/2024-safety4sea-dubai-forum/>

**12 – 14 MARCH 2024****CMA SHIPPING****STAMFORD, UNITED STATES OF AMERICA**

Across a packed three days, CMA Shipping offers opportunities for Maritime professionals to learn from industry leaders, source products and supplies from established and emerging brands, and take advantage of enviable networking opportunities. For many, CMA Shipping is a staple in the diary. Join IBIA's Executive Director, Alexander Prokopakis, as he contributes to the discussion in the "State of the Industry Panel | Status Check on the Maritime Industry in 2040." IBIA members can avail themselves of a special discount by reaching out to [ibia@ibia.net](mailto:ibia@ibia.net) for the necessary link.

For more information visit [www.cmashippingevent.com](http://www.cmashippingevent.com)

**17 APRIL 2024****IBIA ASIA GALA DINNER 2024  
SINGAPORE, ASIA**

The IBIA Asia Gala Dinner 2024 stands as the most prestigious networking event in Asia, marking a highlight of the year. Following the success of the 2023 dinner, IBIA in Asia will host the 2024 event in Singapore on Wednesday 17th April 2024, at the elegant PARKROYAL COLLECTION Marina Bay, Singapore. A staple of the Singapore Maritime Week's social calendar, this gala dinner is renowned for attracting approximately 200 key players from the bunker and maritime industries.

For more information: contact [siti@ibia.net](mailto:siti@ibia.net)

**15 – 19 APRIL 2024****SINGAPORE MARITIME WEEK  
SINGAPORE, ASIA**

The Singapore Maritime Week (SMW) is an annual gathering of the international maritime community to advance key industry issues and exchange ideas to bring the sector forward. Driven by the Maritime and Port Authority (MPA), in collaboration with industry stakeholders and research and educational institutions, SMW brings together key opinion leaders and industry leaders through conferences, dialogues and forums.

For more information: <https://www.smw.sg/about-smw/about>

**23 – 25 APRIL 2024****THE INTERNATIONAL BUNKER CONFERENCE (IBC)  
OSLO, NORWAY**

Join IBIA's Executive Director, Alexander Prokopakis at The International Bunker Conference (IBC), renowned for addressing the bunker industry's intricate issues, having previously explored topics like fuel quality and MARPOL Annex VI emissions. While the 2020's focus was on sulphur reduction, IBC 2023 delved into the industry's future, emphasising the balance between current fossil fuel reliance and the urgency of greenhouse gas emission reductions. As IBC 42 looks ahead to the challenges of 2024 and beyond up to 2050, it urges participants to consider their future fuel choices. IBIA members will receive a 10% discount on this all-inclusive conference, please contact [ibia@ibia.net](mailto:ibia@ibia.net) for the discount code.

For more information: <https://www.bunkerconference.com/>

**6 – 9 MAY 2024****PORTUGAL MARITIME WEEK, LISBON, PORTUGAL**

Portugal Shipping Week 2024, hosted by Petrosport, will showcase Portugal as a global shipping and maritime logistics centre and offer foreign shipowners and representatives from every maritime discipline a unique and exciting opportunity to meet, network and develop important new commercial relationships with the leaders of the Portuguese maritime sector.

For more information: <https://www.petrosport.com/events/PSW24>

**8 – 9 MAY 2024****GREEN PORTS & SHIPPING CONGRESS**

Green Ports and Shipping Congress identifies and prioritises the areas that ports-based organisations and shipping companies need to work together on for their mutual advantage to reduce emissions.

For more information:

<https://www.portstrategy.com/green-ports-and-shipping>

**21 – 23 MAY 2024****MARITIME WEEK AMERICAS, PANAMA**

Maritime Week Americas 2024 returns to Panama. The week-long series of key maritime events, includes the MWA Conference – the largest and most popular bunkering conference in the Americas – plus bunker training courses, a maritime services exhibition, and some exhilarating Latin American-themed networking.

For more information: <https://www.petrosport.com/events/>

For more information:

<https://www.portstrategy.com/green-ports-and-shipping>

**2 JUNE 2024****IBIA COCKTAIL RECEPTION  
ATHENS, GREECE**

Join us for an exclusive Cocktail Reception in Athens, hosted by IBIA at the onset of Posidonia in June. This event promises to be a splendid occasion for members of IBIA and the wider shipping industry to connect and network in a relaxed and elegant setting. It's an ideal opportunity to engage with industry peers, discuss the latest trends, and build lasting relationships.

Don't miss this chance to be part of a memorable evening of networking and camaraderie in the heart of the maritime world.

For more information contact [ibia@ibia.net](mailto:ibia@ibia.net)

**3 – 7 JUNE 2024****POSIDONIA, ATHENS, GREECE**

"Powering ahead" is the theme for Posidonia 2024, exemplified by the impressive statistics of the Greek fleet and the growth of Posidonia itself. The 2022 event welcomed over 28,000 visitors from 103 countries, eager to do business with 1,964 exhibitors in the bustling exhibition halls.

For more information: <https://posidonia-events.com/>

**17 – 19 JUNE 2024****MARITIME WEEK LAS PALMAS  
LAS PALMAS DE GRAN CANARIA**

The bunker and maritime industries of Las Palmas have joined forces with Petrosport to create the inaugural Maritime Week Las Palmas, a major new event designed to showcase and promote this dynamic logistics hub and the wide range of maritime services provided by Las Palmas to ships sailing to and from Africa, Europe and the Americas. The flagship conference will be complemented by a range of in-depth breakout sessions and site visits designed to introduce the key maritime services on offer in the Canary Islands to a wider international audience.

For more information: <https://www.petrosport.com/events/mwlp-2024>

**8 – 10 OCTOBER 2024****SIBCON, SINGAPORE, ASIA**

Organised by the Maritime and Port Authority of Singapore, the Singapore International Bunkering Conference and Exhibition (SIBCON) has a proven track record. Powered by a Steering Committee of senior decision makers from industry, SIBCON 2024 will bring to you unparalleled knowledge, engagement and collaboration opportunities.

For more information: <https://www.sibconsingapore.gov.sg/>

**5 – 7 NOVEMBER 2024****IBIA ANNUAL CONVENTION 2024  
ATHENS, GREECE**

Join us at the IBIA Annual Convention 2024, a key event for the global bunker and shipping industry, taking place in Athens, Greece. Set against the backdrop of one of the world's most significant maritime hubs, this Convention promises to be a hub of innovation and networking. Scheduled for 5 – 7 November, it offers a unique platform for industry professionals to discuss the latest trends, regulatory changes, and future directions.

Don't miss this opportunity to connect with industry leaders and shape the future of the bunker and shipping industry.

For more information contact [ibia@ibia.net](mailto:ibia@ibia.net)

# WORLD BUNKERING

Q2 2024... NOW OPEN FOR BOOKINGS

## Q2 2024

### SPECIAL FEATURES:

#### Fuel Management

The challenges facing ship staff in managing fuel continue to increase as alternative fuels come into use. More and more, biofuels are seen as a way to achieve net zero but what are the associated issues? Meanwhile methanol- and ammonia-fuelled ships are now coming into service, again with their own challenges.

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#### Scrubbers

While the focus of policy has shifted to the demands of decarbonisation the need to comply with IMO's sulphur in fuel regulations as economically as possible remains a high priority. We look at the scrubber scene and talk to manufacturers.

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### GEOGRAPHICAL FOCUS:

#### Western Mediterranean

Our annual survey of the bunkering ports in the Eastern Mediterranean region. This important region, normally located on the main East-West sea route, has seen the geopolitics of Middle East threaten to turn the Mediterranean into a huge cul-de-sac. What are the implications for the region's bunker industry?

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#### Africa

For the first time since the mid-1970s sailing around the Cape of Good Hope has become normal practice for many vessels as owners avoid the dangers of the Red Sea. What does this mean for bunkering in South Africa, where Algoa Bay operations have been disrupted by government decisions?

Meanwhile, offshore, West Africa remains an important bunkering location. We look at the prospects and challenges.

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#### Regular Features

IBIA News, IBIA Africa Report, IBIA Asia Report, Events Reports, Views & Analysis. Plus: Interview – Industry News – Environment – Testing – LNG – Lubricants – Innovation – Legal – Scrubbers – Carbon Capture – Electric Propulsion Methanol – Biofuels – Hydrogen – Ammonia – Alternate Fuels – Diary – Legal Equipment and Services – Diary – Event Previews & Reviews

# GOIL PLC OCEAN BUNKERING



## GOIL BUNKERING

GOIL PLC has attained the enviable Integrated Management System (Quality, Health, Safety and Environment) and has successfully been certified ISO 9001:2015, ISO 14001:2015. This endorsement attainment makes GOIL PLC stand out among the majority of the Oil Marketing Companies (OMCs), with such international excellence in providing bunkering services in Ghana and towards West Africa Coast.

Our Marine Gas Oil (MGO) meets the requirements of our esteemed clients in accordance with the ISO 8217-2017 fuel standard. GOIL is IMO 2020 - Low Sulphur Fuel (VLSFO 0.5%) compliant. We have built an ultra-modern state of the art bunkering facilities at the Sekondi and Takoradi Ports in Ghana to serve our numerous customers and also deliver by barges through ship-to-ship (STS).

Our barges serve as mobile fuel or filling stations, where our bunkering team supplies MGO and Marine Lubricants offshore across the coast of Ghana to a diversified portfolio of customers.

We leverage on GOIL's brands and sales strategies ensuring a seamless service from product sourcing to delivery by focusing on quality and reliability, thereby guaranteeing product quality, quantity, and availability.

GOIL Bunkering thrives on our customers trust in our management principles which are focused on EHS, quality products, exact quantity or equitable distribution and reliability as well as timely deliveries.

**GOIL, GOOD ENERGY.  
GOIL, YOUR RELIABLE AND EFFICIENT PARTNER.  
GOIL, WE DO IT RIGHT THE FIRST TIME.**

## KEY ACTIVITIES

Our key activities include, cargo sourcing, marketing, and credit management. We deliver at offshore, anchorage and at ports through Ship-to-Ship (STS) and ports via ex-pipe and Road Tank Wagon (RTW).

## KEY RESOURCES

Our key resources include, Cargo Sourcing Network, Sales Network, and Operational knowhow.

## SERVICE & PRODUCT

Marine Gas Oil (MGO) and Marine Lubricants.

## GOIL OCEAN BUNKERING STRENGTH

### MARKETING ABILITY

We provide high quality product and Service. Our product is on-Spec, on-time, accurate quantity ensuring value-for-money and nationwide sales network.

### OPERATIONAL EXCELLENCE

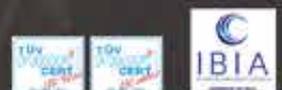
We have an excellent team of highly trained professionals equipped with a wealth of knowledge in marine industry practices.

### COMPETITIVE EDGE

We operate in a very competitive environment and therefore employ best in class competitive strategies. We have been able to weather the storm with our experience onshore, and expertise in the field of bunkering to maintain the number one spot in the industry.

### OPERATIONAL AREA

We cover offshore, anchorage, and ports in Tema and Takoradi.



email: [bunkers@goil.com.gh](mailto:bunkers@goil.com.gh)  
website: [www.goil.com.gh](http://www.goil.com.gh)

# **WE CARE WE KNOW WE SUPPLY**

**Get expert advice on  
your bunkering needs**

