

WORLD



Q2 2024

PUBLISHED SINCE 1997

BUNKERING

THE OFFICIAL MAGAZINE OF IBIA



IMO

DECARBONISATION

STRATEGY

GLASS HALF FULL OR HALF EMPTY?



SCAN ME

INSIDE THIS ISSUE:

INTERVIEW WITH MPA SINGAPORE CHIEF

IBIA AND BIMCO COLLABORATE

BUSY CAPE ROUTE BUT CHALLENGES FOR AFRICAN SUPPLIERS





Certified Bunker MFM System for bunker/tanker vessels

OPTIMASS 2400 – Straight tube Coriolis mass flowmeter for highest capacity bulk measurement

- Unique straight tube design for reduced installation cost and space
- Meets OIML standard R117
- Improving transparency as per bunker suppliers licensing schemes
- Certified bunkering metering system in accordance with MID (MI-005), ISO 21562 and ISO 22191
- Patented entrained gas management system
- Turn-key supplies and project management
- Global support and fleet agreements



Contact us for certified bunker MFM systems in compliance with
bunker suppliers licensing schemes

marine-bunker@krohne.com, krohne.com/marine



D

ear Reader

Welcome to another information-packed issue of *World Bunkering*.

As our front cover suggests, IBIA's representative at IMO, Edmund Hughes, points out in his Regulatory Round-up that recent work at IMO on moving to net zero and protecting the marine environment can be seen as either glass half full or glass half empty.

Edmund notes that, following last year's historic commitments to decarbonise, the really hard work has now begun. That means turning policy goals into international shipping regulations.

Much of his round-up covers progress towards GHG reductions. His report on issues that the bunker industry has with IMO's Carbon Intensity Indicator (CII) show just how hard working towards net zero at IMO is going to be. IMO member states will need to agree on highly complex issues.

Singapore is a country that is very engaged in all aspects of IMO's work. Recently I talked to Teo Eng Dih, Chief Executive at the Maritime and Port Authority of Singapore. His comprehensive responses to my questions set out clearly where the MPA stands on key issues. He stresses: "As the world's largest bunkering hub, we must be ready and capable of meeting the range of fuel needs for international shipping." That is evidenced by Singapore support for a range of new fuel initiatives.

One of the reasons why it is important to achieve progress at IMO is to avoid the proliferation of national or regional regulations. Our Environmental News reports that the Methanol Institute (MI) and SEA-LNG have "deep concerns" at a recent decision by the European Commission that could limit the use of biomethane and biomethanol-based fuels produced outside the EU.

We also report that lengthy voyage diversions around Africa for Europe-bound vessels have dramatically increased fuel consumption and led to soaring emissions liabilities for shipping companies under the EU Emissions Trading Scheme.

As John Rickards notes in our Africa feature, the Red Sea crisis has boosted bunker demand around the African coast but has also posed significant challenges for numerous ports on the loop around the Cape: availability, capacity, congestion, and waiting times. Many smaller ports or those which have seen limited investment in recent years can't cope with a sudden influx of major line cargo vessels.

However, on a much more positive note, and headlined in Environmental News, IBIA and BIMCO have signed a Memorandum of Understanding (MOU) to collaborate on "some of the monumental challenges and opportunities within the areas of bunker, marine energy and maritime sectors and help facilitate shipping's decarbonisation efforts".

As has been the case for a long time now, much of this issue of *World Bunkering* is 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.

Talking of alternative fuels and technologies, wind power is now really starting to become mainstream. Large rotors or other modern devices for harnessing the wind are making their appearance on vessels of almost all types. We take a look at recent developments which promise significant fuel savings, of up to 10%. That is enough for wind to be taken seriously.

This issue hits the streets just ahead of the Posidonia International Shipping Exhibition, and appropriately, we carry a feature on the Eastern Mediterranean, in which John Rickards observes that Piraeus enjoyed a good 2024 and this summer's cruise season is expected to be a strong one.

This year is already proving to be particularly challenging in many ways, but you can always find a good number of positive stories in *World Bunkering*.

Best wishes

David Hughes
Editor





Think smart - Supply fast

PHYSICAL BUNKER SUPPLIER SERVING AT ALL PORTS OF SRI LANKA



CONTACT US AT

THE HAWKS PVT LTD

✉ info@thehawks.biz
☎ +960 3344949

**THE HAWKS COLOMBO
PVT LTD**


✉ trading.lk@thehawks.biz
☎ +94 112 553 399

**THE HAWKS MIDDLE EAST
L.L.C**

✉ uaeoffice@thehawks.biz
☎ +971 438 278 75

**THE HAWKS SINGAPORE
PTE LTD**

✉ sgoffice@thehawks.biz
☎ +65 9180 7830

 www.thehawks.biz

CONTENTS

7

Chair's Letter

8

Executive Director's Report

11

IBIA Events

Navigating the Future

23

IBIA Africa

Empowering Africa's Maritime Future

26

IBIA Asia

Steadfast support

32

New IBIA Members

34

IMO / Regulatory Matters

Regulatory round-up

37

**The BIMCO & IBIA Shipmaster's
Bunkering Manual 2022**

39

**INTERVIEW - The Maritime and
Port Authority of Singapore**

The view from Singapore

45

Innovation

Battery health checks

47

Eastern Mediterranean

Running dry

51

Africa

Cape struggles to cope

54

Equipment & Services

56

INTERVIEW - Bunker One

Planning the net zero journey

58

Environmental News

62

Scrubbers

Scrubbers: An evolving story

64

Industry News

66

**Alternative Fuels and Technologies -
Biofuels**

Checking GHC reductions

67

**Alternative Fuels and Technologies -
Fuel Cells**

Zero emissions

68

**Alternative Fuels and Technologies -
Methanol**

Firefighting concerns

70

**Alternative Fuels and Technologies -
Hull Coatings**

Smoothing the way

71

**Alternative Fuels and Technologies -
LNG**

Cutting methane slip

72

**Alternative Fuels and Technologies -
Carbon Capture**

What to do with captured CO₂?

74

**Alternative Fuels and Technologies -
Ammonia**

Safety first

75

**Alternative Fuels and Technologies -
Wind Power**

Blowing in the wind

76

Company News

89

Diary

90

Next issue

Editor: David Hughes

anderimar.news@googlemail.com

Project Manager: Alex Corboude

alex@worldbunkering.net

Publisher & Designer: Constructive Media

ibia@constructivemedia.co.uk

On behalf of: IBIA, Suite Lu.231, The Light Bulb
1 Filament Walk, Wandsworth
London, SW18 4GQ, United Kingdom

Tel: +44 (0) 203 951 9615

Email: ibia@ibia.net Website: www.ibia.net

The views expressed in World Bunkering are not necessarily those of IBIA, or the publishers unless expressly stated to be such. IBIA disclaims any responsibility for advertisements contained in this magazine and has no legal responsibility to deal with them.

The responsibility for advertisements rests solely with the publisher. World Bunkering is published by Constructive Media on behalf of IBIA and is supplied to members as part of their annual membership package.



Constructive Media

50 George Street,
Pontypool
NP4 6BY

Tel: 01495 740050

**Email: ibia@constructivemedia.co.uk
www.worldbunkering.net**





الخليج لتوزيع البترول GULF PETROL SUPPLIES BUNKERS بنكرز



Gulf Petrol Supplies LLC is 100% owned by the largest diversified conglomerate on the East Coast of UAE, the Fujairah National Group which is owned by the Fujairah Ruling Family members.

- **PHYSICAL BUNKER SUPPLIER IN FUJAIRAH & KHORFAKKAN**
- **BACK TO BACK TRADING IN WORLDWIDE PORTS**
- **SERVING WORLDS BIGGEST SHIP OWNERS, CHARTERERS & PROMINENT NAMES IN SHIPPING WORLD**
- **OWNED INFRASTRUCTURE : OIL STORAGE, TERMINAL & BUNKER BARGES**

- *GPS holds a 60 % stake in the GPS CHEMOIL Storage Facility (a JV between GPS & Glencore) a state of the art oil terminal with total capacity of 700,000 CBM (Black Oil - 587,000 CBM & White Oil -113,000 CBM).*
- *In house specialized Shipping Agency & Technical Management which owns & operates 12 vessels, including 3 Bunker Barges running under GPS Bunkers.*
- *Offering LSFO,HSFO & LSGO*



+971 9 223 5249



marketing@gpsbunkers.com

www.gpsbunkers.ae

AIMING AT FURTHER EXPANSION

At the commencement of his term as Chair Constantinos Capetanakis focuses on IBIA's ambitious goals and the ways to achieve them

Dear fellow members and friends,

The first of April marked the start of my term as IBIA's Chair. It is an honour to serve our Association in this position, following two years as Vice Chair, and to focus on pursuing our objectives. I would also like to warmly welcome our newly elected board members, Maria Skipper Schwenn, Deanna MacDonald and Ufuk Erinc.

IBIA has already been on an upward trajectory and our pace will accelerate to meet the challenges that now face us. Our Association will continue to expand; becoming even more influential, a 'household' name, a marine energy authority of unique impact, placed in the centre of the decarbonisation transition.

IBIA is the true voice of the industry and the upholder of the principles which should permeate it, predominantly transparency and quality, based on facts, so to raise standards and stay away from sensationalism.

The way to accomplish these ambitious, far reaching and attainable goals, is through existing and aspiring, methods, such as:

- Direct engagement with members, through attending to their concerns and feedback, and representing them in an unbiased manner, always in compliance with our recently strengthened and updated Code of Conduct.
- Influence on policy and regulations, by multiplying its interventions at the IMO, taking advantage of its much-coveted consultative status, and by actively participating in other regulatory and policy-shaping bodies, focusing on the decarbonisation advancement and related technical, operational, commercial issues.
- Solidification of existing -and the expansion into new- strategic partnerships with highly esteemed international shipping associations.
- Broadening and diversifying IBIA's membership base, encompassing the global maritime industry.
- Representative Regional Boards in major geographical locations, which will actively highlight regional interests and concerns.

- Expertise in the IBIA members-driven, Working Groups, which diligently engage with projects on the major aspects of future fuels, digitalisation, MFMs, fuel-related technical aspects. Expanded and updated training, covering not only traditional bunkering, but also what we are all preparing for: new fuels.
- Technological and digitalisation innovations, first from within, our secretariat, our services, our communication to all members, and through the technological developments of the marine energy spectrum which we closely follow.

The above require participation, trust, and support from our members on the one hand, and coordination, vision, commitment, and expertise from our Board and Secretariat on the other. I strongly believe that these elements are present in abundance.

During my term as IBIA Chair I am confident of the ceaseless and close cooperation in our professionally diversified, expert, and active Board of Directors, and our expanding, dedicated, passionate secretariat. Our vision is collective, our ties are strong.

At the same time, I am profoundly relying on our members.

Your active engagement is of supreme importance; in our Events, Conferences, Annual Convention, Working Groups, Members' Meetings, all being exceptional opportunities to discuss, provide and receive feedback, develop business networks, assimilate the knowledge shared, and exert influence in policy-making processes.

I believe that my academic and professional background and experience will prove valuable in the realisation of IBIA's ambitions. Most of all, it is my active commitment and dedication to IBIA's mission which shall continue being the driver, as it has since my election as Board Member in 2020. Through a shared strategic vision, collaborative persistence, and unity we shall continue overcoming the future challenges and hurdles.

I therefore look forward to our interaction and hope to see you during the forthcoming Posidonia and our Annual Convention, both taking place in Athens. I assure you that I will actively represent IBIA and participate in the joint effort to solidify it as one of the major stakeholders of the marine energy industry, so that in turn it is truly perceived and ranked as one of the leading international organisations in shipping as a whole.

Constantinos Capetanakis
Chair





IBIA CELEBRATES MILESTONES AND FORGES KEY PARTNERSHIPS IN Q1 2024

The first quarter of 2024 has concluded, marking a period of significant achievements and milestones for IBIA

We commenced the year with an emphatic success, hosting the IBIA Annual Dinner, a hallmark event that welcomed over 1100 esteemed guests to the iconic Grosvenor House. Regarded as the premier networking occasion in marine energy globally, the IBIA Annual Dinner traditionally signifies the commencement of the International Energy (IE) Week each year.

As you read these lines IBIA has a new Chair, Constantinos Capetanakis, Bunkers Director of StarBulk. I eagerly anticipate collaborating closely with Constantinos over the next two years, leveraging his experience and diverse background for the benefit of our association. Furthermore, we extend a warm welcome to our three new board members: Maria Skipper Schwenn, Director of Environmental Regulatory and Public Affairs at Bunker Holding; Ufuk Erinc, CEO of Unerco; and Deanna MacDonald, Founder and CEO of BunkerTrace.

Our thanks to Steve Simms, Principal of Simms Showers, for his dedicated service to the IBIA Board as he concludes his elected term.

IBIA has entered strategic partnerships with two key organisations to bolster industry standards and sustainability in the global maritime sector.

By aligning with BIMCO, the largest international shipping association, and HELMEPA (Hellenic Marine Environment Protection Association), a leading Greek marine environmental organisation, IBIA aims to amplify its impact on promoting sustainable practices.

During my recent visit to Singapore, I had the pleasure of meeting with Prof Lynn Loo, CEO of the Global Centre for Maritime Decarbonisation (GCMD). IBIA proudly maintains our coalition partnership with GCMD, a key initiative focused on accelerating the maritime industry's transition to a low-carbon future.

These collaborations are designed to leverage the distinct expertise and resources of each organisation to address environmental challenges within the maritime industry. Through such partnerships, IBIA seeks to drive positive change and foster a more responsible and efficient bunker industry, setting a new standard for environmental safekeeping and operational excellence.

We recognise the pivotal role of our working groups and the profound impact of member engagement in shaping the future of the bunker industry. These groups, fuelled by the expertise and dedication of our members, are at the forefront of addressing industry challenges and spearheading innovative solutions.

The Bunker Licensing & Mass Flow Meters Working Group, chaired by Rahul Choudhuri, President of Strategic Partnerships, VPS, is taking proactive steps to enhance fuel transaction transparency and integrity across the maritime industry. The group is identifying key ports to initiate discussions on the implementation of Mass Flow Meter (MFM) systems. Furthermore, there is an exploration underway to present at the International Maritime Organization (IMO), emphasising the critical need for a robust bunker licensing scheme. This effort is pivotal in ensuring that fuel transactions are transparent, and that the integrity of the bunker industry is maintained.

In addressing the industry's shift toward more sustainable energy sources, the Future Fuels Working Group, under the guidance of Constantinos Capetanakis, IBIA's Chair, is focusing on educational initiatives. The group is currently developing a Frequently Asked Questions (FAQ) document that concentrates on alternative fuels. This document aims to keep our members comprehensively informed about current and projected developments on Future Fuels and prepare the maritime community for the transition to greener energy sources, ensuring that stakeholders are well-informed and ready for upcoming changes in energy consumption.



Meanwhile, the Digitalisation Working Group is advancing the optimisation of the bunker value chain, developing a presentation to highlight key digitalisation opportunities, assess maturity levels, and define potential challenges. The group is also clarifying the benefits and operational impacts of Electronic Bunker Delivery Notes (eBDNs) to deepen industry understanding. This initiative is crucial for modernising the bunker industry. Additionally, Kenneth Juhls, Managing Director of ZeroNorth Bunker and Chair of the group, recently led an enlightening discussion on digitalisation trends in the bunker industry in a recent members' meeting.

Our engagement with members remains strong, with two successful virtual members' meetings already held. The first one this year featured Dr. Edmund Hughes, IBIA's IMO Representative, who provided exclusive insights from his recent attendance at International Maritime Organization (IMO) sessions, including the Marine Environment Protection Committee (MEPC 81) and the Intersessional Meeting of the Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG 16).

I had the privilege of joining our Singapore team and Asia Regional Board to host the IBIA Asia Dinner, a sold-out event that coincided with Singapore Maritime Week in April. We were honoured to welcome the IMO Secretary-General, Arsenio Dominguez, on his inaugural visit to the region, marking another significant milestone for IBIA in Asia.

I also actively participated in several key industry events globally. At the CMA Shipping conference in Stamford, USA, I spoke on the 'State of the Industry Panel | Status Check on the Maritime Industry in 2040.' Additionally, my involvement in the International Bunker Conference (IBC) allowed me to engage in a fascinating Fire Chat panel. These engagements underscore IBIA's commitment to leading discussions that shape the future of our industry.

As Posidonia Week kicks off in June, we eagerly anticipate hosting the IBIA Posidonia Cocktail Reception, a premier networking event uniting the shipping and marine energy/bunker industries.

This will be followed by the IBIA Annual Convention in November, concluding our yearly events calendar. Both events are set in Athens, Greece – my hometown, a prominent global shipping hub.

The IBIA Secretariat is committed in its efforts to modernise processes and embrace digitalisation. The implementation of new HR software and the impending rollout of a CRM/ERP system signify pivotal steps towards enhancing operational efficiency and better member support.

Furthermore, we are diligently crafting the positioning and strategy of our association for the years ahead, drawing upon valuable insights gathered from the recent perception audit survey.

Your contributions are instrumental in shaping the future trajectory of IBIA.

As IBIA moves onwards and upwards, the unwavering support and engagement of our members remain paramount.

Together, we embark on this journey towards a brighter, more sustainable future for the bunker / marine energy industry.

Sincerely

Alexander Prokopakis
IBIA Executive Director
alexander.prokopakis@ibia.net





Oil Marketing & Trading International

Marine Fuels in the UAE *and now in Salalah Oman*



Office 2001, Saba Tower 1, JLT
DUBAI, UAE
Tel: 00971 4 4350500
Fax: 00971 4 4350505
E-mail: bunkers@oil-marketing.com

12 Kithiron Street, Alimos 17455
ATHENS, GREECE
Tel : +30 2109609860
Fax : +30 2109609861
E-mail: bunkers@oil-marketing.com

15-213, 533 Upper Cross Street,
SINGAPORE 050533
Tel: 0065 6222 4028
Fax: 0065 6222 4027
E-mail: singapore@oil-marketing.com

WEB: WWW.OIL-MARKETING.COM



NAVIGATING THE FUTURE

IBIA's pivotal role in shaping the maritime sector through our active membership engagement

As the Global Head of Events at IBIA, it is my pleasure to bring you the latest updates from our diverse and dynamic calendar of activities that continue to foster growth and collaboration in the maritime sector.

In our IBIA Executive Director's Report, Alexander highlighted two significant members' meetings held this year. The first session provided updates from the International Maritime Organization (IMO) and the Marine Environment Protection Committee (MEPC 81), offering critical insights into regulatory changes and industry impacts. The second session focused on the Digitalisation Working Group, where we delved into the latest technological advancements impacting the bunkering industry.

Looking ahead, we are excited to host an upcoming members meeting focused on the EU ETS, FuelEU, and Fit for 55. Scheduled for June 12, this meeting aims to dissect these critical regulatory updates and their implications for our industry.

This session promises to provide valuable insights and strategies for navigating the evolving regulatory landscape, ensuring our members are well-prepared to adapt to these changes.

The IBIA Asia Gala Dinner has recently concluded, and for more detailed insights, I encourage you to look forward to the report from Siti Noraini our Regional Manager in Asia. This event was a resounding success, bringing together key stakeholders to discuss regional issues and opportunities within the Asia-Pacific bunkering community.

With great anticipation, we look forward to the upcoming cocktail reception preceding the Posidonia shipping event. Thanks to the generous support from our sponsors, this reception is poised to be a premier networking opportunity, allowing our members to engage with industry leaders and peers in a convivial setting.

Preparations are well underway for the IBIA Annual Convention to be held in Greece.

This year's Convention will cover a broad spectrum of pertinent topics including Regulatory Updates, State of the Industry, Shipowners Panel, Bunker Players and Industry Insights, and Diversity in the Maritime Sector.

Year on year, the Annual Convention has seen growth in delivery and impact, and this year continues that trend with a commitment to high-calibre speakers and topics designed to engage and inform our attendees on critical industry developments.

IBIA continues to actively support and participate in numerous regional events. Noteworthy engagements include our presence at the CMA Shipping event in March, Alexander Prokopakis, IBIA's Executive Director spoke on the 'State of the Industry Panel | Status Check on the Maritime Industry in 2040!'. Alongside Alexander was Adrian Tolson, IBIA's Vice Chair and owner of 2050 Marine Energy, who moderated a panel on 'Energy Market Drivers and Meeting Future Bunker Demand'. Additionally, at the Our Oceans conference in Athens,



our new Chair, Constantinos Capetanakis, made significant contributions as a panellist, demonstrating our leadership in sustainable maritime practices. The International Bunker Conference in Oslo was another significant platform where IBIA played a pivotal role as an industry partner.

During the 2024 GREEN4SEA Athens Forum, Alexander Prokopakis, gave a presentation on the importance of bunkering for the maritime industry. He explained the role and goals of IBIA as an organisation, standards, vision, and future aims. The 2024 GREEN4SEA Athens Forum successfully took place on Tuesday 2nd April 2024 at the Lighthouse of Stavros Niarchos Foundation Cultural Center (SNFCC), Athens.

Saunak Rai, Head of FuelLNG and Asia Regional Board Member (IBIA), provided a comprehensive perspective on the alternative fuel pathways in the maritime industry's transition. Rai emphasised that while alternative fuels offer promising solutions for decarbonisation, they also present significant safety and infrastructure considerations that need to be addressed. He highlighted that the journey towards achieving zero-emission shipping is complex and not straightforward, requiring careful planning, collaboration, and innovation.

IBIA is also gearing up for a significant presence at Maritime Week Americas to be held in Panama in May, where our leadership, moderated by IBIA's Vice Chair Adrian Tolson, will host a panel highlighting the influential work of IBIA within the International Maritime Organization and other pivotal forums. This panel will feature contributions from IBIA's Board, along with Regional Board members from the Americas, and members of our dedicated Working Groups.

Reflecting on our first event of 2024, the successful IBIA Annual Dinner was held in London in February. We are immensely grateful for the participation and enthusiasm of over 1,100 attendees who made the evening truly remarkable. A special thank you to all our sponsors whose generous support was instrumental in the success of this event.

We were honoured to have Arsenio Dominguez, the IMO Secretary-General, join us as our special guest, adding a significant highlight to the evening. Most importantly, we extend our deepest gratitude to our IBIA members, whose steadfast support and engagement are the backbone of our continued success. Your presence and commitment helped us achieve yet another sold-out Annual Dinner, reinforcing the strength and unity of our community.

I would like to extend my heartfelt thanks to the Events Working Group, a specialised team within the IBIA Board, plays a crucial role in enhancing the value of our gatherings. Comprised of dedicated board members, this group is tasked with the sole purpose of curating high-level programmes and offerings for our events. It is my privilege to chair this working group, where we focus on delivering top-tier experiences that not only meet but exceed the expectations of our members.

Thank you to all IBIA members for your unwavering support and active participation in our initiatives. Your insights and feedback are invaluable as we continue to refine our event offerings and ensure they meet the high standards and expectations of our community.

We welcome your suggestions on topics and speakers and encourage you to share your visions for future conferences and events.

As we move forward, IBIA remains dedicated to advancing our industry through education, advocacy, and the promotion of ethical practices. Together, we are steering towards a more informed, efficient, and sustainable future for the maritime sector.

We look forward to seeing you at our next gathering, ready to engage, learn, and innovate.

Follow our social media:

 <https://linkedin.com/company/ibia.net>

 [InternationalBunker IndustryAssociation/](#)

 [ibiabunkers](#)

Tahra Sergeant
Regional Manager (Africa)
& Global Head, Events
tahra.sergeant@ibia.net
+27 799907544





IBIA EVENTS – ANNUAL DINNER – LONDON





IBIA EVENTS – ANNUAL DINNER – LONDON





SOHAR Port: Gateway to Exceptional Maritime Services Where Global Trade Meets Excellence

Nestled at the crossroads of global trade routes, SOHAR Port stands as a beacon of maritime excellence. With an impressive track record of servicing a significant volume of vessel calls annually, we offer unparalleled services with consistently favorable anchorage conditions throughout the year.



Diverse Range of Services:

- Expert Bunkering and Ship-to-Ship Operations
- All-Encompassing Vessel Repair Services
- Hull Cleaning and Advanced Underwater Surveys
- Efficient Crew Changes and Comprehensive Logistics Support

State-of-the-Art Facilities:

- Expansive Anchorage Areas with Versatile Layby Options
- Cutting-Edge Infrastructure Catering to Various Vessel Requirements
- Duty-Free Outlet for Crew Essentials

Connect with SOHAR Port: Discover more about our unique offerings



It all starts here

+968 2685 2700 | soharportandfreezone.om

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.



IBIA
INTERNATIONAL BUNKER INDUSTRY ASSOCIATION



MARINE LUBRICANTS  BUNKER FUELS  ALTERNATIVE FUELS

Our Paying Performance
Makes All the Difference!

EXPRESS ENERGY INC.
3 Iassonos Str., 18537 Piraeus, Greece
Tel: +30 210 4287107
www.expressenergy.gr, exenergy@exenergy.gr



IBIA EVENTS PROGRAMME 2024

ONLINE BUNKER TRAINING COURSE		
MODULE 1 TO PURCHASE	Bunker Market Regulations and Enforcement	Online at www.ibia.net
MODULE 2 TO PURCHASE	Understanding ISO 8217 and ISO 4259	Online at www.ibia.net
MODULE 3 TO PURCHASE	Best practice for suppliers with VLSFO	Online at www.ibia.net
MODULE 4 TO PURCHASE	Best practices for users with VLSFO	Online at www.ibia.net
MODULE 5 TO PURCHASE	Adapting to a changing market	Online at www.ibia.net
MODULE 6 TO PURCHASE	Compatibility and stability – Issues with VLSFO fuels and the measurement of Stability	Online at www.ibia.net
MODULE 7 TO PURCHASE	Sales terms and conditions – The purpose, structure and application of Sales terms	Online at www.ibia.net
MODULE 8 TO PURCHASE	Quantity measurement – The principles of quantity measurement including Mass Flow Metering	Online at www.ibia.net
MODULE 9 TO PURCHASE	Sampling – The basics of sampling, sampling methods and sample handling	Online at www.ibia.net
MODULE 10 TO PURCHASE	Fuel quality – Impact on storage, treatment and use in the engine	Online at www.ibia.net
MODULE 11 TO PURCHASE	Alternative Fuels	Online at www.ibia.net
MODULE 12 TO PURCHASE	Bio Fuels	Online at www.ibia.net
MODULE 13 TO PURCHASE	Exhaust Emissions	Online at www.ibia.net
MODULE 14 TO PURCHASE	Introduction to LNG Bunkers	Online at www.ibia.net
COURSE TO PURCHASE	The IBIA Basic Bunkering Course	Online at www.ibia.net
MAY		
29 - 30	2 Days Basic Bunkering Course SS600:2022 & SS648:2019	Singapore, Asia
JUNE		
2	IBIA Posidonia Reception	Athens, Greece
12	IBIA Members Meeting	Online at www.ibia.net
12 - 13	2 Days Basic Bunkering Course SS600:2022 & SS648:2019	Singapore, Asia
27	Methanol Green Marine Masterclass	Singapore, Asia
JULY		
24 - 25	2 Days Advanced Bunkering Course (SS600:2022 & SS648:2019)	Singapore, Asia
AUGUST		
24 - 25	2 Days Basic Bunkering Course SS600:2022 & SS648:2019	Singapore, Asia
SEPTEMBER		
25 - 26	2 Days Advanced Bunkering Course (SS600:2022 & SS648:2019)	Singapore, Asia
OCTOBER		
15	Training Course on 'Biofuels'	London, United Kingdom
23 - 24	2 Days Basic Bunkering Course SS600:2022 & SS648:2019	Singapore, Asia
NOVEMBER		
5	Training Course on 'Future fuels'	Athens, Greece
5 - 7	IBIA Annual Convention 2024	Athens, Greece

BUNKER INDUSTRY EVENTS 2024

MAY		
20 - 22	31st Annual Middle East Petroleum & Gas Conference (MPGC)	Dubai, United Arab Emirates
21 - 23	Maritime Week Americas	Panama
JUNE		
3 - 7	Posidonia	Athens, Greece
3	9th Capital Link Maritime Leaders' Summit	Athens, Greece
17 - 19	Maritime Week Las Palmas	Las Palmas de Gran Canaria
26 - 27	8th Clean Marine Fuel Forum 2024 & IBIA Methanol Bunkering Masterclass	Singapore, Asia
SEPTEMBER		
11 - 12	7th Edition of Oil Spill India (OSI 2024)	New Delhi, India
11 - 13	Argus Sustainable Marine Fuels Conference	Houston, United States of America
18	4th SAFETY4SEA London	London, United Kingdom
OCTOBER		
2	15th SAFETY4SEA Athens	Athens, Greece
8 - 10	SIBCON	Singapore, Asia
24	4th SAFETY4SEA Singapore	Singapore, Asia

**All dates were correct at time of going to print but may be subject to change, please refer to IBIA's website (<https://ibia.net/events/>) for any updates*

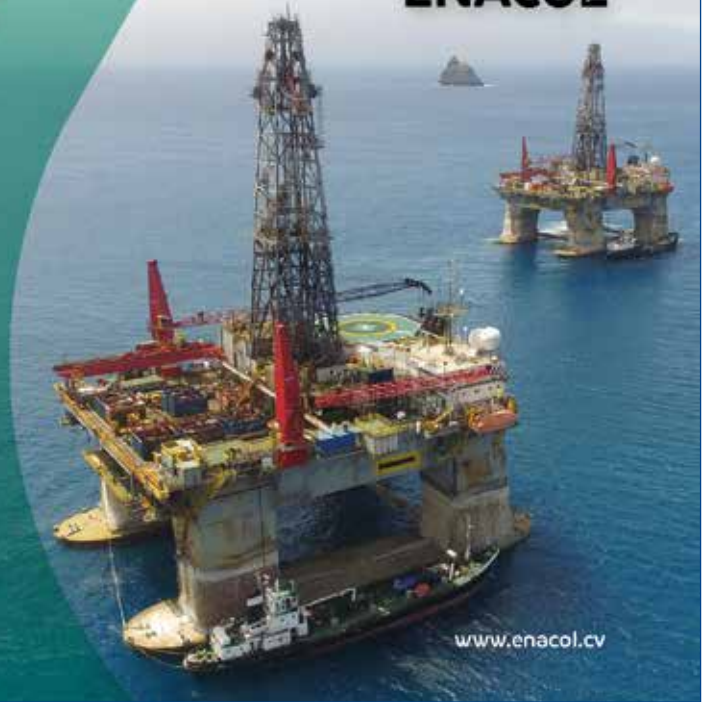
Enacol, Connecting Continents

Based in Cape Verde, strategically located on the main maritime routes between Europe, West Africa and the Americas, ENACOL offers HIGH QUALITY FUELS AND LUBRICANTS and ensures efficient delivery service to all types of vessels.

- 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

We serve our clients safely, efficiently and with environmental responsibility.

Phone: (+238) 534 60 65
Mobile: (+238) 996 84 05 • 991 59 64
E-mail: bunker@enacol.cv



www.enacol.cv



Email : info@engen.com.gh
Tel : +233 (0) 302 513 468-8
Cell : +233 242 807 389 / 544 338 487

Your Preferred Physical Bunker Supplier in Ghana

Operating for over 25 years, Engen Ghana Ltd, a subsidiary of the Mocoh Group is a leading and trusted physical bunker supplier in Ghana. Through our team of experienced professionals and reliable supply partners, we have a proven track record of providing quality marine fuels and lubricants on schedule and with competitive prices.

We offer:

- Marine Fuel Oil (RMG 180) and Marine Gas Oil (MGO/DMA) meeting ISO 8217:2010(E) specifications.
- Deliveries at the Tema & Takoradi ports by both Bulk Road Vehicles and ex-pipe onshore.
- No restrictions on quantities ordered.
- Delivery and sampling methods compliant with Annex VI of MARPOL 73/78 regulations.

We are:

- Professional:** We exhibit professionalism and quality of service in every delivery.
Excellent: We strive to be as efficient as possible, saving both time and money for our clients.
Transparent: We keep our clients informed throughout the process.



www.engen.com.gh

The ONLY official magazine to IBIA

WORLD

ADVERTISE IN BUNKERING

Increase your visibility to the global bunker industry with an advert in World Bunkering.
For more information contact our Projects Manager **Alex Corboud** on:

Tel: + 44 203 935 1474 **Mob:** +44 7957 472 317 **Email:** alex@worldbunkering.net



©iStock

EMPOWERING AFRICA'S MARITIME FUTURE

A Progress Update from IBIA Africa

As the Regional Manager of IBIA Africa, I am thrilled to update you on the strides we are making across the region to strengthen the maritime and bunkering industry. Our efforts are geared towards education, collaboration, and leading industry discussions.

IBIA Africa submitted a report to the International Maritime Organization (IMO) which synthesised the feedback from IBIA Africa members regarding the attacks on commercial shipping in the Red Sea and its impact on bunker volume sales across stakeholders. It investigated changes in sales, quantification of these changes, supply challenges, and future demand expectations. Across regions, stakeholders anticipate further increases in bunker demand, supported by medium to long-term contracting behaviours and infrastructure improvements aimed at accommodating heightened demand. Proactive dialogues between stakeholders and ship operators are underway, particularly in West and South Africa, focusing on securing supplies and exploring long-term cooperation projects amidst uncertainties surrounding low-carbon fuel adoption, emphasising the need for industry focus in this critical area.

The report concluded that the Red Sea crisis has significantly influenced bunker fuel sales in key strategic bunkering ports in Africa, prompting strategic adjustments and plans to address potential increased demand or supply and quality challenges.

The evolving uncertainty emphasises the importance of flexibility and collaborative efforts to sustain bunker supply chains amidst the industry's dynamic landscape. It highlights the crucial role of ship operators in collaborating with bunker suppliers to identify fuel oil demand promptly, underlining the necessity for concerted efforts to navigate the challenges posed by the evolving situation.

We are close to finalising a "Train the Trainer" programme on Future Fuels, developed in partnership with a prominent South African training institution. This live online programme, consisting of eight sessions, aims to extend our educational outreach, equipping trainers with critical knowledge and tools related to advancements in fuel technology. The intention will be for this programme to be rolled out to other regions.

The next IBIA Africa Board meeting's agenda will focus on our current membership status and explore potential growth areas, particularly in North East Africa with a proposed conference in 2025. Discussions will also cover developments in the Red Sea area, and the impact on supply and demand in the region. Plans for an end-of-year gathering in early December are underway, alongside preparations for an online IBIA Africa Member Meeting mid-year, which will welcome new potential members.

Our active participation in several external working groups such as the Offshore Operations Stakeholder Forum, and the Cape Town Port Liaison Forum, continues to foster dialogue and collaboration on pivotal industry issues.

Through these diverse initiatives and engagements, IBIA Africa is committed to leading the region towards a sustainable and well-informed maritime future. We are excited about the growth and the impactful collaborations in 2024 and beyond, as we continue to support and propel our industry forward.

Tahra Sergeant
Regional Manager (Africa)
& Global Head, Events
tahra.sergeant@ibia.net
+27 799907544





IBIA POSIDONIA RECEPTION



SAVE THE DATE

2 June 2024
Athens - GREECE



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



STEADFAST SUPPORT

Updates from Singapore Maritime Week 2024

I am writing this following the Singapore Maritime Week (SMW), where our IBIA Asia Dinner was also hosted as part of the event.

Amidst the vibrant atmosphere of the Singapore Maritime Week, the IBIA Asia Dinner proved to be a resounding success, drawing in 240 guests and members. It was particularly memorable with the esteemed presence of IMO Secretary General, Arsenio Dominguez, who graciously accepted our invitation to join us as our Special Guest for the evening, alongside Capt. Segar, MPA Assistant Chief Executive (Operations).

The IBIA Asia Dinner served as a gathering point for IBIA members, stakeholders, and partners from various segments of the maritime industry, fostering networking opportunities over delightful cuisine and beverages.

I extend my sincere appreciation to all attendees for their steadfast support. Special thanks go to our sponsors: Bunker Partner (Platinum Sponsor), Equatorial Marine Fuel Management Services (Gold Sponsor), and Peninsula (Silver Sponsor), whose support was instrumental in making this event a success.

Our IBIA Executive Director, Alexander, also joined us during that week to gain first-hand experience of the dynamic and vibrant atmosphere of SMW and the industry here in Asia.

Additionally, we had the privilege of being invited to tour the Green Pioneer, the world's first ammonia-powered ship. During the tour, we had the opportunity to meet the Fortescue team behind these pioneering efforts and innovations driving positive change within the maritime sector.

As advocates for sustainable practices and responsible bunkering, we remain committed to supporting initiatives that promote environmental stewardship and contribute to a greener and more sustainable future for our industry.

As we continue navigating the ever-changing landscape of the maritime industry, let us stay unwavering in our pursuit of innovation, collaboration, and sustainability. Together, we can propel our industry towards a more resilient and environmentally conscious future.

Siti Noraini Zaini
Regional Manager, IBIA Asia
+65 6472 0916
Siti@ibia.net
www.ibia.net





IBIA ASIA DINNER







IBIA

INTERNATIONAL BUNKER INDUSTRY ASSOCIATION

IBIA ANNUAL CONVENTION

ATHENS

5-7 NOVEMBER 2024



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
Mercy Ships!



NEW IBIA MEMBERS

CORPORATE A

Agent

Associação Brasileira de Bunker (ABRABUNKER)

Carlos Augusto Cordovil
Americas

Ship Owner, Ship Manager

Bahri

Sharief Abualrahi
Middle East

Bunker Supplier, Ship Manager

Bangladesh Trading

Ahmed Mahi Rasel
Asia

Supplier (Physical)

CI Caribbean Bunkers SAS

Rodrigo Barrios
Americas

Bunker Supplier, Supplier

Colonial Oil Industries

Shannon Radcliffe
Americas

Surveyor, Supplier (Physical)

Marine Surveyor & Services S.L.

Jose Pacheco
Europe

Ship Owner, Ship Manager

Nova Offshore Navegação Ltda.

Flavio Ribeiro
Americas

Agent, Service

P & B Ships Agents Togo Sarl (Ltd)

Apelete Agossou
Africa

Agent, Service, Broker, Charterer, Other (Energy support services, logistics services)

Sealand Shipping and Inland Services

Rebecca Owusu-Asamoah
Africa

Bunker Supplier, Oil Industry Major

Sinopec Fuel (Singapore) Pte Ltd

Zhou Shangqi
Asia

Supplier (Physical)

Stabilis Solutions, Inc.

John Lindquist
Americas

CORPORATE B

Bunker Supplier

AZURenergies S.A.S.

Ana Apavaloaiei
Europe

Trader

Ship Procurement Services

Dimitra Sfyri
Europe

Bunker Supplier, Oil Industry Major

Sinopec Fuel Oil (Middle East) Pte Ltd

Ajay Kumar Pandey
Middle East

INDIVIDUAL

Service

Fabiola Abdmessih

Seahawk Services
Americas

Bunker Supplier, Charterer, Supplier, Agent

Nazil Afeef

Bunker Fuel Maldives
Asia

Legal

Paul Collier

Clyde & Co Clasis Singapore
Asia

Service, Supplier

Ruben Hermida

SILECMAR
Europe

Financial

Heman Kothari

Jefferies International Limited
Middle East

Broker, Service, Storage, Supplier (Physical)

Pierre-Alexis Mosnier

Mareneco Ltd
Europe

Surveyor, Ship Manager, Service

Suriamoorthy Nangapan

Royal Marine Services
Pte Ltd
Asia

Ship Manager, Service

Paul Oprea

SC Histria
Shipmanagement SRL
Europe

Service

Vijay Rao

Steamship Mutal
Europe

Agent

Andrea Realfonzo

Grimaldi Group
Europe

Bunker Supplier, Storage, Surveyor, Broker, Supplier, Agent

Jaba Tarimanashvili

Trans Logistic LLC
Europe

Bunker Supplier

Bobby Tham

BP Sinopec Marine
Fuels Pte Ltd
Asia

Bunker Supplier, Storage

Claudio Usala

Chimica Sarda Srl
Europe

Join IBIA today

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

By 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



©IMO

REGULATORY ROUND-UP

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

The outcome of the latest round of negotiations at the IMO relating to protection of the marine environment can be seen as either glass half full or glass half empty. Following last year's adoption of a revised 2023 IMO GHG Strategy, and the deserved euphoria in that achievement, the real hard work has now begun. Simply this means turning policy goals into policy instruments which for international shipping means regulations. As I have made clear on several occasions for me international shipping only really changes for two reasons: the market and regulations.

The 81st session of the IMO Marine Environment Protection Committee (MEPC 81) saw Member States agree a possible structure of the legal provisions for the "basket" of technical and economic elements to implement the mid-term GHG emission reduction measures for international shipping. The measures are scheduled to be adopted by IMO next year and importantly the governments agreed that they could form a possible new chapter 5 of MARPOL Annex VI "Regulations on the IMO net-zero framework".

This has two important implications. It is the first time an agreement has been reached that MARPOL Annex VI can be used as the IMO legal instrument to incorporate provisions that have an economic element. Previously the view had been expressed by some that it might not be a suitable instrument, the implication being that a new Convention would be needed which, on conservative estimates, could take 10 years to be adopted and enter into force (MARPOL Annex VI took eight years just to enter into force).

Second, it was the first time the Member States formally identified the key regulatory provisions that are likely to be needed to achieve a consensus. On this point it should be noted that a consensus at IMO has a different interpretation to that used for most other United Nations bodies. This is because the IMO conventions, such as MARPOL, permit adoption of regulatory instruments by majority and not by unanimity. Saying that voting on adoption is a very sensitive matter politically and on the issue of GHG emissions may be damaging in the middle to long term.

Key policy issues remain to be resolved including further work on the trajectory of reduction of GHG intensity of marine fuel needed for a global GHG fuel standard and the operationalisation of the amended 2024 Guidelines on life cycle GHG intensity of marine fuels (LCA Guidelines). MEPC 81 agreed, in principle, to the establishment of a scientific working group under the auspices of the UN's GESAMP (Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection) to further consider the technical and scientific elements of the LCA Guidelines.

My last article highlighted the potential significance of the policy decision to consider emissions from ships on a "Well-to-Wake" basis. For me the decision to establish a "scientific" group goes some way to dis-engaging the politically sensitive matters relating to the calculation of upstream emissions for the pathways for the production and supply of fuels in that they can be considered more objectively by independent scientists. But to be frank, decoupling the politics remains challenging!



Several proposals for GHG reduction measures were considered but there remain some key policy differences with some of the most significant being the approach to raising funds and what they should be used for? On this issue the outcome of the “Comprehensive Impact Assessment” of the measures under consideration will be vital in identifying the likely politically acceptable landing ground for any economic measure and furthermore the likely actions that will be needed to mitigate any resulting disproportionately negative impacts on States. As there is an enormous amount of work to be done to reconcile the various positions and not a great deal of time to do it when they meet, Member States have been asked to seek to try and find greater acceptable common ground before the next round of meetings in September and come back with agreed draft regulatory text(s).

Related to the regulatory work on GHG emissions, MEPC 81 initiated a Correspondence Group on the measurement and verification of non-CO₂ GHG emissions (methane (CH₄) and nitrous oxide (N₂O)) to determine the actual, as opposed to default, emissions for the “Tank-to-Wake” part of the emission pathway for the fuel used by the ship. The second stream of work for this group is on the potentially important compliance approach of onboard carbon capture. For this it is recognised there is a critical need for such systems to be certified in a way that is in step with the certification of marine diesel engines. The group will report to MEPC 83 in Spring 2025.

Biofuels and other alternative fuels

Regarding the issue of the carriage of biofuels greater than B24 by bunker vessels for supply to a ship for use as fuel oil on board that ship. Following consideration by MEPC 81, the matter has been forwarded to the IMO Working Group on Evaluation of Safety and Pollution Hazards (ESPH 30) to be held in October, for further consideration in respect of bunker vessels (this is an important distinction that IBIA and others have sought to make) and with a view to advising MEPC on the way forward.

Importantly, this example highlights what is likely to become (another?) potential bottleneck for international shipping to achieve its decarbonisation goals.

That is, the (lack of) availability of vessels to transport and supply the “alternative fuels” to enable internationally trading ships to comply with the future mandatory requirements.

If the fuels are transported and supplied by a ship what certification will these ships require? Bunker vessels are not product tankers! Will there be a need for dedicated “bunker” ships for each type of alternative fuel? The fuel quality risks associated with bunker operations for alternative fuels will need to be further assessed and addressed. Of course, all this will have operational and, most importantly, cost implications. The example of bunkering of biofuels could well become the canary in the coalmine!

The risks for both the bunker industry and the wider shipping sector it serves are evident. Inability to supply the fuels and an inability to obtain them. Constricting supply of compliant fuel will have the consequence of increasing prices. Significantly, this could potentially lead to a restriction of shipping services with consequential impacts on the ability of countries to trade. Not good for global commerce which is already under stress from various economic and political shocks.

Alternatively should IMO fail to deliver a robust maritime GHG emissions pricing mechanism then the likelihood that governments establishing their own “carbon pricing” mechanisms for international shipping may see increased revenues (for them) with restricted supplies of the compliant fuels as the cost of achieving compliance through the purchase of emission permits would increase as there would be a greater need for offsetting the emissions due to a lack of availability of compliant fuels. Whatever IMO does this genie may already be out of the bottle as governments could increasingly see shipping as a revenue source.

Next quarter I shall bring you news of IBIA’s response to the formal review by IMO of the Carbon Intensity Indicator (CII) regulations and progress on the development of safety rules for use of ammonia and hydrogen as fuel.

On the CII key questions for the response to IMO need to be considered, including what can be proposed - just complaining does not work - to reflect the sector’s operational

energy profile more appropriately in the requirements:

1. Correction factor for bunker vessels but would need to identify a basis for a bunker vessel correction factor? Under the current formula for calculating CII there is limited scope especially when you consider that unless you use a low carbon fuel pretty much the whole operation of a bunker vessel is detrimental when it comes to “operational energy efficiency”. As someone said a bunker vessel has all the disadvantages of a tramp trade ship (irregular operational profile, variable speeds, etc.) without the main advantage (long distance voyages)
2. Limit data used for calculation of CII to “sea passage” only - this would exclude energy used for pumping/ other bunkering operations, etc. but may still result in poor ratings as what proportion of energy used by a bunker vessel is for bunker handling?
3. Amend definition of tankers under Chapter 4 of MARPOL Annex VI to exclude bunker vessels – this is the most straightforward option but may not be acceptable politically nor for some operators who want their vessels to participate in efforts to reduce GHG emissions
4. Others?

If any reader has ideas about the CII review for bunker vessels and/or is willing to share data from their ships, then please feel free to contact me.

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

Edmund Hughes
edmund.hughes@ibia.net





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 3: Bunkering procedures

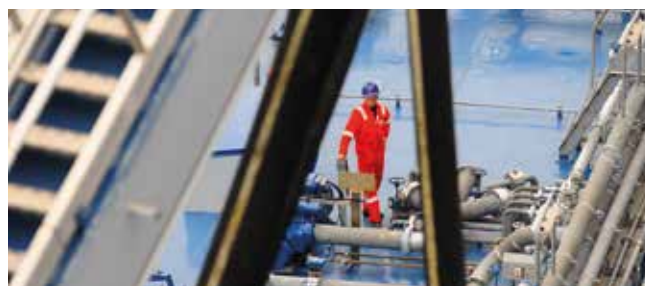
Bunker sampling is one of the most important aspects of bunkering. This chapter covers preparations, practical issues and what to do if something goes wrong. Details of the role each stakeholder ashore and on board undertakes during the process including actions required before, during and after the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

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

<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.



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 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.

ONLINE BUNKER TRAINING COURSE



Module 1:
Bunker Market Regulations and Enforcement

Module 2:
Understanding ISO 8217 and ISO 4259

Module 3:
Best practice for suppliers with VLSFO

Module 4:
Best practices for users with VLSFO

Module 5:
Adapting to a changing market

Module 6:
Compatibility and stability

Module 7:
Sales terms and conditions

Module 8:
Quantity Measurement

Module 9:
Sampling

Module 10:
Fuel quality

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 Port of Singapore ©Maritime and Port Authority of Singapore

THE VIEW FROM SINGAPORE

In a wide-ranging interview Teo Eng Dih, Chief Executive of the Maritime and Port Authority of Singapore, explains to World Bunkering's editor David Hughes where the MPA stand on key issues

DH: Mr Teo, These are uncertain times for world trade. Is MPA confident that Singapore will continue to grow as a transshipment and bunkering port?

Mr Teo: The Port of Singapore has continued to show good growth and resilience amidst global uncertainties and supply chain disruptions. This is due in large part to the strong tripartite co-operation among the industry, unions and government.

Maritime Singapore's Performance in 2023 and 2024

Our 2023 performance indicators saw several new highs. Singapore crossed three billion Gross Tonnage (GT) in annual vessel arrival tonnage for the first time in December 2023, reflecting growth in all segments of Singapore's port ecosystem, including container ships, dry bulk carriers, liquid bulk and chemical tankers, ferries, and specialised vessels. Container throughput grew by 4.6% reaching a new high of 39.01 million twenty-foot equivalent units (TEUs), compared to the previous record of 37.57 million TEUs in 2021. The total business spending by key maritime companies exceeded S\$4.8 billion, up from S\$4.3 billion in 2022. 51.82 million tonnes of bunker fuel were uplifted for the first time, including 520,000

tonnes of biofuel blends, 100,000 tonnes of LNG, and for the first time, 300 tonnes of methanol. The Singapore Registry of Ships (SRS) also recently crossed the 100 million GT milestone.

Singapore has continued its strong growth momentum in 2024. In the first quarter of this year, vessel arrival tonnage increased by 7.3% compared to the same period in 2023. Singapore's container throughput grew 10.7% year-on-year, continuing the strong performance in 2023, to reach almost 10 million TEUs in Q1 2024.

Looking ahead, we can expect a more challenging geopolitical and operating environment for the maritime industry. However, we also see opportunities to accelerate the digitalisation efforts to help make global maritime supply chains more efficient and resilient.

Port Operations

While there has been bunching of vessel arrivals given the supply chain disruptions, we are continuing to invest in developing our port infrastructure to support the flow of goods across the region and the world. For instance, vessels which have been delayed in the prior destinations may choose to shorten their voyages and use Singapore to help bridge their schedules.

We are increasing our cargo handling capacity and will be consolidating our container operations in phases at Tuas Port to improve the efficiency of cargo operations and vessel turnarounds. Eight berths at Tuas Port are already operational under Phase 1 with three more planned soon to support the increase in demand, and 70% of reclamation works for Phase 2 is completed.

In line with Singapore's national target to achieve net-zero by 2050, we are also ensuring that port operations are designed to reduce carbon emissions. Current operational berths at Tuas Port use electrified port equipment such as quay cranes, yard cranes, and Automated Guided Vehicles, which can reduce carbon emissions by about 50% compared to diesel prime movers. Port operator, PSA, will also further reduce energy consumption at Tuas Port through smart grid solutions, battery energy storage systems and optimisation of container handling processes. Tuas Port's Maintenance Base building was constructed with intelligent energy management strategies and solar photovoltaic panels to harvest energy, making it one of Singapore's first Super Low Energy Building, using 58% less energy compared to other similar sized buildings. PSA and Jurong Port both aim to achieve net zero emissions by 2050.



Digitalisation

MPA has also rolled out Phase 2 of our digitalPORT@SG™ Maritime Single Window, which now includes a Just-In-Time Planning and Coordination Platform (JIT Platform). The JIT platform provides advance information of vessel schedules up to 72 hours ahead of time and enables vessels to plan an optimal speed for arrival into the Port of Singapore. The JIT platform will also enable the agents and marine service providers to plan and optimise the deployment of port resources, reduce waiting time, and improve the efficiency of marine services, hence allowing vessels to turn around faster. This translates to lower fuel consumption, carbon emissions and overall cost. We are also continuing to strengthen the use of common data standards to enhance ship-port data exchange interoperability to facilitate efficient port reporting requirements and formalities through digitalOCEANSTM (Open/Common Exchange And Network Standardisation).

We are also developing the digitalOCEANSTM Application Programming Interface eXchange (OCEANS-X) platform to create a common marketplace for data consumers, providers and app developers to find and deploy various Business-to-Government (B2G) and Government-to-Government (G2G) APIs to help various disparate systems connect seamlessly and facilitate digital services across the global maritime supply chain, especially along our Green and Digital Shipping Corridors (GDSCs).

As Singapore expands its hub port, the port waters are expected to become busier with higher traffic volume, making navigation more complex. Currently, a vessel comes into or leaves the Port of Singapore every two to three minutes. To further strengthen vessel navigational safety and efficiency of the port, MPA is developing an AI-enabled Next Generation Vessel Traffic Management System (NGVTMS). In April 2024, MPA awarded the NGVTMS prototyping tender

to three key global players for Vessel Traffic Management (Tidalis B.V., Kongsberg Norcontrol AS, and Wartsila Singapore Pte. Ltd.) to develop prototypes at MPA's Maritime Innovation Lab 2.0 over the next 15 months, before embarking on full-scale development of the system. The NGVTMS will be based on an open system architecture and have advanced features such as data analytics to identify traffic hotspots and machine learning to predict collisions and enable vessel traffic officers to handle higher volumes and more complex vessel traffic safely, which can be expanded to support aerial deliveries by drones, and underwater hull cleaning by robots.

During Singapore Maritime Week 2024, MPA also signed an MOU with S&P Global Market Intelligence and Bunkerchain to use the Port of Singapore as the test bed to trial and pilot the use of digital ship identity in maritime applications such as digital port clearance and digital bunkering.



In March 2024, Fortescue, with the support from the MPA, government agencies, research institutes, and industry partners, successfully conducted the world's first use of ammonia in combination with diesel in the combustion process, as a marine fuel onboard the Singapore-flagged ammonia-powered vessel, the Fortescue Green Pioneer, in the Port of Singapore. ©Maritime and Port Authority of Singapore

Digital identity refers to the unique representation of an entity in the digital world, which consists of various attributes and data that distinguishes it from others. As electronic transactions may be vulnerable to various risks such as identity fraud and data integrity breaches, digital ship identity plays a crucial role in making electronic transactions more secure, trusted, and efficient in the maritime sector. When deployed in tandem with electronic signatures, these digital technologies will eliminate the need for physical ship stamps and wet ink signatures, and accelerate the transition towards a truly digital, secure, and paperless operations.

Alternative Fuels and Bunkering

On the bunkering front, MPA launched the digital bunkering initiative in November 2023, becoming the first port in the world to implement electronic bunker deliver notes (e-BDN). This initiative is expected to save close to 40,000 man-days per year for the bunker industry and streamline workflow and enhance crew safety by eliminating the need for physical transfer of bunker documents between vessels. Over 100 trials were conducted with more than 20 companies in 2023, and we are optimistic of full adoption by Singapore's bunkering ecosystem in the near term.

As the world's largest bunkering hub, we must be ready and capable of meeting the range of fuel needs for international shipping. We have successfully conducted the world's first ship-to-containership methanol bunkering operation in July 2023, and are working towards developing methanol bunkering standards by 2024.

Following the completion of the world's first ship-to-containership methanol bunkering in Singapore last year, MPA launched an expression of interest (EOI) for the supply of methanol as a marine fuel in Singapore. MPA received a total of 50 submissions, out of which 40% of them proposed end-to-end solutions covering all three areas highlighted in the EOI. Over 60 regional and international companies comprising energy companies, fuel suppliers, traders, bunker operators, and storage companies, participated in the EOI, signalling clear business confidence in Singapore as a key offtake location for methanol by international shipping.

In March 2024, Fortescue successfully conducted the world's first use of ammonia as a marine fuel onboard the Singapore-flagged ammonia-powered vessel, the Fortescue Green Pioneer, with MPA's support in the Port of Singapore. This marks a significant milestone in Singapore's multi-fuel bunkering capability development to support the digitalisation, decarbonisation, and manpower development for international shipping. The collective support provided for such trials also demonstrates the facilitative regulatory environment, and the strong research and tripartite ecosystem in Singapore to support the conduct of trials and scale-up operations for new maritime fuels.

MPA and the Energy Market Authority (EMA) are also currently reviewing proposals to develop an end-to-end solution to provide low- or zero-carbon ammonia for power generation and bunkering on Jurong Island. The proposals were submitted by the shortlisted consortiums from MPA and EMA's EOI in a restricted Request for Proposal (RFP). The bidders will be further shortlisted and MPA and EMA will work with the selected parties on the pre-Front End Engineering Design (pre-FEED) study for ammonia import terminals, ammonia bunkering and ammonia power generation.

MPA will also be inviting shipping companies with intentions to transport ammonia, or which are already transporting ammonia, to participate in an open non-binding Request for Information (RFI) to quote the shipping and insurance cost of ammonia from potential source locations to Singapore. Participants may identify ammonia demand hubs between the source country and Singapore in order that the demand can be aggregated to reap economies of scale in the shipping of ammonia.

Building a maritime workforce for the future

As the number of ships operating on zero or near-zero emission fuels grows, there is a need for more maritime personnel and seafarers to be trained and equipped to operate these ships safely and efficiently. MPA, together with 22 partners, including leading global marine engine manufacturers, will establish a Maritime

Energy Training Facility (METF) to close the skills and competencies gap for the safe operation of new zero or near-zero emission-powered vessels. This has the potential to train over 10,000 seafarers and shore-based staff by the 2030s as more alternative-fuelled vessels are delivered.

To be established as a decentralised network of training facilities based in Singapore, METF will tap on an ecosystem of partners' assets and training technologies to train the maritime workforce on the safe handling, emergency response, and incident management of future marine fuels such as methanol and ammonia. The Letter of Intent was signed by all partners at Singapore Maritime Week 2024 and the various facilities will be progressively developed.

DH: How would you describe Singapore's overall strategy on decarbonisation? Is it fair to say that it is hedging its bets by supporting the development of a range of alternative fuels?

How important are the Green Corridor agreements that Singapore has been entering into? Can they really make a difference?

Does MPA have a working assumption of when the volume of sales of alternative fuels will outstrip those of conventional fuels (including MGO, ILSFO, HSFO etc)?

Mr Teo: As the world's largest bunkering hub, our objective is to respond effectively to the fuel needs for international shipping, which currently suggests a multi-fuel transition. As countries implement more renewable projects locally, and the world sources for renewables regionally, there is demand for renewables to be brought through further afield in the form of molecules. Vessels are the grids of the future to bring these molecules to demand centres. Besides the decarbonisation of the shipping sector, these bring many new opportunities as the energy transition will require the transport of more molecules, more materials for the projects worldwide, and more opportunities for the maritime sector professionals to upskill and improve livelihoods.



And as these new molecules are less energy dense, there is also an imperative to enhance ship design, improve energy efficiency and adopt solutions such as wind-assisted propulsion to reduce the energy demand upfront of all vessel types before looking into the most appropriate fuel option.

For instance, biofuel blends are already available in Singapore, and up to B50 are accepted under the national standard. We are studying to specify the B100 standard, so that the full spectrum of commercial blends can be offered subject to the availability and market demand.

For hydrogen, electrolytic hydrogen is the main production pathway though there is increasing focus on geologic hydrogen given the scale of the global demand. As liquid hydrogen is still in the trial stage, hydrogen carriers such as methanol and ammonia have gained prominence.

The world's first liquid hydrogen carrier, the Suiso Frontier, visited Singapore last year and we worked together on safety-related assessments. Singapore will also be having hydrogen-related marine pilots later the year.

The order books for methanol and ammonia fuelled newbuilds and retrofits suggest evidently that the industry sees these new fuels as viable options. In developing our infrastructure and supply chains to supply green fuels, we are also, in parallel, conducting trials and pilots, developing safety standards and operation procedures, and preparing the workforce to handle these new fuels safely, working together with the unions, research agencies and industry.

The pilots and trials involving the bunkering of new low- and zero-emission fuels require comprehensive preparations, including thorough end-to-end

operational and other risk assessments, safety assessments of bunkering and receiving vessels, development of 24/7 operational models, and equipping of the ships' crews involved. MPA has also been leading several table-top exercises and workshops discussions, to evaluate the risks of handling low and zero-carbon fuels, including validation of the studies and models to assess the impact from a fuel-related incident in the Port of Singapore.

For methanol, about 300 tonnes was delivered in the world's first containership-to-ship operation in July 2023, and we are looking at close to 2000 tonnes this year, and with the operations expanding to cover simultaneous cargo and fuel operations. A licensing framework has been launched and we look forward to new supplies to support vessels calling in Singapore.



Singapore's first methanol bunkering operation took place in July 2023 with Maersk and Hong Lam Marine Pte Ltd. ©Maritime and Port Authority of Singapore

For ammonia, we have taken comprehensive steps and the world's first use of ammonia with diesel as a marine fuel was completed in the Port of Singapore in Q1 2024. From an initial tranche of 3 tonnes of liquid ammonia over 7 weeks of tests, a further tranche of more than 6 tonnes was used over 11 days, enhancing our ecosystem's capabilities to handle ammonia safely and securely. Over 26 consortia had also participated in the global call for proposals for ammonia power generation and ammonia bunkering: with 8 potential source locations for the import of ammonia in the coming years.

With the revised IMO 2050 GHG targets at only a ship's lifetime away, the Green and Digital Shipping Corridors (GDSC) play a very important role to help international shipping accelerate its decarbonisation efforts by leading the way. These corridors will bring together the collective resources of value chain partners along the corridor route to build the infrastructure, develop relevant safety standards and regulations to support pilot trials and demonstration projects, and to serve as demand offtake to enable robust trials and data collection. These efforts complement and reinforce the work of the IMO and are necessary to demonstrate feasibility of the fuel and digital solutions and encourage broader adoption.

Volume of Sales of Alternative Fuels

The IMO's revised GHG Strategy has set a clear end date for the use of fossil fuels by setting the target of net-zero GHG emissions for international shipping by or around, i.e. close to 2050, with indicative checkpoints for reducing GHG emissions by 20% (striving for 30%) by 2030 and 70% (striving for 80%) by 2040. These targets will demand significant and accelerated transition to zero-emission fuels. The EU has also recently extended its coverage of the ETS to include the maritime sector, which will help close the premium gap and encourage the uptake of greener fuels. While it is hard to estimate when the volume of alternative fuels will outstrip conventional fuels, there are clear push and signals, that the offtake of the alternative fuels will be set to increase very quickly.

Green and Digital Shipping Corridors

As a key transshipment hub, Singapore is well positioned to catalyse the development of Green and Digital Shipping Corridors (GDSCs) to advance maritime digitalisation and decarbonisation for international shipping. GDSCs support the development of a supply chain of green fuels by bringing together value-chain stakeholders to study various low- and zero-carbon fuel pathways, and to identify pilots and demonstration projects. They also help to catalyse digital solutions.

We have established GDSCs with Rotterdam, and the Ports of Los Angeles and Long Beach. In December 2023, two MOUs were signed to establish the Tianjin-Singapore GDSC and Japan-Singapore GDSC covering six Japanese ports and more recently with Australia in 2024. We have also commenced discussions with several other partners which will be finalised in the months ahead.

The corridors have co-opted research, private and public sector partners in their respective countries or regions, and this helps to build the momentum for various parties to collaborate effectively towards our common goal to decarbonise shipping and to support decarbonisation at scale globally.

DH: Singapore is at the forefront of converting harbour craft to electric power. Is providing shore power to container and cruise ships a realistic or necessary option for Singapore?

Mr Teo: There are merits in having container and cruise ships use shore power when berthed, rather than operate their auxiliary engines on conventional fuels which generate more GHG emissions in port.

Nonetheless, for Singapore, as the main fuel source to generate electricity is natural gas, the equivalent emissions will be reduced in tandem with the emission reduction efforts in the power sector. Singapore has launched the National Hydrogen Strategy. Depending on technological developments and the development of other energy sources, hydrogen could supply up to half of our power needs by 2050.

MPA is studying the provision of cold ironing to container and cruise ships. We are cognisant of the challenges including, increase in energy consumption, risks of surge, and are studying transformer requirements and exploring dedicated smart micro-grids. We are also exploring renewable energy sources such as solar and micro-tidal to power a localised smart micro-grid dedicated to the needs of maritime vessels.

The first charging point pilot, installed by Pyxis and SP Mobility, was recently launched at Marina South Pier, as part of three selected concepts from a public Expression of Interest on electric charging. Insights from the data collected will contribute towards the development of a national e-HC charging infrastructure masterplan, implementation plan, and national standards for e-HC charging infrastructure. MPA is also working with Enterprise Singapore, industry stakeholders and academia to develop a Technical Reference (TR) for e-HC charging and battery swap system.

DH: Last year Singapore was re-elected To the Council of The International Maritime Organization and has always taken an active part at IMO. How optimistic are you that the UN Agency's revised decarbonisation strategy agreed last year can succeed?

Can agreement be achieved on the details of how to accelerate decarbonisation?

The major shipping industry organisations have put forward proposals to move forward the IMO decarbonisation strategy while IBIA has been influential in developing technical regulations affecting bunkering. How important is it for regulators to engage meaningfully with the industry?

Mr Teo: Thanks to the support from Member States, Singapore has been a Council Member of the International Maritime Organization since 1993. We continue to champion the interests of the global maritime community, including in our capacity as a Council Member, through active engagement and multi-stakeholder collaboration.



The 80th session of the Marine Environment Protection Committee (MEPC 80) saw the successful adoption of the 2023 IMO Strategy on Reduction of Greenhouse Gas (GHG) Emissions from Ships, which sets out enhanced targets for international shipping, including a target to reach net-zero GHG emissions by or around, i.e. close to 2050, considering different national circumstances. The adoption by all IMO Member States by consensus, without reservations, was a clear demonstration of the collective will in addressing climate change. The 2023 IMO Strategy also sends a strong and unequivocal signal to the global maritime community on the way ahead, which will help strengthen investment confidence in newbuilds and infrastructure development along the fuel supply chain.

Singapore welcomes these developments at the IMO and is actively supporting ongoing work to achieve the targets set out in the 2023 IMO Strategy. This includes ongoing work by the IMO's Steering Committee on the comprehensive impact assessment of the basket of candidate mid-term measures, coordinated by Singapore as the Vice-Chair of MEPC. We had also supported the development of the IMO Strategic Workplan from 2024 to 2029 as Chair of the Working Group. The draft was co-sponsored by 26 Council members and was widely supported by other Member States before its adoption. Continued engagement and cooperation with relevant stakeholders, including the industry, are therefore critical to ensure that the implementation of the Strategy and development of the candidate mid-term measures are effective and inclusive.

DH: Singapore has led the world in implementing bunker supplier licensing and mandating the use of mass flow meters. Other major ports are now following Singapore's example but in some places, there has been considerable opposition to these policies. What have been the benefits for Singapore of licensing and MFM?

Mr Teo: From 1 January 2017, it is mandatory for all MPA licensed bunker suppliers to use Mass Flow Meters (MFM) for the delivery of bunker fuel in the Port of Singapore.

Before the introduction of the MFM, quantity determination was based on measurements using the tank gauging method which was subject to a wider range of variability. Beyond cost savings, the use of MFM has improved efficiency, productivity, and the transparency of bunkering transactions, and has helped raise Singapore's trust quotient as the world's largest bunker hub.

With strong tripartite industry and union support of Singapore's efforts in implementing MFMs, bunker sales have remained robust and grew to a record 51.82 million tonnes of bunker sales in 2023, surpassing the previous record of 50.64 million tonnes in 2017, the year when MFM was first implemented.

MPA has shared our experience and learnings with various ports in the Port Authorities Roundtable, including those

from the Americas, Asia and Europe. We understand that a few ports are considering this seriously.

MPA will continue to work with the industry to extend the use of MFMs for alternate fuels such as B100 and methanol. More information on how the standards have improved transparency, quality and trust in the maritime sector can be found in the following ISO report <https://www.iso.org/news/ref2640.html>.

With the world's first digital bunkering implementation in the Port of Singapore from Nov 2023, there is scope with greater deployment to couple this with the MFM data so that the bunker delivery process is fully digitalised in due course. This will lead to greater ecosystem benefits such as time and cost savings for the entire shipping community.



Mr Teo Eng Dih, Chief Executive, Maritime and Port Authority of Singapore
©Maritime and Port Authority of Singapore



BATTERY HEALTH CHECKS

Corvus Energy's data-driven tests

Corvus Energy says it has developed a DNV-accepted method for data-driven State of Health (SOH) testing and claims it is the first marine energy storage systems (ESS) supplier to provide this.

These tests for marine battery systems are mandatory and give an overall assessment of the condition, performance, and safety of the batteries over time. They help determine the battery's capacity, efficiency, and remaining life. Using data-driven approaches in these tests, enhances accuracy and efficiency in monitoring and maintaining marine battery systems. In addition, the test can be done with close to no disruption to the normal operation which significantly reduces costs and off-hire time for the vessel.

Lars Ole Valøen, EVP and CTO for Corvus explains: "We recognised very early that we could reduce cost and unwanted non-operation for ship owners significantly if we could do the annual SOH test without taking the vessel out of operation. However, due to the high complexity of battery degradation

processes, it has taken almost five years to gather sufficient degradation data from the field and develop robust data-driven SOH algorithms. The work has been carried out by our experienced team of battery experts in collaboration with world-class research institutions and class society DNV. Large amounts of data from our installations, lab test data, and a powerful digital twin approach have been used to allow simplified test procedure requirements without compromising the accuracy of the test. This method will also make more frequent SOH testing a real choice going forward, enabling improved safety and more predictable operation, especially toward the end of life of a battery installation".

Sondre Austreim, responsible for the safety of electrical installations on Norwegian ferry operator Fjord1 25 ferries sailing with Corvus battery systems, says: "Recognising the costly and disruptive nature of traditional State of Health (SOH) testing, which meant taking the vessel out of operation for a full day, we sought a more efficient solution to fulfil this class-

required task without compromising operational continuity. The process was akin to extracting an oil sample from a diesel engine, necessitating its shutdown until the analysis of the sample was completed and the report was received.

Facilitating transition

Japanese classification society ClassNK has extended its services to "support concrete actions by customers towards a smooth transition to shipping zero-emission".

To support its customers' ongoing GHG emissions reduction measures more effectively, the class society is extending its ClassNK Transition Support Services.

It focuses on three types of GHG emissions reduction measures: the introduction of alternative fuels ships, energy efficiency improvement technologies, and the use of onboard CCS, considering customers' needs together and leading to the implementation of the optimal solutions.



spectrumlabs

QUALITY CONTROL LABORATORIES



BUNKER - BALLAST - WASTEWATER - POTABLE WATER ANALYSIS
NEW BUILDINGS ATTENDANCE | MATERIALS TESTING & FAILURE ANALYSIS
NON DESTRUCTIVE TESTING LASER ALIGNMENT & VIBRATION ANALYSIS
CAT FINES ANALYSIS | SUSTAINABILITY ASSESSMENT
ENVIRONMENTAL SURVEYS & TESTING | CONSULTING

Where Quality Comes First



This year's cruise season could be vital to Piraeus ^{©PPA}

RUNNING DRY

The sharp fall in traffic through Suez and regional tensions have made conditions tough for the Eastern Med's bunkerers, John Rickards writes

On top of two years of Black Sea traffic fall-off from the war in Ukraine, the eastern Med has now had to weather trade jitters and geopolitics arising from Israel's advance into Gaza then its increased tension with Iran, and then the slump in Suez Canal transits following the Houthi attacks in the Red Sea and a warning from Ukraine that without the then-stalled US military funding package, it might not be possible to operate the country's grain corridor on any kind of significant level.

With bunkerers at the western end of the Med enjoying a bump in sales as vessels diverted around the Cape of Good Hope stop to refuel on their way through the Strait, those at the other might be forgiven for feeling a little gloomy. But except for the Ukraine war's ongoing effects, most of the rest should hopefully be comparatively shorter in term - and don't directly affect the rest of the region's vessel traffic.

So, there are reasons to be positive.

Coming into those choppy geopolitical waters, Piraeus enjoyed a good year - and this summer's cruise season, a key component of the Greek bunker scene and

broadly immune to trouble elsewhere, is (currently, at least) expected to be a strong one.

According to annual figures released this March, the port's revenues were up 12.9% and profits up over 26%. The figures were the highest in the company's history for both revenue and profitability. 2023's cruise sector saw "remarkable growth" with 12.4% more vessel calls bringing in a hefty 68.6% more passengers (albeit set against an industry still on the long way out of covid restrictions). Homeport passengers surged by 110.4% to nearly 800,000, while 571 ships were homeported out of 760 in total. "Strategic choices led to this significant growth," the port operator said, "showcasing the company's alignment with the pursued objectives enabling the port of Piraeus to significantly bolster the country's position by attracting high-profile tourist flows."

Coastal ferry shipping was up, as were ship dry-dockings, and box traffic ticked up 2% to 5.1m TEU, keeping Piraeus wedged firmly in fourth place among Europe's ports.

Piraeus Port Authority chairman Yu Zenggang, "expressed his evident satisfaction with the company's continued upward financial trajectory, crediting the company's employees for their crucial role in the port's outstanding performance and emphasising the faithful execution of the company's plan and strategy yielding significant results."

"The company remains steadfast in its commitment to the development plan for the Port of Piraeus, executing crucial investments aimed at its modernisation," PPA said in a statement. "This solidifies its position as one of the most significant ports in the Mediterranean and Europe offering top-tier services across all port activities."

Not enjoying such a strong year, but also seeing moves to expand and invest for the future, was Malta Freeport. In its latest annual figures, container handling was down around 4.5% to 2.8m TEU, although ship calls were up 12.5% to 1,803. However, work is underway on the port's first terminal expansion in twenty years. The project will extend the north quay at the Freeport's Terminal Two by 176 metres and



the west quay by 195 metres, to handle “new and future LNG-powered mega containerships” of up to 23,000 TEU.

Freeport CEO Alex Montebello said: “The Terminal Two extension will be win-win for everyone: for our facility’s capability to handle the world’s largest container ships with maximum efficiency, for the Birzebbuga residents and for local importers and exporters, who will benefit from more services than ever before. The project will also generate more than 160 new jobs and take the investment in the facility since privatisation past the €400 million mark, making the Freeport one of the biggest ever investors in Maltese history.”

Maltese bunkering has been hit by the Red Sea crisis, with trade through Suez, along the Med and onwards to Northern Europe significantly down. However, like Greece, this has been mitigated somewhat by the continued strength of the cruise industry. Last year, Valletta Cruise Port saw nearly 900,000 passengers, up 65% on 2022 and “comparing very well” with pre-pandemic levels in 2019 - and with the same draw as Piraeus towards cruise ship repositioning and rebasing for fly-and-cruise holidays. The port added shore power for cruise vessels at the end of 2023 after €49.9m of government investment, installing electrical connections on all five of its main quays.

Port general manager Stephen Xuereb predicts a good year for 2024 as well, saying: “This industry leaves a substantial impact on the Maltese Islands in economic terms: services to ships and services to passengers; flights to and from Malta with an impact on airlines and the airport, with passengers also having the option of spending several days in our country before or after their cruise. Of note is that the industry has not only achieved full normality post-pandemic but is expanding with more than 50 brand new ships on the orderbook by cruise lines within 2028, with 11 entering the supply market during 2024. Locally prospects for 2024 are extremely positive and we believe that we will comfortably surpass the 900,000-passenger movement mark.”

Cyprus has had to confront the depth of some of the country’s financial ties to Russia in the wake of US and EU sanctions post-invasion - though the “Cyprus Confidential” document leak late last year showed just how much oligarchs’ money was being funnelled through the Cypriot economy in the run-up to the war - and is, at the time of writing, also keenly supporting Israel, with whom it has long ties.

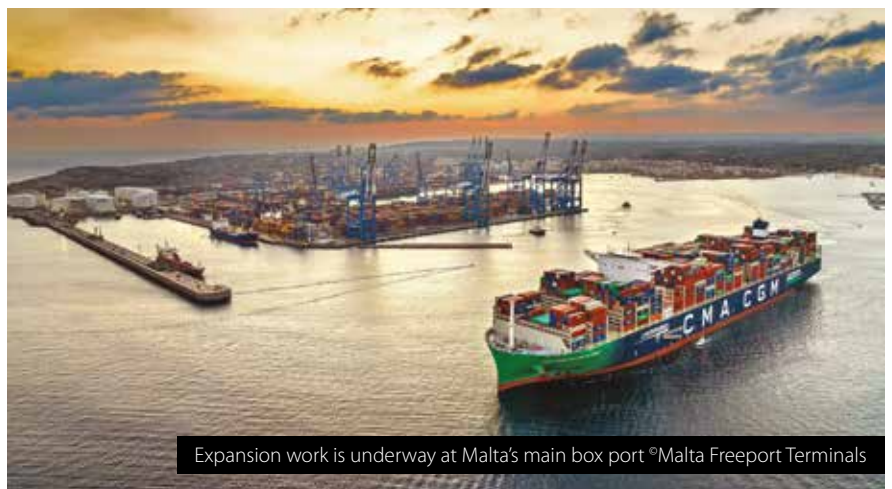
On the bright side, the repeatedly delayed construction of a LNG import and regasification terminal, including bunkering provision, at Vasilikos is back underway. In March this year, the Cypriot government threatened to pull the plug on the €500m-plus project in a dispute between state-run gas company Etyfa, which manages the project, and the consortium building it, led by China Petroleum Pipeline Engineering and Metron Energy. The construction contract was signed back in 2019, and CPP-Metron had already pushed back completion dates three times to leave it two years late (assuming the new target of the end of this year is met) before relations deteriorated so much that work was stopped in January and the consortium took Cyprus to arbitration over €200m it claims it was owed due to cost increases and technical problems.

However, talks between the government and the consortium and the resolution of some of the key issues holding work up seem to have done the trick - not least the energy ministry seeming to take oversight of the project and sidelining Etyfa; a statement issued by the consortium after the talks made it clear that the relationship

had broken down completely, and claimed Etyfa had ignored or refused previous requests to meet and resolve the dispute. At the time of writing, land infrastructure is reported to be around 50% complete, and the FSRU intended for deployment to the terminal is still in a Chinese port awaiting certification to sail. If the terminal can be completed by the end of 2024, not only would it significantly increase LNG traffic to Cyprus, but it’d also represent a first step to the wider use of the transitional fuel within the island’s shipping sector, a welcome boost for the future.

And its biggest bunker operators also seem to be firmly looking to better, cleaner times ahead. Early this year, Island Petroleum, added the 6,544 dwt *M/T Astraia* to its supply fleet operating in Limassol, becoming the company’s largest tanker. Island’s trading manager Elena Christodoulidou said: “This significant addition to our fleet marks an important milestone in our commitment to delivering efficient, reliable, and sustainable solutions to the global shipping community. The vessel’s size and equipment will facilitate even more efficient bunkering operations, in our bid to ensure swift and reliable delivery of marine fuel oils.”

The tanker is “sustainable” in so much as it complies with most recent environmental regulations and best practices as opposed to anything particularly revolutionary, but that’s certainly better than nothing. However, both Island Petroleum and parent fuel trading arm Island Holdings have also attained International Sustainability and Carbon Certification (ISCC EU) for trade and storage of biofuels. The certification aims



Expansion work is underway at Malta’s main box port ©Malta Freeport Terminals

to provide proof of raw material identity and traceability and supports appropriate carbon intensity calculations along the supply chain.

Chrysostomos Papavassiliou, the group's founder and CEO, said: "The ISCC certification reflects our unwavering commitment to sustainable and responsible practices within the marine fuel supply chain. As an experienced and socially responsible marine fuels supplier, Island Oil Holdings recognises the pivotal role that biofuels play in reducing the carbon footprint of the shipping industry. The ISCC certification of our two main subsidiaries underscores the group's dedication to providing sustainable solutions to its global clientele."

Island Oil narrowly beat Turkey's Arkas Bunker to the same certification. Arkas announced in February that it had become the first Turkish bunkerer to gain the accreditation, which it said, "breaks new ground in its sustainability goals".

"We will remain committed to keeping sustainable and environmentally friendly marine fuels at the forefront, in line with the needs of shipowners," said the company's general manager Seçkin Gül.

Turkey is another country that's had to weather its middleman position in the choppy geopolitical waters of late. The Erdogan government has always opposed western sanctions on Russia, though



Limassol should see greener and cleaner bunkering in future ©Sergei Gussev/CC-BY

cargo insurance rules and the like have still restricted trade, but February this year saw one of its oil import terminals stop taking Russian oil after taking on record volumes last year.

Dortyol terminal in Hatay, operated by Global Terminal Services, imported nearly 12m barrels of Russian products last year, seven times more than the year before the invasion of Ukraine, while its exports quintupled. However, GTS has decided to sever any ties to Russian products, though it stressed to Reuters that the company had always complied with all previous sanctions including the price cap.

At the same time Iraqi exports via pipeline, suspended for over a year in a dispute over financing and contracts, still haven't resumed. Because the deal to operate the exports involves the Kurdistan Regional

Government and its petroleum industry, not initially the Iraqi federal government, the supply arrangement has been frozen following an arbitration ruling that it broke treaty agreements between the two countries and would need renegotiation with Iraq. The Iraqi oil ministry claims that foreign oil firms as well as the KRG have yet to submit contracts, but at the same time Iraq owes Turkey minimum payments per day the pipeline *could* be operating - and moreover it's supposed to cut its own production under OPEC plans (which Kurdistan ignores).

Assuming it can get its own cut of the money, the Iraqi government probably ultimately wants things sorted out, the KRG certainly does with the same income guarantees - and Turkey would definitely be happy to have the extra oil export trade, with all its associated benefits in servicing that traffic.



BUNKER SUPPLIES SINCE 1971

EMEA specialists with a global reach.
More than 50 years of experience, competence, and reliability.

Visit our web site: pisanobunker.com

TANGER MED, YOUR BUNKER CALL ON THE STRAIT OF GIBRALTAR

3 BERTHS

7 OPERATIONAL
BARGES

2 ANCHORAGE
AREAS

6 MT
ANNUAL CAPACITY OF
BUNKERING (IN/OUT)

15 MT
TOTAL ANNUAL
HANDLING CAPACITY

Tanger Med is situated on a strategic location on the North African coast of Morocco at the entrance to the Strait of Gibraltar where the Mediterranean Sea meets the Atlantic Ocean.

At the crossroads of major maritime routes, Tanger Med offers dedicated bunkering facility only 14Km from the European Union, Algeciras, and Gibraltar.

Tanger Med includes an oil terminal, managed by **Horizon Terminals** with a storage capacity of over 530 000 M3, fully equipped to provide a bunker service by barge in the port and within the two well situated anchorage areas:

- "Alcazar-Tanger Med West": Situated in front of Tanger Med Port within the strait.
- "Fnideq-Tanger Med East": Situated below the east part of the port
- Also, the terminal is equipped with a laboratory for full spec analysis managed by a recognized independent service provider.

Characteristics of Tanger Med Ouest and Tanger Med East :

- Bunkering activities under way in both anchorage areas and inside the port
- Up to 16 anchorage positions
- Adequate sea ground for anchorage
- Good meteorological and sea conditions
- Many other services available (crew change, Ship chandelling, spare parts transportation, sampling and lab analysis...)
- Low congestion

With multiple anchorage position, both areas offer no congestion for bunkering and service to ships and within reach of transiting shipping lines of the strait.

Supplied and managed by **Minerva Bunkering** (the world's largest physical supplier of marine fuels and related service solutions to ships in port and at sea), the bunkering activity in the port and the anchorage areas has developed tremendously since its inception in 2011 and expect a steady growth due to advantageous conditions applicable for bunker calls only.

**Dedicated Oil Terminal operated
by Horizon Terminals
Multiple anchorage areas directly
on the strait**

TANGER MED
PORT AUTHORITY



MINERVA

www.tangermedport.com

TANGER MED



South Africa's ports have struggled to offer a major bunkering presence ©Axel Bühmann/CC-BY

CAPE STRUGGLES TO COPE

Six months of attacks on passing shipping by Yemen's Houthis since November last year has had major effects on Africa's bunker market, reports John Rickards

At the time of writing, according to the International Monetary Fund's PortWatch project, the seven-day average of vessel transits through the Suez Canal is down around 50% from the year before. Tonnage is down even further, around 60%, as numerous major shipping lines operating between Asia and Europe have redirected their vessels around the Cape of Good Hope. Ships still running the Bab-el-Mandeb Strait are predominantly smaller ones, relying on the US or European naval task forces in the area, good luck, shutting off their AIS, and/or setting their AIS voyage information to things like "No Israel Ties" or "All Turkish Crew" to pass untouched. With war risk premiums enormously hiked and the danger to crews real, the big vessels are steering well south across the Indian Ocean instead.

Tensions in the region haven't been helped by Ethiopia signing a deal at the start of the year with the breakaway region of Somaliland to use the port of Berbera and lease 20km of coastline for a naval base in exchange for recognition as an independent nation. The Somali government has bitterly objected to the move, which it considers illegal and a breach of its sovereignty and said in February it would "defend itself" if Ethiopia tried to press ahead with the move. With the semi-autonomous region of Puntland declaring its withdrawal from the federal

system until constitutional changes put forward by the government can be ratified in a referendum and Somali piracy ticking upwards since the world's eyes turned northward, the Horn of Africa seems dicey at best.

This major shift in trading patterns means more fuel demand, but the volumes and infrastructure involved have posed significant challenges for numerous ports on the loop around the Cape: availability, capacity, congestion, waiting times. Many smaller ports or those which have seen limited investment in recent years aren't able to readily service a sudden influx of major line cargo vessels or don't have sufficient bunker suppliers to handle them without delays; those that do have tended to quickly jam with ships looking to refuel.

As Céline Bacrot and Marc-Antoine Faure, writing for the *UNCTAD Transport and Trade Facilitation Newsletter* summed up in April: "The disruption in the Red Sea and increased shipping traffic around Africa underscore the need for African countries and ports to scale up ongoing efforts aimed at implementing trade facilitation measures, taking up digitalisation and mainstreaming green processes to reduce port congestion and expedite the clearance of goods."

South Africa has come off particularly badly on these scores. Bunker services were suspended in Algoa Bay's Port Elizabeth in September last year after the South African Revenue Service detained five bunker tankers for BP, Trafigura Marine and Minerva Bunkering on suspicion of customs tax violations, chilling relations somewhat with suppliers. And while Durban and Cape Town have seen a rise in interest, they've also seen a consequent rise in bunker costs, with the country still an importer of fuel oils even with Cape Town's refinery reopening last year, and port congestion. With offshore bunkering limited entirely to Algoa Bay, operators can be forgiven for not wanting to chance getting stuck in a portside traffic jam waiting to bunker. South Africa's capacity to act as a major bunker destination has been in question for years, with concerns over port charges and administrative framework dogging bunkerers trying to draw in international trade.

In its most recent half-year financial report (at time of writing), state-owned logistics and port operator Transnet recorded a 1.6bn rand (US\$87m) loss in the first half of the last financial year, down from a narrow profit the year before, on the back of higher costs and falling cargo volumes coupled to ongoing shortages of equipment. The company is billions of dollars in debt and has required hefty cash injections from the South African government to stay afloat.



All that being so, it's no wonder that ships needing fuel on the longer route round the Cape have largely been bypassing South African ports. This despite hugely increased passing trade - research from Clarksons showed that in early March, average gross tonnage rounding the Cape was up 85% on December, with box ships particularly affected; container vessel arrivals more than tripled in the same period.

Instead, it's been ports further up both coasts that have benefited so far, especially Walvis Bay in Namibia and Port Louis in Mauritius, as well as the rapidly expanding port of Maputo in Mozambique. While sudden extra demand for services has at times stretched resources at these ports, they're far less affected by the kind of congestion seen in South Africa.

Maputo has been, and continues to be, heavily redeveloped as Mozambique seeks to establish itself as both a heavy exporter and a regional commercial centre and has already seen increasing bunker interest on the back of this growth. Figures released earlier this year by Maputo Port Development Company showed annual cargo volumes up 16% last year. Of the 31.2 million tonnes of freight handled, about 80% was bulk ores of various types.

Maputo's inland transport links and infrastructure have been something that MPDC has been cautious of. Rail utilisation has improved, dropping road traffic and improving bulk cargo handling, but there's still some way to go.

"The sustainable growth of the transportation corridor continues to be a concern for MPDC. Although there is growth in rail handling, demand for the Port has grown exponentially and so we will continue to work with CFM to seek a better balance between rail and road cargo," said MPDC CEO Osório Lucas.

Despite this, by all accounts the port hasn't been affected by the kind of jams seen elsewhere. Instead, the capacity of the comparatively nascent bunker sector has perhaps been a limiting factor in terms of the volume of calls seen since the Red Sea crisis began.

That's less of a factor in Mauritius. In February-March, both Trafigura and Minerva shifted some of the focus of their regional offshore bunkering operations from Algoa Bay to Port Louis - though both companies are reported to have linked up with local suppliers rather than launching wholly new operations of their own.

Reuters reported that Minerva had done so with Engen Mauritius, while Trafigura inked a deal with Groupe Roland Maurel.

Trafigura's statement on the development was brief and rather chipper: "We've just launched our latest operation location in Port Louis, Mauritius, through a joint-venture with Mauritius bunkering company Groupe Roland Maurel (GRM)."

"The partnership combines TFG Marine's best-in-class approach to marine fuel supply with GRM's local expertise and infrastructure network, to meet the needs of the growing number of shipping customers traversing the Cape of Good Hope."

Not long after, the company announced that the bunker delivery vessel, the *MT Hakkasan*, was to be fitted with a mass flow meter, easing the way for similar additions in future. "While in Port Louis, our delegation also met with local shipyards to discuss the technical specifications necessary for the installation of MFMs on additional barges, underscoring our commitment to expanding the application of this cutting-edge technology across our operations in the region - and to help pave the way for others to follow suit," TFG Marine said in a statement.

Fellow local supplier Stonewin announced in April it had switched bunkering vessels to the newer Verde. No mention of a MFM, but the company did describe it as "state-of-the-art" and able to deliver both VLSFO and HFO as well as MGO.

On the west coast, the biggest player in the market had reshuffled its regional service infrastructure just as the crisis off Yemen was kicking off. Monjasa replaced its chartered 119,456 dwt mothership storage vessel *SKS Dokka* with the 68,589 dwt tanker *Monjasa Leader*, and switched out the 13,000-odd dwt oil and chemical tanker *Monjasa Runner*, used for deliveries to vessels across the WAF region and now sold on to work the western Med, for the similarly sized but confusingly named *Monjasa Refiner*.

Switching more towards an owned fleet would help reduce operating costs, the company said. Group shipping director



Monjasa revamped its WAF fleet late last year ©Monjasa

Torben Maigaard went further: "The *Monjasa Leader* becomes our largest fleet member and represents our single most important tanker acquisition ever. Given the limited opportunities of storing fuel products ashore, our floating storage solution is the backbone of our West Africa marine fuels operations and allows for our supply tankers to frequently go alongside the vessel to load cargo. Providing maritime end-to-end logistics in West Africa is a challenging task, but we are confident that our two new vessels bring the efficiency and flexibility needed."

Flexibility has certainly proved to be useful, in the circumstances. At the start of the year, the company moved three of its WAF fleet to Namibia to serve the uptick in demand in Walvis Bay. The port is already a key commercial and cruise passenger hub, and with recent expansion and investment, and the availability of offshore bunkering via tankers operating out of Walvis Bay, has been able to weather the surge in demand comparatively easily. In mid-April, the Namibian Ports Authority announced that it was allowing bunkers-only calls within port limits, adding further incentive to use it as a fuelling stop en route to and from Europe.

Namport has been steadily growing and developing its service offerings for some years.

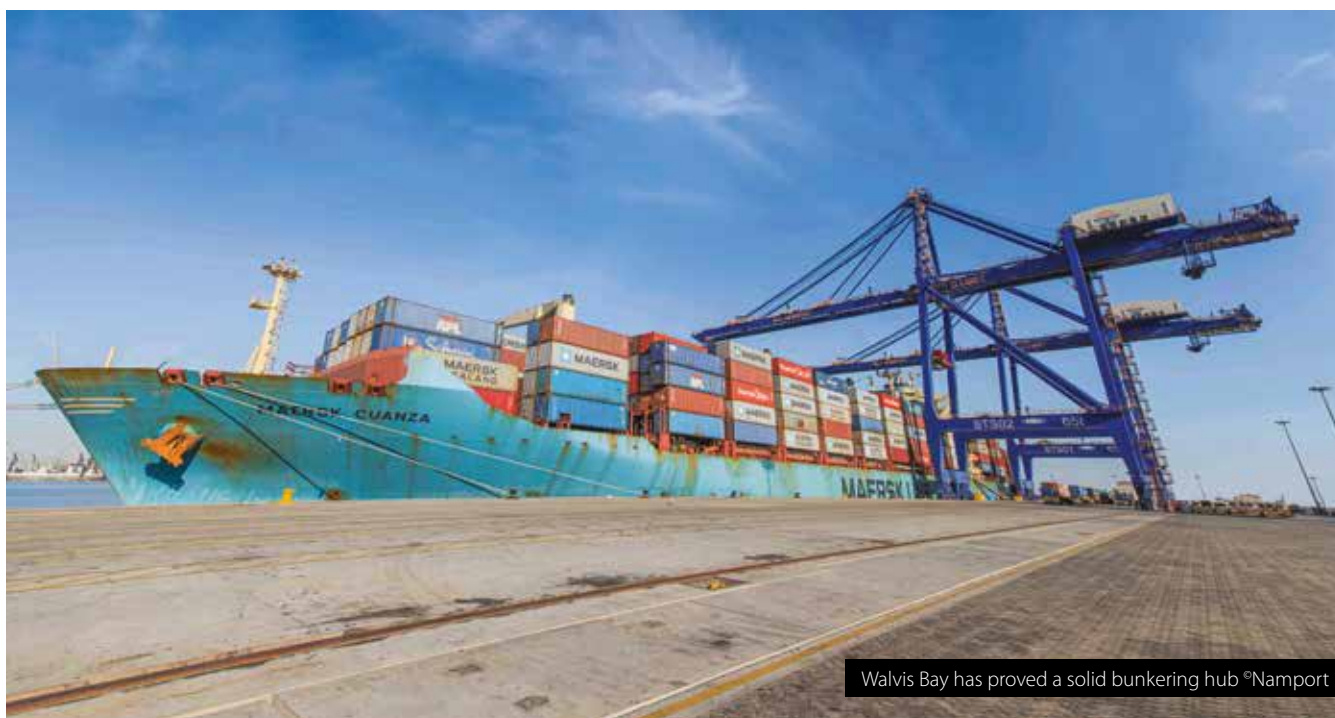
Last year, while profits were down a little compared to 2022, revenue was up 22% to N\$1.5bn, comfortably beating the port authority's own targets, and cargo throughput was up 17% to 7.7m tonnes on the back of higher demand, increased mining output and a rise in overall tonnage of visiting vessels. Looking to its own wider future, the port operator is also extremely keen on becoming an export hub for green hydrogen and ammonia, with the country looking to put US\$20bn in hydrogen projects into action in the coming years.

Chairperson Nangula Hamunyela said: "The developments in Europe and across the world have compelled many countries to seek alternative sources of energy to reduce supply risk and added to the growing demand for energy alternative sources. Namibia's positioning as one of the most competitive and viable sources of green hydrogen production came at the right time. While the world is decarbonising, fossil fuels will remain relevant for years to come, especially in the Southern hemisphere where green energy technologies still lag or are completely non-existent. Namibia's recent oil and gas discoveries are well-placed to resolve European supply challenges resulting from the Russia-Ukraine conflict."

Namport has plans to expand the Port of Lüderitz to add a new deepwater terminal at Angra Point and integrate green hydrogen exports from the Southern Corridor Development Initiative. Its ongoing MoU with the Port of Rotterdam is, it said, providing valuable input in helping position Namibia as a green fuels hub for the future, in addition to increasing supply links with northern Europe. Last year, Belgium's CMB announced plans to build a €2.2bn green ammonia bunkering facility in Walvis Bay.

"Namport recognises the significant potential of green hydrogen production and export as an emerging market and its importance in advancing sustainable energy solutions," the authority said. "The Authority is committed to staying well-informed, exploring further collaborative opportunities and aligning strategies within the evolving market dynamics to ensure that port facilities are adequately prepared to facilitate green hydrogen exports."

The current crisis helping cement Walvis Bay and other Namibian ports as reliable fuelling points now will surely only give Namport an advantage to become a southern African green fuels hub in the future.



Walvis Bay has proved a solid bunkering hub ©Namport



Manta Marine Technologies' automated propulsion optimisation technology system, FuelOpt, is being installed on JJ Uglund's 60,000 DWT bulk carrier Jorita ©JJ Uglund

EQUIPMENT & SERVICES

Our look at what's new

Supporting low-emission operations

Technology group Wärtsilä has signed a lifecycle agreement with UK-based P&O Ferries. The five-year agreement covers two vessels, the *Pioneer* and the *Liberté*, and is said to be intended to optimise and ensure minimal impact on their operations, while providing maintenance cost predictability. The order was booked by Wärtsilä in January 2024.

The scope of the Lifecycle Agreement with P&O Ferries includes parts and maintenance services, as well as maintenance planning, operational support and Wärtsilä's Expert Insight predictive maintenance service. This is designed to ensure issues can be identified before they cause a delay in the schedule.

Both vessels have hybrid propulsion with battery power and four high-efficiency Wärtsilä 31 main engines. They are expected to produce 40% fewer emissions than the ships they replace.

AI bunker data management

Maritime technology company Fuelink has launched a digital platform providing a one-stop shop for bunker data management and fuel supply optimisation using artificial intelligence (AI). The platform is intended to enable effective fuelling strategy forecasting, bunker price comparisons and compliance with the European Union's Emissions Trading System (EU ETS), including inventory management of EU Allowances (EUAs).

The bunker-specific digital platform has been designed to improve transparency, efficiency, and control with all bunker-related information stored in one place. Combining information taken automatically from AIS and noon reports with its AI-based management tool and third-party benchmarking, Fuelink allows the simulation and comparison of both conventional and alternative fuels on different routes, enabling users to make informed decisions on where and when to bunker to achieve the most cost-effective voyage. This includes real-time bunkering readiness data at each port to avoid unnecessary downtime.

Fuelink acts as a central repository for all bunker-related information. The platform records and tracks all deliveries, hosting bunker delivery notes (BDNs), invoices, surveyor reports, Certificates of Quality (CoQs), ISCC information, bunker sampling and analysis reports, statement of facts, and claims handling documentation. This provides ease of access and improves auditing, benchmarking and automated reporting for operational and legal teams.

Propulsion optimisation

Manta Marine Technologies (MMT) says it has secured its four hundredth vessel contract for its automated propulsion optimisation technology system, FuelOpt.

The latest, subscription-based contract is with JJ Uglund for an installation onboard its 60,000 DWT bulk carrier *Jorita*.

This system allows vessels to achieve steady and predictable shaft power, removing costly variations caused by human operational factors and freeing crew up to focus on other essential tasks. Once the crew enters the desired set points and activates the system from the intuitive bridge panel, the system dynamically controls the propulsion output, ensuring that power is always optimised based on the settings defined and changing environmental conditions.

The company says the system is fuel-agnostic and can be used on vessels using conventional or alternative fuels, making it a safe choice for ship owners looking to future proof their investment. It says that FuelOpt also "integrates easily and assists with fuel and emissions reporting and can be utilised alongside AI-technologies for routeing". It adds: "For vessels utilising hybrid propulsion technologies, such as wind assisted propulsion, the automated propulsion optimisation system assists the vessel in dynamically maintaining a target state, automating adjustments to account for changes in surrounding conditions while consuming minimal fuel."



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

+39 0586 219214

bunker@bunkeroil.it

PLANNING THE NET ZERO JOURNEY

David Hughes asks Kristian Korsgaard Pedersen (pictured), Manager of New Fuels and Carbon Markets for major bunker industry player Bunker One about his company's approach to decarbonisation

DH: A range of alternative fuels is being developed to take the shipping industry to net zero. How did Bunker One decide how to proceed to meet the challenges of fuelling the merchant fleet as it decarbonises?

KKP: Bunker One recognises that the future marine fuel landscape will be considerably more complex than today. In addition to our core offering of conventional fuels, Bunker One constantly evaluates opportunities to participate in value chains for new fuel types, waste-based or low-carbon hydrogen derivatives. Our entire industry is on a journey to decarbonise, and our customer-focused approach and agile structure allow us to respond rapidly to opportunities to service this need as and where they present themselves.

DH: Bunker One has been investing in the development of biofuels. Can you outline where the company is with this alternative fuel now?

KKP: We are ready to supply biofuel and biofuel blends in many of our physical supply operations. We acknowledge that the uptake of biofuels has yet to reach a level that will justify dedicated barges and tanks. Still, we are seeing a significant change in our customers' demand. We are moving from a phase where trials and testing were the main reasons for ordering biofuels towards more regular demand motivated by regulations and requests for greener freight solutions.

DH: Biofuels are not without their critics. Do you see biofuels as a long-term solution or just part of the pathway to using hydrogen as marine fuel?

KKP: For the majority of the current global merchant fleet, biofuels offer an immediate solution to reduce emissions. This is possible without investing in new vessels or expensive retrofitting of existing vessels. So, biofuels will undoubtedly be a go-to fuel in the short term.



Even in the medium or long term, biofuels will be needed as a pilot fuel for engines operating on methanol or ammonia. As much as 5-10% may be required.

DH: Bunker One has also moved into methanol bunkering. How is this going? Maersk has gone for methanol in a big way. Do you see methanol as being more widely used than biofuels?

KKP: Methanol will unquestionably form an essential part of the future marine fuel ecosystem. Considering that low-carbon methanol production may develop in a diverse range of locations and relatively modest volumes, this may create an interesting opportunity for Bunker One to play a leading role in sourcing, aggregation and bunkering. It's certainly something that we are currently investigating closely, and I am sure that methanol will be a part of our product range in the not-so-distant future.

DH: Do you plan to also be able to bunker ammonia?

KKP: We view ammonia as a viable future fuel for the shipping industry, positioning it as a pivotal component of our forthcoming commercial offerings. Although we recognise that ammonia bunkering is a few years away from realisation, we are allocating resources today to enhance our expertise and capabilities in this domain.

Working closely with an experienced partner who brings considerable knowledge in the handling and transportation of ammonia, we are actively building our internal competencies and infrastructure. In conjunction with a leading Class Society, we will conduct closed-door working sessions with select clients to address operational challenges associated with bunkering ammonia. We also anticipate becoming more active in industry bodies in the coming months.



Shipping is on the cusp of developing ammonia bunker guidelines and defining what will constitute best practices for this future industry. Bunker One certainly has a role to play in this dialogue, and it is one we look forward to fulfilling.

DH: What about LNG? If the LNG-fuelled fleet continues to increase can Bunker One stay out of that sector?

KKP: LNG continues to develop as a fuel choice for shipping and it looks set to remain relevant for some time to come. Especially as we consider LNG as a stepping stone towards bio-LNG and e-LNG. As such, we continue to evaluate the market and explore opportunities to participate in the future.

DH: Looking ahead five years, how much of your business do you expect to be alternative fuels?

KKP: Our business is driven by our customers' requirements, which are primarily affected by regulations. The volume of low-carbon fuel will undoubtedly increase and diversify over this period. While the total proportion of delivered volumes may stay relatively modest, we foresee a notable rise in the adoption of reduced carbon fuel blends. This shift is deemed essential for ensuring our customers' adherence to environmental regulations. Bunker One supports the IMO targets of 20% absolute reduction and 5% zero/near-zero fuels by 2030 and will facilitate this by making

low-carbon fuels available in its physical operations. Consequently, a substantial percentage of the volumes we provide is expected to incorporate an element of low or zero-carbon fuel by the close of the decade.

DH: Do you expect onboard carbon capture to be a viable option for shipowners?

KKP: There are still a lot of technical challenges around the development of onboard carbon capture for shipping. Until there is clarity on how efficient onboard carbon capture is and when relevant regulations can be entered into law by relevant authorities, it is challenging to say how this market might develop. Onboard carbon capture will, given its nature of allowing continued use of fossil fuel, only be a transitional technology whilst near zero carbon fuels are being matured.

DH: Bunker One can now sell Purify Fuel's nanO_2 fuel combustion catalyst. How well is this being received by the market?

KKP: We are seeing good interest in nanO_2 from our customers. We are currently running trials with selected customers and will further collect data from these tests to evaluate the product's applicability in different fuel types.

DH: Currently, ships can comply with the IMO sulphur cap by using scrubbers and continuing to burn HSFO. Are you expecting HSFO sales to continue for the foreseeable future?

KKP: As we transition towards a zero carbon future, we still need to power the world fleet with fossil fuels. The gradual change will occur over the next few decades, and in our crystal ball HSFO and scrubbers will be a part of the fuel mix. So, unless regulations are tightened in terms of scrubbers and sulphur emissions, HSFO is for sure something that will remain in our product offering.

DH: Are there any other points you would like to make?

KKP: The changes, the global shipping industry is currently witnessing, will have a significant impact on the transport sector. It may be challenging waters to navigate if you do not have a set course and an updated sea chart.

In Bunker One we are closely following the negotiations at IMO on the mid-term measures i.e. an economic mechanism and a global fuel standard to be adopted by the end of 2025. A clear and enforceable regulatory framework is needed to drive the demand for alternative fuels. This way we can continue to help our customers move responsibly.

Bunker One 





©iStock

ENVIRONMENTAL NEWS

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

IBIA and BIMCO collaborate on fuel and maritime challenges

IBIA and BIMCO have signed a Memorandum of Understanding (MOU) to collaborate on "some of the monumental challenges and opportunities within the areas of bunker, marine energy and maritime sectors and help facilitate shipping's decarbonisation efforts".

The two parties have agreed to leverage their respective expertise and resources to develop innovative solutions and initiatives to facilitate the transition towards cleaner fuels and efficient and sustainable shipping practices. The partnership MOU will focus on addressing the following key areas:

Research and Development: Collaborate on research initiatives, studies, and projects relevant to the bunker/marine energy industry and maritime sector.

Information Sharing: Share relevant information, publications, and data that may be beneficial to the members of both organisations.

Training and Education: Explore opportunities for joint training programmes, seminars, and educational initiatives to enhance the knowledge and skills of professionals in the maritime and bunker/marine energy industry.

Influence: Work together on efforts to address common issues and challenges faced by the industry.

Commenting on the MOU, IBIA's Executive Director Alexander Prokopakis stated: "This partnership between IBIA and BIMCO marks an important step towards addressing the pressing challenge of decarbonisation in the shipping industry. The collaboration underscores the industry's collective commitment to navigating towards a greener future for maritime operations."

David Loosley, BIMCO Secretary General & CEO said: "As we work towards the checkpoints and targets of the updated GHG strategy of the IMO, working across all sectors that influence and support decarbonisation of shipping will be key. Our ships will be relying on many different fuel solutions in the process and working toward the safety and availability of those is crucial."

IBIA and BIMCO are committed to driving progress towards a more sustainable and environmentally responsible future for the global shipping industry.

Red Sea crisis "pushes up EU ETS liabilities"

Persistent, and in one case deadly, missile attacks by Houthi rebels on ships plying the Red Sea route have led to soaring emissions liabilities for shipping companies under the EU ETS as lengthy voyage diversions for Europe-bound vessels have multiplied fuel consumption, according to OceanScore.

An increasing number of commercial ships have been taking the alternative route to Europe via the Cape of Good Hope - adding around 9000 nautical miles, or 80%, to the distance sailed - to avoid the Houthi threat as over 50 vessels passing through the Bab-el-Mandeb strait have so far been targeted by the Iran-backed militant group despite protective measures by a broad multi-national coalition.

Recent figures from Clarksons Research show that container ship transits via the Gulf of Aden to the Mediterranean dropped 91% from the first half of December to early March as around 620 vessels have been diverted, while bunker and crude tanker transits are down 37% and 31%, respectively. Conversely, Cape of Good Hope tonnage arrivals have risen 81% since December.

Hamburg-based maritime technology firm OceanScore has calculated the widescale diversion of marine traffic is fuelling the costs of shipping companies due to significantly higher exposure to the EU Emissions Trading System (EU ETS), which imposes liability for 50% of emissions for voyages to and from the EU and 100% for port calls and transits within the bloc.

OceanScore has estimated the route via the Cape has tripled bunker consumption due to the longer distance and an



approximate 25% increase in sailing speed from 16 to 20 knots, based on its AIS tracking of mainly container vessels.

"We have observed increased speeds to compensate for at least some of the longer distance – to keep sailing times and the need for additional tonnage to be deployed at acceptable levels – and this has an inevitable impact on fuel consumption and emissions," OceanScore's co-Managing Director Albrecht Grell says.

Modelling analysis conducted by the firm, based on the case of a 14,000-TEU container ship, has shown the number of EU Allowances (EUA), or carbon credits, necessary to cover emissions would rise from 1,800 to 5,200 per voyage with the current 40% liability requirement under the three-year phase-in of the EU ETS from 1 January 2024, rising to 70% next year and 100% in 2026.

This would translate into a near-threefold increase in EUA costs from €98,000 to €285,000 per voyage this year, based on the current carbon price of around €55 per tonne of CO₂, or a hike of €18 per TEU, according to OceanScore, which is supporting companies with its web-based ETS Manager application for tracking, accounting and allocation of EUAs.

Grell points out that, if the volatile carbon price returns to the level of around €100 that it reached a year ago, these costs would nearly double. "With complete phase in of the EU ETS to 100% of emissions, we would see another 250% increase that would bring the cost mark-up per box to around €80," he says.

"It goes without saying that changes in sailing speeds, different vessel sizes, utilisations and the overall energy efficiency of the vessel used will all have a significant impact on the above analysis – but the general trend will be the same," Grell adds.

While €80 per box "sounds like a lot of money", Grell underlines that EUA liabilities are still not the major cost driver for current high freight rates that reflect increased bunker expenses and tonne-miles sailed with the Cape route.

Singapore and Australia agree on Green and Digital Shipping Corridor

Singapore and Australia signed a Memorandum of Understanding (MOU) in March to formally collaborate on establishing the Singapore-Australia Green and Digital Shipping Corridor (GDSC).

Under the MOU, both countries will work with interested partners to explore opportunities to develop zero or near-zero greenhouse gas (GHG) emission fuel supply chains for the maritime industry, including building necessary infrastructure, formalising standards, and developing and implementing the training requirements.

The MOU will also explore facilitating digital information exchange to enable efficient port clearance, port calls and flow of vessels between Singapore and Australia and facilitate collaboration between the Maritime and Port Authority of Singapore (MPA), Australian federal, state and territory governments, as well as industry stakeholders.

In addition to the MOU, MPA and Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO), supported by Singapore's Agency for Science, Technology and Research (A*STAR), are working to collaborate on research and development, demonstration projects, and pilots under the Australia-Singapore Initiative on Low Emissions Technologies for Maritime and Port Operations (ASLET)¹.

Methanol Institute (MI) and SEA-LNG "concerned" by EU ruling

The Methanol Institute (MI) and SEA-LNG have expressed their "deep concerns" following a recent announcement by the European Commission impacting the trade of biomethane and biomethane-based biofuels such as biomethanol.

The Commission intends to exclude the automatic certification of biomethane, and biomethanol-based fuels produced through mass balance chain of custody in third-party countries outside the EU gas grids within the Union Database (UDB), an IT system to trace the sustainability and origin of renewable fuels placed into service in the European market.

The two industry bodies say: "This exclusion will severely limit the use of these critical fuels in decarbonising intra-European and international maritime transport even if these fuels were produced in accordance with EU regulations under the Renewable Energy Directive (RED)."

MI and SEA-LNG are calling for the recognition of biomethane and biomethanol-based fuels produced using a mass balance chain of custody from non-EU gas grids under the UDB.

Methanol Institute, as the trade association representing the global interests of the methanol industry, and SEA-LNG, a multi-sector industry coalition promoting the benefits of LNG as a marine fuel, say they are particularly concerned about the potential impacts of these measures on competitiveness and international trade dynamics.

They warn: "If this materialises, it will create a trade barrier that threatens to impede the importation of biomethane and biomethanol into the European Union, limiting the availability and increasing the costs of these fuels to the bunkering industry in Europe."

"Furthermore," they argue, "it may also disqualify such fuels produced using a mass balance chain of custody from non-EU gas grids, when bunkered in non-European ports for use by vessels calling at European ports from being recognised under the Renewable Energy Directive (RED). Consequently, these fuels may not be able to generate credits under EU ETS and FuelEU Maritime."

Emissions Reduction Centre in Athens

The Lloyd's Register (LR) Maritime Decarbonisation Hub is collaborating with five major shipowners as founding members in the establishment of a not-for-profit Athens-based global Maritime Emissions Reduction Centre (M-ERC) that will focus on optimising the efficiency of the existing fleet.

The M-ERC is being created with the goal of removing technical, investment and community barriers for the uptake of solutions to reduce the greenhouse gas (GHG) emissions of the existing global fleet,



(From left to right) Dimitris Lyridis, Associate Professor National Technical University of Athens - Natassa Kouvertari, Decarbonisation Programme Manager, LR Maritime Decarbonisation Hub - Spyros Capralos, Chairman of BoD Star Bulk - Philippa Charlton, Chief Marketing Officer, LR - Evangelos Marinakis, Chairman and Founder, Capital Maritime & Trading Corp - Angeliki Frangou, Chairwoman of the Board and CEO of Navios Maritime Partners LP - Michael Lykiardopulo, Principal, NEDA Maritime - Nick Brown, CEO, LR - Nikolas Martinos, CEO, Thenamaris - Elina Papageorgiou, Strategic Growth Director and Vice-President Greece & Cyprus.

offering a collaborative 'safe space' for the maritime value chain's stakeholders, to safely navigate to net zero.

The centre is also intended to play an important role in ensuring that today's ships are suitable for the energy transition whilst ensuring that the people within the industry have the necessary training and skills. These goals will be achieved through research and collaboration with shipyards and original equipment manufacturers (OEMs) alongside the M-ERC's work across society, ports and seafarer organisations to ensure the upskilling and awareness amongst seafarers and shore-based staff.

As part of the collaboration between the LR Maritime Decarbonisation Hub and leading ship owners, including Capital Group, Navios Maritime Partners, Neda Maritime Agency, Star Bulk and Thenamaris, the centre will aim to attract global and regional funding to fund activities, projects and initiatives to deliver on the desired outcomes of the M-ERC. It is anticipated that more shipping stakeholders will join the initiative in the months to come.

European shipowners' welcome EU Net-Zero Industry Act

European shipowners' body ECSA has "strongly welcomed" the inclusion of clean fuels for shipping, including advanced biofuels and e-fuels, in the list of net-zero technologies included in the EU's new Net-Zero Industry Act.

The new law introduces a benchmark for the Commission and the EU Member States to match 40% of the deployment needs for clean fuels for shipping with production capacity.

This is a vital step to ensure that clean fuels for shipping are made available in the market at an affordable price, as a prerequisite for shipping to meet its target under the Fuel EU Maritime Regulation. Scaling up the production and uptake of clean fuels for shipping is a top priority for European shipping.

"European shipowners have consistently requested for a mandate on the European fuel suppliers to scale up and make clean,

affordable and safe fuels available in the market. Matching European fuel industrial capacity with the EU targets under the FuelEU Maritime is essential. We welcome the 40% benchmark for the production of clean fuels such as advanced biofuels and e-fuels as a stepping stone towards an international scale-up of alternative sustainable fuels for shipping. We will work closely with the Commission to ensure that the 40% benchmark is translated into immediate action" said Sotiris Raptis, ECSA's Secretary General.

Cold ironing in Vlissingen

ABB is to provide shoreside shore connection installations allowing DEME's diverse fleet to avoid emissions when berthed in the port of Vlissingen, the Netherlands

Shore connection is intended to enable DEME's diverse fleet of dredgers, offshore construction and support vessels to avoid carbon emissions by shutting off their engines and drawing on shore power while at berth.

Headquartered in Belgium, DEME is a major contractor in the fields of offshore energy, environmental remediation, dredging and marine infrastructure.

The company has set itself a goal of cutting 40% from the greenhouse gases generated by its fleet by 2030 compared to 2008, moving significantly ahead of the revised emissions reduction target set by the IMO in 2023.

ABB will install shore power to connect to suitably equipped vessels calling at Vissingen's DEME base by the end of 2024, as part of the Temporary Shore Power Grant Scheme for Marine Vessels 2022 – 2023, a government-supported initiative that stimulates the construction and use of shore power facilities in Dutch seaports.

Canadian CII now applicable to domestic ships

Since 1 January this year the Canadian Carbon Intensity Indicator (CII) has applied to Canadian ships of 5,000 gross tonnage and above operating only within all Canadian waters (including within the Great Lakes and St Lawrence River) or only within all the aforementioned areas and travelling to ports of the United States provided the ship voyages to these ports comprise 50% or less of annual trips.



St. Lawrence River near the port of Montreal in Canada ©Stock

The CCI does not apply to ships with Category A designation under the Polar Code nor to government ships. Canadian Domestic ships are not subject to application of IMO's Energy Efficiency Existing Ship Index (EEXI) requirements.

Transport Canada found through studies that most of the Canadian fleet could not meet the greenhouse gas (GHG) reduction requirements of the IMO CII. This was due to the unique design and operational characteristics of the Canadian fleet, such as deeper draughts, energy-intensive self-unloading operations in ports without shore-side equipment, lock transits, ice escort, shallow water and speed restrictions.

All have a negative impact on fuel consumption/energy efficiency compared to the international fleet.

Therefore, the Government of Canada has adopted its own GHG reduction targets, which will require action across all sectors as outlined in the 2030 Emissions Reduction Plan. It was determined that the best approach for the domestically trading fleet was to apply the recently adopted IMO measures while factoring in the unique technical and operational characteristics of the Canadian fleet by applying the CII with unique Canadian reference lines.



MARINE SURVEYOR & SERVICES S.L.U.

Our Surveyors are locally based in Spanish Ports of (Ceuta, Tenerife, Las Palmas, Algeciras, Vigo, Bilbao and Gibraltar), Moroccan Ports (Tangier, Casablanca, Safi, Jorf Lasfar, Mohamedia), Algerian Ports (Algiers, Mostaganem, Skikda, Oran).

- ✓ Dry Cargo Survey
- ✓ Liquid Cargo Survey
- ✓ Goods Certification
- ✓ Quality Inspection



T. +34 956 775 480
M. +34 680 849 559
info@marinesurveyorservices.net
www.marinesurveyorservices.net
Ceuta/Spain






SCRUBBERS: AN EVOLVING STORY

Scrubbers are not new, and they are likely to be around for the foreseeable future

Many in the shipping and bunkering industry see exhaust gas cleaning systems (scrubbers) as a temporary technology.

However, according to Anders Skibdal, CEO of scrubber manufacturer PureteQ, this perception is changing “as it becomes evident that we neither have the energy nor the capacity to produce e-fuels at scale for many years to come”.

Whatever the perception, the installation of SOx scrubbers continues. Almost 20% of all newbuildings from Chinese shipyards are being equipped with scrubbers. Retrofitting of scrubbers in Europe is also ongoing.

Scrubbers have existed for more than 100 years and remain a viable technology with numerous applications. The first scrubbers in shipping were inert gas scrubbers for tankers, followed by exhaust gas recirculation (EGR) scrubbers to reduce NOx emissions from larger marine diesel engines, and then SOx scrubbers to reduce sulphur and particle emissions. The next evolution of the technology involves absorption towers and desorption towers for carbon capture, as well as scrubbers for unwanted emissions from new e-fuels.

According to Skibdal, scrubbers are here to stay in one form or another “and they do not pollute – combustion of fuel does”.

He notes: “Predicting future ship fuel has become nearly impossible, prompting ship owners to find ways to secure the needed capacity. However, only a fraction of the required green fuels seems to be available, necessitating a focus on future-proof seaborne logistics that are cost-effective and, at the same time, comply with stricter global regulations. The low-hanging fruit is energy optimisation in any form, and this seems to have taken the headlines, replacing the wonders of methanol and ammonia. Additionally, we see an ever-growing interest in Onboard Carbon Capture & Storage (OCCS).”

“At PureteQ, we do not find this relevant until some of the uncertainties in the value chain are resolved, such as legislation, infrastructure, classification, safety, measurements, etc. The “minus C” in the EEDI/EEXI and CII must be defined and measurable to ensure a level playing field for owners, operators, and technology providers,” says Skibdal.

Recently, scrubbers have come under attack from NGOs and politicians in Scandinavia while Denmark intends to ban emissions from scrubbers within a 12 nautical mile zone. If implemented, this means that vessels transiting through Danish waters can still use open-loop scrubbers, but vessels bound for Denmark will have to use compliant fuel and switch off scrubber systems.

This is straightforward for SOx scrubbers but may pose a problem for EGR scrubbers,

inert scrubbers, etc, which will need to establish more tank capacity, as bleed-off is not permitted.

Skibdal adds: “Hopefully, the Danish government will come to its senses and allow for cleaned bleed-off and instead apply stricter border limits for the wash-water. A ban would increase air pollution and CO₂ emissions, contradicting the purpose of scrubber implementation, which is to reduce air pollution. Instead of banning technologies, politicians should establish goal-based legislation, enforce stricter emission limits, maintain technology neutrality, and ensure robustness to attract investment in environmental initiatives.

As technology providers, we support stricter regulation with fair enforcement to ensure a level playing field.”





PureteQ

SIMPLIFIED EGCS AND EGR MONITORING

PureteQ A/S specializes in designing and maintaining built-to-fit maritime scrubbers including automated control and monitoring systems with remote accessibility and an energy optimisation programme.

The **PureteQ WMS013 Water Monitoring System** is designed for simple installation and operation with only one central monitoring cabinet, reducing sensor maintenance costs significantly. The control system and related software ease retrofitting to any existing EGCS/EGR.

ClassNK and BV approved.



WWW.PURETEQ.COM



INDUSTRY NEWS

Our regular round-up of developments

Digital delivery

TotalEnergies Marine Fuels has conducted its first digital bunker delivery for Mitsui O.S.K. Lines (MOL) in Singapore. The company adopted Bunkerchain's eBDN system, Touch and Sail, and subsequently supplied fuel to the MOL-owned car carrier *Swallow Ace*, on 2 February, issuing an eBDN in the process.

The transaction was also transmitted to the Maritime and Port Authority of Singapore through the digital bunkering platform.

The company's vice president, Louise Tricoire: "Digitalising bunkering eliminates the risk of human errors and saves on paperwork conducted during the operation by a number of people at varying times, some of which involves physical contact by crews from vessel to vessel as signatures are gathered and documents swapped. Just under 40,000 man-days a year could be saved by the industry by digitising bunkering, according to the MPA."

Engine maker admits false fuel consumption data

Japanese engine maker IHI Corp has admitted that a subsidiary has falsified fuel efficiency data for 4,361 engines, mostly for ships, produced at least since 2003 for the domestic and overseas markets.

The data-rigging was found at IHI Power Systems' plants in Niigata and Gunma

prefectures, with data doctored during tests to make their fuel economy look better, IHI said. It also said 2,058 of the engines did not meet the specifications set under contracts with its customers.

According to IHI some of the engines could break nitrogen oxide emissions regulations stipulated by Japan's Marine Pollution Prevention Law and IMO regulations.

Australia trading desk for Integr8 Fuels

Bunker trading and fuel management services company Integr8 Fuels has opened a trading desk in Perth, Australia.

It says that the "strategic expansion positions Integr8 to better serve its international clientele by broadening supply chain capabilities and delivering expertise suited to the Australasian bunkering sector". Integr8 also says it aims to "capitalise on new domestic business opportunities in Australia, by catering to the burgeoning renewables segment and offshore oil & gas projects".

"Our expansion into Australasia is a natural progression reflecting our commitment to providing clients with tailored support and localised market intelligence," said Yusuff Shah, Australasia Trading Lead for Integr8 Fuels. "With our on-the-ground presence in Perth, we can better understand the unique challenges and opportunities this region presents."

Integr8 Fuels Australia's Business Manager Chris Seidel says: "The dynamic evolution of the Australasian bunker market reflects mounting interest in the exploration of alternative energy solutions and our commitment lies in supporting clients as they navigate the opportunities and challenges that this momentous transition offers. Fundamental to this will be building and reinforcing partnerships with trusted, hands-on local suppliers."

New digital platform

Maritime technology provider Fuelink has launched a new platform providing, it says, "a one stop shop for bunker data management and fuel supply optimisation". It is intended that the platform will enable effective fuelling strategy forecasting, bunker price comparisons and compliance with the European Union's Emissions Trading System (EU ETS), including inventory management of EU Allowances (EUAs).

The bunker-specific digital platform has been designed to improve transparency, efficiency, and control with all bunker-related information stored in one place. Combining information taken automatically from AIS and noon reports with its AI-based management tool and third-party benchmarking, Fuelink allows the simulation and comparison of both conventional and alternative fuels on different routes, enabling users to make informed decisions on where and when to



From left to right, Konstantin Bronetskiy, General Manager of Fuelink, Nicholas Argyrou, Key Account Director of Baseblue, Lars Nielsen, CEO of Baseblue, Mark O'Neil, CEO of Schoeller Holdings, Kyriakos Vlachos, CFO of Schoeller Holdings, Gregory Gregoriou, CCO of Baseblue ©Debra Massey

It adds: "The bunker market's legacy manual processes mean that data entries commonly contain inaccuracies, which leads to raised claims and additional costs. By directly and automatically transferring eBDN data into the procurement system, the new integration is a true step forward for transparency in the bunker market; improving operational efficiency, fostering stronger supplier relationships, and ensuring adherence to payment schedules."

Bunkering app "ready for use"

The Peart Group's recently launched bunkering app Bridge is now "fully live and ready for buyers and suppliers to connect, chat and fix in a much more straightforward, efficient and secure way than ever before, removing the complexity of multiple engagements, across multiple platforms."

Peart says Bridge has been designed by a team with many years of experience in the bunkers market and who possess a deep knowledge of what buyers and suppliers around the world require. It adds: "Whilst there is an increasing shift to digitalisation across the sector, Bridge differentiates itself from other more operationally focused apps, by enabling the complete bunker transaction, underpinned by full visibility and control, which is particularly valuable for compliance, as well as other areas where transparency is key."

bunker to achieve the most cost-effective voyage. This includes real time bunkering readiness data at each port to avoid unnecessary downtime.

E-Learning course on ammonia

Ocean Technologies Group (OTG) has launched what it says is the world's first ammonia fuel safety e-learning title to familiarise seafarers with the differences in handling, storage and safety precautions needed on ammonia fuelled vessels.

OTG says that while ammonia is already transported as a cargo on specialist tankers and is sometimes used as a refrigerant at sea, common working practices are not yet established when using it as a fuel, with most crew unaware of its properties and how to handle it safely.

Ahead of the IMO producing interim guidelines in September 2024, OTG has engaged with working groups including The Nautical Institute and those formed as part of the Just Transition Task Force as they develop competencies for safely handling ammonia as a fuel.

"The first ammonia-powered ships are due next year, so it was essential for OTG to develop this e-learning module to ensure seafarers are prepared for the significant differences in handling ammonia as a fuel when compared with existing hydrocarbon-based fuels. This new release builds on our "Introduction to New Fuel Types" title and is the first of a series on

specific new fuel handling courses, with hydrogen coming next," said Knut Mikalsen, Director of Learning Solutions for OTG.

eBDN service

Technology company ZeroNorth has launched a new service to enhance data integration between bunker suppliers and buyers using its electronic bunker delivery note (eBDN) solution.

The company says: "The new solution works by transitioning eBDN data into procurement systems and facilitating automatic matching with corresponding supplier orders. Payment processes are then initiated automatically without manual intervention."

Ocean Technologies Group has created the world's first ammonia fuel safety e-learning title. ©Debra Massey





CHECKING GHC REDUCTIONS

KR verifies biofuel-using company's GHG calculation methodology

KR has awarded a third-party verification certificate for a Greenhouse Gas Reduction (GHG) Calculation Methodology developed by South Korea's largest shipping company, HMM which is adopting the use of biofuels. The methodology is based on the EU's Renewable Energy Directive II.

It involves calculating the amount of reduced greenhouse gases based on the fuel's life cycle emissions (WtW, Well-to-Wake), which includes WtT (Well-to-Tank) and TtW (Tank-to-Wake) emissions. HMM uses this verified methodology in its Green Sailing Service. This aims to help shippers and stakeholders reduce Scope 3 carbon emissions, by allowing them to report carbon reductions directly resulting from HMM vessels sailing on low-carbon fuels.

HMM describes itself as being "at the forefront of adopting biofuel, collaborating with GS Caltex and KR". Last year HMM carried out a successful biofuel trial on its 6,400 TEU container ship, *HMM TACOMA*.

Meanwhile an increasing number of shipowners are using biofuel. In 2023 biofuel sales in Singapore reached around 520,000 tonnes, according to the Maritime and Port Authority of Singapore (MPA), up from 140,000 tonnes in 2022.

Vitol Bunkers has completed the first delivery of B30 biofuel blend in Singapore, the first time that biofuel above concentration B25 has been delivered.

A total of 1,100 tonnes of VLSFO B30 was delivered on 14 March 2024 to the vehicle carrier *Grand Hero*, chartered by Hyundai Glovis. The delivery was carried out by Vitol Bunkers's bunker barge *Marine Future*, that the company says is "uniquely capable of supplying biofuel blends including B24, B30 and up to B100".

Offshore drilling services company Glomar Offshore says it has reduced its CO₂ emissions by 28% by switching from traditional fuels to FincoEnergies subsidiary GoodFuels' HVO30 marine biofuel blend.

Global independent marine energy supplier Peninsula has deployed an IMO II chemical tanker to Barcelona. The company says that the *Aalborg* is capable of supplying 100% biofuels (B100), "in contrast to traditional fuel barges that cannot exceed 25% bio component".

According to Peninsula, the vessel supplies FAME (Fatty Acid Methyl Esters) produced from vegetable oils and allows for neutral emissions (depending on the origin of these vegetable oils)

"The importance of having a biofuel supply vessel permitted to supply up to 100% bio component, will provide Port of Barcelona users with a solution to decarbonise their activity and to fully comply with EU regulations. The Port of Barcelona, as part of its Energy Transition Plan, is committed to transition and alternative fuels such as LNG, green methanol or green ammonia, as well as biofuels, which will help to reduce the maritime sector's carbon footprint," comments Lluís Salvadó, president of the Port of Barcelona.



The Magellan Discoverer is the first hybrid electric vessel to be built in South America ©Antarctica21 and ASENAV

ZERO EMISSIONS

Fuel cells power ferry and boutique cruise ship newbuilds

A zero-emission ropax ferry for the Estonian State Fleet is to be fitted with hydrogen fuel-cell battery propulsion.

Lloyd's Register (LR) has awarded Approval in Principle (AiP) for a hydrogen fuel-cell ferry designed by Finnish ship design and engineering company Deltamarin.

The zero emissions ferry is to be operated between the Estonian mainland and the islands of Saaremaa and Hiiumaa, on the Virtsu-Kuivastu and Rohuküla-Heltermaa routes, which connect the Baltic nation to its two largest islands.

As part of the certification, LR approved the current stage of the design process to be suitable for further design, construction and procurement of the ropax ferry. The thorough AiP process was conducted by LR experts and led by its Hamburg Technical Support Office.

LR Key Account Manager Patrick Wrede said: "LR is pleased to have acted as a trusted adviser on this project with Estonian State Fleet to provide the Estonian government with a new battery-hydrogen fuelled ferry for the Virtsu-Kuivastu and Rohuküla-Heltermaa routes. Not only will this ferry help to progress the transition towards low and zero carbon vessels, but

it will also provide improved connectivity between Estonia and its largest islands."

Deltamarin's sales director Esa Jokioinen said that the development of the design was the result of "very extensive and thorough research of requirements of end users, where particular attention has been paid on safety, efficiency and environmental matters".

Estonian State Fleet's director general Andres Laasma said: "The Estonian State Fleet is committed to leading the way in innovation within its sector. To achieve this, we have undertaken a project to develop a passenger ship with a remarkably high level of autonomy. Despite the challenges involved in this complex endeavour, including regulatory hurdles, technological risks, and significant initial investments, the potential benefits are considerable. These benefits include cost savings, market leadership, innovation, and a positive impact on the environment. The Estonian State Fleet is confident that this strategic advantage will propel us to the top of our industry, setting the standard for others to follow."

Meanwhile Swedish-Swiss technology company ABB is to power the first hybrid-electric polar expedition cruise ship built

in South America. Chilean shipyard Astilleros y Servicios Navales (ASENAV) has ordered ABB's power and propulsion systems for Antarctica21's newbuild polar expedition cruise ship, *Magellan Discoverer*.

According to ABB, the project marks a milestone as the first installation of Azipod propulsion technology on a hybrid-electric vessel built in the Americas.

Accommodating up to 96 passengers and 67 crew members, the vessel will be operating in the Antarctic Peninsula, South Georgia and the Falkland Islands. It is due for delivery in 2026.

ABB's scope of supply comprises the Azipod propulsion system and a hybrid power plant featuring the Onboard DC Grid power distribution system, with battery bank from Corvus Energy. The ship's energy storage system allows the engines to be switched off for silent operations in environmentally sensitive areas. ABB's Onboard DC Grid enables integrating a wide range of energy sources, including fuel cells, ensuring, says ABB, that the vessel is ready to comply with stricter emission regulations in the future.

FIREFIGHTING CONCERNS

Study "demonstrates the need for new safety rules for methanol-fuelled vessels"

According to a new fire safety study existing firefighting methods used to extinguish machinery space spray and pool fires on conventionally fuelled vessels are inadequate when dealing with methanol-based fires.

The finding by an investigation by safety technology Survitec follows extensive comparative fire tests on dual-fuel marine engines using diesel oil (DO) and methanol.

"Our tests confirm that traditional water mist fire suppression mechanisms do not perform as expected on methanol pool fires and methanol spray fires. A completely different approach is required if these ships are to remain safe," said the company's product manager, water mist systems, Michal Sadzynski.

The company notes that ethanol is a methyl alcohol (CH₃OH) that burns in a completely different way to other hydrocarbon fuels and has a much lower flashpoint of 12°C (54°F). However, while there are established fire safety regulations and testing standards for diesel fuels, clear test protocols for alcohol-based fuels such as methanol and ethanol have yet to be developed.

"We believe this is a high-risk situation that needs immediate action," stressed Sadzynski. "Methanol fires are far more aggressive than fires involving traditional hydrocarbon fuels. Methanol fires have different physicochemical properties and so they cannot be extinguished as easily or with the same approach."

Survitec said its tests found that while water mist systems are highly effective in absorbing heat and displacing oxygen on diesel fires, they do not produce the same results on methanol fires.

"We had to completely rethink nozzle placement, spacing and other factors to make water mist suppression effective on methanol. For instance, the range for nozzle installation height is much lower than that needed to put out a diesel fire," Sadzynski said.

The implication is that if existing vessels are retrofitted to run on methanol, they would need to overhaul and redesign their fixed firefighting arrangement completely.

For bilge areas, statutory rules formulated in IMO MSC.1/Circ.1621 establish a requirement for an approved alcohol-resistant foam system for ships running on methanol. For the first time, a fixed, low expansion foam system is mandatory under the rules when it comes to protecting machinery space bilges.

"Our tests demonstrate that standard discharge devices do not properly extinguish methanol pool fires in the confined bilge space. It is crucial to deliver properly expanded foam on the methanol pool fire and this is not an easy task within such a narrow space where throw length is limited," said the company's product manager, foam systems, Maciej Niescioruk.

He added: "MSC.1/Circ.1621 provides us with a starting guideline but it is very general and therefore open to interpretation. Moreover, methanol compliance for Local Application Firefighting (LAFF) systems is not yet covered. As an industry, we need to come together and develop comprehensive and robust fire test standards and safety rules tailored to methanol's unique properties.

Survitec noted that orders for methanol-fuelled newbuilds increased by 9% in the last 12 months, 2% more than those for LNG-fuelled ships and analysts have suggested the methanol-fuelled fleet will account for 20 million GT by 2028.

"We are seeing a significant uptake in orders for methanol-fuelled vessels, with 2023 being the breakout year for this alternative marine fuel. With more methanol-powered ships being built every year, the industry must act now to prevent dangerous gaps in fire safety," said Niescioruk.

Methanol plus battery hybrid propulsion

Norwegian shipowners Eidesvik Offshore and Agalas have set up a new company to own a newbuild construction support vessel to perform subsea and offshore wind operations. She will be equipped with methanol engines and a battery hybrid system making her, the companies say, the "world's most environmentally-friendly vessel within its operating segments".

Eidesvik hold a majority stake of 50.1%. The remaining shares will be owned by Northern Norway shipowners Agalas. In addition, Eidesvik Agalas AS has been granted options for four additional vessels.





The vessel is set to be built at the Sefine Shipyard in Turkey with delivery in early 2026. The newbuild will be equipped to perform inspection, maintenance and repair (IMR) work. Upon delivery she will enter into a three to five-year time charter with Reach Subsea. Full management of the vessel, including crewing, will be provided by Eidesvik.

Auxiliary engines

Technology group Wärtsilä is to supply the methanol-fuelled auxiliary engines for five new container vessels for COSCO Shipping Lines Co., Ltd and seven new container vessels for Orient Overseas Container Line. Each vessel will operate with three 8-cylinder and two 6-cylinder Wärtsilä 32M engines. This is the Chinese maritime sector's largest order to date for methanol-fuelled newbuild vessels.

The Wärtsilä 32M methanol-fuelled engine has received type approval certificates from several classification societies around the world. Studies have shown that using methanol instead of heavy fuel oil can cut CO₂ and other GHG emissions. In particular, green methanol derived from renewable sources could achieve a further reduction in carbon footprint and thus becomes one of the central decarbonisation solutions for carriers in the future.

The Orient Overseas Container Line's 24,000 TEU ships are to be built at the Nantong COSCO KHI Ship Engineering yard, and the COSCO Shipping Lines' 24,000 TEU ships at the Dalian COSCO KHI Ship Engineering yard. The vessels are expected to commence commercial operations in 2026.

Methanol bunkering at Savannah

The Stena Provident, one of six state-of-the-art methanol fuelled IMOII MeMAX ships commissioned through the partnership between Proman and Stena Bulk, completed the first ever methanol bunkering at the Port of Savannah, in Georgia, US on 29 February 2024. The vessel, which is time-chartered by Bahri Chemicals, successfully loaded almost 1,000 tonnes of methanol at Colonial Terminals' Lathrop 2 facility, in an historic first for the port.

Anita Gajadhar, Executive Director of Marketing and Logistics at Proman, said: "Savannah is a significant port and completing the first ever methanol bunkering here underlines the growing demand for methanol as a marine fuel, and the increasing industry acceptance of its role on the pathway to achieving a lower-emission future for the shipping sector."

She added: "Our fleet of methanol fuelled vessels have been in operation around the world for over 20 months and we are proud to be enabling others to gain valuable operational experience of using methanol as a marine fuel by time chartering Stena Provident and other ships in the fleet. The bunkering was made possible thanks to the collaboration with Bahri Chemicals and Colonial Terminals, and I am sure it marks the first of many methanol refuellings at the port."

"We pride ourselves on the safe and efficient handling of our customers' diverse mix of bulk products, as well as leading and supporting marketplace innovation," said Ryan Chandler, President of Colonial Terminals. "We are grateful to be included in this collaborative effort that supplied the first methanol bunkers in the Savannah market."

Terence Collins, Director Chartering at Bahri Chemicals added: "We'd like to applaud our partners at Proman and Colonial Terminals for their expert handling of the inaugural methanol bunkering procedure in Savannah. We are quite sure this will be the first of many smooth and successful operations at the terminal not only for us, but for many other operators."



Methanol bunkering at Savannah Port



SMOOTHING THE WAY

Recent developments in the hull coatings scene

Using ITCH “does not degrade coatings”

Norwegian technology developer Shipshave says that independent laboratory testing has confirmed there is no decrease in the thickness of hull coatings from the use of its In-Transit Cleaning of Hulls (ITCH) solution. The company says the results address a key industry concern over adoption of the innovative system.

Shipshave commissioned the Endures laboratory in the Netherlands to perform thorough tests to investigate the impact on the thickness and roughness of anti-fouling coatings from repeated brushing with the ITCH system.

Several coated panels treated with two main anti-fouling coatings - self-polishing copolymers (SPC) and fouling release coatings (FRC) - from three suppliers were exposed to natural sea water over a two-month period and then subjected to a test simulating one year of monthly proactive cleaning, with the layer thickness and surface roughness of the coating measured before, during and after cleaning.

Testing was carried out using four different brushes with varying fibre thickness placed at different angles on the ITCH system.

The semi-autonomous hull-cleaning robot, which can be deployed by a ship's crew from a portable winch mounted on the forecastle deck, swipes up and down the hull underwater in transit using hydrodynamic energy to remain attached to the hull.

The newly published test report concluded that “no decrease in coating thickness could be found for all brush types used on all coatings” and therefore that “the ITCH can be used as a tool to remove fouling as it does not influence or reduce the coating thickness”.

The testing did show some increase in surface roughness, with no further increase after initial brushing, but the resulting roughness was still well within what is considered acceptable for a well-performing, freshly coated hull. Consequently, the “increase in roughness is neglect-able from a hydrodynamical point of view”, according to the report.

Going copper-free

US-based coatings manufacturer PPG has launched its PPG Nexeon 810 product which it describes as “an innovative copper-free anti-fouling developed with a strong emphasis on vessel performance, emissions reduction and sustainability”.

PPG says that independent tests confirm that the ultra-smooth surface of PPG Nexeon 810 coating “can yield an immediate boost in power of up to 10%

and enhance operational efficiency by up to 15% due to improved fouling control performance”.

The manufacturer says that using the new coating reduces fuel consumption and significantly lowers greenhouse gas (GHG) emissions, enabling a vessel to sustain higher speeds while helping vessel owners and operators remain compliant with IMO's carbon intensity indicator (CII) requirements of the International Maritime Organization.

PPG claims: “The coating's unique formula can achieve a total reduction of up to 25% in GHG emissions compared to traditional anti-fouling coatings and supports 60 days of idle time resistance with minimal speed loss.”

It adds: “The unique binder technology ensures that the coating offers controlled and predictable solubility, guaranteeing strong performance throughout the vessel's operational period. PPG Nexeon 810 coating is also suitable for electrostatic application and offers outstanding colour retention throughout the entire service life of the vessel.”



PPG has unveiled PPG NEXEON 810 marine coating, an ultra-low friction, premium copper-free antifouling that delivers significant emissions savings

CUTTING METHANE SLIP

Onboard tests of catalyst system to start later this year

Japanese companies Hitachi Zosen Corporation, Mitsui O.S.K. Lines (MOL), and Yanmar Power Technology Co report that they achieved a 93.8% reduction rate, at an engine load of 100%, in the development of the technology to reduce the methane slip from LNG-fuelled vessels through a catalyst system and engine improvements.

The project was adopted by the country's New Energy and Industrial Technology Development Organisation (NEDO), and results have been verified by ClassNK (NK) which has issued a Statement of Fact (SOF).

The project aims to achieve a 70% or more reduction in methane slip from LNG-fuelled vessels by combining a methane oxidation catalyst system with engine improvements during the six-year period from fiscal 2021 to fiscal 2026.

In 2022, Hitachi Zosen and the Yanmar developed their methane oxidation catalyst system, which reduces methane slip by oxidizing methane emitted from marine engines fuelled by LNG. This received NK's approval in principle. In December 2023, a land-based test achieved a reduction rate of 93.8%, far exceeding the 70% target. The results were considered by NEDO and the project was selected for continued support in February 2024. The onboard tests will commence on MOL's large coal carrier *Reimei* in the autumn.

Ship-to-ship LNG bunkering at Singapore and Emden

Pavilion Energy's newbuild LNG Bunker Vessel *Brassavola* has commenced ship-to-ship (STS) LNG bunkering operations, delivering 1970 tonnes to Rio Tinto-chartered dual-fuelled bulk carrier *Mount Api*. This follows the recent delivery of *Brassavola* to Pavilion Energy two weeks ago.

Equipped with dual-fuel engines, the Singapore-built *Brassavola* is also the country's first membrane LNG bunker vessel and can deliver up to 2,000 cubic metres an hour.



Ceremony to receive the Statement of Fact

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

KPI OceanConnect notes that executing a 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.

Michael Schaap, Commercial Director, Titan, commented: "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."

Jesper Sørensen, Global Head of Alternative Fuels and Carbon Markets, KPI OceanConnect, commented: "This significant achievement underscores KPI OceanConnect's unwavering commitment to supporting the growing role of LNG in the shipping industry's energy transition. The operation marks our inaugural LNG deal for a car carrier – testament to the company's dedication to advancing sustainability through partnerships up and down the supply chain."

He added: "Cooperation between fuel providers and buyers in the market is essential to supporting capacity growth and, crucially, immediately reducing greenhouse gas emissions (GHG) from the industry."

The three companies assert: "LNG offers substantial environmental benefits, with potential GHG emission reductions of up to 23% on a well-to-wake basis and depending on engine technology. Notably, LNG achieves nearly total reduction in local SOx emissions and particulate matter, and up to a 95% reduction in NOx emissions."



Demonstration Vessel REIMEI

WHAT TO DO WITH CAPTURED CO₂?

New study finds ports are not ready to offload onboard captured carbon dioxide, posing a key barrier to large-scale commercialisation

Considerable effort is being put into developing Onboard Carbon Capture and Storage (OCCS) but disposing or making use of the captured CO₂ remain significant challenges. However recent research has identified potential uses in the chemicals industry.

A study commissioned by the Global Centre for Maritime Decarbonisation (GCMD), in collaboration with Lloyd's Register and professional services company Arup, has identified low port readiness as a major hurdle bottlenecking the adoption of OCCS systems as a practicable decarbonisation solution. It found that, while the technologies required for offloading onboard captured CO₂ exist at high levels of maturity, safe transfer of captured CO₂ transfer by trained personnel has not been demonstrated.

The report, *Concept study to offload onboard captured CO₂*, found that while a limited number of ports possess the infrastructure to offload liquefied CO₂ (LCO₂), they are primarily designed to handle food-grade CO₂. The higher purity standards that accompany this use limits the interoperability of facilities to handle onboard captured CO₂.

The study examined over ten planned LCO₂ related infrastructure projects worldwide. Located near, or with transport links from, CO₂-emitting industrial clusters, these projects are likely to handle much larger volumes of captured CO₂ than that from OCCS systems; port infrastructure needed for offloading, storing and transporting onboard captured CO₂ will likely need to be integrated with these projects for economies of scale. However, as many of such projects remain in concept phase and have not reached final investment decision (FID), ports have not proceeded with offloading infrastructure investments.

The report notes: "This chicken-and-egg dilemma highlights the overall infancy of the carbon value chain." It adds: "Furthermore, introducing LCO₂ offloading into already complex port operations will likely impact port efficiency and operational performance. The need for additional buffer zones to address the safety concerns of LCO₂ handling and storage will also add to existing space constraints at ports and terminals."

The nine-month long study aimed to address a gap in the onboard carbon capture value chain. The study complements GCMD's Project REMARCCABLE (Realising Maritime Carbon Capture to demonstrate the Ability to Lower Emissions) by addressing the feasibility of OCCS as a practicable, end-to-end solution at scale. For OCCS systems to be operationally feasible, the industry needs to develop a collaborative ecosystem to enable the value chain for managing captured CO₂.

The study determined that captured CO₂ in its liquefied form is likely the most efficient and cost-effective option for onboard storage and transport. Based on this, the study shortlisted four concepts covering key offloading modalities, such as Ship-to-Ship and Ship-to-Shore, serving as building blocks that can be combined to cover a wider range of offloading concepts.

In ranking the operability of these concepts, the study identified ship-to-ship and ship-to-shore transfers using an intermediate LCO₂ receiving vessel as the most promising modalities for offloading at scale, with captured CO₂ eventually sequestered or used as feedstock for manufacturing synthetic fuels.

Ship-to-Terminal transfer of captured CO₂ stored in ISO tank containers was identified to be more compatible at smaller scales and for end uses that

require higher grades of CO₂. This mode of transfer is also most compatible with existing port infrastructure and therefore easier to pilot today.

The study notes that handling LCO₂ onboard presents a unique set of safety challenges not commonly encountered when handling fuels in shipping. The study carried out an in-depth examination of hazards, such as asphyxiation and toxicity, if a leak or a loss of containment takes place.

Unique to CO₂ is evaluation of its storage at conditions near its triple point, where the gaseous, liquid and solid phases of CO₂ co-exist. Storage at or near the triple point is sensitive to impurities, and minor changes in temperature and pressure can lead to a phase change from liquid to solid CO₂, leading to hazardous situations, such as blockage in pipes and build-up of pressure.

To address these hazards, a series of safety studies, including a Hazard Identification (HAZID) of offloading, Simultaneous Operations (SIMOPS) and a coarse Quantitative Risk Analysis (QRA), were conducted and mitigation measures and emergency response procedures articulated for handling LCO₂.

Professor Lynn Loo, CEO of GCMD, said, "While pilots have successfully demonstrated numerous capture technologies onboard ships, it is still uncertain how captured carbon on merchant ships can be safely offloaded, and what the rest of the value chain looks like. This study sheds light on these challenges, and highlights recommendations to holistically address these concerns for parties interested in advancing OCCS / LCO₂ offloading concepts."

Nick Brown, LR CEO said: "The maritime industry requires a comprehensive understanding of the safety and



operational challenges posed by all emission reduction technologies. This study, which focused on port readiness and considerations for the safe handling and offloading of LCO₂, addresses some of the gaps that exist in the carbon capture value chain and will support industry stakeholders in making informed investment decisions around carbon capture solutions and the creation of regulatory and operational guidelines.”

Robert Cooke, Design Lead of Arup said, “As a result of the study, it has been promising to see how transferable existing CO₂ industrial knowledge is to an offloading application. Arup brought together energy and maritime capabilities to outline the concepts for onboard captured CO₂ offloading and develop how this new process can practically and safely integrate into busy port environments. We look forward to seeing the technologies and implementation develop into effective marine decarbonisation solutions.”

Assuming CO₂ can be discharged from ships and handled safely and efficiently by ports, the issue is then what to do with it. A new report by research company IDTechEx report, *Carbon Dioxide Utilization 2024-2044: Technologies, Market Forecasts, and Players*, explores how captured CO₂ could be utilised as a feedstock for hundreds of different chemicals instead.

The chemical sector alone is responsible for 2% of global anthropogenic CO₂ emissions, and the industry depends heavily on finite fossil fuel feedstocks.

Valorising waste carbon dioxide has already proven profitable in the chemicals industry for polycarbonate polymers. Overall, IDTechEx forecasts revenue from CO₂-derived polymers and other drop-in chemicals will exceed US\$47 billion in 2044.

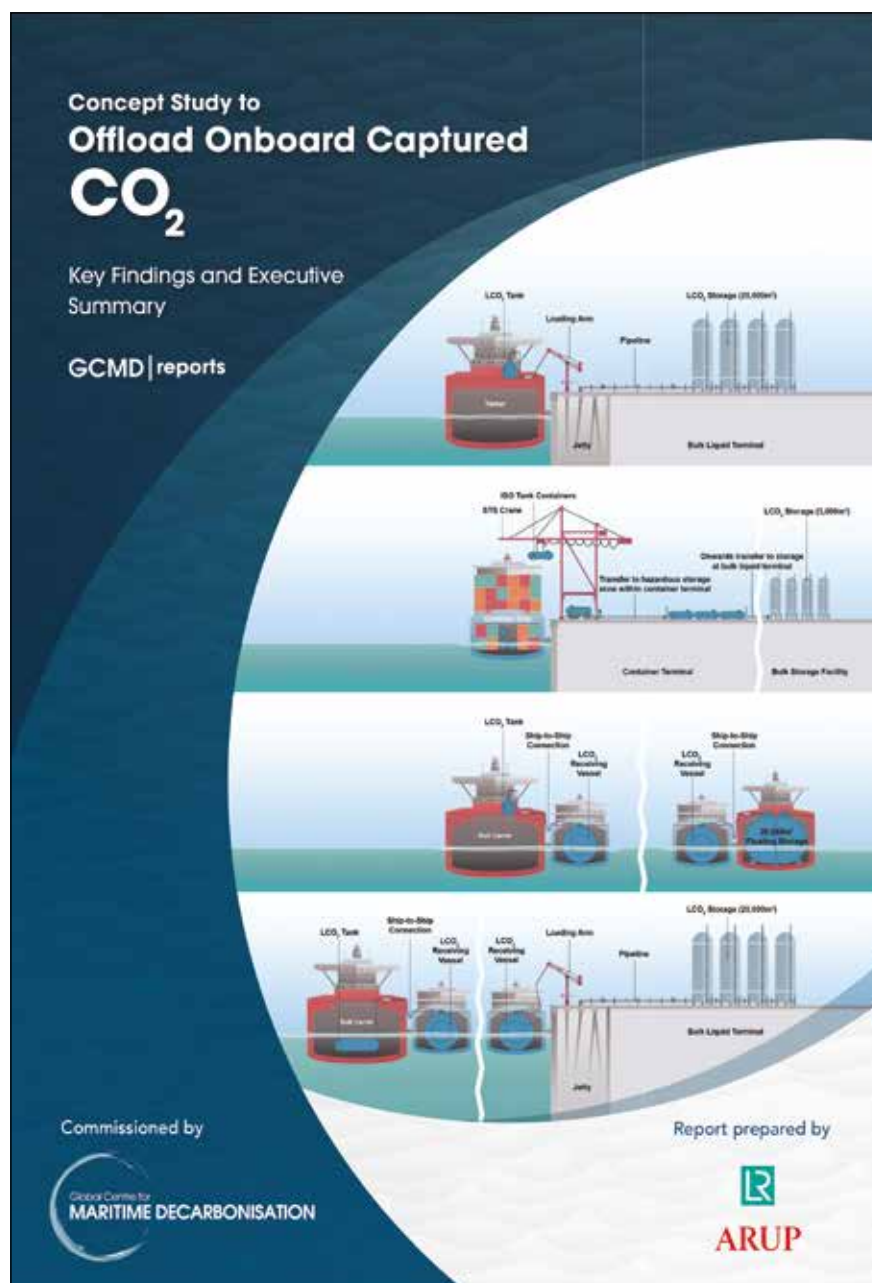
The report notes: “Carbon capture is viewed as a key technology for achieving net-zero goals as it can decarbonise hard-to-abate sectors. However, carbon capture technologies are expensive, and regulatory pressure to decarbonise remains weak worldwide. If captured

carbon can be utilised to make profitable chemical products, this revenue stream can provide an economic incentive to accelerate the uptake of CCUS (carbon capture, utilisation, and storage) technologies until legislation that promotes CO₂ storage emerges.

While many CO₂-derived chemicals do not always represent net-negative or net-zero products, they do still represent reductions in emissions compared to the fossil fuel-based status quo and should not be overlooked as a decarbonisation tool.

IDTechEx advises: “The chemical industry is a highly interconnected, integrated industry and has been optimised over decades. If this system is to be fundamentally changed to run on CO₂ rather than on fossil feedstock, decisions to preserve, repurpose, or replace industrial assets need to take place soon.

Industrial demonstrations need to ramp up. Cheap, low-carbon electricity needs to become widely available. A full account of emissions and embedded carbon in the chemical industry supply chain must be routine through carbon management.”





SAFETY FIRST

Safety and supply crucial for the widespread adoption of ammonia as a marine fuel

The safe use of ammonia and its surrounding regulatory framework remains a critical factor for its adoption as a marine fuel, according to a new Lloyd's Register (LR) report. It has highlighted the need for industry-wide understanding of the operational and safety challenges surrounding the use of ammonia as a marine fuel, for its adoption as part of the maritime energy transition.

LR's *Fuel for thought*: Ammonia found that although technology for ammonia as a marine fuel is developing rapidly, gaps in the regulatory framework around its use need to be addressed, alongside resolving the challenges for the production and supply of zero or near-zero emissions ammonia.

The report has identified that by taking steps to develop a framework today, the industry can avoid delays and build on the strong technology case for ammonia adoption. It noted that, for the safe handling and infrastructure, the maritime industry can draw on the extensive experience of transporting ammonia as a cargo throughout the 20th and 21st centuries. But it cautions: "There are, however, still concerns around ammonia's toxicity, crew awareness and training and its overall impact on aquatic, human and environmental health."

The study also found that among the factors to consider for ammonia adoption, social acceptance and scalability are key.

The pricing of renewable electricity, green hydrogen and carbon capture will all

impact ammonia's affordability as a marine fuel. Clean ammonia producers, who are looking to upgrade production to create blue and green ammonia, see potential in increased demand from agriculture and other sectors, as well as shipping, all putting pressure on supply.

Liam Blackmore, Principal Specialist – Decarbonisation at Lloyd's Register said: "Fuel for thought: Ammonia, underlines the importance of addressing regulatory gaps, technology application and production hurdles in order to ensure the seamless integration of ammonia into the marine fuel landscape as part of the maritime energy transition."

World's First Use of Ammonia as a Marine Fuel

Mining company Fortescue, with the support from the Maritime and Port Authority of Singapore (MPA) government agencies, research institutes, and industry partners, has successfully conducted the world's first use of ammonia, in combination with diesel in the combustion process, as a marine fuel onboard the Singapore-flagged ammonia-powered vessel, the Fortescue Green Pioneer, in the Port of Singapore. The Fortescue Green Pioneer was loaded with liquid ammonia from the existing ammonia facility at Vopak Banyan Terminal on Jurong Island for the fuel trial.

In completing the fuel trial, the Fortescue Green Pioneer has also received flag approval from the Singapore Registry of Ships (SRS) and the "Gas Fuelled Ammonia" notation by classification society DNV to

use ammonia, in combination with diesel, as a marine fuel.

Ammonia fuel supply system

Swiss marine power company WinGD and Japanese shipbuilder and technology developer Mitsubishi Shipbuilding Co have completed the initial design of an ammonia fuel supply system (AFSS) for vessels powered by WinGD's X-DF-A ammonia-fuelled engines.

The AFSS design is the first result of a wide-ranging partnership announced last year that will develop solutions for ammonia engines and fuel systems that can be applied across a range of vessel designs. The project will now proceed to the detailed design phase, ensuring that ammonia capability is available to ocean going vessel operators ahead of regulatory requirements to reduce greenhouse gas emissions.

As well as the fuel supply system - including a fuel valve unit, fuel conditioning and all related piping – the concept includes several features to enable the safe use of ammonia as a marine fuel. These include an ammonia catching system as well as purging and venting arrangements.





BLOWING IN THE WIND

Wind-assist propulsion systems are becoming mainstream

More shipowners are using the wind to reduce fuel consumption and cut carbon emissions, among Louis Dreyfus Armateurs (LDA).

Following installation of eSAIL foundations in Poland in November 2023, the 2004-built, 5,200dwt *Ville de Bordeaux* emerged from a short stopover in March in a shipyard in Vigo, Spain with its three 22-metre-high eSAILs in place.

The *Ville de Bordeaux* is on charter to Airbus from LDA and used to transport A320 Family components from Europe for final assembly at the aircraft manufacturer's US factory in Mobile, Alabama.

The installation of the eSAILs, developed by the technology innovator bound4blue, contributes to Airbus' target to halve CO₂ emissions from its maritime logistics operations by 2030, versus a 2015 baseline. LDA says it believes wind-assisted propulsion is a key decarbonisation solution that can help the company reach its goal to achieve net-zero GHG emissions by 2050.

"The *Ville de Bordeaux* installation takes us one step closer to that goal.

The sails look fantastic, and we look forward to seeing them in action. Along with our client Airbus we're proud to be among the first movers in this space," said Mathieu Muzeau, Transport & Logistic General Manager at LDA.

According to its manufacture, each eSAIL generates six to seven times more lift than a conventional sail thanks to an electric-powered air suction system that helps the airflow to re-adhere to the sail. This force allows for the reduction of the load on the ship's main engines.

Agreements have been reached to fit the system on several other vessels. These include the installation of four 26-metre-high eSAILs® on the chartered-in, 2014-built, 35,584 dwt juice carrier *Atlantic Orchard* for global agricultural trader Louis Dreyfus Company (LDC). The project, undertaken in collaboration with Wisby Tankers of Sweden, is expected to reduce annual fuel consumption and CO₂ emissions by at least 10%.

Tanker owner Odfjell of Norway is planning to retrofit the eSAIL system on a chemical tanker, the first such vessel to harness this ground-breaking technology.

Eastern Pacific Shipping of Singapore has also agreed to install three 22-metre eSAILs on its 50,332-dwt tanker *Pacific Sentinel* (built 2019).

Meanwhile Chemship has also commissioned its first ship with wind assisted ship propulsion, using Econowind's VentoFoil. It is claimed the *Chemical Challenger* is the world's first chemical tanker to be equipped with sustainable wind technology. The ship will serve on shipping company Chemship's Trans-Atlantic route between the East Coast of the United States and the Mediterranean.

This week four 16-metre-high aluminium wind sails were installed on board the 134-metre-long vessel. The system creates a direct wind surface of 180 square metres.

The manufacturer says: "Smart vacuum technology quintuples the force of the wind, creating a gross wind surface of 900 m₂. This is equivalent to an imaginary sail of 30 by 30 metres. Chemship expects to achieve an average CO₂ reduction of 10% with these turbo sails."

ENGEN GHANA LIMITED (EGL)

Engen Ghana Limited (EGL) is a leading energy company specializing in the downstream refined petroleum products market and associated businesses

Established in 1998 and licensed by the National Petroleum Authority as an Oil Marketing Company in Ghana, EGL has grown steadily in both the Retail and Commercial Sectors. EGL operates as a wholly owned subsidiary of MocoH Ghana Limited and boasts of a dedicated team of skilled professionals.

Over the years, EGL has solidified its position as Ghana's preferred physical bunkering supplier, providing marine bunkering services to vessels operating in various maritime sectors. With a commitment to efficiency, safety, and environmental responsibility, we cater to the refuelling needs of ships ranging from cargo carriers to cruise liners. As a trusted bunkering partner, we ensure timely and reliable delivery of quality fuel products, adhering to international standards and regulations.

Fuel Products:

We offer a comprehensive range of marine fuel products, including Marine Fuel Oil (RMG 180) and Marine Gas Oil (MGO/DMA), meeting ISO 8217:2010(E) specifications.

Our fuel products comply with IMO (International Maritime Organization) regulations, meeting the required sulfur and emission standards.

Delivery Capacity:

Our strategically located bunkering terminals enable us to efficiently serve vessels at the Tema and Takoradi ports in Ghana by both Bulk Road Vehicles and ex-pipe onshore. Best of all, we do not place restrictions on quantities ordered.

Quality Assurance:

We implement stringent measures to ensure that our delivery and sampling methods comply with Annex VI of MARPOL 73/78 regulations to maintain consistent product quality.

Safety Measures:

Safety is ingrained in our bunkering operations, and we strictly adhere to industry best practices and safety guidelines. Our bunkering team undergo rigorous training to handle bunkering operations safely and efficiently.

Environmental Responsibility:

As an eco-conscious company, we are committed to minimizing the environmental impact of our bunkering activities.

Our adherence to low-sulfur requirements helps reduce emissions, contributing to a cleaner maritime ecosystem.

Compliance and Certifications:

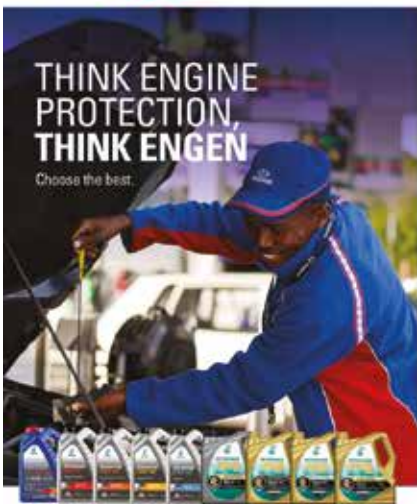
Our bunkering operations comply with all relevant international and local regulations, and we hold the necessary certifications and licenses to conduct bunkering operations in compliance with industry standards.

By choosing Engen Ghana Limited as your preferred bunkering partner, you can be assured of efficient and environmentally responsible services backed by our team of dedicated experts who are ready to fulfill your maritime bunkering needs.

www.engen.com.gh



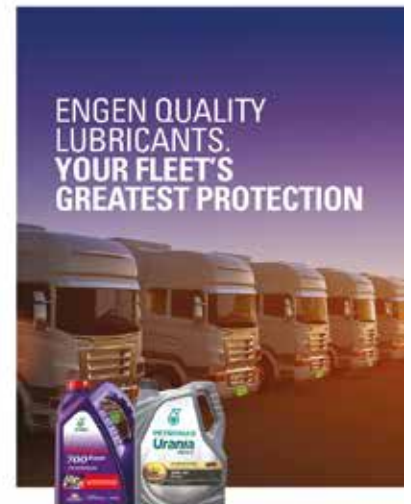
25 YEARS OF DYNAMISM, RESILIENCE & SUSTAINABLE GROWTH



Engen Ghana Limited
No. 89 Lagos Avenue, East Legon, Accra
P.O. Box CT 4514, CT. - Accra, Ghana



www.engen.com.gh
info@engen.com.gh
+233 (0) 302 513 466-8



For lubricant enquiries,
kindly contact:
+233 (0) 59 384 5679





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](https://www.bunkeroil.it)

+39 0586 219214

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

Throughout 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

For lubricant enquiries please send an e-mail to: lubricant@bunkeroil.it

Phone: +39 0586 219214
Address: Via Pietro Paleocapa 11, 57123, Livorno, ITALY.



SCRUBBERS' VITAL ROLE IN THE ENVIRONMENTAL TRANSFORMATION OF THE SHIPPING INDUSTRY

The uncertainties surrounding the availability and environmental impact of green fuel throughout the well-to-wake lifecycle emphasize the rationale for the existence of scrubbers

An exhaust gas cleaning system (EGCS), also known as a scrubber system, is an international acknowledged technology developed to meet the International Maritime Organisation's (IMO's) regulations to reduce greenhouse gas (GHG) emissions from international shipping, but few realize that using higher sulphur fuel oil (HSFO) or heavy fuel oil (HFO) with a scrubber system in fact appears to be the most cost and environmentally beneficial way to reduce emissions considering the well-to-wake GHG emissions of marine fuels in general.

Predicting future ship fuel has become nearly impossible, prompting ship owners to find ways to secure the needed capacity. However, only a fraction of the required green fuels seems to be available, necessitating a focus on future-proof seaborne logistics that are cost-effective and, at the same time, comply with stricter global regulations.

As a tech company, we believe it is necessary to look at the impact of technologies on the environment from a more holistic perspective. Instead of implementing outright bans, regulations for emission limits could be tightened, allowing us as a company to optimize the technologies, accordingly, says CEO Anders Skibdal, PureteQ.

Scrubber systems are encountering political opposition in the climate debate, despite their proven value in combating air pollution and cost-effectiveness for the shipping industry. Overall, scrubbers remain a vital technology irrespective of fuel, as even new e-fuels require scrubbing for unintended emissions. Additionally, scrubbers are integral to future carbon capture technologies.

A future with onboard carbon capture

Committed to combating climate change, PureteQ Group continually enhances existing technologies and invests in research and development within the fields of carbon capture and power-to-x. The PureteQ scrubber system is partly carbon capture ready and may thus be upgraded later if feasible and the infrastructure for captured carbon is made available at major trading ports on a worldwide basis.

According to CEO Anders Skibdal of PureteQ, we are witnessing an increase in demand for Onboard Carbon Capture & Storage (OCCS), and hardly a day passes without discussions with shipowners and other stakeholders on OCCS. We will soon witness the first operational amine-based systems, but the value chains remain unclear, and legislation must catch up with the development of new technologies.



Energy Efficiency Design Index (EEDI), Energy Efficiency Existing Ship Index (EEXI), and Carbon Intensity Indicator (CII) still lack a 'negative C' in the formula, so that shipowners investing in OCCS will receive credit for the captured and stored CO₂. Container ships may be the first to adopt this new technology, given that they already have some infrastructure in terminals for handling ISO containers with liquid CO₂.

PureteQ Group is currently commissioning its subsidiary company ESTECH's patented technology called CAPPOW – a combined carbon capture and power-to-x plant, with plans for the grand opening in September this year. Part of this technology will be offered to ships in 2026.

Energy efficient technology

PureteQ specializes in designing and maintaining scrubber systems. With established offices in Europe and Asia and extensive expertise in exhaust gas cleaning, PureteQ is a leading service provider for all scrubber brands globally.

A team of marine engineers assist shipowners and operators in safeguarding continuous operation, reliability, and MARPOL compliance of scrubbers.

While PureteQ scrubber systems are known for their high energy efficiency, even less efficient ones can be fine-tuned to lower electrical consumption caused by excessive scrubbing. To support this effort, we've introduced Pure-SPOT, a cloud-based Scrubber Performance Optimization Tool for enhancing system performance and generating reports. Interest in this free platform is growing, as it enables ship owners and operators to reduce fuel costs.

PureteQ maritime scrubbers now come as outdoor weather-proofed models for easy installation of existing superstructures and can handle loads of up to 100MW. They are equipped with a user-friendly control system allowing real-time remote access and support. The energy performance is superior due to the patented hydrodynamic fluid distribution system, which eliminates interior obstructions.

Installation of PureteQ scrubber systems will not only reduce fuel costs but also substantially reduce the emission of particulate matter and black carbon, also emitting less CO₂ well-to-wake as a side benefit.

CONTACT

PureteQ A/S
Sverigesvej 13, 5700 Svendborg,
Denmark,
www.pureteq.com
CEO Anders Skibdall,
anders@pureteq.com,
(+45) 40 17 14 00

**A SIMPLE SOLUTION TO
A GLOBAL CHALLENGE**





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.

Oil Marketing & Trading International

Tel: +971 4 4350500

Fax: +971 4 4350505

E-mail: bunkers@oil-marketing.com

<https://www.oil-marketing.com/>





YOUR PARTNER OF CHOICE

Founded on a passion for excellence and customer service

The journey of Hawks Pvt. Ltd. began with the vision of Chairman Mr. Ahmed Rasheed Hassan, who started small with a single-fuel truck with a capacity of 5,000 liters. Fueled by a passion for the industry and a deep commitment to providing high-quality fuel and exceptional service, Mr. Hassan steadily built the company's reputation. Over the past 17 years, The Hawks expanded its operations boasting a fleet of over 38 vessels providing bunkering services and 17/18 fuel storages with a total capacity of 48 million liters. The company has established itself as a trusted partner to businesses and individuals across the Maldives, by offering bunkering solutions in all Major ports in the Maldives.

The company's reach extends beyond the Maldivian archipelago, establishing itself as a physical bunker supplier in all major ports in Sri Lanka. Providing a reliable and continuous supply of VLSFO, LSMGO, and HSFO. Furthermore, Hawks is esteemed as a premier provider of superyacht bunkering services worldwide, catering to the specific needs of luxury yacht owners and operators, offering reliable and efficient service.

In addition, The Hawks established four international trading hubs in Dubai, Singapore, China and Monaco providing access to real-time market information and facilitating optimal bunkering and cargo decisions for our customers.

The cornerstone of the company's success lies in its commitment to quality, safety, and customer satisfaction. The company adheres to the highest international

standards, investing in a team of highly skilled professionals to ensure the seamless delivery of fuel products.
www.thehawks.biz





SPECTRUMLABS S.A., ACCREDITED LABORATORIES

Working together for a sustainable future

Since its inception in 1967, Spectrumlabs S.A. has been a pioneer in quality testing, setting the benchmark as the first laboratory in Piraeus solely dedicated to ensuring excellence across a wide spectrum of materials and fluids. With a steadfast commitment to excellence, reliability, and partnership, SpectrumLabs has emerged as a trusted authority in the marine, industrial, energy, and mechanical sectors.

A Legacy of Excellence

The journey of Spectrumlabs has been marked by a relentless pursuit of excellence. Our dedication to quality is symbolized by the three icons in our logo, representing the diverse methods and techniques we employ to meet the unique needs of our clients.

Accreditation and Independence

We take immense pride in our accreditation by E.SY.D (Hellenic Accreditation Council) under ISO 17025:2017 and certification by BVQI (Bureau Veritas of France) under ISO 9001:2015. As a completely independent, family-run business, Spectrumlabs ensures unbiased and reliable results for our clients, maintaining the highest standards of integrity and professionalism.

Where Quality Comes First

Our motto, "Where Quality Comes First," encapsulates our unwavering commitment to personalized service, attention to customer needs, and professional integrity. Spectrumlabs is dedicated to delivering high-quality services through state-of-the-art laboratories and experienced personnel, ensuring rapid turnaround times and detailed quality advisory reports.

Personalized Service and Communication

We believe in building strong relationships with our clients through personalized engagement and a deep understanding of their specific requirements. Our communication channels are open, transparent, and focused on exceeding expectations at every step.

A Vision for Sustainable Expansion

Spectrumlabs envisions a path of sustainable growth, driven by accurate diagnoses, innovative testing methodologies, and continual investment in technological advancements. Our goal is to remain at the forefront of the industry, offering unparalleled quality control solutions to our partners.

Trusted Partnerships

Our extensive client base includes shipping companies, shipyards, refineries, major construction firms, metal industries, and more. These partnerships are built on a foundation of trust, innovation, and mutual benefit, reflecting our commitment to long-term collaboration and success.

Prime Location in Piraeus

Situated in the heart of Piraeus port, Greece, Spectrumlabs enjoys proximity to commercial and cruise ship traffic, making it a central hub for bunkering activities. Our privately owned, five-story building houses state-of-the-art laboratories and company offices, providing an ideal environment for quality testing and collaboration.



Petroleum Products Analysis: Setting the Standard

Discover excellence in analysis at Spectrumlabs. Our Chemical Laboratory, the foundation of our expertise, is staffed by a team of highly qualified and experienced chemists. Equipped with a full range of cutting-edge analytical instruments, we offer comprehensive testing services tailored to meet your specific needs.

Among our offerings, we specialize in marine bunker fuel analysis, ensuring compliance with ISO 8217 standards. Additionally, we analyze a wide range of cargo products, including Crudes, Gas Oils, and Gasolines, according to your requested specifications.

At Spectrumlabs, we pride ourselves on our commitment to serving our clients. That's why our team is pleased to provide assistance 24/7. Experience the difference with Spectrumlabs – where excellence is the standard in petroleum products analysis.

Contact Details

49 Efplias str., Gr 185 37 Piraeus. Tel: +30 210 4526771 -3 Email: info@spectrum-labs.gr
www.spectrum-labs.gr



SOHAR PORT AND FREEZONE

SOHAR Port and Freezone is an ideal location for business as it lies at the centre of global trade routes, between Europe and Asia

SOHAR Port and Freezone, an integrated logistic hub situated in the Sultanate of Oman, 50:50 Joint Venture between Asyad and Port of Rotterdam.

For over 20 years, SOHAR has stood as a beacon of economic progress, attracting a staggering investment exceeding OMR 10.4 billion (USD 27 billion) since its establishment. Our steadfast commitment to the Sultanate of Oman's development objectives and economic diversification endeavors has made us an integral contributor to the nation's growth trajectory, particularly in the industrial and logistics sectors, which are pivotal for driving economic prosperity and creating local employment opportunities.

One of our paramount advantages lies in our strategic location, serving as a pivotal gateway between the East and West. Situated at the crossroads of major shipping routes, SOHAR Port and Freezone facilitate seamless transportation of goods to meet the burgeoning demands of rapidly expanding markets, spanning across Africa, Asia, and the Middle East. With natural deep-water jetties boasting depths of approximately 25 meters, we stand as one of the select global ports capable of accommodating the world's largest cargo vessels, exceeding 362 meters in length and 400,000 tonnes in weight.

Our well-connected road network ensures efficient linkage to neighboring countries, with imminent plans for direct connectivity to the Kingdom of Saudi Arabia.

By offering unparalleled access to the Gulf States' thriving economies, bypassing the congested Strait of Hormuz, we ensure stability amidst regional political dynamics.

Annually, we welcome over 3,000 vessels and handle an estimated 1.5 million tonnes of cargo weekly, with a remarkable capacity exceeding 2 million TEUs per annum. SOHAR Port serves as the primary gateway for imports and exports in the Sultanate, facilitating the passage of over 60% of





imports, 40% of exports and 80% re-exports. Our steadfast connectivity to global markets ensures a steady supply of commodities to the local market, empowering local businesses with international reach and fostering economic resilience. The Port terminals are operated by leading international companies: C. Steinweg Oman for general cargo handling, Advorio Terminals for liquid bulk handling, and Hutchison Port Sohar for container handling, with the container offering benefitting from remote-controlled gantries capable of servicing the largest of the world's container ships.

In addition to our expansive land area spanning 21 million square meters, complemented by 45 million square meters at the Freezone, we prioritize sustainability by offering renewable energy and cool water sources at competitive rates.

Through strategic investments in renewable energy initiatives, we are spearheading the transition towards sustainable energy solutions.

Our pursuit of alternative energy sources, including green hydrogen, underscores our dedication to reducing carbon emissions and enhancing the sustainability of our operations.

SOHAR Port and Freezone aspire to be recognized as an integrated logistics hub, epitomizing cutting-edge technologies while upholding the highest standards of sustainability. Aligned with Oman's Vision 2040 and the Oman Logistics Strategy 2040 (SOLS 2040), overseen by ASYAD Group, we remain committed to driving enduring economic prosperity for the nation. Currently, SOHAR Port South expansion is underway, aimed at providing additional leasing space for major companies.

Concurrently, at the Freezone, Phase 2 infrastructure project is set to commence, offering leasable land of 345 hectares, aims to meet the expanding needs for industrial and commercial space, fostering an environment of innovation, collaboration, and enduring success. The project is set to commence construction by the start of Q2 2024, with the completion of its major scope anticipated in Q2 2025. This milestone also serves as a testament to the trust and confidence invested in SOHAR Freezone operations by both the country and the region.

Join us in shaping the future of commerce and logistics at SOHAR Port and Freezone, where innovation meets sustainability, and opportunities abound for enduring success.

www.soharportandfreezone.om/



ENACOL, CONNECTING CONTINENTS

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

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

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



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.



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 and check our web page www.terpel.com

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





BUNKERING

THE OFFICIAL MAGAZINE OF IBIA - PUBLISHED SINCE 1997

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%

Q3 Autumn 2024

IBIA Convention Athens 2024 Special *with circulation at the event*

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.

Fuel Quality

Our survey of the quality of fuel oils. Despite the advent of a variety of new fuels, the quality of MGO, VLSFO, ULSFO and HSFO continue to be the main concern for ship operators. We look at recent quality issues.

GEOGRAPHICAL FOCUS:

Indian Subcontinent

From Karachi to Colombo we look at developments throughout this vast and varied region. India is one of the fastest growing economies in the world but taxation – GST – and lack of storage facilities have been said to hold back the bunkering sector.

Far East

Our survey of the bunker scene in this key region. We look in depth at what is happening in Hong Kong and ports along the Chinese coast. Meanwhile Singapore not only keeps its position as the world's top bunkering port but is forging ahead with decarbonisation initiatives and the development of new fuels.

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

DIARY 2024

20 – 22 MAY 2024

**31ST ANNUAL MIDDLE EAST PETROLEUM
& GAS CONFERENCE (MPGC)
DUBAI, UNITED ARAB EMIRATES**

Join IBIA's Executive Director, Alexander Prokopakis at the 31st Annual MPGC 2024 in Dubai on May 20-22 with the Emirates National Oil Company (ENOC) as the host, bringing together the global oil and gas markets' leading NOCs, IOCs, traders, refiners, petrochemical, storage, financial institutions, and technology companies, in a confluence of dialogue, debate, and business interactions at the highest level. For more information: https://commodityinsights.spglobal.com/mpgc.html?utm_source=partner&utm_medium=display&utm_campaign=q2_2024_emea_events_mpgc&utm_content=advert2&utm_term=conferences

21 – 23 MAY 2024

MARITIME WEEK AMERICAS PANAMA

Join IBIA's Vice Chair, Adrian Tolson, and members of the IBIA Americas Regional Board at Maritime Week Americas 2024 in 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.petrospot.com/events/>

2 JUNE 2024

**IBIA POSIDONIA 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

3 JUNE 2024

**9TH CAPITAL LINK MARITIME LEADERS' SUMMIT
ATHENS, GREECE**

The 9th Capital Link Maritime Leaders' Summit, set in Athens, Greece, is a premier event under the Posidonia Conference Programme. Themed "Dashing Ahead – Leadership in Action," this summit hosted by Capital Link brings together industry leaders to discuss dynamic strategies and proactive leadership in the maritime sector. For more information: <https://forums.capitallink.com/shipping/2024analyst/sponsors.html>

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>

11 SEPTEMBER 2024

OIL SPILL INDIA 2024 NEW DELHI, INDIA

In the backdrop of the recent oil spill incident, caused during cyclone Michaung in Chennai's Ennore Creek, it is with a sense of urgency and shared responsibility that we announce that the 7th edition of Oil Spill India (OSI 2024), the region's flagship conference & exhibition on the Oil Spill Prevention, Planning, Preparedness, Response & Restoration industry, will be held 11 - 12 September 2024 at Hotel JW Marriott, Aerocity, New Delhi, India. For more information: <https://www.oilspillindia.org/index.php>

11 – 13 SEPTEMBER 2024

**ARGUS SUSTAINABLE MARINE FUELS CONFERENCE
HOUSTON, UNITED STATES OF AMERICA**

The implementation of policies like the EU ETS, CII rating, and FuelEU Maritime is shaping cleaner fuel adoption in North America's maritime sector and influencing compliance costs for shipowners trading with Europe. In response, the US is advancing through policies like the Inflation Reduction Act, supporting renewable energy and zero-emission technologies. This evolving scenario encourages collaboration among various maritime stakeholders to discuss profitability while investing in green fuel production and infrastructure. Join industry leaders at our event to explore these critical developments and strategies. For more information: <https://www.argusmedia.com/en/events/conferences/sustainable-marine-fuels>

18 SEPTEMBER 2024

**4TH SAFETY4SEA LONDON
LONDON, UNITED KINGDOM**

The 4th SAFETY4SEA London Forum is scheduled as a half day event (09:00 to 14:00) on Wednesday 18th September 2023 at the Ocean Suite of ICS Maritime Hub, London, UK.

This is a NON PROFIT event expected to attract a target group of approx. 200 persons / 100 organisations attendance from Safety, Technical, Marine departments of shipping operators and other related industry stakeholders. Attendance will be FREE of charge to delegates, a common feature of ALL SAFETY4SEA forums with sponsors covering all the expenses of the event.

For more information: <https://events.safety4sea.com/2024-safety4sea-london-forum/>

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 <https://www.ibiaconvention.com/>

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

WORLD BUNKERING

Q3 2024... NOW OPEN FOR BOOKINGS

Q3 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.

.....

Fuel Quality

Our survey of the quality of fuel oils. Despite the advent of a variety of new fuels, the quality of MGO, VLSFO, ULSFO and HSFO continue to be the main concern for ship operators. We look at recent quality issues.

.....

GEOGRAPHICAL FOCUS:

Indian Subcontinent

From Karachi to Colombo we look at developments throughout this vast and varied region. India is one of the fastest growing economies in the world but taxation – GST – and lack of storage facilities have been said to hold back the bunkering sector.

.....

Far East

Our survey of the bunker scene in this key region. We look in depth at what is happening in Hong Kong and ports along the Chinese coast. Meanwhile Singapore not only keeps its position as the world's top bunkering port but is forging ahead with decarbonisation initiatives and the development of new fuels.

.....

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
website: www.goil.com.gh



BEYOND BUNKERING. REDEFINING POSSIBILITIES.

The Seas, the Skies, the Future

We don't just fuel vessels, we fuel dreams. Explore new boundaries with Axiom's expanding offerings in Marine, Aviation, and Renewables. Partner with us and redefine the limits of possibilities.



SHIP BUNKERING | AIRPLANE REFUELLING | BIOFUELS
info@axiomglobaltrading.com | axiomglobaltrading.com