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WORLD BUNKERING

THE OFFICIAL MAGAZINE OF IBIA

ALTERNATIVE FUELS

MANY CHOICES, FEW CERTAINTIES



INSIDE THIS ISSUE:

SHOULD MFMS GO GLOBAL?
BUSY YEAR AHEAD AT THE IMO
INTERVIEW: TIMOTHY COSULICH

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GOING ROUND IN CIRCLES?

Dear Reader

As somebody who only quite recently stumbled upon the current usage of the word 'woke' I must confess that the term 'circular economy' took me by surprise when I came across it while writing this Issue's Environmental News section.

As you will read there, international not-for-profit organisation Global Maritime Forum's (GMF) website says: "New circular economy business models can present opportunities to increase revenue, reduce costs, and improve risk management."

It appears to be making the case for the maritime business equivalent of going back to darning socks and turning shirt collars. That is to say we should make things last longer, by maintaining and mending them, and then recycle properly when can't use them anymore. It sounds like going back to what we used to do.

Creating a circular economy is a commendable aim but the practical application could be tricky if the world's fleet becomes prematurely obsolete due to the need to achieve Net Zero carbon emissions. But I suppose nobody ever said achieving sustainability was going to be easy.

A.P. Moller-Maersk does not claim getting to Net Zero and a sustainable future will be easy but, also on the Environmental News pages, the giant container carrier commits itself to achieve net zero greenhouse gas emissions in 2040, a decade ahead of its initial 2050 ambition. That is big news and will surely become the industry standard as the rest of the shipping industry will certainly be confronted with: "If they can do it, why can't you?"

Maersk is not only taking the initiative in its commitment to fast-track Net Zero but is also, as covered in the Q4, 2021 issue of *World Bunkering*, going its own way in committing to the use of methanol as its, eventually, 'green' fuel.

On the same theme you will have noticed that alternative fuels are highlighted on this issue's front cover. We have devoted separate pages this time to the various alternative fuels that are out there now. Having such a range of potential replacements for fuel oil is a good thing in many ways. The different potential alternatives are being developed very quickly. And, as also covered in this issue, work is proceeding fast on developing viable carbon capture technologies, potentially allowing continued fossil fuel use.

But, as our front cover suggests, choice creates uncertainty. Maersk has picked its choice, methanol. The LNG lobby takes a different view. Meanwhile many in shipping will be hesitating before committing the huge amounts of capital required for new vessels with new technologies.

Of course, there is much else in this issue. IBIA director Unni Einemo gives a comprehensive run though of what will happen at IMO this year. As IBIA's representative at this vitally important UN Agency, she explains how your organisation is working in your interests, even though sometimes it has to be a case of arguing for the least worst outcome. That is the reality of international regulation.

In this issue Unni has interviewed IBIA's new chairman, as of 1 April, Timothy Cosulich. For those who don't know him, this piece provides an insight into the background and views of the person set to take over the helm at a time of continuing great change.

Change is inevitable, if often somewhat scary. One thing that doesn't change, though, is that we are always talking about quantity matters and, to be honest, disputes. This issue devotes space to the question of whether mass flow meters should be made mandatory. We report the thoughtful opinions put forward on this subject at last November's online IBIA Annual Convention.

Fortunately the next big IBIA event will be in-person. Hopefully the contents of this issue, timed to coincide with the Annual Dinner, will provide food for thought.

Best wishes

David Hughes
Editor



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IBIA ON THE RIGHT TRACK

Dear members and friends,

This is my last editorial letter as the chairman of IBIA after serving 2 x 3 years in the board, the last two as the chairman. It is now time for a change of guards. I think this is a good time to do a bit of reflection of the time I have spent in the board and the development that IBIA in that period has gone through.

When I first joined the board, we had a big challenge on the 2020 transition that we were working on. And we had not yet set our eyes on neither the green transition or imagined the world being haunted by a global pandemic that would limit the traditional gatherings, courses and events that are a great part of the work that IBIA is doing.

Looking back at that time, the 2020 challenge somehow seems rather small compared to what came after, both on the green transition, but surely also on the Covid-19 impact to both the industry and IBIA.

Covid-19 gave IBIA some major challenges, as part of our offerings was conferences, courses and events that served to support the purpose of IBIA as an industry platform. Our offerings were also part of the financial platform supporting IBIA's running costs.

That challenge we have overcome and we have adapted to a more virtual and online platform, and today we again have an IBIA in balance. When that is said, it is still of great importance that you continue to support IBIA, both as a member but also by actively participating in IBIA events, courses and conventions. Thus, a big thank you for the great support IBIA is receiving from you every day.

The green transition was an enabler for IBIA to set our three targets, as the complexity on this is larger and more diverse than the 2020 transition. To cope with this, we knew that the traditional IBIA structure needed a future proof development, hence we decided back in time to establish a global regional structure in the five large regions: Asia, Africa, Americas, Middle East and Europe.

This was done with the purpose of ensuring that IBIA understood both the global and regional perspective and added more dedicated and engaged resources to support the IBIA work globally. Today, when I see how both the Asia and the Africa board have more than proven themselves on this task, I am confident that this was the right move to get IBIA on the right track. Furthermore, it also prepared IBIA for the future complexity we as an industry face, and I look forward to following the establishment of the next two regional boards for Americas and the Middle East, which both are scheduled for launch in 2022.

Besides the internal IBIA structure, the green transition in itself is one of the three major key points IBIA is focusing on. With a specific focus on the 2030 and 2050 deadlines, a very visible action on IBIA's work in this regard is the establishment of an Alternative Fuels working group, under the leadership of IBIA board member Constantinos Capetanakis from Starbulk.

This group has worked on mapping the most likely future energy products and gathered data that will enable IBIA's members to better navigate the green future we are all are approaching. The group has done an amazing amount of work that will soon be available. This kind of work and the sharing of results capture the purpose and role of IBIA, where we see IBIA as the platform for our industry to meet, discuss and learn from each other. A purpose that for the green transition has become even more important, as only if we work as a team and across companies and interests, we will successfully be able to overcome the 2030 and 2050 targets for green transition.

For me this kind of delivery from an IBIA working group provides direct value to the members of IBIA. Great work and a big thank you to all who have participated in this!

The third focus area from IBIA has been the Bunker License and MFM use, where again our working group on this matter have recently launched a membership survey in cooperation with BIMCO. IBIA's ambition is to create greater alignment and transparency across bunker ports and strengthen the credibility of our industry by the use of MFM. But in addition to that, IBIA's wish was also to strengthen the basis on which the future green transition and new products can be implemented in a more standardized setting across the major bunker hubs.

So, when I look back, I feel proud of the development that IBIA has gone through and how we as a united organisation have overcome the challenges we've met along the way, adapted to the new realities and stand prepared for what the future will bring.

Finally, I would like to take the opportunity to thank my fellow board members, present and past, the secretariat and all the other key stakeholders for a great time while being an IBIA board member and chairman. It has been a voyage that I wouldn't want to be without.

Henrik Zederkof
Chairman



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WORK IN PROGRESS

Transition. Transparency. Sustainability. Cooperation. These words feature frequently in current industry conversations that IBIA is part of

As I write this, IBIA is preparing to host our prestigious Annual Dinner in London. It will be our first in-person event since our Annual Dinner in 2020, when we were just entering the new global low-sulphur fuel era. Little did we know, in early 2020, that Covid-19 was about to become a much more problematic global event! Let's hope that 2022 will be the year when we get past the ravages of this pandemic so we can all be safer and get together in person more often.

So, what do those four buzz-words I mentioned up top mean for IBIA? Many, many things, but let me summarise a few that spring to mind.

Transition

Looking back at the past two years, the industry has coped with two major transitions: IMO 2020 and the Covid-19 pandemic. IMO 2020 was a significant energy transition as the majority of the industry moved from operating on HSFO to low sulphur fuels, mostly new blends known as VLSFO. Learning to live and work with the social distancing measures imposed due to the Covid-19 pandemic was another transition. The bunker industry has proven its resilience and adaptability in both instances. We should take courage from this as we work on the big energy transition required from the industry to meet greenhouse gas reduction targets. We have transitions going on within IBIA as well. This issue sees the final contribution to *World Bunkering* from Henrik Zederkof as our Chairman. His tenure, against the backdrop of two tumultuous years for the industry, has been extraordinary; he has shown exceptional drive and commitment to the focus areas he outlined for IBIA at the start of his chairmanship. As Henrik's tenure ends, we are lucky to have another driven individual step into the role; Tim Cosulich, who will become the Chairman of IBIA on 1 April this year. You can find out more about him in this issue's interview, and I'm sure he will hit the ground running!

Transparency

The bunker industry suffers from a murky reputation, and much has been said about the need for more transparency to improve matters. An effective bunker licensing scheme and mandatory massflow meters (MFM) has made a big difference in Singapore. Other bunker hubs may benefit from similar licensing programmes, which is why we formed the IBIA Bunker Licensing & MFM Working Group last year. Our major industry survey, launched in close cooperation with BIMCO, is designed to identify industry experiences and attitudes. We hope it will give us insights into the extent of the type of problems that gives the industry a bad reputation, and whether the industry agrees that wider implementation of bunker licensing and MFMs are good tools to improve transparency.

Sustainability

We hear this word a lot, especially in connection with work going on at the IMO and elsewhere to reduce our industry's negative impact on the environment. But sustainability is not only about the safeguarding and preservation of our ecological environment; it also means protecting human, and economic health and vitality – or in other words, societal needs.

So, for new regulations to be truly sustainable, we need holistic thinking. This is part of the reason the IMO takes so long to develop new regulations. The impact on societies needs to be taken into account, both in terms of the damage done from pollution, and the cost and societal impacts from implementing new regulations to reduce harmful pollution. In addition, the IMO must always consider the safety of ships and crew. The IMO therefore needs to work across several committees to reach the long term aims of having regulations that support the provision of marine fuels that are truly sustainable from a holistic perspective, technically feasible and safe to use.

Cooperation

Cooperation, working together toward goals of mutual interest, is a cornerstone of IBIA's ethos and activities. Our members operate in very competitive markets, often in direct competition with other IBIA members. Yet, we find that our members contribute constructively in our working groups (WGs) to identify solutions and try to reach common ground. IBIA's long-standing Technical WG attracts top-level experts which help form well-informed input from IBIA to the IMO and elsewhere. Our more recently formed Future Fuels WG, and the Bunker Licensing & MFM WG mentioned above, are prime examples of cooperation for the benefit of all.

Elsewhere, IBIA has cooperated with several other industry organisations on various items of mutual interest, including IPIECA, BIMCO, OCIMF, CIMAC and IMarEST to mention some. We have worked with them in areas such as joint publications, IMO submissions and discussions, and we had input during the development of the latest BIMCO Bunker Terms.

Cooperation will certainly be needed to get us through the big energy transition that has begun in earnest, to ensure we can go through that transition in a sustainable way. We're working on it.

Unni Einemo,
Director, IBIA
E: unni@ibia.net



IBIA EVENTS PROGRAMME 2022

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 *NEW*	Online at www.ibia.net
5 MODULES TO PURCHASE	The IBIA Basic Bunkering Course *NEW*	Online at www.ibia.net
MARCH		
09 - 10	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
10	IBIA Member Meeting	Online at www.ibia.net
23 - 24	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
APRIL		
04 - 10	Singapore Maritime Week 2022	Singapore, Asia
06 - 07	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
12	IBIA Member Meeting	Online at www.ibia.net
20 - 21	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
MAY		
11 - 12	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
12	IBIA Member Meeting	Online at www.ibia.net
25 - 26	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
JUNE		
08 - 09	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
22 - 23	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
22	IBIA : Going to Clean Ship Future	Istanbul, Turkey
JULY		
06 - 07	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
20 - 21	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
AUGUST		
03 - 04	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
24 - 25	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
SEPTEMBER		
07 - 08	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
13 - 15	IBIA Mediterranean Bunkering & Green Shipping Conference	Malta
21 - 22	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
OCTOBER		
05 - 06	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
19 - 20	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
NOVEMBER		
09 - 10	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
14 - 18	IBIA Annual Convention 2022	Houston, USA
23 - 24	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
DECEMBER		
07 - 08	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
14 - 15	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia

BUNKERING INDUSTRY EVENTS 2022

MARCH		
7 - 11	Middle East Bunkering Convention	Dubai, UAE
16 - 18	Asia Pacific Maritime 2022	Singapore, Asia
21 - 25	The Oxford Bunker Course	Oxford, UK
22 - 25	World Petrochemical Conference	Houston, USA
29 - 31	CMA Shipping	Stanford, USA
30 - 31	Asia Energy Transition Conference	Singapore, Asia
APRIL		
25 - 27	Ship Energy Summit	Valencia, Spain
MAY		
9 - 13	Portugal Shipping Week	Lisbon, Portugal
10 - 12	The International Bunker Conference IBC	Oslo, Norway
23 - 27	Maritime Week Americas	Panama
JUNE		
6 - 10	Posidonia 2022	Athens, Greece
20 - 24	Maritime Week Las Palmas	Las Palmas, Canary Islands
OCTOBER		
3 - 7	Maritime Week Americas	Fort Lauderdale, USA
18 - 19	Marine Energy Transition Forum	Antwerp, Belgium
20 - 21	ARACON 2022	Rotterdam, Netherlands
TBC	SIBCON 2022	Singapore, Asia
NOVEMBER		
22 - 24	Propulsion & Future Fuels Conference 2022	Hamberg, Germany



London



Malta



Turkey



Houston

**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*

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

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IBIA ACTIVITIES TO SHAPE THE BUNKER INDUSTRY IN 2022

2021 was a year that taught us a lot, we became more knowledgeable and stronger

During 2021, we managed to connect more than 2,000 industry stakeholders, IBIA members and non-members, through our online conferences, training courses, members meetings and networking events.

In January we organised the **'Alternative Fuels in the Maritime Industry'** webinar in collaboration with the UK Chamber of Shipping. In February, we arranged for an online version of the **IBIA Annual Dinner.** We launched a two-part conference series; **'Bunkering & Shipping in Transition'** focusing on Europe, Middle East and Americas.

In November we put together one of our most successful **Annual Conventions** to date with the presence of the IMO Secretary-General, Kitack Lim, who delivered a keynote speech and over 60 experts covering the most crucial issues of the industry. We also co-organised the **'Fostering Bunkering Opportunities'** conference with Mauritius Ports Authority (MPA) in collaboration with CELERO, including an IBIA Bunkering Training Course in Mauritius (our first physical event of the year).

We conducted surveys amongst members to help us improve our services, understand and meet your needs, and the Events working group met regularly to bring the agenda forward.

We continue running our online **IBIA Bunkering Training Course** (14 modules) as well as the new **IBIA Basic Training Course** for beginners.

We will also continue to run IBIA Members Meetings, conducted under the Chatham House rule, where our members have the opportunity to talk openly with other industry stakeholders.

A huge thanks to all our event sponsors during 2021: Shell, Peninsula, Intertek Lintec, Bunker Metric, BunkerChain, Helmsmam, ClearLynx, Nereus, Seahawk, Inatech, Bunker Metric, Cockett Marine Oil, Bunker One, Island Oil Holdings, Methanol Institute, Simms Showers, Starbulk SA, Petrol Ofisi and the Turkish Chamber of Shipping. Of course thanks also go to our media partner Ship & Bunker and our exhibitors: AMSOL, Prime's Bunkersplus Services, Termoil and Terpel as well as to our supporting associations and media sponsors

All of the above has shown that regardless of the difficulties we all have faced in 2021, our industry, our community wants to keep connecting on a regular basis.

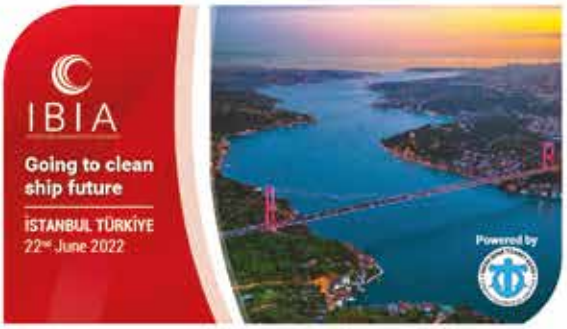
Saying that, we are pleased to announce that we have created an online **Networking Members Platform** that will enable our members to connect effectively with one another and being an active member to our community. The purpose of this networking platform is for industry experts to support each other both locally and internationally, collaborate and share knowledge and experience. You can get to know IBIA members by using the IBIA Networking Platform to send messages, request a meeting and/or conduct a video call. You can search for IBIA members by

IBIA EVENTS CALENDAR 2022

IBIA
INTERNATIONAL BUNKER INDUSTRY ASSOCIATION



FEB 21
IBIA Annual Dinner 2022



JUN 22
Going to clean ship future



SEP 13
IBIA Mediterranean Energy and Shipping Conference 2022



NOV 15
IBIA Annual Convention 2022



TRAINING COURSE
Online IBIA Bunker Training Course



TRAINING COURSE
The IBIA Basic Bunkering Course



MONTHLY
IBIA Members Meeting

ibia.net/events/

name, company, service or country. It is that simple. For those who wish to be part of this community, you can get in touch with us and become an IBIA member today.

Our events agenda for 2022 starts with the **IBIA Annual Dinner 2022**, which we are proud to host at the luxurious Grosvenor House in Park Lane in **London, on 21th February 2022**, after 2 years of absence due to Covid restrictions. The only way to start London's IP week, is with our sold-out IBIA Annual Dinner; a well-established fixture in the bunker industry's calendar. The high level of support and attendance received for this year's event is overwhelming, which reflects the growth of the bunkering industry and the need to get back to together, physically. IBIA would like to extend its thanks to our Gold Sponsor Island Oil and Sea Crown Services, our Silver sponsor Gulf Petrol Supplies, our Bronze sponsors ExxonMobil, Metcore and S&P Global Platts, our Supporters Amsol, Bunker Holding, Energy Petrol, Total, Terpel and Simms Showers as well as our advertising sponsors Petro Inspect and Propeller Fuels.

Our next physical Conference **'Going to Clean Ship Future'** powered by the Turkish Chamber of Shipping will take place in **Istanbul, Turkey on 22nd June**. It will be a full day industry conference, which will host experts covering crucial topics such as Clean Shipping & Decarbonisation, Emission Control Areas (ECAs) designated under MARPOL Annex VI & New Regulations, Alternative Fuels, and EU Emissions Trading System (EU ETS) followed by a gala dinner.

Shortly after Turkey, we will host the **IBIA Mediterranean Energy and Shipping Conference in Malta on 13th September,** Prominent speakers will explore the benefits of green alternatives and environmental technologies which will carry the bunkering industry into the future and beyond. Malta's Maritime history stretches back over 7000 years. Its strategic location has meant that it always played a central role in shipping and trade in the region. The arrival of the Navy of the Knights of St. John in 1530 saw that Malta's role as a shipping hub was forever established and this has gone from strength to strength right up to the present day. Hope to see you in Malta.

As we approach the end of 2022, the **IBIA Annual Convention 2022** will take



place on **15-17 November in Houston, USA**. The need to reduce emissions of air pollutants like SOx and NOx has been driving the industry toward new types of cleaner-burning fuels. Going forward, the decarbonisation drive will have an even bigger impact. Which alternative fuels are currently in favour? How long will LNG remain part of the picture? When will we see the first large zero-carbon cargo ships, and how long will it take for these ships to become the majority? Join industry experts introducing what we should expect in the years ahead, how the new fuels will work in engines and what preparation needs to be done for the zero-carbon transition.

Should you wish to attend, speak or sponsor any of the above events please email me at sofia.konstantopoulou@ibia.net
For more information and how to secure your place in the above events, visit: www.ibia.net

By joining IBIA you will become part of a global network of bunker industry experts who collectively form 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. Who is attending our activities: Shipowners Ship Managers, Refiners, Shipping Agents, Independent Suppliers, Bunker Traders, Storage & Blending, Law Firms, Credit and Finance Firms, Testing Agencies, Brokers, Major Oil Companies, Barge Operators, Oil Companies, Shipping Agents, Lubricant Suppliers, Charterers, Fuel Distributors, Bunkering Services.

Make sure you are part of this voice! If you and your company wishes to join the IBIA community, participate in the members meetings, actively contribute to our working groups, attend conferences and training courses, you can become an individual or corporate member now! You can access all information on our website **www.ibia.net.**

Follow our social media:

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

InternationalBunkerIndustryAssociation/

ibiabunkers

@IntBunkIndAssoc

Get in touch with us at ibia@ibia.net

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IBIA CODE OF ETHICS

IBIA is appealing to all of its members to join this important initiative by showing support for our Code of Ethics. It's an aspirational statement and an important step towards our aim of promoting the adoption of a common set of ethical values across the 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

To sign up for the Code of Ethics working group email **ibia@ibia.net**

IBIA
INTERNATIONAL BUNKER INDUSTRY ASSOCIATION

Going to clean ship future

İSTANBUL TÜRKİYE

22nd June 2022



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TURKISH CHAMBER OF SHIPPING

IBIA
INTERNATIONAL BUNKER INDUSTRY ASSOCIATION
www.ibia.net

13-15 September

2022 MALTA



IBIA Mediterranean Energy and Shipping Conference



ENTERING THE INTO THE 'NEW NORMAL', WHAT'S IN STORE FOR 2022

A new era for IBIA Africa, challenges and changes that will allow us to grow

As we enter this year, as has been the case globally, the local industry in Africa has been faced with two years of challenges about how we engage with our colleagues and industry, and we trust that 2022 will bring us together in person sooner rather than later.

As I run one of IBIA's regional offices, it has been my honour to serve our membership both locally and globally for eight years. As I write this, we are preparing for the IBIA Annual Dinner 2022, which I have had the pleasure of project managing since joining IBIA. This year we look forward to hosting a smaller gathering, to allow for social distancing, but still answering our members and industry's appetite to meet face to face. I am looking forward to seeing some of our Africa members as well as our international colleagues and friends in London this February.

We have much in the pipeline as an Association which you can read in our Events Report. From a regional perspective our members will see more direct communication from me as we scope out the Bunkering landscape here in Africa - who the key role players are in each country, what products and services are on offer and how far and wide can we grow our Africa membership and therefore have stronger influence and support the industry in the direction bunkering and marine energy takes on the African continent.

This will be supported by a short survey which will be shared with members and industry to enquire into what it is that IBIA can do for the African Bunker Market, as we recognise there are some distinct nuances and differences from our counterparts in the Northern hemisphere.

The Africa team continue to investigate ways of further engaging directly with our members in the form of informal get-togethers, online member meetings, and specific and continued dialogue on regional discussion points. We encourage you to be active and participate in all our efforts at further growing IBIA in Africa.

I look forward to updating you as we continue to work through our plans and bring our regional members together, whether it be online or in person.

Should any of our members wish to engage further regarding the above, you are encouraged to contact me directly.

If you would like to engage with the IBIA Africa team, or become a member of IBIA, speaker, sponsor or find out more about our local engagements and events, you can contact:

Tahra Sergeant
Regional Manager: Africa
SA Mobile: +27 (0)79 990 7544
E: tahra.sergeant@ibia.net
S: sergeant.tahra
W: ibia.net



IBIA
INTERNATIONAL BUNKER INDUSTRY ASSOCIATION

2022

15-17
NOVEMBER

ANNUAL CONVENTION



Houston



ASIA'S BUNKERING SECTOR ADVANCES IN 2021

IBIA's Asia office is proud to be part of Singapore's thriving bunkering scene

The Maritime and Port Authority of Singapore (MPA) announced in mid-January 2022 that 2021 total bunker sales were close to 50 million tonnes. Total bunkering volumes in Singapore, the world's largest bunkering port, have increased over the past three years, from 47.5 million tonnes in 2019 to 49.9 million tonnes, despite having to cope with the Covid 19 pandemic. IBIA Asia office, which is based in Singapore, is proud to be part of the growing bunker industry in Singapore.

We also wish to congratulate our IBIA members who make it to Singapore's top 10 bunker licensed suppliers in 2021 – Vitol Bunkers (S) Pte Ltd, TFG Marine Pte Ltd, Glencore Singapore Pte Ltd, BP Singapore Pte Limited, Sentek Marine & Trading Pte Ltd, Global Energy Trading Pte Ltd and Hong Lam Fuels Pte Ltd.

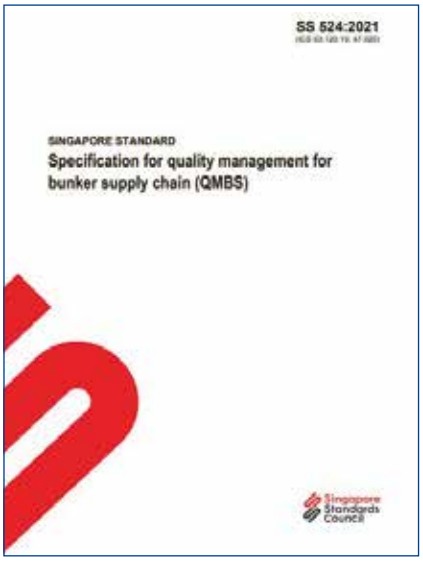
Technical Committee participation in Singapore Council

I also represent IBIA Asia in the Singapore Chemical Industry Council Technical Committees for Bunkering and LNG Bunkering, participating in driving forward Singapore's standards for bunkering for both conventional fuels and LNG.

There are important updates:

1. The revised SS 524 - Singapore Standard Specification for Quality Management for Bunker Supply Chain (QMBS) draft has completed its two-month public consultation.

Please be informed that the revised SS 524:2021 is now available on the standards e-shop https://www.singaporestandardseshop.sg/Product/SSPdtDetail/2da40a5d-c489-4377-8cef-c12e87258e51



2. SS600 - Singapore Standard Code of Practice for Bunkering by Tank Gauging is out for public comment in till 8 March 2022.

Both of these revised standards are expected to be rolled out in Q2 of 2022.

Current Training Programme

The IBIA Asia office offers mandatory training for the bunker sector in Singapore with courses that have been approved and certified by the Maritime and Port Authority of Singapore (MPA). They are:

- Singapore Standard SS 600:2014 + SS 648:2019 - 2 Days Basic Training for new Bunker Surveyors and Cargo Officers.
- Singapore Standard SS 600:2014 + SS 648:2019 - 2 Days Advanced Training for new Bunker Surveyors and Cargo Officers.

The IBIA Asia office also offers specialised training for the bunker sector in Singapore with our MPA-approved course, Understanding Marine Fuel. We completed two successful live on line-courses in October and November 2020.

If you are interested in becoming part of the bunker community through IBIA membership or in the bunkering training offered by IBIA Asia we encourage you to contact Noraini at noraini@ibia.net or me as detailed below.

Alex Tang MIPM CMarSci MIMarEST
Regional Manager: Asia
M: +65 88 76 6491
E: regionalmanagerasia@ibia.net
W: www.ibia.net



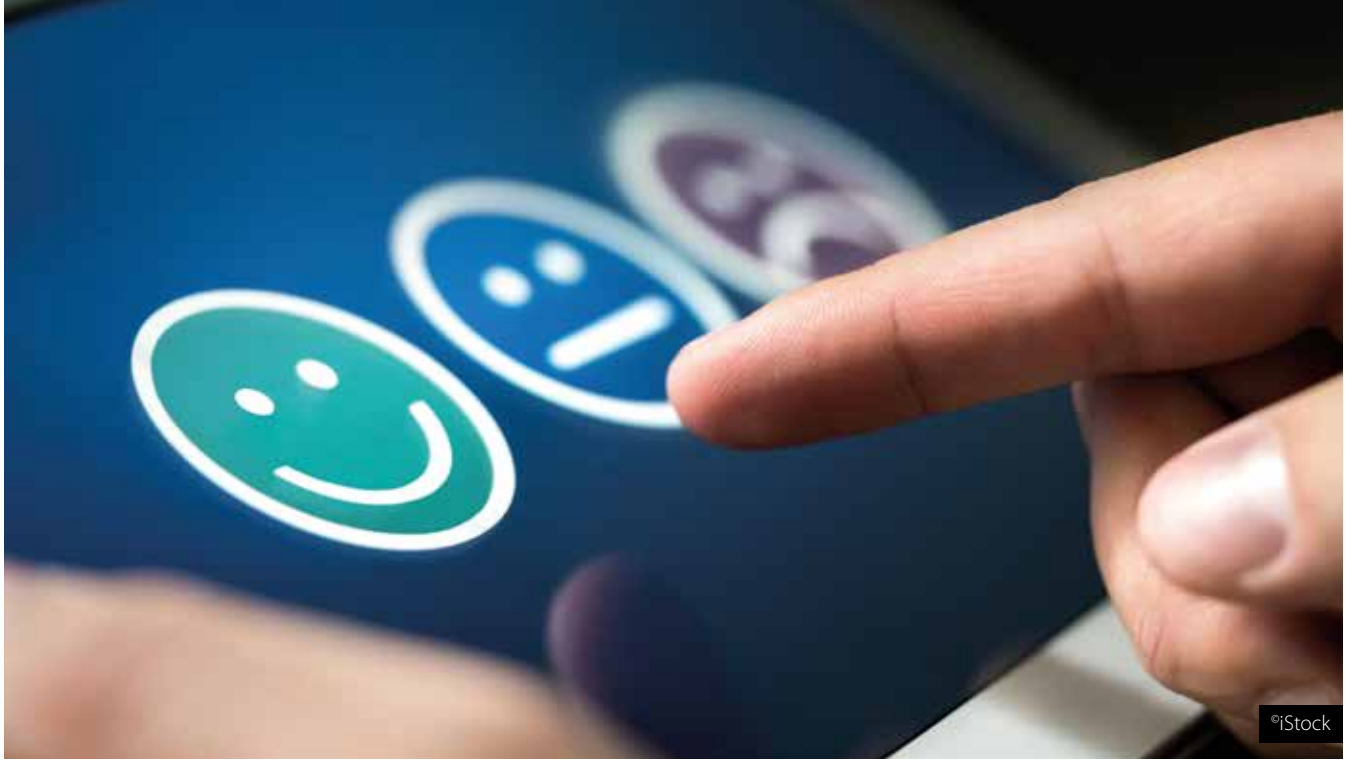
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MAJOR SURVEY LOOKS INTO NEED FOR BUNKER LICENSING

IBIA, supported by BIMCO, launch survey to assess industry views on licensing and Mass Flow Meters as tools to improve transparency in the marine fuel sector

The need for more transparency in the bunker industry is an ongoing theme of discussion and dialogue among relevant stakeholders. In particular, the bunker industry's record for disputes over the quantity and quality of fuels supplied to ships calls for even greater focus in order to improve this record and enhance the industry's reputation and reliability.

In a bid to address this and contribute meaningfully, IBIA has stated its ambition to actively work for effective bunker licensing schemes, preferably introducing mandatory massflow meters (MFM), to be implemented in bunker hubs around the world. This would, we believe, improve market conditions by reducing the scope for malpractice and create a more transparent and level-playing field in the marine fuel sector.

Does the industry agree? This is what the survey aims to establish.

During 2021, we formed the IBIA Bunker Licensing & MFM Working Group (WG) to drive forward the work in identifying key elements of bunker licensing programs, chaired with great skill by Alexander Prokopakis, the CEO of probunkers. In addition to IBIA members, BIMCO has taken part in this working group and supports this initiative.

This WG has put together a carefully crafted survey to identify industry experiences with quantity and quality issues, and assess opinions among industry stakeholders about the impact of introducing bunker licensing programmes and MFMs.

We are now looking for wide industry participation to get a clear picture.
The survey will take approximately 7-10 minutes to complete. All responses will be treated in confidence.

Below is a QR Code and link that will take you to the survey, or you can find it online on IBIA's and BIMCO's websites.

We urge you to take part in our Bunker Licensing and Mass Flow Meter survey!

BIMCO

IBIA
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Posidonia
6 - 10 June 2022
Metropolitan Expo, Athens Greece
www.posidonia-events.com

JOIN US

- IBIA MEMBERSHIP BENEFITS -

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 £300

- IBIA Board Member eligibility
- The right to 1 vote for Board Member Elections
- IBIA Working Group eligibility
- Free or 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)
- Use of IBIA logo on your website and stationery
- Access to IBIA's online membership directory
- Eligible to book up to 4 tickets at the prestigious IBIA Annual Dinner
- IBIA mediation and dispute resolution
- IBIA membership certificate

CORPORATE £1500

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
- 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 £500 per office

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.

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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

If you are interested in becoming an IBIA member please contact ibia@ibia.net or visit www.ibia.net

IBIA's NEW MEMBERS 2021

We welcomed **65 NEW MEMBERS**

CORPORATE - OFFICE A

COMPANY	PRIMARY CONTACT	BUSINESS ACTIVITY	REGION
BANLE ENERGY INTERNATIONAL LIMITED	Jasmine Lyew,	Trader	Asia
BUNKER ONE	Peter Zachariassen	Supplier	Europe
BUNKERCHAIN PTE LTD	Vance Loh	Service	Asia
CARBONADO ENERGY	Neveraj Moodley	Service	Africa
CCIC Singapore Pte Ltd	Tan Teng Hian	Service, Surveyor	Asia
EMERSON MARINE SOLUTIONS	Daniel Kemp	Service, Supplier	Europe
ENG HUA COMPANY (PRIVATE) LIMITED	Mike Sin		Asia
GOODFUELS B.V.	Patrizia Patrizia	Supplier	Europe
HAI SOON DIESEL & TRADING PTE LTD	Michael Shiew Kiong Low	Ship Owner, Ship Manager	Asia
KENOIL MARINE SERVICES PTE LTD	Desmond Chong	Supplier, Ship Owner	Asia
LUDOIL ENERGIA SRL	Claudio Laurora	Supplier	Europe
MAURITIUS PORTS AUTHORITY MPA	Sanjeev Ghurburrun		Africa
MILAHA	Nikolaos Lazarikos	Service	Middle East
MINTON, TREHARNE & DAVIES LTD	Richard Minton	Service	Europe
MODIFI GMBH	Sven Brauer	Financial	Europe
OLEO ENERGY DMCC	Anil Keswani	Supplier, Trader	Middle East
ORIM ENERGY	Edwin Coppens	Bunker Supplier	Europe
RED SEA BUNKERING	Abdi Ismail Kahin	Bunker Supplier	Africa
SENSIA GLOBAL	Duane Rowan		Americas
STATE TRADING CORPORATION	Rajiv Servansingh	Service, Storage	Africa
THE SHIPOWNERS' MUTUAL PROTECTION AND INDEMNITY ASSOCIATION (LUXEMBOURG) SINGAPORE BRANCH	Captain Hari Subramaniam	Other	Asia

CORPORATE - OFFICE B

COMPANY	PRIMARY CONTACT	BUSINESS ACTIVITY	REGION
BUNKER HOLDING A/S	Michael Ekdal Jacobsen	Bunker Trader	Asia
CCIC MIDDLE EAST FZE CO. LTD	Seow Wee Seong	Service, Surveyor	Middle East
BP OIL INTERNATIONAL LIMITED	Captain Rajeev Kumar	Oil Industry Major Ship Owner/Charterer	Asia
OLEO ENERGY (INDIA) PVT LTD	Amit Dingwani	Supplier, Trader	Middle East
FINCO FUEL GROUP BV	Bart-Willem Ten Cate	Oil Industry Major, Storage	Europe
HAI SOON SHIP MANAGEMENT PTE LTD	Gilbert Wenliang Liu	Ship Manager, Service	Asia
MODIFI	Ankit Goel	Financial	Middle East
MINERVA BUNKERING	Tyler Baron	Bunker Supplier	Europe



INDIVIDUAL

COMPANY	PRIMARY CONTACT	BUSINESS ACTIVITY	REGION
HELMSMAN LLC	Maureen Poh	Legal	Asia
AGATAZ ENERGY	Rami Kaddoura	Trader	Europe
EVANS ADVISORY LLC	Eric Evans	Service	Americas
C I QUALITY BUNKERS SUPPLY S.A.S	Sergio L. Vargas	Supplier	Americas
MARITIME RECRUITMENT COMPANY LTD	Vernon Jayanathan	Service	Europe
TSAKOS SHIPPING & TRADING SA	Stamatios Xochakis	Service	Europe
MCHICH MOHAMED LTD	Karim Mchich	Surveyor	Africa
POWERZEEK AS	Dag Lilletvedt	Service	Europe
EXPONENT	Michael Banning	Service	Europe
UNIPER ENERGY DMCC	Emanuele Gallone		Middle East
CELERO LTD	Patrice Maury		Africa
BLACKCORAL ENERGY SARL	Jesper Christensen		Europe
PORT OF ROTTERDAM AUTHORITY	Ron Van Gelder	Port Authority	Europe
LEVANT ATLANTIC	Umar Girei Dahiru	Supplier	Africa
MARITEC PTE LTD	Ken Zhang	Service, Oil Industry Major	Asia
WEST COAST AFRICA SURVEYS (WCAS)	Romaric Pagning Gad		Africa
TRITON BUNKER SERVICES PTE LTD	Hoo Keong Victor Tay	Service, Supplier	Asia
HAPAG- LLOYD AG	Jan Christensen	Ship Owner	Europe
EDFLO ENERGY SERVICES LTD	Uwadiae Oyegun	Service	Africa
FUELTRUST	Darren Shelton	Service, Agent	Americas
MAURITIUS PORT AUTHORITY	Shankhnad Ghurburrun	Port Authority	Africa
STEM FUELS	Simon Munch		Europe
GRAHAM EDEN	Graham Eden	Agent	Europe
BUNKERIST TRADING AND BROKERING LTD	Ahmet Cagatay	Trader, Broker	Europe
NEXT MARITIME, S.L.U.	Francesc Dianez	Trader, Agent	Europe
MULTISOL SOUTH AFRICA (PTY) LTD	Robert Bell	Other	Africa
HOYER MARINE TRADING GMBH	Tim Heickmann	Bunker Supplier, Trader	Europe
MARTIME BROKERAGE AND TRADING CORPORATION	Burak Ekim Urun	Broker, Trader	Europe
ENEMAR	Hugo Vera	Trader, Supplier	Americas
CPG BUNKERING	Peter Heilner	Bunker Supplier	Africa
OCEANIS BUNKERING LTD	Robert Desvaux	Bunker Supplier	Africa
ADVANCED RESOURCE MANAGERS LTD	Jasmine White	Other	Europe
PROPELLER FUELS LIMITED	Robert Thompson	Bunker Supplier, Trader	Europe
OPIS BY HIS MARKIT	Rob Sheridan	Media	Europe
PMG HOLDING	Anna Stefanou	Bunker Supplier, Broker	Europe
WOLVERINE TERMINALS	Mathew Trickey	Bunker Supplier, Storage	Americas



Timothy Cosulich ©Fratelli Cosulich

FAMILY VALUES

Timothy Cosulich has strong family links both to the bunker industry and IBIA. He will become Chair of the Association on April 1, 2022. Unni Einemo spoke to him about his experience so far and thoughts on what lies ahead

Timothy Cosulich joined Fratelli Cosulich in 2010, where he sits on the Group Board of Directors and holds the role of CEO – Marine Fuels. He started his career as a Strategy Consultant at PricewaterhouseCoopers, then got an MBA from INSEAD and later joined the A.P. Moller Maersk Group as a general manager focusing on acquisition and development of terminals. He was elected to the Board of IBIA in 2019, and has served as the Vice Chair. The Board has unanimously elected him as the next Chair of IBIA.

Unni Einemo (UE): Fratelli Cosulich is a long-established family company. Did you know much about the family business in general, and the bunker industry in particular, prior to your initial career moves?

Timothy Cosulich (TC): Honestly, when I joined the Group, I knew little about Fratelli Cosulich and even less about the bunker industry. In our family we do not put pressure on young generations to join the business as we only want to attract the truly motivated and passionate ones. Business is not really discussed at the dinner table and my understanding of what the Group was involved in – including bunkering – was rather limited. I still remember my first week at work I was given classes on the (very) basic concepts about marine fuel… and my learning continues to this date!

UE: Did you always plan to join the family firm? Were your initial career choices part of that plan?

TC: Not really… no family member has the right to join the business; you need to work outside of the Group for at least 10 years before you can apply. I was fortunate that my parents never pushed me towards the family business and I always felt free to find my own path. I started in strategy consulting at PwC and I loved it as it gave me plenty of learning and growth opportunities. After my MBA at INSEAD I was lucky to get a very interesting offer from APM Terminals (the terminal division of AP Moller Maersk) and I spent a few years at their headquarters in the Netherlands. The time I spent at APMT also allowed me to get a feel for the shipping industry so that, when "the call" came from Fratelli Cosulich I felt rather confident that this was an industry I was passionate about.

UE: Upon joining Fratelli Cosulich, did your experiences from your previous roles help you bring anything new and/or different to your understanding of running a marine fuels business?

TC: I feel that my experiences prior to joining the Group were pivotal in a number of ways. As a family member in a 7-generations family business it is normal to ask yourself if you are where you are because of your skills or because of your last name. The answer, for me, it's that it is because of both… but, if I look at how our company is structured, I believe that skills and merit do play a relevant role.

Having spent many years at excellent and very professional organisations such as PwC and Maersk gave me confidence in my ability to contribute to our family business' growth and success. The challenge, particularly at the beginning of my experience at Fratelli Cosulich, has been having the maturity and humbleness to learn why things work in a certain way before suggesting changes. I remember being eager to make an impact and to bring my prior learnings, sometimes overlooking the fact that businesses are

made of people and change can only happen if those around you understand and buy into such change.

UE: What do you think are the best and worst aspects of the bunker industry?

TC: I have spent the past 12 years in the industry, so I still consider myself a "beginner" particularly when I compare my industry knowledge to the one of some of my colleagues or some of my IBIA fellow Board Members.
I truly enjoy the "relationship aspect" of the business and how important mutual trust is. On the other hand, I hope that the industry will soon move beyond the lack of transparency that still prevails in many situations.

UE: Is there a difference between a family business like Fratelli Cosulich and other industry players? Are there specific positives/negatives?

TC: Competition is great because it pushes you to improve, and it is tempting to compare yourself to others but ultimately, I think it is important to lead your business based on your values and vision. In our case I truly believe that integrity and a desire to improve is what drives us in the interactions with our stakeholders. Having my last name as part of our Group name also implies that I make it my priority to preserve the reputation that 5 generations before me built over the last 164 years through honesty and transparency.

The relationship between our family and our people is also something that we treasure and that we focus on. We have never let anyone go (except for lacking performance, of course – that's something where we set the bar rather high). Even when the market is tough, we make sure that our colleagues feel looked after and motivated.

As a family business we are attached to our tradition and that, sometimes, can also mean not being fast enough at innovating and changing. We are focusing on making sure that we do not confuse "tradition" with "obsolete and old way of working"… but it is work in progress!

UE: You represent a new generation of managers in the long history of Fratelli Cosulich, and in the bunker industry. Do you think much has changed compared to previous generations? What has changed, and what hasn't, both in terms of the company, and the industry you operate in?

TC: A lot has changed and the pace of change, if anything, is increasing. Nowadays trust is key, but it is not sufficient. Competition happens at a global level and information asymmetry has decreased; this means that industry players are required – and rightfully so – to provide a service that is highly competitive and based on in-depth knowledge.



Fratelli Cosulich Board Members from left to right: Stefano Abate (Group CFO), Tomaso Moreno, Marta Cosulich, Augusto Cosulich, Timothy Cosulich, Matteo Cosulich, Andrea Cosulich (Honorary Chairman). All are family members except Stefano Abate ©Fratelli Cosulich

Our Group has significantly grown over the years as we now count on more than 2,000 employees worldwide, 104 companies in almost 30 countries, and operating in 7 different segments of the shipping industry (Marine Fuel being one of them). The complexity of our structure has increased, and the challenge is to maintain our "family business feel and values" while evolving and professionalising the way we work.

UE: Your family has an historic connection with IBIA. Antonio Cosulich was one of IBIA's founding members and its second ever chairman. Did this influence your decision to stand for election and become more involved with IBIA? What where the other reasons?

TC: Antonio has been a true role model for me and for many of my colleagues. His passion for the industry and his unwavering pursuit of business done with integrity are a constant reminder for what we, as a Group, stand for. I cannot deny that it gives me joy and a sense of pride to know that I will be following his footsteps and that Fratelli Cosulich will have provided two chairmen to IBIA.

Having said that, the main reason for me to stand for election back in 2019 was a sense of responsibility and one of belonging. Fratelli Cosulich has been part of the marine fuel industry since 1969 and I feel it is our responsibility to play an active role in shaping how our sector evolves, pushing for more transparency, professionalism, and sustainability. It is too easy to sit on the side-line and complain that the industry is not moving in the right direction; with IBIA we have the opportunity to have a true positive impact and to actively support the energy transition.

UE: How would you describe IBIA, and why IBIA is important?

TC: IBIA is a member driven organisation, playing a key role in the marine fuel industry towards increased transparency, professionalism and, overall, sustainable and business friendly regulations. The value and know-how brought about by members and the secretariat allows IBIA to be a relevant voice for the industry at the IMO and with numerous institutions around the world. All segments of our sector are represented at IBIA and the association provides a great platform for industry players to share ideas and discuss important issues.

As a Company, we always appreciated IBIA's contribution to the world of marine fuel and felt that every member shares the honour and the responsibility of playing an active role in this process.

UE: IBIA is working on many different fronts, both globally and regionally. Has the Association changed much since you first became aware of its activities?

TC: I feel that IBIA, over the past years, has found a more structured and focused dimension. If you look, for example, at the calibre of candidates that we had for the most recent Board elections, you will realise how high the bar is and how top companies (and top individuals) now aspire to play a prominent role within the organisation.

That is a testament to the good work that has been done so far, and also to the passion that industry players have for the good development of bunkering.

We have to continue putting our members, and the industry at large, at the core of what we do, and be courageous when it comes to sustain integrity and transparency as key values.

UE: In taking the role as the chair of IBIA, what are your plans for how IBIA should operate and what to focus on?

TC: My first goal is to reinforce the message that IBIA is a member-driven organisation. All of us, as members, have a responsibility to shape the agenda that the association will pursue, based on what we believe is the good of the industry. We have so much know-how amongst our members and we can have such an impact once we align around some key objectives.

Externally, it will be important for IBIA to consolidate its role when interacting within the IMO and with other important institutions around the world, advocating for business & environment friendly regulations as well as transparency and integrity.

Internally, we will continue the work started in the past couple of years, giving IBIA the right structure, revolving around the Global Board, Regional Boards, and Working Groups.



One of the company's barges delivering bunkers in Singapore ©Fratelli Cosulich

It goes without saying that our members want and need a platform to connect, discuss, and exchange ideas, and IBIA will continue to provide this through its members meeting, conventions, training courses, and our flagship event, the Annual IBIA Dinner.

UE: You are based in Singapore, where Fratelli Cosulich operates a substantial fleet of bunker barges. This must make you very aware of the benefits of solid market regulations, including bunker licencing and mandated use of approved and verified MFM systems. To what extent do you think the Singapore Standards and regulations for the country's bunker industry are applicable to other ports and countries?

TC: I can openly say that for us, as a bunker tanker owner and operator in Singapore, life changed on 1st January 2017. The level of transparency and reliability dramatically improved once the use of MFM systems was mandated by the Maritime and Port Authority of Singapore and the entire industry benefitted from the achievement of this milestone.

Since then, a number of players tried to circumvent the rules, but they were caught and the MPA stripped them of their licence, showing how important enforcement is.

I can speak on behalf of both Fratelli Cosulich and IBIA when I say that we fully support the introduction of MFMs globally as we see this as a key steppingstone towards a transparent and fairly regulated industry.

UE: We've seen the marine fuel industry transition successfully to IMO 2020. What are your thoughts on the much bigger energy transition our industry needs to embark on?

I would probably need a few pages to express a comprehensive view. My wish is that the industry swiftly moves from "discussing" the energy transition to "doing something" about it. We have a number of solutions on the table, all of them with pros and cons; the climate emergency is here, today, and our responsibility as an industry and as a society, is to take steps towards decarbonisation. Once again, IBIA's role will be pivotal in providing a platform for industry players to discuss, align, and collaborate.

UE: You have been working in the bunker industry for just over a decade, during which much has changed, yet some things are very much the same. A decade from now, what do you think the industry will look like?

TC: I am an optimist, and I see an industry that has maintained its passion and traditions, while focusing on sustainable energy sources. I see a very competitive industry, where professional companies fiercely compete based on skills, knowledge, and customer service, rather than how reckless and non-taransparent they are.

Like in a family business, I wish the key players in our sector see themselves as stewards of our industry, tasked with handing it over to the next generation in better shape than when they arrived!





IMO IN 2022: WHAT TO WATCH

EGCS discharge water, black carbon, fuel oil safety, and various policy instruments to address GHG emissions are among the agenda items that concern the marine fuels sector, says IBIA's Unni Einemo

The agenda for IMO meetings in 2022 features a mix of big political issues and science. The volume of studies submitted about some of the agenda items is striking. A high level of technical and scientific understanding will be required to make informed decisions both on policies and policy tools, but politics and opinion may colour interpretation of available evidence. It certainly makes for complex and multifaceted discussions.

There are 35 IMO meetings scheduled for 2022, including of various committees, sub-committees and intersessional working group meetings. IBIA will not be at all those meetings. We're present when the agenda touches on items that have an impact on the marine fuels sector, and that's quite a few. In addition to the meetings, we participate in IMO correspondence groups that discuss specific items to make progress between meetings. There is only so much that can be achieved during the meetings themselves, which are attended by hundreds of delegates from member states, NGOs and IGOs.

During 2022, discussions will continue on items the IMO has been working with since before 2020, when the Covid-19 pandemic threw a major spanner in the works. We are still playing catch-up after meetings were suspended for several months, and since they resumed virtually, we are hamstrung by short working hours compared to physical meetings at IMO HQ in London.

I have marked several IMO meetings in the IBIA calendar for 2022.

ISWG-GHG: LCA and carbon intensity

Two meetings of the Intersessional Working Group on Reduction of GHG Emissions from ships have been scheduled for 2022. ISWG-GHG 11 will be held on 14-18 March, ISWG-GHG 12 on 16-20 May. The aim of these meetings is to help the Marine Environment Protection Committee (MEPC) make progress by working out details on GHG policy instruments that cannot be discussed in sufficient detail during MEPC meetings.

The ISWG-11 session in March will "further consider the development of draft lifecycle GHG and carbon intensity guidelines" for marine fuels. This complex work is a continuation from ISWG-9 and ISWG-10 meetings in 2021.

ISWG-GHG 9 agreed on developing well to wake (WtW) lifecycle assessment (LCA) guidelines but was not able to agree on the exact methodology. There are competing proposals with many common elements but also some divergence. The EU has submitted a proposal in line with the methodology proposed in FuelEU Maritime (part of the Fit for 55 package). Another proposal, which appears to be simpler and more flexible, is based on a Fuel Lifecycle Label (FLL).

Both talk about defining default well to tank (WtT) emissions of various fuel categories. There is also talk of allowing a system where default values can be replaced by actual values provided the actual values are proven through a recognised certification scheme.

Draft LCA Guidelines that the ISWG-GHG will continue to develop use aspects from both proposals, including Fuel Lifecycle Label categories for the fuel based on carbon source and other sustainability aspects. This could be documented on the BDN linking the fuel, as supplied, to a sustainability certificate.

This would have significant impact on marine fuel suppliers. Despite the complexity this will entail, it is hard to see any other way to move forward than

to adopt a workable methodology and associated certification schemes, preferably one that will apply a single and consistent international approach to determine the lifecycle analysis of fuels as supplied to the maritime sector.

ISWG-GHG 10 began discussions on proposals envisaging a gradual phase in of fuel with lower GHG intensity than fossil fuels, with the potential introduction of a Low GHG Fuel Standard (LGFS), or GHG intensity limit.

IMO regulatory instruments to address GHG from shipping have so far regulated the emissions from the ship through technical and operational measures. The idea of a GHG intensity limit is a new departure as it would set requirements on the fuel's overall GHG emissions profile and require gradual uptake of low GHG intensity fuels.

It is, in essence, the same principle as we have seen in the FuelEU Maritime (Fit for 55) proposal, which is a policy instrument aimed at stimulating demand for renewable and low carbon fuels.

IBIA sees the gradual phase-in of a low GHG intensity limit as a very effective tool to ensure predictable levels of demand, which the supply side would respond to as we see increasing demand for such fuels. The proposals could have a similar effect as we have already seen for sulphur limits, which set a clear regulatory signal which stimulated demand and, consequently, supply.

ISWG-GHG 11 is also due to consider how to deal with various aspects of impact assessment. Many countries fear that IMO measures may unintended negative consequences, and have a disproportionately negative impact on vulnerable states. These discussions are usually long, complex and very political.

Also on the agenda for ISWG-GHG 11 are proposals for the revision of the ship fuel oil consumption Data Collection System (DCS). The agenda for ISWG-GHG 12, which takes place less than a month prior to the first of two MEPC meetings in 2022, is not available yet.

PPR 9 – EGCS & Black Carbon

The Sub-Committee on Pollution Prevention and Response meets once a year and has a large technical agenda, aimed at providing solutions to tasks set by its parent committee, MEPC. The ninth session, PPR 9, will take place from 4-9 April. Three agenda items are of interest:

- Development of an operational guide on the response to spills of hazardous and noxious substances (HNS)
- Reduction of the impact on the Arctic of Black Carbon emissions from international shipping
- Evaluation and harmonization of rules and guidance on the discharge of discharge water from exhaust gas cleaning systems (EGCS) into the aquatic environment, including conditions and areas.

The debates on black carbon (BC) and EGCS (scrubber) discharges are prime examples science and politics sometimes pulling in different directions.

Discussions about what causes black carbon emissions have been fraught and heavily biased against VLSFO, but hopefully IBIA and others have helped clarify some of the misunderstanding about that with submission to, and discussions at, previous PPR and MEPC meetings. Policy decisions on short-term measures to reduce the impact of BC emissions on the Arctic were agreed during 2021. At the time of writing, the only new paper submitted to PPR 9 on the subject is about the suitability of different methods for measuring Black Carbon emissions from marine engines.

Four information papers from MEPC with reports from research into BC formation have been forwarded to PPR 9.

The not very snappily titled agenda item about discharges from scrubbers (the third bullet point) is one the most confusing and difficult ones. Among the papers PPR 9 is due to consider are a large number of information papers, several containing studies which are not easy reads, and they do not all draw the same conclusions.

How do we get clarity about the subject? It would take an unbiased scientific group to make sense of the various studies and what conclusions one can draw from them. Unfortunately, there seems to be no time for that as the target completion year for this agenda item is 2022.

The only new proposal available to view at the time of writing, PPR 9/10, describes parameters to be considered, and data that should be collected, while developing a risk assessment that considers local environments and a database for evaluating hazardous substances in the discharge water from exhaust gas cleaning systems (EGCS). It is a very long list. The proposal asks PPR to consider the parameters, but also for a database evaluating hazardous substances in discharge water from ECGS to undergo a scientific review by the GESAMP EGCS task team.

The outcomes will be of great interest to shipowners using, or considering to use, EGCS to meet current sulphur emission limits, as well as refiners and bunker suppliers providing HSFO to ships equipped with scrubbers.



Fuel oil safety

After a pause in 2020, the IMO's Maritime Safety Committee (MSC) has resumed work on an agenda item called 'Development of further measures to enhance the safety of ships relating to the use of fuel oil'.
As reported in previous issues of *World Bunkering*, the initial focus is on further regulations around flash point.
The intention is to put more controls on the supply side to ensure fuels with flashpoint below the 60°C minimum limit in SOLAS do not find their way to ships and, if they do, provide guidance to ships on how to manage such situations.

IBIA has taken active part in this work, where we represent a minority view. We are not convinced about the need for further regulations. As for what form such regulations might take, IBIA's efforts are a bit like trying to make sure the medicine we don't see a need for doesn't cause negative side effects.

The signals coming through from the latest round of work in a correspondence group is that new requirements will come for suppliers to document a specific flashpoint value prior to delivery, or provide a declaration that the fuel conforms with the SOLAS regulation. IBIA would prefer the latter which is in line with requirement for the bunker delivery note to contain a declaration that the fuel oil supplied is in conformity with regulation 18.3 of MARPOL Annex VI.

We are all for pragmatic guidance for how to deal with the few cases where, after delivery, test results from the ship's own sample indicate that the flashpoint is below 60°C. There's quite a bit of work left on that part.

Also up for discussion at MSC 105 are whether it is appropriate for the IMO to develop new safety measures related to oil fuel parameters other than flashpoint.

It seems quite likely that this agenda item will still be active at MSC 106, scheduled for 2-11 November this year.

MEPC x 2

MEPC is where all the IMO's big environmental decisions are made and it will, undoubtedly, continue to be dominated by GHG discussions at the two sessions scheduled for 2022. MEPC 78 will run from 6-10 of June, MEPC 79 from 12-16 December.

No papers were submitted to MEPC 78 yet at the time of writing, but the first submission deadline, on March 4, is not far away. Even if no new documents have been submitted yet, there are many papers submitted to previous session of MEPC that have still to be considered.

The agenda items of interest for the marine fuels sector include:

- Air pollution prevention
- Energy efficiency of ships
- Reduction of GHG emissions from ships
- Pollution prevention and response
- Identification and protection of Special Areas, ECAs and PSSAs.

For the latter, a proposal to establish a sulphur emissions control area in the Mediterranean is expected this year.

With two MEPCs this year, we should see further groundwork being laid for achieving 2030 energy efficiency targets for shipping, get closer to agreement on a more ambitious overall GHG reduction target for 2050 and, crucially, development of regulations that will enable and push for those targets to actually be achieved.

Hopefully, the work taking place during the ISWG-GHG meetings on items such as LCA and carbon intensity, and impact assessments, will assist MEPC in defining



IMO terreace with flags ©IMO

and agreeing on some of those measures during 2022. Whether there will be sufficient consensus to take any of these big decisions during 2022 remains to be seen, but with the IMO's initial GHG strategy due for an update in 2023, serious progress will be needed. The world is watching and waiting impatiently.

Fuel cells and low flashpoint fuels

The Sub-Committee on Carriage of Cargoes and Containers (CCC) does not face the same public interest as MEPC, or even the PPR sub-committee, but there is interesting and important work going on there.

As previously reported in *World Bunkering*, this sub-committee made history when, in mid-September 2021, CCC 7 agreed draft interim guidelines for ships using fuel cell power installations, adding fuel cells to the short list of energy converters used to power ships. It took around 10 years of discussion to develop the framework, intended to ensure the safe and reliable delivery of electrical and/or thermal energy through the use of fuel cell technology. It will be sent to the Maritime Safety Committee (MSC) for approval at its 105th session in April 2022.

CCC has an ongoing agenda item on the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code). The IGF Code initially focused on liquefied natural gas (LNG), but work is underway to add specific provisions for other fuel types. Interim guidelines for the safety of ships using methyl/ethyl alcohol (which includes methanol) were approved by the MSC in 2020.

At CCC 7, it was agreed that its correspondence group should consider how best to proceed with the development of draft amendments to the IGF Code to address safety provisions for ships using low-flashpoint oil fuels; continue to develop interim guidelines to address safety provisions for ships using LPG fuels; initiate the development of guidelines for the safety of ships using hydrogen as fuel, and collect information on the safe use of ammonia as fuel.

The first round of input to this correspondence group, which IBIA takes part in, was completed in December 2021. The outcomes of this correspondence group deliberations will be discussed at CCC 8 which is set to take place from 19-23 September 2022.

Speaking at CCC 7 last year, IBIA said: "We fully appreciate the urgency of developing safety provisions to enable the timely uptake of alternative fuels aimed at reducing GHG emissions from shipping. Some of those options will include e-diesel and bio-derived diesel fuels, and we will likely see increasing production and use of such fuels, either on their own or in blends with oil-based fuel, already a well-established practice in land transportation."

IBIA and another NGO have therefore argued that CCC should continue to develop regulations for low flashpoint oil fuels under the IGF Code due to its moderate hazard profile, providing access to a liquid fuel with high energy density, which in future could be used in the synthetic climate neutral e-fuel version. There are, however, a number of delegates who want to drop this work and focus on other types of low flashpoint fuels.

As you can see, there are many aspects to the work IMO does in its various committee that, in various ways have an impact on the marine fuels sector. We need all these elements to come together to reach the long term aims of having regulations that support the provision of marine fuels that are truly sustainable, technically feasible and safe to use. The rest is up to the market.





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Spain has trialled sniffer drone flights in the Strait of Gibraltar ©Nordic Unmanned

FRESHER AIR

Another shift in the overall fuel picture is on the cards for the western Med's bunker suppliers, John Rickards writes

It's been on the horizon for a long time, but the Med's littoral states have agreed to make the region a sulphur emission control area (ECA) from 2025. The proposal still needs to go before the IMO's Marine Environment Protection Committee, of course, but it seems very unlikely now - given how long this has been in the offing - that it will have any real issues passing through IMO.

The EU's Commissioner for the Environment, Oceans and Fisheries Virginijus Sinkevičius said: "Our commitment today manifests the will to work with our non-EU partners to achieve high standards of environmental protection in line with our European Green Deal. I am particularly proud that all contracting parties have agreed to designate the Mediterranean as a sulphur emission control area to protect the health of millions of Mediterranean citizens and their marine environment from ship's pollution."

All this will mean considerable upheaval for the region's bunker suppliers, with local demand shifting from fuels with maximum 0.50% sulphur to fuels with maximum 0.10% sulphur, except for outbound traffic at the Strait of Gibraltar. Perhaps it will also give greater economic motive for ships to switch to scrubbers or alternative fuels, given the price differentials between MGO, ULSFO, LNG and HSFO. Given the level of LNG bunkering infrastructure on the northern side of the western Med, as well as the gateway ports at the Strait, it certainly looks relatively promising for the future of alternative fuel demand.

The Strait itself was the site of a pilot programme for tighter sulphur monitoring in recent months. Backed by the European Maritime and Safety Agency and carried out by the Spanish General Directorate of Merchant Marine, it has seen drone monitoring ships' stack emissions. Drones have been used in the entrance to the Baltic and in the English Channel for "sniffing" exhaust plumes, but this is the first time, EMSA said, they've been employed in this role outside the northern European ECAs. The drone flights from Tarifa finished at the end of October and the authorities are now evaluating their effectiveness with a likely eye to future use.

In a statement issued partway through the pilot project, EMSA said the drone was flying twice a day and making an average of ten inspections, with 27 possible breaches of SOx emissions out of the first 294 vessels checked. Records from the drone are not confirmation of non-compliance directly, but automatic uploading to EMSA's THETIS database makes those ships readily targetable for port inspection and fuel testing.

The western Med has seen continued development in LNG bunkering, with France seeing its first LNG bunker barge taking station in Marseille-Fos this January under TotalEnergies' supply deal with CMA CGM for its LNG-powered box ships. The 6,000 cubic metres Gas Vitality is a sister to TotalEnergies' Gas Agility, performing the same service in Rotterdam.

"TotalEnergies is delighted to successfully complete Marseille's first LNG bunkering operation of a containership via the Gas Vitality. Her deployment underscores the company's commitment to support the French port's ambition to be an LNG bunkering hub for the Mediterranean region," said Jérôme Leprince-Ringuet, VP for marine fuels at TotalEnergies. "This landmark operation also demonstrates our continued support to the growing role of LNG in shipping's energy transition. In line



Marseille has joined the ranks of ports offering LNG bunkering © Jeanne Menjoulet/CC-BY

with TotalEnergies' climate ambition, we will continue to work hand-in-hand with our industry partners to develop and scale up new, lower-carbon and ultimately, zero-carbon fuel solutions for shipping."

In Italy, class society RINA was awarded a four-year framework contract from EMSA in the summer of 2021 to back initiatives to increase LNG bunkering availability across the Med and into the Black Sea and Caspian. The initiative is to focus on small scale bunkering and depots rather than larger hub facilities to provide wider-scale, lower-volume supply of the fuel. RINA's role is to help port authorities determine which locations are feasible.

RINA's energy engineering solutions director Angelo Lo Nigro said: "LNG is an important fuel on our way to decarbonisation. The services we will be providing as part of the frame agreement with EMSA will help make LNG storage and bunkering available in port areas and will also bring consistency and guidance for economically developing nations that do not yet have strong experience with small scale LNG. "This contract will reduce the capacity gap between countries and ensure a coherent, effective and uniform implementation of the international rules for maritime safety, security and prevention of pollution from ships in the Mediterranean, Black and Caspian Seas."

RINA certainly seems keen to promote LNG use, to the extent that even its most recent involvement in the hot-topic field of maritime hydrogen has been LNG-based. The Italian class society, in a consortium with ABB, Helbio, Wärtsilä, the Liberian registry, and an unnamed energy major, is aiming to produce an easy-install system to sit alongside a vessel's stack, steam-cracking LNG to produce hydrogen for power and using the LNG's cryogenic temperatures to liquefy the resultant CO_2 for collection and disposal/reuse ashore or as inert gas on tankers.

The consortium cites the relative simplicity of only requiring LNG bunkering and notes that "by progressively increasing the production of hydrogen, the consumption of fossil methane and associated methane slip will be reduced at the same rate."

However, with other hydrogen-as-fuel projects looking at ammonia (whose power plants in use would likely be very similar in operation to LNG engines), or green methanol (relatively straightforward and already trialled extensively), or synthetic natural gas (which simply replaces fossil LNG), or fuel cells for existing electrical power plants, it's not yet clear how much interest there'd be in this type of intermediate-step technology, or whether comparative ease of fitting would make it a tempting investment for owners who'd otherwise stick with traditional fuels.

Market recovery

In the short term, away from future fuels and future ECAs, the region's bunker suppliers are looking for an uptick in trade on the back of post-pandemic economic recoveries, stalled momentarily by the Omicron variant of Covid.

A return of the cruise ship market is a key factor in some ports. Gibraltar saw a slew - by 2021 standards, anyway - of cruise vessel calls in the final stages of the year and into 2022 as the sector began to cautiously relaunch, and has continued to work to bring more and to make a particular point of the availability of LNG bunkering in the port given the shift to dual-fuel engines in the cruise sector over recent years. Resurgent traffic would be a boost for the territory post-Brexit and pandemic.

On the southern side of the Strait, Tanger Med has seen considerable growth in the past year. Box throughput was up 24% on 2020 to 7.2 million TEU on the back of terminal expansion, and its final tally of 101 million tonnes of cargo was up 25% on the year before. Ro-ro traffic was up 14% on the back of a resumption of industrial exports and a good growing season for the agricultural sector, while vehicle exports and liquid bulk were both up; the port handled 8.7 million tonnes of hydrocarbons in 2021. Only passenger traffic has yet to recover due to travel restrictions.

"These performances accomplished during 2021 affirm the position of the port complex as a major strategic hub but also its key role as a privileged logistics platform serving the national logistic competitiveness," the port said in a statement.

Its continued solid performance - the port now handles more than 50% of all Moroccan imports/exports - should be reflected in its bunkering volumes. In a typical year, around 30% of its oil products throughput is bunkers, but at time of writing Tanger-Med hadn't released volume figures for 2021. Nonetheless, it's been very keen to establish itself as a bunker hub to rival Gibraltar and Algeciras just as it's become a box hub, and all being well, 2022 should be a bright year.

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Another port looking to draw traffic transiting the Strait is Ceuta. *World Bunkering* **(WB)** spoke to the port authority's president Juan Manuel Doncel **(JMD)**.

WB: How much of a hit was the pandemic to Ceuta's bunker sector given the importance of the Strait of Gibraltar?

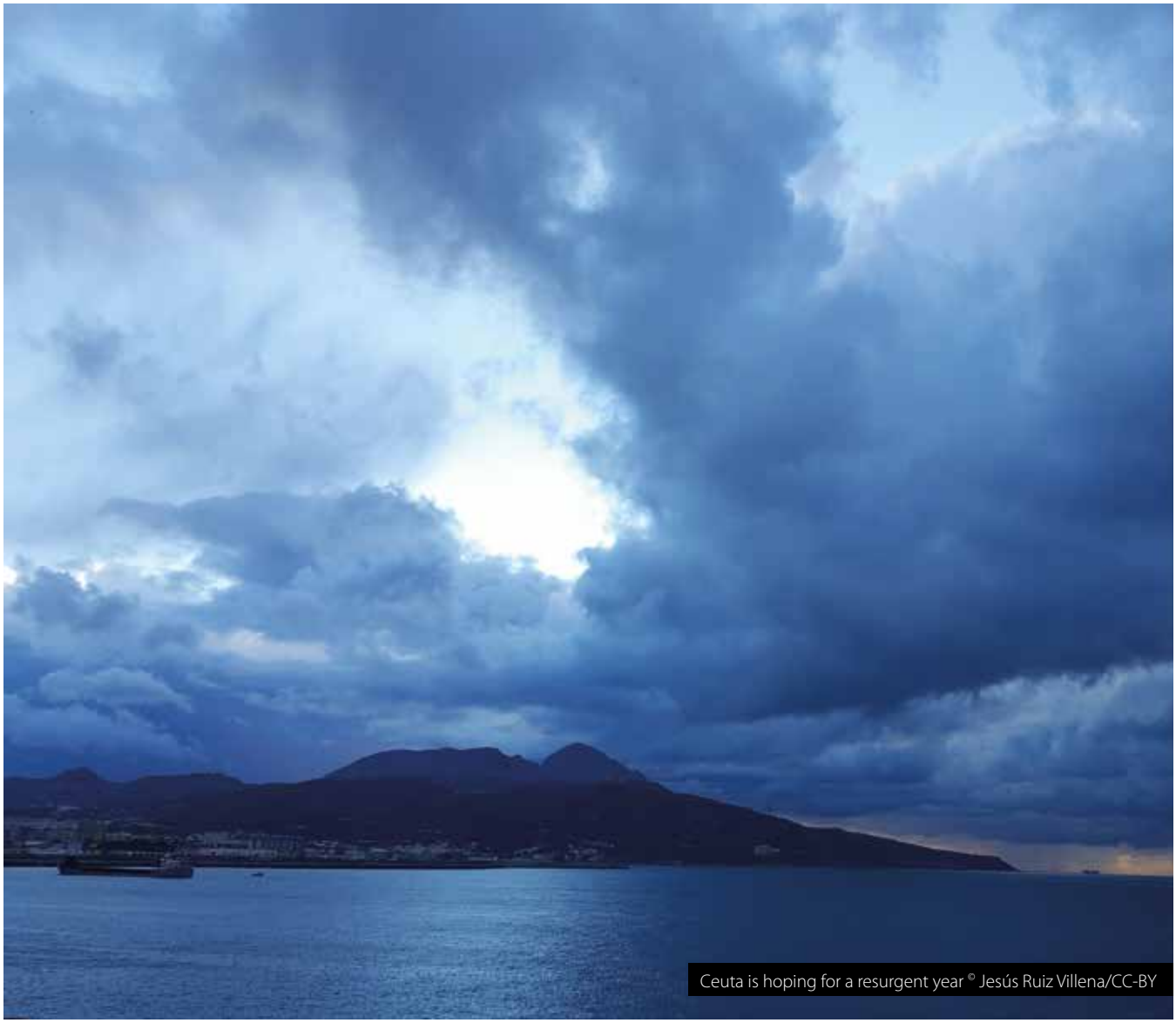
JMD: The Port of Ceuta is one of the main ports of the Strait of Gibraltar for bunkering services thanks to our privileged strategic position, where more than 100,000 ships cross each year, which is an added value to international shipping routes. Business was affected by Covid-19, due to the problems it is causing to the world economy which carries a negative impact on maritime traffic. Nevertheless, supply activity at the port of Ceuta did not stop and, last year, large quantities of fuel were moved through our facilities with significant discharges. Our levels of quality, effectiveness and efficiency in operations constitute a great competitive advantage over other supply ports.

WB: How does port business and bunkering look in general going into 2022?

JMD: Due to the evolution we are experiencing, the year 2022 looks an optimistic one. If the epidemiological situation allows it, we will recover to the traffic levels prior to the pandemic, looking at 2023 as the year of definitive growth. The Port of Ceuta has increased its storage and supply capacity and some complementary services were specialized, which implies a gradual growth in commercial traffic and, therefore, if it continues, we will achieve an improvement in future port results.

Currently, we count on two fuel supply companies: CEPSA, which has its own factory, and VILMA OIL, which supplies products from DUCAR factory tanks and which has two storage terminals. These terminals are connected through a set of pipes to the Poniente and Levante docks, where they carry out their commercial activity, supplying docked ships and those anchored in the bay by barge.

In order to promote the transition to the decarbonisation of maritime transport, a berth was built for the reception of large ships, allowing large discharges through a new attached dock with a hose



Ceuta is hoping for a resurgent year © Jesús Ruiz Villena/CC-BY

deployment and collection system using reels. Likewise, we are advancing in the extension of supply capacity through berthing simulation manoeuvres (SIPORT) with the aim of increasing the length and draft of the ships up to 230m length, 12.5m draft and 55,000 GT, which will increase, considerably, the competitiveness of the Port of Ceuta as well as improving freight costs and economic results.

WB: Ceuta has been keen to promote itself as a bunkering hub, especially picking up bunker trade from Gibraltar post-Brexit. What competitive advantages do you have to offer?

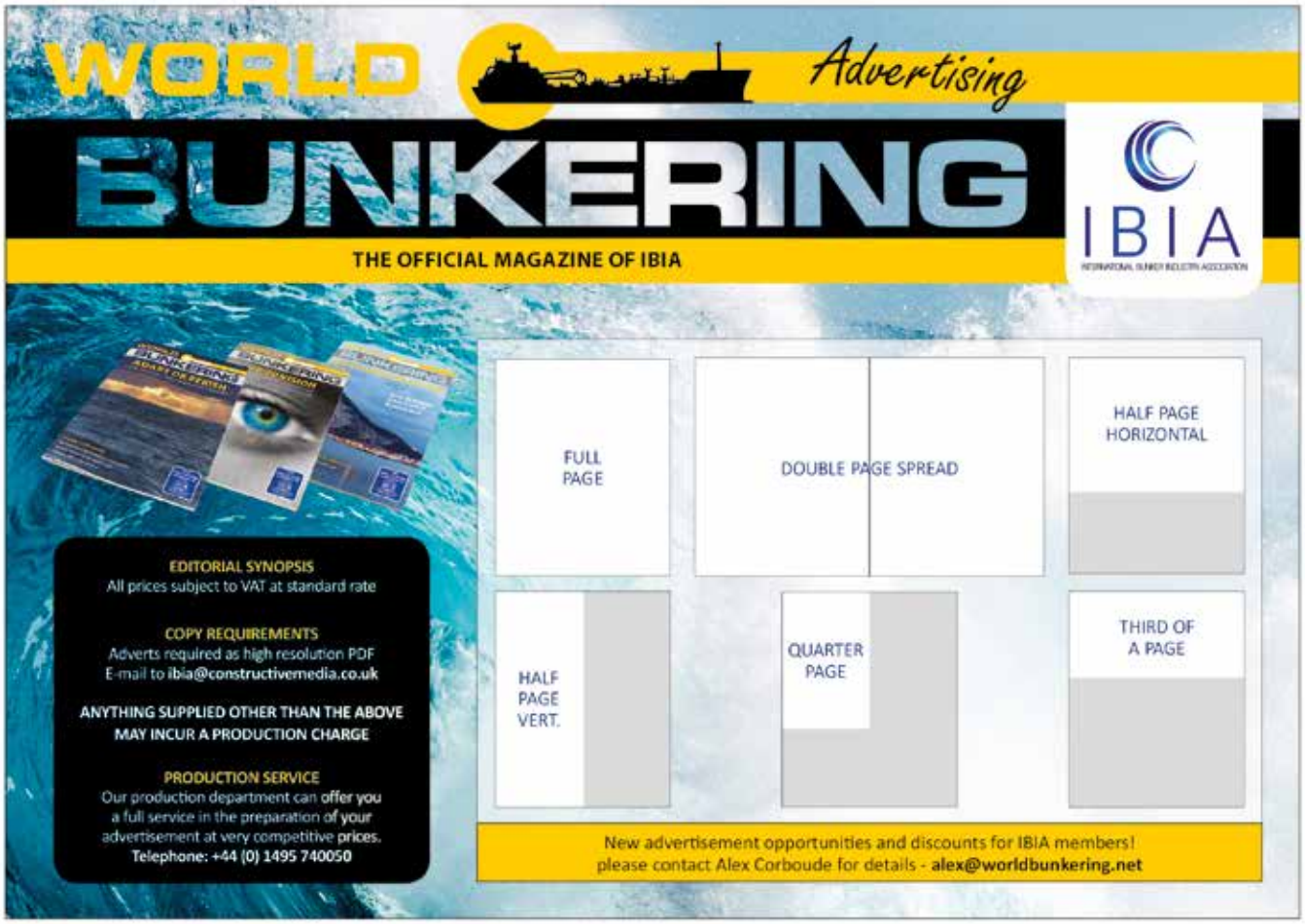
JMD: A large amount of the fuel supplied in Gibraltar comes from Spain and it is normally stored in nearby ports so the new environmental regulations after Brexit could affect this type of export. The Port of Ceuta is an alternative in the Strait of Gibraltar, as it is a tax-free port that supplies sustainable fuels such as 0.5% VLSFO that respects all environmental and quality standards of the European Union. In addition to this, it has very modern facilities characterised by the speed and little delay ships have to face too.

On the same lines, as well as bunkering services, several supply and provisioning services are offered, such as oils and lubricants, water, MARPOL, bunker survey, hull repair, underwater inspections, crew changes and vaccinations, nautical charts, etc. All these services are provided with high levels of quality and speed, virtues that are highly valued in this market.

WB: Would you hope to see Ceuta on the bunkering side continue offering sustainable fuels as they become commercially available?

JMD: The availability of a premium product such as VLSFO 0.5% in addition to MGO 0.1%, both of them competitive in price, quality and availability, required a considerable investment, but also a great deal of work, enthusiasm and coordination among the actors and teams that work daily in our port facilities.

Sustainability is one of the core ideas for growth of the Port of Ceuta. In this sense, the port is committed to the development of strategies which can bring advantages in environmental matters. In relation to alternative fuels, the Port Authority of Ceuta is studying the feasibility of different private projects aimed at reducing the carbon footprint and which are mainly focused on alternatives such as green hydrogen or OPS (On-shore Power Supply).





India's current green hydrogen projects are aimed mostly at refining

ROOM TO GROW

While they weather the impacts of the most recent Covid wave, South Asia's markets have a keen eye on expanding their array of fuels on offer, as John Rickards reports

India looks set to see demand in its petrochemical sector continue to recover across the early part of this year despite the ongoing Omicron wave gripping the country, state lockdowns affecting product demand, and ongoing issues sourcing containers for export affecting ship calls and cargo volumes. Analysts expect box traffic from India won't recover fully until next year at least.

However, the combined woes of a third wave of Covid and export difficulties aren't stopping the country looking to future fuel infrastructure in the wake of its COP 26 commitments.

A report this January in business paper Mint revealed that the ministries of ports, shipping and waterways and new and renewable energy were apparently looking at a model for commercial shipping as well as the Indian Navy that would see green hydrogen - in some form yet to be announced - used for fuel, generated by the country's expanding solar and wind energy production capacity. Prime Minister Modi had announced a new focus on hydrogen production in his Independence Day speech last August.

The month before, IndianOil announced it was to build the country's first green hydrogen plant at its Mathura refinery. However, as promising a move as that is, this first plant won't be used directly for transportation fuels of any kind, much less shipping. "As we see it, the green hydrogen will replace carbon-emitting fuels used in the refinery to process crude oil into value-added products such as petrol and diesel," IndianOil chairman Shrikant Madhav Vaidya said. "Moreover, we have got several expansion plans down the line which are already approved. We will not have a captive power plant and will utilise power from the grid, preferably green power. This will help decarbonise some part of the manufacturing."

"Petroleum refining and marketing with much higher petrochemicals integration will continue to be IndianOil's key focus area. We are going to add 25 million tonnes of refining capacity by the year 2023-24. Forecasts by various agencies sees Indian fuel demand climbing to 400-450 million tonnes by 2040 as against 250 million tonnes now. This demand surge offers enough legroom for all forms of energy to co-exist. And, while exploring the multiple energy avenues, environmental conscience will be a critical priority for IndianOil. We are pushing ahead with research on carbon capture, utilisation and storage technologies."

"There is a fresh momentum for scaling up hydrogen use across sectors globally. IndianOil R&D Centre has emerged as a pioneering institute undertaking cutting edge research in all facets of hydrogen, including production, storage and applications like fuel cells. Also, with the support of the MoPNG, IndianOil is in the process of setting up about 1 tonne per day capacity pilot plants based on four innovative hydrogen production technologies."

Another one of India's biggest gas companies, Bharat Petroleum, announced in December that it is collaborating with Bhabha Atomic Research Centre to scale-up domestic alkaline electrolyser technology for green hydrogen production, as at present all such plants are imported. BPLC said the move was the first of its kind to support the country's commitment to achieve renewable energy targets and reduce greenhouse gas

emissions. Like IndianOil, the main aim for the hydrogen produced will be to use it in refining, at least at first.

BPLC's chairman and MD Arun Kumar Singh said: "BPCL is fully committed towards environment protection and ensuring a greener planet. We have been extensively leveraging technology in all our activities. Today, through collaboration with BARC, we intend to scale up indigenous alkaline electrolyser technology and look forward to commercialising it for large use, especially in refineries. This will be another step towards Atmanirbhar Bharat (Self Reliant India) in our journey for achieving Net Zero Emissions by 2040."

So very much early days, with India's first hydrogen plants looking more like test beds than production units, which is perhaps unsurprising given the scale involved.

GAC Bunker Fuels, meanwhile, has partnered with Neutral Fuels to market an MGO biodiesel blend to the Gulf states and India, aiming to expand further in the future. Neutral Fuels chief commercial officer Gary Hubbard said, "Deploying our Net Zero biofuel in the maritime sector will play a key role in helping to achieve the new carbon emission reduction targets set by the International Maritime Organization. Adoption of cleaner biofuels is much quicker when we work in close collaboration with leading companies such as the GAC Group. It means that the whole sector can become part of the solution to climate change, rather than remaining part of the problem."

"As a leader in our industry, we have a responsibility to do the right thing," said Martyn McMahon, GAC Bunker Fuels' global commercial manager. "We have to play our part in helping to achieve the United Nations' sustainable development goal on climate action. Hence our commitment to adapt, reduce and mitigate our activities' negative impact on the environment and contribution to climate change."

GAC says that with MGO emitting 3.22 tonnes of CO_2 per tonne of fuel, the reduction in carbon emissions from using the blended fuel will depend on the degree to which the biofuel is added - so an improvement on the traditional fuel, but not net zero, yet anyway. And biofuels are of great interest in terms of production within India.

In January this year, Bharat Petroleum, one of the few suppliers of LNG bunkers, announced that with CSIR-Indian Institute of Chemical Technology it is going to jointly develop a bioreactor to produce bio-methane and compressed biogas from agricultural waste residue. CSIR-IICT has already developed a large-scale bioreactor operational at Hyderabad using vegetable waste as a feedstock, while BPCL has been pushing biofuel production and use for some time - ethanol, biodiesel and compressed bio gas (CBG).

The company's R&D head Dr. V Ravi Kumar said, "Large scale production of agricultural waste residues will enable [us] to reduce India's dependency on crude oil and will also enhance rural income and the same by-product can be used as manure, which leads to more natural irrigation avoiding the use of chemical fertilizers."

With India's huge agricultural sector and vast renewables potential, there's no reason at all it shouldn't be a major player in zero/reduced carbon fuels in the future - particularly given the country's need to reduce its reliance on oil imports. The infrastructure for that, though, is clearly still some way off and in the meantime it will remain reliant on fossil fuels, demand for which remains strong in both low and high sulphur form.

Late last year, the Adani Group's bunkering arm launched HSFO supply at the port of Mundra and across Gujarat. "The increasing number of scrubber-fitted vessels in the water and Mundra having its strategic location advantage along with world-class bunkering infrastructure encouraged Adani … with the strategic placement of HSFO at Mundra," Adani Bunkering said in a statement. "Mundra is among the few selective ports in the region having privilege of single point supply of all grades of marine fuel including HSFO, VLSFO & LSMGO."

Adani's ports arm APSEZ, which handles nearly 30% of all India's vessel traffic, enjoyed a big lift in cargo volumes last year, with cargo throughput by weight in the most recently reported quarter up 83% - much higher than India's 33% recovery in volume - and over 2 million TEU in containers despite global supply chain issues. "Our strategy of establishing a network of world-class ports to balance cargo across the east and west coast has been tracking precisely as per plan, thereby continuing to de-risk our growth as well as lay the foundation of a broader logistics platform. This has resulted in APSEZ accelerating its market share gain," said CEO Karan Adani. "We have therefore raised our target cargo volumes to 350-360 million tonnes, which translates to unprecedented year-on-year growth of about 45%. I am also pleased to state that our goal of becoming the first port company to be carbon neutral by 2025 is very well on track."



Alternative fuels are very much in the pipeline ©Sanoop/CC-BY

Sri Lanka's Hambantota beefs up offering

HFSO demand is also reportedly up in Sri Lanka, where Colombo's bunker suppliers continue to tussle with competitors in India, due to price differentials with low-sulphur fuel. And MGO, in the meantime, has become the next product to be offered at the still-slowly-growing port of Hambantota. The first 15,000 tonnes of MGO were delivered to the port's tank farm in January, having launched VLSFO supply through Sinopec last year. The port's operator has also set up a fuel testing lab on site to be run with Intertek Lanka for fuel quality certification.

The CEO of Hambantota International Port (HIP), Johnson Liu said: "With our Lloyds certified oil storage facility and state of the art testing capabilities, HIP has the overall capacity to add great value to customers. With our location in the Indian Ocean rim, where 50% of the world's maritime oil is traded, our oil fuel bunker, LPG and future LNG operations, we are securing the Hambantota Port's rightful place as a global maritime location."

The operator added in a statement that: "The lab testing facility will enable HIP clients to get their products such as fuel oil, marine diesel and marine gas oils tested efficiently and with ease, at the bunker terminal site, ensuring that products meet the required international quality standards. The port's dedicated professional team ensures safe operations of the oil tank network, ancillary pipelines, oil berth jetties, and control systems, which are on par with international standards."

HIP has been promoting the port hard over the past year following its fresh push to become a bunkering and cargo hub after years as a white elephant. First half figures for 2021, the latest available at time of writing, showed that cargo volumes last year had tripled compared to the first half of 2020, and ro-ro traffic almost doubled, while liquid bulk was up around 15% to 215,094 tonnes. It also received its first cruise ship call for bunkers in August, though this is unlikely to be a significant sector given the nature of the port.



Sri Lanka's ports are competing hard for bunker calls ©jgmorard/CC-BY

"HIP responded very well to the challenges during lockdown, and today we can say that our unique selling proposition is the efficiency of the port. This comes from a responsive workforce at all levels of the operation and best equipment being used to assist the smooth running of it. As Hambantota Port is working towards being a fully functional multipurpose port by next year, we are gearing at all levels, which includes continuous training and testing our systems for optimum efficiency which is part of the DNA of all CMPort operations across the globe," said HIP's commercial and marketing manager Lance Zuo.

Mixed pictures in Pakistan

Lack of supply was an issue for much of 2021 in Pakistan, with VLSFO barely available for months due to a lack of refined products; it was only in December that local player Ocean Bunkers reported inking a refinery deal allowing it to offer the grade again.

But this hasn't hampered the country's trade recovery between Covid waves, with Karachi Port Trust reporting annual cargo throughput up 25% last year to 52.28 million tonnes and the highest container traffic in the port's history at 2.29 million TEU, alongside 21% more vessel calls to 1,845 ships, of which 868 were box vessels. KPT, which described its pandemic performance as "outstanding", has been keen to point out that its ongoing moves to digitalise and improve efficiency have been contributory factors. Having ready access to a wider range of fuel types must help, too.

Bangladesh bolsters stocks

Bangladesh too has been acting to shore up oil stocks going into 2022. In January, the government approved the purchase of 1.5 million tonnes of various refined products for the first six months of the year for a total cost of almost US$1 billion. The scale of the purchase seems to be in part a response to oil price volatility and in part down to gas supply technical issues at the turn of the year. Bangladesh's Mercantile Marine Office is trying to encourage Bangladesh Petroleum Corporation to use domestic-flag ships to handle the imports.



KEEPING THE DIGITAL SHIP SAFE

Modern bunker 'barges' are in reality high tech ships with increasingly sophisticated electronic systems on board

At the cutting edge of these rapid developments is the bridge, and a new guide is intended to help seafarers keep up with the latest best practice for bridge technologies designed for the digital age.

The recently launched edition of the *Bridge Procedures Guide* from the International Chamber of Shipping (ICS) reflects the rapid technological advances taking place in the shipping industry. It is aimed at providing crews with the knowledge and confidence they need to deal with the digital transformation taking place within the world fleet.

"I've seen navigation equipment that I sailed with on display in Hamburg's maritime museum. Now you walk onto the bridge and it's like Star Wars," says Nick Rich, Bernhard Schulte Shipmanagement's Group Technical Manager – Systems and a member of the expert panel that helped ICS develop the new edition.

However this high level of dependency on electronic systems comes with increased vulnerability to criminal attacks.

According to transnational anti-crime agency Europol, accelerated digitalisation related to the Covid-19 pandemic has boosted the development of a number of cyber threats. The new edition of Europol's Internet Organised Crime Threat Assessment notes that criminals have been "quick to abuse the current circumstances to increase profits, spreading their tentacles to various areas and exposing vulnerabilities, connected to systems, hospitals or individuals".

There is almost no information available on to what extent the global shipping industry may have been hit by ransomware attacks or other cyber crime. What is clear, though, is that shipping is becoming more and more dependent on information technology (IT) and operational technology (OT). And the bunker industry operates some very expensive technology-dependent assets.

A recent, and fairly typical, press release talked of a "user-friendly solution that automates and integrates control, alarm and monitoring of critical systems on board". As we move more into LNG bunkering the idea of malware wandering around in critical systems hardly bears thinking about.

However thinking about it, and doing something, is essential. Last year a large group of shipping organisations published Version 4 of their Guidelines on *Cyber Security Onboard Ships*. This publication aims to assist in the development of a proper cyber risk management strategy in accordance with relevant regulations and best practises on board a ship with a focus on work processes, equipment, training, incident response and recovery management.

The guidelines explain why and how cyber risks should be managed in a shipping context. The supporting documentation required to conduct a risk assessment is listed, and the risk assessment process is outlined with an explanation of the part played by each component of cyber risk.

The guidelines ought to assist in developing a company's cyber security strategy, but are probably less useful for the master of a bunker barge, under time pressure and needing practical guidance.

Another recent publication is aimed at providing just that sought guidance. BIMCO, International Chamber of Shipping (ICS) and Witherby Publishing Group put out the latest, third, edition of the "Cyber Security Workbook for On Board Ship Use".

This workbook is intended to provide the practical knowledge to identify cyber risks and to protect vulnerable onboard systems. It also gives guidance on how best to detect, respond and recover in the event of a cyber attack.

According to ICS the workbook will help to ensure that cyber risks are appropriately addressed in the onboard safety management system, which is required by IMO regulations.



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Experts testing the MFM system onboard a bunker tanker in Europe, prior to being used for custody measurement. ©Metcore International

CAN MFMS BE MANDATED EVERYWHERE?

Singapore has led the way on mandating the use of mass flow meters (MFMs) and many, but not all, in the global bunkering industry would like the rest of the world to follow its example

The Singapore model is based on the firm foundation of comprehensive and strictly enforced regulation that is based on a now long-established licensing system.

So it made sense that last November's IBIA Annual Convention looked at both licensing and MFM at the same time in single session, chaired by Alexander Prokopakis, the chair of IBIA's working group on Licensing and MFM. He said the working group was aiming to drive forward transparency and trust between suppliers and buyers.

There is no doubt that there is a groundswell of opinion among shipowners, and increasingly suppliers, in favour of mandating the use of MFM and that was largely reflected in comments from the session's panel.

ExxonMobil's Eddie Fish, who 20 years ago had been responsible for buying bunkers for the oil major's large charter fleet, reminded us why quantity has always been a controversial issue. He said that he had been on the wrong side of many quantity disputes, even with the use of bunker surveyors. He said that while it was possible sometimes to stop using "repeat offenders", that wasn't possible when there was only one supplier in a port.

Fish continued that "today we are still hearing of too many shortages" and they are expensive and time consuming to resolve.

In an answer to a question, he asserted that honesty and integrity were essential in the bunkering industry and that there could be "no grey areas".

Helle Graesdal, head of bunkers at Frontline and Golden Ocean, said her companies were "highly supportive" of efforts to introduce licensing and were a "huge promoter" of MFM systems. She said that before MFMs were mandatory at Singapore "we had so many issues" but after their use was compulsory "we had no issues". She added that when bunkering in ports including Rotterdam and Gibraltar, they would prioritise suppliers who had fitted MFM.

Oguz Onalan, TotalEnergies' general manager, trading and operations Europe and Africa, said that "clear regulations" were needed all around the world. He stressed that regulations should not be implemented without the use of technologies to measures quantity. He pointed out that MFMs were a proven technology in use today and that mandatory MFM was a "no brainer".

The group chief operating officer of major trader and supplier Monjasa, Svend Stenberg Molholt, emphasised what is a common theme among major global bunker suppliers, the desire for a 'level playing field'. He said that Monjasa's experience of delivering in excess of 5 million tonnes of fuel a year in 700 ports worldwide was that introducing licensing and measures such as MFM "does indeed raise the quality" and increases trust between the parties.

Bjarke Staal, general manager of trader Termoil, was also strongly in favour of MFM. He pointed out that traders worked on very small margins and that quantity claims were "very costly".

However, it cannot be assumed that all in the global industry welcome both licensing and mandatory MFMs. Nicolas Yerie Vukelja Duque, IBIA Board Member and CEO of Panama-based supplier Terramar explained that licensing has been in place in Panama for 20 years. The Panama bunker licensing system does not, however, mandate the use of MFMs, which were available on some barges but only at customer's request.

That a global roll-out of mandatory MFMs is not a given is clear from what is happening at Rotterdam. The port authority there is only in the early stages of introducing licensing. Making MFMs mandatory would be a "step too far" according an adviser to the Port of Rotterdam, Ron van Gelder. He explained that the Netherlands' legal system would work against imposing mandatory MFMs as it would be difficult to argue it would be a reasonable response when there are only relatively few disputes over quantity in the port. Moreover, who would pay the estimated Euro 20 million needed to fit MFM on the port's 170 barges is a contentious issue at Rotterdam.



MFM system onboard a bunker tanker ©Metcore International

STANDARDS MORE IMPORTANT THAN ENFORCEMENT

MFM measurement and performance specialists Metcore International, set out their ideas on expanding the global use of MFM

We often hear the argument that mass flow meters (MFMs) can only work in Singapore due to fact that the Maritime Port Authority of Singapore (MPA) has been keeping a close watch.

In fact, the standards and conformance framework in Singapore facilitated the bunker industry and regulatory agency to work in tandem, for the successful implementation of mass flow metering systems (MFMS).

While the port authorities have the jurisdiction to mandate the use of mass flow meters (MFMs) for bunker fuel delivery measurement, the onus remain with the various bunker industry stakeholders to embrace the technology. This was a hot topic discussed among IBIA Members during the recently concluded IBIA Annual Convention at the end of 2021.

Singapore has a decade of proven track record that the use of MFMS increases operational efficiency, reliability and consistently accurate bunker measurements, if the correct approach is implemented.

Mandating the use of MFMs may not always be a welcome preposition among the stakeholders, as it results in the burden of implementation cost and having relevant knowledge and expertise to operate it appropriately.

The Coriolis principle mass flow meter technology remains reliable and accurate for liquid measurement. Therefore, reaping its benefits may make more commercial sense in the long term.

A softer national policy or regulations, without killing the existing bunker measurement options would definitely go a long way in allowing the interested stakeholders to take up the MFMS.

Suggested approach for use of MFM in Major Ports

1. **Standards** – Adoption of relevant bunker fuel measurement standards, be it using mass flow meters or other methodology, will enable the harmonising of requirements.
2. **Statutory Requirements** – Standards and references adoption by the industry without the need for relevant port authorities enforcing any measurement methodology. Independent party certification program in place to mitigate regulatory requirement.
3. **Conformity & Competency** – Ensuring continuous MFMS measurement integrity and operational competency

These three factors need to support each other to take this approach to the next level of MFMS implementation.

Lack of Interest in taking up MFMS

Resistance of ARA, Fujairah and other Persian Gulf bunker supplier areas to the utilisation of MFMs has delayed its implementation onboard bunker tankers.

It is a chicken or egg story, where the relative lack of use of MFMs in the regions have been cited as a factor for the decision by the authorities to promote or mandate its use. Detractors have even asked if there are more quantity dispute issues in the Gulf compared to Singapore where the use of MFMS is mandated.

In reality, sometimes when quantity disputes happen, the authorities do not have the know-how and real-time data to ensure strict enforcement versus what is readily available with MFMS. The reliance on traditional methods of bunker measurement simply amplify the uncertainty in bunker measurement. Hence, many stakeholders may not have the right avenues nor the resources to pursue disputes further. Ultimately, it is not a matter of fewer incidences but rather fewer reports of incidences.

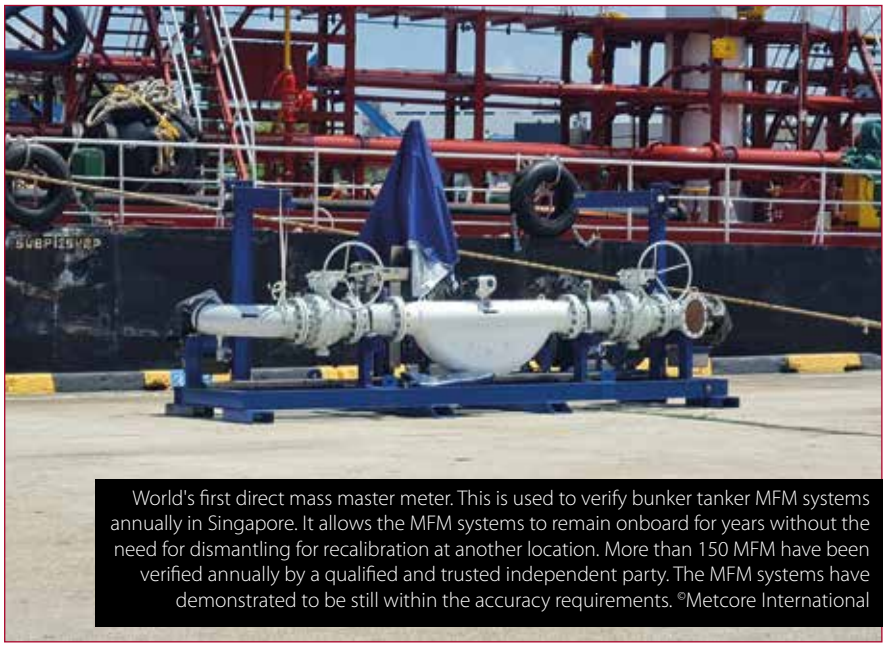
Standards and Statutory Requirements

Although there is a lack of mass flow meter usage, bunker industry stakeholders could still publish guidelines and best practises, with reference to applicable standards to enable the interested stakeholders to adopt MFMS onboard bunker tankers.

References like the Singapore Standard (SS) 648 and ISO 22192 are readily available for adoption by any stakeholders who are keen to ensure their MFMS is in-compliance.

To reinforce the guidelines and requirements, independent experts in bunker MFM measurement, like Metcore International, are well positioned to guide the stakeholders of their needs.

The use of MFMS promotes consistency and accurate measurement for bunker fuel delivery. Thus, efforts to encourage more uptake of MFMs as part of bunker licensing schemes will go a long way in averting and minimising cases of disputes in MFM deliveries.



World's first direct mass master meter. This is used to verify bunker tanker MFM systems annually in Singapore. It allows the MFM systems to remain onboard for years without the need for dismantling for recalibration at another location. More than 150 MFM have been verified annually by a qualified and trusted independent party. The MFM systems have demonstrated to be still within the accuracy requirements. ©Metcore International

Conformity and competency in operating MFM

A mass flow meter is not a 'plug and play' device. It requires a certain level of understanding and knowledge to operate it. Reinforcing the MFM operational aspect requires continuous monitoring of its measurement integrity through constant validating of the security seals and the system pre-set parameters. Any compromising of the sealing provisions or parameters would greatly impact its performance.

MFMS enable the digital capture of metering parameters and produce data sets (audit trails) that allow key stakeholders to tap in, for monitoring and investigation of bunker operations.

The metering data also acts as a means to analyse the flow measurement profile, thereby identifying any anomaly. Crew competency in operating the MFMS within the meter vendor's recommended sets of parameters can also be determined.

Independent experts can also be engaged to train the crew and key management on technical expertise to ensure competency in handling MFMS correctly and consistently.

MFMS has its strengths and limitations. While aeration has always been a challenge in bunker deliveries; the good point about using MFMS is that the Coriolis mass flow meter can capture the measured data which can be used later on as evidence for resolution of disputes. This is the major factor behind the reduction of 'cappuccino effect' cases in bunkering in the Port of Singapore.

Conclusion

The use of MFMS primarily promotes efficiency and reliable measurement in the bunker supply chain. MFMS use has proven over the years that it can provide proper and correct measurement, but ensuring the correct amount is delivered requires the integrity of the system to be continuously monitored and checked. This will increase confidence in the efficiency of MFMS among the key stakeholders.

It is possible to ensure transparency and traceability under a standards and conformance framework, even in the absence of mandatory requirements by the port authorities.

Embracing the Coriolis mass flow meter technology with the right approach to implementing its use will help the maritime industry to move forward into the next phase of technological change in an environment of mutual trust.

HYBRID SYSTEM "CUTS FUEL USE"

Bulk carrier retrofitted with solar power and energy management system

Technology group Wärtsilä has installed and commissioned a hybrid power system, incorporating photovoltaic (PV) solar energy panels, on a 61,762 dwt bulk carrier operated by Marfin Management.

The installation of PV panels manufactured by solar energy specialist Solbian was carried out on the 2016-built *Paolo Topic*, at Japan's Onomichi Dockyard.

The fully integrated Wärtsilä HY Module solution includes an energy management system and batteries that delivers auxiliary power to the ship's grid. It is described as a compact containerised solution that cuts a vessel's emissions by optimising the onboard power production, consumption, and management.

According to Wärtsilä, the HY module gives the possibility to combine and integrate an energy storage system and additional energy sources, such as solar power, with Wärtsilä's highly sophisticated Energy Management System (EMS) to deliver auxiliary power. The EMS has overall control of the engines, batteries, power distribution, and with the installation of solar panels on the weather deck it is a "maritime industry first".

The containerised module has been placed on the ship's deck to save space and has been installed without the need for dry-docking.

A Wärtsilä statement asserts: "When coupled with other sources of energy such as the PV panels the benefits are enhanced. It will address the marine sector's major challenges to lower operating costs while simultaneously reducing environmental impact. The solution achieves this through significant reductions in fuel consumption and maintenance needs, while offering cleaner, safer, and more efficient operations. It also contributes to placing the vessel in a positive position regarding the industry's Energy Efficiency Existing Ship (EEXI) and Carbon Intensity Indicator (CII) indexes."

WinGD opens future-focused R&D test centre

Marine engine technology company WinGD has opened a new collaborative Global Test Centre in Shanghai, China. The facility is a collaboration with CSPI (China Shipbuilding Power Engineering Institute Co., Ltd.) for "the advancement of a decarbonised future through sustainable fuel and combustion research and innovation".

The Swiss-based company says that the role of research and development (R&D) has come into sharp focus as part of the strategy to help ships reach the IMO's 2050 target. It says: "The success of the industry reaching these targets relies on a focus well beyond alternate fuels."

This new centre is intended to encompass research and innovation around future fuel propulsion solutions, holistic energy management systems, and power generation based on new energy converters. For the development of new technologies and products, the facility has two 2-stroke test engines and several test rigs for the validation of sub-systems such as fuel injection, pumps or gas admission valves.

With future demands in mind, testing will focus on new fuels including methanol and ammonia, and on the further development of WinGD's low pressure dual-fuel technology.

The test centre will also be equipped with an electrical grid representing modern vessels, including a DC grid laboratory and dynamometers instead of water brakes, a perfectly suited infrastructure to test and demonstrate hybrid propulsion systems in the future.

WinGD Vice President Research & Development Dominik Schneiter said: "The pace at which we need to act as an industry to reach a carbon free future requires all players to step up with significant commitment. By considerably expanding our test engine infrastructure, we are confirming our commitment to accelerate the energy transition in shipping. The future is a multi-fuel landscape where deep knowledge of the combustion properties of all fuels is required. Our collaboration with our CSSC family of companies allows us to bring the full weight of our shared expertise towards this goal."



Wärtsilä HY Module for Bulkers installed on board the Paolo Topic. © Marfin



Maersk is committing to more raprd decarnisation ©Maersk

ENVIRONMENTAL NEWS

Our regular survey of recent developments

A.P. Moller - Maersk aims at 'net zero' by 2040

In a move that is likely to be seen as an example to the wider maritime industry, shipping conglomerate A.P. Moller – Maersk says it plans to achieve net zero greenhouse gas emissions in 2040, a decade ahead of its initial 2050 ambition.

Its says that associated 2030 targets will ensure industry-leading green offerings and significant emissions reductions already in this decade.

In a statement, the company says the new targets align the company with the Net Zero criteria of the Science Based Targets initiative (SBTi) pathway to limit global warming to 1.5°C. They include a societal commitment to act now and drive material impact in this decade, and a commitment to deliver net zero supply chains to customers by 2040. The targets go beyond previous efforts to reduce emissions related to the ocean fleet as they cover all direct and indirect emissions across the entire Maersk business.

CEO Soren Skou says: "As a global provider of end-to-end logistics services across all transport modes, it is a strategic imperative for Maersk to extend our net zero ambition to the total footprint of the business. The science is clear, we must act now to deliver significant progress in this decade. These very ambitious targets mark our commitment to society and to the many customers who call for net zero supply chains," says Soren Skou, CEO of A.P. Moller - Maersk.

Medium term 2030 targets include a 50% reduction in emissions per transported container in the Maersk ocean fleet and a 70% reduction in absolute emissions from fully controlled terminals. Depending on growth in the ocean business, this will lead to absolute emissions reductions between 35% and 50% from a 2020 baseline.

Circular economy business models promoted

Shipping's energy transition provides an opportunity to adopt new circular business models for asset management and radically change ownership structures for the benefit of the entire industry according to a paper published on the Global Maritime Forum's (GMF) website.

The international not-for-profit organisation is committed to "shaping the future of global seaborne trade to increase sustainable long-term economic development and human well-being". The paper was written by a team from Denmark-based innovation and transformation consultancy group PA Consulting, led by Jon Plate who was Manager International Accounts for container giant A.P. Moller – Maersk in the 1980s and 90s.

The paper says: "New circular economy business models can present opportunities to increase revenue, reduce costs, and improve risk management.".

"However," the paper asserts, "green fuels alone will not make shipping sustainable. Parallel to these efforts, other drivers for

sustainability – such as increasing demand for transparency about product and asset lifecycles, and rising consumer pressures for extended producer responsibility – makes it relevant to consider how circular economy principles can be applied to shipping. In effect, how can we make parts or all of shipping's lifecycle more environmentally and socially sustainable while still commercially viable?"

The paper says: "Shipping's energy transition will likely lead to either extensive retrofitting of the current fleet or accelerated scrapping of existing vessels to accommodate new and emerging fuel types."

The paper argues that the shipping industry is in many ways defined by an 'engineer-to-order' environment, wherein necessary activities to deliver a product (e.g., design, engineering, manufacturing, assembly, etc.) are executed after receiving a purchase order. This method of building and designing vessels implies unique and bespoke ship designs, which makes the industry less flexible and ready for retrofitting in response to future regulation.

The paper claims: "Standardised and modular designs that can easily be retrofitted to operate on new fuel types could enable cost savings and create a competitive advantage. Furthermore, re-manufacturing of used maritime components reduces energy, water, and material use by up to 90% and, when re-manufactured to the same level of reliability as new components, may lower overall component costs by 50% to 80%."

Skuld joins zero carbon centre

Prominent marine insurer Skuld has become mission partner in a global initiative to decarbonise the maritime industry. It has joined the Maersk Mc-Kinney Moller Center (MMMC) for Zero Carbon Shipping as part of the insurer's stated intention to protect ocean industries.

The centre, based in Copenhagen but operating globally, was founded in 2020 and comprises corporate partners across multiple industries all sharing the vision of zero-carbon operations in their commitment to collaborative climate action.

Ståle Hansen, Skuld president and CEO said: "Sustainability is an essential part of Skuld's strategy, culture and identity. As a membership organisation we are frequently contacted for advice on decarbonisation and this partnership with MMMC will further support and promote our common goal of securing and providing tomorrow's zero carbon shipping solutions. The zero carbon centre is a world-leading initiative supported by some of the biggest names in the marine sector, and we are delighted to be able to support it."

The Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping is a not-for-profit, independent research- and development centre working with industry players across the energy- and shipping sectors to mature viable decarbonisation pathways for shipping globally. Corporate Partners to the Center now include: Alfa Laval, American Bureau of Shipping, A.P. Moller - Maersk, BP, Cargill, Haldor Topsoe, MAN Energy Solutions, Mitsubishi Heavy Industries, Mitsui, Norden, NYK Line, Seaspan Corporation, Siemens Energy, Stolt Tankers, Sumitomo Corporation, Swire Group, TotalEnergies and V.Group.

Cold ironing at cruise port

Norwegian company Havnekraft has awarded Zinus, a global provider of cable solutions and charging infrastructure for ports and vessels, the contract to develop and deliver a new and flexible shore power solution for cruise ships calling at Haugesund Cruise Port. Havnekraft is owned by Karmsund Port Authorities and the energy company Haugaland Kraft.

For several years Zinus has offered its Shore Power Cruiser system, a specially developed, mobile and flexible system for transmitting high-voltage shore power to cruise ships and other large vessels.

Four such systems are currently installed in the port of Bergen. Zinus says: "In addition to supplying renewable electricity to docked cruise ships, both the existing and upcoming Shore Power Cruiser solutions also contribute to improved port logistics, as well as better preservation and maintenance of cables and plugs, through the systems' handling and storing of cables and connectors."

So far, Karmsund Port Authorities has booked 120 cruise calls in 2022, and around 90% of these ships can receive



Shore power for cruise ships at Haugesund Cruise Port. ©KCarmsund Port Authorities

shore power. The goal is to sell up to nine million kilowatt-hours of electricity during an ordinary season. This should result in a reduction in CO_2 emissions of around 2,500 tonnes per season, compared to if the ships are running their diesel generators while docked.

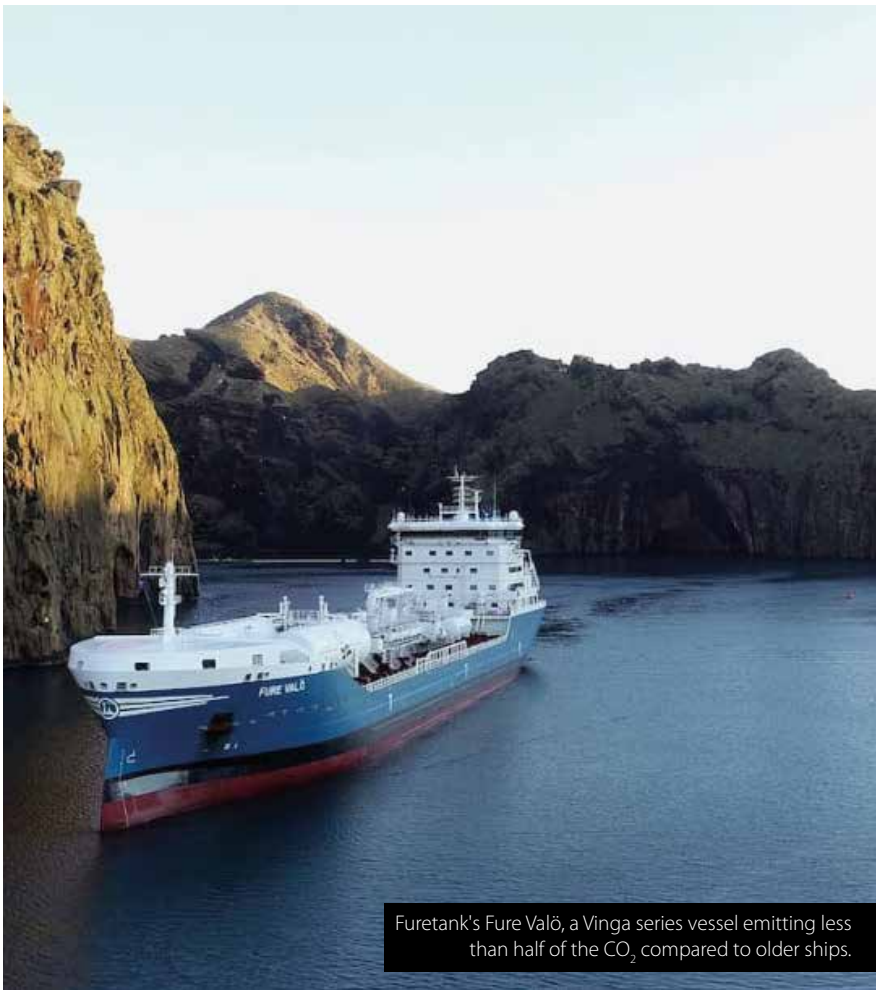
Furetank claims zero net carbon for new ships

Swedish tanker company Furetank says it has fully offset the remaining CO_2 emissions of its newest vessels, through certified carbon credits.

According to the company, optimised ship design and liquid biogas (LBG)/LNG propulsion, have enabled its new Vinga class ships to achieve a 55% reduction of CO_2 emissions compared to the previous generation of vessels.

It says: "The goal is to reach zero by running the vessels entirely on renewable LBG but today the supply is just not sufficient."

Furetank's credits are certified by climate compensation registry Gold Standard, which validates the applications and transfers funding to renewable energy projects worldwide.



Furetank's Fure Valö, a Vinga series vessel emitting less than half of the CO_2 compared to older ships.



Lubmarine



Talusia Universal

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WIN GD

Talusia Universal is approved by MAN Energy Solutions and WIN GD.

LUBRICATING THE FUTURE

Marcus Schaerer, Shell Marine's GM Technical & Services outlines what he sees as the biggest challenges the industry moves toward alternative fuels

With alternative fuels being developed to facilitate the marine energy transition, adjusting to a multi-fuel reality will undoubtedly have a bearing on the requirements of lubrication development and on how shipowners approach their lubrication requirements.

How alternative fuels are affecting lubrication

The emergence of future fuels will not alter the core role of lubricants – to prevent corrosive, adhesive, or abrasive wear and keep engine parts clean by preventing deposit build-up. However, they are expected to increase the complexity of this role, simply because lubricant specifications (i.e., the need for different additive chemistries) in engines using these fuels are still unclear.

This uncertainty is leading to several challenges along the whole value chain, from research & development and product approval to the availability of components and supply chain capabilities – all of which need to be carefully managed to avoid disruption.

For lubricant manufacturers and users alike, a review of lubrication strategy is a must. Firstly, to ensure that marine lubricants and associated technical or digital services continue to contribute to performance and cost markers, but increasingly, so they can also help the maritime value chain work towards sustainability goals.

Collaboration and co-creation

But to develop effective new products, we first need to understand how ship owners and operators are adapting their practices and decision making in response to the regulatory, economic, and operational challenges they face.

That's why it's so important for lubricant manufacturers, like Shell, to work together with both the customers who are facing a tougher operating environment, and the OEMs who are developing higher efficiency engines as a result.

Navigating complexity with intelligent monitoring

OEMs are offering new design and retrofit options that allow operators to use a wide range of fuels including HSFO, VLSO, and LNG to LEG and Methanol/Ethanol, LPG, Biofuels and Ammonia in the future.

While every engine-fuel combination has its own challenges, there are several common factors that are driving lubricant developments, such as increased thermal stress and a higher risk of deposit build-up. This makes cleanliness performance increasingly key.

To tackle this, detailed monitoring of specific engine performance markers and characteristics is becoming even more important for operators. Because, whether loading, contamination, wear debris, or lubrication (i.e., lack of base number) related, most machinery failures can in fact be avoided by regular sampling and structured data management.

It is why manufacturers are aligned on the need for constant lubrication monitoring to establish baselines that can help operators react to changes immediately.

Engine monitoring programmes, such as Shell LubeMonitor and Shell VitalyX therefore become a critical piece of the modern operator's toolkit. Providing the ability to identify key insights and track long-term trends, the right engine monitoring application can ensure operations are aligned with OEM recommendations, while ultimately helping to save time and reduce costs.

What the future holds for marine lubrication

As large two-stroke and four-stroke engines come close to efficiency limits, and as the sector moves further through its energy transition, collaboration throughout the value chain will only grow in importance.

For lubricant manufacturers, this means working with OEMs, shipowners, and fuel suppliers to develop solutions that can unlock efficiencies in the engine room, while also standing up to the harshest operating demands and latest engine technologies.

And for marine operators, not only must these next-generation lubricants become a vital part of the maintenance toolkit, but there must also be a shift from traditional 'cylinder condition monitoring' programmes to integrated, real-time engine monitoring programmes. This will ultimately allow the marine industry to prepare for its decarbonisation journey, no matter which fuels emerge as priorities from the increasingly diverse mix.



Marcus Schaerer, Shell Marine's GM Technical & Services

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The Sanderus, Jan De Nul Group's trailing suction hopper dredger and ultra-low emission vessel

RECENT DEVELOPMENTS IN THE LUBES SCENE

MAN approval for low sulphated ash formation engine oil

Chevron Marine Lubricant says its low sulphated ash trunk piston engine oil Chevron HDAX 9700 has become the first lubricant to gain time-unrestricted approval for use with MAN Energy Solutions' four-stroke engines running on either LNG or distillate fuels with a sulphur content of up to 0.10%.

Chevron HDAX 9700 was tested on Luxembourg dredging and offshore operator Jan De Nul Group's trailing suction hopper dredger and ultra-low emission vessel Sanderus. The company required an engine oil with very low sulphated ash formation due to the use of a variety of low sulphur fuels (below 0.10% sulphur) with selective catalytic reduction (SCR) and diesel particulate filter (DPF), as part of its strategy to comply with European Stage V limits on nitrous oxides (NOx) and particulate matter (PM) emissions from ships.

Michel Deruyck of Jan De Nul explained: "We needed a low sulphated ash oil because the DPF would not handle high levels of ash deposits. But MAN ES had not approved any low sulphated ash oils for use with distillate fuels. We had already worked with Chevron for low sulphated ash oils on three other vessels, so we extended the relationship and ran a validation test for HDAX 9700 on Sanderus."

Chevron HDAX 9700 is an SAE 40 engine oil that is designed to control sulphated ash accumulation in combustion chambers and exhaust system, while providing sufficient alkalinity to protect against acidic corrosion. After 6,500 running hours, the approval for unrestricted use with distillate fuels was granted, making Chevron HDAX 9700 the first low sulphated ash oil to receive such an approval. Because low sulphated ash oils are commonly used with gas engines – which are also sensitive to sulphated ash deposits – MAN ES also granted unlimited approval for the lubricant to be used when operating with LNG.

Marine lubricating oil for diamond mining operation

Gazpromeft-Lubricants Marine Department is to supply oils to diamond mining company ALROSA for industrial equipment. It has already provided over 110,000 litres of lubricants for diesel engines operated on heavy fuels.

"The area of marine oils application is not limited to marine machinery, since the design features of the units play the key role. For 8 years now Gazpromneft Lubricants marine oils demonstrate excellent performance in various environmental conditions and under extreme mechanical loads. We are confident that our products will successfully cope with the Siberian challenges and look forward to long-term cooperation with ALROSA ", said Roman Miroshnichenko, head of the Gazpromneft Marine Lubricants Business.

ALROSA's diesel plants operate at the fields in Yakutia. The severe Siberian climate means high quality lubricants are required to ensure the reliability of machinery.



Shipyard in Singapore ©iStock

INDUSTRY NEWS

Our regular look at the world bunkering scene

Singapore still in top place

Singapore has retained its position as the world's busiest bunkering port by total bunker sales volume, with 50.04 million tonnes delivered in 2021. This comprised 49.99 million tonnes of conventional bunkers sales and 0.05 million tonnes of LNG bunker sales. In 2017, Singapore bunker sales reached a record high of 50.6 million tonnes but then fell back below the 50 million tonnes mark, before bouncing back last year.

Issuing the 2021 figures, the Maritime and Port Authority of Singapore (MPA) noted that Singapore commenced regular ship-to-ship LNG bunkering operations in March 2021 and said that it would "continue to diversify our fuel offerings in line with our push for maritime decarbonisation".

MPA said the Port of Singapore remained open and connected to the world in 2021 despite the ongoing Covid-19 pandemic, with a record high container throughput of 37.5 million TEUs.

Minister for Transport and Minister-in-charge of Trade Relations, S Iswaran, announced that the MPA had awarded almost S$3 million (US$2.2 million) of funding to eight projects involving 35 companies working together to accelerate the development of digital products and solutions for the bunkering sector. He said these projects were part of the first industry transformation map to digitalise the maritime industry, and would support the effort of Singapore Trade Data Exchange (SGTraDex) in data sharing across bunkering stakeholders.

Minerva expands in Red Sea

Minerva Bunkering has launched a marine fuels supply service in the Red Sea ports of Yanbu and Jeddah in Saudi Arabia.

"The Red Sea is one of the shipping industry's most important waterways yet one that has historically offered limited bunkering options to serve the global fleet. We believe Minerva's new operation will support the increasing number of vessels calling these ports as well as provide a highly efficient service with minimal deviation for transiting vessels needing bunkers," said Minerva CEO Tyler Baron.

Minerva will use shoreside bulk cargo storage and two of its bunker tankers, the Patmos and the Halki, both equipped with mass flow meters.

"We have worked closely with Minerva to start this new business in Yanbu and Jeddah, which is aligned with our vision of accelerating growth in the local maritime economy. Minerva's global scale and innovative solutions will provide shipping customers with a high-quality product and a world-class service," said the Ministry of Energy of Saudi Arabia.

"We are excited to work with Minerva to expand the scope of bunkering services at the Port of Yanbu to include both domestic and international customers, and this development is in line with the Kingdom's Vision 2030," said ATC CEO Ibrahim Al Buainain.

Minerva Bunkering, a fully-owned subsidiary of Mercuria Energy Group, took over Aegean Marine Petroleum Network Inc, after it emerged from Chapter 11 bankruptcy proceedings in the US in 2019.

New terminal at Duqm

Oman Oil Marketing Company (OOMCO) has opened a new bunker terminal at Duqm. The company plans to use the strategic location on Oman's south-east coast to serve international shipping sailing through the Suez Canal, Arabian Gulf, and the Indian Ocean.

OOMCO says that the terminal will offer "the highest specification HSFO, VLSFO and LSMGO marine fuel in compliance with ISO 8217".

As well as supplying at the terminal the company says bunkers will also be delivered by the 10,126 dwt bunker barge Alpha, which is being deployed to the port.

"OOMCO's development of the Duqm Bunker terminal is part of Oman's Vision 2040 development plan to diversify the Sultanate's economy, including the marine and logistics sectors, while leveraging the country's strategic location," said Hilal Ali Al Kharusi, Chairman of OOMCO.

"The bunker fuel market in the Middle-East and Africa region is expected to grow at more than 12% during the period of 2022-2025," said Hussain Jama Bait Ishaq, Acting Chief Executive Officer of OOMCO. "Through this milestone, we are taking a step forward to achieving our goal to be among the top fuel bunker suppliers in the GCC by 2027."

OOMCO's bunkering services are based on the Duqm refinery which, when completed, will have the capacity for 230,000 barrels per day. In addition, the nearby Ras Markaz storage terminal is also currently under construction, geared to offer six million barrels of storage capacity once completed in 2022. An additional capacity of 19 million barrels is earmarked for the site as part of its future development.

ZeroNorth buys ClearLynx

Danish technology company ZeroNorth has bought US-based online bunker market platform ClearLynx. ZeroNorth says that adding ClearLynx to its platform will provide ship owners and operators with an integrated and end-to-end solution for the cost and environmentally efficient optimisation of bunker fuel, from initial enquiry through to supply. The move will give ZeroNorth a physical presence in the US and, it says "create a foundation for continued growth and sales within the region".

A statement says that ClearLynx will continue to offer its current bunker services via its platform and will also over time be integrated within the ZeroNorth platform, bolstering optimisation benefits to customers of both platforms, the industry and the planet.

Peninsula renews credit facility

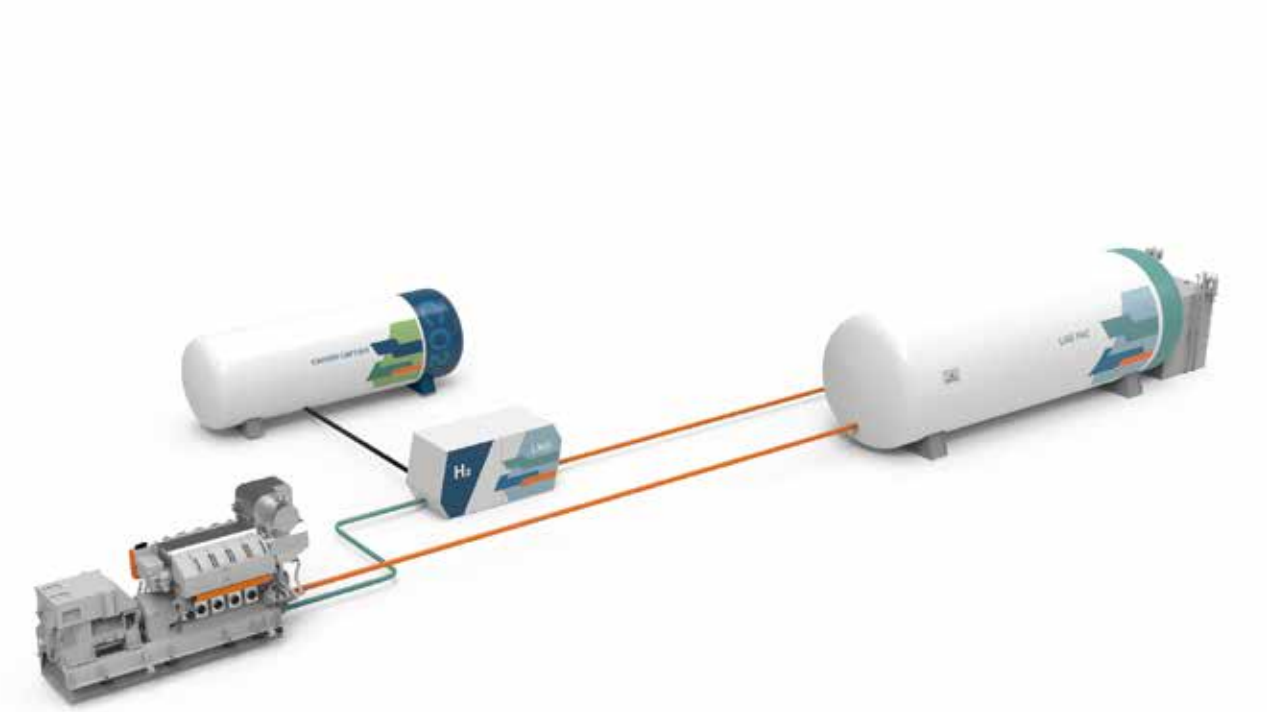
Global marine energy supplier Peninsula has renewed a $320 million syndicated Singapore-based credit facility. The moves followed the renewal of the company's European banking facility in May last year and, together with the group's other bilateral lines, provided a total funding package in excess of $1 billion.

According to the company, the Singapore facility was upsized from its initial launch amount of $285 million and is future proofed with the incorporation of an $80 million option increasing the total Singapore facility to $400 million once exercised.

Peninsula CEO John A Bassadone said: "We are pleased that Peninsula's successful business model, transparency and conservative risk management continues to resonate with our stakeholders and attract the highest quality banking partners. Our track record in securing committed funding and further diversifying our banking portfolio puts the group in a very strong position to deliver and exceed our strategic objectives ahead of time, especially as the group has already outlined its commitment to the ESG agenda in our sector."



Port of Duqm



The gas reformer produces hydrogen from natural gas for use as engine fuel, while the CO produced is captured and stored onboard. ©Wärtsilä Corporation

ONBOARD HYDROGEN PRODUCTION

New project will make hydrogen from LNG while at sea

Class society RINA, an unnamed energy major, the Liberian Registry and technology companies ABB, Metacon subsidiary Helbio and Wärtsilä are working on a project to produce hydrogen on board ships, without the need for extensive infrastructure investment, "offering the shipping industry a low-carbon pathway in shorter timescales".

A statement notes that the difficulties and costs associated with the production, distribution and storage of hydrogen on board have challenged the interest in its direct use as fuel. It continues: "By producing hydrogen on board and using affordable and readily available LNG the solution meets the very demanding IMO targets for 2050 in a much shorter time frame."

The concept is based on combining the ship's LNG fuel steam to produce hydrogen and CO_2. Hydrogen will then be used directly in internal combustion engines or fuel cells, without the need to be supplied and stored on board. The CO_2 will be liquefied by the cryogenic stream of LNG that would be used as fuel anyway, and stored on board for later disposal ashore, either into carbon storage or use. In case of tankers, the stored CO_2 can also be used as inert gas.

According to the partners in the project, the equipment necessary to meet the IMO 2050 target can easily be fitted on the deck of a commercial vessel in a progressive manner, at subsequent drydocks after ship's delivery. They say the duration of the transition will depend on how far the owner wishes to remain ahead of the competition in terms of efficiency, sustainability and exceeding the regulatory requirements.

Only LNG bunkering will be required and, by progressively increasing the production of hydrogen, the consumption of fossil methane and associated methane slip will be reduced at the same rate.

Wärtsilä and ABB will support the application of hydrogen in powering internal combustion engines and fuel cells respectively, while Helbio will provide the technology and manufacturing of the reformer. RINA and the Liberian Registry will provide advice and guidance on the application of rules and regulations for novel concept alternative designs, based on Hazid/Hazop analyses, as well as specific rules for this kind of arrangement.

Liquid hydrogen bunkering

UK-based gas and liquids handling specialist Unitrove says it plans to create the "world's first" liquid hydrogen bunkering facility.

It will use equipment made by Nikkiso Clean Energy & Industrial Gases Group. The Japanese company will provide heat exchangers and cryogenic pump units.

Unitrove set up the UK's first liquefied natural gas bunkering facility at Teesport in May 2015. It CEO, Steven Lua, says he wants to "enable clean, affordable, reliable, and sustainable fuelling options for ships at every port in the world".

He adds: "Using liquid hydrogen as a commercial fuel is a relatively unexplored option, but it has great potential. It has long been used to safely and successfully send rockets into space. The technology is mature, but the markets for its use are not.

"We already see very early signs of light-duty vessels being battery-driven or powered by compressed gaseous hydrogen, but liquid hydrogen will allow us to serve the heavier portion of the shipping fleet where we hope to have a much larger impact."

Australian hydrogen production plan

Commodity trading company Trafigura Group, multi-metals manufacturing business Nyrstar and South Australia's state government have announced a joint investment to progress plans to construct a commercial scale green hydrogen manufacturing facility in Port Pirie, a regional city north of Adelaide.

The AU$5 million (US$3.5 million) front end engineering design study for the Port Pirie Green Hydrogen Project, jointly funded by Trafigura and the South Australian State Government, will commence immediately, with a final investment decision to be made by the end of 2022. If approved, construction will commence in 2023.

At an estimated design and construction cost of AU$750 million, if approved, the project is to be developed in a phased manner, initially producing 20 tonnes per day (tpd) of green hydrogen for export in the form of green ammonia. The full-scale plant will produce 100 tpd of green hydrogen at full capacity from a 440 MW electrolyser, enabling it to meet both export and domestic supply needs. The oxygen created in the production of hydrogen will be utilised by the Nyrstar Port Pirie smelter.

Trafigura says it will source 100% renewable energy to provide the electricity needed to run the project's electrolyser, which will also contribute to decarbonising the existing smelter's power supply.



Port Pirie Pic Trafigura



Northern Skagerrak will collect sludge from ships arriving at the Port of Gothenburg. © Northern Energy & Supply.

ELECTRIC POWERED SLUDGE BARGE

A service vessel at Gothenburg is to be converted to run on electricity

During the second quarter of 2022 a sludge barge, the *Northern Skagerrak*, is to be converted to hybrid operation. It will run mostly using electric power although there will also be an auxiliary engine that runs on hydrotreated vegetable oil (HVO) produced from renewable sources.

The 700-dwt vessel will collect oily engine room waste from ships under a contract with the Gothenburg Port Authority. The conversion is expected to save 680 tonnes of carbon dioxide.

"Our aim at the Gothenburg Port Authority is to reduce carbon emissions at the port by 70% by 2030. *Northern Skagerrak* will serve around 6,000 incoming ships each year and the conversion to hybrid operation will be a significant step in the right direction," said Erik Waller, Deputy Harbour Master at the Gothenburg Port Authority.

All ports in Sweden are obliged to receive sludge from ships arriving at the port. During operation, ships accumulate sludge, which comprises a mixture of water, oil residue, cleaning agents, and solvents. The ships leave the wastewater at the port, then it is transported to a purification plant where oil and heavy-metal contaminants are separated from the water.

Fuel cells for mini cruise ships

Specialist cruise ship operator Northern Xplorer (NX) is building a series of 14 vessels powered by fuel cell-based electric propulsion.

The ships are being designed to meet a new Norwegian government regulation coming into force from 2026 that will make a zero-emission standard mandatory in the world-heritage sites of Geirangerfjord and Nærøyfjord.

The ships will carry up to 300 passengers in 150 cabins supported by approximately 100 crew. The first of these new ships are intended to be operational from 2024/2025.

A statement says: "The ships will feature clean technologies including fully electric propulsion, battery energy storage, hydrogen fuel cells and auxiliary renewable energy supply (wind and solar power). Sophisticated HVAC systems will safeguard against pathogen spread while extensive use of recyclable materials will promote circularity. They will also feature advanced LADAR technology to detect marine plastic debris and raise awareness of maritime pollution. Built to the highest classification notations, all the vessels will be performance-optimised for superior energy efficiency and reduced fuel consumption."



This converted pilot boat is intended as a demonstration of methanol's suitability as a marine fuel

METHANOL-FUELLED PILOT BOATS

Harbour craft operated by the Swedish Maritime Administration switches fuel following successful trial

Sweden's Fastwater Consortium and the Swedish Maritime Administration (SMA) have successfully demonstrated a pilot boat which has been converted to operate on methanol fuel. The event was also supported by the Methanol Institute.

The trial in Stockholm Harbour followed the successful bunkering of the vessel at the SMA pilot station in Oxelösund, Sweden, where the pilot boat will be based.

Fastwater Co-ordinator Sebastian Verhelst said: "The Fastwater project demonstrates that methanol is a present and practical choice for application in ports and coastal shipping for all kinds of small craft, where there is an urgent need to reduce pollution."

According to the Methanol Institute, the trial provided a further demonstration of methanol's suitability as a marine fuel, permitted within the IMO's IGF Code with full flag state and class society approval.

Liquid at ambient temperature and miscible in water, methanol can be shipped, stored and handled using procedures similar to conventional fuels. The Methanol Institute says that, in operation, methanol produces around 10% lower carbon emissions than fuel oil, has IMO-2020-compliant SOx emissions, low PM and NOx. It adds: "As increasing volumes of renewable Methanol become available, operators can lower net carbon emissions further and achieve compliance beyond 2030."

AIP for methanol-fired boilers

US-based classification society the American Bureau of Shipping (ABS) has granted Alfa Laval what it says is the first marine approval for operating boilers on methanol. Alfa Laval received an approval in principle (AIP) in November 2021, based on extensive solution testing at the Alfa Laval Test & Training Centre.

Methanol is so far only used by a small number of vessels and only for their main engines.

"Alfa Laval is looking at the full scope of methanol's influence on board," says Lars Skytte Jørgensen, Vice President Technology Development, Energy Systems, Alfa Laval Marine Division. "The most natural choice for boilers is to fire them with the vessel's primary fuel, but methanol's low-flashpoint nature and the differences in its energy density require a new approach to the burner and fuel supply systems."

Alfa Laval has been testing boiler operations with methanol since early 2021 at the Alfa Laval Test & Training Centre, where engine combustion tests with methanol are also underway. Tests have been conducted using a pressure-atomizing MultiFlame burner on an Alfa Laval Aalborg OS-TCi boiler, as well as a methanol valve unit (MVU) designed by Alfa Laval to meet the class requirements from ABS.

According to Alfa Laval, initial results, obtained with both pure methanol and a methanol-water mixture, showed as expected that methanol is easy to ignite and results in very low emissions. Focus was therefore placed on securing the same steam output with methanol – despite its lower heat value – as would be the case using oil or gas as fuel. A solution was reached after a few adaptations, ensuring that a boiler of a given size can produce the same amount of steam regardless which fuel is used. This meant that development could move rapidly to optimizing the fuel supply system and working with ABS on the methanol AIP.

The next step for Alfa Laval will be a pilot installation on an ocean-going vessel. It says results from field testing will be crucial in fine-tuning the methanol boiler solution and arriving at a commercial design.

Meanwhile, Alfa Laval says it is "pursuing wider optimization possibilities" that will compensate for methanol's lower energy density and higher price. One of these is the use of an Alfa Laval Aalborg Micro economizer in conjunction with the OS-TCi. By absorbing waste heat from the boiler's exhaust gas, the Aalborg Micro would recover valuable energy and reduce boiler-related fuel consumption by roughly 10%.

"Moving to methanol will require many changes on board, especially when it comes to energy management," says Jørgensen.


Jurong Port

JURONG JOINS CASTOR INITIATIVE

Joint development project for deep-sea ammonia-fuelled tanker now has seven partners

Singapore's Jurong Port has joined the Castor Initiative, a multinational coalition promoting the decarbonisation of shipping and currently supporting the development of alternative fuels, including ammonia. Its other members are MISC Berhad (MISC), Lloyd's Register (LR), Samsung Heavy Industries (SHI), MAN Energy Solutions (MAN), the Maritime and Port Authority of Singapore (MPA) and Yara International ASA (Yara).

In September 2021, LR awarded approval in principle (AIP) to SHI for its ammonia fuel supply and fuel storage system. SHI had earlier received an AiP in September 2020 for its ammonia-fuelled tanker design.

Jurong Port has the world's largest port-based solar power generation facility as well as the world's first green berths. Its CEO, Ooi Boon Hoe, said: " As actions by the shipping industry in meeting the decarbonization goals are gaining momentum, we recognize that there could be multiple pathways for future marine fuels. Being the operator of the busiest bunkering terminal in the world's largest bunkering port today, Jurong Port is keen to facilitate the adoption of such future marine fuels, including Ammonia, by providing suitable supporting bunkering infrastructure. We look forward to contributing to the success of the Castor Initiative and reinforcing Singapore as the world's leading bunkering hub."

According to its members the Castor Initiative was motivated by their shared belief that the maritime industry needs leadership and greater collaboration if shipping is to meet the IMO's GHG reduction ambitions. They said: "While ammonia is one of the fuels being considered by maritime stakeholders, the partners also recognise that the shipping industry will need to explore multiple decarbonisation pathways and hope their collaboration will spur others in the maritime industry to join forces on addressing this global challenge."

AIP for ammonia-fuelled ships

The Korean Register (KR) awarded approval in principle (AIP) to two ammonia-fuelled ships developed by Korea Shipbuilding & Offshore Engineering (KSOE), Hyundai Heavy Industries (HHI) and Hyundai Mipo Dockyard (HMD). One is a 60,000 cubic metre ammonia carrier and the other is a 38,000 cubic metre ammonia carrier/ bunker tanker.

The AIP is the first output from the Green Ammonia Marine Transport and Bunkering Consortium which was launched in May 2021 and comprises KR, LOTTE Fine Chemical, KSOE, LOTTE Global Logistics, HMM and POSCO.

Kim Daeheon, the Executive Vice President of KR's R&D division, said: "This AIP is extremely significant considering the industry's focus on developing and utilizing eco-friendly fuels such as green ammonia to achieve decarbonization. We have prepared a solid technical base for ammonia-fuelled ships with this certification and are getting closer to the goal to commercialize them in 2024."

KR said it was further supporting the development of ammonia-related technologies through the presentation of AIP for ammonia bunkering ships developed by Navig8 and KmsEmec last year, the development of its guidance for ammonia-fuelled ships and its work to provide customers with technical support to achieve decarbonisation through the consortium.

Meanwhile Japanese classification society ClassNK has awarded AIP to a concept design for an ammonia-fuelled car carrier developed by Kawasaki Kisen Kaisha ("K" Line) and Shin Kurushima Dockyard.

In a joint study, Shin Kurushima Dockyard, ClassNK and "K" Line formulated a potential risk assessment and safety measures for using ammonia as a fuel. Based on this safety assessment of ammonia fuel, Shin Kurushima Dock and "K" Line worked on the development of a ship that can "both reduce environmental impact and meet actual operational requirements".



GoodFuels barge and the Samskip Innovator

BIOFUEL NETWORK LAUNCHED

Ship to Zero initiative brings together organisations spanning a range of countries and industries

A partnership between 18 companies from around the world announced at COP 26 aims to curb emissions on voyages between Rotterdam and the UK.

Biofuels facilitator GoodShipping says the Ship to Zero initiative brings together organisations involved in food production, consumer goods, chemicals, textiles, machinery and logistics. The initial partners of the initiative are Bugaboo, Cocoasource, DHL Global Forwarding, Dille & Kamille, Dopper, Geelen Counterflow, Lenzing, Loods5, Lush, Matsen Chemie, Nine & Co, Regent Ingredients, Samskip, Sipsmith, Tony's Chocolonely, YOGI Tea, Yumeko and Zaytoun.

Each partner has committed to a specific reduction in greenhouse gas (GHG) emissions related to the transport of their products or services. Translating these pledges into tangible, traceable and demonstrable climate impact, GoodShipping completed the first bio-bunkering of the container ship Samskip Innovator late last year, when fossil fuels were replaced by 100% sustainable biofuels. The partnership will see biofuels used for a total of four or five trips from Rotterdam to Hull, and around 4,000 tonnes of CO_2 will be saveed as a result.

The refuelling has been achieved in partnership with GoodFuels, whose biofuels deliver an 80-90% well-to-exhaust (or well-to-wake) CO_2 reduction and are produced from certified renewable feedstocks. These include used cooking oil and waste animal fats, which are labelled as 100% waste or residues and cannot be used for any higher quality application or recycling. These feedstocks are approved by an independent sustainability board, to make sure all biofuels used meet the highest sustainability requirements.

GoodShipping says that because its initiative is based on the mass balance principle – the concept that all carbon is emitted into the same atmosphere – the vessel being refuelled will not necessarily carry the cargo that the partner companies have decided to transport carbon neutrally. The CO_2 reductions can be enabled on another ocean-going vessel, "with GoodShipping's strict accountability criteria ensuring that the partners' decarbonisation commitments are delivered".

Tina Trinks, Commercial Manager at GoodShipping, said: "The Ship to Zero initiative demonstrates that concrete climate action is possible now, and that a tangible impact can be achieved by taking small steps together and breaking down barriers to collaboration across industries. Given the urgency of the climate crisis, there is no time to waste, and cargo owners have a unique opportunity to move from intentions to action.

"K" Line trials biofuel

Japanese shipping group Kawasaki Kisen Kaisha ("K" LINE) has conducted a marine trial of biofuel which was supplied by global integrated energy company BP to the car carrier Polaris Highway.

The biofuel was delivered to the vessel at Flushing, the Netherlands, in November. The trial was conducted after the ship had left the European Emission Control Area.



Brittany Feries' new LNG ferry Salamanca

SEA-LNG LAUNCHES ANIMATION

Lobby group highlights potential of synthetic LNG as part of campaign to promote LNG as a marine fuel

SEA-LNG has published a new animation explaining the LNG pathway to decarbonisation, and the major role that it believes renewable synthetic LNG has to play as the ultimate destination of that pathway.

The lobby group says it wants the video to be "an introduction and a crib for anyone interested in alternative marine fuels, whether they are in our industry, provide services to our industry, or, like the vast majority of individuals and organisations, simply want to see action taken to address climate change now".

According to SEA-LNG, renewable synthetic LNG, which is chemically identical to fossil LNG but can be carbon-neutral, has made big advances in recent months. As an example, it notes that the ElbBlue became the first ever ocean-going vessel to be bunkered with synthetic LNG produced from renewable electricity, when it docked in Brunsbüttel, Germany, in late September 2021.

SEA-LNG says: "The drop-in versatility of renewable synthetic LNG and its biogenic relation, bioLNG, vindicates the continued pursuit of their commercialisation, as the order book for LNG powered ships expands."

It adds that it exists to support the ongoing development of the LNG decarbonisation pathway and is dedicated to helping shipping thrive through the energy transition. The end goal of this pathway, to deliver net-zero greenhouse gas (GHG) emissions, requires the production of synthetic LNG from renewable electricity.

In a statement, SEA-LNG hits out at criticism of LNG, noting: "The pathway faces challenges: loud calls for a winner takes all approach to fuel choice, when many of the fuels being championed are still at the starting gate; unthinking warnings of stranded assets, when investments made in LNG today can utilise its bio and synthetic cousins; misleading statements about methane slip, when developments by engine manufacturers are underway to eliminate it within the next few years; and confusion about the environmental performance, readiness, costs and availability of other alternative marine fuels."

In attempt to clarify terminology the statement continues: "The LNG pathway makes sense – from an emissions perspective and both commercially and operationally. However, anyone reading about the LNG pathway could easily be confused by the variety of terms used to describe the carbon-neutral forms of the fuel. In recent months, 'renewable synthetic LNG' has been referred to variously as carbon-based liquid methane, e-methane, eLNG, Synthetic Natural Gas, SNG, electro-methane, green methane, liquid green methane, liquefied synthetic methane (LSM), and hydrogen-based LNG. Among SEA-LNG members, naming of the product is not always consistent." The lobby group says it will use the term 'renewable synthetic LNG'.

New ferry powered by LNG

French ferry company Brittany Ferries has taken delivery of an LNG-fuelled cruise ferry from China Merchants Jinling shipyard in Weihai, China. The 1,015-passenger ferry will run on a route between Portsmouth, in the UK, and Bilbao and Santander, in Northern Spain. The ship is classed by Bureau Veritas (BV).

The Salamanca will enter service in March 2022 and will be the first of the Brittany Ferry fleet to be fuelled by LNG.

With a length of 214.5 metres, the Salamanca is equipped with twin Wärtsilä 12V46DF (dual-fuelled) engines, each generating 13,740 kW.

The ferry will take on LNG at Bilbao and Santander, enabling round trips between Spain and Portsmouth.

Brittany Ferries plans to deploy three more LNG-fuelled vessels in the coming years: The Santoña will join the fleet in 2023 on the Portsmouth-Santander-Bilbao route while two hybrid LNG-electric ships are planned to enter service between France and the UK in time for the 2025 season.

GTT supplies LNG fuel tanks for new boxships

French LNG vessel specialist GTT is to provide the fuel tanks for two LNG fuelled container vessels being built at Hyundai Samho Heavy Industries (HSHI), South Korea. T

The two vessels, each with a capacity of 15,600 containers, will be equipped with tanks holding up to 12,800 cubic metres of LNG each. The tanks will be fitted with the Mark III Flex membrane containment technology, developed by GTT.

In addition, GTT will fit these vessels with its GTT Digital platform to monitor and optimise the operational performance of the vessels and further reduce their energy consumption and environmental footprint.

The two vessels are scheduled for delivery between the fourth quarter of 2023 and the second quarter of 2024.

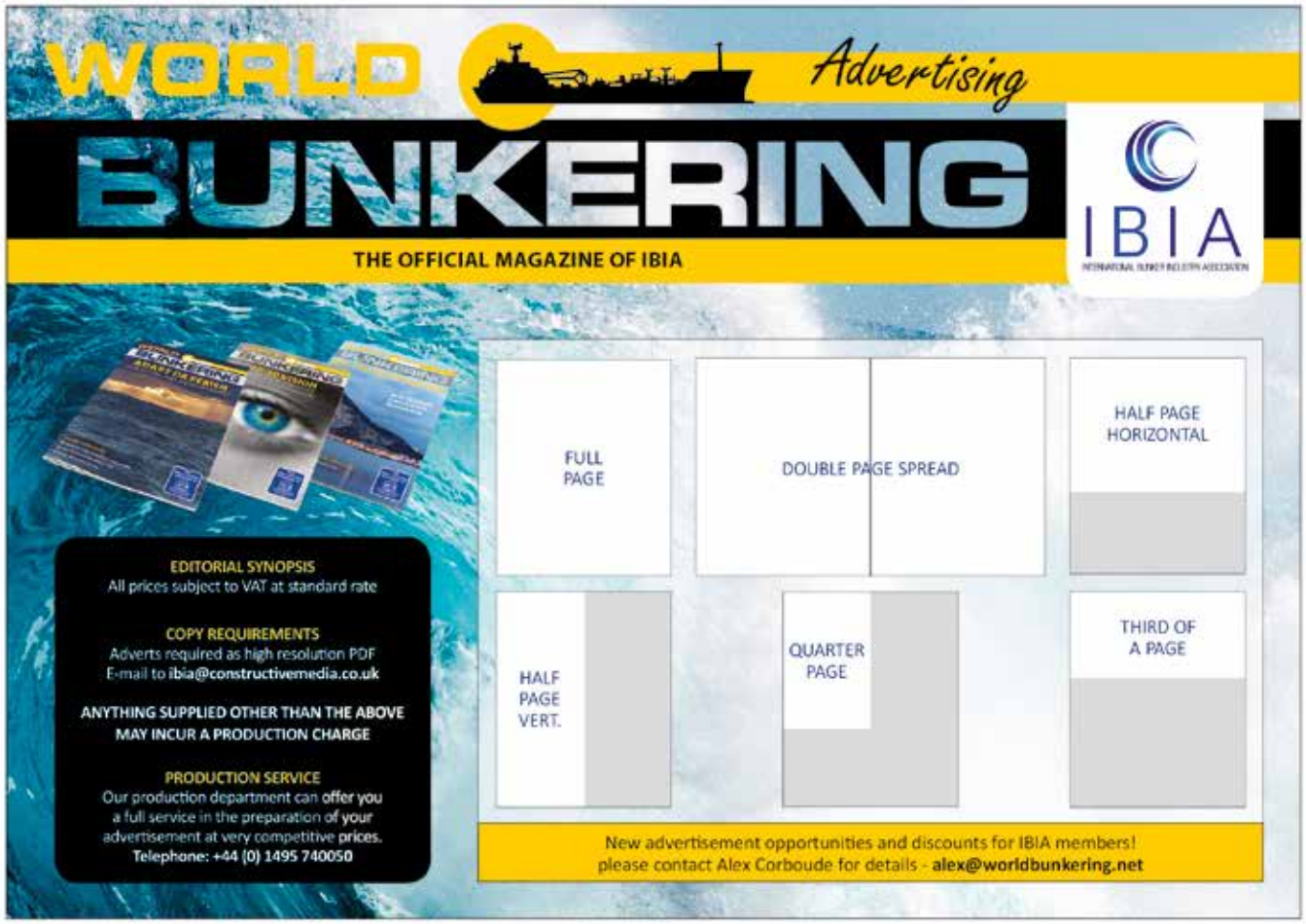




ABB Turbocharging and Hyundai Heavy Industries, have teamed up to offer an engine part-load optimization (EPLO) service for shipowners. ©ABB

CUTTING EMISSIONS

Service providers and engine manufacturers are focusing on reducing emissions through the use of advanced technology

Specialist charter software company AXSMarine has recently added a new algorithm to its systems aimed at helping dry bulk carrier owners and operators estimate the amount of CO_2 emissions their fleets will create through their planned activities.

As an addition to its existing portfolio the company has launched a tool to estimate the CO_2 footprint of each vessel's next voyage.

The company says its CO_2 calculator is fully automated within its current voyage estimator and provides both the energy efficiency operating indicator (EEOI) and the Annual Efficiency Ratio (AER) methodologies. It takes into account HSFO, VLSFO, and LSMGO carbon factors, and provides an Alignment Delta to EEOI trajectory values for its users.

AXSMarine's chief commercial officer Steve Fletcher said: "Our calculator automatically estimates the CO_2 effect of every single voyage using established methodologies. It also provides you with total CO_2 emissions and off-setting cost, which can be specified depending on its price in your region of operation."

Engine power optimisation

ABB and Hyundai Global Service say that many vessel owners are looking to engine power limitation as a means of complying with IMO's Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Index (CII) regulations which come into force in 2023.

Hyundai Global Service (HGS), the aftercare division of shipbuilder and engine maker Hyundai Heavy Industries, has teamed up with ABB Turbocharging to offer an engine part-load optimisation (EPLO) service for shipowners seeking to cut emissions in line with the International Maritime Organization's (IMO) requirements.

The two companies say: "Optimizing engines for part-load operation is a reliable and economically feasible solution to minimize environmental impact and improve the operational efficiency of vessels. EPLO can help shipowners find the optimum power range for their engine power limitation, optimize combustion within the reduced load range and reduce fuel consumption, emissions and maintenance costs."

Integrated emissions control

Emissions control company Eminox and turbocharger maker Kompressorenbau Bannewitz (KBB) are to collaborate on meeting increasing emissions compliance requirements for marine diesel engines.

The two companies say they will provide marine engine manufacturers and vessel operators with a fully integrated emissions control solution, "from turbo to tailpipe, to deliver clean marine diesel engines".

Aimed at medium speed engines over 1MW power, the new solution incorporates KBB's expertise in marine turbocharging and air handling with Eminox's EMx exhaust aftertreatment system (EATS) technology.

The integrated solution can be retrofitted on existing engines as well installed on new ones. The companies say their integrated project management and full in-house solution "removes the need for engine manufacturers to assemble components from multiple suppliers or undertake their own costly testing and type/class approval certification".



Langh Tech existing hybrid scrubber installed on board one of LanghShip's fleet has been used for carbon capture trials. © Lang Tech

SCRUBBING SOx PLUS CO_2

Sea trials indicate existing scrubbers can be modified to also capture significant amounts of CO_2 during normal operation

Scrubber manufacturer Langh Tech has started researching the possibility of carbon capture on board vessels. It says initial tests have been successfully performed on board one of the vessels in sister company Langh Ship's fleet, utilising the existing Langh Tech hybrid scrubber installed on board.

Langh Tech says it has conducted several preliminary tests of capturing CO_2 emitted by a vessel's main engine by the means of using an existing Langh Tech closed loop SOx scrubber system. In the tests, additional alkali was added to the scrubber closed loop process water in order to provoke a reaction between the alkali and CO_2, effectively capturing the CO_2 from the exhaust gas into the process water. The setup of tests was limited by the capacity of the existing alkali pump, but positive results were observed even with only a slight increase in the alkali dosing. At a main engine load of approximately 85%, a 5% increase in alkali dosing (over normal level) was able to reduce the measured CO_2 emission by 3,3%. At 40% main engine load, a CO_2 emission reduction of nearly 7% was observed.

During the tests, the alkali consumption remained at a reasonable level, and the impact on the operating expenses of the vessel would be acceptable. According to Langh Tech the results of the tests are tentative proof of concept and additional tests with further increased alkali feed will be conducted to verify this. It adds that the CO_2 capture feature could be applied to any Langh Tech closed loop or hybrid scrubber systems with relatively low cost impact, with only minor changes to the existing scrubber system. The process could be performed with readily available alkali products such as NaOH and MgOH2, which are both already being used in many SOx scrubber processes.

Langh Tech is also researching methods of extracting the captured CO_2 from the process water and looking for ways to store and/or utilize the captured CO_2 efficiently both onboard vessels and upon possible discharge to shore.

New CO_2 separation membrane

In a development that could be applied in the shipping industry in the longer term, Japan-based NGK Insulators has developed a CO_2 separation membrane for industrial exhaust gas. In testing with simulated industrial exhaust gas, the membrane achieved a CO_2 separation factor approximately five times that of conventionally developed DDR-type zeolite membrane used for CO_2 separation.

The company aims to continue with development for further increases in separation performance, aiming for commercialisation in 2030 after demonstration testing.

The company has been successful in developing a DDR-type zeolite membrane, which is one of the world's largest ceramic CO_2 separation membranes. Demonstration testing of these membranes is currently in progress.

The conventionally developed DDR-type zeolite membrane can be used for CO_2 separation using differences in molecule size. It is easily able to separate CO_2 in associated gas and natural gas, since methane, their major component, has a larger molecule size than CO_2.

On the other hand, in industrial exhaust gas, the major components are nitrogen and oxygen, which have molecule sizes similar to CO_2. Therefore, it is difficult to precisely separate CO_2 from industrial exhaust gas using a DDR-type zeolite membrane.

The newly developed CO_2 separation membrane for industrial exhaust gas makes use of a difference in adsorption characteristics (affinity) for molecules to separate CO_2 from nitrogen and oxygen, which increases the CO_2 separation factor. In testing using simulated industrial exhaust gas, the new membrane was confirmed to have approximately five times the CO_2 separation factor of a conventionally developed DDR-type zeolite membrane.

Using the characteristics of ceramics, which can be used under harsh conditions, the company says it is working to increase the separation factor even further for high temperature industrial exhaust gases.

SELF-REGULATED ORGANIZATION
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MARINE AND RIVER BUNKER SUPPLIERS



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Zinfira Yamaletdinova (Left)

HEALTH AND SAFETY ISSUES HIGHLIGHTED

A recent industry webinar heard how major regulatory changes in H&S supervision are affecting Russia's bunkering industry, as Olga Bogacheva reports

The Russian Association of Marine and River Bunker Suppliers has held a webinar for representatives of bunker companies and coastal oil terminals. The December event focused on the changes in the state health and safety (H&S) regulations for facilities handling hazardous products and attracted about 30 participants from different Russian ports.

Zinfira Yamaletdinova from Rostechnadzor, the Federal Service for Environmental, Technological and Nuclear Supervision, addressed the seminar. She pointed out that the main task of the current reform of control and supervisory activities is a transition from a punitive system to 'smart control' and the development of risk prevention.

Yamaletdinova noted that at the moment, all inspections are strictly planned and all companies know about them in advance because the schedule is approved for a year ahead. Any sudden, unannounced visits by inspectors are prohibited, except in cases of a suspected imminent threat to human life and health. The duration of inspections has now been reduced from 30 to 10 days, and in case of a small business an inspection should not last more than 50 hours.

The most important innovation is pre-trial appeal of decisions made by inspectors. According to Yamaletdinova, this is intended to ensure the rights of the companies and guarantee protection from unreasonable demands. The businesses will have the right to file their complaints through the Gosuslugy (Public Services) portal when they disagree with a decision. This new procedure allows companies to reduce legal costs and speed up dispute resolution. Previously, only the court could consider an appeal. The process could last several months. Now the period of consideration of the appeal in a pre-trial procedure is limited to 20 working days.

In a significant move, the government has extended the period for fully complying with the instructions of the inspection bodies to up to one year. However, this would only be allowed following a request by company which would have provide a strong justification for a lengthy delay.

Yamaletdinova also spoke about what is happening in practice and the most common violations of the country's H&S laws. One of them is understating the hazard class of dangerous substances. Rostechnadzov officers sometimes

have to deal with intentional incorrect hazard identification, which under the H&S regulations are determined by the companies themselves. In some cases, machinery and equipment, including pumps and even pipelines, may not be mentioned at all in documents submitted by a company.

She warned that while companies doing that are clearly trying to save costs and avoid the close attention of inspectors in the event of an emergency, a lack of accurate information can lead to tragic consequences.

Yamaletdinova touched on another sensitive problem, namely the continued use of previously appropriately certified equipment that no longer meets current safety standards. She had sympathy for companies facing significant expense but she said that in such cases, Rostechnadzor takes a completely unambiguous position. All safety requirements must be strictly observed, even if the business has to spend additional funds.

Rostechnadzor is constantly working to simplify control procedures. At the moment, an experiment is being conducted to introduce a remote control system for industrial safety. This involves complex software and hardware that ensures continuous receipt, processing and transmission in real time of information about the parameters of technological processes at a facility handling hazardous products. The new system monitors safety, the performance of emergency protection systems and registration of accidents and incidents. The system is currently being tested at a large, operational refinery. If the trial is successful, the technology will be widely applied. Companies that join the monitoring system voluntary will receive significant benefits, in particular, the cancellation of scheduled inspections and permanent state supervision.


Doctor Sergey Matsenko

The Electronic Inspector system will be a logical expansion of current control procedures. It will enable owners and employees of facilities handling hazardous substances to pass a preliminary test of compliance with safety requirements in their personal accounts. The Electronic Inspector will automatically compare the mandatory requirements targeted in the system with the current state of the enterprise being monitored. Thus, the manager will see his facility in advance through the eyes of an inspector, get information about potential sanctions along with the ability to intervene to prevent issues arising.

The second part of the webinar was devoted to practical aspects of the development and coordination of Oil Spill Emergency Plans for offshore oil terminals. Doctor Sergey Matsenko, a recognised expert in marine safety issues and CEO of Southern Navy Research and Design Institute was the key speaker.

Matsenko explained that Russian law requires that the companies' oil spill response (OSR) plans should ensure prevention of worst case spills which would occur in a major disaster such as the sinking of a large oil tanker.

He said that, obviously, small spills are much more likely to happen as a result of mechanical failures. Even large marine terminals cannot afford to have in place all resources and equipment sufficient to cope with incidents larger than of local scale. The only way to ensure adequate response to large accidents is to conclude contracts for emergency preparedness with Morspassluzhba, the state emergency response service, with "its unreasonably high prices for services".

Every marine terminal is required to undergo a state environmental assessment of both its economic activities and its OSR plan. Each examination takes more than six months and the development costs amount to tens of thousands of euros. Matsenko said this meant the financial burden and costs for enterprises were still too high.

He also told the webinar attendees about specific incidents in various ports of the Russian Federation and how dispute resolution works in practice.

The consensus among webinar participants was that it is reasonable to comply with the relevant regulations but sometimes it makes sense to take cases to court.

Russian News

"Common ground" found on cutting bureaucracy

Reducing bureaucracy was among topics discussed at a high-level industry/government meeting in December 2021.

Vitaly Klyuev, Director of the Department of Maritime and Inland Waterway Transport Policy of the Russian Ministry of Transport, and Vladimir Sergeev, Chairman of the Council of the Russian Association of Marine and River Bunker Suppliers, discussed the most pressing issues of the bunker business caused by the latest legal changes regulating the supply of fuel to ships at the meeting.

Common ground was reached on a number of provisions and the parties agreed to continue efforts to improve the regulatory framework aimed to eliminate excessive administrative barriers. The Association will inform its members about the implementation of the agreements reached.

Special economic zone set for Ust-Luga gas projects

A draft decree of the Russian Government has been published which will establish a special economic zone (SEZ) at Ust-Luga. It is reported that two linked projects for the SEZ have already been confirmed.

They are the Baltic Gas Chemical Complex (BGC) and the Baltic Gas Processing

Complex. The investors in both projects are Gazprom and RusGazDobycha, a part of RusChemAlliance. The projects are focused on the processing of gas coming through Gazprom's main pipelines. The products will be exported by sea via Ust-Luga to Europe, the CIS and Southeast Asia, as well as to India and China, and also sold to the domestic market.

The gas processing complex within the SEZ may become the largest in Russia and in Northwestern Europe. The planned annual output is 13 million tonnes of LNG. The commissioning of the first stage of the complex is scheduled for the end of 2024.

Currently, there are only small-tonnage projects for the liquefication of natural gas in the Baltic region. Cryogaz-Vysotsk of Novatek is already producing LNG, and Gazprom's KS-Portovaya is under construction.

Rosneft-Bunker active during 2021 river navigation season

RN-Bunker delivered 220,000 tonnes of bunker fuel to inland waterway vessels during last year's navigation season, according to a press statement.

The largest volumes, 41,000 tonnes, were delivered in the Siberian Yenisei River basin. The main customers in the region were shipping companies involved in the implementation of the Rosneft - Vostok-Oil project.

RN-Bunker is the leading bunker supplier in the Volga-Don basin and in Siberia, where its market shares are 47% and 69%, respectively.

To meet the needs of shipping companies operating on the inland waterways of Russia, Rosneft has expanded the production of low-sulphur marine fuel, including at refineries located in West Siberia.

Passenger LNG vessel handed over

Chaika-LNG, the first LNG-fuelled craft in the Russian river passenger fleet has been leased by the State Transport Leasing Company (STLC) to Gazprom LNG Technologies.

The ship was built at the Zelenodolsk shipyard as part of a state subsidised water transport leasing programme.

In total, STLC has contracted 10 LNG-powered vessels for a total of 55 billion roubles (US$721 million). The vessels comprise five tankers, two cargo vessels and three passenger ships.

Earlier, STLC and Gazprom LNG Technologies signed a cooperation agreement to coordinate the efforts of the parties in production and marketing of LNG infrastructure to develop a domestic market for LNG as a fuel.

The goal is to create low-carbon transport corridors. The use of LNG by river vessels and railway locomotives is an integral part of the implementation of this program.

NNK-Bunker tankers certified under the OCIMF-SIRE program

Three vessels operated by NNK-Bunker, the *Astoria, Taurus* and *Kora*, have passed voluntary OCIMF–SIRE inspections, according to NNK-Bunker.

NNK-Bunker, part of oil company NNK, is one of the leaders of the bunker market in the Russian Far East.

The company says it emphasises its commitment to ensure the highest level of environmental protection and safety during transportation and transshipment of petroleum products at sea. The NNK fleet is regularly checked for compliance with the requirements of the oil majors.

Binom-T joins Russian Association of Marine and River Bunker Suppliers

Binom-T, a Far Eastern company, has become a new member of the Russian Association of Marine and River Bunker Suppliers.

Binom-T LLC has been conducting bunkering supplies in the main ports of Primorsky Krai, Vladivostok, Zarubino, Posyet, Slavyanka, Nakhodka, Vostochny and Kozmino since 2008. Since December 2018, it has been operating in the international bunkering market in the ports of Primorsky Krai under the name Binom-T Co Ltd.

The company's fleet consists of four tankers, the *SLV-311, Nika, Patroclus* and *Korf.*

Sakhalin intends to expand LNG bunkering

Sakhalin's governor, Valery Limarenko, has announced plans for the development of the port of Korsakov. In addition to the construction of fish processing and storage facilities, it is planned to deliver LNG in tank containers to the Kuril Islands and supply LNG fuel to ships.

Several low-tonnage LNG projects are being implemented in the Russian Far East in line with regional plans.

The Korsakov Seaport is located on the southern coast of Sakhalin Island in Aniva Bay. It also includes the Poronaysk, Pogranichnoye, Moskalvo and Nabil Sea terminals located in the Gulf of Patience, on the Okhotsk Sea coast and the Baikal Bay of Sakhalin Island.

Regular services connect the port with the ports of Primorsky Krai, Japan, the Republic of Korea and the Kuril Islands. Cruise ships regularly call at the port.

Belarusian cargo traffic redirected to Russian ports

In early December 2021, the fifth package of European sanctions against Belarus was published. It prohibits the transit of petroleum products and potash fertilisers from Belarus through the Baltic States and their transshipment through the ports of Lithuania and Latvia, particularly, Klaipeda, Ventspils and Riga.

To meet this potential challenge, an intergovernmental agreement on transportation and transshipment of Belarusian petroleum products exported to third countries through Russian seaports had been signed in Moscow in February 2021. In 2021-2023 Belarus was expected to export about 10 million tonnes of cargo through Russian ports on the Baltic Sea with the possibility of further extending the arrangement.

A 50% subsidy of rail costs compensates for a longer delivery time.

The situation is more complicated with regard to fertiliser, since all available port

facilities are contracted by Russian fertiliser producers. Potassium exports are the main source of hard currency revenues for Belarus, so its authorities are actively trying to find options for redirecting fertilizers to Russian ports in the Arctic and the Northwest. So far, these efforts have not been successful.

There is a further complication in that Russian and Belarusian producers of potash fertilisers are competitors in the world market. So transferring Belorussian exports to ports controlled by their competitors is problematic.

Ruslan Parhamovich, Belorussian Minister of Construction, claimed that his country is considering construction of their own port infrastructure in the Leningrad region. One of the options is building a Belarusian port. It is difficult to say how realistic and feasible this idea is, given the interests of the Russian Federation.

Covid hits St Petersburg passenger ship business

St Petersburg-based owners of pleasure and domestic cruise ships had a surprisingly good summer season in 2021, but all international passenger ship voyages to and from the port were cancelled. Pre-pandemic, in 2019, the Marine Facade passenger port hosted more than 300 cruise liners, receiving ships operated by global companies including Viking Cruises, Norwegian Cruise Line and Carnival Cruise Lines. In addition, Russian companies operated several large ferries on daily services to Scandinavian countries.

Cruise lines have always been highly prized customers for St Petersburg's bunker companies, despite their particularly strict requirements for fuel quality and timing. The total losses for the port's bunker industry caused by the closure of international passenger navigation are unknown but are clearly significant.



Saint-Petersburg, Russia ©iStock

GIBRALTAR PORT CONTINUES TO PERFORM ABOVE EXPECTATION

Gibraltar Port has continued to perform above expectation, despite the ongoing COVID19 pandemic

Whilst port activity remained resilient even at the height of the pandemic, we have seen an increase in bunkering activity during 2021 with bunker call figures exceeding pre-pandemic levels seen in 2019, matched with an increase in bunkering volumes for the same period. This is no mean feat considering the difficulties that have arisen in all aspects of life, both for individuals generally and for commercial activity because of the pandemic. John Ghio, the recently appointed CEO and Captain of the Port believes that the increase in activity is largely down to the dedication and simple hard work of the different partners within Gibraltar's local maritime industry during this time, as well as the fact that Gibraltar Port remained fully operational from the start of the pandemic when other Ports were shutting down their operations. Added to this is the transparent and efficiently run bunkering operation in Gibraltar, umbrellared by the globally recognised Bunker Code of Practice, allowing ship owners and masters to have the confidence in bringing their vessels to Gibraltar Port where they know will receive the best available service.

Hence, Gibraltar remains the biggest bunker port in terms of volume in the Mediterranean, but John Ghio noted that suppliers were already looking at other 'future fuels', to see what the logistics set-up needed to be to be ready to supply when there was customer demand and fuels are available.' Innovation and evolution was the key', he added and 'Gibraltar Port will be ready to meet those challenges as we work with the wider maritime industry in pursuit of ever greater sustainability'.

The Hon. Vijay Daryanani MP, Minister for Business, Tourism, and the Port said that the awarding of an LNG Bunkering licence in 2021 was a big step in Gibraltar's green ambitions and the Port would continue to work proactively towards this energy transition so it can contribute to the sustainability of the maritime sector on green fuel availability. The introduction of LNG is a major development that supports the Government's environmental goals and decarbonisation pathways. He added that while the demand for LNG was not huge in this part of the world at the moment, having the capability to meet the demands, which will no doubt materialise, was the right strategy for growth. It was anticipated that additional LNG licences would be awarded as demand increased. And in fact, the rapidly increasing uptake of LNG as a marine fuel can be seen with the recent visit of the cruise vessel, the IONA, one of the new vessels powered by LNG. It is anticipated that with more LNG powered vessels coming on line the bunkering hub in Gibraltar will be at the forefront of the drive for greater sustainability and improved performance for not just the cruise industry but the maritime industry globally.

But it is not all about LNG bunkering, Gibraltar is excelling in developing its maritime services into a formidable maritime cluster - considered a key component to its continued success. With the introduction of crew training services through the Maritime Academy at the University of Gibraltar, potable water facilities to expand on the large portfolio of existing support services for vessels, as well as ship to ship cargo transfers and underwater services, the local maritime industry is continually improving and expanding the range of services offering to visiting vessels. These are by no means the only ancillary services on offer, with excellent ship agencies, repair facilities and legal and financial institutions based on the English legal system available, these are just some of the reasons why coming to Gibraltar Port is so attractive.

Speaking at the second Maritime Week Gibraltar conference in late 2021, Minister Daryanani said that 'We have all the right ingredients to make Gibraltar the port of choice for doing business.' And with an ambitious marketing programme about to kick off in 2022 the focus will be on attracting new business in partnership with our local maritime industry with the 'Gibraltar Port' team looking forward to engaging with major players across of sectors of the international shipping industry.





BUNKERING IN THE STRAIT OF GIBRALTAR...

OFFERING A WIDE RANGE OF SUPPLY SERVICES.

The port of Ceuta is one of the main seaports of the Mediterranean, it is a leading port in the movement of merchandise traffic, bunkering, liquid bulk, passengers and vehicles from Spain

With its strategic location in Africa, this Spanish port of call maintains an important geographic position for passengers, products and goods destined for Africa and Europe.

The main advantages the Port of Ceuta offers are the following ones:

- One of the top ports in the Strait for Bunkering services.
- Tax Free bunkering and Zero Duty on goods passing through the port suppose a financial advantage.
- Quick turnaround due to efficiency of calls. At the Port of Ceuta, bunker delivery is expipe and by truck and, says the port, these supply options plus barge supply to vessels at anchorage 'significantly reduce waiting times'.
- Compliance with the Spanish Ports Cronos project for rapid response and prevention of accidental pollution of the port.
- A wide range of port services such as: hull cleaning, VLSF 0,5%, another different kinds of fuels, MARPOL service, storage area, etc.

The competitive advantage that the Port of Ceuta offers, with respect to its competitors, is the quality service that can be found throughout the facilities in all areas such as: infrastructure, machinery, and labour force. The Port´s target is to attract and meet the needs of the medium tanker that use intermediate fuels. This unique specialization in the servicing and supplying of all kind of moored boats has no rivals in the Strait of Gibraltar and the Port is considered to be the least congested in the Strait.

Liquid bulk traffic which includes the loading and unloading of fuel and the supply of ships represents over half of the traffic of our port. We have most of the port infrastructure exclusively designated for this side of business. Therefore, we can confidently say that this is our specialization. We are an indispensable reference point in the Spanish port system for this type of traffic.

Furthermore, it is important to underline that the Port of Ceuta is working with the



fuel oil 0.5% low in sulphur VLSFO (Very Low Sulphur Fuel oil) in our facilities. The new berthing infrastructure built some months ago by the Port Authority of Ceuta made the aforementioned unloading a great success; since it allowed to receive a ship of great draft and length allowing the port of Ceuta to be more competitive by increasing its capacity for this type of operations that was previously limited to smaller vessels.

In the same line, the port of Ceuta has been expanding its product offer with the new VLSFO (Very Low Sulphur Fuel oil) marine fuel which is another step in the strategy of the port of Ceuta to boost its positioning as a reference of fuel supply services to ships in the Strait, as it is a key geographic-logistic core for international navigation routes. Apart from that, the construction of new berthing at the Poniente (Western) dock has also enabled the port to receive tankers up to 227 metres long and with a 12.5 metre draft and we are studying the possibility of increasing these figures very soon up to 230 metres length so as to be even a more competitive port.







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BUNKER ONE

Bunker One present at the entrance to the Turkish Straits

At the end of 2021, Bunker One has strengthened its presence in the Mediterranean Sea, by establishing a joint venture with the Port of Çanakkale, owned by Kologlu Holding, as a physical bunker supplier for the region mainly in Dardanelles Strait. Through the strategic partnership, Bunker One will broaden the area's niche market and provide a competitive bunkering alternative to surrounding regions such as Istanbul and the Greek Islands.

"The Turkish bunker market is one of the key markets that we have been monitoring closely over the years and entering into a such niche and value adding bunkering spot together with Port of Çanakkale is the perfect match for two like-minded partners. With the years of experience and knowledge of Bunker One Physical together with the professionalism of Port of Çanakkale, we will provide the highest-quality services to our customers in the Turkish Straits, offering an alternative bunkering operation for any vessels passing Turkish and Aegean waters," – says Taha Karakan, Physical Manager, Bunker One, Turkey, about the joint alliance with Kologlu Holding.

While you wait, Bunker One supplies

Bunker One offers safe and efficient supplies by barge at various anchorages around Bozcaada Island and Gelibolu Peninsula at the Southern and Northern Entrances of Dardanelles Strait respectively. Additionally, any cargo vessels handled at Çanakkale Kepez Port are also able to get supplied by ex-pipe facility during their cargo operations.

The location is ideal for vessels in transit from the Mediterranean to the Black Sea, as they are already anchored around the Bozcaada Island, awaiting passage. As a practical matter, clients can rest assured that their passage time will not be negatively affected by bunkering at Bozcaada Anchorage during the queue time. Moreover, the ability to do bunkering in all designated anchoring areas surrounding Bozcaada Island allows for uninterrupted operations regardless of weather conditions.

Vessels arriving from the Black Sea may sail through both the Istanbul and Dardanelles Straits without needing to stop for refuelling in between. By getting supplied at Bozcaada Anchorage, vessels can gain an operational advantage during passage and move forward in the line.

This operation can be strategically advantageous for tankers already stopping at Bozcaada performing deslopping/desludging operations. Bunker One can further shorten their halt time by providing a one-stop solution that allows them to discharge their waste and receive bunkers simultaneously. Port of Çanakkale, which has Turkey´s largest waste reception facility in terms of storage capacity and is the only service provider for the Dardanelles, also has the largest slop barge fleet in terms of simultaneous and uninterrupted execution of bunkering operations.

Ready to accommodate cruise lines

The region of Çanakkale, also known as Dardanelles, has become immensely popular among tourists, with the town of Çanakkale serving as a regular port of call for cruise ships sailing through the area. Even though the cruise ship industry has been severely impacted by Covid-19, Bunker One is prepared and ready to supply bunkers when they start revisiting the port. Furthermore, Port of Çanakkale is not only an indispensable destination for cruise ships, but also the only port in Turkey with dedicated infrastructure for ex-pipe delivery.

We work on optionality and opportunities for our customers

In line with the company's ambition to transform and simplify the bunkering process, the operation has high ambitions within the Turkish market. As a next step, Bunker One and Kologlu Holding intend to increase the number of bunker barges to meet the increasing demand for its services in the region. Additionally, Bunker One plans to uncover opportunities in the market that may be linked to the present operation to provide even more supply options for our customers, making refuelling easier, safer, and faster.

For further information, please contact:

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Bunker One



LISBON AND SINES FOR BUNKERS ONLY CALL

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

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

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

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

Contact the Galp bunkers team for further details.
+351 217240 654 | +351 217240 799
bunkers@galp.com





NACALA

NEW BUNKERING HUB IN THE MOZAMBIQUE CHANNEL

New player CPG launches bunkering service to serve vessels trading and transiting the East African area

CPG, licensed for Bunkering in Mozambique as Civitas Logistics Lda, subsidiary of CPG Operations DMCC ("CPG"), in the 4Q of 2021 launched a new bunkering service based out of the port of Nacala, Mozambique. The company has been operating in fuel logistics in Mozambique since 2018.

After landing Mozambique's first cargo of very low sulphur fuel oil (VLSFO – max 0.5% sulphur) in November, CPG has seen strong demand for the new service - delivering bunkers to over 50 vessels.

Anchored by the company's Floating Storage Unit (FSU) with capacity of 110,000 DWT and segregations for all three major grades, low sulphur marine gasoil (LSMGO), VLSFO and high sulphur fuel oil (HSFO), CPG is able to offer efficient delivery by barge at berth (general cargo and fuel terminals) and at anchorage. The FSU allows the company to land products at affordable levels and offer stems at rates comparable with other regional bunkering hubs, including Port Louis and Algoa Bay.

CPG is operating three delivery barges based in the Port of Nacala and is able to offer consistent availability for charterers and owners operating on strict schedules.

Strategic Location

The Port of Nacala, home to the largest coal terminal in Mozambique, sits in a strategic location in the Mozambique channel, representing only a small deviation for vessels transiting the channel.

Nacala's natural deep water anchorages allow for vessels of all sizes to call for bunkers without any draft restriction.

Bunker Only Calls

Working with the authorities in the port of Nacala, CPG has implemented a regime for bunker only calls at an affordable lump-sum calling cost at Nacala outer anchorage. Operations are proceeding on a 24hr basis, minimising waiting times for bunker only operations.

Please Contact:

Pedro Fonseca, Civitas Logistics Limitada / CPG Operations DMCC
Whatsapp + 258 84 6995975
Email: cpgbunkering@civitas-partners.com
www.cpgbunkering.com



Nacala is the only affordable option for bunker only calls between Fujairah and Algoa Bay for vessels on the cape-north route.

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:
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www.enacol.cv

ENACOL

GOIL COMPANY LIMITED (GOIL)

GOIL Good energy

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

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

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

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

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

www.goil.com.gh





PROVIDING THE BEST SERVICES

Big enough to be powerful, small enough to be agile

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

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

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

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

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

During the same period, we launched the Clearing and Shipping Agency service in the port of Livorno, whilst our international expansion in the lubricant sector began in the second half of the 2000s. Today, we cover all of the world's main ports as bunker and lubricant traders, of course with a greater focus on the Mediterranean Sea.

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

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

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

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

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

BUNKEROIL CONTACTS:
Address: Via Pietro Paleocapa 11, 57123, Livorno, ITALY.
Phone: + 39 0586 219214
Bunker enquiries: bunker@bunkeroil.it
Lubricant enquires: lubricant@bunkeroil.it
Please visit: www.bunkeroil.it
Follow us on Linkedin: Bunkeroil





SK SHIPPING, WINGD AND LUBMARINE

JOIN FORCES TO UNEARTH PERFECT MATCH CYLINDER OIL FOR BRAND NEW DUAL-FUEL ENGINES

Having installed brand-new X-DF engines on the SK Audace LNG vessel, Lubmarine's customer SK Shipping needed to improve its operating efficiency beyond what the current cylinder oil was permitting. WinGD's engines are state-of-the-art, but were yet to be accompanied by a validated fit-for-purpose lubricant, prompting a three-party collaborative mission to find the ideal solution

To meet its future emissions goals SK Shipping chose the dual-fuel X-DF engine manufactured under license for WinGD by Korean specialist HSD.

The switch to LNG to reduce CO_2 emissions combined with the advanced X-DF engine capability operating a low-pressure Otto-Cycle combustion system, further reduces NOx emissions without the need for additional emission reduction technologies (Tier III emissions compliant). SK Audace is the first vessel fitted with the dual-fuel X-DF engine from WinGD.

To help increase environmental performance and drive further cost savings, SK Shipping required a superior cylinder oil for the new engine that was able to offer sufficient lubrication at lower feed rates, and keep the piston running components clean and free from excess deposit build up to optimize engine performance. Cylinder oils, while burning LNG as fuel (ie. in gas mode), undergo significantly more thermal stress than in liquid fuel mode.

Lubricants form a significant proportion of vessel operator expenditure, and the need for cost effective cylinder oils that perform well is essential. This is likely to develop further as marine 2-stroke cylinder oils will also have to work with future alternative gas and liquid fuels, while still providing their core lubrication, basicity (where needed) and cleaning functions to the piston running components of an engine.

The collaboration

Working closely with engineers from SK Shipping and WinGD, Lubmarine trialled its Talusia Universal cylinder oil on the SK Audace for over 4,000 hours while operating mostly on LNG. In addition, Lubmarine ran 2 separate liquid fuel trials including 2,000 hours on ULSFO and 2,000 hours on VLSFO, both on current WinGD X Generation engines, making it one of the most tested cylinder oils currently available on the market.

Crucially during the LNG trial, the SK Audace operated in a variety of sea and ambient conditions with the engines running almost 24/7. Trials on-board the SK Audace used two WinGD X-DF engines, allowing for simultaneous, direct comparison between Lubmarine's Talusia Universal and another lubricant. Vessel inspections at port and drain-oil analysis samples from the sea trials, were sent to Lubmarine's laboratory for analysis and interpretation. Findings were shared with all partners to help inform decisions and next steps.

Outstanding results

By the end of the trial on the SK Audace, the engine using Lubmarine's Talusia Universal was able to operate at a feed rate 20% lower than the second engine running with an alternative lubricant, and with improved cleanliness levels. Talusia Universal showed significantly improved piston and component running performance as a result of greatly reduced and in places negligible carbon deposits found on engine components, including the piston and piston rings.

To date, Talusia Universal has proven a commercially viable option and is currently one of just two cylinder lubricants on the market to have passed WinGD's gas mode validation while using LNG as a marine fuel. Talusia Universal is 'DF' dual-fuel validated, and is fully approved as a single cylinder oil solution for unrestricted use on the widest range of today's compliant fuel grades.

To read more, scan this code
For more stories, go to https://go.lubmarine.totalenergies.com/



BIOFUELS IN THE MAINSTREAM:
UPTAKE, BARRIERS AND THE FUTURE FUELS NORMAL IN 2022

The marine fuels market is rapidly evolving

Just a few years ago, biofuels were an outsider's option championed by a few environmentally minded, but ultimately rare market leaders. The fossil default seemed like it would remain as just that: the default. While there is still a huge amount of work to do to bring about a true low carbon future in shipping, the market has evolved tremendously since 2015.

Driven by a perfect storm of regulatory and consumer pressure, companies from across shipping are now throwing their weight behind sustainable marine biofuel. Rather than being the territory of those rare market leaders, biofuels are now a mainstream fuel option for shipping fleets.

Responding to market demands, industry giants have pledged to zero-carbon transport, and crucially they are ready to pay a premium to ensure their cargo is transported sustainably. As a result, the days of fossil parity are over, and the demand for biofuel is such that producers and suppliers of these fuels now must rapidly increase production and source new feedstocks to ensure we can continue to respond to the industry's needs in the future.

For our part, GoodFuels is working hard to ramp up production and find new energy sources whilst continuing to ensure that all of our feedstocks are sustainably sourced. In this new normal, trusted and reliable partners are more important than ever, and independent validation and verification are key building blocks of that trust. This is why at GoodFuels all our products are assessed by an independent sustainability panel to guarantee their provenance.

Meanwhile, the geographical reach of biofuels itself is expanding. In addition to growing interest in Asia, there is a significant and growing demand in countries like the United States, the United Kingdom and France, where more favourable legislation is providing additional incentives for companies and suppliers.

The role that legislation will play in encouraging biofuel and, indeed, other low carbon fuel uptake should not be underestimated. In order to truly decarbonise shipping, regulators must ensure that new legislation is goal-oriented and technology neutral, and does not allow for the preferential treatment of any technology unless it concerns the phasing out of fossil energy.

We recognise that the new fuels normal is both exciting and challenging in equal measure for the sector to navigate. However, sustainable marine biofuel is so exciting as an immediate option that we will continue to do everything we can to get it on as many vessels in the global fleet. We look forward to working with partners new and old to make that vision a reality.

For more information please contact:
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www.goodfuels.com



DIARY

7 – 11 MARCH 2022

MIDDLE EAST BUNKERING CONVENTION

DUBAI, UAE

Now in its seventh year, the Middle East Bunkering Convention returns to Dubai in March 2022, providing a key forum for lively and informed discussion about the state of play for the bunker industry and wider shipping markets as global trade adjusts to the constraints and challenges caused by the COVID-19 pandemic. MEBC will look at the issues that have an impact on bunkering in the Middle East, whilst providing a useful and comprehensive overview of the global marine fuel supply and demand picture.

For more information:
https://www.petrospot.com/events/mebc22-dubai

16 – 18 MARCH 2022

ASIA PACIFIC MARITIME 2022

SINGAPORE, ASIA

Asia Pacific Maritime (APM) is at the centre of maritime conversation. Held in Singapore, it is the arena where the global maritime industry convene every two years to forge partnerships and discover business opportunities. With Asian economies expected to regain pre-pandemic levels in 2022*, APM is even more essential as a gateway between Asia and the world.

For more information:
https://www.apmaritime.com/en-gb/Discover.html

29 – 31 MARCH 2022

CMA SHIPPING 2022

STANFORD, USA

Focusing on bringing the shipping industry together after the last two years, this year's agenda will focus the lessons learned and the opportunities that lie ahead as trade gets back on track with shipping leading the way. Choose he sessions you would like to attend from Greener Shipping, Bunkering, Legal and The Human element. Plus keynotes, shipping association panels and the Commodore Debate.

For more information:
https://informaconnect.com/cma-shipping/

10 – 12 MAY 2022

41ST INTERNATIONAL BUNKER CONFERENCE IBC

OSLO, NORWAY

The International Bunker Conference (IBC) has become a world-renowned forum for the international bunker industry. The previous IBCs have focused on the industry milestones and challenges presented by MARPOL Annex VI. Challenges, consequences and opportunities approaching new regulations in the bunker industry. We have passed the doorsteps of a paradigm shift in bunker fuels as we know it. Did we manage and succeed? IBC 2022 will summarize 2020, provide market overviews and solutions in the new regulatory regime, and ask whether the real storm is brewing on the horizon.

Don't miss the chance to obtain an update on what's happening in the bunker industry as well as to meet old and new friends at this great networking arena.

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

13 – 15 SEPTEMBER 2022

IBIA MEDITERRANEAN ENERGY AND SHIPPING CONFERENCE

IBIA goes to Malta. Malta's rich and vibrant history sets us firmly on a path to a greener future. A host of prominent speakers will explore the benefits of green alternatives and environmental technologies which will carry the bunkering industry into the future and beyond. Malta's Maritime history stretches back over 7000 years. Its strategic location has meant that it always played a central role in shipping and trade in the region. Should you wish to attend or know more please email sofia.konstantopoulou@ibia.net

For more information: www.ibia.net

22 JUNE 2022

IBIA : GOING TO CLEAN SHIP FUTURE

ISTANBUL, TURKEY

Meet with IBIA members and Industry for a full day member and industry meeting. IBIA will host panels and round table discussions where you will be able to hear from the experts, engage in dialogue and have your say as we look towards the future of the industry as a whole.

Should you wish to attend or know more please email sofia.konstantopoulou@ibia.net

For more information: www.ibia.net

15 – 17 NOVEMBER 2022

IBIA ANNUAL CONVENTION 2022

HOUSTON, USA

The need to reduce emissions of air pollutants like SOx and NOx has been driving the industry toward new types of cleaner-burning fuels. Going forward, the decarbonisation drive will have an even bigger impact. Which alternative fuels are currently in favour? How long will LNG remain part of the picture? When will we see the first large zero-carbon cargo ships, and how long will it take for these ships to become the majority? Join industry experts introducing what we should expect in the years ahead, how the new fuels will work in engines and what preparation needs to be done for the zero-carbon transition. Should you wish to attend or know more please email sofia.konstantopoulou@ibia.net

For more information: www.ibia.net

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

WORLD BUNKERING

Q2 2022... NOW OPEN FOR BOOKINGS

Q2 2022

SPECIAL FEATURES:

Scrubbers

The differential between HSFO and VLSFO prices has widened again. We look at what effect that has had on the take up of scrubbers. What are the prospects for scrubbers as LNG and other alternative fuels become more common, and the possibility that regulations may tighten.

Fuel Management

Over two years after the implementation of the 0.50% sulphur limit are there still lessons to be learnt on how to manage using VLSFO and switching between fuels.
Meanwhile, biofuels are emerging on the bunker scene in a significant way.
What fuel management challenges do they pose?

GEOGRAPHICAL FOCUS:

Africa

Coronavirus has continued to ravage many African countries but bunkering has proved to be resilient. We report on the situation around the ports of this vast continent.

Eastern Mediterranean

The signatory countries to the Barcelona Convention have committed to establishing a Mediterranean ECA. What impact will that have? Meanwhile the region's important cruise ship business is slowly coming back to life.

Regular Features

IBIA Updates, IBIA Africa Report, IBIA Asia Report, Diary, Event Previews & Reviews, News, Views, Analysis, Scrubbers, Alternative Fuels, Interviews, Industry News, Environment, Testing, LNG, Innovation, Legal News, Equipment and Services, Russian Update, Conference Previews, Conference Reviews



WWW.WORLDBUNKERING.NET **ibia@constructivemedia.co.uk**



WORLD-CLASS BUNKERING SERVICES FOR OCEAN-GOING VESSELS

IMO 2020 COMPLIANT MARINE GAS OIL AND LUBRICANTS



Takoradi Port MGO Facility



Sekondi Naval Base MGO Facility

GOIL BUNKERING

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

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

TEAM OF EXPERT

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

QUALITY AND QUANTITY

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

GOIL OFFSHORE TANKER FOR FAST AND FLEXIBLE DELIVERY

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

EFFICIENT, RESPONSIVE, RELIABLE AND AVAILABLE

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

LONG TERM BUSINESS RELATIONSHIP IS OUR PRIDE

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

HEALTH, SAFETY AND ENVIRONMENT

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

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GOIL
Good energy

Bunker One

WE CARE WE KNOW WE SUPPLY

Get expert advice on your bunkering needs



bunkerone.com

Bunker One – Fuelling Simplicity