

WORLD



BUNKERING

THE OFFICIAL MAGAZINE OF IBIA

EMISSION CONTROL FOCUS SHIFTS FROM SULPHUR TO GHG

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SCIENCE UNDER SCRUTINY

LNG: BRIDGE OR PATHWAY?

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BETTER TIMES COMING

The prospect of Covid-19 vaccines being widely administered around the world in 2021 brings hope of a better year ahead

D ear Reader

A long time ago UK oil major British Petroleum called its tanker operation the British Tanker Company. It was known by all as BTC. And that universally became 'better times coming' to those who sailed on those ships. Better times coming was a classic piece of wry seafarer humour. Ostensibly it sounded optimistic, but it was also a half-hidden swipe at life at sea at the time.

Whether or not the penny eventually dropped with the company's board, the name was changed later on, initially to BP Tanker Company and then to BP Shipping. I mention this because I do believe things are just starting to get better. And the wry bit is that it jolly well couldn't get much worse. (Except, sadly, that it probably will do for many populations around the world, and particularly the poorest who will be at the back of the queue for any vaccine.)

But mass vaccination does hold the key not only to a general recovery but also to a gradual return to something like normal for the shipping and bunkering industries. This issue's News Section reports on how Covid-19 has hit the revenue of major bunker industry player World Fuel Services. Among the reasons for that is the almost complete closedown of the cruise industry. Its future is very much linked to the availability of vaccination programmes worldwide.

The News Section also carries reports on how bunkering is getting on with its business right now and making plans for the future. Unfortunately, shamefully in fact, we also have to report on the same pages the kidnapping for ransom of three crew from a bunker barge in the Gulf of Guinea. Piracy won't go away in 2021.

While Covid-19 was the unexpected disruptor of 2020, we all knew that it was going to be the year shipping would have to come to terms with the 0.50% sulphur limit that came into force of 1 January. Our Additives feature looks in considerable detail at how problems can be prevented or mitigated. Similarly, our Lubricants section reports on how manufacturers have developed new products to prevent excessive engine cylinder wear.

Meanwhile IMO has carried on its work, albeit virtually and in a somewhat constrained fashion. IBIA intervened at IMO's Marine Environment Protection Committee (MEPC 75) to clarify aspects relating to guidelines for onboard sampling, and shared some observations about voluntary measures that can readily be taken prior to the Arctic HFO ban taking effect. In our MEPC 75 feature IBIA director Unni Einemo notes the meeting was dominated by discussion about the adequacy of steps to deliver greenhouse gas (GHG) reduction policies. The outcome, as she observes, was a compromise that pleased very few. There is still a long way to go down this particular road.

While the politics of delivering GHG reductions are fraught with controversy and are incredibly complex, progress is being made at a frankly astonishing speed towards developing new fuels. The bewildering range on new initiatives and new possibilities is covered in our Alternative Fuels feature. This harks back to the beginning of this letter. Better times are coming, eventually.

In the short term, desperately needed vaccines are on their way to end the coronavirus. In the longer term, and in the big scheme of things much more importantly, shipping does have tools to move towards zero carbon.

Interestingly, as reported in Environmental News, progress is being made on developing carbon capture technology, something that was more or less dismissed as impractical a few years ago. There could be more than a few surprises as we head towards the 2030 and 2050 targets.

This issue of *World Bunkering* refers to a number of studies and, as the industry attempts to navigate a way towards a sustainable future, accurate data and analysis are going to be vital if sound decisions are to be made. In this issue's Interview with CE Delft's lead author Jasper Faber, Unni Einemo explores the principles and methodologies that underpin the independent research institute's studies for IMO and other clients.

As ever, there is much more in this issue which, I hope you will agree, provides a wide-ranging overview of our industry at the end of a very difficult year.

Best wishes for 2021.



David Hughes
Editor

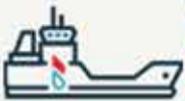
ITALY IS READY FOR IMO 2020

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Our experience at your side.

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ear IBIA members

In times when we are still coping with Covid-19 it is understandable if we feel we are losing touch and so also losing our overview of what is going on. We at IBIA hope that this magazine will assist you in getting that overview.

As we have communicated previously, IBIA is presently working on three major focus areas. Much of our other work, events and involvement are based on, and aligned with: IBIA ORGANISATIONAL DEVELOPMENT BUNKER LICENSING SCHEMES AND MFM 2030 & 2050 GHG REDUCTIONS TARGETS

I am here sharing an update on these three areas, and a reminder that finding new ways will never be easy, but we must show respect for those trying.

IBIA ORGANISATIONAL DEVELOPMENT

The development of our own organisation within IBIA is making steady progress. We are presently on the final stretch toward finalising our interim IBIA Regional board for Africa, which should be operational in early 2021.

The work to establish the interim IBIA Regional Board for the Americas has also been started, and the ambition is to present this by May 2021.

With the already established interim Regional Board for Asia, which has been operative since May 2020, three out of five regional boards will be ready before the summer of 2021, all according to our original plan and intention.

From the summer of 2021 we will start working on the last two regional boards for the Middle East and Europe.

A very important part of the plan is to ensure that the appointed interim boards in the future will be replaced by elected Regional Boards through a democratic and transparent election process.

To ensure that process is done correctly and aligned with the election for the Global Board, we have asked our Legal Working Group to work on a draft proposal on how this process could be handled and what changes it will have to the by-laws of our Association.

For sure this is not an easy task, but with the strong capacities in our legal working group, I feel confident that we will also manage this part of the challenge.

So, in a short update; the organisational development of IBIA is on track and will further strengthen IBIA's local involvement and impact, ensuring that IBIA will be both local and global in our work for our members.

BUNKER LICENSING SCHEME & MFM

IBIA is still determined to push for more bunker licensing schemes, mandatory mass flow meters and a firm control on bunkering procedures in the major bunker hubs of the world.

Our industry still suffers from a poor reputation and an image of having too many 'cowboys'; an image that we from IBIA will continue to work on improving. We believe that the efforts of the Singapore Maritime and Port Authority (MPA) have set the right course to demonstrate how active use of bunker licences and mandatory mass flowmeters can improve the quality of the supply chain and build trust in the industry.

Not long ago the Singapore bunker market was regarded as a "cowboy" market, with prices of delivered bunkers well below prices at the terminals. The MPA's wisdom and courage has changed that, and today Singapore is an example to be followed by others.

End users, customers and companies involved in the supply chain all accept competition as part of their daily work. IBIA just wants to make the playing field more even and fairer.

IBIA therefore encourages port authorities and authorities around the world to have the courage to follow in the footsteps of Singapore and implement both a bunker licensing scheme and the mandatory use of mass flow meters.

2030 & 2050 GHG REDUCTIONS TARGETS

What energy will we use for moving goods around the world in the future? That is the question that we all are involved in or influenced by to some extent. With the IMO's 2030 and 2050 ambitions set on reducing the climate impact of seaborne traffic, we believe the bunker industry needs to be actively involved in the discussion and dialogue, and in the testing of solutions.

On the last point, we have seen companies actively getting involved in researching, developing and testing new forms of energy, some with success and others facing challenges and set-backs, and some even getting negative press coverage when trying to search for solutions. LNG was a few years back one of the most promising fuels to reduce not just sulphur and particulate matter, but also CO₂. We know now that LNG has challenges in regard to methane slip, but today it seems to be a better product than most other current alternatives. Whether LNG produced from bio-mass as opposed to fossil sources can remain a sustainable environmentally friendly fuel of the future after 2050 remains to be seen.

Investment made in hydrogen as a fuel for ships has been highly regarded as a positive step toward cleaner and CO₂ free shipping, but this too has met with resistance and negative comments.

I want to remind us all that we must try to not judge things as black or white or jump to quick conclusions. The above are important steps and examples for all of us to learn what works best toward a sustainable future. On that voyage we will fail repeatably, but only by failing we will learn and it is all part of a steep learning curve that we need to accept and get engaged in to meet the 2030 targets set by the IMO to reduce the carbon intensity of ocean transport, and later the 2050 target to cut overall GHG emission from shipping by at least 50% compared to 2008 levels.

Let's therefore agree to encourage development to support testing and embrace the failures that naturally will follow and pay respect to those companies that have the courage and ambitions to make a difference for the future.

It is easy to stay on the sidelines and judge others. Instead, let us get into the game and actively support the process and accept that we might have more set-backs and direct failures than wins toward the end goals, but that it is all part of the process when exploring unfamiliar territory.

Looking towards 2021 and reflecting on 2020, we have been riding a roller coaster and faced many new challenges and we all faced times where we felt unsure about the future. However, such challenges and the way our industry has been able to adapt to an ever-changing environment, has made us very well prepared for 2021. We will continue in IBIA to work on adding value to our members, influence the industry players and focus on continuing on the journey that IBIA is on.

Merry Xmas and a happy New Year to you all.



Henrik Zederkof
Chairman



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REASONS TO BE THANKFUL

When nearing the end of a year, we often reflect on the on what happened, and look ahead to what lies ahead

Most of us will remember 2020 as the year when a dangerous virus spread rapidly to become a pandemic that affected us all, and look forward to 2021 full of hope that it will be the year when Covid-19 is finally brought under control.

So what, you may wonder, do we have to be thankful for? At IBIA, we have several reasons:

1. IMO 2020 went much better than many had predicted

As the global maritime industry looked ahead to the 0.50% sulphur limit for bunkers, doom and gloom often prevailed about what a disaster IMO 2020 would be in terms of fuel quality and safety, availability and cost to industry. At IBIA, we worked relentlessly during 2019 to help the industry navigate safely through this monumental challenge. IBIA's efforts made a positive difference at the IMO in preparing its framework for ensuring consistent implementation of the 0.50% sulphur limit. Preparation is key and our message since the start of 2019 was for all stakeholders to plan, prepare and practice for the transition. With the exception of expected teething problems around availability, quality and compatibility during the

transition process, preparations have paid off. A fall in oil prices from early in the year made low sulphur fuels more affordable than expected, alleviating stress on credit lines. Some fuel quality issues remain, and VLSFO fuel management requires more attention to deal with the variable characteristics of these fuels, but as we look back on 2020, I am grateful that the industry adapted successfully.

2. Our 2020 Annual Dinner took place before the pandemic

At our Annual Dinner in February, myself and the chairman of IBIA delivered our speeches in a video inspired by the movie Titanic. My speech focused on how many believed we were headed for a colossal iceberg due to IMO 2020, but we had avoided disaster. "We must of course remain alert. There are still icebergs in the sea but when we know about them, we can mitigate the risks," I said. What we didn't know when we scripted that video was that the world was heading toward a different kind of iceberg. By the time we hosted our dinner, we were wary of the growing threat of the coronavirus outbreak, but we had no idea how bad it would become. We were delighted to see many of our members joining us for a hugely enjoyable evening at the start of IP

Week, and for the first time in IBIA's history, we were honoured to host the Secretary General of the IMO, Kitack Lim, at the Chairman's table.

3. Plugging into new ways of engaging

Apart from one IMO meeting, our Annual Dinner, two speaker engagements at conferences and social events during IP Week - all in February - I have not been to any physical events in 2020. What a contrast to 2019, when I travelled extensively to represent IBIA at our own events, or as a speaker at others. Thankfully, technology has enabled us to continue to do our work and take part in virtual events and meetings. In April 2020, we held our first online video IBIA member meeting to find out how they were coping with IMO 2020 and the new challenges caused by Covid-19. We have since held several such informal meetings, which are open to all IBIA members to actively participate and share experiences, comments and questions. As a member association, we want to hear from you and we have found these informal online video meetings a really useful way of connecting with IBIA members all over the world to discuss pertinent issues. We will be doing more of these during 2021. Personally, I have also participated and represented IBIA at a number of online conferences this year, and since June,



at both informal and formal IMO meetings. I am thankful that we have been able to connect without expanding my personal carbon footprint.

4. The resilience of our industry in the face of challenges

The bunker industry has proven its resilience and ability to adapt in the face of both known challenges like IMO 2020, and unknown challenges like the coronavirus. Since mid-March, it has felt as if the world stood still amid efforts to control the coronavirus, but shipping and the bunker industry have continued to operate, adapting to new ways of working. We are part of an essential industry. Shipping is needed to keep the world's population supplied with food, energy and other vital goods. Shipping is the engine of global trade and the bunker industry fuels that engine. We found ways of dealing with practical problems caused by restrictions on human interactions. This resilience and innovation will serve us well on the road toward zero emissions, which will be challenging.

5. Cooperation and pursuing common goals

As IBIA's IMO Representative, much of my time is taken up by contributing to IMO's work on addressing a range of issues relating to marine fuels. During 2020, our main input was at PPR 7 in February, and at MEPC 75 in November. IBIA played an active part in plenary, working groups, and in the drafting group that finalised the text for amendments to MARPOL Annex VI prior to adoption. IMO meetings can be fractious and discouraging, which is to be expected when politics and practical considerations pull in different directions, but a spirit of cooperation in pursuing common goals eventually bring results. IMO meetings in 2021 will be busier than ever because 2020 meetings were postponed and restricted in time. We will need input from IBIA members to formulate our position on key subjects such as fuel oil safety, regulations for low flashpoint

fuels, and ongoing efforts to minimise shipping's negative impact on the ecosystems that sustain us all.

IBIA will also continue to work with our members and relevant partners in pushing for higher standards across our industry, including bunker licensing schemes to promote transparency and fair play.

6. Strong support from our members and the board of IBIA

IBIA has always ensured a low membership fee and balanced the cost of running the association by organising events that support our ambition of being the place where all industry players meet up, and enable us to represent the industry effectively at the IMO and elsewhere. Covid-19 has challenged this concept as we have not been able to host any physical events since February 2020, and we cannot do so until we are confident that it is safe. This leaves IBIA in a challenged position as we depend on revenues from our events to run the Association. We have reached out to our members for assistance to ensure we can achieve our ambitions through a fundraising campaign. Our request has been very positively received and we are deeply grateful to our supporters who see the value in IBIA and have made generous financial contributions,

as well as those who sponsored our Annual Dinner and virtual Convention in 2020.

We receive support in other ways too. The board of IBIA give their time and expertise, and set goals for IBIA which they work on helping us achieve. We also appreciate all the IBIA members who share their knowledge and experiences with us, either through participation in IBIA events and member meetings, our working groups, or individually when we ask for input and advice. These interactions are of huge value to understand the industry so we can represent it effectively, and set us on the right course for the future.

2020 will go down in history as one of the most challenging years ever, but I am grateful that the industry and IBIA have weathered the storm so far. Vaccinations against the coronavirus have started, giving us hope that some level of normality will be restored within the foreseeable future.

Meanwhile, stay safe, thank you for being a part of IBIA in 2020, and we look forward to working with you toward a better future in the coming year.



Unni Einemo, Director IBIA
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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 EVENTS PROGRAMME 2021

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 – Fuel quality, its impact on storage, treatment and use in the engine	Online at www.ibia.net
JANUARY		
6 + 7	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
21	London Uk (virtual)	online at www.ibia.net
27 + 28	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
FEBRUARY		
3 + 4	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
22 - 24	IBIA Annual Dinner Get Together Online	Online Networking
24 + 25	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
MARCH		
3 + 4	2 Days Basic Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia
24 + 25	2 Days Advanced Bunkering Course (SS600:2014 & SS648:2019)	Singapore, Asia

EVENTS IBIA SUPPORTS OR PARTICIPATES IN 2021

FEBRUARY		
5 - 6	Middle East Bunkering Convention	Dubai, UAE
17 - 21	European Shipping Week	Brussels, Belgium
23 - 25	IP Week 2021	Online
MARCH		
8 - 12	Maritime Week Las Palmas	Las Palmas, Spain
22 - 24	12th International Fujairah Bunkering & Fuel Oil Forum	Fujairah, UAE (Virtual)
APRIL		
12 - 25	Seatrade Cruise Global	Miami, USA
20 - 21	Singapore Maritime Week	Singapore, Asia
MAY		
10 - 24	Portugal Shipping Week	Lisbon, Portugal
25 - 27	Maritime Week Americas 2021	Panama
JUNE		
21 - 25	Maritime Week Gibraltar	Gibraltar
SEPTEMBER		
13 - 17	London International Shipping Week	London, UK
22 - 24	41st International Bunker Conference IBC	Oslo, Norway

*Please note that the above dates are subject to change. Please refer to IBIA's website for any postponements or changes that may occur due to the current pandemic

DEVELOPMENT AND INNOVATION

2020, what a year for all of us! For our families, for our jobs, for our industry, for our world

Being the voice of the bunker industry means creating a community. By conferencing we bring people and businesses together to share some of their professional experiences and therefore develop or even shape the industry together.

Due to the pandemic, we, IBIA had no intention of slowing down and IBIA's impact and events activity has developed in a different, virtual way in the past year.

During 2020, as physical events became a no-go, we organised several online Member Meetings, we launched 10 bunker training modules (there are more to come in 2021), we co-organised a webinar and online conference with S&P Global Platts,

we have supported other industry conferences, our director spoke at several significant online events and webinars, and we conducted our first virtual Annual Convention in November.

Taking the IBIA Annual Convention online was a strategic decision, to ensure that the Convention would take place this year. With innovation and the new ways of working, our vision was to deliver a unique and advanced way of conferencing.

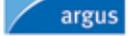
The panels we put together brought us a fantastic range of voices addressing the biggest issues facing the industry. We delivered a series of both regionally focused panel discussions in three time zones,

and a final day of comprehensive global panel debates.

The participation was truly global with 398 delegates from over 50 countries. You will find highlights from the Convention in our report on page 17.

We would like to thank our strategic partner Ship & Bunker, sponsors, media sponsors, and supporting organisations.

The IBIA Annual Convention 2020 would not have been possible without their support. They have shared valuable insights, continuing to uphold the values and best interests of the bunkering industry. Thank you!

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As I write this report summarising our online events activities for 2020, we are putting together our largest ever virtual networking room, continuing our tradition of the IBIA Annual Dinner. Wherever you live or work, you will still have the opportunity to virtually connect with around 1,000 stakeholders of our industry. We hope to 'see' you all on Monday 22 February 2021.

For the closure of this report, we are pleased to announce our first webinar of 2021, which will be in partnership with the UK Chamber of Shipping. Shell will be the main sponsor of this webinar, which will focus on GTL Fuel, an alternative diesel fuel derived from natural gas, which burns more cleanly than conventional crude oil-based diesel.

In the meantime, we warmly encourage you to take advantage of IBIA's portal, where you can find important insights for the industry, our member directory as well as actively participate at our working groups.

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22 – 26 February 2021

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IBIA AFRICA LOOKS FORWARD TO NEW BEGINNINGS IN 2021

We welcome the positive approach both regionally and globally with the introduction of regional boards, to represent the regions interests within the association

I write to you at a time when we as South Africans and many around the world, have been going through an arduous time. The Covid-19 pandemic has been challenging enough. It appears that the pandemic is literally trying to give the world a second run for our money which we can ill afford. I implore each and every one to stringently adhere to the Covid-19 safety protocols.

As the end of 2020 fast approaches, we recognise that the bunker industry in Africa (and globally) has faced challenges this year, in particular the implementation of the IMO 2020 sulphur limit and the Covid-19 pandemic. These challenges have presented the opportunity for more unified and global solutions which is encouraging.

IBIA embraced these changes by moving as quickly as possible to virtual meetings, social distancing and for the better part of the year working with our members from home.

We have hosted IBIA Member meetings which have had a global attendance and included many of our Africa members. To date we have hosted six of these meetings covering many aspects of the effect of Covid-19 on the bunker industry and the fuel market, the ever-present question of sulphur testing, bunker licensing schemes and a general round-up of 2020. We would like to thank our members for their attendance and participation and look forward to further engaging with you all, both on a regional level and globally in the same format.

We are very pleased to see the uptake with the IBIA Online Training Programme which has been a great opportunity to brush up on your knowledge and further develop your teams. Several of our members in Africa have already completed many of the modules and feedback has been extremely positive.

We would love to hear from you regarding further topics to educate the industry further.

Looking forward into 2021, we would like to encourage our regional members to further engage with the Africa office as we establish our first Interim IBIA Africa Regional Board. This board will comprise of five Africa members covering not only the large range of services provided in the bunkering sphere, but include representation from as many of the countries who engage in port and bunkering activities around the African continent as possible. We will be co-opting the Interim Board over the next few weeks with an announcement to be made in early 2021.

The purpose of the Regional Board is to facilitate and ensure that the interests of the Africa bunkering industry are truly represented regionally and feed into the Global Board for IBIA. Our goals and aims for the Regional office will be to increase and broaden our reach through encouraging new members, online member meetings, engaging with legislative bodies and ensuring dissemination of vital IMO information to our membership.

IBIA Africa's aims remain aligns with the global approach:

- To provide an international forum for bunker industry issues
- To represent the industry in discussions and negotiations with national and international policy makers, legislators and other groups and bodies
- To review, clarify, improve, develop and endorse where appropriate, industry methods, practices and documentation
- To increase the professional understanding and competence of all who work in the industry
- To provide services and facilities for members and others as the Board shall from time to time consider appropriate

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

We would like to take this moment to warmly thank our Africa Membership for your support and continued dialogue in this year and wish you all a healthy and happy festive season.

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

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Tahra Sergeant

OVERCOMING THE "BLACK SWAN"

IBIA Asia has achieved remarkable training results in 2020 amidst the coronavirus pandemic

IBIA Asia, a Maritime and Port Authority of Singapore (MPA) approved bunkering training institute, has supported the local industry by training about 83% (583 out of 700) certified cargo officers and bunker surveyors through our one-day SS648: 2019: Singapore Standard Mass Flow Meter bridging course from TR48:2015 (Technical Reference) training.

All IBIA Asia course syllabuses are designed and taught by dedicated, experienced professional trainers who can relate training to real life operation. IBIA Asia ensured the continued delivery of courses during the Covid-19 circuit breaker period in April, May and June 2020, when physical classes had to be stopped, by doing live on-line training.

In the beginning of 2020, IBIA Global Board Chairman- Henrik Zederkof, set out three areas of focus for IBIA for the year. The first such area is the development of IBIA as an organisation to become more international by introducing and implementing a new board structure that will consist of five Regional Boards and a Global Board. Each of the Regional Boards will be empowered and work with a local mandate to act and manage on behalf of IBIA's and the members' interests in their region. IBIA Asia was the pioneer for the new set-up and it works very well. Regional Board members have also supported IBIA Asia training extensively by sending their staff for the training we provide.

IBIA Asia Regional Board members are:

- Ms Junko Mikano – BP Singapore Pte Ltd
- Capt. Rahul Choudhuri - Veritas Petroleum Services (Asia) Pte Ltd
- Mr Peter Beekhuis - Maersk Oil Trading Singapore Pte Ltd
- Mr Danny Chua - Joseph Tan Jude Benny LLP
- Mr Lim Teck Cheng – Hong Lam Marine Pte Ltd
- Mr Timothy Cosulich – Fratelli Cosulich Group of Companies (Chairman of the Regional IBIA Asia Board)

In 2020, IBIA Asia has scheduled four Regional Board meetings and has built a stronger relationship with the Maritime and Port Authority of Singapore (MPA) by highlighting local bunkering concerns and actively proposed solutions on issues. This model for engaging with port authorities will be adopted across the Asia Region in the coming year of 2021 and beyond.

IBIA Asia Regional Manager, Alex Tang represents IBIA for the support and development of national and international standards for bunkering and bunkering events as follows:

- Technical Committee member of LNG Bunkering for Singapore Chemical Industry Council in development of TR56.
- Pro Tem member of Blockchain of Bunkering supply/ deliveries for Singapore Chemical Industry Council.
- Working Group member of SS600:2014 Code of Practice for Bunkering for Singapore Chemical Industry Council.
- Working Group member of SS524:2014 Specification for Quality Management for Bunker Supply Chain (QMBS) for Singapore Chemical Industry Council.
- Member of the SIBCON (Singapore International Bunkering Conference) 2020 steering committee.
- Speaking in Mandarin for IBIA's introduction to the China market at the China Petroleum Circulation Association (CPCA) Annual Marine Fuel Work Conference virtually on 26 November, 2020.

Through our engagement with all regional bunker industry stakeholders, we have confidence in the resilience of this industry in coping with unexpected situations. IBIA Asia will continue our commitment to service the local bunkering industry and contribute our utmost in the world's largest bunkering hub - Singapore.

Training

The IBIA Asia office offers mandatory training for the bunker sector in Singapore with MPA-approved and certified courses as follows:

- Singapore Standard SS648:2019- 1 Day Bridging Training for approved Bunker Surveyors and Cargo Officers. 40 successful courses completed from February to November. During the circuit breaker in Singapore from April to June, classes were conducted on line, and exams were conducted physically after the easing of the circuit breaker in July.
- Singapore Standard SS 600:2014+ SS648:2019- 2 Days Basic Training for new Bunker Surveyors and Cargo Officers. Four successful courses completed from August to November 2020.
- Singapore Standard SS 600:2014+ SS648:2019- 2 Days Advanced Training for new Bunker Surveyors and Cargo Officers. Three successful courses completed from March and October 2020.

Courses were approved by the MPA in May 2020 on the Maritime Cluster Fund grant of up to 90%, up from 70% earlier, for eligible trainees on courses taken between 1 May 2020 and 31 December 2020.

In addition, the IBIA Asia office offers specialised training for the bunker sector in Singapore with an MPA- approved course called Understanding Marine Fuel. Two successful live on line-courses were taught by IBIA Asia Regional Manager, Alex Tang in October and November 2020. These courses have been approved by MPA on the Maritime Cluster Fund grant of up to 50%, for eligible trainees.

Interested parties are encouraged to contact Noraini.noraini@ibia.net or Alex.Tang.regionalmanagerasia@ibia.net.



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IBIA ANNUAL CONVENTION 2020: GOING GLOBAL

Physical events were out of the question in 2020. At IBIA, we used this as an opportunity to launch our most ambitious Convention programme yet

From the upheaval of IMO 2020 to the disruptions of Covid-19, to a future demanding a complete rethink on marine energy; the shipping and bunker industries have found themselves at arguably the most challenging point in their history.

In response to this most critical of times, IBIA decided to host our Annual Convention over three days, providing a mix of in-depth on-demand content, and a series of both regional and globally focused panel discussions.

The panels we put together brought us a fantastic range of voices addressing the biggest issues facing the industry. We delivered a series of both regionally focused panel discussions in three time zones: APAC (Asia Pacific), EMEA (Europe, Middle east and Africa) and AMERICAS, and a final day of comprehensive GLOBAL panel debates. The participation was truly global with 398 delegates from over 50 countries.

Here is a look at what happened.

In a keynote speech at the opening of the convention, **IMO Secretary General Kitack Lim** stated: "IBIA is a key partner of IMO and has consistently contributed constructively to the work at IMO". He also said that IBIA "was among key industry stakeholders working tirelessly in the run up to its entry into force as well as in the first months of implementation, to ensure the smooth transition". Henrik Zederkof, IBIA Chairman, Unni Einemo, IBIA Director and Sadan Kaptanoglu, BIMCO President, all delivered welcome speeches.

APAC

This section of the Convention started off with a panel of bunker buyers and suppliers talking about the IMO 2020 transition and how the quality of VLSFO has turned out this year. Timothy Cosulich of Fratelli Cosulich said his firm's concerns over credit this year had been allayed, while Total's Jesper Rosenkrans said that preparations by the industry had paid off with this year's fuel switch.

APAC Regional Panel
Bunker Suppliers and Buyers

Gabian Chew Senior Editor Manifold Times Moderator	Jens Maul Jorgensen Director Bunkers Oldendorff	Timothy Cosulich CEO Fratelli Cosulich	Lars Malmbratt General Manager Stena Bulk Bunker Procurement	Jesper Rosenkrans Global Sales and Business Development Director TOTAL Marine Fuels Global Solutions
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IBIA Annual Convention 2020

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A credit and risk panel took the financial theme further, looking at how the health of the bunker industry in Asia-Pacific has held up since the sudden absence from the market of Hin Leong Trading earlier this year. All of the panel agreed that credit was becoming harder to come by as lenders become more cautious. Kostas Ladis of NL Transoil stressed that further problems may emerge when prices start to rise more significantly again.

APAC Regional Panel
Credit & Risk Management

Jack Jordan Managing Editor Ship and Bunker Moderator	Yunlong (Joe) Zhou Group Head of Credit Fratelli Cosulich	Deanna MacDonald CEO, Bloc Co-Founder, BunkerTrace	Kostas Ladis Sales & Purchase Manager B&L Transoil
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In the legal, compliance and regulations panel, a group of three experts looked at how the legal landscape for the shipping and bunker industries in this region has changed this year. Elfian Harun gave Intertanko's view on the legal aspects of the IMO 2020 transition, saying more could be done at the level of enforcement on the supply side.

APAC Regional Panel
Legal, Compliance and Regulations

Gabian Chew Senior Editor Manifold Times Moderator	Elfian Harun Environment Manager & Assistant Regional Manager Asia-Pacific INTERTANKO	Maureen Poh Director Helmsman LLC	Max Lim Partner Rajah & Tann Singapore LLP
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IBIA Annual Convention 2020

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Finally, five fuel quality gurus gathered for the bunker quality panel, looking at some of the details of how VLSFO had performed as the new dominant bunker fuel this year. The panel first looked at the possibility of jet fuel being blended into bunkers and some of the quality risks involved, before moving to a more general conversation about bunker quality and specification.

APAC Regional Panel
Bunker Quality

Stefka Wechsler
Marine Fuel
Fuel oil price analyst
Argus Media
Moderator

Captain Rahul Choudhuri
Managing Director
VPS

Gary Walker
Regional Manager
Isertek Linetec

Douglas Raitt
Global PQ&AS Manager
Lloyd's Register

Chris Turner
Manager Bunker Quality and Claims
Integr 8 Fuels

Samantha Leow
Marine Fuels Technical Advisor
ExxonMobil

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EMEA

Our EMEA panel discussions kicked off with a group of bunker suppliers, brokers and buyers addressing the latest developments within the bunker supply space. IBIA board member Mustafa Muhtaroglu warned of the dangers of access to credit getting reduced once bunker prices start to rise again from this year's slump. And Hapag Lloyd's Finn Fuelbier gave his view on how the LNG bunkering market is shaping up.

EMEA Regional Panel
Bunker Suppliers & Buyers

Jack Jordan
Managing Editor
Ship and Bunker
Moderator

Finn Fuelbier
Director Global Fuel Purchasing
Hapag Lloyd

Robert Gaina
Commercial Director
Ardmore Shipping

Paul Hardy
Business Development
Nautical Supply International

Mustafa Muhtaroglu
Founder
Energy Petrol Istanbul

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In the EMEA credit and risk session, three credit experts set out some of the questions around how the financial pressures for shipping and bunkering have played out this year. Jonathan Mcilroy talked of the slump in crude prices in March as the 'saving grace' preventing a much worse impact from the COVID-19 pandemic.



In the legal, compliance and regulations panel, Nigel Draffin started the discussion with a conversation about some of the legal conflicts that have arisen from the IMO 2020 transition. IBIA Secretary Trevor Harrison brought up the difficulties caused by inconsistent port state control measures from state to state, and Hafnia Law Firm's Mathias Steino mentioned the problems that can be caused when flag states and port states take differing approaches.



The bunker quality panel saw a team of testing company representatives and market participants discuss the bunker quality problems seen in Europe this year. Steve Bee of VPS said Europe has had some of the highest incidence levels of off-specification results for VLSFO this year. The conversation also covered the risks involved in leaving some VLSFO blends in the tank for too long.

EMEA Regional Panel
Bunker Quality

Jack Jordan Managing Editor Ship and Bunker Moderator	Tracy Wardell Global Technical Manager Intertek Lintec	Steve Bee Group Commercial & Business Development Director Veritas Petroleum Services	Stuart Hall Technical Sales Director BunkerTrace	Bjarke Staal Credit, Claims & Legal Director BMS United Bunkers

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Finally, the EMEA shipping markets panel discussed the turmoil in freight markets this year with the wild swings in demand brought about by the COVID-19 pandemic. The conversation covered the seafarer crisis, the health of global trade and the decarbonisation agenda.

EMEA Regional Panel
Shipping Markets

Anastasios Adamopoulos Reporter Lloyd's List Moderator	Bob Sanguinetti Chief Executive UK Chamber of Shipping	Bahadır Tonguc Managing Director Supranor Shipping - Istanbul	Burak Akartaş Member of the Board of Directors Turkish Chamber of Shipping	Charlotte Bucchioni Associate Editor SEI Global Platts	Peter Sand Chief Shipping Analyst BIMCO

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In the bunker suppliers and buyers panel, the discussion started off with suppliers giving their perspective of how the IMO 2020 transition went in the Americas. Michael McNamara of Carnival gave an impression of some of the traumas cruise lines have had to go through this year. The conversation then moved on to a more general look at the current pressures in the market.



In the credit and risk panel, Jason Silber of SeaCred led a discussion of the financial landscape in the shipping and bunker industries this year. The conversation ranged around how due diligence checks have started to change this year, how the change in demand has changed companies' finances and how the health of the cruise industry can be assessed in an era where most of their ships have been left at anchor.



The legal, compliance and regulations panel saw Steve Simms of Simms Showers question a group of four other legal experts on how regulatory change has affected their organisations this year. Alexis Rodríguez of the Panama Canal Authority gave an idea of how the inspections regime of his country has shaped up. The conversation moved on to looking at how authorities are dealing with the fuel declaration process.

Americas Regional Panel
Legal, Compliance and Regulations

				
Steve Simms Principal, Owner Simms Showers LLP Moderator	Francisco Carreira Senior Partner Carreira Pitti P.C. Attorneys	Alexis Rodríguez Environmental Protection Specialist Panama Canal Authority	Bobby O'Connor Managing Partner Montgomery McCracken's New York office	Demostenes Sánchez Deputy Director Merchant Marine General Directorate Panama Maritime Authority

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For the last session of the day, Patrick Burns of S&P Global Platts led the Americas bunker quality panel looking at some of the quality issues this year's fuel transition has brought up. Panellists discussed the off-specification rate seen in the Americas, some of the problems caused by blending the new VLSFOs and the logistics issues testing companies are experiencing because of the COVID-19 pandemic.

Americas Regional Panel
Bunker Quality

					
Patrick Burns Senior Editor Americas Residual Fuel S&P Global Platts Moderator	Hauk Wahl Business Development Manager Intertek Lintec	Rob Leventhal Business Development Manager - Marine Fuels Bureau Veritas	Jack Grogan Senior Sales Manager VPS	Wajdi Abdmessih President Seahawk	Albert Leyson Global Market Manager Drew Marine USA Inc.

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In the global bunker suppliers and buyers panel, five executives from the top of the industry took on topics including the risk of further bankruptcies, the relative performance of bunker hubs and smaller ports this year and the possibility of more widespread bunker supplier licensing. Bunker One's Peter Zachariassen suggested that further consolidation in the industry could be inevitable. And Peter Beekhuis of Maersk Oil Trading said his company had seen surprisingly few problems from VLSFO blending.



The future fuels panel covered the range of possibilities facing shipping and bunkering with the IMO's looming 2030 and 2050 greenhouse gas targets. Alexander Prokopakis of Probunkers and Frederic Meyer of Total made the case for LNG as a way of cutting the shipping industry's emissions in the short term, while the rest of the panel set out the advantages and disadvantages of the low- and zero-carbon fuels that might start to take market share in the coming decades.



The global legal, compliance and regulation panel saw IBIA board member Nigel Draffin take a group of legal experts to task over some of the compliance issues for shipping and bunkering. Jodi Munn-Barrow of the Caribbean MOU on Port State Control set out how the authorities in her region seek to take a pragmatic approach to enforcement of IMO regulations, and Frederick Kenney of the IMO's legal affairs and external relations division shared some detail on how the IMO comes up with guidance for member states on how to put its rules into practice.

Global Overview Panel
Legal, Compliance and Regulations

Nigel Draffin Consultant Moderator	Steve Simms Principal Simms Showers LLP	Grant Hunter Head of Contracts and Clauses BIMCO	Jodi Munn-Barrow Secretary General Caribbean MOU on Port State Control	Frederick Kenney Director, Legal Affairs and External Relations Division IMO

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The global bunker quality panel brought together some of the detail we have seen in the regional quality sessions, with a lively discussion of the overarching quality problems shipowners are seeing around the world. The conversation focused on how VLSFO quality now has compared to expectations last year, as well as what the panel would like to see from the next revision of the ISO 8217 specifications.

Global Overview Panel
Bunker Quality

Jack Jordan Managing Editor Ship and Bunker Moderator	Steve Bee Group Commercial & Business Development Director Veritas Petroleum Services	Olivier d'Oine Group Technical Director Adesso	Tracy Wardell Global Technical Manager Intertek Lintek	Charlotte Rejgaard Global Head of Marine Fuel Services Bureau Veritas VeriFuel	Chris Fisher Consultant Fuel Specialist Marine Engineer Brooksbell

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In a special shipping industry panel, IBIA Director Unni Einemo asked a panel of experts for their assessment of the effect of IMO 2020. The responses were largely positive, acknowledging that there had been significant challenges but noting that preparation had in most cases made them manageable. The discussions also covered the crew change crisis, movement in the freight markets and the shift towards alternative fuels.



Former IBIA chairman Robin Meech moderated the IBIA and industry leaders panel, asking a group of senior bunker and shipping industry figures about some of the medium- and long-term issues they have to grapple with. After a discussion of the COVID-19 impact on demand the group discussed the shrinking availability of lending to shipping activity, before moving on to the problem of what type of ship to order now, when the future fuels landscape is so uncertain.



The credit and risk panel had no shortage of material to discuss after this year's financial troubles for some large players in the bunker industry. Jason Silber of SeaCred led a discussion of what can be done to avoid failures at the larger companies, the changing methods of assessing credit this year and which companies may step in to provide more credit if the banks start to retreat from this sector.

Global Overview Panel
Credit & Risk Management

				
Jason Silber Managing Director SeaCred	Hasan Ozturk Senior Credit Analyst Dynamar	Kieran Brown Credit Manager Island Oil (Holdings)	Kostas Ladis Sales & Purchase Manager BL Transoil	Lars Holmberg Nielsen Executive Group Director BMS United Bankers
Moderator				

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In the digital technologies panel, Martyn Lasek of Ship & Bunker questioned a panel of technologists on how the way we trade bunkers is changing. The group discussed ways of saving money, bringing more transparency to bunker supply and carry out more processes remotely.

Global Overview Panel
Digital Technologies

				
Martyn Lasek Managing Director Ship and Bunker	Alok Sharma Senior Vice President Business Development Inatech	Grant Norton Partnership Director BULUGO	Christian Plum Co-founder BunkerMetric	Deanna MacDonald Co-Founder BunkerTrace
Moderator				

IBIA Annual Convention 2020

And finally, the women in shipping panel covered the gender imbalance in shipping and what can be done to change it. The group took a positive take on the issue, stressing the importance of female role models and networking to help encourage female candidates to take on maritime roles, and Ada Egzi Gaser of Dan-Bunkering set out some of the challenges of life at sea from her years as captain of a VLCC.



We would like to thank our strategic partner Ship & Bunker, sponsors, media sponsors, and supporting organisations. The IBIA Annual Convention 2020 would not have been possible without their support. They have shared valuable insights, continuing to uphold the values and best interests of the bunkering industry. Thank you!

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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 £250

- 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 £1300

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.

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



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IMO ADOPTS REVISED SULPHUR VERIFICATION PROCEDURES

IBIA urges Member Governments to apply MARPOL Annex VI amendments without delay. IBIA's Director Unni Einemo shares industry message to MEPC 75

IBIA welcomes the adoption of amendments to MARPOL Annex VI at the 75th session of the IMO's Marine Environment Protection Committee (MEPC 75), which met virtually from Monday 16 to Friday 20 November 2020.

In fact, there are several elements of the revision that IBIA has been instrumental in driving forward, such as introducing acceptance for the 95% confidence principle when testing so-called in-use and on board samples against the relevant sulphur limit. IBIA also proposed the inclusion of a definition of sulphur content in the regulation, referencing the most relevant ISO test method. This definition, and a footnote referencing ISO 8754:2003, is now part of the regulation.

Having listened to problems our members have reported to us, IBIA delivered a statement to MEPC 75 urging Member Governments to apply the amendments to MARPOL Annex VI prior to their entry into force to ensure a consistent approach to verifying compliance with sulphur limits. The full statement, which will be appended to the final report of the meeting, was as follows:

IBIA statement to MEPC 75

IBIA has some observations and experiences to share with regards to the draft amendments to Appendix VI on Verification procedures for a MARPOL Annex VI fuel oil sample, which the committee is invited to consider and adopt this week.

The concept of test precision can be hard to grasp. Many find it hard to understand that a test result of 0.53% sulphur does not conclusively prove that the fuel fails to meet the 0.50% sulphur limit. However, all test methods have limitations with regards to their accuracy, with specific reproducibility and repeatability values calculated in accordance with ISO 4259. For sulphur, the accuracy of the test method, known as 95% confidence, means that fuel oil with a true value of 0.50% sulphur may give a test result of up to 0.53% in a laboratory.

These statistically sound test precision principles have been taken into account for verifying if samples of fuel oil in use, and samples of fuel oil carried for use on board a ship, meet the relevant sulphur limits of Regulation 14. This is reflected in the amendment to appendix VI under the Verification Procedure Part 2 for in-use and onboard samples. We support this wholeheartedly. We remain concerned,

however, that the same principles are not recognised for the MARPOL delivered sample, which will significantly increase the risk that a fuel oil that is actually compliant with MARPOL sulphur limits can, on the basis of testing by one laboratory, be deemed as having failed to meet the requirement. These concerns were laid out in detail in MEPC 74/10/11 by IPIECA and IBIA.

We have always feared that the complexity in having different approaches to sulphur verification for MARPOL delivered samples versus in-use and on board samples would cause unintended confusion and conflict. Experience so far suggests that this is indeed the case.

Since the 0.50% sulphur limit took effect, there have been cases of ships that have received a test result on their own bunker manifold inlet sample indicating a sulphur content above 0.50%, but not above 0.53%. Ships may have documented such test results as indicative of a potential non-compliance through a notification to its flag administration. Copies of the notification may also be sent to authorities at its next port of call, and the Administration under whose jurisdiction the bunker supplier is located, and to the bunker supplier.



We have heard from our members that some flag states have been advising ships to not use the fuel if the ship has a test result from its own sample indicating potential non-compliance, e.g. 0.51% to 0.53% sulphur. There are also fears that port State authorities will not take 95% confidence into account for in-use and on-board samples. This has created a lot of problems and uncertainty for the shipping and fuel oil supply industries, including demands to debunker fuels which have not been proven as non-compliant by the appropriate verification procedures stipulated under MARPOL Annex VI. Debunking is not a trivial matter. Apart from substantial financial costs, it also carries an environmental cost through extra CO₂ emissions, and represents safety and environmental risks.

IMO guidelines for consistent implementation of the 0.50% sulphur limit, and the revision of appendix VI of MARPOL Annex VI, make it absolutely clear that the 95% confidence principle for test precision should be applied to in-use and on board samples. This principle was sufficiently important to prompt this committee to agree, at MEPC 74, to issue a circular, MEPC.1/Circ.882, inviting Member Governments to apply approved amendments to MARPOL Annex VI related to the verification procedure for a MARPOL Annex VI fuel oil sample in advance of their entry into force, in order to “ensure a consistent approach to verifying the sulphur limit of the fuel oil delivered to, in-use or carried for use on board a ship until the entry into force of the approved amendments.”

A consistent approach does not appear to be happening. It really, really needs to happen.

Let me be very clear about the expectations on suppliers: no fuel should be put on the market if it has tested above the limit even by a fraction prior to delivery, and the blend target to meet the 0.50% sulphur limit during production should be no more than 0.47%, in line with best practice guidance.

However, when it comes to sulphur verification under appendix VI of MARPOL Annex VI, having two different procedures will inevitably cause confusion in how the regulation is understood and applied. The signals are confusing. We all know the meaning of green and red traffic lights, but yellow seems to mean ‘keep going’ for one type of samples and ‘stop’ for another.

We need to make sure everybody understands that as far as the ship is concerned, a yellow signal means “keep going”. We believe this is enshrined in the amendments to appendix VI that are up for adoption and as such urge Member States to apply these amendments prior to entry into force.

Furthermore, we would recommend making the following principles clear: If an authority decides to test the MARPOL delivered sample, it will determine whether the fuel as delivered meets the relevant requirement. If the fuel tests above 0.50% sulphur and as such has not met the requirement as delivered, it should nevertheless be considered as having met the requirement for the ship to use, or carry for use, unless the test result exceeds 0.53% sulphur. This would be in line with the MARPOL Annex VI sulphur verification procedure for in-use and onboard samples.

We believe these issues needed to be brought to the Committee’s attention, and that they demonstrate the need for further IMO guidance to bring clarity on how to determine compliance for all parties concerned.

We have heard of cases during 2020 where ships have been advised, or even required by authorities, to debunker fuels which have not been proven as non-compliant by the appropriate verification procedures stipulated under MARPOL Annex VI. This should not be happening on the basis of an independent test result without being verified by testing a MARPOL sample, especially not if the test result is within the 95% confidence limit.

In line with IMO practice prior to adopting regulatory amendments, it went through an editorial review during MEPC 75, which IBIA took part in. The final text was formally adopted by MEPC 75 on Friday 20 November.

It includes, in the preamble to the regulatory text, a reminder about Circular MEPC.1/Circ.882 and invites the Parties to consider the early application of all the amendments made to MARPOL Annex VI.

The amendments to MARPOL Annex VI are expected to enter into force on 1 April 2022. However, we hope the reminder in the preamble regarding MEPC.1/Circ.882 may improve the chances of Member Governments applying them without delay, which would alleviate problems that the industry is experiencing today.

IBIA’s statement has been welcomed by most of our members, while some think it isn’t tough enough on suppliers and erodes the limit. We would stress, once again, that we acknowledge that the supplier must do their utmost to ensure the MARPOL delivered sample will never exceed the limit, and that a test above 0.50% would mean the fuel as delivered has not met the regulatory requirement. That could lead to action against the supplier, but we would question using any test result within 95% confidence as the basis for taking any action against the ship. As our statement said, we see a need for further IMO guidance to bring clarity on how to determine compliance for all parties concerned.





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EMISSION CONTROL

IBIA's Director and IMO Representative, Unni Einemo, provides a roundup of key developments

IBIA played an active part at the 75th session of the IMO's Marine Environment Protection Committee, focusing on the items that have an impact on our members. MEPC 75 dealt with several issues of interest to the marine fuel sector, although the agenda was significantly curtailed due to the limited time available during virtual IMO meetings. Most of the news coverage from MEPC 75, much like the meeting itself, was dominated by arguments about the adequacy of steps to deliver greenhouse gas reductions.

The meeting also covered other important issues. One key development was the adoption of amendments to MARPOL Annex VI, which will enter into force on 1 April, 2022. IBIA delivered a statement to MEPC 75, urging Member Governments to apply the amendments without delay ahead of entry into force, as this should alleviate problems and bring consistency to sulphur verification procedures. We have covered this in a separate article.

IBIA also made interventions at MEPC 75 to clarify aspects relating to guidelines for onboard sampling, and shared some observations about voluntary measures that can readily be taken prior to the Arctic HFO ban taking effect. Here we provide a summary of the most relevant MEPC 75 developments.

Guidelines for on board samples

IBIA sought clarification on the link between sample handling and inclusion of bunker delivery note details of the fuel oil sampled as MEPC 75 approved a circular on

"Guidelines for onboard sampling of fuel oil intended to be used or carried for use on board a ship".

The guidelines were developed to establish an agreed method for the sampling, from tanks, of liquid fuel oil intended to be used or carried for use on board a ship, to enable authorities to check for compliance with the carriage ban. Since 1 March 2020, ships are not allowed to carry any fuel exceeding 0.50% sulphur unless they have an approved alternative compliance method, e.g. a certified exhaust gas cleaning system (EGCS).

The guidelines set out sampling procedures, either by use of the ship's fuel oil transfer system or direct sampling from a tank. They also set out sample handling. As the guidelines came up for approval, IBIA made the following intervention:

IBIA has a comment and question regarding paragraph 3 of the draft Guidelines for onboard sampling of fuel oil found in Annex 8 of PPR 7/22/Add.1, regarding sample handling. After obtaining an on board sample, the list of information to be included on the labels includes – in point 3.1.2 – "bunker delivery note details of the fuel oil sampled, as per information required by appendix V of MARPOL Annex VI".

It is important to note that the content of a fuel tank on the ship may be a mix of more than one fuel oil delivery as a result of comingling onboard the ship,

or fuel left in the tank when bunkering new fuel. Unless you have confidence that the content of the tank was less than 5% at the start of bunkering, the information on the BDN will not be completely relevant to what is now in that fuel tank.

We just wonder, therefore, if point 3.2.1 refers to a specific BDN, or multiple BDNs to reflect the content of an on board fuel oil sample, as this is not clear.

In response to the point raised by IBIA, IMarEST told the meeting that because the sub-point refers to BDN details, it implies that details from more than one BDN could be included on the label of the sample. IBIA subsequently asked for our intervention, and the clarification provided by IMarEST, to be included in the report from MEPC 75 so that there is an official record of it.

The on board sampling guidelines are also referenced in the amendments to MARPOL Annex VI that were adopted at MEPC 75. The amended regulation states that If the competent authority of a Party requires the in-use or on board sample to be analysed, it shall be done in accordance with the verification procedure in appendix VI of Annex VI.

Sampling points for taking 'in-use' samples

Amendments to MARPOL Annex VI adopted at MEPC 75 will require all ships that do not have designated sampling points for taking so-called in-use samples to have them fitted.



For a ship constructed before 1 April 2022, when the amendments enter into force, in-use sampling point(s) must be fitted or designated not later than the first renewal survey as identified in regulation 5.1.2 of MARPOL Annex VI on or after 1 April 2023. The requirements for having a designated sampling point for in-use fuel are not applicable to a fuel oil service system for a low-flashpoint fuel for combustion purposes for propulsion or operation on board the ship.

The purpose of in-use samples is to draw a representative sample of the fuel that is actually in use on a ship. This has, in fact, been the most common practice in European Union countries for several years when port state control authorities have undertaken detailed inspections to check that ships were complying with emission control area (ECA) limits and/or sulphur limits for ships at berth in EU ports.

IMO guidelines for drawing in-use samples are already in place. The requirement for designated sampling points will make it clear where such samples can be drawn.

Scrubber guidelines and evaluation of discharges

MEPC 75 approved guidelines that have been developed to deal with various aspects of exhaust gas cleaning systems (EGCS), or scrubbers. The meeting approved a MEPC resolution on the “2020 Guidelines for exhaust gas cleaning systems” as well as a revised MEPC circular on “Guidance on indication of ongoing compliance in the case of the failure of a single monitoring instrument, and recommended actions to take if the exhaust gas cleaning system (EGCS) fails to meet the provisions of the EGCS Guidelines”, for dissemination as MEPC.1/Circ.883/Rev.1

The meeting also approved a revised title for one of its current agenda items to read “Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment” as well as the scope of work for this output. It also agreed to request the IMO Secretariat to explore the possibility of involving GESAMP in the development of different parts of the agreed scope for scientific advice, as appropriate, of this above agenda item.

This agenda item has been driven by concerns about the environmental impact of discharges from scrubber systems; concerns which have led to a number of local and national restrictions on the use of open-loop systems, as well as calls for scrubbers to be phased out. Studies into the impacts of scrubber discharges have not helped settle the subject as they have diverging conclusions.

Interested Member Governments and international organizations were invited to submit proposals and comments to the eight session of the IMO’s Sub-Committee on Pollution Prevention and Response (PPR 8) on this subject, which will be followed with great interest by multiple stakeholders including shipowners, refiners and bunker suppliers.

PPR 8 has tentatively been scheduled for 22-26 March, 2021.

Arctic HFO ban

A prohibition on the use and carriage for use as fuel of heavy fuel oil (HFO) by ships in Arctic waters is on course for entry into force on 1 July, 2024. There are, however, exemptions for ships with fuel tanks protected by double hulls, and waivers for ships flying the flag of countries with a coastline bordering on Arctic, that will allow these ships to continue to use and carry HFO for use until 1 July, 2029.

This has angered environmental organisations which have warned that exemptions and waivers will apply to most ships. Combined with expected growth in shipping activity in the Arctic, this could cause both the use and carriage of HFO in the region to increase significantly until the middle of 2029.

MEPC 75 approved draft amendments to MARPOL Annex I to incorporate a prohibition on the use and carriage for use as fuel of HFO by ships in Arctic waters. It is expected to be adopted by MEPC 76, which is scheduled to meet in June 2021.

Very low sulphur fuel oil (VLSFO) produced to meet the IMO 2020 0.50% sulphur limit may still be regarded as HFO as any product with density at 15°C higher than 900 kg/m³ or kinematic viscosity at 50°C higher than 180 mm²/s will be defined as HFO according to the MARPOL Annex I regulation.

Prior to approving the draft regulatory change, MEPC 75 discussed a submission by FOEI, Greenpeace International, WWF, Pacific Environment and CSC urging the Committee to strike out exemptions and waivers so that the prohibition can take full effect from 1 July, 2024.





Their paper, MEPC 75/10/7, was one of the very few submissions to MEPC 75 which was allowed to be introduced. Due to time constraints, most papers were not introduced, but taken as pre-read before discussion. Their paper highlighted the risk of HFO spills in the sensitive Arctic environment, and several of the co-sponsors made statements about the harmful impact of black carbon emissions on the region's diminishing sea ice cover.

Member states who spoke at MEPC 75 nevertheless supported the draft prohibition, including the exemptions and waivers up until 1 July, 2029, recognising that the text was already an intensely negotiated and carefully balanced compromise.

Toward the end of the 35 minutes discussion on the HFO prohibition in the Arctic, IBIA made the following statement to MEPC 75:

We have a short intervention. It's simply some practical considerations. We know that part of the reasoning behind the prohibition on the use and carriage for use of heavy fuel oil by ships in Arctic waters is to reduce black carbon emissions. As we know, the exact factors behind black carbon emissions are complex to determine. However, studies do indicate a significant general reduction when ships use distillates instead of HFO.

There have, therefore, been calls for a voluntary shift to distillates for ships operating in the Arctic, prior to the prohibition entering into force. In practice, this is entirely feasible. Ships have already been using mainly distillates in emission control areas since 2015.

In light of the impact black carbon emission in the Arctic can have on climate change, a voluntary shift to distillates, or other fuels and technology solutions that can significantly reduce black carbon emission for ships operating in the Arctic should clearly be recommended. Moreover, we are confident that the bunker supply industry can meet the demand requirements.

IBIA believes it makes sense to encourage voluntarily steps to reduce black carbon emissions in the Arctic as part of global efforts to fight climate change.

Black carbon, or soot, absorbs light and heat and causes snow and ice to melt faster, and with less snow and ice to reflect solar radiation, the warming process accelerates.

IBIA checked the 4th IMO GHG study prior to MEPC 75 and made some enquiries with its authors about black carbon emission factors. In short, the study suggests that overall, engine type is a bigger factor than the fuel type in determining black carbon (BC) emissions, because 4-stroke engines emit so much more BC than 2-stroke engines. The study indicates that a 4-stroke engine using MGO emits more BC than a 2-stroke engine using HFO. However, both engine types emit less BC when using MGO compared to HFO, and the reduction is particularly pronounced for 2-stroke engines.

As IBIA already stated at the seventh session of IMO's Sub-Committee on Pollution Prevention and Response in February this year, the shift to VLSFO meeting the 0.50% sulphur limit has likely already helped to reduce overall black carbon emissions from international shipping.

VLSFOs are typically less aromatic than the high sulphur fuel oils they have replaced, and hence likely to emit less BC during combustion than HSFO. However, if switching to distillates can reduce black carbon emission even further, it is a practical step that should be within easy reach. Methanol and LNG are even better for reducing black carbon emissions, but as they are low-flashpoint fuels it isn't a quick and easy change to make, as it requires ships to meet specific safety design criteria.

IMO's latest GHG measures

MEPC 75 was heavily dominated by discussion about the adequacy of steps to deliver greenhouse gas (GHG) reduction policies. The outcomes were a compromise, which inevitably means that few were completely satisfied.

A package of measures (see point 2 below) that was up for approval at MEPC 75 had already been discussed at length in October during an intersessional GHG meeting, where many member states criticised it for being too weak, but

reluctantly accepted it as the best compromise possible at this time, largely thanks to a review clause to assess how effective the measures have been. The review should be completed by 2026.

One of the elements that makes agreement so hard to reach is concern about the impact on states from any measures adopted by the IMO, in particular on developing and remote countries whose economies and trade opportunities, as well as imports of essential goods, depend heavily on international shipping. All measures are required to undergo an impact assessment.

The measures that were adopted and agreed at MEPC 75 are in line with the IMO's initial greenhouse gas strategy. The first step is to identify and implement short term measures to meet the first stated ambition, which is to reduce CO₂ emissions per transport work as an average across international shipping by 40% by 2030 compared to a 2008 baseline.

This will not in itself guarantee that overall CO₂ emissions from shipping fall as the initial steps are aimed at reducing the carbon intensity of ships. If global trade and transport of goods by sea grows by more than 40% to 2030, CO₂ emission from shipping could also grow even if the 40% carbon intensity reduction target is met.

The initial short-term, goal-based measures to reach the 2030 ambition include tightening existing mandatory energy efficiency measures, and introducing new mandatory technical and operational efficiency measures. Below is a summary of steps taken at MEPC 75 to control GHG emissions from shipping:

- 1.** Adopted amendments to MARPOL Annex VI on early application of Phase 3 of the Energy Efficiency Design Index (EEDI) – bringing it forward from 2025 to 2022 for selected ship types. Entry into force will be 1 April, 2022 but early implementation is encouraged.

2. Approved draft amendments to MARPOL Annex VI to allow for a package of mandatory GHG reduction measures that will apply to existing ships. If adopted at MEPC 76 they will enter into force in 2023.

The measures consist of:

- Energy Efficiency Existing Ship Index (EEXI) applicable to all existing ships. Once the EEXI is verified the ship should get an Energy Efficiency Certificate.
- Carbon Intensity Indicator rating (CII) for ships above 5,000 GT, with an annual
- A to E rating system which needs to be verified by its Administration, which will issue a "Statement of Compliance". A ship that as an E-rating for any single year or a D-rating for three consecutive years will be required to develop a corrective action plan that will be part of the SEEMP and subject to approval.
- Enhanced Ship Energy Efficiency Management Plan (SEEMP) which will
- be subject to approval and audits.

3. Agreed on Terms of Reference for a comprehensive impact assessment of the draft measures in point 2. This is required under the IMO's initial GHG strategy and repeatedly referred to by IMO Member States that worry about the impact of measures on the cost trade for developing and remote countries.

4. Approved IMO's Fourth GHG Study 2020

The study provides a GHG inventory for 2012-2018, carbon intensity calculation and emission projections to 2050. It estimates that under a BAU scenario, CO₂ emissions from shipping could increase by 90-130% to 2050, which clearly demonstrates that policy measures and low carbon innovations will be required.

5. Had a lengthy discussion about a proposal from shipping industry organisations for an International Maritime Research and Development Board (IMRB) to overlook an International Maritime Research Fund (IMRF) expected to raise approximately \$5 billion annually via a mandatory R&D contribution of \$2 per tonne of fuel oil purchased for consumption. Also included in the debate at MEPC 75 were four papers submitted with comments on the IMRB/IMRF proposal.

While nobody objected to the need for R&D to identify and develop technologies and fuels that will be needed to get shipping towards the IMO's stated ambition of cutting CO₂ emissions from shipping by at least 50% by 2050, there were many concerns and questions about the proposal. Many commented that it was not sufficiently clear about legal structure, the collection of funds, and the management and allocation of funds.

There were reservations about the IMO mandating a fee for a fund not directly under the IMO's control. The need to assess the impact on states was also raised. Several pointed out the need to avoid duplication of other R&D efforts which are already well underway, both in the private sector and elsewhere.

In summary, there was no definitive yes or no to the IMRB/IMRF proposal, only an invitation for interested parties to submit papers to MEPC 76 to comment on it in more detail, noting the concerns raised at MEPC 75, or submit alternative proposals.

6. Adopted a resolution on voluntary National Action Plans to reduce GHG emissions from international shipping. The National Action Plans could include: improving domestic institutional and legislative arrangements for the effective implementation of existing IMO instruments, developing activities to further enhance the energy efficiency of ships, initiating research and advancing the uptake of alternative low-carbon and zero-carbon fuels, accelerating port emission reduction activities, fostering capacity-building, awareness-raising and regional cooperation and facilitating the development of infrastructure for green shipping.



IMO Secretary-General Kitack Lim addressing MEPC 75 at the close of the meeting



Life cycle GHG emissions to be discussed further

There is agreement at the IMO that life cycle emissions of fuels should be taken into account when developing regulations to reduce GHG emissions from shipping, but there is little clarity yet as to how this will be done. Short term GHG reduction measures focusing on reducing the carbon intensity of ships topped the agenda at MEPC 75, but there was no development specifically on how low carbon fuels can contribute.

It came up when considering the draft terms of reference for the next intersessional working group meeting on GHG (ISWG-GHG 8). A number of delegations emphasized the need to urgently address issues that ISWG-GHG 7 did not have time to consider, in particular concrete proposals to reduce methane slip and emissions of Volatile Organic Compounds (VOCs), and to encourage the uptake of alternative low-carbon and zero-carbon fuels,

including the development of life cycle GHG/carbon intensity guidelines for all relevant types of fuels.

The subject is complex as it isn't clear how the IMO can assess and take into account life cycle assessments (LCA) when developing life cycle carbon intensity guidelines.

When it was discussed at the IMO during ISWG-GHG 6 in November 2019, there was support for the establishment of a dedicated workstream for the development of life cycle GHG/carbon intensity guidelines for all relevant types of fuels. Confusingly, however, it was agreed that the priority for international shipping should be given to the development of "tank-to-propeller" emission factors for alternative fuels, while it was only noted that it was important to be cognisant of upstream emissions ("well-to-tank") as these were relevant for assessing the sustainability of alternative fuels.

The trouble with focusing on "tank-to-propeller" emissions is that it may address CO₂ or CO₂ equivalent emission for shipping in isolation, making it unclear how full life cycle assessment (LCA) will be taken into account. During discussions on the subject at ISWG-GHG 6, IBIA commented on that conundrum, pointing out that the fuels that may be low or zero emission on the ship may have generated a lot of CO₂ during production, and likewise, some fuels that produce CO₂ when burned by the ship could be sustainable net-zero emission solutions if you take a full LCA into account.

Proposals have been invited for draft guidelines on life cycle GHG/carbon intensity for all relevant types of fuels, as well as relevant studies, to bring this work forward, as well as proposals on the reduction of methane slip.



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The Koningsdam in Venice before Covid-19 brought the cruise industry to a halt. ©Carnival Corp

LOWER VOLUMES HIT WORLD FUEL SERVICES

Cruise industry shutdown contributes to drop in sales as effects of Covid-19 bite

Major global fuel company World Fuel Services (WFS) reported a total gross profit of US\$214.0 million in Q3, 2020, down 30% year-over-year. Its marine segment generated gross profit of \$32.0 million, a decrease of 40% year-over-year, principally attributable, WFS said, "to lower volume and profitability due to a decline in demand as a consequence of the pandemic and lower average fuel prices".

Commenting on the effect of Covid-19, WFS said in statement: "Beginning in the first quarter of 2020, the aviation, marine and land transportation industries, along with global economic conditions generally, have been significantly impacted by the coronavirus pandemic. A large number of our customers in these industries have experienced substantial reductions in their operations, especially commercial airlines and cruise lines, which have been particularly impacted by ongoing travel restrictions. Customers in our marine and land segments have also been adversely affected by these restrictions and the reduction in operations of various businesses in affected regions."

Bunker barge crew kidnapped off Nigeria

Pirates kidnapped the master and two other crew members of the small Togo-flag bunker barge Stelios K while she was off Nigeria in November. Two other crew members were left on board and sailed the ship to in Lagos.

At time of going to press, negotiations for the release of the men were understood to be ongoing.

The Stelios K, with a small crew and low freeboard, was particularly vulnerable to attack.

Taking of hostages by pirates operating in the Gulf of Guinea is the main reason ICC International Maritime Bureau (IMB) figures show a rise in piracy and armed robbery on the world's seas in the first nine months of 2020. There was a 40% increase in the number of kidnappings reported in the Gulf of Guinea, compared with the same period in 2019. Of the 85 seafarers kidnapped from their vessels and held for ransom, 80 were taken in the Gulf of Guinea in 14 attacks reported off Nigeria, Benin, Gabon, Equatorial Guinea and Ghana.

IMB warned that pirates armed with guns and knives are abducting bigger groups of seafarers at further distances off the West African coast.

Fall-out from Hin Leong collapse continues

As legal moves continue in the wake of the Hin Leong oil trading and bunkering empire collapse, the formal winding up of subsidiary Ocean Tankers Tuas Terminal has been gazetted in Singapore.

Hin Leong's creditors, which include HSBC Holdings and DBS Group Holdings, have taken to the courts in a bid to recover funds from the insolvent company. Meanwhile, failed trader's court-appointed managers PricewaterhouseCoopers have taken legal action against Lim and his family for a total US\$3.5 billion in outstanding debt.

Hin Leong's founder Lim Oon Kuin (known as OK Lim) has denied HSBC's allegations that he used forged documents to obtain financing. The bank is suing Lim, his children and a Hin Leong Trading employee to recover US\$85.3 million in financing that the bank alleges they obtained with forged documents.



Lim denied he knew the documents had been issued and said that they had been a mistake.

However, Lim has admitted in an affidavit that he told his employees to hide the losses in the company's balance sheets which were used for bank references. He said that despite the company's official accounts showing a US\$78 million profit in the 2019 financial year it had "not been making profits in the last few years".

Female leadership can be "game changer"

Female leadership should be a priority for maritime businesses, "particularly in the bunker industry where women make up just 9% of senior positions," according to bunker broker, trader and risk manager LQM Petroleum Services.

The firm says it is "bucking the trend" and has a gender equality ratio of 50% across global operations in the UK, USA and France.

At a recent LQM webinar, a panel comprising of Unni Einemo (Director of IBIA), Isabela Tatu (Consultant for TMA), Jenna Coles (Head of Maritime for ARM) and Sara Brady (Team Leader at LQM) discussed why female leadership in bunkering is so important.

"I came into bunkering through LQM," said LQM Team Manager Sara Brady. "I was hired by a very strong female broker - who was also a partner in the business - and that's why I'm so happy LQM are still continuing on the same path. I thought it was amazing to see such a strong businesswoman doing the best for our clients and accounts. It wasn't about being a woman or man. It was about working as hard as you can to get there."

She added: "I remember sitting on a board of directors with 15 men and it was scary because it's hard to tell if they're taking you seriously or not.

Nearly two decades later, I'm going to the same board meetings and I'm so glad to see more women and female buyers. There are still some regional differences. It's a slower pace of change in South America, for example, but there have been improvements - especially on the supplier side."

LQM chief executive Daniel Rose said his organisation is putting diversity at the heart of its plans. He said: "Our 50% gender equality ratio is something we absolutely intend to keep in the future. Despite bunkering being male dominated, LQM's experience is that keeping things balanced has been hugely positive."



Sara Brady

UK Club bunkering training video

In the first of its new 'Inside Ship' series of training films, the UK P&I Club focuses on the importance of taking proper samples during bunker operations. The mutual liability insurer says it continues to see bunker quality claims arising from delivery of off-specification bunkers. In many of these cases, fuel-sampling procedures on board at the time of delivery have been inadequate and unreliable. This, the insurer says, complicates the claims handling process.

Asked whether the film was relevant to this year's implementation of IMO's mandatory 0.50% sulphur in fuel limit (IMO 2020) and the consequent widespread use of very low sulphur fuel oil (VLSFO) a spokesperson replied that proper sampling had always been a vitally important part of the bunkering process.

They added: "Any disputes between charterers and owners are compounded if the samples cannot be relied upon.

The club expects more disputes than normal due to the introduction of IMO 2020 and VLSFO and so a video was made to highlight the importance of taking proper sampling. There are a number of issues with VLSFO which aren't mentioned in the short four-minute video. It only discusses the issue of bunker sampling which is a common issue and something which can be improved upon by ship's crew. In relation to IMO 2020 or VLSFO incompatibility, the Club acknowledges that proper sampling is key to identifying these issues. Unless the sampling is done correctly none of the IMO 2020 issues can be managed."

New electronic platform used for delivery

Minerva Bunkering completed its first bunker delivery conducted entirely over Minerva's new Advanced Delivery Platform (ADP) in November, to a vessel owned by shipowner Hafnia. The ADP is comprised of integrated hardware and software designed and developed by Minerva and its technology partner Curl Tech.

Minerva intends to launch commercial service of the ADP in early 2021 covering the ARA, Fujairah, and Singapore markets. The major tanker owner and operator, collaborated with Minerva on critical design elements of the ADP, and has entered into a supply agreement with Minerva relating to these ports.

Monjasa buys tanker for ME Gulf operations

Denmark-based trader and physical supplier Monjasa has bought a bunker tanker from Golden Agri Stena to expand its cargo and bunkering operations in the Middle East Gulf.

The 9,600 dwt GS Adventure, renamed the Monjasa Server is intended to boost Monjasa's marine fuel operations across the Middle East, where it already operated a fleet of four tankers ranging between 4,000 and 10,000 dwt.

Monjasa supplied 600,000 tonnes of marine fuel in the region in 2019, about 13% of Monjasa's global total.

"During the past years, we have actively pursued additional ownership of the supply chain through an increasing percentage of owned tonnage across our fleet. We have seen how the IMO 2020 sulphur cap sparked further market interest in how the new fuel products are being sourced, shipped and supplied. This most recent acquisition fits well with our ambitions and matches market demand in terms of cargo capacity and high technical specifications," Andres Ostergaard, group CEO of Monjasa, was quoted as saying.

Bunker One expands In Brazil

Bunker One has switched a tanker from the Gulf of Guinea to bunkering operations off northern Brazil.

The Danish company said the deployment of the chartered 2008-built, 13,211 dwt Thornton was "in line with the company's strategy and ambition to increase global activities and meet customer requirements".

The tanker, reportedly owned by UK-based Union Maritime, ran foul of Ghanaian regulations in May this year and was arrested the country's maritime authorities.

Bunker One announced in November that "to provide access to more flexible offshore bunkering solutions" it had expanded its offshore operation 50 nautical miles from the Itaqui coast by adding the Thornton to its fleet. It added that the tanker will be supplying VLSFO and LSMGO and was fully equipped for offshore bunkering.

Peter Zachariassen, CEO, Bunker One, said: "I am very pleased that we can sustain momentum and stay on course with our plans to expand our operational reach. As we continue with our ambitious growth plans, we will, of course, remain dedicated to our business partners and maintain our strong focus on providing our customers with services of the highest quality."

Finecor Oil Bunkering expands to Thessaloniki

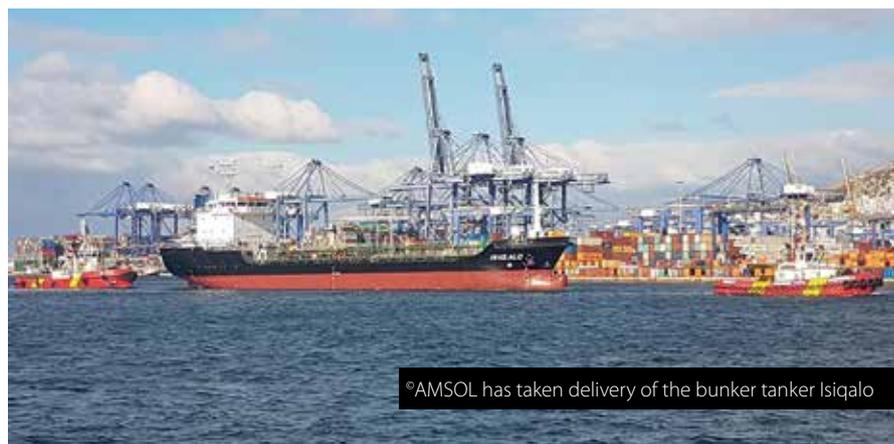
Greek-based supplier Finecor Oil Bunkering obtained a licence to load bunker products from the HELPE Refinery in Thessaloniki in December. The company says it can now supply at Thessaloniki port in addition the other ports in north central Greece and at more competitive prices, strengthening further its position and coverage in this area.

Founded in 2001, Finecor Oil Bunkering is a physical supplier, specialising in the supply of fuel oil, distillates and lubricants in all Greek ports.

AMSOL's new contract

South African tanker and bunker barge operator AMSOL has recently been awarded a "multi-year" contract by Shell Downstream South Africa.

AMSOL Chief Executive Officer Paul Maclons said: "With a changing requirement for the transportation and delivery of multiple grades of marine fuel, Shell has partnered with AMSOL to provide a world class service in the Port of Durban. This partnership has resulted in AMSOL acquiring a product tanker, representing a multimillion-rand investment, and will provide sustainable employment for South Africans in the specialised niche of tanker operations."



©AMSOL has taken delivery of the bunker tanker Isiqalo



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Southbond Shipping Agency Ltd (SSAL), incorporated in

Mauritius as an operator/management shipping company since the late 1980's. We consider ourselves among the market leaders, given our experiences and dedicated team to achieve the best possible turn around of your vessels. In doing so we provide top class services based on attention to details, due diligence and timely communication.

The company forms part of a cluster in related maritime activities, spanning from third party management, ship handling, shipchandling, ship agency services, crew change, crew recruitment among others.

Over the years, the company has developed an unparalleled expertise in the field of its activities and our reliability and professionalism have ranked us amongst the best ship agency on the island. we recognize that every activity has its specific needs, which is the reason why we propose to you the expertise in a range of different domain and activities, all of which are backed by competent and professional staff.

Our high quality services include:

- Bunkering : brokering spot prices & arranging supply
- Crew change (immigration formalities/ provision of air tickets (own ticketing dept /local transport/meet and greet at airport)
- Crew medical attendance
- Accommodation
- Garbage, sludge, bilge disposal arrangement
- Cash to master
- Stevedoring, cargo loading/discharging
- Dry & cold warehousing facilities
- Dry docking and technical surveys
- Provision of crane services-up to 45 mts
- Pilotage and tugs services
- Clearing, forwarding and delivery of ship spares
- Custom brokerage
- Fresh water supply (inside/outside port limit)
- Freight forwarding solutions(air/sea/road/rail)
- Courier services
- Supply boat facilities
- Shipchandling and ship stores supply at quay & anchorage
- Provision of gas free and hot work permit
- Protective agency services
- Cargo, hull and machinery surveys
- In-water survey, under water inspection, cutting/welding, hull cleaning and diving assistance
- Provision of anti piracy security in High Risk Areas.



SCIENCE UNDER SCRUTINY

CE Delft has undertaken several studies for IMO and other clients that are of huge interest to the global marine fuels sector. IBIA's Unni Einemo had the opportunity to put some questions to the lead author; Jasper Faber

Netherlands-based CE Delft describes its mission as “helping build a sustainable world” through its independent research and consultancy work. It specialises in the fields of transport, energy and resources. Jasper Faber’s speciality is analysing policy instruments for improving the environmental performance of aviation and maritime shipping. In this interview, we asked about his work, and got refreshingly honest answers to some challenging questions.

UE: CE Delft and you became very well-known names when you were in charge of the availability study to determine the timing of the IMO’s 0.50% sulphur limit under MARPOL Annex VI, which was completed in 2016. Were you involved in other relevant projects prior to this crucial study that made CE Delft the right team to take this on?

JF: We were part of the consortium of the Third IMO GHG Study, in which we led the work on emission projections (and consequently fuel demand projections). The Fuel Oil Availability Assessment required a projection of maritime fuel demand in 2020 and an assessment of the potential supply. For the latter, we teamed up with Stratas Consulting who have excellent knowledge of the refinery sector globally.

UE: Did you learn many new things about the bunker industry in the process? What did you learn?

JF: I must admit that even though I started focusing my research on climate impacts of shipping in 2005, my knowledge of the bunker industry was very shallow before I did this study. The thing that impressed me most is the diversity within the industry at every level: business models, processes, markets. I think the transition to 2020 has also demonstrated that the industry is capable of turning around quickly in response to market changes.

UE: The availability study concluded that there would be sufficient low sulphur blend components available to introduce the 0.50% limit in 2020. This was contested on many fronts. Some thought the fact that CE Delft describes itself as being committed to the environment made the outcome a given. How did you deal with these challenges?

JF: Many of the people who were convinced that supply would be insufficient were starting from the notion that compliant fuels would be distillates. When we started the study, I had a similar view. However, at one of the first project meetings the team discussed at length what the options of the refinery sector were to supply low-sulphur fuels and concluded that there would be insufficient distillate supply but probably sufficient desulphurisation capacity.

We considered that the sector could perhaps produce low-sulphur fuel oil blends. Stratas tested this idea extensively with their global refinery model and we concluded that it would indeed be possible.

I knew for a fact that we didn’t go in with a bias, but I am aware that this may be the first impression that some people have, given that next to our work for regulators and companies, we also work for environmental NGOs. CE Delft prides itself on being independent. We have over 40 years of experience in consultancy work for a broad range of stakeholders. Almost all of our reports are published and as such subject to public scrutiny. I therefore have tried to liaise bilaterally with many fuel suppliers and have agreed to every invitation to speak in order to be transparent about the project and to get the notion of fuel blends across. It has always been my hope that if people could see the methodological rigour of our work, it would help them to accept the conclusions.

UE: The prediction in the availability study about how many ships would be fitted with scrubbers by 2020 was doubted by many. In hindsight, your figures for expected market share of HSFO used by ships with scrubbers,



max 0.10% sulphur marine gasoil (MGO) and up to 0.50%S blends seem to have proven remarkably accurate. Were you surprised by this yourself and if so, what has been the biggest surprise(s)?

JF: Based on the economic analysis that we did, we were convinced that scrubbers would be profitable for many ships. There were other observers in the market that had reached the same conclusion. What we did not know was how many shipping companies would act rationally and whether the yard capacity would be sufficient to install the scrubbers. The outcome, that the number of ships installed with scrubbers almost exactly matched our projection, was a lucky coincidence.

Fortunately, the conclusion of the Fuel Oil Availability Assessment did not depend on the uptake of scrubbers (or LNG, for that matter). There would have been sufficient desulphurisation capacity even without these options.

UE: In 2019, you undertook a study commission by CLIA on the impact of washwater discharges from open-loop scrubbers. Can you give us a short summary of the key findings?

JF: We were able to access the largest database I know of washwater sample analyses which allowed us to accurately model the discharges of heavy metals and PAHs in ports. We used this as input in a widely used model to calculate the equilibrium concentrations and compared them with applicable standards in the EU. The main finding was that the increase in concentrations of heavy metals and PAHs was less than 1% of the standard and often less than 0.1%.

UE: Your findings, indicating limited impact on water quality, appear to be at odds with some other studies which are more alarmist. Why do think that is?

JF: There are some issues we did not analyse, such as the toxicity of compounds in the presence of other compounds. Other studies have suggested that this could be a problem. We also compared the increases in concentration with European norms. Impacts outside Europe may be different and possibly worse.

UE: Various studies on scrubber discharges have been presented to the IMO, and the IMO has also asked the GESAMP EGCS Task Team to review available studies. Do you think your study has been given a fair hearing compared to the other studies?

JF: I was a little surprised that the Task Team wasn't able to reach a conclusion.

UE: Environmental organisations are dead set against open loop scrubbers, and they get a lot of bad press. The perception is that they are simply moving pollution from the air to the water. What would you say to that? Should we be worried about the impact today? And should we be worried if the number of ships installing scrubbers increases?

JF: The question of whether we should worry relates to the impacts of scrubber washwater on ecosystems. I am not a marine biologist so this is not a question I can answer. All I can say is that the current European legislation does not give rise to concerns.

UE: In August 2020, CE Delft released a study commissioned by three scrubber manufacturers, comparing the overall climate impact of ships using HSFO and scrubbers compared to using low sulphur fuels. It appears to have drawn the same conclusion we have heard from refiners for many years, namely that the CO₂ penalty associated with the extra refining is greater. Can you tell us briefly how they compare?

JF: That is a straightforward question but it actually requires a nuanced answer. If you compare the carbon footprint of using a scrubber on the one hand with the emissions associated with removal of sulphur from the fuel at a refinery, the latter has a smaller climate impact. However, when a refinery removes sulphur it inevitably improves the quality of the fuel by saturating unsaturated bonds and reducing the aromatics content of the fuel. If you take all the emissions associated with fuel quality improvement into account, a scrubber has a much lower climate impact. In reality, some of the streams coming out of desulphurisation units are too good to be sold as marine fuels. This makes it impossible to assign precise numbers to the emissions associated with desulphurisation of fuel oil.

UE: Science should in theory be objective, but I think how scientific studies are received is subjective: confirmation bias makes people prone to dismiss studies that do not support their beliefs and trust those that do. What's your view on that? And, do you think the Terms of Reference (ToR), and the views of those undertaking studies, can add an element of bias and subjectivity to scientific studies as well?



JF: I certainly know for a fact that I am guilty of confirmation bias when I read other people's reports and articles. It is only human that it can feel a little bit uncomfortable if beliefs are challenged by scientific findings. I just hope that people who read my reports will not reject them because they don't like the conclusions, but at least try to form an opinion on whether each study has employed a robust methodology and what the evidence supporting the conclusion is. CE Delft is always transparent about the methodologies we employ and about the sources we use.

You are right, the client determines the ToR we use for doing our studies, and they may not ask questions which they expect to give a negative answer. At CE Delft, we have occasionally decided not to bid if we thought the ToRs were prepared to reach one-sided conclusions. Our approach has always been that clients can ask the questions, and we provide the answers.

We conduct the study and author the report, and the client can decide whether or not to publish it (although I can state that in my career, there has only been one occasion when a report has been withheld for a long time). Clarity about the relation with the client has always worked well for us. We care very much about our reputation as independent experts.

UE: You have been involved in several of the IMO Greenhouse Gas Studies including the 4th which has just been formally approved by MEPC 75. What were the main differences between the 4th IMO GHG study and the one before it?

JF: Every aspect of the Third IMO GHG Study was updated and there are too many new details to mention all of them, but I think three things stand out: we have calculated the carbon intensity of international shipping for 2008 and for the period 2012-2018; a new method to distinguish between domestic and international shipping has been applied, based on the voyages of ships; and we have estimated Black Carbon emissions.

UE: What does the 4th IMO GHG study tell us about what needs to happen to decarbonize shipping? Does it help point us in the direction of which fuels to use?

JF: It tells us that decarbonisation is not business-as-usual and that it will be costly. The projections are that shipping emissions will increase BY 4-50% in the next three decades despite quite impressive efficiency improvements. Because there isn't much more to gain from efficiency, a fuel switch is required to achieve the level of ambition of reducing emissions by at least 50% by 2050. These fuels are some US\$ 1,200 per tonne more expensive than VLSFO.

UE: If you look at CO₂ or CO₂ equivalent emission for shipping in isolation rather than using life-cycle assessments, the long-term choices to get to zero would be limited to hydrogen or hydrogen-based fuels, batteries, wind power, nuclear or possibly conventional fuels with carbon capture. I believe that would cut out valuable sustainable net-zero emission solutions that are better suited to rapid adaption for the maritime sector, but at the moment it is not clear how life-cycle assessment could be incorporated into an IMO legal framework. Have I missed something? How do you see the way forward?

JF: The issue with hydrogen, ammonia and other hydrogen-based fuels is that their lifecycle emissions may be worse than fuel oil if they are produced e.g. from coal or lignite. This is not a theoretical example; there is actually hydrogen that is produced from lignite. If shipping does not want to dump its problem on land-based sectors, it has to assume responsibility for all emissions during the production, distribution and use of the fuel.

I think this can be regulated by introducing a requirement in MARPOL that the bunker delivery note contains verified information on the emissions generated during the production of the fuel.

There are good standard models available to calculate these emissions, for example in the California Low Carbon Fuel Standard, and these could be tailored to include marine fuels.

Emissions generated on board can be added to the emissions notified on the BDN to calculate the total emissions, which need to be the basis of a future policy measure to phase out fossil fuels.

UE: What's the next project relevant to the marine fuels sector that you and CE Delft will be involved in?

JF: We are doing many interesting projects at the moment. Many of them focus on renewable and low-carbon maritime fuels. The next decades will be thrilling for the sector as fossil fuels make way for new fuels, and we do not know yet which fuels, if any, will dominate the market 20 years from now.



JasperFaber



Scientists at the UK's University of Southampton who are working on carbon capture to produce plastics say the process could be used on ships. ©University of Southampton

SHIPPING'S CO₂ FOOTPRINT "TO GROW"

An ageing fleet of ships and historically low levels of newbuild activity threaten IMO's goal of cutting CO₂ emissions, according to new research

The latest analysis of CO₂ emissions based on vessel tracking data (AIS), vessel specification data and the vessel order book by Swedish big-data firm Marine Benchmark shows that CO₂ emissions will continue to rise.

The research carried out in partnership with major shipbroker Simpson Spence Young (SSY) found that most of the efficiency gains possible by the shipping industry to drive down its carbon footprint have already been made over the past decade. It also forecast that the proportion of eco-ship newbuildings entering the global fleet would drop to historic lows and noted that the use of LNG as a transitory fuel remained relatively small.

According to Alastair Stevenson, Head of Digital Analysis at Marine Benchmark, the current lack of investment in modern tonnage and a potential economic rebound implied lower ship scrapping activity over the next couple of years.

He said: "We're going to see older and older vessels on the water and the impact of the marginal gains already made from running ships more efficiently have already been felt. To bring down absolute emissions without impacting global trade, scalable low carbon fuels and new ships and engines to run them are needed.

However, many shipping investors are sitting on their hands waiting for technological breakthroughs and regulatory certainty. The implications are that the shipping industry cannot deliver an absolute reduction in CO₂ emissions by 2030."

Although the shipping industry has reduced its carbon intensity by more than 30% since 2008, overall CO₂ emissions from the sector have risen by an average annual rate of 2.1% to reach 800 tonnes in 2019. The current pandemic has weakened this growth to 1.7% as emissions in the first nine months of 2020 have fallen by approximately 2% from 2019 levels.

This is despite slower steaming speeds, the increased economies of scale of larger vessels, eco-vessel designs and the use of LNG as a fuel.

Trafigura calls for huge carbon levy, and invests in hydrogen

Major charterer Trafigura has proposed that the IMO should introduce a carbon levy of between US\$250 and \$300 per tonne of CO₂ equivalent on shipping fuels, in order to make zero- and low-carbon fuels more economically viable and more competitive.



An ageing fleet is an obstacle to reducing shipping's carbon footprint



As World Bunkering went to press Trafigura announced it had become a major investor in green hydrogen by committing US\$62 million into Swiss-based H2 Energy Holding, described as a “business innovator in green hydrogen solutions”.

In the Trafigura proposal the system would be overseen by the IMO and would involve charging a levy on carbon-intensive fuels and subsidising low- and zero-carbon fuels. The proposed levy range is more than a hundred times higher than the \$2 a tonne levy proposed by the shipping industry for funding research and development. In very broad terms it would double the cost of conventional bunkers.

In IMO terminology, this would be a Market Based Measure. A Trafigura statement said: “We believe that only through the introduction of a significant levy on carbon-intensive fuels can sufficient progress be made towards the decarbonisation of the global shipping industry.”

Trafigura is proposing the introduction of a global carbon levy on carbon-intensive shipping fuels in the form of what it describes as a “partial ‘feebate’ system”. Feebate is a contraction of ‘fee’ and ‘rebate’ and is used to mean a fee on the purchase of goods with undesirable characteristics with the revenues gained used to finance a rebate for more desirable ones.

Trafigura explained: “The revenue raised by the levy would primarily be used to subsidise and incentivise low and zero carbon fuels and subsequently also be used to fund the research and development of alternative fuels, and in part to help small island developing states and other developing countries with the energy transition and to mitigate the impact of climate change. The inclusion of these elements is why we refer to the scheme as a partial feebate system.”

Meanwhile Trafigura announced it had committed to invest an initial US\$62 million, with US\$20 million as capital injection, into H2 Energy to “further support the development of the production, storage and distribution of green hydrogen for refuelling stations and industrial customers”.

The remaining part of the investment will be provided to seed and fund the development of a 50:50 joint venture based in Zurich that will “roll out green hydrogen-based ecosystems and to invest in hydrogen infrastructure and hydrogen application-related projects across Europe, excluding Switzerland”.

LR backs decarbonisation, opposes regional regulation

Lloyd’s Register [LR] has launched a “dedicated centre of excellence” that is intended to “accelerate the safe, sustainable and cost-effective decarbonisation of world shipping in support of delivering greenhouse gas (GHG) reduction targets”. At the same time LR has made it clear it does not support regional regulation to achieve GHG reduction targets.

According to LR, the Maritime Decarbonisation Hub, a joint initiative between Lloyd’s Register Group and Foundation, brings together thought leaders and subject matter experts with the skills, knowledge and capability to help the maritime industry design, develop and commercialise the pathways to future fuels required for decarbonisation. A steering group of external stakeholders is in place to ensure the hub focuses on the challenges that matter to industry.

LR said that, under the leadership of Charles Haskell, LR’s Decarbonisation Programme Manager, the LR Maritime Decarbonisation Hub is open to undertaking and actively seeking partnerships with stakeholders across the industry, focused on creating a more sustainable future for shipping and contributing to society’s global challenge of slowing climate change.

Meanwhile LR issued a statement saying it was “aware that there have been calls for greater regional regulation of the global shipping industry at this year’s virtual Global Maritime Forum (GMF) event”.

These statements were made in relation to the speed with which regulatory measures are being imposed to address the maritime industry’s decarbonisation challenges.

LR clarified its position: “Some media have also reported that greater support for regional regulations may be among the recommendations coming out of this year’s Global Maritime Forum. LR is a Strategic Partner of the Global Maritime Forum, but does not support these or any calls for greater regional regulation in support of decarbonisation.”

LR Group CEO Alastair Marsh emphasised: “We believe that global regulation to reduce the maritime industry’s greenhouse gas (GHG) emissions, set by the IMO as the shipping regulator, is in the best interests of all shipping stakeholders. Lloyd’s Register is committed to working with all industry players to halve GHG emissions from 2008 levels by 2050. To do this, zero-carbon vessels must enter the world fleet by 2030, along with the necessary fuels and land-side infrastructure, and we are actively supporting our clients to achieve these ambitions.”

Carbon capture progress

Scientists from the UK’s University of Southampton have invented a hybrid catalyst platform that is said to be able to “efficiently and sustainably convert carbon dioxide into versatile plastic materials”.

Asked by World Bunkering if the development could have a marine application, a spokesman said: “We are working on this with the Southampton Marine Maritime Institute. We are indeed interested in on-board methanol and dimethyl ether (DME) production, using a reactive capture system, that could re-purpose the captured CO₂ for effective carbon utilisation.

The Viridi CO₂ platform, created by Dr Daniel Stewart and Professor Robert Raja, has recently been recognised by the UK’s Royal Society of Chemistry (RSC) as a winner of its 2020 Emerging Technologies Competition.

According to the university, the novel chemistry solution could be used to more effectively produce tens of millions of tonnes of plastics used annually in mattresses, clothing and building insulation, while also reducing carbon dioxide emissions.

COLD IRONING PLAN AT ROTTERDAM

The Municipality of Rotterdam and the Port of Rotterdam Authority say they are working together on the joint roll-out of shore-based power for sea-going vessels in Rotterdam

By 2030, they want a “significant share” of sea-going vessels to ‘plug in’ once they have berthed at the port’s quays. Over the next five years, the partners will be initiating a series of projects that are intended to accelerate

and scale up the adoption of shore-based power. Depending on the experience gained in these projects, the Municipality and the Port Authority may adapt their targets in this area in 2025.

It is claimed that, by 2030, Rotterdam’s shore-based strategy could result in carbon savings of approximately 200,000 tonnes per year.



Rotterdam shore power project. ©Danny Cornelissen



ExxonMobil's Altona refinery is one of those struggling in the pandemic ©David Jackmanson

LACKING REFINEMENT

The slump in fuel demand hasn't been kind to Australia's refiners, and there's now a real danger of no local fuel production at all in the future, John Rickards writes

Refining is hardly a sector that has breezed along trouble-free in recent times - three Australian refineries have closed in the past ten years - but the slump in demand caused by Covid-19 risks putting paid to two or more of the remaining four. Local fuel production, which going back a year was one of the concerns regarding Australian VLSFO availability ahead of IMO 2020, could be under serious threat as a result.

Viva Energy, the first producer to offer VLSFO in the country, is going to decide whether or not to shut its Geelong refinery in December. The company said in October that it expected to see an A\$30 million loss for Q3, building on an already poor year, with low demand expected to continue into 2021.

"The company continues to incur unsustainable operating losses in this part of business and is pursuing all available options to improve cash flow and near-term profitability," Viva said in a statement.

If conditions don't improve - or the at-time-of-writing proposed offer from the government to bolster the oil sector to the tune of A\$2.3 billion doesn't do enough to make refining viable, Geelong could close during the first quarter (Q1) of 2021.

Lytton refinery, operated by Ampol, could close too. In Q3 of 2020 it recorded losses of A\$82m, taking the plant to A\$141 million in the red for the year so far. The refinery had been closed for a time during the winter when planned maintenance was brought forward.

Ampol reported in October that the Lytton plant was expected to produce 1.3 billion litres of products in Q4, more than a third of the year's total, which is down sharply from the 5.8 billion litres in 2019. The company is now carrying out a review of the refinery's future, which will "consider all options for the facility's operations and for the connected supply chains and markets it serves". Options on the table include closure, continuation and "other alternative models of operation".

Speaking about its Q3 results, Ampol managing director and CEO Matt Halliday said: "Global economic conditions triggered by Covid-19 have put significant pressure on refining, as evidenced by our performance in the first half and the significant losses announced today."

ExxonMobil Australia - which with BP Australia make up the country's other two remaining refiners - has remained tight-lipped on its own plans, but has been critical of the government's lengthy consultation process for its fuel industry support package, which could take up to six months. However, sources have suggested to local press that proposals could be finalised by December and funding available in January. Nevertheless, the company launched a voluntary redundancy program for staff in September. The Australian Workers' Union (AWU) has been quite clear that ExxonMobil's Altona refinery, as well as BP's at Kwinana, are in danger too.

"These refineries support well-paid, highly-skilled blue-collar jobs in areas that desperately need them," AWU chair Mick Denton said. "Our governments can't afford to shed 5,000 of these jobs in the middle of this crisis. A shutdown of the local fuel refining sector would see a direct contraction of \$6.7 billion - that's 0.36% of GDP."

In the long-term, there are companies operating routes out of Australia with an eye on a less oil-based future. In September, Eastern Pacific Shipping inked a five-ship, five-year charter deal with mining giant BHP for its dual-fuel VLOCs due to be delivered in 2022. The ships will work on BHP's iron ore routes from Australia to China, and will, EPS said, "be the cleanest and the most efficient in the entire dry bulk shipping fleet". BHP was originally thought to be eyeing 14 dual-fuel LNG VLOCs, but seems to have scaled back its ambitions for now.

"As one of the largest dry bulk charterers in the world BHP recognises the role we play in working with our suppliers and customers to drive actionable reductions in GHG emissions across the maritime supply chain," BHP's chief commercial officer Vandita Pant said, describing the deal as marking "a progressive shift" for the industry.

"We expect the introduction of LNG-fuelled vessels will result in more than 30% lower CO₂ emissions on a per voyage basis compared to conventional fuel along the Western Australia to China route."



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Wärtsilä will include Anemoi Marine Technologies Rotor Sails as part of its propulsion offering. ©Anemoi Marine Technologies

ROTOR SAIL DEAL

Wärtsilä to incorporate wind power into its propulsion range

Technology group Wärtsilä is to integrate UK-based Anemoi Marine Technologies' Rotor Sails into its propulsion business. By offering wind power solutions as an integral part of its propulsion offering, Wärtsilä says that will be able to assist owners comply with the IMO's Energy Efficiency Design Index (EEDI).

The two companies have signed a memorandum of understanding and a licence and cooperation agreement covering future sales and servicing of Rotor Sail solutions to the shipping industry.

Wärtsilä says the move will boost its efforts to increase fuel efficiency and reduce emissions. The collaboration will enable the adoption of wind assisted solutions for most marine vessel types, with the immediate focus likely to be on dry and wet bulk vessels. Wärtsilä will promote the solution for both newbuild projects and for retrofitting to existing ships.

Rotor Sails, or Flettner Rotors, are vertical cylinders which, when driven to rotate, harness the renewable power of the wind to propel ships. According to Wärtsilä: "These highly efficient mechanical sails capitalise on the aerodynamic phenomenon known as the Magnus Effect to provide additional thrust to vessels and deliver significant fuel and emission savings."

"Our patented designs overcome operational constraints such as air draft and cargo handling, making the technology suitable for the majority of shipping sectors. As the industry focuses on emission reduction targets and energy saving, we are collaborating with Wärtsilä to strengthen our offering and facilitate the global uptake of our Rotor Sails by offering clients a full end-to-end solution including sales, supply and lifecycle support," says Kim Diederichsen, CEO of Anemoi Marine Technologies

Nippon Paint adds Xship system

Nippon Paint Marine has added the XSHIP Performance tool to its in-house KP Analysis fuel saving system.

KP Analysis has been available for verifying the fuel and power saving of Nippon Paint's low-friction LF-Sea antifouling range since 2006. However, the introduction of the ISO 19030 standard in 2016 has been widely accepted by the industry as a means of verifying the performance of hull coatings, leading Nippon Paint to adopt the ISO 19030-compliant XSHIP methodology

Bill Phua, Nippon Paint Marine Managing Director, Singapore, said: "Our enhanced hull performance measurement software enables the shipowner to have a continuous evaluation of the interaction between a vessel's hull and propeller.

We can provide more precise data on how the hull coating is affecting speed loss, fuel efficiency and emissions.

"Dependent on the coating applied, ship operators can benefit from significant fuel savings, but these annual savings reduce over time due to hull and propeller fouling. Vessel performance monitoring between two drydock intervals can help maximise the coating efficiency and, as a result, lower fuel consumption and emissions."

The XSHIP software generates real-time management reports, weather reports and performance assessments.

Singapore-headquartered shipowner Berge Bulk Maritime is using low-friction A-LF Sea coating for its fleet of bulk carriers.

"A monitoring system compliant with the ISO 19030 standard was a key factor in Berge Bulk Maritime's decision to apply A-LF Sea hull coating as part of its current drydocking programme," said Nippon Paint Marine Director John Drew.



REDUCING METHANE SLIP

New cooling and recirculating system claimed to reduce methane slip by up to 50%

Alfa Laval and global Swiss engine developer WinGD have cooperated on the development of the iCER concept (Intelligent Control by Exhaust Gas Recycling) which is being offered as an option for next-generation WinGD X-DF engines. It is claimed to slash methane slip and significantly boost fuel and energy efficiency.

Alfa Laval's PureCool cascade exhaust gas cooling system, developed in close collaboration with WinGD, is key to the iCER concept.

"With IMO aiming to cut greenhouse gas emissions by at least 50% compared to 2008 levels, LNG has a major role as a bridge fuel in moving towards a carbon-neutral future," says David Jung, Business Development Manager at Alfa Laval. "However, the awareness of methane slip and its influence on global warming is increasing. New regulations are not unthinkable, and any improvement from today's environmental benchmark is important. With or without regulations, WinGD's iCER technology with the Alfa Laval PureCool system will help the shipping industry align more fully with climate goals by minimizing methane slip."

"The iCER option is a stand-alone installation adjacent to the engine," says Jung. "During operation in gas mode,

it improves combustion by cooling and recirculating about 50% of the exhaust gas through a low-pressure path with full turbocharger capacity. This minimizes methane slip, and the PureCool system provides the vital cooling function that makes it possible."

Trials at WinGD's dedicated engine test facility, which were the final step in a two-year testing programme, showed a methane slip reduction of up to 50%.

According to the two companies the iCER solution with PureCool also results in improved combustion. As a result, fuel consumption in gas mode is reduced by 3%.



Alfa Laval PureCool, part of WinGD's iCER technology on WinGD X-DF engines. ©Alfa Laval



New use for old batteries

Shipping group Stena is researching the use of recycled batteries in charging stations at ports.

Stena Recycling subsidiary Batteryloop says it is developing a “new type of energy storage, similar to very large power banks, which will be essential for the quick charging of electric ferries in the future”.

The project is part-financed by the EU and will, among other things, investigate how used batteries from the transport sector can be reused for energy storage in ports.

It will map and evaluate opportunities to reuse lithium-ion batteries from the transport and automotive industry for energy storage in ports - to charge electric ferries, for example.

The collaboration includes several Stena companies - Batteryloop, Stena Recycling, Stena Rederi and Stena Line – as well as the ports of Gothenburg and Kiel, and the accreditation company DNV GL.

The project will be carried out over two years and be part-financed by INEA, the EU’s Innovation and Networks Executive Agency.

“An incredible amount is happening in the world of batteries. New solutions are being designed to meet the charging requirements of the transport sector of the future, especially for shipping where vessels are starting to switch to electric power. Rapidly charging a large ferry, for example, requires a huge amount of energy in a short time and it’s not certain that the electricity grid will be able to deliver it. Local energy stores at ports could offer a great solution to this problem”, says Rasmus Bergström, Managing Director of Batteryloop.

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Dubai's bunker fleet is on the rise ©DMCA

INVESTING FOR A RECOVERY

Fujairah and other parts of the Middle East appear to be trying to buck the Covid-19 economic trend through heavy investments across the energy sector, as John Rickards reports

Bunker demand in Fujairah was showing reasonable signs of recovery at the time of writing, after considerable contraction across the middle of the year as Covid-19 bit into trade levels, oil prices bottomed and production was reduced. There have been issues with availability for all grades. At the time of writing storage was at the lowest it's been for over a year, not helped by the shutting down of the storage facilities of one of the hub's biggest bunker providers - more on which below.

In the middle of that contraction, the UAE port's third refinery began operations, with Ecomar Energy Solutions joining those already operated by Unipac and Vitol in offering local production of VLSFO and other fuel products. In October, Brooge Energy started preconstruction work on the third phase of its oil storage terminals and refinery at the port. The expanded oil storage facility is expected to be operational in late 2022, and will make Brooge Energy the largest oil storage provider in Fujairah.

Brooge Energy CEO, Nicolaas L. Paardenkooper, described the move as "a key next step in our strategy to increase our storage capacity, accelerate revenue growth and further entrench our position as a leading oil storage provider in the Port of Fujairah".

At the same time, Six Construct and Jan De Nul have been awarded the US\$107 million contract to build the new Dibba Bulk Handling Terminal at the port. Construction is slated to take 19 months.

On the UAE's western coast, Abu Dhabi National Oil Company has been very busy this year pushing ahead with plans to upgrade the main oil lines feeding Jebel Dhanna (to the tune of US\$245 million) over the next two and a half years. Both projects should serve to further bolster the UAE's local energy sector.

UAE Minister of Industry and Advanced Technology, and ADNOC Group CEO, Sultan Ahmed Al Jaber said: "We continue to focus on stretching the margin of every barrel of oil we produce to maximize the value of our resources, while also making responsible investments in the current market environment. This investment is another step in our progress to develop Ruwais into a dynamic, global hub for downstream activity, further strengthening ADNOC's role as a key driver of the UAE's long-term industrial growth and economic diversification."

On the direct bunkering side, July saw BP Sinopec Marine Fuels move into physical supply in Fujairah, part of the company's long-held plans for market expansion, while in September, Oilmar Shipping &

Chartering launched a bunker trading arm based in Dubai but offering trading services pretty much everywhere outside Australasia and the Americas.

"Oilmar plans to expand the Dubai office in the start and eventually expand to other parts of the world in coming months," the company said. "Customer Credit Control of the bunker trading team has been assigned to qualified experts of risk management and credit insurance is also in place to cope with bunker industry credit exposure."

One of those taking on a post in bunker credit risk management with the firm was Neeraj Sisodia, until September the lead global bunker credit handler for GP Global - more on which, again, below.

Alongside these moves, the Dubai Maritime City Authority announced an increase in the number of licensed bunker barges operating in its waters to 12 this summer.

"The decision was made in conjunction with the move to resume maritime operations in Dubai anchorage areas," the DMCA said in a statement, "including ship repair and maintenance operations and in full compliance with the controls applied to ensure the highest levels of security and safety of ship crew members and visitors."



DMCA marine anchorage operations director, Mohammad Al Bastaki, said: "Strengthening the bunkering fleets represents a quality focused addition to the efforts aimed at providing guarantees for the return of momentum to the local marine sector, particularly in present scenario, when there is an easing of [Covid-19] restrictions in Dubai and in conjunction with the completion of the National Disinfection Programme.

"We will continue to focus on updating the operational and legal framework governing marine activities to be at pace with the rapidly changing variables, keeping in mind the adoption of best practices that support the growth and sustainability of marine activity, in line with the 'Dubai Maritime Sector Strategy' which is focused on enhancing the attractiveness, competitiveness and inclusiveness of the local marine community."

So, signs for optimism, but the underlying economics in the short term are obviously still rather fragile. One of the region's big players, Glander International Bunkering,

suggested in the presentation of a strong annual financial performance that after the "eventful and dramatic" year so far, the course of the pandemic, together with the development in oil prices and the world economy in general, would determine "the coming year's playing field".

"I would not be surprised if the coming year leads to more consolidation in the industry, with strong companies emerging even stronger," CEO Carsten Ladekjær said. "With our sound financial foundation and strong organisation, we look forward to this with humility, but also optimism. We are prepared to face future challenges and remain ready to seize opportunities."

Scrubber discharge bans

Adding a fresh complication to the local market, Saudi Arabia and Oman have both joined the clutch of jurisdictions banning the discharge of scrubber washwater. Both bans were announced in August and neither offered any particular justification behind them - presumably the same as yet unquantified but also understandable concerns as other regions have offered.

Although the restriction to territorial waters won't likely mean a great deal in shipping economics to scrubber-equipped vessels, having to carry small amounts of maximum 0.50% sulphur fuel to call at the two nations will still be a nuisance.

P&I group the Standard Club warned its members that there was no defined maximum fine for breaching the Omani discharge rule. "The fines will be set on a case to case basis at the discretion of the Ministry of Environment & Climate Affairs and the respective port authority. We have also been advised that if the authorities discover that the ship has not complied with these rules, then the ship may be detained."

So, while the cost of running on low sulphur fuel in Saudi or Omani waters might not be all that high, the cost of being caught breaching washwater rules may well be more serious.



Abu Dhabi, like most of the states along the Gulf, is spending serious money on energy infrastructure ©Guilhem Vellut/CC-BY



GP Global Group's troubles

Away from the run of the mill daily business of making fuel, putting fuel in ships and then dealing with the resultant effluent streams out of them, the big ongoing story over the past three or four months has been the troubles at UAE-based GP Global Group. The company did not reply to an approach from World Bunkering for comment as to the current state of play.

Previously - up until shortly before problems surfaced - the oil trading, storage and bunkering group had been aggressively expanding its operations and supply locations, having ballooned in recent years to cover most of the main bunkering hubs. Then in July, rumours began to circulate that the group was in financial trouble and all was not well beneath the surface.

The company put out a statement saying that it was "undertaking a financial restructuring exercise" and that the stories of financial problems were "blatant lies",

that it was "being targeted by vested interests who do not wish to see us succeed and grow higher and higher", and that other than the effects of Covid-19, it was merely a case of being "unable to get full support from a few financial institutions recently" leaving it with a "tight cash position".

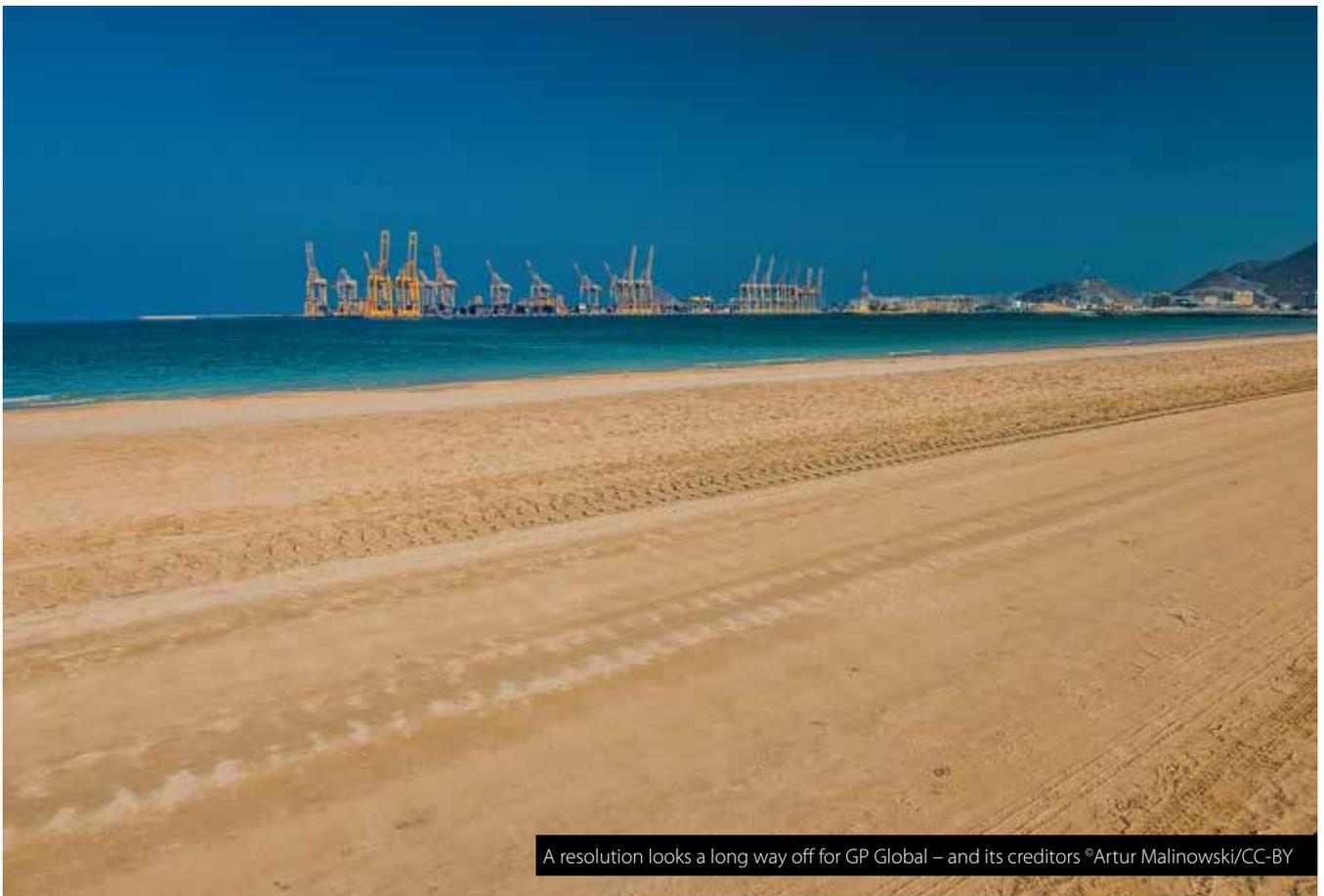
Company representative and head of bunker credit management John Phillips was bullish about the state of its bunker arm, in particular, and that the restructuring was an exercise to improve cash flows, not an emergency measure to shed debt.

That statement was followed, a week later, by a letter to the company's clients by its legal representatives saying that it had uncovered fraud by "a few" of its UAE employees who took advantage of Covid lockdown to "collude with external entities" to defraud the company and its customers by manipulating cargo records, and that criminal complaints had been filed against them. Seemingly a few bad apples, then.

However, September brought with it reports - denied, though not especially strongly given later events, on the basis that the company was looking for the best result for creditors - that the group was looking to sell its storage farms in Fujairah and Hamriyah or other assets to stay afloat.

Unnamed sources told press agency Bloomberg that the company's total outstanding debt was over US\$1 billion, which - while it must come with the caveat that 'sources' aren't always right - would be a staggering amount, and surely hard to claw back from asset sales.

Its "lesser performing" trading desks were closed, and two arrest warrants were issued on consecutive days for one of its bunker tankers in India - the first for the company's defaulting on a loan payment to the National Bank of Fujairah, the second for failure to pay dues to the vessel's Singapore-based manager, Celestial Ship Management.



A resolution looks a long way off for GP Global – and its creditors ©Artur Malinowski/CC-BY

The NBF filing, according to Gujarati High Court records, related to a US\$11 million loan in 2015 secured against the arrested vessel (and two others) which GP Global's bunkering arm, Gulf Petrochem FZC, first defaulted on as of August 1 with US\$2 million still to pay. This was no more than a week after the company was loudly insisting on the strong financial footing of its bunker division, but it had made no move to pay the outstanding by the time the filing was made with the court a month later.

The Celestial filing, likewise from court records, involved a much smaller US\$600k amount for unpaid invoices that the management company had paid on behalf of the owner, even though it wasn't obliged to, as it had been "chased by the vendors" and paid to avoid embarrassment "due to the impeccable reputation" of the company. The company alleged hadn't been paid for its services since April 2019 - just one month after entering into the ship management contract.

However, this filing had the added wrinkle that, according to Reuters, Celestial's registered directors include the wives of GP Global's joint managing directors, the sons of its founders, while Celestial's office was, at the time of filing, the same as GP Global's Asia-Pacific arm in Suntec City. Its registered address on Singapore's register of companies, ACRA, is now however the RB Capital Building.

At the same time, its Singapore operation was hemorrhaging staff. John Phillips, the credit management head who had been so supportive of the bunker arm's chances two months before, two other credit managers and one of its bunker traders all left for other companies. So did numerous other senior staff in other offices across the tail end of summer.

Capping it all, in October, Gulf Petrol Supplies - part of the state-operated Fujairah National Group - announced it had filed a criminal complaint against GP's bunker arm, Gulf Petrochem,

in Sharjah, alleging that the company had faked supply contracts suggesting that GPS owed Gulf Petrochem millions of dollars and then tried to assign those debts to banks and financiers to collect them from GPS, saying the company had defaulted. World Bunkering contacted GPS, but no further update was forthcoming.

The group is now reported to be trying to draft agreements with creditors to give it up to six months to sell assets before making claims, in what looks very much like the kind of financial debt restructuring the company insisted it wasn't getting into back in July. But with staff leaving, lawsuits ongoing over fraud and debts owed, and the backdrop of post-pandemic economics still to deal with, it would seem only fair to question whether what had been one of the world's biggest names in bunkering will emerge in any recognisable shape.



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Rotterdam's bunker sales have remained relatively stable ©Danny Cornelissen

CHANGING CLIMATE

Market conditions seem to be relatively stable despite a second Covid-19 wave, writes John Rickards, and so northern Europe's ports, operators and legislators are all gearing up to tackle the thornier long-term issue of decarbonisation

If anywhere is going to show how the region's bunker market is going to shape up come 2021, it's Rotterdam. Less vulnerable than some of the smaller bunkering ports to dips and shifts in trading patterns caused by Covid-19 aftershocks, suppliers across ARA should be well-placed to see if the current storm is weatherable.

Total sales in Q2 were reasonably stable, with Rotterdam's total bunker volumes down just 1.4% compared to Q2 of 2019, although that's in the context of Q1 showing signs of increased sales from 2019 - and 2019 being a relatively weak year.

Fuel oil volumes in Q2 declined 6.4% on Q1 overall to 1.78 million m³, though a 10% increase in demand for maximum 0.50% sulphur very low sulphur fuel oil (VLSFO) made up for an 11% drop in high sulphur fuel oil (HSFO) sales, which stood at 545,231 m³ versus 1.09 million m³ VLSFO. MGO was down 10.5% on Q1 at 365,950 m³, while the much smaller MDO segment was up 20.5% at 88,354 m³. LNG sales have continued to grow, reaching 55,637 m³ in Q2.

Q3 showed growth in fuel oil sales to 1.84 million m³ in total with the share of HSFO rising to 609,583 m³ while VLSFO dropped to 1.06 million m³. The remaining share of fuel oil sales, at 172,464 m³, was made up of ULSFO.

Distillate sales in Q3 showed another fall in MGO to 298,863 m³ while MDO sales jumped sharply from Q2 to 133,910 m³, and LNG sales fell from Q2 to 48,623 m³.

The port's improving bunker sales in Q3 may be related to Q3 throughput figures, which if not a perfect metric by which to judge fuel sales, offer an indication of trade activity in the face of fresh Covid restrictions across northern Europe.

In Q3, the port handled 103.4 million tonnes of freight, taking the year's tally so far to 322.3 million tonnes. This is 8.8% lower than the nine-month volume recorded last year. Crude oil, iron ore, coal and mineral oil products all declined, though box traffic dropped only "very modestly" (2.1% in tonnes, 4.7% in TEU) and agribulk was up. Some of these changes reflect, though, an ongoing decline in the use of coal for power generation as the Dutch grid switches more to solar, wind and gas. The drop in oil volumes was mainly caused by the reduced uptake of crude oil by refineries that transport via Rotterdam due to exceptionally low refining margins caused by equally low prices for petrol and kerosene due to Covid-driven very poor demand.

"In comparison with the second quarter of 2020, many segments showed a marked improvement in their throughput volumes," the port said in a statement. "The agribulk, iron ore & scrap, biomass and roll on/roll off categories in particular could report a strong recovery at the end of the third quarter - even to pre-Covid volumes.

In addition, there was a clear increase in the number of containers put through the port in Q3 compared to the preceding quarter."

Ro-ro traffic's uptick following a period of low travel and demand for goods to and from the UK is, the port said, explained in part by the stocking up of supplies in Q3 ahead of the end of the Brexit transition period (which, at the time of writing, seems likely to be replaced largely with a mess, so it doesn't look as though that bounce back is going to be sustained).

Port authority CEO Allard Castelein said: "At present, it is still too early to determine whether we have left the worst behind us in economic terms. Nevertheless, I am heartened by the revival of international trade flows and the resilience of our economy - in which the rate of recovery naturally depends to an extent on further developments in the Covid-19 pandemic. Together, the Port of Rotterdam Authority, the Dutch government and companies in our port will be able to give our economy a kick-start by stepping up their joint pace of investment. This will allow us to retain jobs, create new prosperity and help build a more sustainable Netherlands."

Green growth

Rotterdam is aiming to accelerate investments in a number of projects intended to increase its "sustainable earning power", collectively known as the Starter Motor project.



Some of these measures involve simple port facilities - such as the extension of Vlaardingse Terminal, which was put on hold at the onset of the pandemic but has now been given the green light to go to tender, with construction hopefully starting around the new year - but others are focused on energy and emissions.

The Porthos carbon capture and storage project, taking 2.5 million tonnes of CO₂ per year from the plants of Air Liquide, Air Products, ExxonMobil and Shell in the port and injecting them into the seabed just offshore via pipeline, was earmarked in October for €102 million in funding from the European Commission, subject to ratification in the European Parliament.

The funding would cover around a fifth of the cost of Porthos; the project is eligible for this grant because it's transnational, involving a partnership between Rotterdam, Antwerp and North Sea Port (Vlissingen, Terneuzen and Ghent). If funding and permits are secured, construction will take place over 2022 and 2023 and the system will be in operation, offering commercial customers CCS to reduce their emissions under the EU Emissions Trading Scheme (ETS).

EU ETS?

That EU ETS seemed - at the time of writing - as though it will apply much more lightly to shipping than it might have done. A leaked draft of the regulations seen by various press outlets in September suggested that only intra-EU voyages would be included in the emissions scheme rather than any voyage originating in European waters. However, the same leak also suggested that the Commission was still looking at ways of bringing international shipping and aviation into the ETS in future.

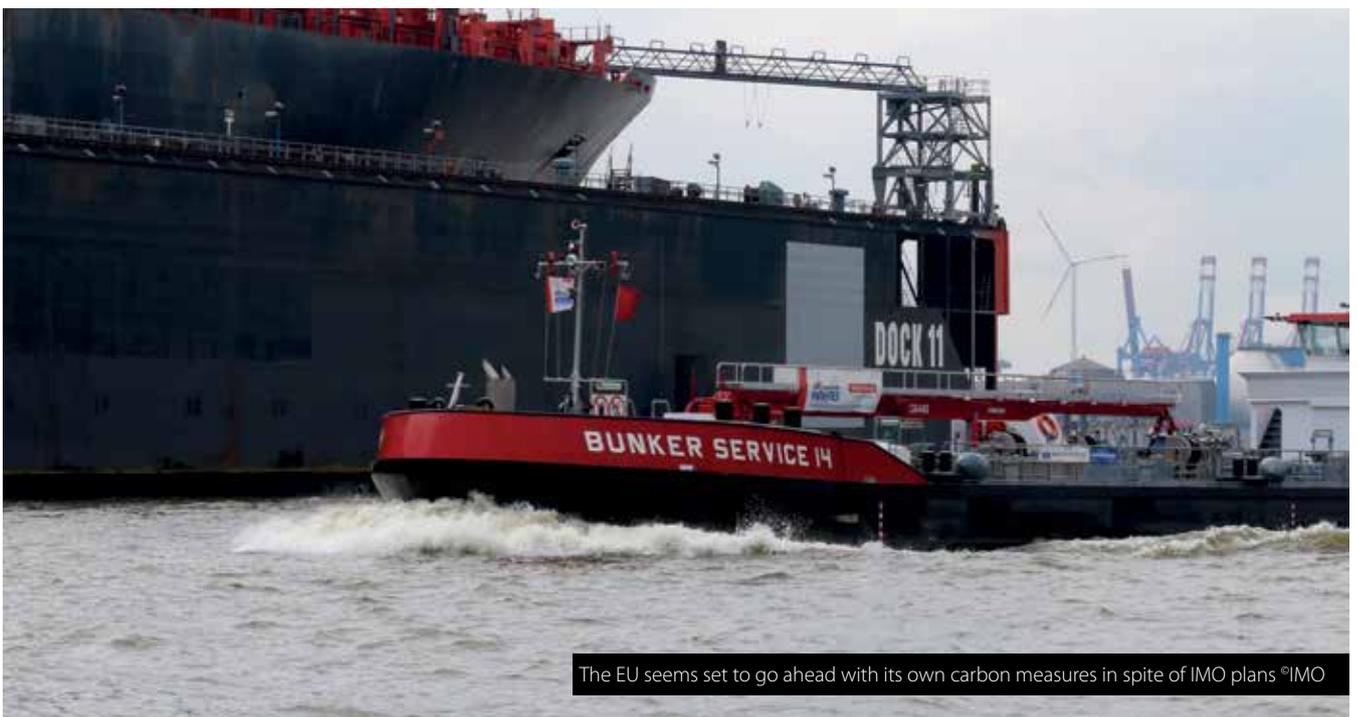
The actual proposal won't come until June 2021, but could also include a sharper drop in the rate at which permit caps drop from the planned 2.2% per year.

The European Community Shipowners' Association was still scathing of the potential inclusion of shipping in the scheme at all.

"The proposal aims to pre-empt the conclusions of the European Commission's impact assessment study and undermines the ongoing negotiations at the UN International Maritime Organization," ECSA said. "The move risks introducing sub-optimal environmental regulations at the EU level, contributing to a regulatory patchwork and an increased fragmentation at the international level!"

It continued: "A recent study about the implications of the EU ETS on international shipping found that such a measure would undermine the international negotiations to implement the IMO's Initial Strategy on Reduction of GHG Emissions from Ships and would increase political tension with third countries, potentially leading to trade disputes. Another essential finding relates to the administrative burden and associated costs especially for small and medium-sized enterprises (SMEs), which accounts for the majority of shipping companies. The use of the revenues is another critical point: depending on the final set-up, the revenues from the EU ETS would most likely not support efficiency projects and, in that case, it would not facilitate the energy transition of the sector."

Martin Dorsman, ECSA Secretary General, said: "In our opinion, imposing any regulatory measures without measuring the impact on shipping is not prudent. Regional measures have been criticised for undermining global negotiations at UN IMO level and may slow down or even reverse the progress that has already been made."



The EU seems set to go ahead with its own carbon measures in spite of IMO plans "IMO

Be that as it may, and as much as the industry is moving to decarbonise in its own time (at least at the high end) and as much as any EU rules need to account for the significant difference in emissions between newbuilds and existing ships, it would take a brave person to bet on ECSA's words falling on anything but deaf ears.

The DFDS way

One company running services across much of northern Europe embarking on its own decarbonisation plan is ro-ro operator DFDS, which launched an in-depth climate plan in September with a number of ambitious commitments on GHG emissions.

DFDS wants to become climate-neutral by 2050, with a first stage 25-35% reduction in carbon emissions by 2030 (corresponding to around a 45% reduction from 2008 levels). In 2019, the company said it emitted 2 million tonnes of CO₂, 90% of it from its ships.

The first stage tonnage adaptations look to be aimed at fuel efficiency, a mix of minor technical upgrades like the use of the correct coatings on vessel hulls and decision support systems and more major upgrades, like modifications to bulbs and propellers.

"We are constantly scanning the market to pinpoint new ways of optimising what we have," said Technical Organisation VP at DFDS, Thomas Mørk. "We continuously assess where we should set in based on where we can harvest the greatest effect. The bottom line is that not only are we saving the environment from thousands of tons of CO₂ every year, we are also able to work with fuel consumption in a smarter way. In time, this will help us run our vessels cheaper and greener and that just makes good business sense."

DFDS is also looking for AI to monitor fuel usage onboard. At present, the company said, it has monthly fuel reports but lack understanding of what exactly lies behind the numbers. "We know what we use, but not how these figures are accumulated."

"This new smart AI system located on the vessels' bridge will give the crews qualified directions on what is the right speed and also real-time advice on which route will help the fuel on board last longer," said Technical Organisation Head of Projects & Implementation at DFDS, Jacob Pedersen. "After a crossing, there will be a report on what the crew has done well in terms of consuming fuel, and also where they can improve."

The second, longer-term stage will come down to switching to sustainable fuels on newbuild vessels, with DFDS earmarking ammonia, hydrogen (for which Rotterdam is already planning to build electrolysis plants to make 'green' hydrogen), or methanol (for which the company has already undertaken initial onboard trials aimed at replacing 10-15% of HFO in combustion).

"We know which fuels have the biggest potential to work in shipping: ammonia, hydrogen, methanol," said the company's head of Innovation and Partnerships, Jakob Steffensen. "So far so good. And we know that we have until 2026/2027 to make a qualified choice of which fuels and vessels to go for. That's our deadline: 2050 seems like an eternity away, but in an industry where a ship's lifetime is about 25 years, the ones we purchase just five years from now will have a decisive effect on our ability to achieve our climate goals."

Steffensen continued: "Some industry actors seem to be jumping to conclusions and placing their bets on one kind of fuel. It's human nature to want to stick with what we understand.

And if we see that a ship can run on methanol, some people may say 'done! That's what we're choosing'. But the choice of fuel is not a choice we are ready to make just yet. There are too many unknowns. What if the aviation industry goes for methanol, too? How can we know that there's enough to go around for everyone and that the price of it doesn't skyrocket? We don't want to end up in a situation where the shortage of some of the elements we need for our fuel trigger a 'who is willing to pay most' competition between aviation and shipping, for instance. We need to keep investigating and assessing results on an ongoing basis before we make decisions that cannot be unmade.

"If anyone in the industry can achieve this, I believe it is us. It's engrained in our culture that we listen before we make decisions, and that's vital at this stage. We also share openly and because of that, our partners share, too."

The final 10% of its emissions, DFDS says, will be eliminated by "getting its house in order" - switching to electric road vehicles and reducing facility energy consumption.

DFDS CEO Torben Carlsen said: "I am very happy that we now have this ambitious and comprehensive climate action plan in place. It clearly states how we can and will take responsibility for the environment. It will also help us stay relevant as a service provider in 10, 15, 50 years from now. With the support of every one of our employees, we will be able to turn this plan into reality and at the same time continue our existing efforts to support the environment and local communities."



DFDS has been trialling sustainable fuels as part of its decarbonisation efforts ©DFDS



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Being an agile fleet-footed company Bunker One can speedily seize new opportunities and process major decisions. Last year alone the company has expanded with operations in West Africa and offshore Brazil and is now represented in 22 strategic locations worldwide employing 140 experts.

Our Nordic footprint

In Scandinavia, Bunker One has a strong market position with well-positioned locations supporting our customers on their entire journey into the Baltic. In the middle of this maritime sweet spot, you find Bunker One Sweden with its sizeable storage facilities, four modern barges and 11 experienced experts servicing customers from the entire region with their unique local insights and in-depth knowledge of all fuel qualities and grades. Our logistical setup with tanks in Gothenburg, Skagen, and South of Sweden enables us to seamlessly supply bunkers to customers and adapt to future demands of products in the area by increasing speed,



flexibility, and agility - despite sometimes challenging weather conditions.

We are deeply engaged in our industry – and in the future

Our people are specialists with many years of experience in the maritime industry. They know the nuts and bolts of our processes, the fuels, and our services - and they are very committed to our customers, our partners, and the industry. Therefore, we are engaged in a number of industry networks; IBIA, and the Danish Shipowners' Association.

Through our networks and as a company, we will continue to put dedicated effort into improving standards and future legislation, and to encourage knowledge sharing between counterparts across the industry.

Our future outlook

The challenges caused by COVID-19 and the transition to low-sulphur fuels are some of the most recent instances that have impacted the bunkering and shipping industries on the shorter as well as the longer term.

To tackle these challenges, and to continue being a contributor to an industry that is constantly evolving, it is our conviction that future customer-supplier relationship will be centred around mutual value creation, trust and openness. This means that we will increase our focus on knowledge sharing and strong partnerships.

"Although 2020 was an essential year for Bunker One and also the entire shipping industry in gaining momentum on our ambition to lower global emissions, it was merely the beginning. We have a long and challenging journey ahead of us, and it's absolutely pivotal that we continue our work with raising the bar and setting new standards for our industry to meet future demands."

- Carl Johan von Sydow, Managing Director, Bunker One, Sweden



Carl Johan von Sydow

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LINES HIT WITH CALIFORNIA FINES

Penalties imposed for not cutting auxiliary engine use

The California Air Resources Board (CARB) has imposed substantial penalties on ship operators Del Monte Fresh Produce and Mitsui OSK Lines for breaking the US state's Sea-Going Vessel at Berth Regulation.

Del Monte has been hit with a US\$1,990,650 penalty, the largest to date related to clean air violations.

CARB's at-Berth Regulation is intended to reduce diesel emissions from ocean-going vessels. It requires anyone who owns, operates, charters, rents or leases any US or foreign-flagged container, passenger or refrigerated-cargo vessel that visits a California port to meet the operational time limits and reduce their power generation fleet-wide, as well as submit statements of compliance. Power reduction requirements have been phased in over time and can be accomplished this by turning off their diesel engines and connecting to grid-based shore power, or by using alternative technologies to achieve equivalent emission reductions while in port.

CARB says that through routine audits, it discovered that Del Monte's chartered fleet calling at the Port of Hueneme for 2015-2016 did not meet the operational time limits for at least 50% of its visits and did not reduce its auxiliary engine power generation by 50%. In addition, their 2017-2019 chartered fleet visiting the same port did not meet the operational time limits for at least 70% of its visits and did not reduce its auxiliary engine power generation by 70%.

To resolve these violations, Del Monte has agreed to pay a settlement of \$1,990,650. Half of the funds will be paid to the Air Pollution Control Fund, and the company agreed to comply with all regulatory requirements going forward. The remaining half will be paid to the Marine Vessel Speed Reduction Incentive Program,

a supplemental environmental project located in the Santa Barbara Channel Region and the Bay Area. The project provides financial and other incentives for ocean-going vessels to reduce their speed in specified areas along the coast during peak ozone and migratory whale seasons. These reductions decrease air pollution and the mortality rate of endangered whales.

CARB recently adopted a new At-Berth Regulation to seek additional emissions reductions by including smaller fleets and additional vessel types such as roll-on/roll-off vehicle carriers and tankers. CARB views the new rule as building on "progress achieved by the original regulation, which helped to achieve an 80% reduction in harmful emissions from more than 13,000 vessel visits as of 2020". The new regulation will help achieve more public health protection for Californians living in communities near the ports.

Meanwhile Mitsui OSK has paid \$253,300 in penalties for violations that were discovered during routine audits of the company's 2017 and 2018 vessel fleet visits to the Port of Oakland. CARB's investigation revealed that, from 2017 to 2018, the line's vessels calling at Oakland did not meet the three-hour diesel engine operational time limits and did not reduce auxiliary engine power generation by 70% as was required.

Electronic record books allowed

As of 1 October, 2020 IMO amendments to MARPOL Annexes I, II, IV and V (and the NOx Technical Code, 2008) now permit the use of electronic record books instead of hard copy records.

The records that can be kept electronically are:

- Oil Record Book, parts I and II (MARPOL Annex I)
- Cargo Record Book (MARPOL Annex II)
- Garbage Record Book, parts I and II (MARPOL Annex V)
- Ozone-depleting Substances Record Book (MARPOL Annex VI)
- Recording of the tier and on/off status of marine diesel engines (MARPOL Annex VI)
- Record of Fuel Oil Changeover (MARPOL Annex VI)
- Record Book of Engine Parameters (NOx Technical Code, 2008)
- Approval of New and Existing Electronic Record Books

Electronic record book installations must be approved by or on behalf of flag state and a ship-specific declaration issued, confirming the installation meets the requirements of the IMO guidelines, and kept on board.





Innospec Fuel Specialties research and testing department, Ellesmere Port, UK. ©Innospec

ADDING STABILITY

The various challenges faced by ship operators as they switched to VLSFO have spurred additives manufacturers to develop specific products to combat fuel management issues and excessive engine wear

World Bunkering asked Innospec Fuel Specialties what products the major additives manufacturer developed in anticipation of the 1 January 2020 implementation of the IMO 2020 0.50% sulphur limit.

The company's Marketing Director, Christian Uerkwitz, replied: "Very early on we developed a number of products to tackle the 'new' issues. Based on our long-term experience with all kinds of fuels we were able to develop products that will give benefits in a number of applications.

"For example, our range of cold flow improvers (CFI) that was originally developed for MGO can now be applied to VLSFO to solve the wax formation issues that are present in the market. With more fuels available in the market we are also expanding our CFI product range to improve performance in as many fuels as we can.

"Our focus, however, was the stabilisation of the new low sulphur fuels and the anticipated stability and compatibility issues."

Innospec's Our two main products for tackling these problems are: Octamar™ HF-10 Plus and Octamar™ Ultra HF. The company says the first one stabilises fuel blends and reduces sludge formation. – it "It is the first/only product to prevent fuel ageing due to high demand of distillate,"

said Uerkwitz. The second product ; Octamar™ Ultra HF improves fuel blend stability and combustion while reducing soot formation and enhancing fuel economy, according to the company.

On the principal challenges identified, Uerkwitz commented: "Stability and compatibility were the main concerns, this was due to the varying compositions of VLSFO and well publicised regional variations. We are seeing more and more cases of instability due to ageing of the high distillate portion of the fuel. There is a definite need to heat VLSFO due to its high wax contents and this accelerates the distillate ageing process. It is kind of a Catch 22, you need to heat the fuel to keep the waxes in solution, but cannot heat it too much as otherwise the distillate portion of the fuel will show ageing issues and form gum and/or sediments. This has become apparent and is causing issues onboard, with the likes of VPS and FOBAS introducing tests to detect the wax appearance temperature (WAT)."

So, what has happened since 1 January, 2020? Has there been strong take-up of additives?

According to Uerkwitz: "Generally, all oil companies have been using fuel additives in the automotive industry, power generation plants, refineries, aviation industry, etc. for decades.

These industries clearly understand and appreciate the benefit of fuel additives and in these markets, it is also common practice to run standardised tests to prove their performance," according to Uerkwitz.

"The shipping industry has been the only fuel market not considering additives as a key component to improve fuel and thereby engine performance so far. A large number of people in the marine industry are still not aware of the advantages when using fuel additives and - equally important - struggle to measure their performance. Hence, the rather reluctant use of fuel treatment chemicals in the past. Now, in the run-up to 2020, this situation has changed. We have seen quite an up-take from shipping companies that have adopted the approach of 'once bitten, twice shy'. There have also been many companies that have taken a proactive approach to risk mitigation, routinely dosing additives into every bunker stem," he observed.

Have the new additives performed as expected? Uerkwitz's answer was unequivocal: "In short: Yes, absolutely! Our fuel experts have carried out extensive testing with a large number of different fuels sourced globally sourced and various combinations of them. Therefore, we know our new additives for VLSFO do offer operators greater flexibility on-board. That is to say they can adapt to every fuel type that comes on-board. For example, if the ship loads a fuel that has a high WAT, ship's staff can heat it confidently,



knowing that the fuel will not be as prone to thermal ageing. If they have a high-density, high-viscosity fuel, they can trust that their systems can handle it, without asphaltenic dropout.”

What other developments is Innospec working on? Will wider use of biofuels pose challenges and could the use of additives be appropriate?

Uerkwitz emphasised: “Octamar HF-10 Plus and Octamar Ultra HF are future-oriented additives. They are ready to perform in various marine fuels far beyond 2020. Already at the development stage, we knew the challenges faced by 2030 and that biofuels would play an important part in meeting the targets. Innospec are no strangers to biofuels as we are heavily involved in supporting refineries to meet automotive specifications where biofuels have been present in varying degrees for years. We know the challenges and how best to deal with them. That is why our Octamar™ HF products are Bio-ready.

“We are under no illusion that biofuels are the only route to 2030 targets, and that there is a tapestry of future fuels under development as we speak. Innospec are involved at all levels in the industry, from ISO/CIMAC all the way to the crew on-board. So, we are aware what fuel alternatives will be coming around the corner and we are constantly looking for smart ways to utilise our technological capabilities to keep our customer’s fleets moving.”

According to another major player in additives scene, Aderco, fuel stability remains the most important parameter for ship owners, managers and operators when selecting their fuel. Since the start of 2020 and the IMO’s introduction of the low 0.50% sulphur fuel cap, there have been concerns over this issue, particularly when it can result in severe financial implications resulting from damage to maritime marine diesel engines. Aderco, which describes its self as “one of the world’s most innovative fuel treatment companies”, told World Bunkering that it had “been working with the shipping industry for nearly 40 years and today fuel treatment is a proven and dependable solution to these problems”.

A spokesperson explained: “As we all know, VLSFO can generate sludge and contaminants that affect maritime engines in a variety of ways: damage to mechanical parts, fuel lines, filters clogging, and corrosion are common problems. In these cases, fuel stability is defined as - the ability of a fuel to retain asphaltenes in solution and a fuel oil with a high Stability Reserve can quickly “break down” and asphaltene (heavy polycyclic aromatics compounds) will form sludge or ‘sediments’ which results in an unwelcome build-up of sediments that are detrimental to the ship’s operations. The main concern is that some of today’s new low sulphur fuel oils remain a risk.

“Those low sulphur fuels with high sediment will result in excessive sludge in tanks which can lead to engine fuel starvation due to blocked and inefficient filters. Ships affected by these contaminants can often limp back to port although the strain on the crew and the mechanical systems can be disastrous. Without the use of a fuel treatment such as Aderco 2055G, the fuel can generate problems with plungers sticking, injection valves damaged and needing to be replaced, broken rings, cracked pistons and even connecting rods bent. These all result from contaminants and sludge and yet the problems associated with clogging from poor fuel can be simply addressed and resolved using a fuel treatment.”

Idris Talib – Technical Surveyor at Aderco, based in Singapore, has been involved in recent cases that have required the use of fuel treatment. He explained that, when Aderco tested the supplied fuel from some of the bunkers supplied in Houston, Texas, the fuel classified by the independent laboratory was “3” on the ASTM D4740 scale, indicating the fuel as being unstable. It also showed that naphthalene, an aromatic hydrocarbon, was also detected in the fuel. Presence of naphthalene could potentially destabilise the paraffinic fraction of this fuel blend, according to Aderco. To resolve this, Aderco’s “Bad Fuel Procedure” was immediately implemented resulting in the vessel consuming the fuel without any abnormal sludge precipitation or damage to machinery, which meant no off hire,

de-bunkering and serious operational and financial damage for the ship owner.

Talib said: “Yet this is not a new problem and even before the IMO’s global 2020 sulphur cap came into effect there had been cautionary tales and in December 2019 test results on new low-sulphur marine blends from Singapore were found to contain sediment that could potentially damage the engines of vessels. This could have resulted in ships adrift due to engine failure. In fact, in 2018 there were reports of problems with fuel supplied in the US Gulf region, particularly in the Houston area and according to some industry experts more than 200 vessels were affected at that time by quality related issues with bunkered fuel. This why Aderco produced earlier this year its guide to resolving the five key fuel issues - VLSFO Fuel Guide: How Aderco 2055G improves the five key fuel oil issues.”

In 2019 one more manufacturer, Wilhelmsen, produced a White Paper that focused a lot on the need to prevent cylinder wear. Has World Bunkering asked the company’s Product Marketing Manager, Oil Solutions, Jonas Östlund, if that had turned out to have been the main issue, or even a significant one?

Östlund replied: “A regulation change will always bring challenges. In this case the change in sulphur content has an impact on the lubricating oil and the base number used. Before we changed over to VLSFO most residual fuel users, if we generalise, used a base number of 70+. Once the IMO 2020 regulations came into force and residual users changed to VLSFO or MGO with a maximum sulphur content of 0.5%, issues with wear were seen more often. The main reason for the increase in wear was the use of a too high base number, and as far as I have seen the recommendation today is to use a 40 BN lube oil with VLSFO. This adjustment in base number has now helped reduce the number of wear issues. But it shows the importance of continuously monitoring the performance of the engine to be able to see issues and take corrective actions before major damages can occur.”



To what extent had other issues - stability, compatibility, sludging, waxing and poor cold flow properties - manifested themselves and what solutions were there?

"We see all of the above issues in the market today," Östlund noted. "Stability seems to have become a more serious problem with VLSFOs in conjunction with the wax and cold flow properties. With the blending done in the manufacture of VLSFO we tend to see a poorer intrinsic stability. This manifests itself in some cases as large amounts of sludge after a short time of storage. We have seen several of these examples where the fuel is within specification when bunkered, but a few weeks later the Total Sediment Potential (TSP) is out of specification. In two recent examples the TSP was analysed at 0,28% and 0,17% after just a few weeks of storage. These cases will not show up in the statistics from the fuel testing companies so I am not sure how common the problem is."

He continued: "We have also seen a drop in viscosity since the introduction of VLSFOs and in on average a VLSFO contains three times as much saturates compared to the high sulphur fuels and have a higher pour point that can lead to operational problems."

Since it is a residual fuel quality it is heated in the tanks, but recently we have seen discussions around Wax Appearance and Disappearance Temperatures of VLSFOs and the need to heat to high temperatures to avoid wax sedimentation. This also has an adverse effect on the stability of the VLSFO as an increase in storage temperature will accelerate the ageing and storage stability of the fuel.

"Wilhelmsen has a full set of solutions for all the above concerns through our Test & Treat program. We have test kits to monitor engine wear during operation, so potential issues can be identified and corrected. We have a full range of treatment chemicals to manage the stability and waxes to avoid excessive sludging from asphaltenes, as well as optimize the heating need for the VLSFO to avoid wax sedimentation and accelerated ageing."

World Bunkering asked what challenges did greater use of biofuel pose and how could additives help?

Östlund said: "The increase of renewable biofuels in our hydrocarbon fuel pool will help to reduce the environmental impact. Adding biofuel poses challenges, promoting microbial growth in the fuel."

For microbes to grow they need an environment and available food. The biofuel is hygroscopic and retains up to 5000 ppm of water, while a diesel fuel in general holds up to about 300 ppm of water. This means that the environment for growth is better for microbes in a fuel containing biofuel. Compared to the diesel the biofuel is also better food for the microbes and they digest them more readily, this means that biofuel provides both a better environment and food for microbes, increasing the risk for microbial contamination."

He added: "Through our Test & Treat program Wilhelmsen has the products to monitor the fuel for microbial contamination through our bacteria test kit. This is an ASTM test that provides conclusive results after 15 minutes and can easily be done before bunkering to make sure any new fuel is not contaminated. Fuel tanks should also be checked on regular intervals and if contamination is identified Wilhelmsen has the products to treat any contaminated fuel and remove microbial contamination."



Ferrous meter wear test. ©Unitor

GOING FOR ZERO

The race to decarbonise shipping is well and truly on and there are several candidates to become the bunker fuels of the future

A proposal by the main shipping industry bodies put forward to the IMO for a global \$5 billion research and development (R&D) fund “to de-risk future investment” was discussed at MEPC 75 with no conclusion, other than that several aspects needed clarification. A recent report from one of those bodies, the International Chamber of Shipping (ICS), “warns that a failure by governments to support the industry’s initiative to accelerate R&D risks trillions of dollars of investment being misallocated, making it impossible for the sector to decarbonise”.

This article won't explore the merits of that case, but a huge amount of R&D is already either underway or planned, and in many cases alternative fuels are already in limited commercial operation.

In fact, there is so much going on that hybrid bunker broker LQM has launched an alternative bunker fuels database. According to the broker, the LQM Eco-Alternative Fuel (LEAF) database allows users to search 3,000 data points of global bunker supply options to discover which alternative fuels are available and where in the run up towards IMO 2030.

LQM says that the LEAF database currently covers LNG, biofuels and biogas in all ports globally while methanol and hydrogen options will be added before the end of 2020.

The ICS report, *Catalysing the Fourth Propulsion Revolution*, looks at different options to help decarbonise shipping and achieve IMO's greenhouse gas (GHG) reduction targets. These include the use of ammonia, hydrogen, and batteries to power the global fleet.

However, the report finds that currently, zero carbon fuels are not available at the size and scale needed to drive decarbonisation. While there are several promising potential zero-carbon fuels and technologies, the emissions reductions called for by the international community and industry require a huge amount of research and development before they can become viable.

This represents a ‘financial iceberg’ for the industry, as pressure to regulate emissions is currently moving faster than supply chains’ ability to keep pace. Without innovation and a massive scaling-up of research and development, there is a significant risk of stranded assets that will impact nation states, the finance community and the shipping industry.

The report examined three alternative fuels in more detail and found:

“Green’ ammonia - one of the most promising low-emission fuels, with the IEA predicting that its use for shipping will reach 130 million tonnes by 2070, twice as much as was used worldwide for fertiliser production in 2019. However, it is less energy dense than oil, meaning ships will consume up to five times as much fuel by volume. Ammonia production would have to rise by 440 million tonnes – more than treble current production – requiring 750 gigawatts of renewable energy. This means that shipping alone would consume 60% of the world’s current renewable energy production of 2,537 gigawatts.

“Hydrogen - emits no carbon but its current commercial production emits large amount of the GHG, negating its green credentials. However, research is underway to prevent this. Similar to ammonia, fuel density is poor, and a new bunkering system would also be required. Hydrogen use could reach 12 million tonnes in 2070, equivalent to 16% of 2019 global maritime bunker demand and 16% of today’s global hydrogen use.

“Fuel Cells and Batteries - the battery challenge is just as great: a typical container vessel would require the power of 10,000 Tesla S85 batteries every single day meaning that it would require 70,000 batteries in order to sail for a week. Wind power could complement electric vessels, although the current view is that they will only be viable for short-distance trips, but this could change with increased R&D.”

ICS makes the case that to upscale these and other infant technologies into adoptable solutions, large levels of investment in R&D is required.

Operational improvements alone cannot achieve the 90% efficiency targets needed to reach the IMO 2050 goal of halving emissions compared to 2008. Instead, commercially viable zero-carbon technologies must be available by 2030. It argues: “Trillions of dollars of investment will rely on the success of such initiatives to identify the right zero-carbon technologies of tomorrow.”

ICS Secretary General, Guy Platten said: “A quantum leap in decarbonised technology similar to the switch from sail to steam over a century ago is required if shipping’s current CO₂ reduction targets are to be achieved. However, we do not have the same luxury of time to transform.”

“This report sheds some light on potential solutions that will have to be adopted if we are to steer the shipping industry away from fossil fuels. But the reality is that companies need a centralised fund that can catalyse an intense injection of R&D investment to turbocharge projects. Without it we are not going to achieve zero-emission shipping.”

Neither LNG nor methanol are considered in the ICS report because they are considered interim fuels although their proponents would see them as more than just ‘bridging’ fuels and as having the potential to be zero carbon if they are produced synthetically.

Then there is tantalising possibility that the new alternative wonder fuel could be.....heavy fuel oil! A couple of years ago, few would have taken that possibility seriously and probably most in the industry still wouldn't. However, with an example reported in our Environmental News section, serious money and considerable R&D is going into carbon capture technology that would allow continued use of hydrocarbons such as HFO and LNG.



One major technology group committing to researching the use of future carbon-neutral fuels for viable use in marine engines, and active in investigating alternative means for eliminating emissions including the use of fuel cells, is Wärtsilä.

It has teamed up with major shipping operator Odfjell, specialist fuel cell technology company Prototech and offshore oil & gas company Lundin. Interestingly the project has up to now been part-funded by Gassnova, the Norwegian state enterprise for carbon capture and storage as well as by the participants.

Wärtsilä says it has "led the way in developing hybrid propulsion solutions utilising both conventional engines and energy storage for ferries and harbour vessels". This allows emissions-free sailing when close to population centres. However, for long-distance ocean-going vessels, current battery technology does not provide sufficient energy storage for the entire voyage. The Norwegian project is testing the use of fuel cell technology as a means for overcoming this limitation.

According to Wärtsilä, preliminary results from the testing indicate that CO₂ reductions of as much as 40 to 45% are possible when using LNG as fuel, and emissions can potentially be reduced even further with other fuels, such as ammonia.

"Greater efficiency and increased sustainability are at the core of Wärtsilä's Smart Marine Ecosystem vision. We see the combustion engine remaining as the stalwart of shipping, because it has the flexibility to operate on future renewable fuels as and when they become compliant, market-ready and available. However, we are keen to support all efforts and innovations aimed at reducing the carbon footprint of shipping, and we see this fuel cell project as being an important contribution to this effort," said Ingve Sørffonn, Technology Manager at Wärtsilä Marine Power.

The project's fuel cell technology is first being tested with a 1.2 MW prototype at the Sustainable Energy Catapult Centre in Stord, Norway. A prototype is to be installed onboard an Odfjell chemical tanker for sea trials.

Meanwhile Japan's "K" Line has joined the Japan Hydrogen Association, which has been set up by private sector companies to promote global cooperation in hydrogen-promoting activities as well as the establishment of a hydrogen supply-chain.

The major shipping group explained its move saying: "In pursuit of the principle in our long-term guideline concerning environment, "K" Line Environmental Vision 2050 – Blue Seas for the Future, under which we have promised not only to reduce the emission of greenhouse gas (GHG) from our own fleet but also to encourage decarbonization of society, we are diligently working toward our goal to become a leading player to supply and transport new energy. Hydrogen is expected to play a central role to solve global warming. We have decided to participate in the association because its initiative – implementation of hydrogen in the society and encouragement to develop hydrogen industry through collaboration with various stakeholders – is fully aligned with our principle to drive decarbonisation of ourselves and the society."



Following testing at the Sustainable Energy Catapult Centre technology will be tested on one of Odfjell's chemical tankers. ©Odfjell

The Japan Hydrogen Association intends to propose and coordinate projects, establish and manage an R&D fund, formulate policy proposals, engage in international activities and gather and disseminate information within Japan and internationally.

In another alternative fuel development, the Methanol Institute (MI) has welcomed November's adoption by the IMO's Maritime Safety Committee of interim guidelines on the use of methanol as a marine fuel.

The guidelines enshrine ethyl and methyl alcohols as options for marine fuel; a milestone the institute believes will be catalyst for more ship operators to consider methanol as a low carbon compliance option.

The MI said the approval was significant given the industry focus on transparency around vessel emissions data reporting, the possible inclusion of shipping in the EU ETS, the Sea Cargo Charter and regulatory pressure to tighten ship efficiency under the proposed EEXI.

The MI noted "growing interest among owners and operators seeking a cost-effective solution to cutting carbon emissions quickly and embracing renewables in the longer term". It added that it was working with shipyards to develop standard vessel designs for ships powered by methanol.

At present, 12 methanol powered chemical tankers constructed to equivalent class rules are already in operation with another 10 on order. The new guidelines should shorten the time to approval and even lower the cost of constructing tankers, bulkers and containerships using methanol as fuel. The Technical Reference for Methanol was published recently by Lloyd's Register and MI, as fuel suppliers are gearing up to increase capacity for methanol bunkering volumes.

"Our work with shipowners, class societies, flag administrations and bunkering providers demonstrates there is pent-up demand for a low carbon fuel that can help owners meet their 2030 emission

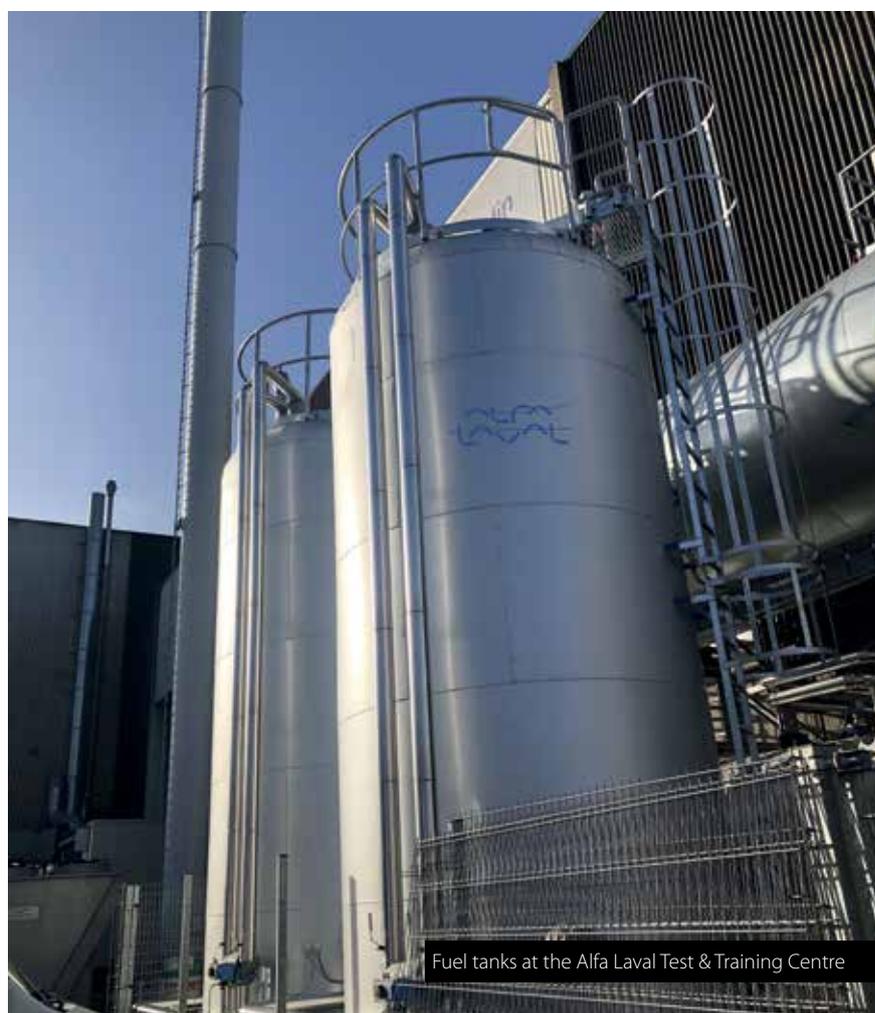
reduction targets at a fraction of the cost of an LNG powered vessel," said MI COO Chris Chatterton. "With new methanol guidelines the industry truly has a choice that can help start to reduce emissions with the regulatory certainty it needs."

The approval came as research by IEA-AMF suggested conventional methanol can be a significant bridge fuel, lending itself as a base for increased blending of bio-methanol or renewable methanol going forward. As the simplest alcohol with no carbon-to-carbon bonds, Methanol has a 4:1 hydrogen to carbon ratio, which also makes it the main candidate for use as a hydrogen carrier, for example, in fuel cells.

Oil major Shell has issued a report, Decarbonising Shipping: Setting Shell's Course, highlighting the important role that hydrogen and fuel cells could play in achieving a decarbonised shipping sector. It also supports the increased use of LNG.

In its new report, Shell considers the potential role of different future fuels. Continuing to build the industry's understanding of possible future technologies through research and development will, it asserts, be critical. Shell's analysis points to hydrogen with fuel cells as the zero-emissions technology which has the greatest potential to help the shipping sector achieve net-zero emissions by 2050. Shell plans to expand its research in this area, "as hydrogen is projected to benefit from build-out across other industry and transport sectors, making it potentially more cost competitive than alternative zero-emissions fuels".

Shell warns: "Meanwhile the shipping sector cannot simply wait for its zero-emissions fuel to emerge and must also look to bring down and peak emissions as quickly as possible. A zero-emissions fuel is not likely to be available on a commercial scale globally until the 2030s.



Fuel tanks at the Alfa Laval Test & Training Centre



It is essential that the industry takes action to reduce emissions now with solutions available today. Efficiency gains are vital in all pathways. Solutions such as wind assist, air lubrication, advanced engine lubricants and digital optimisation technologies must all be deployed to close the gap to net-zero emissions as much as possible."

Shell's report found that LNG could also help lower greenhouse gas emissions today, noting: "Compared to heavy fuel oil, from extraction to combustion LNG reduces greenhouse gas emissions by up to 21% for 2-stroke slow speed engines and up to 15% for 4-stroke medium speed engines. It can also be used with fuel cells to aid the development of this key technology. In this way, LNG can play a critical role in helping the industry to lower its emissions today and develop technology for the zero-emissions fuels of the future, while continuing to address methane slippage."

Biofuels also have their proponents and the Alfa Laval Test & Training Centre at Aalborg, Denmark, which is already equipped for today's oil and gas fuels, has been readied for testing with biofuels. The company says the centre is a core component of its own R&D. It is also a site for collaboration with industry partners and research institutes.

Alfa Laval, biofuel producer MASH Energy and shipowner DFDS are collaborating on a bio-fuel project, which is part-funded by Shipping Lab, a Danish non-profit initiative focused on smart shipping.

"Two 25 m³ tanks have been installed at the centre, one of which is stainless steel and dedicated for testing of biofuels and other new fuel types," said Lars Bo Andersen, Alfa Laval Test & Training Centre Manager.

"New fuel alternatives are constantly being introduced to the marine industry, but the knowledge about their behaviour in marine fuel systems is limited. We want to extend that knowledge through testing, beginning with biofuels."

In another bio-fuel development marine biofuels supplier GoodFuels, and car manufacturer Volkswagen Group have successfully started their partnership in supplying GoodFuels' advanced Bio-Fuel Oil (MR1-100 or BFO) at Vlissingen, the Netherlands – another major step for sustainable shipping in the car carrier segment.

The ro-ro carrier Patara was bunkered with 100% GoodFuels' Bio-Fuel Oil, which was said to have reduced the vessel's CO₂ emissions by a minimum of 85% on voyages with Volkswagen Group's cargo.



RoRo carrier Patara was bunkered with GoodFuels' Bio-Fuel Oil

NOT SO MUCH A BRIDGE, MORE A PATHWAY?

A recent meeting of players in the growing LNG as a marine fuel scene debated where it fitted into the move towards zero carbon

If LNG is a 'bridge' fuel, how long is the bridge? And, more importantly, where is it leading? Those questions framed discussions at a series of virtual workshops hosted in November by Gas Fest and Society for Gas as Marine Fuel (SGMF) as shipowners, energy majors, bunker operators, port authorities, class societies and technology suppliers explored how to strengthen the framework for clean fuels in shipping.

"Gas Fest has always delivered honest discussions and real action," said Mark Bell, General Manager, SGMF. "Although we could not meet physically this year, the virtual workshops showed that the community built around the event remains energised and committed to clearing a smooth and safe path for the increasing uptake of LNG and, as they become viable, other fuels that can contribute to cleaner shipping."

In the opening session, participants explored some of the perceptions of LNG as a marine fuel.

All involved in the event were unimpressed by the potential alternatives to LNG. The organisers commented: "Comparisons of clean fuel candidates can give the impression that fuels such as green hydrogen, methanol and ammonia are close to commercial availability. In fact they are many years away and LNG is an important first step, offering clear emission advantages today as well as potential for future greenhouse gas emission reductions, either by synthetic methane or bio-LNG – which can be used as drop-in fuels to gradually lower emissions – or to other cryogenic clean fuels."

It looks like the proponents of LNG are about to change tack slightly in the way they describe the fuel. The comment continued:

"Shipowners require long-term certainty and the idea of a 'bridge' fuel may encourage them to look to future solutions that are not yet ready. Describing LNG instead as an 'incremental' fuel that can be gradually made cleaner over the lifecycle of a vessel may provide reassurance that owners' technology investments will not be stranded."

This change in emphasis is apparently at least in part about money: "A similar message could help stimulate the investment in infrastructure needed to enable more widespread use of LNG as marine fuel. A separate session found that perceived uncertainty of returns was holding investors back, with few governments giving clear signals about the long-term future of LNG and few companies prepared to take risks to develop bunkering markets without these cues. This investment is needed to drive infrastructure to the stage where it is capable of serving vessels trading on the spot market, which have no fixed schedule and can only bunker where they are sent."

According to the organisers: "The infrastructure session also took a deep look at the current state of LNG bunkering. Reducing the cost of LNG bunker vessels was seen as key to encouraging uptake, with designers considering how the next generation of vessels could be made more cost-effective.

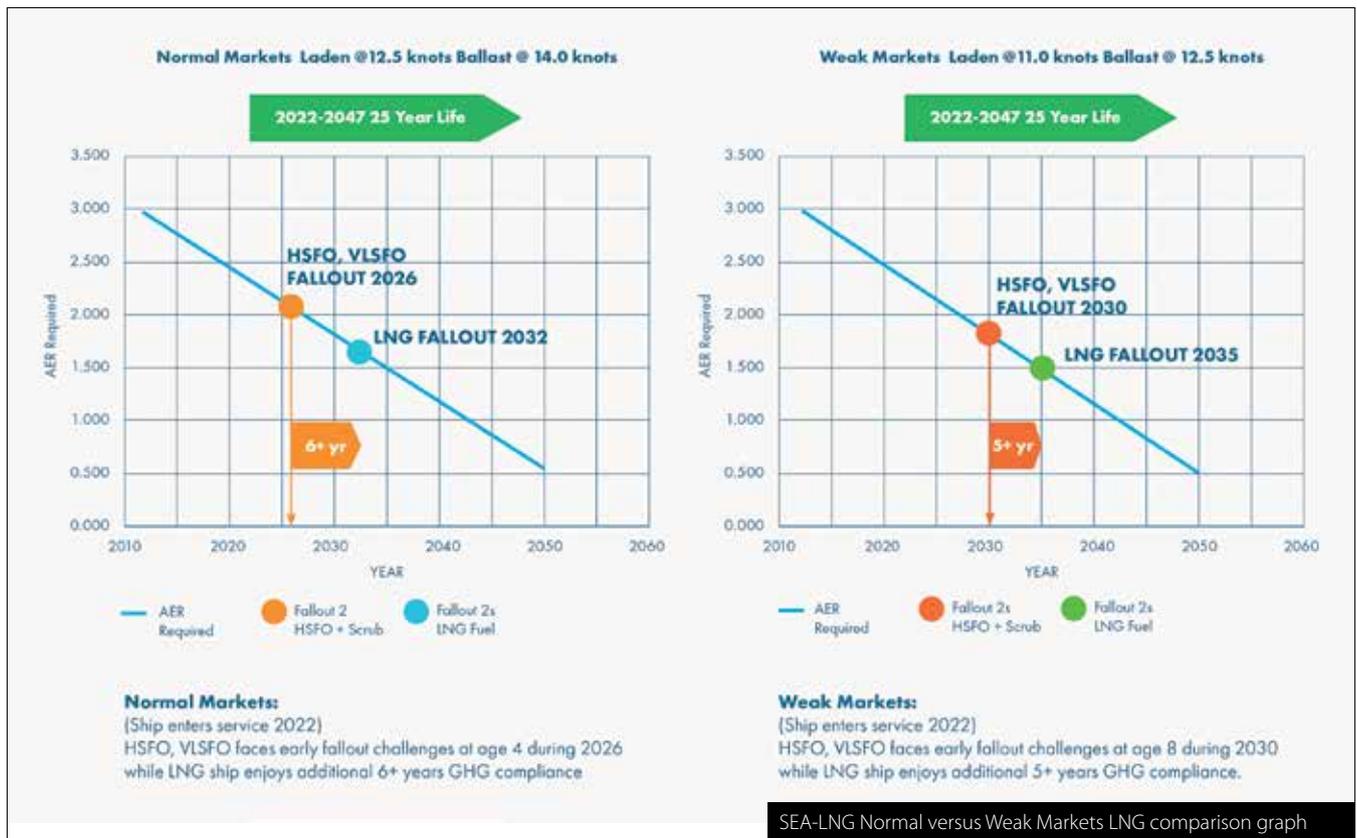
At the same time, it was agreed that a wider range of bunker vessel sizes will be needed to ensure all vessel sizes are served."

Participants in Gas Fest's Alternative Fuels sessions also reportedly noted an incremental advance towards carbon-neutral fuels. Many were already being asked for concepts that are 'future fuel ready' even though some characteristics of these fuels – their emissions on combustion, for example – remain relatively unknown. That pressure was noted as representing a "palpable change" over the past year or so in the approach shipowners are taking to investigating future fuel options.

According to Gas Fest, while the pace of investigation is accelerating, shipowners have yet to narrow down the direction of change. Participants revealed that owners were reluctant to eliminate fuel candidates prematurely because of the grave risk of making a wrong decision. Another reason was that shipping might have only a limited influence over which fuels it eventually has access to, with competition for clean fuels coming from national grids and other, bigger, industries. In this context, flexibility, preparedness and willingness to deploy new fuels and technologies was thought to be more important than predicting which fuels would be available.



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LNG's "7-years advantage for Poseidon Principle loans"

Pro-LNG lobby group SEA-LNG says new research demonstrates that LNG-fuelled ships can benefit for up to eight years of emissions compliance for preferable asset financing compared to those using conventional fuels including HSFO, VLSFO, and MGO. The Poseidon Principles now cover over 15 financial institutions, representing a loan portfolio of nearly \$150 billion, or about a third of all maritime loans.

LNG as a marine fuel is claimed to deliver up to 28% lower CO₂ profile from tank to wake, which puts LNG vessels in a favourable position when judged by the Poseidon Principles' funding criteria, which were instituted by the founding financial institutions to improve strategic decision making and to shape a better future for the shipping industry and society.

The Poseidon Principles measure progress towards these objectives using Average Efficiency Ratio (AER) scoring. This follows an ever-tightening decarbonisation trajectory index to 2050, requiring a vessel's aggregate carbon emissions intensity to improve.

LNG-fuelled vessels, with their lower CO₂ profiles, comply with this trajectory far longer, and 'fall out' of favour many years later than conventionally fuelled vessels, according to SEA-LNG, whose analysis found that LNG fuel can extend the emissions compliance runway for five to eight more years for owners across all market scenarios; weak (requiring slow steaming), normal, and strong (requiring elevated speeds).

This 'extended compliance runway' is said to provide LNG-fuelled ship owners with strong competitive advantages, including the precious time to extend compliance through the use of fuel options that reduce emissions further, such as bio-LNG or liquefied synthetic methane (LSM) – both of which are interchangeable with LNG.

Data from SEA-LNG analysis, referencing recent public US Securities & Exchange Commission (SEC) filings, indicates that AER scores are key metrics for determining the interest rate charge for Sustainability Linked Loan Principles. The loan interest rate for a public case shows the potential loan interest reduction or increase of 10 basis points,

for good or poor performing AER scores respectively; representing a 20 basis point range. Each basis point represents 1/100 of 1%, thus 20 basis points is 2/10 of 1%.

According to the research, chartering criteria are quickly following finance with a similar emissions reduction trajectory, according to SEA-LNG. Sea Cargo Charter, a newly formed organisation that represents 17 major charterers, will give preference to green ships with its emissions compliance program.

John Hatley, SEA-LNG Investment Committee Chairman, said: "The combination of these factors makes LNG the clear compelling choice for long-term emissions compliance. Asset finance (banks) and Charterers are two incredibly powerful forces when it comes to moving shipping towards its decarbonisation goals. These incentives provide a compelling pathway for shipowner's aspiring to achieve lower emissions and also gain a competitive advantage with LNG fuel."

LNG bunkering at Pasir Gudang

Titan LNG says it has arranged the first LNG bunkering in the port of Pasir Gudang, partnering with Malaysian oil and gas major Petronas.

Titan LNG delivered 3,000 m³ of LNG to the Siem Aristotle on 9 November, using Petronas Marine's LNG bunker barge Avenir Advantage which recently came under long-term charter to Titan.

The new barge can also be used as feeder vessel, servicing its customers in the region from the regasification terminal at Sungai Udang and facilities at Pengerang and Johor.

Rotterdam's busy LNG bunker barges

A total of nine LNG bunker vessels have operated recently in Rotterdam's port area. Three of them are there on a permanent basis.

In November, Total's Gas Agility bunkered the container ship Jacques Saade with 18,000 m³ of LNG. The operation took around 16 hours to complete. The Gas Agility, the world's largest LNG bunker vessel, was built especially to supply ULCVs such as Jacques Saade with LNG while they are loading or unloading their cargo.

Port of Rotterdam Authority CEO Allard Castelein commented: "Like CMA CGM, we support the transition from heavy fuel oil to liquefied natural gas (LNG) as a transport fuel for shipping.

At present, LNG is the cleanest fuel that can be considered scalable and affordable for this ship category. Moreover, the introduction of these new LNG-powered vessels supports the Port Authority's ambition to serve as a key hub in the import, export, storage and bunkering of LNG. We feel honoured that every year, these nine new ships will be bunkering some 300,000 cubic metres of LNG in Rotterdam."

The Jacques Saade is the first LNG-powered container vessel with a capacity of over 23,000-TEU containers. CMA CGM has ordered another eight of these ULCVs and by 2022 plans to have a fleet of at least 26 LNG-powered vessels in service.



Petronas Marine's LNG bunker barge, Avenir Advantage supplying the Siem Aristotle

SHORE POWER SYSTEM FOR FERRY

Connection technology allows cold ironing in Baltic port

Technology company ABB Marine & Ports has installed its latest shore connection technology on the passenger ferry Viking XPRS, allowing her to close down auxiliary machinery while docked at Tallinn, Estonia.

The 2008-built ferry is deployed on the 2.5-hour route across the Baltic Sea between Tallinn and Helsinki, Finland, typically docking in the Estonian city twice a day.

ABB says its shore connection technology is designed for easy integration on all ship types and is controlled from the vessel itself, so that sequencing does not need intervention by any shore-based staff. The equipment manufacturer notes that the technology's "sustainable in-harbour operation is especially valued at city ports such as Tallinn" where it can have a significant impact on local air quality.

ABB adds: "Given the frequency of port calls made by Viking XPRS, shore connection will also save substantial amounts of fuel."

Earlier this year, Port of Tallinn installed ABB shore power systems on five of its piers in Old City Harbour as part of the first shore power project in Estonia, enabling vessels with shore power technology to draw on land-based power in port.

Bunker recommendation software launched

Maritime technology company ZeroNorth has launched its bunker recommendation software, BunkerAction.

BunkerAction, which is being added to the suite of tools in ZeroNorth's Optimise platform, uses data insights to provide tramp shipping operators with recommendations about where, when and what to bunker for vessels across their fleet.

The company claims: "This will create a one-stop optimisation tool for operators."

Launching as a Beta product with more features to be added "in the coming weeks and months", BunkerAction uses currently available data, such as vessel specifics, position, route, ETA, and tank capacity, as well as ZeroNorth data spanning bunker prices, weather, port details, sailing distances and market rates, to generate its actionable bunker planning insights.

Through its algorithm, BunkerAction calculates necessary parameters to make recommendations to operators about their bunker procurement. For example, depending on weather, market rates and dynamic speed and consumption, BunkerAction may recommend that a vessel takes on bunkers at an alternative port, if it calculates that cost and efficiency savings can be generated.





Harvey Gulf's fleet of LNG-fuelled PSVs are to be fitted with Wärtsilä Energy Storage systems, giving them tri-fuel capability. ©Harvey Gulf

Energy storage system for PSVs

US-based offshore support vessel operator Harvey Gulf has ordered Wärtsilä Energy Storage for another four LNG-powered platform supply vessels (PSVs).

The technology group Wärtsilä will supply its advanced Energy Storage System (ESS) to be retrofitted on four Harvey Energy class LNG-fuelled PSVs. A fifth vessel in this class was earlier fitted with a Wärtsilä ESS. Louisiana-based Harvey Gulf placed this latest order with Wärtsilä in October.

The four vessels will be retrofitted with an ESS comprising a Closed Bus-Tie 1360Kw Drive with 746 kWh 1100 VDC Batteries. The retrofitting project will be commenced in 2021 and will be completed in early 2022.

When the upgrade project is completed, all five vessels will be capable of full tri-fuel operation.

The vessels will be capable of closed bus Dynamic Positioning (DP) operation running only one engine augmented by the Wärtsilä Energy Storage System. When stationary at sea or in port, the boats will be able to operate on battery power only, thereby greatly reducing both fuel consumption and exhaust emissions.

Scrubber waste collection at Le Havre

French Port operator HAROPA - Port du Havre, in partnership with SEREP, a subsidiary of SARP Industries, has set up a local facility for the treatment of scrubber residues.

Le Havre has been in a SECA (Sulphur Emission Control Area) since 2015, where ships must either use fuels containing no more than 0.10% sulphur, or be fitted with an "equivalent means" such as a scrubber system to clean exhaust fumes.

Waste from ship exhaust fume purifiers is taken by truck to the treatment and recovery centre for processing.

To encourage ships to deposit their liquid waste and scrubber residues on site, the port covers 30% of the cost of collection.

Bunker management system for smaller ship operators

Glencore subsidiary Inatech has launched a new version of its Shiptech bunker fuel management system, ShiptechLite, aimed at smaller shipping companies.

Inatech says: "Smaller shipping firms, with fewer than 40 vessels, command a significant market segment of more than 2,500 ships. Unlike larger companies, these operators often lack options to weather a crisis, such as keeping ships in storage, and typically have lower cash buffers and resilience."

ShiptechLite is a decision support tool that focuses on the bunker procurement process. It automates the entire request for quote process at a glance, managing everything from creating and sending out requests to conducting multiple stakeholder negotiations, and finally to stemming the order.

CONFLICTING VIEWS

One new report recommends banning scrubbers entirely while another finds that the carbon footprint of using a scrubber is lower than that of low-sulphur fuels

A study published by environmental campaign group International Council on Clean Transportation (ICCT) recommends that IMO should consider banning the use of exhaust gas cleaning systems (EGCS), or 'scrubbers', on newbuild ships and phasing them out on existing ships.

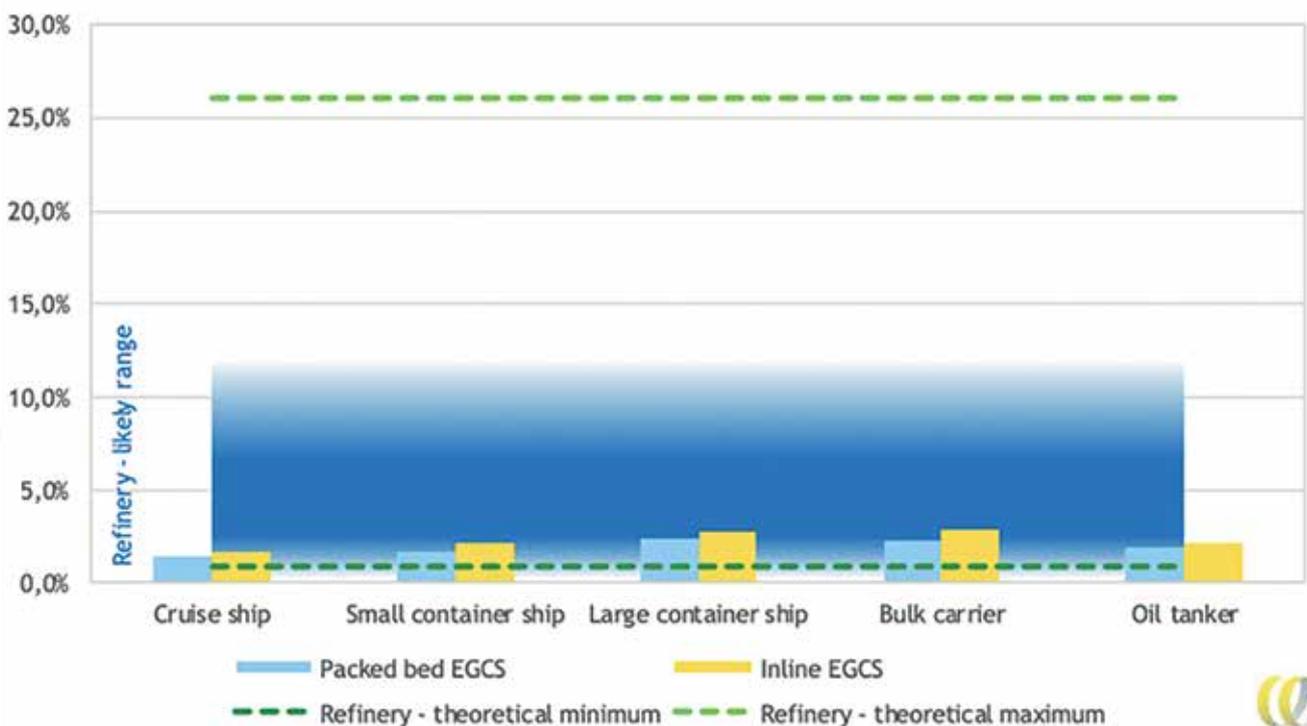
The ICCT report says the number of ships using exhaust gas cleaning systems has grown from just three ships in 2008 to more than 4,300 in 2020. It argues: "Although scrubbers are effective at reducing air emissions of sulphur dioxide (SO₂), the sulphur and other contaminants removed from the exhaust gas—including carcinogens such as polycyclic aromatic hydrocarbons (PAHs) and heavy metals—are dumped overboard in the form of washwater, also called discharge water. Meanwhile, the International Maritime Organization's (IMO) guidelines for scrubber discharges have not been strengthened since 2008,

despite being reviewed in 2009, 2015, and 2020, and the guidelines ignore the cumulative effects of many ships operating and discharging in heavily trafficked areas. Such cumulative effects are to be expected given the rapid increase in the number of ships with scrubbers."

The ICCT study says that SO₂ emissions from ships using 2.6% sulphur HFO with a scrubber are on average 31% lower than ships using 0.07% sulphur MGO. Particulate matter emissions are nearly 70% higher using HFO with a scrubber compared with MGO. Black carbon emissions are 81% higher using HFO with a scrubber than using MGO in a medium-speed diesel engine and more than 4.5 times higher than using MGO in a slow-speed diesel engine, according to the study.

ICCT argues that scrubbers are therefore not equivalently effective at reducing total air pollution emissions compared to using MGO. Additionally, its study says direct carbon dioxide (CO₂) emissions are 4% higher using HFO with a scrubber compared to MGO, and even though HFO has lower upstream emissions than MGO, the extra fuel consumption associated with powering the scrubber results in 1.1% higher CO₂ emissions on a life-cycle basis when using HFO.

Regarding water emissions, the study finds scrubber discharges typically comply with IMO guidelines, but all scrubbers—open-loop, closed-loop, and hybrid—discharge water that is more acidic and turbid than the surrounding water. ICCT says this contributes to ocean acidification and worsens water quality.



CO₂ emissions associated with the production of low-sulphur marine fuels will be between these extreme values. ©CE Delft



It says that all scrubbers emit nitrates, PAHs, and heavy metals that accumulate in the environment and food web and can negatively affect both water quality and marine life.

ICCT says that PAHs and heavy metals have been linked to cancers and reproductive disorders in threatened and endangered marine mammals, including Southern Resident killer whales and beluga whales.

The campaign group is urging individual governments to “continue to take unilateral action to restrict or prohibit scrubber discharges from both open-loop and closed-loop systems”.

By contrast, technology group and scrubber manufacturer Wärtsilä has been referring its customers to a recent report by independent research and consultancy organisation, CE Delft, regarding the impact of scrubbers on climate change. The study compares the results to the use of low-sulphur marine fuels and is made from a well-to-wake perspective in order to achieve an accurate comparison.

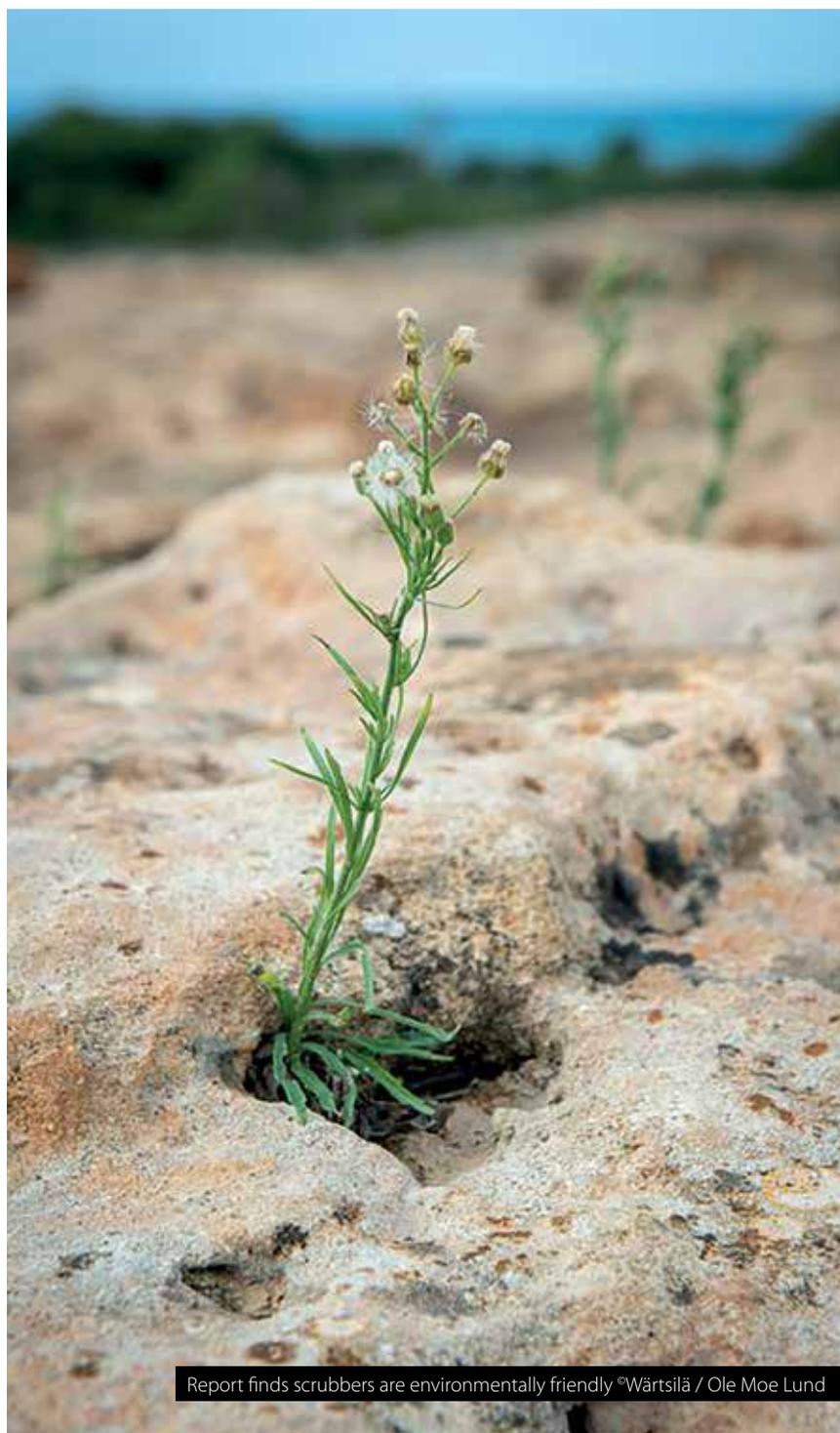
The report concludes that the climate impact of EGCS will be less than that of low-sulphur marine fuel. It notes that CO₂ emissions associated with producing and installing an EGCS are small compared to those generated when operating the system. The CO₂ emissions are mainly related to the energy demand of the system’s pumps, which typically result in a total increase in CO₂ emissions of between 1.5% and 3%.

By contrast, with de-sulphurised fuels the overall CO₂ footprint increase is a result of the refining processes. Theoretical calculations range from an increase in CO₂ emissions of 1% to as much as 25% when removing the sulphur content of the fuel. The report states that while the lower figure is not in fact physically possible, the higher percentage increase is applicable only to a quality of fuel that is too high for marine applications. The conclusion, therefore, is that the CO₂ emissions associated with the production of low-sulphur marine fuels will be between these extreme values.

“This study provides a comprehensive overview of the climate impacts of different options to reduce sulphur emissions. It shows that in many cases, the carbon footprint of using a scrubber is lower than low-sulphur fuels,” said Jasper Faber, Project Manager at CE Delft.

“Wärtsilä has consistently demonstrated its commitment to minimising the marine sector’s carbon footprint.

This shows not only in our products and systems, but also in our manufacturing and production processes. We are delighted that this independent report confirms that when taking all things into consideration, our EGCS create less CO₂ emissions than the use of sulphur-compliant fuel,” commented Jan Othman, Vice President, Exhaust Treatment.



Report finds scrubbers are environmentally friendly ©Wärtsilä / Ole Moe Lund



Example of a piston with scuffing and deposits. ©Chevron Marine Lubricants

TAKING STOCK OF 2020 FUEL SWITCH

Both Chevron and Castrol have published results of surveys to gauge the effects of changing to VLSFO

After over half a year of low-sulphur fuel operations for international shipping, Chevron Marine Lubricants has distilled its experiences of working with new fuels and lubricants into a recently published 'whitepaper'.

Taking the Temperature of the 2020 fuel sulphur switch includes findings based on work with ship operators worldwide to manage the transition from traditional high-sulphur fuel oil (HSFO) to very low-sulphur fuel oil (VLSFO) – the most widely used means of complying with IMO's 2020 regulation. The paper also explores what these experiences mean for shipping as it prepares for even greater changes in the future, as decarbonisation and other sustainability targets further influence fuel choices.

"Chevron's observations show that most ship operators managed the transition very well," says Ian Thurloway, Brand, Marketing and Business Development Manager for Chevron Marine Lubricants. "Fuel quality has been less variable than expected and accurate recommendations on cylinder lubrication helped prevent the worst fears from being realised. But there have been engine condition concerns and rigorous monitoring remains a fundamental of any fuel change – particularly faced with a whole new range of clean fuels to choose from."

Chevron notes that VLSFO in general has a higher energy content than HSFO, offering good value for users. But its rapid ignition has caused problems for some older engines. Meanwhile the practice of flushing high-sulphur residues from tanks ahead of the regulation's entry into force also contributed to an increase in cylinder condition challenges early in the year.

The lower sulphur content in marine fuel also reduces the safety margin between normal piston running, with a limited but manageable level of corrosion, and damaging abrasive or adhesive wear. To detect these conditions before they lead to irreversible engine damage Chevron recommends that operators employ a robust onboard drip oil monitoring programme, supported by frequent onshore laboratory analysis. Chevron's own DOT.FAST® service now includes a separate indicator for abrasive/adhesive wear in its onshore laboratory analyses.

Meanwhile, global lubricants supplier Castrol has also highlighted the increasingly important role of marine lubricants as the engine room environment changes.

According to Castrol, more efficient engines, new and varied fuels, and recent changes to leading OEM cylinder oil strategies are making lubricant choice a more important and complex decision.

Castrol's survey of marine owners, operators and managers, earlier this year, revealed that 30% of those surveyed had undertaken no or limited planning to prepare for these new fuels.

The lubricant manufacturer warns: "When the dynamic between engine, fuel and lubricant isn't right it could result in reduced efficiency, dirtier engines, and damage to cylinders, while increasing costs. The changes mean owners and operators should consult closely with lubricant providers to find solutions for engines that have a good balance of both cleaning and neutralising power."

Cassandra Higham, marketing director, Global Marine & Energy, Castrol, comments: "The sulphur cap means we have entered a new era of complexity in the engine room. In addition, the journey to decarbonisation will mean an increasingly diverse fuel mix, where lubricant choice becomes more critical.

"Increasing stress on engines, a focus on cost, and more blended fuels mean that previous assumptions in the choice of lubricants no longer apply. Castrol supports a new, collaborative approach, with an emphasis on engine cleanliness, in this more challenging operating environment."



For years, the measure of performance of a cylinder oil has been largely based on its alkalinity, or base number (BN). However, with lower sulphur levels in fuels, cylinder oils need to have both cleaning and neutralising power to protect engine hardware. Castrol Cyltech 40SX was formulated with a bespoke detergency system specifically for use with low sulphur fuels.

Higham adds: "It is vital that lubricant providers, engine manufacturers, ship owners, fuel suppliers and technical staff come together to smooth the road for shipping. The current challenges are only the tip of the iceberg, as the shipping industry aims to transition to new lower carbon fuels and energy."

Castrol says it is working with the whole sector to help change the way the market views marine lubricants. Part of this includes a programme of consultative operational and technical improvements, SmartGains, that is intended to "drive efficiencies across the engine room".

WinGD launches new guide

Engine designer Winterthur Gas & Diesel (WinGD) says it has prioritised collaboration and transparency in its new cylinder lubrication guide, to ensure that selecting the right oil is easier than ever. For the first time, it says, the new documentation provides ship operators with consolidated, at-a-glance information highlighting the specific usage conditions for each and every approved cylinder oil.

The guidance is the result of several months' work with major oil companies to make usage requirements more transparent. Previously, the guidelines for each oil were found only in the industry standard No Objection Letters (NOL) issued by WinGD to oil companies, and available only upon request by a customer to an oil company directly. Now this information has been included in the full list of approved cylinder oils.

To find an appropriate cylinder oil, users first select a suitable Base Number (BN) range based on their fuel sulphur content. Customers then look through the guide to see which oil products fall within a specified BN range.

The document then highlights whether each oil is approved for general, long-term use or whether further stipulations – such as a time limit or greater frequency of inspections – are required. An additional category, labelled as 'DF validated' shows whether the oil has passed a validation trial while burning gas as the predominant fuel during that trial.

"Cylinder oil is not just another consumable onboard – it's considered an important engine component that ensures reliable operation," says Frank Venter, WinGD Project Engineer Tribology Fuels & Lubricants. "Given the already wide variability in existing fuels available, it is important that engine companies and oil suppliers work together to offer clarity for ship operators about which oils can be used and how. This will become increasingly important as we embrace a decarbonised future with potentially multiple varied sources of both liquid and gaseous fuels."

Total Lubmarine opens Chicago lab

The opening of Total Lubmarine's new Diagomar Plus Laboratory in Chicago means the marine lubricant specialist now has five centres around the world, with the others located in Belgium, Singapore, China and Panama.

"North America is an increasingly busy market for us and the opening of the Chicago Lab ensures we have a specialist team on hand to deliver onshore dedicated technical support to our customers," said Olivier Suming, Service Product Manager at Total Lubmarine.

The new lab offers standard analyses for engine oil, non-engine oil, drain oil, thermal oil, stern tube oil, and environmentally acceptable lubricant (EAL).



Cassandra Higham, Marketing Director, Global Marine & Energy, Castrol



Bucking the trend, sales at St Petersburg increased in the first half of the year

RUSSIAN BUNKER MARKET SHRINKS BY ALMOST A THIRD

Olga Bogacheva reports on developments in Russia, including the role of LNG in the Arctic region

The total amount of fuel delivered in Russian ports in the first half of 2020 was 4.1 million tonnes, down 27% compared to the same period last year.

The statistics, reported by PortNews in its semi-annual review, also reflect the dominance of the bunkering divisions of vertically integrated oil companies backed by their own resources. This year's ranking by sales is: LUKoil Marine Bunker, Gazpromneft Marine Bunker and Rosneft Bunker. Independent market operators are gradually losing their positions, and this trend strengthened along with the general decline in business due to Covid-19.

Most fuel was delivered in the ports of the North-West and the Arctic, where the total of 1.7 million tonnes was 12.6% down year on year. Sales dropped at all ports with the exception of St. Petersburg where sales of 659,000 tonnes marked a 2.3% increase.

In the Far East there was 51.4% drop in volumes, to 1.2 million tonnes, in the first six months of this year. This was caused by shortages, high prices, quality problems with blended fuels and a decrease in the number of ship calls.

In the same period, ports in the Caspian-Black Sea basin also experienced a decrease of 2.7% to 972,000 tonnes.

Fuel oil production falls

Since the beginning of 2020, the output of fuel oil at Russian refineries has decreased by 3.4 million tonnes, to 21.4 million tonnes. The main reason given was the optimisation of production and modernisation of refineries, resulting in less residual fuel.

Gazprom Neft has opened new facilities at its Omsk and Moscow refineries. Cracking at the two plants has increased from 81% to 85% and from 90% to 97%, respectively. The company plans further reductions of fuel oil production with a complete phase-out by 2024.

Meanwhile the Rosneft-owned Khabarovsk refinery has commenced production of ULSFO. The company is a leading supplier of marine fuel in the Far East.

Gazpromneft joins SGMF

Gazpromneft Shipping, which operates Gazpromneft Marine Bunker's fleet, has become the first Russian oil company to join the Society for Gas as a Marine Fuel Association (SGMF).

Gazpromneft Marine Bunker plans to start LNG bunkering in 2021.

Construction of LNG ferry delayed

Completion of Russia's first LNG-fuelled ferry has been put back six months, Kommersant Daily has reported. The car and train ferry Marshal Rokossovsky was expected to be delivered to the Ust Luga-Baltiysk line operator Rosmorport, by 15 November this year but this has been put back to May or June 2021.

The contract for two ferries was signed in 2018 with the Nevsky shipyard, but their construction has been subcontracted to a Turkish shipyard. Delays to deliveries of equipment caused by the coronavirus pandemic have held up construction.

Gazpromneft Marine Lubricants opens in Hong Kong

Gazprom Neft started supplying lubricants at Hong Kong in September with the delivery of Ocean CCL40 oil for engines running on low-sulphur fuel.

The company has been expanding in East and South East Asia and its presence in Hong Kong follows the establishment of offices in Singapore, Malaysia, Taiwan and South Korea.



Gazprom Neft Ocean oils for customers in the Asia-Pacific region are produced at two third party owned sites in Singapore and South Korea.

The company plans to expand in the region with three more storage sites in addition to Hong Kong. It is intended to cover the Chinese coast including the hubs of Dalian, Shanghai, and Guangzhou.

Electric powered river craft planned

A network of charging stations for electric vessels has been proposed for the St. Petersburg area.

The office of Maxim Sokolov, Vice-Governor of St. Petersburg, is preparing a concept for the further development of electric water traffic on the city's waterways.

The proposal provides for the design of 16 onshore and floating charging stations with capacities ranging from 150 kW to 2 MW connected to power supply networks. Six routes are being proposed.

An electric passenger catamaran, the Echovolt, was launched this summer. Her builder, the Morsvyazavtomatika shipyard, plans to start building a series of vessels at its shipyard this year.

The state welcomes the initiative and promises strong support. Electric vessels can receive indefinite exemption from property and transport tax as well as benefiting from preferential electricity pricing and a temporary waiver of berthing charges.

LNG "is key to using Northern Sea Route"

Olga Bogacheva asked Alexander Klimentyev, an adviser to the Russian federal state of Yakutia's permanent mission of at the Russian president, about the prospects for the Northern Sea Route (NSR).

OB: Russia intends to postpone the ban on the use of heavy fuel oil in the Arctic until 2024. However, the ban will not apply to specialised vessels, participating in rescue operations. It may also grant a delay until 1 July 2029 to ships with fuel tanks protection meeting the requirements of MARPOL and the Polar Code.

If heavy fuel will be allowed for some considerable time will this affect the development of LNG bunkering infrastructure on the NSR?

AK: Currently, Arctic shipping does not only supply industrial projects. In some cases it is the only way to deliver food, fuel and essential goods to the local population. When discussing the issue of HFO ban in the Arctic, each country conducted its own analysis of the impact of the ban on the living standards of the population.

As a result, to ensure a smooth transition and to prevent a sharp growth of costs for the local population, an agreed opinion was adopted on banning fuel oil from 2024 with the possibility of extending it to 2029 for certain categories of vessels. It seems that nine years will be sufficient to adapt to the new requirements and the gradual transition will not lead to a sharp increase in the living costs for the local population due to the increase in the cost of sea transportation.

In any case, ship owners should accept as a reality constant tightening of fuel requirements. LNG provides confidence that vessels using it for many years to come will meet the current and future requirements for navigation in Polar waters.

LNG is already widely available in the Arctic, and new projects for LNG production, infrastructure, and gasification in the Murmansk region and Kamchatka Kray ensure development of LNG bunkering infrastructure. Many large companies either already have LNG-powered ships (Sovcomflot), or are ordering them (Rosneft), or are seriously considering modernisation of their fleet (Norilsk Nickel, Rosatom Cargo).

LNG is also a good solution for the traffic along the (NSR), providing savings on fuel costs and low environmental impact. Murmansk, Arkhangelsk, Sabetta, Pevek and Petropavlovsk-Kamchatsky, Sakhalin will soon have facilities for LNG bunkering. It is expected that LNG will be also used for harbour craft, providing local cargo and passenger sea operations.

Of course, it should be borne in mind that the LNG infrastructure can also be used for the subsequent use of hydrogen fuel.

OB: What is the current situation on the NSR? What cargo is transported and in what amounts? Whose vessels use the route on a permanent basis?

AK: The major operators are Sovcomflot, Gazprom Fleet, and LNG carrier owners.

Rosatom group operates the Sevmorput, a nuclear lighter carrier, both for the delivery of equipment for LNG projects and for the other services between Petropavlovsk-Kamchatsky and St Petersburg. COSCO and Oldendorff vessels are prominent among foreign ship owners.

The main cargoes transported via the NSR are LNG and oil. Frozen fish, wind farm structures, iron ore, and pulp have become common though cargoes. During the first eight months of 2020, more than 20.4 million tonnes of cargo were carried via the NSR, which is 3.3% higher than in the same period last year. Through cargo reached 400,000 tonnes. Total cargo traffic along NSR in 2020 is expected to reach 32 million tonnes.

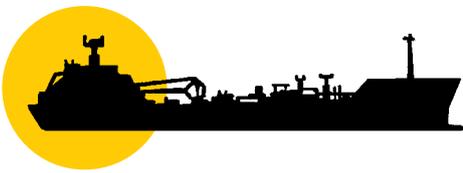
OB: How and where is bunkering currently carried out?

AK: Bunkering along the NSR is currently non-existent. Usually the vessels are bunkered in Murmansk and Arkhangelsk with fuel oil and distillate fuel grades.

Due to restrictions on sulphur for marine fuels enforced from January 1, 2020, many shipowners switched to more expensive distillates to avoid problems with shortage and high prices for low-sulphur fuel oil.

OB: It is not widely known, but in 2020 the NSR became the global route with the highest use of LNG as a marine fuel. Can you tell us more about this?

AK: This is an extremely important milestone in the development of the NSR. Transit traffic along the NSR is an important element of the Russian Arctic policy. The updated Fundamentals of State Policy of the Russian Federation in the Arctic for the Period up to 2035 is focused on the international role of the NSR.



One of the main issues of the NSR navigation is the risk of spills and black carbon emissions leading to accelerated ice melting. A number of large companies like MSC, CMA CGM, Hapag-Lloyd, have declared an environmentally motivated voluntary refusal to use the Arctic routes. However, LNG fuel eliminates all negative consequences from shipping in the region.

In 2018, the Viikki and the Haaga, two LNG-fuelled dry cargo vessels operated by ESL Shipping, passed through the NSR from Chinese shipyards to the Baltic Sea. Although their main fuel is LNG, they used oil due to the lack of LNG bunkering facilities in Asia. In 2019, Sovcomflot tankers made three commercial sailings from Murmansk to the Asia-Pacific region using only LNG. Due to the lack of LNG bunkering in Asia, the tankers returned via the NSR using oil fuels.

Due to Sovcomflot's operations, cargo carried through the NSR carried out by LNG-fuelled vessels exceeded 300,000 tonnes, or 43 % of the total.

OB: How and where will the low-volume LNG projects and LNG bunkering facilities emerge?

AK: LNG production in the Arctic zone is mostly connected with the large-capacity LNG projects in Norway and Yamal. However, there are developing small-scale LNG projects focused on environmentally friendly energy supplies for the population and industrial consumers in the Arctic. Low-tonnage LNG production may be expected in Arkhangelsk. Several projects are currently under evaluation. A special feature of the Arkhangelsk projects is high reliability of supplies. LNG production is based on the unified gas supply system of Russia. The Arkhangelsk LNG project considered by the Sozvezdie Association is aimed at the bunkering market, power supply to consumers in Solovki, coastal territories of the region, as well as a promising project for the extraction of zinc and lead ores on Novaya Zemlya.

Low-tonnage LNG production already operates in the Yakutsk region. It may grow to supply LNG to consumers along the Lena River, including river-sea vessels. The Anadyr gas supply system is the market for the low-tonnage LNG production in Chukotka. In addition, there is a possibility to produce LNG for marine passenger lines on its basis.

The LNG transshipment terminals in Murmansk and Petropavlovsk-Kamchatsky, and the LNG storage facility at the gas power plant in Pevek should definitely become customers of low-tonnage LNG producing facilities. Based on these terminals, it is possible to create bunkering centres for shipping on the NSR.

OB: IMO aims to reduce greenhouse gas emissions from ships. One of your reports concluded that the global shipping companies can reduce greenhouse gas emissions by almost 40% using NSR. Would you please comment on this statement.

AK: The NSR reduces the distance between East and West and, as a result, the sailing time, the amount of fuel consumed and emissions of pollutants. COSCO and Oldendorff sailings practically gave the evidence.

According to the companies' data and our preliminary estimates, using the NSR can reduce fuel consumption and emissions, including greenhouse gases, by up to 23%, all other relevant factors being equal. LNG is an affordable and sustainable fuel for the Arctic. Substitution of oil fuels by LNG on the NSR will reduce greenhouse gas emissions by another 16%. As a result, shipping on the NSR using LNG or other alternative fuels will not only prevent Arctic pollution, but rather serve to achieve global climate and environmental goals. The IMO target for reducing greenhouse gas emissions from global shipping is 50% by 2050.

Shipping between North-East Asia and Europe could reduce greenhouse gas emissions by 40% in the shortest possible time at the current level of technology only through the use of LNG on the NSR. The intensification of Arctic shipping based on alternative fuels serves the purpose of limiting global warming and protecting the Arctic itself. It is, at first glance, a paradoxical conclusion. But practice confirms that the rejection of Arctic navigation is not a rational way to protect the Arctic. On the contrary, Arctic navigation based on LNG-powered shipping leads to reduced use of oil fuels and provides environmentally efficient routes. The NSR can become the clearest example of a balance between shipping, industrial development, climate and ecology, ensure the sustainable development of the Arctic, and act as a supplier of alternative fuels for all humankind.



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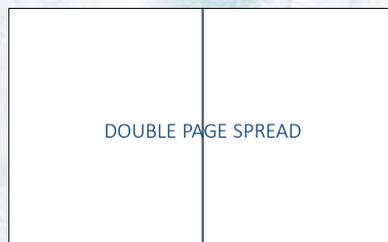
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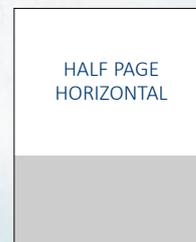
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PROVIDING THE BEST SERVICES



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.

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BUSINESS PROFILE: TOTAL LUBMARINE #TLM

Total Lubmarine: your trustworthy and reliable supplier



Total Lubmarine is a specialized marine lubricants business which provides innovative solutions to the global shipping industry.

Our history began in 1952, when Antar, a small petroleum business in France, began supplying marine lubricants to some 40 steam vessels. Elf Aquitaine expanded this activity internationally in 1961 when it created Lubmarine, a worldwide network of partners and distributors dedicated to marketing and supplying the same high-quality marine lubricants, backed by industry-leading customer services around the world.

Today, Total Lubmarine - a division in the Total Group - is now one of the leading marine lubricants suppliers, and our products and services are trusted to protect marine engines and auxiliary equipment on board more than 7,000 vessels each year. IHS Markit's data report revealed we are the second largest port network in the international marine lubricants segment, with a total of 797, covering 93 countries, more countries than any other operator. In addition to the officially listed ports, Total Lubmarine also makes its products available via non-listed ports, bringing total coverage to 1,000 ports in about 100 countries.

We have become the shipping industry's partner of choice, providing local support to our global maritime industry customers with a pioneering range of marine lubricants and greases.

Working through the pandemic

One of the Total Group's core values is safety and this has been, and continues to be, a major priority for us, extending to everyone across the Total Lubmarine customer and supply chain network.





At the height of the pandemic our teams remained available in a 'business as usual capacity' to help with any of our customers' needs – and we used technology to provide that immediate, real-time support for all our customers. Daily contact with ports and port operations provided a level of reassurance for our customers on product supply and logistics, as many of the challenges we face are centred on how vessels, ports and ship-to-shore operations can operate 24/7. This includes our International Port Directory which is updated with the latest information on each port's delivery status, and on-demand downloadable listing.

To minimise potential disruption for our customers, we also developed operational Tech Care kits for use onboard vessels to ensure engine maintenance and performance can be frequently assessed and diagnosed with immediate and localised decision making with online support from our experts when needed.

Increasing support for all our customers

With IMO2020 regulation transitioning the shipping industry towards lower sulfur fuel oils, the industry has been encouraged with exploring options to meet stricter emission reduction targets. As highlighted in the findings of the 2020 Fuel Oil Quality and Safety Survey published by BIMCO, The International Chamber of Shipping (ICS), INTERCARGO and INTERTANKO, engine cleanliness is by no means a superficial concern. Fouling and deposits can impact engine efficiency and risk malfunction which often leads to more serious problems down the line.

It is why we launched a series of new videos to raise the importance of drain oil analysis in helping achieve optimized lubricant oil feed rates to identify and prevent potentially costly engine damage.

A single cylinder oil for all 2020 compliant fuels

Engine cleanliness requires a high level of in-depth technical awareness and solutions for ship operators and OEM's to ensure they implement the right lubricants and fuels strategy – and are using the right combination of solutions to operate successfully. It is one of the reasons why our technical expertise is focused on ensuring all our customers use lubricants and monitoring tools that deliver optimal engine performance and engine cleanliness. And, we have made progress.

Earlier in May, MAN ES endorsed the use of TALUSIA UNIVERSAL, with a No Objection Letter (NOL) confirming TALUSIA UNIVERSAL's 57 BN [SAE 50] approved use in MAN B&W two-stroke engines operating on <0.50% S VLSFO, and fuel with a sulfur content ranging from 0.5 to 1.5%.

TALUSIA UNIVERSAL 57 BN [SAE 50] recently received a revised NOL from Winterthur Gas & Diesel (WinGD) adding Dual Fuel (DF) validation for the WinGD range of DF engines.

This DF validation adds to the existing TALUSIA UNIVERSAL NOL, issued on March 3, 2020, for use in WinGD X, WinGD X-DF, WinGD RT-flex, WinGD RT-flex-DF, Wärtsilä RTA, Wärtsilä RT-flex and Wärtsilä X engines, as well as in Sulzer 2-stroke engines operating on fuels with a sulfur content from 0.00 % m/m up to 1.50 % m/m.

This means TALUSIA UNIVERSAL is seamlessly compatible for any IMO 2020 compliant fuel strategy such as LSFO, VLSFO, ULSFO and including LNG.

Looking to the future

At Total Lubmarine we are strengthening our work with OEMs and the shipping supply chain on how best to develop new formulations of cylinder lubricants and Trunk Piston Engine Oils appropriate to the new fuels of the future, and their application for both 2 stroke and 4 stroke engines. We are also taking into consideration not only engine characteristics, but emission control and energy saving systems, as well as operating conditions so we can create solutions designed to help further reduce CO₂ emissions.

www.totallubmarine.com





VIVCO ENERGY



VIVCORE[®]
ENERGY SOLUTIONS

International Bunkering with VIVCORE

The bunker service to cruise vessels is the most sensitive bunker operation since international luxury cruisers require a standard operating procedure from the bunker service providers to comply. These vessels cannot afford any interruption due to a wrong specification of fuel and hence a lot of attention is given to assure quality control in the service. With our experience and qualified crews on our vessels, we try our level best to give the best bunkering service.

In order to assure quality, VIVCORE has introduced Marine Gas Oil – 10 ppm to the Maldivian bunkering industry as it will comply to the regulations of the emission control areas and ensure longevity of the onboard machineries. Additionally, this is an initiative the company took to introduce a cleaner fuel to the market. The Certificate of Quality will be provided prior to cargo discharge and standard safety procedures will be followed at every bunker operation.

All the fuel delivery vessels will be equipped with a NITTO SEIKO flow meter coupled to a bucket strainer to assure quality and quantity. NITTO SEIKO is world renowned in liquid measurement and is a popular name in the fuel industry since it is not designed for manual adjustments. It is manufactured with factory calibration and cannot be manipulated or altered to give a false reading.

Hence it gives better accuracy of the delivered quantity.

The product discharge line is facilitated with a Y-Type strainer which will strain any impurities that may pass the line from suction to the flow meter. Additionally, the crew will conduct an onsite test to assure the recipient vessel that the cargo is free from water contamination.

Safety measurement is given importance when delivering fuel to your esteemed vessels. While our fuel delivery barges are in compliance with the national safety standards, the vessels are insured under a comprehensive cover and covers for third party insurance, where in case of an accident the damages to the fuel delivery station of your property will be protected under insurance for loss or damage.

Furthermore, the fuel delivery vessels are equipped with oil dispersant chemicals that will remove any slight effect or oil slick that may spill to lagoon during the operation, safety standards that assures the wellbeing of sea life and care for the oceans by preventing pollution. These delivery fleets coexist with the amazingly beautiful lagoons of the Maldives islands. Our vessels fit perfectly to the Maldives natural environment due to the eloquent look that it embraces with the blue, green and white which are colors that blend to the blue lagoons, green vegetation, crystal clear beaches and the clear sky respectively.

We try our best to minimize the waiting time for the vessels which come to get our bunkering services. We assure that these good practices will be implemented and executed in order to provide a quality service and deliver genuine products.



WEST INDIES PETROLEUM PARTNERS WITH BP TO MAKE A DIFFERENCE IN THE REGION

West Indies Petroleum confident about the future despite COVID

The bunkering business, like many other industry sectors, has been affected by the global COVID-19 pandemic. West Indies Petroleum (WIP) - a diversified Petroleum products company based in Kingston, Jamaica with operations in bunkering, retail fuel sales and bulk regional distribution - has seen mixed results during this period. However, the team has quickly and effectively utilized the time to strengthen the company from an operational perspective and entered into a long-term exclusive supply agreement with bp.

WIP's agreement with bp will introduce a new level of service for WIP in both the bunker industry as well as the distribution of fuel to other countries in the Caribbean and Central America. WIP has the opportunity to supply different product lines outside the bunker industry and its agreement with bp provides WIP with the products necessary to raise the bar of WIP capabilities to grow the business locally and regionally.

A bold move amidst the pandemic some would say, but through this agreement, WIP, as a renewed and reinvigorated company, is focused on making Jamaica a bunkering destination. This employment of WIP's assets will positively contribute to improving reliability, maintaining the highest quality and of course providing the best priced solution in the space of operation. WIP's Commercial Manager, Dearbhla Kieran stated, "Overall, WIP feels good about where we are now based on the results of the company.

WIP has navigated the switch to IMO 2020 very successfully and the company is in a position whereby we are able to provide quality products to the Jamaican bunker market."

Though the company has seen mixed results during this period of the pandemic, they continue to do well and are prepared for a post-COVID world that they are very optimistic about. Their current challenges include the complete halt of the cruise business in Jamaica as well as an initial dampening effect on the container shipping business at the beginning of the pandemic back in early March.

Since then, the container business has begun to stabilize and it is projected that it will continue to grow as the world becomes more informed on how to live and operate with the virus. As for the cruise business, it is expected that 'new normal' operation will restart in the coming months and with the current plans in place, WIP will be uniquely positioned to satisfy the demands of that industry when it does - supplying all the vessels coming to Jamaica with the products that the cruise shipping industry requires.

As a company with a diversified stream of revenues, WIP has also had positive results from the current environment. Kieran also shared that the company on a whole has fared well during the pandemic. She added "We are incredibly optimistic about WIP's prospects in the medium term. Operationally, with our fleet of barges, expipe facilities and storage terminals there is no equal to WIP in Jamaica.

Our agreement with bp gives us access to reliable products that we did not have before and that makes us very confident about our ability to satisfy the needs of the cruise and container industry going forward for vessels that call Jamaica or for those wishing to take bunkers only. WIP maintains stock of VLSFO, HSFO, ULSD, LSD and HSD and through our exclusive agreement with bp we will be able to reliably supply all customers at the volumes and prices necessary to truly make Jamaica a bunkering destination going forward."

Despite the current climate, WIP continues to grow and over the next 10 years, in alignment with its strategy, the company will focus on growing assets in the region and providing a strong structure for regional product supply. WIP prides itself on its Caribbean heritage and aims to make a difference for Jamaica and the region with the support of the bp resources, experience and tools to make it happen.

www.westindiespetroleum.com





OUR WORD IS OUR BOND



Axiom Global Oil & Gas Trading DMCC

Ever since its establishment in 2019, Axiom Global has strived to maintain high ethical standards, provide products and services that delivers high value to our customers. The company strives to become trusted and chosen by all its stakeholders, including customers in the market.

Axiom Global has strategically positioned itself to play a significant role in the building the bunkering supply chain in Indian Ports, Iraq and other ports worldwide by engaging in all main phases of the trading cycle viz., shipping, storage, bunker supply and pricing. Going forward, we attempt to build a corporate culture in which each individual possesses a spirit of self-help and makes the first move to carefully assess the expectations of maritime community and the customers at large, to consider what can be done to meet those expectations, to take appropriate action and value, and to build stronger relationships of trust with all of our stakeholders.

The strength of Axiom Global lies in its team. We believe in "happy employees, even happier customers". Axiom Global believes and practices the philosophy that engaged team helps in establishing better relationship as it is the team who are in contact with the customers, suppliers and other channel partners and stake holders.

Axiom Global offers bunker fuels that meet the unique needs of our customers at affordable rates through multiple distribution points (in-port and out-of-port limits) in all major and minor ports in India, Sri Lanka and Iraq.

Axiom Global is poised to become one of the leading marine fuel physical bunker supplier in India by controlling all key stages of the marine fuel supply chain by providing exceptional value to our customers.

Axiom Global promises to provide services through its progressive and innovative approach to delivering energy. We offer broad range of marine fuels which comply with international standards like ISO, MARPOL as well as localized requirements to meet customer satisfaction.

Based on this principle "our word is our bond", Axiom Global's team, over a period of time have developed a satisfied clientele of ship owners, oil majors, government shipping companies, OMC's, bunker buyers and bunker traders who look upon us for meeting their bunker requirements for their ships calling in Indian sub-continent, Middle East and other ports like Egypt, Singapore, etc.

Axiom Global has working offices in Dubai, Singapore and India and soon will be establishing an office in London to increase and closeness with our customers and stakeholders.

www.axiomglobaltrading.com



DIARY

21 JANUARY 2021

**LONDON, UNITED KINGDOM (VIRTUAL)
ONLINE AT WWW.IBIA.NET**

IBIA is pleased to announce our first webinar of 2021, which will be in partnership with the UK Chamber of Shipping. Shell will be the main sponsor of this webinar, which will focus on GTL Fuel, an alternative diesel fuel derived from natural gas, which burns more cleanly than conventional crude oil-based diesel.

For more information: <https://ibia.net/events/>

8 - 2 MARCH 2021

**MARITIME WEEK LAS PALMAS
LAS PALMAS, SPAIN**

The Port of Las Palmas and its key Government and Industry stakeholders have joined forces with Petrosport to create the inaugural Maritime Week Las Palmas – Supplying Ships in the Atlantic, a major new biennial event designed to showcase and promote this dynamic logistics hub and the wide range of maritime services provided by Las Palmas to ships sailing to and from Africa, Europe and the Americas.

For more information:
<https://www.petrosport.com/events/mwlp-2020>

22 - 26 FEBRUARY 2021

IBIA ANNUAL DINNER GET TOGETHER ONLINE

Join the largest ever virtual networking room!
We are keeping the tradition of hosting 1,000 stakeholders of the industry around the world.

If you want host your networking event, like you used to do during IP week, now is your opportunity! Let's do it together!

For more information contact sofia.konstantopoulou@ibia.net

22 - 24 MARCH 2021

**12TH INTERNATIONAL FUJAIRAH BUNKERING &
FUEL OIL FORUM
FUJAIRAH, UAE (VIRTUAL)**

FUJCON is the pre-eminent & most prestigious bunker forum for the Middle East bunker markets. The anchor event was successfully held from March 25-27 2019 during the "Fujairah Bunkering Week" – a week of specialized professional training comprising bunker courses and briefings, laboratory visits & an off-shore anchorage site visit to the Port of Fujairah – FUJCON has grown to enjoy international recognition and attendance from over 50 countries covering the full supply chain of the bunkering industry. Attended by nearly 500 participants from 35 countries, FUJCON has raised the profile of Fujairah as an internationally recognized service Anchorage, being amongst the world's top three bunkering locations and as a global hub for both oil/crude storage and product supply.

For more information: <http://www.fujcon.com/>

23 - 25 FEBRUARY 2021

**IP WEEK 2021
VIRTUAL EVENT**

Today's oil and gas sector faces the toughest of operating environments, but the ingenuity of its people, its engineering capabilities and innovative spirit will all be pivotal in rising to these global challenges. As the sector's leaders and influencers gather virtually for IP Week 2021, for a programme uniquely convened and curated by the Energy Institute's industry experts, this remains the pre-eminent international event for building collaboration between industry, government, and society. The urgency of action, together with the associated risks and opportunities in geographies around the world, will be at the heart of an unmissable week's agenda.

For more information: <https://www.ipweek.co.uk/>

12 - 25 APRIL 2021

**SEATRADE CRUISE GLOBAL
MIAMI, USA**

13,000+ cruise professionals get together each year at Seatrade Cruise Global because they know if they are not here, they sacrifice huge growth opportunities. Seatrade Cruise Global is your chance to expand both your knowledge base and your entire network in a forum like nowhere else.

For more information:
<https://www.seatradecruiseglobal.com/en/home.html>

All dates are correct at time of going to print and are subject to change, please review the related websites

20 - 21 APRIL 2021
SINGAPORE MARITIME WEEK
SINGAPORE, ASIA

Driven by the Maritime and Port Authority of Singapore, the Singapore Maritime Week gathers the international maritime community for a week of flagship conferences, dialogues and exhibitions to advance key issues.

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

21 - 25 JUNE 2021
MARTIME WEEK GIBRALTAR
GIBRALTAR

The Gibraltar Port Authority, HM Government of Gibraltar, Gibraltar Maritime Administration and Petrosport are proud to announce the second edition of the biennial Maritime Week Gibraltar, a global showcase for one of the most efficient, secure and professionally-managed ports in the world. Building on the huge success of the inaugural event in June 2019, MWG 2021 will demonstrate the advantages that make Gibraltar the rock-solid partner for global shipping. The week will consist of a range of events, including a Flagship Conference, training courses, seminars, B-2-B meetings, technical site visits, an exhibition and some spectacular networking.

For more information:
<https://www.petrosport.com/events/MWG2021>

10 - 24 MAY 2021
PORTUGAL SHIPPING WEEK
LISBON, PORTUGAL

Portugal Shipping Week 2021 will showcase Portugal as a global shipping and maritime logistics centre and offers foreign shipowners and representatives from every maritime discipline a unique and exciting opportunity to meet, network and develop important new commercial relationships with the leaders of the Portuguese maritime sector.

This second edition of the biennial Portugal Shipping Week will be one of the key maritime gatherings of 2021, offering a range of events focused on the impact of the marine energy transition for shipping and ports, as well as bunkering, port and ancillary services.

For more information:
<https://www.petrosport.com/events/psw-2021>

13 - 17 SEPTEMBER 2021
LONDON INTERNATIONAL SHIPPING WEEK
LONDON, UNITED KINGDOM

LISW21 will be the 'must attend' event of 2021, offering up to 250 industry functions and unique networking opportunities for leaders across all sectors of the international shipping industry – regulators, charterers, ship owners, ship managers, bunker suppliers, lawyers, ship brokers, bankers, insurers, insurance brokers, commodity traders and brokers, ship suppliers, port operators, shipping service providers and many more.

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

22 - 24 OCTOBER 2021
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 2021 will summarize 2020, provide market overviews and solutions in the new regulatory regime. and ask whether the real storm is brewing in 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/>

25 - 27 MAY 2021
MARITIME WEEK AMERICAS
PANAMA

Maritime Week Americas is the biggest and most popular annual bunkering event in the Americas because of its top-quality, timely content and unrivalled networking. MWA 2021 in Panama will lift the bar even higher. MWA 2021 comprises a high-level two-day marine bunker conference and several specialist training courses and workshops, plus an opportunity to experience the Panama Canal and the country's shipping and bunkering infrastructure.

For more information:
<https://www.petrosport.com/events/mwa2021-panama>

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WORLD BUNKERING

SPRING 2021... NOW OPEN FOR BOOKINGS

SPRING 2021

SPECIAL FEATURES:

Fuel Quantity

The use of mass flow metering systems on bunker barges has been pioneered by Singapore and is gaining traction elsewhere. Will this soon become standard practice in major bunkering hubs around the world?

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I.T.

Cybersecurity has become a major concern in all industrial sectors. Is the bunker industry doing enough to protect itself from cyber attack?

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Lubricants

Lubricant manufacturers worked hard in the run-up to the 1 January 2020 implementation of the 0.50% sulphur in fuel limit to produce new lubricants compatible with IMO 2020 compliant fuels. A year on we look at how the market has adapted.

GEOGRAPHICAL FOCUS:

Western Mediterranean

Our annual review of this important bunkering region. Over the past year the regions ports have had to adapt to meeting demand for VLSFO. At the same time some are starting to prepare to bunker LNG-fuelled ships.

.....

Americas and Caribbean

We look at how the bunkering industry has coped with a disastrous 2020. In addition to ravages of Covid-19 the Caribbean has experienced an unprecedented hurricane season. In particular we look at the prospects for a return of Caribbean cruising.

Regular Features

Russian Update
News, Views, Analysis
Interview, Industry News, Environment,
Testing, LNG, Lubricants, Innovation, Legal News,
Equipment and Services, Diary
Event Previews & Reviews





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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LET'S DO BUSINESS TOGETHER

Benefit from our approach to strong
and transparent partnerships across
the entire value chain



Meet our experts worldwide at
www.bunkerone.com

Bunker One. Fuelling Simplicity.