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maritimeweek®
2022




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TRANSFORMATION
FOR GROWTH



Welcome Address

Senior Minister of State for Transport, Singapore, Mr Chee Hong Tat delivering the welcome address at the opening of the MarineTech Conference.

Singapore, The Next Silicon Valley For MarineTech

Pearl Lee
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Advancements in maritime technology can help the shipping industry tackle its supply chain challenges and move ahead in innovation.

And Singapore can play the key role in providing the ecosystem for such technology solutions to grow and flourish, said Senior Minister of State for Transport Chee Hong Tat.

Speaking at the MarineTech Conference yesterday, Mr Chee said Singapore already has a thriving maritime technology, or MarineTech, ecosystem, and is "a hub for maritime technology producers and clients to meet".

But the city-state is aiming to achieve more. Its goal, he said, is to be the Silicon Valley for MarineTech, with a focus in three broad areas: digitalisation, innovation, and partnerships.

The digitalisation of the shipping industry is crucial to easing logistical bottlenecks and strengthening the resilience of the global supply chain, as it will provide visibility on vessel movements and cargo flows, he added.

To this end, the Maritime and Port Authority of Singapore (MPA) has been working with partners and regulators to pilot solutions across various levels.

Citing digitalPORT@SG™ as an example, Mr Chee said the second phase of development for the portal

is on track to be completed in the later half of this year. First launched in June 2020 to streamline transactions between government agencies and businesses for port clearances, the updated version will be connected with port community systems and other commercial platforms. This will enable better coordination among port and marine service providers to reduce vessel turnaround times.

Globally, the development of OCEANS-X, an API (application programming interface) marketplace announced by Singapore's Deputy Prime Minister Heng Swee Keat on the Monday, will also boost the country's digitalisation efforts by facilitating data sharing among data providers, consumers, and app developers.

Key to the success of Singapore's efforts in digitalisation and innovation is its relationships with partners, noted Mr Chee.

"To maximise our chances of success in digitalisation and innovation, we need to pool our collective knowledge, expertise, and resources to leave our comfort zones, take calculated risks, and explore uncharted waters together," he said.

For instance, MPA is renewing its Memorandum of Understanding (MOU) with Jurong Port with a S\$28 million budget to support the multipurpose port terminal operator in growing new business verticals, such as green marine fuels that help drive Singapore's maritime decarbonisation goals.

As Singapore seeks to digitalise more of its processes, cybersecurity will be a key concern – and it

will require keen cooperation among partners, he added.

On this front, a separate MOU signed between MPA, the Singapore Shipping Association, and seven industry partners including container shipping companies Ocean Network Express and Pacific International Lines, will seek to deepen Singapore's maritime cybersecurity capabilities.

The MOU will also establish the Maritime Cybersecurity Roundtable, which will explore initiatives to strengthen Singapore's cybersecurity defence, promote information sharing, and develop maritime cybersecurity skills and talent for the maritime landscape over the next three years. The inaugural meeting will be held later this year, where participants will recommend initiatives to improve maritime cybersecurity collaborations.

In a keynote address at the event, Ruma Balasubramanian, Southeast Asia Managing Director of Google Cloud, said that technology developments in the maritime space are set to accelerate in the coming years.

MarineTech has in recent years attracted more venture capital (VC) funds, with investments totalling US\$11.3 billion last year, double that of 2020.

This, she said, closely resembled the rise of the fintech sector between 2010 and 2013.

"There is no better time to be in maritime technology. There's unprecedented levels of public support, large enterprises are also taking notice of maritime technology, but what is really special is that VC investments are coming in too," she said. ■

At A Glance

Several initiatives were launched at the MarineTech Conference yesterday. Here's a quick look at some of them.

Roadmap for additive manufacturing

Senior Minister of State for Transport Chee Hong Tat launched the Maritime Singapore Additive Manufacturing Landscape Report, which provides a roadmap for companies to experiment with new practices in additive manufacturing.

Accelerating the adoption of metal additive manufacturing

Singapore Polytechnic signed a Memorandum of Understanding with recycling and additive manufacturing company Molyworks to accelerate the adoption of metal additive manufacturing and metal recycling technology for the maritime and offshore industry.

An expanded digital plan

The Sea Transport Industry Digital Plan (IDP), launched in 2020, is now expanded to include all subsectors in sea transport, including ship chandlers, ship brokers, marine surveyors, ship management, and ship operators.

Deepening maritime research

The Singapore Maritime Institute and the Research Institutes of Sweden signed a three-year Memorandum of Understanding to deepen research in four areas: maritime informatics, supply chain innovation and efficiency, decarbonisation and sustainability, and safety and security.

Drone delivery: The next steps

Drone delivery operator Skyports signed Memoranda of Understanding with Wilhelmssen Ships Service and Thome Group to advance full-scale commercialisation of maritime ship-to-shore drone delivery services in Singapore.

Data Sharing Key To Tackling Supply Chain Challenge

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After two years weathering the storms brought about by COVID-19, it is time for the maritime industry to stop blaming the pandemic for its supply chain disruptions.

Instead, the industry needs to pursue partnerships and integration to boost productivity, said Tan Chong Meng, Group Chief Executive Officer of PSA International.

Speaking at a dialogue moderated by Maritime and Port Authority of Singapore Chief Executive Quah Ley Hoon on the future of supply chains in the face of disruption and digitalisation, Mr Tan said that around the world, domestic mobility has "pretty much restored".

"I think we have been through COVID-19 for two years. I think we should stop blaming COVID," he said.

Instead, he urged industry players to be more integrated to facilitate data flows in order to be more productive.

"We are all fractions of the supply chain. For us to reimagine the supply chain as a whole, we need to be able to share data... This is the next step of the supply chain world."

To that, Ms Quah said the industry should thank the pandemic instead. "If not for COVID-19, the issues of digitalisation, standardisation, and partnerships would not have come up so strongly."

Since the pandemic began, the global supply chain has been plagued by disruptions and delays, made worse by overwhelming e-commerce demand, overtaxed port infrastructure, and opaque shipping operations.

And the supply crunch is unlikely to abate soon, especially in the United States, where port infrastructure has been pushed to the brink, said Laurent Olmeta, Asia Pacific Chief Executive Officer of shipping company CMA CGM. "Without a drop in demand, there is no magic bullet."

While the sharing of data can facilitate coordination and better optimisation of logistics, industry players remain hesitant to do so for fear of competition. The lack of data standards is also an obstacle.

Allard Castelein, President and Chief Executive Officer of the Port of Rotterdam, said the industry has to accept the idea that data should not be con-



Group Chief Executive Officer of PSA International Tan Chong Meng (extreme right) speaking at the keynote dialogue alongside Laurent Olmeta (middle), Asia Pacific Chief Executive Officer of CMA CGM, and Andre Simha, Chief Digital and Information Officer of Mediterranean Shipping Company.

sidered proprietary. Instead, what is proprietary are the services and solutions built upon that data.

"If we can get to that modus operandi, it becomes much (easier) to predict where the cargo is, when the vessels will arrive... It is actually quite strange that in 2022, so few vessels are on time," he said.

"I think we have a collective responsibility to not accept sub-optimisation. Sub-optimisation will inevitably lead to non-sustainable business models."

Sharing his experience of building the Singapore Trade Data Exchange, or SGTraDex, Mr Tan said data owners have to be socialised and brought onboard the process to see the benefits of data sharing.

SGTraDex is a digital infrastructure that facilitates secure data sharing across traders, carriers, port operators, service providers, and financial institutions through a common data highway.

Added Mr Tan: "There is still a lot of nervousness (about data sharing). As industry leaders, we should try and create an environment where we can convince people that (this) is acceptable and appropriate." ■

"We are all fractions of the supply chain. For us to reimagine the supply chain as a whole, we need to be able to share data... This is the next step of the supply chain world."

Tan Chong Meng
Group Chief Executive Officer,
PSA (International)

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From left: Bala Sankaran, Co-Chief Executive Officer, Alpha Ori Technology (USA); Nakul Malhotra, Vice President of Emerging Opportunities Portfolio, Maritime Services (Singapore), Wilhelmsen; Leslie Dang, Managing Director, Singapore, Nautilus Labs; Benjamin Hadfield, Head of Digital Products, Swire Shipping (Singapore); Martijn Thijssen, Head of Ecosystem & Platform Play, Digital Strategy & Transformation, Port of Rotterdam (Netherlands); and Mario Moretti, Asia Marine Senior Director, RINA (Singapore) at the MarineTech Conference.

With Time, Technology Will Transform The Maritime Industry

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From building autonomous vessels with the help of artificial intelligence to aiding decarbonisation goals by developing alternative fuels, technology has been at the heart of progress made in the maritime sector.

But progress did not happen overnight. In fact, when it comes to harnessing technology, industry players must also learn how to manage expectations and practise patience to obtain optimal results, said panellists at the MarineTech Conference yesterday.

"Transformation shouldn't be immediate – there should be steps in place," said Benjamin Hadfield, Head of Digital Products at Swire Shipping (Singapore). "We should take an incremental approach."

He was one of five experts speaking at a panel on the first day of the MarineTech Conference yesterday, which discussed the impact of disruptive technologies and the digital economy in the maritime sector.

The panellists were clear on one thing: technology is critical in the maritime sector, and its importance will only continue to grow.

"Shipping is in an era of digitalisation," said the panel's moderator Mario Moretti, Asia Marine Senior Director at RINA (Singapore). "We see a lot of players and technology providers."

Technology, however, takes time, especially since the challenges facing maritime are complex and multifaceted. As such, companies must remain patient and adjust expectations of what technology can and cannot do, noted Bala Sankaran, Co-Chief Executive Officer of Alpha Ori Technology (USA).

"What they end up doing is that they invest in digital solutions and then shoot themselves in the foot by challenging their own decisions," he said. "There's a huge change management exercise that needs to happen in the industry."

Similarly, a big factor of success in developing the right technological solutions is collaboration. Maritime companies must also make a concerted effort to connect with the technology providers, noted Nakul Malhotra, Wilhelmsen's Vice President of Emerging Opportunities Portfolio, Maritime Services (Singapore).

He noted that there is often a communication gap between the two parties. "If we don't get that bridge with the domain experts – the guys who really know how to solve those problems – we're setting ourselves up for failure," he said.

If maritime companies can adjust their expectations and stay patient, the results will become clear with time. For instance, the Port of Rotterdam has focused on using technology to develop port call optimisation – a concept that maximises port efficiency.

By sharing data on an advanced communication platform called PortXchange, the platform allows for the coordination of all activities such as mooring and bunkering. The Dutch port can guarantee vessels an available berth upon arrival so that no time is wasted.

This is also environmentally beneficial. A joint study conducted by the port and Dutch research institute TNO in 2017 estimated that this reduction in waiting time could slash carbon emissions by 134,000 tonnes.

"It's like a Formula 1 pitstop for ships," said Martijn Thijssen, the Port of Rotterdam's (Netherlands) Head of Ecosystem & Platform Play, Digital Strategy & Transformation.

This could not have been achieved without the use of digital technology. "We see the future where we really need to have digital infrastructure in place, as we do with hard infrastructure as a port," said Mr Thijssen.

In addition, technology can also help maritime companies tackle multiple modern-day challenges such as sustainability, profitability, and regulatory changes all at the same time, noted Leslie Dang, Managing Director of maritime technology company Nautilus Labs in Singapore.

"In order to manage all that, they need to be able to predict the future of the currents with a high degree of accuracy," she said. "We can only do that with machine learning."

And as the maritime industry continues to embrace technology, the panellists emphasised that talent remains crucial to industry efforts. This means ensuring that talent in the industry remains up-to-date, well-trained and reskilled so that they can adapt to the fast changing technological landscape.

"I strongly urge and recommend them (seafarers) to understand what the maritime landscape is and how they can continue to be connected, upskilled and reskilled to be relevant moving forward," said Mr Malhotra.

"The technology's already there," added Mr Hadfield. "It's just about getting people onboard." ■

Talent Crucial To Sustaining Maritime Excellence

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There is no substitute for talent when it comes to retaining Singapore's maritime excellence. As a hotbed for innovation and digitalisation, the Republic must continue opening its doors to the brightest minds to enhance its role as an industry leader.

Singapore is already several steps ahead, with concerted research and development (R&D) efforts, robust governance, and advanced technologies as the deciding factors for companies to establish their base here, panellists at the MarineTech Conference said yesterday.

The panel discussion focused on what it meant for Singapore to be the top maritime technology city. The country maintained the top spot for the fifth year running in the Leading Maritime Cities of the World 2022 report by consultancy Menon Economics and classification society DNV.

But with more business opportunities in areas like decarbonisation and artificial intelligence (AI) surfacing, recruiting the right people is paramount. This will ensure start-ups and other firms here are thinking and building globally as deep technology organisations.

"Our strategies revolve a lot around creating an environment that attracts talent to thrive in Singapore," said Thomas Ting, Chief Technology Officer/Deputy Director, Innovation, Technology & Talent Development Division at the Maritime and Port Authority of Singapore (MPA). "Talent is a very crucial piece in terms of providing growth capabilities to start-ups and companies."

The process is far from straightforward today. With everyone fighting for talent, Singapore needs to make it as easy as possible for people to work here, said Ronny Waage, Regional Manager of maritime Internet of Things company ScanReach, and

"If someone on the other side of the world is willing to relocate to Singapore to drive a scale-up, they should be able to move here and start tomorrow."

Ronny Waage
Regional Manager,
ScanReach and
Digital Transformation Committee
Member,
Singapore Shipping Association



From left to right: Chris Chung, Director, Digital Innovation & Strategic Projects, Wärtsilä; Ronny Waage, Regional Manager, ScanReach and Digital Transformation Committee Member, Singapore Shipping Association (SSA); Nidhi Gupta, Co-founder and Chief Executive Officer, Portcast; Thomas Ting, Chief Technology Officer/Deputy Director, Innovation, Technology & Talent Development Division, Maritime and Port Authority of Singapore; and Chua Chye Poh, Founder, ShipsFocus.

Digital Transformation Committee Member of the Singapore Shipping Association (SSA).

"If someone on the other side of the world is willing to relocate to Singapore to drive a scale-up, they should be able to move here and start tomorrow," he added.

With companies able to get the perfect talent fit to find success in Singapore, which in turn powers new business opportunities, the near- and long-term returns will help to build a "virtuous cycle" that elevates the maritime sector here, added Mr Ting.

This is where proper governance and a sustained interest in maritime start-ups from investors is necessary. One way MPA is enabling smoother innovation is to create regulatory sandboxes for companies to conduct R&D in a safe space, which prevents them from running into legislative roadblocks.

For some start-ups stationed in Singapore, there are huge benefits to operating in a country with a digitalisation strategy outlined by supportive regulation framework, abundant class societies to maintain technical standards for ship construction, and a strong base of legal and tech providers.

"Singapore has been the perfect breeding ground for us to bring the best in class of AI, cloud computing and data analytics used globally in leading sectors, into maritime and logistics," said Nidhi Gupta, Co-founder and Chief Executive Officer of supply chain technology start-up Portcast.

Singapore cannot rest on its laurels. To remain in a strong position, the maritime community must create scalable solutions that will draw venture capitalists and investors.

While not as developed as the fintech scene, the maritime industry has seen a steady build-up in capital and needs "a bit of time" to reach the same level, added Mr Waage. This means creating value

"I think what sets Singapore apart is having a clear articulation of strategy and what it wants as a maritime nation, where it wants to get to."

Chris Chung
Director, Digital Innovation &
Strategic Projects,
Wärtsilä

that could potentially shift the needle in terms of technology and digitalisation.

To that end, as long as the start-ups are showing traction and their business fundamentals make sense, they will appeal to investors.

"I think what sets Singapore apart is having a clear articulation of strategy and what it wants as a maritime nation, where it wants to get to," said Chris Chung, Director, Digital Innovation & Strategic Projects at technology firm Wärtsilä.

"This is underpinned by a strong set of roadmaps and actionable milestones – it's compelling and structures a conducive environment for digitalisation." ■

Why Singapore Is Leading The Way In Maritime Digitalisation

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When more than 300 global experts were polled recently on which maritime cities were among the world's best, Singapore, perhaps unsurprisingly, came out tops.

This is the fifth consecutive time Singapore has clinched the overall top spot in the Leading Maritime Cities of the World report, a biennial global benchmarking study by Norwegian classification society DNV and Oslo-based analysis group Memon Economics. The 2022 edition of the report was published in January, delayed by a year because of the COVID-19 pandemic.

Singapore retained its top ranking in the "Attractiveness and Competitiveness" category. For the first time, it also scooped the "Maritime Technology" title, in light of its strong focus on digital transformation.

"We see this (digitalisation) as a tectonic shift in the industry," said Shahrin Osman, DNV's Regional Head of Maritime Advisory and Director at its Centre of Excellence for Maritime Decarbonisation & Autonomy in Singapore.

“Our small size gives us a unique advantage – people within the ecosystem can get access to each other very well.”

Lee Keng Lin
Managing Director (Business Development),
KSL Maritime Group

Dr Shahrin was moderating a panel at the 4th Annual Singapore Maritime Forum, where speakers shared why the country has emerged as a leader of digital transformation in the maritime sector.

Held on Monday in conjunction with the Singapore Maritime Week, the online event was organised by Capital Link in partnership with Columbia Shipmanagement and Singhai Marine Services.

NATURE AND NURTURE

With companies seeking to decarbonise and improve operational efficiency, among other goals, digitalisation is fast becoming a cornerstone of the maritime industry. Panellists shared that Singapore's successful push for maritime digital transformation stems from four key factors.

Geography is one. "Our small size gives us a unique advantage – people within the ecosystem can get access to each other very well," said Lee Keng Lin, Managing Director (Business Development) at KSL Maritime Group, who was one of four panellists at the session. "That in turn attracts a lot of marine professionals to the country."

This advantage is complemented by a second factor – a deliberate decision on the Government's end to push extremely hard on digitalisation, noted Leslie Yee, General Manager, IT at Pacific International Lines.

"We've gone very far in bringing the entire country towards digitalisation," he said. This has led the maritime industry to pick up on the trend.

Mr Yee gave the example of how the Maritime and Port Authority of Singapore (MPA) has launched various initiatives such as digitalOCEANS™, an online platform that helps enhance global connectivity between ports. "These are very encouraging developments in the digitalisation space, especially for maritime," he said.

In her opening keynote remarks at the forum, MPA Chief Executive Quah Ley Hoon pointed out that MPA will continue to build and enable more

of such collaborative ecosystems. "Maritime is transforming faster than we can ever imagine," she said. "Technology adoption and digitalisation is occurring at a rapid pace."

Such strong support from the government is another reason Singapore's maritime sector is ever-ready to embrace digital transformation, observed Nakul Malhotra, Wilhelmsen's Vice President of Emerging Opportunities Portfolio, Maritime Services (Singapore).

"What Singapore has done really well is to create these regulatory sandboxes," he said, citing MPA's Maritime Drone Estate – a testbed to develop drone technologies – as an example. "It is a safe space for start-ups and corporates to test these ideas out."

Lastly, he noted that the country's solid foundation as a maritime hub has provided a stable base for digital transformation to take place. "Singapore has always been a key operational centre in a lot of elements of shipping like bunkering, transshipment, and key port activities," he added.

That said, Mr Malhotra pointed out that digital technology in the maritime sector is still at a nascent stage. For it to truly flourish, Dhritiman Hui, Managing Director at entrepreneur network Techstars, suggested that start-ups need to aim for even bigger investments to attain unicorn status.

"We as a sector now need one or two outsized successes," he said. "If that happens, we'll see an order of magnitude increase in the action that we're seeing in the maritime tech space."

To achieve that, KSL Maritime Group's Mr Lee called on more maritime players to use Singapore as an incubator or accelerator for their developing technologies.

"We have all the key elements that are required for Singapore to be a digital hub," he said. "I'm very encouraged by the scene." ■

Fighting Against Growing Piracy In Asia



Matthew Gan

It is critical for ship owners to build up defences against piracy, in light of increasing attacks at sea, said Laila Jesmin, Additional Secretary at the Bangladesh Ministry of Shipping and Vice-Chairperson of ReCAAP ISC Governing Council.

Speaking at yesterday's ReCAAP ISC Piracy and Sea Robbery Conference 2022 on piracy challenges facing the maritime industry, she noted that safety concerns have grown, with the COVID-19 pandemic forcing seafarers to stay on ships for prolonged periods due to entry restrictions. This, in turn, has led to more opportunities for piracy.

ReCAAP, or the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia, is the first regional government-to-government agreement to promote and enhance cooperation against piracy and armed robbery against ships in Asia. The ReCAAP Information Sharing Centre (ReCAAP ISC) was established in Singapore in 2006.

At the event, Lee Yin Mui, Assistant Director (Research) at ReCAAP ISC, shared that the number of reported incidents of piracy rose by 29 per cent in the first three months of this year, compared to the same period last year – from 17 to 22 incidents.

In fact, it is the second highest number of incidents within this three-month period in the past five years.

Although 67 per cent of these incidents involved unarmed perpetrators and unharmed crew, or what is termed as CAT4 incidents, it is still a cause for concern. The other 23 per cent were CAT3 incidents, where the perpetrators were armed with knives but the crew remained unharmed.

When examined more closely, these statistics reveal another worrying trend. Among the 22 incidents, 17 had occurred along the Singapore Strait – an uptake from 10 incidents in the same period last year.

But there various ways in which shipping companies can effectively defend against such attacks, said Joo Sung-kuk, General Manager (Marine Superintendent), Tanker Management Team at HMM Ocean Service.

Mr Joo spoke on the importance of having a ship specific hardening plan that addresses the primary, secondary, and last layer of defence. This comprehensive plan should include built-in defences such as razor wires and water cannons, as well as a defensive mindset of enhanced vigilance.

While being prepared to defend against piracy is crucial, it is even better to incorporate strategies to avoid these attacks. This can be done by conducting adequate passage planning, ensuring that necessary risk assessments are done before ships begin their voyage.

Shipping companies and ship masters ought to be furnished with the latest information from ReCAAP ISC and other relevant agencies. Ship masters, in particular, are to plan their routes, brief their crew, and carry out various drills.

Another essential process in the works is timely and accurate information sharing. On this issue, Mr Joo offered some suggestions to ReCAAP.

He believes that it will be immensely beneficial for companies and ship masters to be given real-time alerts via email. He also suggested using various social media platforms such as Twitter, Facebook, and Whatsapp to share quick updates relating to piracy in the region.

These initiatives, he said, would allow companies and ship masters to access important information quickly and conveniently.

As Asia is a piracy hotspot, it is crucial to find solutions. "This could lead to a negative impact on international trade around the region. It is imperative that these issues be tackled," said Mr Joo. ■

TODAY'S
HIGHLIGHTS

Wed
April 6

Accelerating Decarbonisation Conference

9am - 2.45pm
Hybrid (Marina Bay Sands, Level 4, Orchid Ballroom)

Industry leaders will share strategies on how pathways to net zero are being forged in decarbonisation technologies, future fuels, finance, and collaboration models. The conference will underscore practical steps for the transitional phase and what progress needs to be made beyond 2022.

IMO-Singapore Future of Shipping Conference

4pm - 6.30pm
Hybrid (Marina Bay Sands, Level 4, Orchid Ballroom)

The joint IMO-Singapore Future of Shipping Conference Decarbonisation returns to Singapore Maritime Week to tackle the critical issue of maritime decarbonisation. FOSC 2022 brings stakeholders together to identify solutions along the two pillars of opportunities and gaps in the maritime and energy value chains.

MTEC/ICMASS Conference

9am - 5pm
Hybrid (Marina Bay Sands, Level 4, Peony Junior & Orchid Junior Ballrooms)

The conference provides an avenue to create partnerships and collaborations amongst researchers, academics, engineers, and professionals in the maritime, port, and adjacent industries. Nearly 80 global researchers, expert engineers, and scientists from 17 countries will present groundbreaking research findings that will lead to future-proof products, services, and applications for the maritime industry.

SCMA Key Legal Challenges from Digitalisation and Decarbonisation

3pm - 5pm
Virtual

This panel discussion covers some of the changes in law, legislation needed, new challenges and claims, in particular accommodating EEXI, CII and EU ETS regulations in supply chain contracts & charterparties.

MarineTech Conference

9am - 4.30pm
Virtual

MarineTech Exhibition

9am - 5.00pm
Marina Bay Sands, Level 4,
Melati Ballroom

Baltic Freight and Commodity Forum – Tanker and Gas

4pm - 5.30pm
Virtual

Get the latest updates on Baltic services and hear from leading market experts on the dynamics and market outlook of the tanker, gas freight, and commodities markets.



Will Carbon Credits Advance Sustainable Shipping?

THE SPARK - CARBON OFFSETS AS THE FIRST STEP

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Worldwide, there is a march towards net zero emissions, with 193 signatory countries participating in the Paris Agreement and about 5,000 companies committed to net zero targets as part of the global Climate Ambition Alliance.

Building on efforts from the 1970s, the International Maritime Organization (IMO) set out strategies in June 2021 to control air pollution from ships. Among such measures is the establishment of a formal energy efficiency rating for ships.

However, to meet the IMO's goal to cut carbon intensity of all ships by at least 40 per cent by 2030 (compared to the 2008 baseline), much work remains to be done.

One possible way? Carbon credits. Buying carbon credits (or offsets), which are currently voluntary in the shipping industry, allows owners to emit a certain amount of carbon dioxide or greenhouse gases (GHGs) in exchange for a reduction somewhere else. The credits can be traded on marketplaces – the value of traded global carbon credit markets grew by 164 per cent to US\$851 billion last year, according to Reuters.

Much of this increase came from the European Union's Emissions Trading System (EU ETS), the world's most established carbon market. The region could be the first in the world to require shipowners to buy permits covering their emissions.

That said, the carbon credit debate remains divisive in the maritime sector. While the system could theoretically ensure a net zero outcome, it may be a short-term solution. Will companies simply pay to continue their polluting ways? Other challenges remain, such as the difficulty of enforcing and regulating a global carbon credit market for shipping.

AN INTERIM SOLUTION?

The shipping industry has dipped its toes in carbon credits before, with AkzoNobel's marine coatings business working with The Gold Standard Foundation in 2014 to formulate the first approved carbon credit methodology in the sector. Shipowners who invested in the company's sustainable hull coatings were awarded carbon credits based on the amount of carbon dioxide reduced due to lower drag and improved fuel efficiency.

Each of the 16 vessels included in the first issue achieved savings of over 1,250 tonnes of fuel, preventing 4,000 tonnes of emissions yearly – earning about US\$500,000 worth of carbon credits in total. However, despite the promise of the model, it has not caught on or been scaled throughout the industry.

Still, it showed that companies can be incentivised to act to save the environment if it makes economic sense. This could be the calling card of carbon credits as the transition to green fuels for the maritime sector is an expensive one.

"Carbon credits are an intermediary solution to bridge the higher cost of lower-emission solutions," said Joshua Politis, Deputy Managing Partner at Transport Capital, an international transportation investment management and advisory firm.

However, he added that credits should be used as a last resort rather than as a "free pass" to continue emitting as normal. "Carbon credits should only be used for those emissions which cannot be abated with current technologies at a reasonable cost."

ARE THE CREDITS CREDIBLE?

Perhaps the largest concern over a voluntary carbon credit market is whether it is a form of greenwash-

ing, especially when low-quality credits are used. As the voluntary market is neither legally mandated nor enforced, this is a legitimate concern.

"It is possible for a company to claim they buy more credits than they emit," said Kevin Milla, Consultant and Carbon Specialist at Paia Consulting, which specialises in sustainability issues. "Companies have complete discretion in the voluntary carbon market."

There is also the issue of who should purchase the credits. Should it be the shipowner or charterer, for instance? Such disagreements have emerged in light of the shipping industry's impending addition to the EU ETS.

Another overriding question is who should enforce the carbon credit system, should it be set up. The IMO has indicated that regulations on GHG emissions should be global, in contrast to the EU's approach, due to concerns that developing countries may be disproportionately affected.

Finally, while carbon credits may be a useful short-term incentive for companies transitioning to alternative fuels, there remain doubts over its efficacy in addressing the world's climate crisis. Instead, carbon credits may be more effective when used in tandem with other tools, such as levies on bunker purchases that can pay for decarbonisation research, or carbon pricing to make carbon-based fuels more expensive.

"For reputational purposes and perhaps stakeholder and employee satisfaction, the purchase of carbon credits can be a key part of a maritime company's sustainability plan," said Mr Milla. "However, it is less effective towards global climate change goals if it is the sole plan." ■