

Shaping the Future of Shipping

# Leadership **Insights**

Insights from the global leadership community

Issue no: 22 | July/August 2023

## **Decision Maker**

Decarbonisation: Learning by doing p2

#### **Feature**

Seafarer 2050: a milestone summit in Manila р4

#### Nowe

Market measures needed to realise MEPC net-zero consensus, Cyber security risk remains as industry defences mature, ABS study outlines 'vast potential' of nuclear powered ships

## **News Analysis**

Collaboration crucial to boost green fuel production p9

#### **ICS in Action**

Global energy summit adopts CEM-Hubs, ICS welcomes new IMO Secretary General, Panama endorses medical guide p10

Learning by doing Professor Lynn Loo, CEO of the Global Centre for Maritime Decarbonisation, pushes forward zero emission shipping with real-world pilots and trials

# By trial and error

Professor Lynn Loo, CEO, Global Centre for Maritime Decarbonisation (GCMD) seeks to accelerate shipping's green transition with pilots and trials of alternative fuels and technologies

What has been the most pressing aspect to your work at GCMD and what continues to be your core goals with the centre going forward?

It was important for me to map the kinds of decarbonisation activities that were already going on in the maritime space, to figure out how we can add value and not duplicate efforts. The one piece that was missing was pilots and trials; putting solutions on ships, on water and on land. In our goal to learn by doing, we can address the hurdles that we come across and lower the barriers for adoption broadly across the market. If a pilot or solution fails, those learnings are equally important for refining future efforts, and we will share those with

How does your background as a professor in chemical and biological engineering at Princeton feed into the work you are doing at GCMD?

industry too.

I'd like to think that I'm bringing some academic rigour to the table in how we are scoping out projects: making sure we're asking the right questions and that our hypothesis is really addressing the pain points of the sector.

For example, 60% of ships on the water today belong to

Image: MPA | Front cover image: Global Centre for Maritime Decarbonisation

owners that have 20 vessels or less in their fleet. These shipowners have different pain points than the big guys. In our recent Global Maritime Decarbonisation Industry survey which we completed with Boston Consulting Group, we found that smaller shipowners lack context and understanding of the technologies available to them to help them reduce their greenhouse gas (GHG) emissions. This is in contrast to the large shipowners who are already adopting solutions considered "low hanging fruits" and are more concerned with technology maturity and price gaps. This shows us how we need to differentiate our interventions.

> ventions and the practical work you're doing to accelerindustry-wide adoption of

Can you tell us about

some of those inter-

alternative fuels?

In February we completed a trial of two supply chains of sustainable biofuels to help resolve issues of traceability and transparency. The consortium we led did this by adding a tracer in the biofuels at their production sites outside Singapore, and tracking the labelled biofuels to Singapore where they were blended and bunkered. Testing was also conducted until the biofuels were consumed onboard vessels. Tracking it across the supply chain supports our development of an assurance framework on the

quality, quantity and source of fuel, which allows us to accurately account for the GHG emissions abated.

In April this year we also completed our <u>ammonia</u> bunkering safety study in partnership with DNV, Surbana Jurong and Singapore Maritime Academy. The study commenced last year to define the safety and operational envelopes for an eventual bunkering pilot to be conducted within Singapore's port limits. We chose Singapore for the study as it is population dense and sees more than a thousand ships a day, making the findings extendable to other ports around the world. We went to great lengths to do a coarse quantitative risk assessment to figure out safety distances and a reasonable flow rate to pilot ammonia bunkering. The safety distances came up to be 300-400 metres based on a flowrate of 700 cubic meters per hour, close to parameters for LNG bunkering in Singapore when those operations first started.

Safety is of course a major concern to address, guidelines will need to be developed so we can bring the risks down to an "as low as reasonably practicable" (ALARP) level. As our next step, we are preparing for pilots entailing ammonia ship-to-ship cargo transfer (because ammonia-fuelled vessels are still being built) with like-minded partners, bringing a known operation into port limits to understand and define emergency response requirements.

# It is all about creating a clear pathway for the adoption of decarbonisation technologies

What is the best way for shipping to get its fair share of green fuels when vying against other industries and countries?

Through our participation in ICS' and the International Association of Ports and Harbors' Clean Energy Marine Hubs and seeing the work underway, it's about maritime leaders being able to grease the wheels and move things faster. Engaging with stakeholders at platforms, such as the Clean Energy Ministerial and those with a line of sight on fuel production facilities, is vital so that more people understand shipping's role in the energy transition and the efforts required to help roll out green fuels globally.

As a solution-agnostic centre you are not just focusing on fuels. What kinds of pilots are you running for more nascent technologies?

GCMD is working with six other partners, including Oil and Gas Climate Initiative (OGCI), Stena Bulk, Alfa Laval, the Netherlands Organization for Applied Scientific Research (TNO), Deltamarin Ltd and ABS to demonstrate the feasibility of using carbon capture onboard a vessel with a goal to accelerate deployment of the technology in the next five years.

There have been pilot projects that focus on proving the capture technology; our pilot differs from these as it aims to address solution adoption from end to end. Once you have figured out and demonstrated that the capture technology works, you need to have the ability to sequester or reduce CO<sub>2</sub> emissions into the environment. But there currently doesn't exist guidelines for offloading of captured liquefied CO<sub>2</sub>. So the fate of the CO<sub>2</sub> is in question. We are working with Lloyd's Register on how one would offload liquefied CO<sub>2</sub> from a technical and operational perspective. If carbon capture and storage is going to be a viable option, you will need to offload and identify an offtaker - will it be buried underground? Will someone take that waste CO, and use it as feedstock? It's all about providing clarity for the adoption of decarbonisation technologies.

And while shipping waits for technologies to mature or be proved and made more widely available, what practical things can leaders be doing to green their operations?

It's important to remember this isn't a sharp transition, it is going to take multiple decades. Until alternative fuels are more widely available and at lower costs, we should look at nearer-term solutions and technologies that are available to us now. I would say that despite its challenges, as a drop-in fuel, biofuels has a role to play in helping to lower GHG emissions today. So does LNG, provided that we take a holistic approach to mitigate leaks and slips during its lifecycle.

Shipping can also use technical measures as simple as routine hull cleaning, coating hulls in low friction paints and others more advanced, such as wind propulsion. While these measures will help with efficiency gains today, they can also help us when shipping transitions to future fuels, such as ammonia or methanol. These fuels are significantly lower in energy density compared to fuel oils today, so improving energy efficiency to reduce fuel consumption will be all the more important.

Finally, from your time working in Singapore, what are your views on the need for decarbonisation being approached with just transition considerations in mind?

Depending on where you sit, the challenges of the energy transition can look very different. Yet, we tend to apply a homogeneous Western lens to the challenges of the energy transition around the world. Speaking from Singapore, where GCMD is based, renewable resources are limited, meaning we would need to import green electrons and green molecules in order to decarbonise the economy. From an energy security perspective, we cannot afford to rely on a single source. The local context is important, and different yardsticks need to be applied for measuring various decarbonisation efforts that are taking place at different places.



## **Shaping the Future of Shipping**

## Seafarer 2050: A Milestone Summit in Manila

More than 250 delegates from maritime, NGOs, governments and international organisations met to discuss the opportunities and challenges facing the seafarer workforce

The Shaping the Future of Shipping – Seafarer 2050 summit, held on 26 June in Manila, Philippines, has been dubbed a milestone moment for the maritime industry by leaders in attendance.

Organised by ICS, in collaboration with the International Maritime Employers' Council (IMEC), and the International Transport Workers' Federation (ITF), with the Filipino Shipowners' Association (FSA), it convened over 250 delegates including global industry leaders, governments, NGOs and international organisations. Its goal was to drive essential collaboration and begin to tackle future challenges facing the maritime workforce, including the rapid greening of the industry.

Importantly, with a significant number of seafarers hailing from the Philippines, the choice of location underscored the importance of addressing the challenges

and opportunities faced by the maritime workforce in the coming decades.

Jaime J. Bautista, Secretary of Transportation under the administration of President Ferdinand R. Marcos, Jr., told ICS Leadership Insights that the summit gave the chance to demonstrate to other governments its dedication and commitment to maritime, the initiatives it employs and the "strong collaboration" that exists between the Philippine's government and private stakeholders, who share "a common priority of developing well-trained Filipino seafarers". He continued: "The plan is to create a ripple effect that will ensure industry-wide progress, benefiting seafarers and other industry stakeholders."

Gerardo A. Borromeo, ICS Vice Chair and Chief Executive Officer, PTC Holdings, noted that holding the summit on the 13th observance of the Day of the Sea-



farer was symbolic and felt like placing a marker in the sand as "the launch date to get all key initiatives needed across the board to achieve the ambitious Net Zero goals by 2050".

The outcomes of the summit revolved around the key areas of investment, training, recruitment and retention, and industry-wide collaborations.

Since the summit, an <u>ambitious agreement</u> to tackle shipping's greenhouse gas (GHG) emissions has been adopted by the International Maritime Organization (IMO), only further underscoring the need for the outcomes from the summit to be enacted. Read more on MEPC 80 on p7.

## Investment in sustainable shipping

The commitment to decarbonisation and the transition towards cleaner fuels were central themes throughout the event. Discussions revolved around the importance of developing and adopting innovative technologies and practices to reduce greenhouse gas emissions and promote sustainable shipping practices.

Delegates at the summit strongly stressed if maritime is to achieve these goals there is a pressing need for investment and funding streams, particularly from governments, to address challenges related to seafarer recruitment, retention and training. Fifteen governments were in attendance at the summit. Borromeo noted that such government representation, including the attendance and participation of President Ferdinand Romualdez Marcos Jr of the Philippines, sent a strong message of government support for the summit.

Discussions revolved around the importance of developing and adopting innovative technologies and practices to reduce greenhouse gas emissions

President Marcos Jr. himself reiterated his directive to the Maritime Industry Authority and the Commission on Higher education to "work closely with the shipping industry on the upskilling and reskilling of Filipino seafarers" to prepare for alternative fuels. He also emphasised the need for all governments to face challenges head on, stating, "I enjoin national government agencies, multi-layer organisers, and private stakeholders to work together in identifying strategies to ensure the availability of skilled workers to fulfil the requirements of the shipping industry."

## Recruitment and retention of seafarers

The summit attendees acknowledged the critical issue of seafarer recruitment and retention. Recognising that the future of shipping depends on skilled and competent seafarers, industry leaders pledged to address this challenge collectively. There was a particular mention given to the need to attract and retain a diverse workforce, promote gender equality, and ensure fair and decent working conditions for seafarers.

Stephen Cotton, General Secretary of the International Transport Workers' Federation, noted that while many young seafarers do see shipping as a "life opportunity" there was an agreement from those at the summit to find ways to "continue to promote seafaring as an attractive career and ensure that we continue to recruit the highest qualified maritime professionals into the industry, because let's remember this, seafarers move the world".

Emanuele Grimaldi, ICS Chairman, said that shipping will need to not only do more to invest in its people but also keep "an open dialogue to ensure that we can recruit more people to this industry".

## Training for future challenges

The summit emphasised the importance of continuous training and upskilling to equip seafarers with the competencies required in the evolving shipping landscape.

Grimaldi commented that with the introduction of new fuels, ships and technological advances, "the role and concept of our seafarers will continue to evolve and change".

Discussions among the delegates centred around the integration of new technologies, digitisation, and artificial intelligence into maritime operations. Industry leaders stressed the need for comprehensive training programs that address these emerging trends, preparing seafarers for the challenges and opportunities they will encounter in the future. The summit aimed to foster collaboration between training institutions, industry bodies, and governments to develop standardised and globally recognised training frameworks.

Belal Ahmed, Chairman of IMEC, highlighted once again the importance of industry-wide collaboration for training, stating, "Without participation of IMO [International Maritime Organization], ILO [International Labour Organization], governments, and wider industry bodies, any effort to address issues such as upskilling seafarers' competence will not be successful."

Ahmed added that as changes are implemented and seafarer performance is put under greater demands, there will need to be a focus on welfare. "That must include reducing length of service at sea, [greater] family support and assistance in whatever form that will make the career at sea more attractive," he said.

## Industry-wide collaboration

In every discussion point delegates came back to one essential element for success: the urgent need for industry-wide collaboration. Grimaldi noted that only through "international collaboration, including both developed and developing worlds, can we meet the challenges ahead".

Lessons learned from the COVID-19 pandemic served as a catalyst for increased

That must include reducing length of service at sea, [greater] family support and assistance in whatever form that will make the career at sea more attractive

**Belal Ahmed, Chairman of IMEC** 

collaboration between the IMEC, ITF, and ICS. The involvement of governments, the IMO, and the ILO was identified as crucial in addressing issues such as just transition, digitisation, and achieving the goals outlined in MEPC 80.

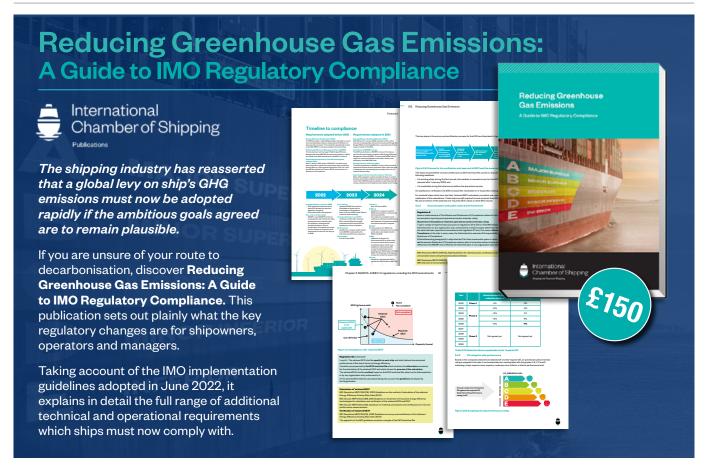
Cotton said that perhaps the most significant outcome of the summit was "the joint belief that as partners we can convince and collaborate with governments to ensure qualifications keep pace with change, and that we can continue to work together to attract young men, women and young workers to our amazing industry".

Bautista said that he believes the summit will act as a "catalyst" for more multilateral discussions, partnerships and policies. He added: "The potential for collaborative efforts in research, development, innovation, investment, and policy-driven actions makes us excited as this holds great promise for a better working environment for our seafarers by 2050."

## Imperative for action

Borremeo said that all groups present at the summit were "chomping at the bit" to drive "real momentum" towards achieving interim goals and objectives, from 2030, through 2040, leading to the attainment of net zero carbon emissions by 2050.

The Shaping the Future of Shipping - Seafarer 2050 summit is hoped to act as a catalyst to spur the change and collaboration required to face the challenges that decarbonisation and digitalisation pose for shipping and seafarers. The outcomes from the summit reflect a collective determination to shape a resilient, efficient, and sustainable future for the shipping industry, ensuring that seafarers remain at the forefront of this transformation.



Order now at: publications.ics-shipping.org

## Nuclear power poses 'vast potential' for shipping says ABS

Shipping must not ignore the "vast potential" nuclear power poses for emissions reductions and operational efficiencies, said ABS CEO Christopher J. Wiernicki.

His comments follow the release of ABS' study in which Herbert Engineering Corp modelled the impact of nuclear propulsion technology on the design, operation and emissions of a 14k TEU container vessel and a 157k DWT suezmax tanker.

Modelling on the impact of two, lead-cooled, 30MW fast reactors on the container carrier, found it would likely increase cargo capacity and operational speed, while eliminating the need for refuelling during its entire 25-year lifespan. On the Suezmax vessel, the use of four, 5MW, heat-pipe microreactors, and less cargo capacity, would raise operational speeds and require refuelling once during its 25-year life. Both concept vessels would emit zero CO<sub>2</sub>.

Despite regulatory hurdles, Wiernicki said the findings show "why the industry cannot afford to ignore the vast potential offered by nuclear propulsion both in terms of emissions reduction and operational efficiency". Read more here.



Opening of the 80th Session of the Marine Environment Protection Committee (MEPC) at IMO HQ (03/07/2023) Credit: IMO

# Market measures needed to realise MEPC net-zero consensus

IMO's Marine Environment Protection Committee (MEPC) adopted its revised greenhouse gas (GHG) emissions strategy on 7 July, agreeing to target netzero emissions "by or around" 2050. It will be supported by "indicative checkpoints" for 2030 and 2040 – aiming for cutting 20-30% and 70-80% of total GHG emissions from global shipping respectively – as well as a commitment for market-based measures to be decided in 2025 and in force from 2027.

The 2040 checkpoint indicates that shipping has less than 20 years to eliminate most of its GHG emissions. This will require rapid change in ship technology and fuels and major reductions in their costs.

Simon Bennett, ICS Deputy Secretary General, said: "We urgently need to reduce the cost gap between conventional and alternative marine fuels and incentivise the production and uptake of new fuels ... to meet this accelerated transition."

The committee also agreed that regulatory mechanisms to meet the targets would include both an economic measure (carbon pricing) and a technical measure (a fuel standard) to be decided in 2025. Among the proposals for the economic measure is the 'fund and reward' levy proposed by ICS, which Bennett said "remains firmly on the table". Read more here.

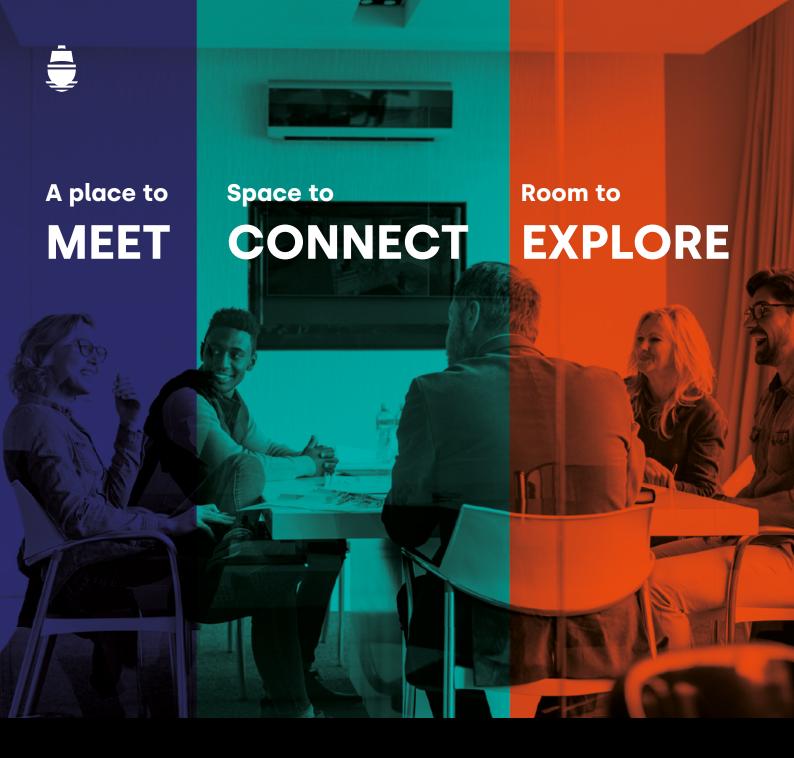
## Cyber risk remains as industry defences mature

A spate of recent cyberattacks on maritime-related companies, including A.P. Moller-Maersk's terminal business, ABB and DNV, signal ongoing risks for the industry. Incoming class requirements and improved cybersecurity may still not protect maritime assets, experts have warned.

Shipping leaders ranked cyber attacks as one of the highest risks impacting

their operations in the <u>ICS Maritime</u>
<u>Risk Barometer 2022-2023</u>. Similarly, in
<u>Allianz Global Corporate & Specialty's</u>
(AGCS) 2023 Risk Barometer, 34% of
respondents cited it as the most important risk factor of 2023. AGCS Chief
Underwriting Officer Shanil Williams
told *Leadership Insights* that the impact
of cyber-crime has reached US\$1 trillion, representing nearly one percent of
global GDP.

At the end of 2023, two new unified requirements from the International Association of Classification Societies, IACS URS E26 and E27, will come into force, requiring all shipboard systems and system integration on newbuild vessels to meet strict cybersecurity standards. Williams noted a growing shortage of cybersecurity professionals could complicate meeting those standards. Read more here.



The Maritime Hub offers state-of-the-art meeting rooms in the heart of the City of London. Unique spaces to meet, engage and collaborate – tailored to your requirements.

# The ICS MARITIME HUB

reservations@ics-shipping.org

+44 20 7090 1460

maritimehub.ics-shipping.org



# Collaboration crucial to boost maritime green fuel production

Why industry partnerships will play a key role in ramping up alternative fuel supplies

As increasing numbers of shipowners seek to move ahead with plans to decarbonise their vessels by using alternative fuels, a major hurdle is securing its share of a currently limited global fuel production capacity.

One factor is that green fuel producers are not getting the levels of demand they need themselves to boost production - at least not from maritime. This is indicated by Mikkel Kiil, CEO of Danish biogas producer Green2x, which transforms biomass waste to bioenergy. It is currently developing major projects both in Denmark and internationally.

Kiil observes that while there is currently a large demand for biomethane, shipping's demand forms "quite a small part". He adds: "These molecules could be turned into biomethanol for shipping, however currently we see bigger demand from other industries. If shipping wants the green gas for biomethanol it needs to speed up signing off take agreements."

Proman calculates shipping's demand for methanol as around one million tonnes by the end of 2024, with this figure expected to jump to almost 6 million tonnes by 2025.

Proman executive director marketing and logistics Anita Gajadhar says this only represents a fraction of overall methanol demand globally, which is around 100 million tonnes. Half of this current demand is going to the chemicals industry, while roughly 20% goes to the methanol-to-olefins process in China.

She says: "Those sectors are going to continue to need methanol even as the



Maritime will need to secure its share of green fuels as it seeks to decarbonise. Credit: Shutterstock

maritime demand increases, so we will see production ramping up."

Proman recently joined other fuel producers and OEMs in signing the Environmental Defense Fund's call for the shipping industry to fully decarbonise by 2050.

International authorities' and governments' investment and regulatory policies are also going to be key to growing green fuel production. An example is the Danish Government initiative PtX, which Kiil said will "enable more green fuels in general, especially if there is a way of co-locating biofuel and efuel production".

Different players within shipping view cross sector collaboration as the obvious way to boost production, but long term commitments are required.

Speaking at the Singapore International Bunkering Conference and Exhibition, CMA CGM Vice President (Bunkering and Energy Transition) Farid Trad said: "I think the key factor in success, as we have already seen with LNG, is to involve everybody in the value chain, from the supplier to the port authority, to the

barge operator, to the shipper and to the end-consumer."

Hapag-Lloyd Senior Director Global Fuel Purchasing Jan Christensen adds: "Green fuels project developers require long term offtake commitments to raise financing for developing the projects. This means the shipping sector and its customers need to test new business models with a long-term mindset to make decarbonisation of maritime logistics a viable business case."

He says that collaboration among shipping companies within bunkering infrastructure and sourcing is a "key to reducing the offtake risks which come along with the long-term commitments".

Lars Ravens, managing director of E-Cap Marine GmbH (emission-free power generation systems' solution provider), sums up: "Achieving these [shipping decarbonisation] targets is crucially contingent upon cross-sector collaboration, technological innovation, supportive as well as regulative policies from international authorities and national governments, to create opportunities for zero-emissions fuels and technologies to thrive and quickly achieve scale."

## ICS in Action

A round-up of ICS news and activites over the last month

## Global energy summit adopts CEM-Hubs

Less than a year after it was first presented, the Clean Energy Marine Hubs (CEM-Hubs) <u>initiative was adopted</u> at the Clean Energy Ministerial (CEM) on 20 July.

Commenting on the unprecedented speed of adoption, Guy Platten, ICS Secretary General said it: "speaks volumes to not only the scale of the challenge before us and the urgency to act, but also the economic opportunity low-carbon energy production offers – particularly to developing economies."

With the aim of de-risking investment needed to produce and transport low- and zero-emission fuels, the CEM-Hubs initiative is a cross-sectoral and public-private partnership to facilitate the secure and efficient production and transport of new clean energy resources. The initiative and progress will be featured at the next COP28 in Dubai.

## Panama endorses ICS' seafarers medical guide

Released in April 2023, the value of the first edition of the ICS International Medical Guide for Seafarers and Fishers has been recognised by the Panama Maritime Authority. The largest flag by ship numbers (8,025 according to UNCTAD 2022 figures) has recommended to all Panamanian-flagged vessels that the guide be included in the approved publications list for use on board.

Developed in tandem with maritime medical experts, the 600-page guide provides

MEPC 80 endorsed revised IMO guidelines on the reduction of Underwater Radiated Noise (URN) in July. An ICS Briefing on 7 September will introduce them, summarise the various means of compliance, and consider the synergy between energy efficiency and URN reduction. It will take place on 7 September between 11am-12pm BST. Find out more here.

the latest medical guidance in a practical and accessible format.

Panama's decision to issue a merchant marine notice means the guide could soon be available for crew to use on all of its vessels, improving the welfare of hundreds of thousands of seafarers in the process.

## ICS launches campaign to drive seafarer recruitment

ICS <u>launched a video</u> titled 'An Adventurous Spirit' on 26 June, signifying the start of a global campaign to recruit the estimated 90,000 STCW certified officers needed by 2026 to operate the world merchant fleet.

The video is the result of collaboration between ICS and its members and can be used across the shipping industry. Featuring clips of seafarers from around the world, the video offers those considering a career at sea a glimpse into the roles, opportunities and challenges that await. The full 10-minute video is accompanied by a 2-minute version that is available in multiple formats for use across different social media platforms.

Guy Platten, Secretary General of ICS <u>welcomed Arsenio Dominguez</u> as the new IMO Secretary-General on 18 July. Noting the challenges ahead, he said "Mr Dominguez will lead with equal measures of authority, purpose and compassion .... it will be a pleasure to tackle the challenges head on with Mr Dominguez for a better and safer future for our industry and its people."



ICS is the principal international trade association for merchant shipowners and operators, representing all sectors and trades and over 80% of the world merchant fleet.

For more ICS contacts: www.ics-shipping.org/contact-us/

#### Contact us

## International Chamber of Shipping

7th Floor, Walsingham House, 35 Seething Lane, London EC3N 4AH

+44 (0) 20 7090 1460 info@ics-shipping.org www.ics-shipping.org

#### **Editorial**

#### Intent Communications

#### Tanva Blake

+44 (0) 7598 025 513 tanya@intentcommunications.co.uk

## Namrata Nadkarni

+44 (0) 7598 025 513 namrata@intentcommunications.co.uk

#### Samira Nadkarni

samira@intentcommunications.co.uk

## **Gavin Lipsith**

gavin@telegraphcommunications.co.uk

## Paul Levey

paul@intentcommunications.co.uk

## **Design and layout**

## Phil McAllister

phil@philmcallisterdesign.com +44 (0) 1273 737481

## **Press and Communications**

## Hannah Patmore

+44 (0) 7498 418 438

## Sales

## Richard Emsley

richard.emsley@ics-shipping.org +44 (0) 7730 289459

Disclaimer: Whilst every effort has been made to ensure the quality and accuracy of the information contained in this newsletter at the time of going to press, the International Chamber of Shipping, its affiliates and any person, firm, corporation or organisation who or which has been in any way concerned with the furnishing of the information assume no responsibility as to the accuracy or completeness of and, to the extent permitted by law, shall not be liable for any errors or omissions or any loss, damage or expense incurred by reliance on information or any statement contained in this newsletter. Any views or opinions expressed do not necessarily represent the views or opinions of ICS, its affiliates or any person, firm, corporation or organisation who or which has been in any way concerned with the furnishing of the