



International
Chamber of Shipping
Shaping the Future of Shipping

Leadership Insights

Insights from the global leadership community

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Race to resilience

Maria Antonia Yulo Loyzaga, Secretary of the Department of Environment and Natural Resources of the Philippines, shares her scientific approach to navigating maritime challenges, achieving net-zero compliance and implementing the UN Sustainability Development Goals

Q What are you proud of having achieved in your current role to date?

A Right from the start, I adopted an integrated science-based approach that recognises the complexity and interconnectedness of everything in the ecosystem, and made sure that teams no longer worked in silos. I created the office of integrated environmental science, which did not exist in the history of this department; and the geospatial database office, which allowed us to construct a platform that will enable us to map out the natural resources of the country.

The Geospatial Platform is in constant use today to help manage our resources in terms of water, forests, coastal and marine areas, and minerals. It allows us to see where nature-based solutions are possible, where populations are underserved for water supply, where there is environmental degradation from either neglect or abuse of our natural ecosystems, etc.

Q How does this scientific approach intersect with shipping?

A We have adopted a climate risk lens to look at the way the human or social geographies intersect with the physical geographies of the country for adaptation and mitigation, as well as

disaster and risk reduction. Working with organisations such as Philippine Transmarine Carriers (PTC) and the International Chamber of Shipping (ICS) allows us to see shipping's contribution to economic and social development, as well as to greenhouse gases globally. Our work intersects very well not just in adaptation and mitigation, but also in the transition of energy technologies and human resources in the sector.

We are working to overcome challenges, especially in terms of the waste management sector with regard to plastics and microplastics making their way into our rivers and oceans. We have the new "Extended Producer Responsibility" (EPR) law, which obligates plastic packaging producers to assume full responsibility for the entire life cycle of their products,

Adopting an integrated science-based approach that ... recognises the complexity and interconnectedness of everything





Upskilling and reskilling offshore and onshore to address the new fuel technologies is critically important

including the cost of waste prevention, clean up, and recovery measures. But we have almost no control in terms of what ships discharge, especially when offshore, and can only mitigate this marine pollution by collection when it makes its way to shore. What doesn't make its way to shore goes into the ocean circulatory system, both biologically and chemically, which is a huge challenge.

Q What other maritime challenges are on your radar?

A Realistically, we will not make net-zero by 2050, as the economy in our country will not be able to afford it. So, we're looking at a clean energy mix with predominantly renewables, but also geothermal and possibly a small, modular nuclear factor. We have a 35% renewable energy target for 2030 and higher ambitions of 70% by 2050. We are currently focused on identifying renewable solar and offshore wind energy sources – including solar farms on land and floating – as these will require the least amount of investment and have the greatest impact.

Upskilling and reskilling offshore and onshore to address the new fuel technologies is critically important. This will apply to seafarers but also to the human resource at ports to operate the type of infrastructure that needs to be put in place. Additionally, climate change has changed the operating environment of shipping: there's too little water in

some of our main passageways (like the Panama Canal), and ships are now exposed to more extreme weather events while at sea. So, the industry also needs to adapt beyond developing and using cleaner technologies, and train our seafarers to deal with the new climate conditions caused by global warming.

We need a lot more investment in science. There have been several disasters that involve waves of a certain nature that were never anticipated but may be predictable via AI. In a rich world, we would map the physical and the chemical oceanography and identify how this will be impacted by changes in climate.

Lastly, we must be ready to handle transition and end-game green fuels, as we currently do not have the capacity to look at safeguards, permit approvals or infrastructure. The department itself needs to build capacity to be able to monitor the environmental impacts of what the shift in fuel technologies will actually mean. For us, it's a race to resilience.

Q How can the private sector support your energy transition goals?

A At this time, the trajectory and pace of our transition mean that some of the greater investments are being made in infrastructure to manufacture and import LNG as a transition fuel oil. Although this is still a fossil fuel, we need to accept that this is what we can afford to baseload. We are strategically engaging with our dynamic private sector and joint ventures with foreign companies that are active in ports to engage in marine scientific research to preserve biodiversity while still participating in the energy transition.

Q Can the United Nations' Sustainable Development Goals (SDGs) support your maritime aims?

A I think the SDGs serve their purpose, but some countries will have barriers to achieving several goals because of available means including human resources or available finance. The international financial architecture needs to be reviewed to intervene for those that are most vulnerable, such as debt for nature and debt relief for countries prone to extreme weather-related disasters.

The SDGs are intersectional, so accomplishing them requires understanding compounding risks and complexity. We need to be able to take a single action that hits several SDGs at the same time. If you reverse engineer a path from the impacts and outcomes that you want to achieve, you get to see the interconnectedness among these goals and make investments that will have a positive impact [across several SDGs](#).



International Chamber of Shipping

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Bunker stations will need to be diversified to ensure shipping can remain resilient when using future fuels. Credit: shutterstock

Ports need to adapt to US \$67bn climate change threat

Efficient ports are an essential link in maritime supply chains, connecting sea and shore, however their coastal position makes them vulnerable to climate change impacts.

Ports are making moves to invest in infrastructure and greater flood protections to protect against the costly threat from climate change.

The forecast for global mean sea level increases has been revised upwards repeatedly in recent years, but current expectations are that by 2100, sea levels will be between 43 cm and 84 cm higher compared to the 1995-2014 average.

The University of Oxford's Environmental Change Institute published [a study](#) in January 2024 which stated that 86% of ports globally are exposed to more than three climate-related and geophysical hazards.

The study found that absolute risk was highest in the large ports in high-income countries of Asia, the Gulf of Mexico, and

Western Europe, but that the impacts of climate risks to ports could be higher in middle income countries. Of a total climate risk to ports of US \$7.6bn per year, most was attributed to tropical cyclones and river flooding.

"On top of the physical damages, port downtime associated with these natural hazards puts trade worth US \$67 billion at-risk every year, which could result in costly delays, revenue losses, and impacts to the wider economy," said the report.

Without action, it is likely that the impact of climate change on ports will not only be costly but have a major knock-on effect to trade flows around the world, with events such as disruptions in the Panama Canal due to drought liable to become a much more common occurrence.

Potential impacts to port operations

Ports are employing various mitigation and adaptation measures to prepare infrastructure to endure the impacts of climate change and reduce their own greenhouse gas (GHG) emissions to minimise global temperature increases.

Infrastructure planning can take a long view into the future. The UK Government has already started planning on its Thames Estuary 2100 initiative which will prepare flood defences along the river to handle the higher sea levels of the late 21st century. By 2040, a decision will be made as to whether the Thames Barrier is upgraded, converted, a new flood barrier is placed elsewhere along the river, or tidal flood storage areas are created.

Similar decisions are being made by governments the world over. Singapore is exploring the use of sea walls, polders, and mangrove cultivation to protect coasts, and is investing US \$1bn over five years in improving drainage infrastructure. Even Tokyo's famous extensive underground flood defence network is being upgraded to cope with increas-

ing climate risks under the 2022 Tokyo Resilience Project.

Port operators are also taking steps such as allowing remote access of IT infrastructure and installing backup generators for critical port systems to minimise disruption in extreme weather events.

Associated British Ports's (ABP) recently launched masterplan for decarbonised growth at the Port of Newport which includes specific planning for flood mitigation, accounting for rising sea levels and a 1-in-200 year flood event. Measures under consideration include using dredge material to raise ground levels and flood resilient building designs.

Henrik L. Pedersen, CEO of ABP, told ICS *Leadership Insights*: "Climate change is an era-defining challenge, but it is also an opportunity to scale innovative new industries to leave an optimistic legacy for generations to come."

A looming threat

It can be hard to prepare for the unknown. However, Giulia Sforzi, Princi-

pal Engineer at independent civil engineering and environmental hydraulics organisation HR Wallingford told ICS *Leadership Insights* that the rising mean sea level is the most significant climate impact risk to ports, with increased frequency and intensity of storm events a further major risk.

"Other climate change impacts, which need to be considered for ports, particularly in certain parts of the world, are bigger storm surges, more precipitation and more intense precipitation at times, changes to wave conditions and increases in the occurrence of major tropical cyclones," said Sforzi.

Long term planning is essential if the global supply chain is to remain resilient. Extreme sea level events that are currently viewed as a once in a hundred years' event are expected to become common by 2100, according to the Intergovernmental Panel on Climate Change (IPCC). Compounding this challenge to port environments, extreme weather events are also expected to become more frequent, [increasing the risk to infrastructure](#).

Climate change is an era-defining challenge, but it is also an opportunity to scale innovative new industries to leave an optimistic legacy for generations to come

Henrik L. Pedersen, CEO of Associated British Ports



ICS in Action

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

ICS and the GCMD extend their cooperation agreement

The International Chamber of Shipping (ICS) has extended its agreement with the Global Centre for Maritime Decarbonisation (GCMD) and will now include the collaboration on the [Clean Energy Marine Hubs \(CEM Hubs\)](#).

ICS Secretary General Guy Platten met with GCMD CEO, Lynn Loo, and Chairman, Andreas Sohlen-Pao in early May at the ICS Head Office in London to sign the extension.

GCMD is a non-profit organisation that supports the decarbonisation of the maritime sector.

The CEM Hubs is public-private platform between energy, maritime, shipping and finance communities to de-risk investments and transform the energy-maritime supply chain.

ICS Chairman Emanuele Grimaldi honoured at ESG Shipping Awards

International Chamber of Shipping (ICS) Chairman and Managing Director of Grimaldi Group, Emanuele Grimaldi, was awarded the Honorary Recognition Award at the ESG Shipping Awards in recognition of his significant contribution to the global maritime industry. The second annual awards ceremony took place at the Grand Hyatt in Athens on the 20 May.

Speaking at the event Mr Grimaldi said: "Being recognised as a significant contributor to the global maritime industry is truly an honour and I feel privileged to be standing here before you... I would like to take a moment to thank Greece's maritime com-

munity for the support you have shown for the International Chamber of Shipping, our proposals and initiatives. It is thanks to your support and engagement that we are forging ahead with our work to shape the future of shipping. Environmental, Social and Governance factors and the impact that they will have on our work and our decision making as we navigate the future are becoming increasingly important, and rightfully so."

The ESG Shipping Awards were established to celebrate the efforts and achievements of companies in the shipping industry worldwide that exhibit remarkable commitment to sustainability and responsible [business practices](#).

ICS Publications releases sixth edition of 'Guidelines on the Application of the IMO International Safety Management (ISM) Code'

ICS Publications has launched the sixth edition of 'Guidelines on the Application of the IMO International Safety Management (ISM) Code'. This latest edition offers new and updated guidance to help shipping companies fulfil their safety and environmental obligations, and to comply with the IMO's International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code).

The sixth edition aims to help shipping companies operating ships in all sectors and trades develop, implement, maintain and improve their safety management system (SMS).

The updated edition promises to be an invaluable resource for company personnel including senior management, DPAs, internal auditors, masters and crew, in particular those specifically tasked with writing or [reviewing the SMS](#).

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.

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Upcoming events

In less than one month, on the 13 June, ICS with the Chamber of Marine Commerce, will be convening CEOs and maritime leaders from across the supply chain to the annual [Shaping the Future of Shipping Summit](#) in Montreal.