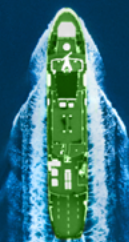


# CHARTING A 1.5°C TRAJECTORY FOR MARITIME TRANSPORT



**OCEAN  
STEWARDSHIP  
COALITION**



## KEY MESSAGES

- It is time for International Maritime Organization (IMO) Member States to align with the Paris Agreement's 1.5°C temperature goal by committing to full decarbonization by 2050.

- An accelerated decarbonization of shipping in line with the Paris Agreement's 1.5°C temperature goal must be equitable and advance progress towards the Global Goals, enabling equitable access to developing nations.

- Reskilling, upskilling and new skills must be incorporated to ensure a just transition to zero-carbon shipping. Incorporating a human-centred approach to decarbonization, based on inclusive and transparent social dialogues, would ensure decent jobs and gradual shifting in roles.

- National Governments can display leadership by including shipping in their Nationally Determined Contributions (NDCs) and piloting domestic incubators, among other efforts.

- As no single fuel will solve all of shipping's zero-carbon needs, it is important to prepare for a multi-fuel future. Ensuring fuel flexibility, or the ability to convert an engine to use a different fuel, will play an important role.

- The entire value chain must be harnessed if the shipping industry is to decarbonize, moving beyond the remit of the IMO.

- Setting intermediary targets will help the task ahead by defining clear milestones from now to 2030.

## FOREWORD

This brief is the outcome of the United Nations Global Compact Blue Road to COP 26. In March 2021, the Sustainable Ocean Business Action Platform launched this workstream, focusing on four ocean-based climate action areas: zero-emission maritime transport, offshore renewable energy, low-carbon blue food, and ocean nature-based solutions. A group of more than 100 stakeholders from business, policymakers, non-governmental organizations (NGOs) and science was brought together to discuss how to advance such ocean-climate solutions.

## 1

## TIME FOR IMO MEMBER STATES TO ALIGN WITH THE PARIS AGREEMENT'S 1.5°C TEMPERATURE GOAL: FULL DECARBONIZATION BY 2050

The Paris Agreement, adopted by 196 Parties in 2015, aims to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels. The latest [report from the Intergovernmental Panel on Climate Change \(IPCC\)](#) showed that unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to 1.5°C or even 2°C will be beyond reach. IPCC projections demonstrate that limiting warming to 1.5°C above pre-industrial levels is critical if the most catastrophic impacts of climate change are to be avoided. In order to be on track for a 1.5°C trajectory, the world must reduce emissions by 45 per cent by 2030 and reach net-zero emissions by mid-century (IPCC, 2014). While global shipping — responsible for 80 per cent of global trade — is one of the most energy-efficient modes of transport, it accounts for approximately 3 per cent of global greenhouse gas (GHG) emissions (IMO, 2020).

To meet the global 1.5°C target, it is essential that the international shipping industry aims to decarbonize by 2050. Several Governments, including the United States, ([White House, 2021](#)), alongside major shipping stakeholders ([Getting to Zero Coalition, 2021](#)), are now calling for the global shipping industry to decarbonize by 2050 and commit to a 1.5°C pathway.<sup>1</sup> However, there remains some misalignment between the position of Member States in the IMO — a United Nations specialized agency — and their commitments under the terms of the Paris Agreement. Under the [IMO's Initial GHG Strategy \(2018\)](#), the total annual GHG emissions from international shipping should be reduced by at least 50 per cent by 2050, compared to 2008. The strategy is likely to be revised by 2023.

It is essential that the IMO Member States align the international shipping industry goals with the Paris Agreement's 1.5°C temperature goal by adopting a target of full decarbonization of international shipping by 2050, when the IMO GHG strategy is urgently revised. This would align the ambitions of many IMO delegations with their Governments, which actively support bringing their policies in line with the Paris Agreement.

1. Noting the pathway is not entirely clear, and that there is potential for exponential progress post 2030.

2. This could be informed by the Science Based Targets initiative methodology for shipping, expected to be released this year.

3. The Science Based Targets initiative (SBTi) work on sectoral guidance for the shipping sector is not yet finalized. A current alternative to a SBTi target could be setting a standardized Life Cycle Assessment (LCA) methodology-based reduction target, with a requirement of a percentage of reduction, in comparison to fossil fuels, and ensuring it covers the fuel from well to wake.

This alignment would counter the current disconnect between national governmental ministries in certain Member States.

### RECOMMENDATIONS FOR PARTIES

- IMO Member States must urgently update as soon as possible the IMO GHG Strategy to align with the Paris Agreement's 1.5°C temperature target and deliver a clear, achievable and equitable implementation plan to achieve this target.
- National Governments to ensure low- and zero-carbon pledges in their national climate and energy plans are reflected in their positions in the IMO.

### RECOMMENDATIONS FOR BUSINESS LEADERS

- Set a science-based target to structure a GHG trajectory aligned with the 1.5°C target.<sup>2</sup>

## 2

## AN ACCELERATED DECARBONIZATION OF SHIPPING IN LINE WITH THE PARIS AGREEMENT MUST BE EQUITABLE AND ADVANCE PROGRESS TOWARDS THE GLOBAL GOALS

A transition to zero-emission shipping in line with the Paris Agreement must go hand-in-hand with sustainable and equitable socio-economic growth and development. This includes ensuring the delivery of the Global Goals. The IMO must ensure that when it aligns its GHG reduction target (Goal 13 (Climate Action)), it is done in the broader context of the Global Goals, particularly Goal 5 (Gender Equality); Goal 7 (Affordable and Clean Energy); Goal 8 (Decent Work and Economic Growth); Goal 9 (Industry, Innovation and Infrastructure); Goal 10 (Reduced Inequalities); Goal 12 (Responsible Consumption and Production); and Goal 17 (Partnerships for the Goals).

The transition towards a more sustainable, zero-carbon future within the shipping industry offers the opportunity to increase inclusivity and representation. For example, according to recent estimates, women represent only about 2 per cent of the world's seafarers. Therefore, there needs to be an active policy to promote women in maritime work as part of a just transition. Training and new roles should also encourage young workers to see themselves working in an eventually green shipping industry.

Developing countries need equitable<sup>4</sup> access to opportunities created by accelerated decarbonization, such as those presented by the uptake of new zero-carbon fuel sources. Many developing countries are well-positioned to become future suppliers of zero-carbon bunker fuels — namely green ammonia and hydrogen (World Bank, 2021). The IMO will play a key role in leveling the playing field. At present, the price and competitiveness gap between proposed zero-carbon fuels and fossil fuels is vast. The access of developing countries — including Least Developed Countries (LDCs) — to the world's markets to export products, as well as access to affordable maritime transport services for the heavily maritime transport-reliant Small Islands Developing States (SIDS), needs to be safeguarded to ensure sustainable and equitable socio-economic growth and development.

### Meaningful market-based measures

The introduction of global market-based measures would help to close the gap while ensuring no country is left behind. It could also raise funds to support developing nations — particularly SIDS — to develop zero-carbon fuel sources and the necessary infrastructure.<sup>5</sup> As a result, developing economies could benefit from the trading opportunities shipping provides with less reliance on developed economies.

For example, a recent study by Ricardo and the Environmental Defense Fund found that South Africa, with its vast renewable energy sources, has a significant opportunity to supply the global shipping industry with zero-carbon fuels. The study highlights that producing new zero-carbon fuels can help the country not only meet its target to reach net-zero emissions by 2050, but also catalyse economic growth by opening up new markets, creating new job opportunities and supporting an equitable transition.

Companies within the shipping industry<sup>4</sup> and some IMO Member States<sup>6</sup> have called for the introduction of a carbon levy (based on carbon equivalents) per ton on marine fuel by 2025; the proposed figures vary from about \$50–\$250 per ton. At present, some proposals for a global carbon levy are foreseen as a mechanism to neutralize cost differences and generate funds to support developing countries and SIDS; other proposals are for research and development. It is clear that the funds raised can be a vital step in supporting investments in technology and low to zero-carbon fuel production across the globe for an accessible low and zero-carbon fuel market.<sup>7</sup>

Aside from global market-based measures, it is clear that regional measures, for example those proposed by the European Union, will also play an important role in shipping decarbonization.

### RECOMMENDATIONS FOR PARTIES AND BUSINESS LEADERS

- Introduce a meaningful market-based measure that puts an adequate price on carbon and/or GHG emissions before 2025, which will require a regulatory framework at the international level (IMO) with enforcement mechanisms.

### RECOMMENDATIONS FOR BUSINESS LEADERS

- Ensure operational alignment and broader strategic support for all of the interconnected Global Goals. Do no significant harm on environmental, social and governance targets.

4. Noting that equitable market mechanisms need to be thought through, so that leakage problems are avoided. See Section 4 for recommendations on carbon leakage controls.

5. As is outlined in the 2030 Agenda for Sustainable Development – Goal 7 (Affordable and Clean Energy).

6. See Trafigura, <https://www.trafigura.com/media/2752/a-proposal-for-an-imo-led-global-shipping-industry-decarbonisation-programme.pdf>; Maersk, <https://www.bloomberg.com/news/articles/2021-06-02/shipping-giant-maersk-seeks-150-a-ton-carbon-tax-on-ship-fuel>.

7. For more information, see Watson, Farley & Williams, "MI and SI Proposed Carbon Tax: Contractual Considerations", <https://www.wfw.com/articles/mi-and-si-proposed-carbon-tax-contractual-considerations/>.

## 3

### A JUST TRANSITION: RESKILLING, UPSKILLING AND NEW SKILLS MUST BE INCORPORATED TO ENSURE THE SUSTAINABILITY OF THE SECTOR

It is essential the transition is approached through a “just transition”<sup>7</sup> lens. In terms of workforce considerations around zero-emission innovation, there is often a particular focus on issues of job creation and the need for reskilling, including in the maritime industry. For instance, the transition to zero carbon may involve moves towards automation, which could lead to further reduction in the size of crews. Ensuring that safe crewing levels are maintained in light of increased automation will be an important consideration.<sup>8</sup> The health and safety of seafarers should be an intrinsic consideration in the transition to new fuels and technology. It is key that seafarers have decision-making power and inputs in the maritime transition. However, at present, discussions around ensuring a just transition for a net-zero maritime shipping industry are in the nascent phase.

More research is needed — led by the ILO and the IMO — to ensure that an accelerated alignment with 1.5°C works for all society. Incorporating a human-centred approach to decarbonization, based in inclusive and transparent social dialogues and stakeholder engagement is key to ensuring decent jobs. In addition, adherence to international human rights standards, including in relation to the responsibilities that pertain to businesses under the UN Guiding Principles on Business and Human Rights, should be at the core of transition (OHCHR, 2011). The transition to net-zero must also ensure a just transition across the value chain for maritime and offshore workers. For example, workers trained in fossil fuel industries (e.g., the coal industry) can shift to support the production of zero-carbon fuels.

The transition also will offer opportunities for capacity building and blue skills for currently untrained workers.<sup>9</sup> It has been estimated that demand for offshore wind employees will triple by the end of the decade.<sup>10</sup> Many offshore oil and gas workers

may transition to offshore wind jobs, which can be used to power hydrolysis to produce green hydrogen/green ammonia. To fully realize a just transition, and the potential economic opportunities from a zero carbon fuel industry, accessibility of job opportunities to local populations and communities must be ensured through knowledge and skill transfer.

Access to training will need to be ensured for crews — including those from developing economies — to safely handle new fuels such as ammonia and hydrogen. In this regard, it is also important that the IMO rapidly updates its safety legislation, such as its International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code), to ensure safe on-board handling and use of alternative fuels. Consideration should also be given to workers who will be displaced across the broader value chain, for example, the potential reskilling of tanker crews.

#### RECOMMENDATIONS FOR PARTIES

- Adopt policy frameworks and measures for a just transition with the effective engagement of enterprises, workers and their organizations.
- IMO and ILO to strengthen research and collaboration to implement ILO Guidelines<sup>11</sup> to ensure the transition to a zero-emission maritime industry by 2050 is safe and just, which maximises job opportunities in the Green Ocean Economy and minimizes job losses in declining industries.

#### RECOMMENDATIONS FOR BUSINESS LEADERS

- Take steps towards a just transition to zero-carbon shipping, including by committing to uphold human and labour rights in line with the Ten Principles of the UN Global Compact (Principles 1 to 6) and the UN Global Compact Sustainable Ocean Principles (Principle 7).

8. A deliberate effort to plan for and invest in a transition to environmentally and socially sustainable jobs, sectors and economies. The vision held by the International Labour Organization (ILO) of a just transition includes both measures: measures to reduce the impact of job losses and industry phaseout on workers and communities and measures to produce new, green and decent jobs, sectors and healthy communities.

9. For more information, see International Chamber of Shipping, “ICS IMO: A review of the Standards of Training, Certification and Watchkeeping for Seafarers (STCW) Convention (2020)”, <https://www.ics-shipping.org/current-issue/a-review-of-the-stcw-convention-2020/>.

10. Noting that the World Benchmarking Alliance released their Just Transition Methodology, which assesses companies’ alignment with the goals of the Paris Agreement and their approach to addressing the social challenges of a low-carbon transition.

11. See Rystad Energy, “Hiring wave coming: Offshore wind staff demand to triple by 2030, hundreds of thousands needed,” 19 February 2021, <https://www.rystadenergy.com/news/news/press-releases/hiring-wave-coming-offshore-wind-staff-demand-to-triple-by-2030-hundreds-of-thousands-needed/>

- Ensure transition plans are founded in and informed by stakeholder engagement and social dialogue and are consistent with corporate human rights responsibility as set out in the UN Guiding Principles on Business and Human Rights.
- Develop new qualifications for workers across the fuel supply chain to ensure new fuel types are handled safely.<sup>12</sup>
- Introduce decision-making power and mechanisms for maritime workers, including, but not limited to:
  - Decision-making over health and safety standards at all levels.
  - Space for unions to bargain over a broad range of conditions.
  - Worker participation in the creation of training programs and standards.
  - Consideration of how to harness the transition to attract a diversity of workers to careers at sea

## 4

### **CATALYSING DECARBONIZATION ON A NATIONAL LEVEL: NATIONAL GOVERNMENTS CAN DISPLAY LEADERSHIP BY INCLUDING SHIPPING IN THEIR NATIONALLY DETERMINED CONTRIBUTIONS AND PILOTING DOMESTIC INCUBATORS**

In addition to global cooperative efforts to reduce GHG emissions from international shipping, it is imperative to decarbonize at the national level. Domestic shipping represents approximately 30 per cent of overall shipping activity,<sup>13</sup> making its decarbonization vital. The COP 26 shipping breakthroughs include a target for 2 to 5 per cent zero-emission fuels in domestic shipping by 2030.

National Governments subsequently play a key role by incorporating domestic shipping targets into their Nationally Determined Contributions (NDCs) submitted under the Paris Agreement. Importantly, increased commitments by countries such as the United States (100 per cent GHG reduction by 2050) may create momentum with the next five-year IMO review of its targets by 2023.

Paris Agreement Parties can also develop specific energy and technology transition plans as a follow-up of their NDCs and ensure that such plans also include investments to enable zero-emission shipping. Such plans can also include pilot programmes.<sup>14</sup> National pilot programmes and incubators are often technological catalysts for zero-emission international shipping. Such pilots also pave the way for safety, protocol and standards to be developed and provide an essential learning ground for full-scale decarbonization.

In addition, in 2020, the IMO Marine Environment Protection Committee adopted Resolution MEPC.327(75) to encourage Member States to develop and submit voluntary National Action Plans to address GHG emissions from ships. Japan, the United Kingdom, Norway, India and the Marshall Islands have submitted relevant national action plans.<sup>15</sup> For example, Norway adopted an [action plan for green shipping](#), which includes a public-private collaboration between industry, municipalities and port authorities. Such collaboration on a national level is essential to drive the technological innovation needed to meet the challenge of a zero-emission fleet running on zero-carbon fuels.

The recent World Bank report "[Charting a Course for Decarbonizing Maritime Transport](#)" estimated a \$1 trillion + opportunity from decarbonizing shipping. Of the total investment needed to decarbonize, about 85 per cent would be directed towards land-based infrastructures (i.e., renewable energy supply and fuel synthesis). The report emphasizes that developed and developing countries alike can tap into this investment potential to enter into the zero-carbon bunker fuel market. Multilateral development banks can assist developing countries with implementing pilot projects and support technology transfer from more mature markets.<sup>16</sup>

12. Noting the cost of reskilling should not be borne by the workers

13. The Fourth IMO GHG Study 2020 includes two methods of calculating international and domestic shipping: the "vessel-based" and the "voyage-based" approach. In accordance with the vessel-based approach, domestic shipping represents around 13 per cent of total shipping, whereas under the voyage-based, domestic shipping represents around 30 per cent.

14. For more information on pilot programmes, see Global Maritime Forum, "Getting to Zero Coalition Mapping of Zero Emission Pilots and Demonstration Projects", <https://www.globalmaritimeforum.org/content/2021/03/Mapping-of-Zero-Emission-Pilots-and-Demonstration-Projects-Second-edition.pdf>.

15. For additional information, see International Maritime Organization, "Relevant National Action Plans and Strategies", <https://www.imo.org/en/OurWork/Environment/Pages/RELEVANT-NATIONAL-ACTION-PLANS-AND-STRATEGIES.aspx>

16. For example, PROBLUE, a multi-donor trust fund administered by the World Bank, is supporting the sustainable and integrated development of marine and coastal resources in healthy oceans.

## RECOMMENDATIONS FOR PARTIES

- Include domestic shipping in Nationally Determined Contributions (NDCs):
  - Expand and increase the ambition of existing economy-wide GHG targets by including emissions reductions from domestic marine transport.
  - Define a specific GHG target for domestic shipping and/or domestic fleets.
  - Include infrastructure.
- Harness National Action Plans to develop specific energy and technology transition plans as a follow-up of NDCs, ensuring that such plans also include investments enabling zero-emission shipping.
- Invest in research and development on how to diminish carbon, for instance by establishing pilot projects and national incubators.
- Introduce carbon leakage controls to ensure that there is not double accounting for any reductions. These can be multinational standards, which are transparent and based on international standards.

- Commit to Sustainable Ocean Management Plans or implement a Marine Spatial Plan which includes green domestic shipping.<sup>17</sup>
- Identify suitable test sites through national Marine Spatial Plans or other regulatory mechanisms, such as Environmental and Social Impact Assessments (ESIA), for blue innovation relating to shipping.<sup>18</sup>
- Include shipping in upcoming taxonomies (e.g., European Union Taxonomy Regulation) to steer green investments towards shipping and zero-carbon energy infrastructure.
- Set up cross-governmental task forces, including transport, maritime, labour and environmental ministries, to ensure a holistic approach.
- Provide support to developing economies through national actions, such as recommendations to development finance organizations, to prioritize funding for infrastructure development.

## RECOMMENDATIONS FOR FINANCIAL ACTORS

- Ensure the participation and engagement of development and multilateral banks to secure an equitable transition.

## 5

### NO SINGLE FUEL WILL SOLVE ALL OF SHIPPING'S ZERO-CARBON NEEDS: PREPARING FOR A MULTI-FUEL FUTURE

The UN High-Level Climate Action Champions for COP 26 have stated that zero-carbon fuels<sup>19</sup> must represent 5 per cent of international shipping's fuel mix by 2030 for the global fleet to achieve complete decarbonization by 2050 (*Global Maritime Forum, 2021*). Candidates for alternative fuels include green ammonia, hydrogen, green methanol, biofuels and batteries (*Lloyds Register, 2021, ICS 2020*).

The UN High-Level Climate Champions' breakthrough targets were based on a study showing that meeting the 5 per cent tipping point would accelerate the adoption of zero-carbon fuels to desired levels during the following years (*UMAS 2019*). According to the study, once this target is met, energy companies will have greater confidence in the demand for green fuels, cargo owners could be mobilized to pay a premium for zero-emission fuels, and investors could better quantify the investments needed across the value chain to decarbonize and to provide low- and zero-carbon fuels to the sector.

17. Noting that considerations around Marine Spatial Planning are also relevant to international shipping.

18. For example, charging buoys.

19. For a definition of zero-carbon energy sources, Getting to Zero Coalition, "Definition of zero carbon energy sources", see [https://www.globalmaritimeforum.org/content/2019/09/Getting-to-Zero-Coalition\\_Zero-carbon-energy-sources.pdf](https://www.globalmaritimeforum.org/content/2019/09/Getting-to-Zero-Coalition_Zero-carbon-energy-sources.pdf).

20. Noting the recent announcement that Maersk and Hyundai Mipo Dockyard have agreed on a contract for Hyundai Mipo to build a feeder vessel with a dual engine technology, enabling it to sail on either methanol or traditional very low sulphur fuel., see <https://www.maersk.com/news/articles/2021/07/01/container-fueled-by-carbon-neutral-methanol>.

Ensuring fuel flexibility, the ability to convert an engine to use a different fuel, will play an important role. This might involve the establishment of dual-fuel vessels as a way to protect investments.<sup>20</sup> Moreover, it is critical that emissions are considered on a full life cycle (well-to-wake) basis<sup>21</sup> and appropriate, consequential life cycle assessments (e.g., for other particulate emissions, embedded emissions in materials, components, emissions during shipbuilding and recycling, etc.) are introduced and undertaken for alternative zero-carbon energy sources. Such energy sources must also be vetted for other sustainability criteria, including environmental, social and socio-economic impacts across the life cycle (e.g. land use, biodiversity, feed stock, other air emissions, etc.), and may be subject to certification and standards.<sup>22</sup> Evaluating new fuel sources with a full life cycle analysis will also help to ensure that there is not a burden shift from the shipping sector to other sectors.

Ports will also play a key role in providing multi-fuel facilities, building and operating an appropriate bunkering infrastructure for new fuels and handling the fuelling process. Port infrastructure projects could combine several objectives, including GHG emissions reductions, climate adaptation and resilience, and ensuring local energy security. Strategic ports, such as the [Port of Singapore](#) and the [Port of Rotterdam](#), are already working towards providing the infrastructure and bunkering needed to host a variety of fuels. This will be essential for a multi-fuel transition. There is also increasing interest in establishing port-to-port “green corridors”, wherein a pair of ports collaborate to determine the necessary steps to decarbonize the route between them.

Developing economies will likely need additional support to develop port-based infrastructure to decarbonize. Development banks can also play a key role in securing targeted investments to developing countries and addressing the financial challenges.<sup>23</sup>

## RECOMMENDATIONS FOR PARTIES

- The IMO to rapidly put in place life cycle GHG emission guidelines and safety standards for alternative low-carbon and zero-carbon fuels.
- National Governments to incentivize large-scale domestic production or import of zero-emission fuels.
- National Governments to create incentives for zero-emission vessels through ports and port-to-port “green corridors”.
- Reduce administrative burdens.
- Relief for early adopters of zero-carbon solutions.

## 6

### BEYOND THE IMO REMIT: HARNESSING THE ENTIRE VALUE CHAIN — FROM FINANCE TO CARGO OWNERS

The decarbonization of shipping will require an entire value chain effort — from sea to land-based players. The complexity of the transition requires strong partnerships. No shipping company can navigate the transition alone. Each company should form cross-sectoral partnerships with other shipping companies and along the value chain. The Getting to Zero Coalition found that barriers to first movers can be reduced and overcome through collaboration, the use of de-risking mechanisms, public-private partnerships and sharing the higher costs of green shipping across the value chain.<sup>24</sup>

Cargo owners play a vital role in the shipping value chain. Cargo owners can set demand signals for green shipping and incentivize zero emissions in their entire logistical value chain — and be willing to pay a premium to ensure the transition.

21. The life cycle refers to the assessment of greenhouse gas emissions that begin with fuel production to the ship's propeller, also known as “Well-to-Wake”. Furthermore, LCA is a standardized methodology, with relevant standards including ISO 14040 and ISO 14044.

22. Noting that the Sustainable Shipping Initiative has defined sustainability criteria for zero and low-carbon marine fuels. For more information, see <https://www.sustainableshipping.org/our-work/current-work/sustainability-criteria-for-marine-fuels/>.

23. Noting the IMO has launched a FIN-SMART initiative, which aims to bring development banks and commercial banks together to support financing of low-carbon shipping. For more information, see <https://www.imo.org/en/MediaCentre/PressBriefings/pages/38-FINSMART-roundtable.aspx>.

24. For more information, see The Global Maritime Forum, “The First Wave: A blueprint for commercial-scale zero-emission shipping pilots”. <https://www.globalmaritimeforum.org/publications/the-first-wave-a-blueprint-for-commercial-scale-zero-emission-shiping-pilots>. <https://www.globalmaritimeforum.org/content/2020/11/The-First-Wave-%E2%80%93-A-blueprint-for-commercial-scale-zero-emission-shiping-pilots.pdf>



Initiatives such as the [Clean Cargo Working Group](#) and [coZEV Coalition](#) are working towards such ends. In addition to paying a premium, cargo owners also incentivize green shipping by setting and reporting on their own ambitious targets.

There is growing interest among cargo owners in measuring and reducing Scope 3 value chain emissions through initiatives such as the CDP (formally the Carbon Disclosure Project), the [Sea Cargo Charter](#) and the Science Based Targets initiative.<sup>25</sup> Other private sector stakeholders can consider measuring, validating and reporting energy efficiency and GHG performance in their shipping portfolios. Classification societies and regulatory authorities will be charged with developing necessary safety and fuel-handling standards. In addition, logistics actors along the shipping value chain, including canals and suppliers, can encourage the transit of vessels with low- and zero-carbon fuels and more efficient technologies.<sup>26</sup>

## RECOMMENDATIONS FOR BUSINESS LEADERS

### Public-private and cross-sectoral

- Engage with Governments to establish regulations and incentives for zero-emission shipping.
- Engage with Governments to establish public-private national incubator programmes and pilot projects.
- Establish and engage in private and public-private partnerships in order to promote and share knowledge on technologies and solutions.

### Leveraging finance

- Develop a company strategy on which the market can place a price.
- Include a long-term fleet transition plan based on resource consumption (including materials, not just cost), emission and social acceptance factors.
- Help the maritime value chain attract funding through harnessing innovative financial mechanisms, such as blue bonds, in line with international standards and principles.

The financial markets will play an essential role to help de-risk innovative investments and award those pioneering the necessary transition (UNEP FI [Turning the Tide: How to Finance a Sustainable Ocean Recovery](#), UN Global Compact [Practical Guidance to Issue a Blue Bond](#)). Meanwhile, The Poseidon Principles establish a framework for assessing and disclosing the climate alignment of ship finance portfolios.<sup>27</sup> Innovative financial instruments, such as blue or sustainability-linked bonds, are key components. For instance, Norwegian shipping company Odfjell ASA issued the shipping industry's first [sustainability-linked bond](#) in January 2021.

- Educate potential issuers and finance stakeholders to improve recognition and understanding, reducing pricing.
- Develop or coalesce on transparent, measurable, verifiable criteria/key performance indicators (KPIs) for sustainable shipping.

### Harnessing the value chain

- Enter into cross-value chain partnerships.
- Private-sector stakeholders such as insurers and charterers should measure, validate and report energy efficiency and GHG performance in their shipping portfolios.
- Cargo owners should adopt a human rights and environmental due diligence lens – demanding green, human-centred shipping conditions from their suppliers and freight forwarders.
- Set a science-based target with a clear Scope 3 emission reduction target which includes the shipping supply chain and considers labour rights and health and safety.

25. Efforts to transition towards green shipping must incorporate a human rights due diligence lens to ensure a human-centred approach to green shipping and prepare for upcoming environmental human rights due diligence legislation, such as those [proposed in the European Union](#).

26. For example, the Panama Canal, has set their own decarbonization targets, while also establishing initiatives to help and incentivize shipping lines to minimize their carbon footprint. Helping to inform the maritime industry as it adopts initiatives to reduce the carbon footprint and incentivize route optimization, the Panama Canal has a CO2 Emissions Dashboard. This dashboard has monthly data saved by vessels that choose to transit the Panama Canal over the most likely alternative route. It also has a programme that lets customers improve their position within the customer ranking, which is considered when booking for transit through the Panama Canal.

27. The Poseidon Principles set a benchmark and provide actionable guidance on what it means to be a responsible bank in the maritime sector and how to achieve this goal.

See <https://www.poseidonprinciples.org/#about>.

## 7

## SETTING INTERMEDIARY TARGETS WILL HELP THE TASK AHEAD: CLEAR MILESTONES FROM NOW TO 2030

Setting intermediary targets and milestones will be key as the period from the present to 2030 plays an important role. Indeed, several Governments and organizations already have set more ambitious targets than those agreed upon by IMO Member States in the 2018 Initial IMO GHG Strategy. The European Union is already turning net-zero targets into regulations with a net-zero goal for 2050.

2023 will be a key year for the IMO to implement new regulatory frameworks. A global price on carbon (or GHG emissions) is needed by 2025 to provide the necessary assurance to the private sector to meet the 2030 targets for zero-carbon fuel sources and vessels.

Regulations must match targets to provide accountability and enforcement. Many companies will subsequently need to be aligned with more stringent requirements in the intermediate-term. Targets should be science-based, aligned with global standards, and ideally verified by third parties. Digitalization of vessels and equipment, vessel-shore connectivity and analytics capabilities will be critical for most companies to verify data and emissions reductions.

Private sector efforts can also focus on what needs to happen by 2030, such as setting strategies that include a long-term fleet transition using the best pathway for a specific company profile, and demonstrating a willingness to invest in the transition in their investment plans. For instance, committing to zero-carbon ready vessels, which could be ready by 2023 or 2024 (Lloyd's Register, 2021 – [Nor-Shipping Towards COP 26: Ambitions for Shipping](#) Panel Discussion), or setting goals around the number of zero-emission vessels (ZEVs) in the water by 2030. As shipping vessels typically have a lifespan of up to 30 years, most ships being ordered now are expected to still be on the water in 2050. Therefore, vessels being ordered in the near term should be designed to make the switch to new fuels to meet decarbonization targets.

The private sector can use available sustainability frameworks, including the UN Global Compact [Sustainable Ocean Principles](#) for companies, and blue finance principles, such as the [Poseidon Principles](#), for financial institutions.

### RECOMMENDATIONS FOR PRIVATE SECTOR ACTORS

#### Focus on near- and medium-term targets, such as:

- Number of international zero-emissions-ready vehicles in the water by 2030
- Number of domestic ZEVs in the water by 2030
- Percentage of zero-emission fuels by 2030
- Increased energy efficiency of fleet (e.g., retrofits, slow steaming, operational improvements)
- Target on reporting percentage of suppliers reporting to relevant standards, etc.
- Per cent reduction in line with verified plan (science-based target) for net zero by 2050

26. For example, Unilever is developing a way of also tracking emissions in real time to benchmark ocean carriers against industry standards and drive improvements through its Virtual Ocean Control Tower initiative. See

29. Examples of recent private sector efforts: (1) In 2018 A.P. Møller – Mærsk set ambitious goals to reduce shipping's relative CO<sub>2</sub> emissions by 60 per cent by 2030, compared to 2008, and to net-zero by 2050. By 2020, A.P. Møller - Maersk had achieved relative CO<sub>2</sub> reductions of 46 per cent (2008 baseline). In 2021, the company committed to operate the first carbon-neutral liner by 2023. (2) Kongsberg developed the YARA Birkeland to be the world's first fully electric and autonomous container ship, with zero emissions.

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## THE TEN PRINCIPLES OF THE UNITED NATIONS GLOBAL COMPACT



### HUMAN RIGHTS

- 1 Businesses should support and respect the protection of internationally proclaimed human rights; and
- 2 make sure that they are not complicit in human rights abuses.



### LABOUR

- 3 Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- 4 the elimination of all forms of forced and compulsory labour;
- 5 the effective abolition of child labour; and
- 6 the elimination of discrimination in respect of employment and occupation.



### ENVIRONMENT

- 7 Businesses should support a precautionary approach to environmental challenges;
- 8 undertake initiatives to promote greater environmental responsibility; and
- 9 encourage the development and diffusion of environmentally friendly technologies.



### ANTI-CORRUPTION

- 10 Businesses should work against corruption in all its forms, including extortion and bribery.

The Ten Principles of the United Nations Global Compact are derived from: the Universal Declaration of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, and the United Nations Convention Against Corruption.

## ABOUT THE UNITED NATIONS GLOBAL COMPACT

As a special initiative of the UN Secretary-General, the **United Nations Global Compact** is a call to companies everywhere to align their operations and strategies with Ten Principles in the areas of human rights, labour, environment and anti-corruption. Our ambition is to accelerate and scale the global collective impact of business by upholding the Ten Principles and delivering the Sustainable Development Goals through accountable companies and ecosystems that enable change. With more than 13,000 companies and 3,000 non-business signatories based in over 160 countries, and 70 Local Networks, the UN Global Compact is the world's largest corporate sustainability initiative — one Global Compact uniting business for a better world.

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