



Insight brief

Shipping's urgent need for Paris-aligned regulation

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Co-authors

Stephen Cotton

Secretary General

International Transport Workers' Federation

Dominik Englert

Economist

The World Bank

Claus Hemmingsen

Chair

DFDS

Bjørn Højgaard

Chief Executive Officer

Anglo-Eastern Univan Group

Martin Humphreys

Lead Transport Economist

The World Bank

Rasmus Bach Nielsen

Head of Fuel Decarbonisation

Trafigura

Jeremy Nixon

Chief Executive Officer

ONE

Alexander Saverys

Chief Executive Officer

CMB

Masahiro Takahashi

Executive Officer

Technical Headquarters NYK Line

Tristan Smith

Associate Professor

University College London

Director

UMAS

Lau Blaxekjær

Senior Project Manager

Global Maritime Forum

Ingrid Sidenvall Jegou

Project Director

Global Maritime Forum

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Executive summary

This paper summarises discussions from the **Global Maritime Forum Annual Summit** around the policy imperative to decarbonise shipping in line with the Paris Agreement's 1.5 degree Celsius temperature goal, in the context of the momentum for policy action that has emerged over the past years. The International Maritime Organization (IMO) is at a critical juncture in the development of regulation to ensure a smooth transition to sustainable global maritime trade. The IMO's Marine Environment Protection Committee is expected to adopt a revised greenhouse gas (GHG) strategy at its 80th meeting in July 2023. In parallel, the IMO is negotiating a policy package with specific measures and incentives to transform shipping and deliver the GHG strategy's levels of ambition. These include proposals for a carbon price mechanism and a global GHG fuel standard.

Stakeholders in the shipping industry and the broader shipping value chain know that it will carry significant risk – in both short and long term – if global regulation is ambiguous, delayed, and

poorly designed for this critical evolution of the industry. For this reason, Global Maritime Forum discussions echoed the now wide call from across shipping's industry associations for IMO to adopt a high ambition GHG Strategy and associated regulation to transform shipping and ensure a level playing field and commercial viability.

The main findings of this insight brief are that:

- The Revised IMO GHG Strategy should set clear 1.5-aligned interim targets, for example GHG emissions reduction targets for 2030 and 2040. Targets should be guided by IPCC science and specify the reduction rates over each decade. The IPCC science indicates GHG reductions in 2040 at least 80% below 2008 emissions. A higher value (90% or more) is likely to be necessary to acknowledge that deep absolute reductions may not be achievable by 2030.
- A combination of policy measures is the best way to close the competitiveness gap between fossil fuels and scalable zero emissions fuels (SZEf) and phase out GHG emissions. This is because no single individual measure is likely to effectively do this on its own.
- A combination of policy measures could at least include 1) an economic instrument, for example a carbon levy as this is the simplest to administer for industry, and it can generate revenue to support the transition, and 2) a global GHG fuel standard, as this would send a clear signal to industry for gradual and final phase-out of GHG emissions.
- Both the Revised IMO GHG Strategy and policy measures must adopt a well-to-wake framing for targets and incentives.
- Provisions for revenue allocation and spending should be developed to ensure an effective transition that is also just and equitable for workers, communities and countries. Provisions should include climate finance for developing countries, especially SIDS and LDCs.
- Provisions for revenue allocation could also include a system of funding seafarer training for new fuels and other decarbonisation technologies. Other options are support for development, distribution, and buying of SZEf and development of zero emission vessels.

Following these recommendations and steps to take for the IMO, we are more likely to create strong demand for SZEf, zero emission technologies and vessels, which will maximize the required investments in shipping decarbonisation including the critically important land-side investment in new scalable zero emission energy supply chains. Strong, clear regulation at the IMO is the safest way to ensure that both the fleet and fuels needed will be available in the quantities needed for a 1.5-aligned transition.

The available time to reduce GHG emissions in line with 1.5 is so compressed, that failure to agree on science-based interim targets in 2023 could mean that investments and an orderly transition would no-longer be possible.

The paper further stresses that shipping's decarbonization transition will have huge implications for seafarers and maritime workers across the value chain. It must be a just transition that puts health and safety first, ensures all workers are appropriately trained and no worker is left behind. It is critically important that the voice of seafarers is listened to in the revision of the Strategy and policy measures, and in the continuous work to review and improve regulation.

There is a need for stakeholders in the shipping industry and value chain to help amplify these requests. The damage to the industry that can result from the significant downside risk of a late, disorderly, or globally fragmented transition means that it's in our collective interest that IMO provides clarity and ensures a level-playing field by taking the above steps. Now is the time to seize the window of opportunity and put trust in the IMO to adopt a clear and ambitious strategy with the policies the industry and its value chain needs to manage the risks and opportunities of important new investments.



Momentum is building for ambitious global regulation

Recent reports, including the **World Energy Outlook 2022** and **State of Climate Action 2022**, clearly show that it's vital to accelerate efforts to decarbonise the world's economy, to be able to meet the Paris Agreement temperature goal and limit the global temperature increase to 1.5 degrees Celsius. States as well as non-state actors must urgently increase climate actions. This includes the maritime transport sector, which currently accounts for almost 3 percent of global GHG emissions.

Momentum for high ambition regulation is building in the maritime sector, as expressed by, for example, the **Call to Action for Shipping Decarbonization**, the **International Chamber of Shipping**, **Intertanko**, **BIMCO**, World Shipping Council and the **International Trade Workers' Federation**. In addition to these calls, the industry is showing leadership by taking concrete action towards decarbonisation, as demonstrated by the many **pilot- and demonstration projects** that are emerging in the maritime space, by pledges to develop **green corridors** as well as by concrete business decisions to order zero-emission-ready vessels and to invest in the production of zero-emission marine fuels.

Many governments also contribute to this momentum for climate action in shipping. Ahead of COP26 in 2021, several declarations were made, including the **Declaration on Zero Emission Shipping by 2050**, in which currently 31 governments pledge for higher ambition at the IMO; the **Dhaka-Glasgow-Declaration** with 55 country signatories; and the **Clydebank Declaration**, in which currently 24 governments declare to support the establishment of green shipping corridors. At **COP 27, shipping as a sector delivered climate actions beyond expectations**, sending clear signals of high ambition and willingness to act, and shipping was for the first time included in a world leader's statement by way of a mention from US President Joe Biden. An important bridge was built to the hydrogen supplier community through a **joint statement of alignment** to rapidly scaling the supply of hydrogen and hydrogen-derived fuels this decade.

While the progress made is encouraging, it needs to translate into a firm policy framework that sets the direction and enables the sector to undertake the transition. Industry needs clarity on the overall ambition and on interim targets, in order to be able to make investment decisions in the near term and thereby to avoid the worst impacts of climate change. While not all industry actors need to fully decarbonise over this decade, everyone needs to plan for decarbonisation to rapidly scale up in the 2030s.

The International Maritime Organization (IMO) has a key role to play. The current Initial IMO GHG Strategy has set a goal to reduce GHG emissions by at least 50 percent by 2050 compared to 2008. While seen as a major step in 2018 as the first ever climate goal of the global shipping sector, it is inadequate to meet the climate challenge. The initial strategy's targets, whilst helpful in confirming that ships built today would be operating at least towards the end of their life in a significantly different market/sector, left the intervening period up to 2050 broadly undefined. This meant that inferring detail to guide investments in ships and fuel/energy supply for the 2020's and 2030's remains challenging.

The Initial IMO GHG Strategy is up for revision in July 2023 when members gather at the 80th meeting of the Marine Environment Protection Committee (MEPC). Therefore, we are facing an important window of opportunity to shape policy making at the IMO towards a climate ambitious outcome that ensures the commercial viability of the sector, while also addressing legitimate development and equity concerns of all IMO member states. This is a window for governments to align international shipping with **commitments under the UNFCCC of climate neutrality by mid-century and 45% GHG emissions reduction by 2030**, and to make use of the global path for regulation of a truly global industry. It's also a window for industry to shape policy making at the IMO, to avoid or minimise the less preferred options of fragmentation through national and regional frameworks, or the IMO setting a framework which is not cognisant of the industry's needs and results in a disorderly and disruptive transition.

Drawing on **the work of the Getting to Zero Coalition**, this momentum, the window of opportunity, and the policy imperative to unlock shipping's decarbonisation transition was a priority topic at the **Global Maritime Forum's**

Annual Summit in September 2022. This Insight Brief presents some of the key messages and findings of the Summit and signals the support of industry for the direction and the policy measures needed. In addition, the Global Maritime Forum and UMAS recently published an **insight brief** that elaborates specifically on the issue of an equitable transition.

From crises to action

The past few years have been marked by several exceptional, grave events. The Covid 19-pandemic struck with devastating human costs, causing severe impacts on the global economy, including major setbacks for poverty eradication and the Sustainable Development Goals. The attack on Ukraine by Russia is threatening the lives and livelihoods of the Ukrainian population, forcing millions of people to flee the country, and causing major geopolitical tensions that we have not yet seen the full impact of. And the world is now clearly seeing the impacts of climate change at an increasing frequency and strength.

These crises have had serious repercussions for global shipping, directly – through the crew change and supply chain crises – as well as indirectly, with global supply and demand of cargo and hence of shipping services being altered, the global energy crisis and implications for fuel costs, and inflation.

While the multiple crises, in a perfect storm, could risk distracting the world community from taking climate action at a point where time is already running out, they also mean that global action is needed more now than ever. This is especially true as the crises have led to increasing inequality, and hence to a more pressing need for policy to address concerns of equity and sustainable development. It also means that the necessary shift to other, sustainable sources of energy is further emphasised, to shift away from reliance on non-renewable fuels originating in few countries, thereby reducing the vulnerability and increasing the energy security of the sector and of many national economies. The world community has learnt the hard way during the multiple recent crises to value the importance of a well-functioning world trade system delivered by shipping. Against that murky background, it's however important to highlight the many opportunities for sustainable development related to shipping decarbonisation, in addition to the crucial effect of abating GHG emissions.

The production of scalable zero emission fuels (SZEF), which to a great extent will be derived from green hydrogen, can be more evenly distributed across the world, with opportunities arising for many economies, including developing countries as evidenced at COP27, to attract direct foreign investments and develop new streams of income. This comes with potential growth and development opportunities for countries such as Chile, **Indonesia**, **Mexico**, Morocco, Namibia, **South Africa**, and **many others**, especially important for supporting a just transition and for the generation of new quality jobs. The projected demand for SZEF from international shipping represents an investment opportunity of between **1.2-1.6 trillion USD**, the majority of it on land. This can also generate benefits for the land-based energy transition and for other sectors of the economy.

A recent **assessment** of the sector on its journey towards full decarbonisation shows good progress. In terms of specific levers driving the energy transition, for technology, finance and demand, the sector is partially on track. Work on how the decarbonisation transition impacts seafarers and how to include the voice of seafarers, for example in relation to training and safety, has been progressed through the **Maritime Just Transition Task Force**.

For the policy lever, the sector has made considerable progress since the development of the Initial IMO GHG Strategy. There is increasing convergence on the need for a clarification of how IMO strategy and policy aligns with the Paris Agreement temperature goal of 1.5 degrees Celsius. The same is true regarding the need to identify the policy measures required to enable the effective, equitable and just transition. There is now wide support for market-based measures such as a carbon levy at the IMO. Having said that, the continued progress of the sector towards decarbonisation depends on translating these signs of convergence into concrete targets and policy measures. Below, we will discuss what is needed in that context.

Revision of the IMO GHG Strategy

The strategy is scheduled for revision on a 5-yearly basis. 2023 is the first opportunity to address the shortcomings in the specificity of the initial strategy and agree details of what GHG intensity and levels IMO policy

measures will be designed to incentivise. Stakeholders across the value chain can then use this guidance to get a sense of when and how the fleet and fuel supply may need to change. This will guide investments this decade.

2023 is also the final opportunity to set ambition and targets to ensure an orderly 1.5 degree-aligned transition of international shipping. If 1.5-aligned targets are not agreed in 2023, then by the next scheduled revision in 2028, the timescales for the processes that convert IMO’s strategic ambition into GHG emissions reduction (development of detailed policy instruments, investment decisions, production and distribution of fuel, evolution of fleet) will face insurmountable incompatibility with political ambition. That incompatibility will leave a stark choice between having to make policy to achieve a crash stop in the use of fossil fuel, with major disruption to fossil-compatible asset values (fixed and floating), or a failure to achieve the Paris-aligned temperature goal of 1.5 degrees Celsius.

While setting a target of full decarbonisation is important for triggering a fuel shift, the year that shipping reaches zero GHG emissions is not in itself defining of its climate impacts. The IPCC science for the 1.5 temperature goal sets a limit on the total (cumulative) GHG emissions from all sectors. For international shipping to contribute a proportionate amount of these cumulative GHG emissions, there are multiple pathways describing the profile of its GHG emissions reduction and therefore technology adoption over the next three decades. Figure 1, taken from the shipping criteria developed by the **Science Based Targets Initiative**, shows two pathways derived from **IPCC’s 1.5 special report**.

A key choice for the IMO in its Revised Strategy is therefore the shape of the GHG pathway for the sector. Early reductions in GHG emissions buy more time to complete the decarbonisation of shipping and is a lower risk pathway for the industry. Setting ambition on an ‘early reduction’ pathway also provides time to react if the pathway is not delivered in practice and remedial action is required.

Early reductions can be achieved through energy efficiency measures in the near term but will likely only achieve modest reductions in absolute GHG emissions (amongst others because of parallel growth of the sector), while the deep reduction that needs to follow will require a fuel shift. The IMO’s revised targets therefore should maximise GHG emissions reductions this decade, but also recognise the timescales needed for enabling a safe fuel transition, and trade-off a commitment to a higher rate of GHG emissions reduction in the 2030’s, with a lower rate of GHG reduction in the 2020’s and 2040’s e.g. as represented in an S-curve.

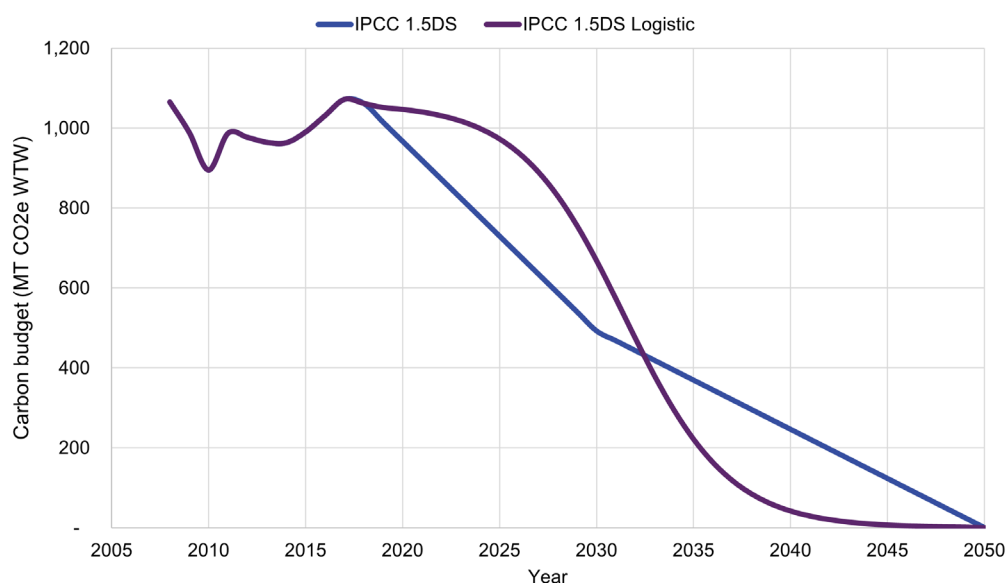


Figure 1: Maritime sector Well-to-Wake (WTW) emission pathways IPCC 1.5DS, IPCC 1.5DS Logistic ‘S-curve’.

Note: These pathways can be contrasted with the Initial Strategy which has a target of “at least 50%” reduction in GHG emissions by 2050, and minimal detail on the expectation of GHG emission reductions in the period to 2050.

These choices highlight the importance of the IMO clarifying the levels of GHG emissions reduction that it will aim for in interim years, at least in 2030 and 2040. This can enable the sector to plan for the ‘shape of the curve’ and the timescale that stakeholders will need to be changing fleet and/or fuels. It will also enable fuel producers to better identify the timings that their production and distribution will need to ramp up supply by.

The Revised Strategy therefore needs ambitions/targets, including interim targets, that are clearly aligned with IPCC science and the 1.5 temperature goal, and do not result in uncertainty as to whether they will need significant revision in 2028. Acknowledging the challenge of near-term deep GHG emissions reduction, IPCC science indicates the need for IMO to adopt an absolute well-to-wake reduction of 90-100% by 2040 (compared to 2008) to provide a proportionate response to the 1.5 temperature goal. If greater reductions can be agreed for 2030 (e.g. 50%), the 2040 target may be reduced to 80% (compared to 2008).

Availability of SZEf, including hydrogen-derived fuels and the preparation to bunker these fuels, will be critical to enabling shipping's GHG emissions reduction, as recognised through the joint statement at COP27 between hydrogen producers and the wider shipping value chain. Unlocking investment at the rate needed to rapidly ramp up supply of shipping's future SZEf requires clarity from IMO that there will be incentivisation and regulation based on a full lifecycle (e.g. well-to-wake) perspective. A well-to-wake framing in policy, including in the targets in the Revised Strategy, is also critical to unlock the use of sustainable biofuels as drop-in fuels used in the near-term. Without this, the significant risk arises of underinvestment in new fuels and insufficient supply, unnecessarily prolonging the use of fossil fuels.

Including the widely accepted objective of at least 5% adoption of SZEf by 2030 (e.g. hydrogen and hydrogen-derived fuels) in the Revised Strategy, as an interim target, would provide a clear signal that the forthcoming mid-term measures need to enable this outcome. This could maximise and unlock investments that can start already in 2023, without waiting for the completion of negotiations on corresponding mid-term measures.

Any pathway to reduce GHG emissions creates multiple risks that can exacerbate existing inequities between states. This can include risk associated with access to technology, access to SZEf, disruption to trade and economic development and increased cost of living. Having said that, the transition also offers opportunities to many developing countries. For a 1.5-aligned level of ambition to be translated into effective policy measures with the urgency required, a strong consensus is needed at the IMO. Thus, the different IMO member states need to be able to see pathways for their opportunities and risks being addressed. Explicitly including equitable transition objectives and ambitions in the Revised Strategy would send that signal.

Developing a basket of mid-term measures to enable the transition

In parallel with the process to revise the Initial GHG Strategy, the IMO has begun debating and developing so-called mid-term measures (measures that will be adopted no later than 2030). Several rounds of discussion have been held so far following a workplan that advances agreement via three phases. Phase 1, an initial collation and discussion of candidate mid-term measures, has been concluded. The IMO is currently in phase 2, assessing and selecting proposals and elements. If this process continues on time for phase 3, finalisation, the earliest that a mid-term measure or a basket of measures could be agreed is in 2024, with entry into force in 2026.

The IMO has grouped mid-term measures into three categories:

1. Technical measures: fuel standards, Carbon Intensity Indicator (CII) enhancements, and newbuild standards.
2. Economic measures: levy, feebate, and emission trading system (ETS).
3. Combinations of measures.

In many ways, mid-term measures hold the key to ensuring that international shipping can reduce its GHG emissions and deliver the level of ambition to be set in the revised strategy. For instance, as they can most effectively close the competitiveness gap between zero emission fuels and fossil fuels and enable an equitable transition. There are currently several proposed measures and combinations on the table as submitted by from many Member States and Member Organizations. The IMO has recently agreed to further develop a basket, or a combination, of mid-term measures that includes setting a price on GHG emissions and gradually reducing GHG emissions through a fuel standard.

It has been argued that a combination of measures is the best way to close the competitiveness gap between fossil fuels and scalable zero emission fuels as no single individual measure is likely to effectively do this on its own. Such a combination could include an economic measure, e.g., a levy, to close the competitiveness gap, and two technical measures, e.g., a GHG fuel standard and a ban of fossil fueled only vessels. The economic measure should be supplemented by provisions about strategic revenue recycling. Measures should either individually or in combination be consistent with the levels of ambition as set in the Revised Strategy.

An economic measure would incentivise the uptake of zero emission fuels by applying a global levy on GHG emissions, as this is the simplest measure to administer for the industry. The main purpose of the GHG levy is to close the competitiveness gap between fossil and zero emission fuels. The gap can be closed both by the levy and by recycling of revenues raised to support deployment. As a result, the GHG price may not need to fully close the gap from the outset, as evidenced in a previous report. Since a GHG levy applied to international shipping would generate a significant amount of revenues, provisions for revenue allocation should be developed to ensure not only an effective but also equitable and effective transition. Yet, the shipping sector's wider responsibility should be limited to what is proportionate and not lessen the responsibility of others to contribute to the many needs relating to climate change mitigation and adaptation. Notwithstanding, provisions should include climate finance for developing countries, especially Small Island Developing States (SIDS) and Least Developed Countries (LDCs). They could also include a system of funding seafarer training for new fuels and other decarbonisation technologies. Other options are support for producing and buying of SZEFS and development of zero emission vessels, which would create demand and help unlock additional investments in renewable energy production, especially for hydrogen-based scalable zero emission fuels.

In the event of a tight supply of green hydrogen, the shipping industry will be competing for green hydrogen as feedstock with other sectors (including agriculture, heavy industry and other modes of transport). Without stringent policy enabled by an ambitious revision of the Initial IMO GHG Strategy, shipping may easily fall behind in the global competition for green hydrogen. In return, with levels of ambition and correspondingly stringent regulation entering into force by the middle of this decade, shipping will be in a stronger position to secure the supply of green hydrogen it urgently needs to decarbonise.

A global GHG fuel standard would send a clear signal to industry about a gradual and final phase-out of GHG emissions from international shipping. It would define the future GHG emissions profiles of marine fuels according to a specific timeline, allowing the wider maritime ecosystem to make the right long-term investment decisions. In addition, a global ban on fossil fueled only vessels built after a certain date would partly support the steep abatement needed, and partly send a clear signal to shipowners, shipyards, engine manufacturers, and investors that they should begin to shift to zero emission vessels and technologies in advance of this ban. Thereby, it would help the industry to plan in an orderly way and avoid locking in infrastructural choices and creating stranding of assets. With such a ban, fuel producers would also be better able to estimate demand for scalable zero emission fuels and invest in the transition early on.

Concluding remarks

The maritime sector's composition of capital-intensive long-life assets, a large community of seafarers and maritime workers, and global and complex supply chains, can make the scale of decarbonisation and the needed changes appear daunting. However, discussions at the recent Annual Summit of the Global Maritime Forum demonstrated resolve. And it echoed the now wide call from across shipping's industry associations for IMO to adopt ambitious regulation and policy.

Collaboration within the Global Maritime Forum's and the Getting to Zero Coalition's broad network of stakeholders across the maritime value chain, informed by evidence and various projects around the world, is crystallising solutions and turning risks into opportunities. This can help synthesise how the decarbonisation challenge can be broken down and addressed, and even represent growth and business opportunities. By applying both experience from the recent years of progress towards decarbonisation with an understanding of the context and possible 1.5-aligned pathways, this insight brief highlights key steps that are needed now.

2023 is the first and last chance – a key window of opportunity – to set clarity in a timely manner to enable a smooth and equitable transition to full decarbonisation. Broad consensus on ambition is needed at the IMO, which means the Revised Strategy will need to couple ambitions on GHG reduction with specific commitments to achieve such reductions as part of an equitable transition.

Shipping's decarbonisation transition will also have huge implications for seafarers and maritime workers across the value chain. It must be a just transition that puts health and safety first, ensures all workers are appropriately trained and no worker is left behind. It is critically important that the voice of seafarers is part of the IMO process to not only adopt a Revised Strategy and policy measures, but also part of the continuous work to review and improve regulation.