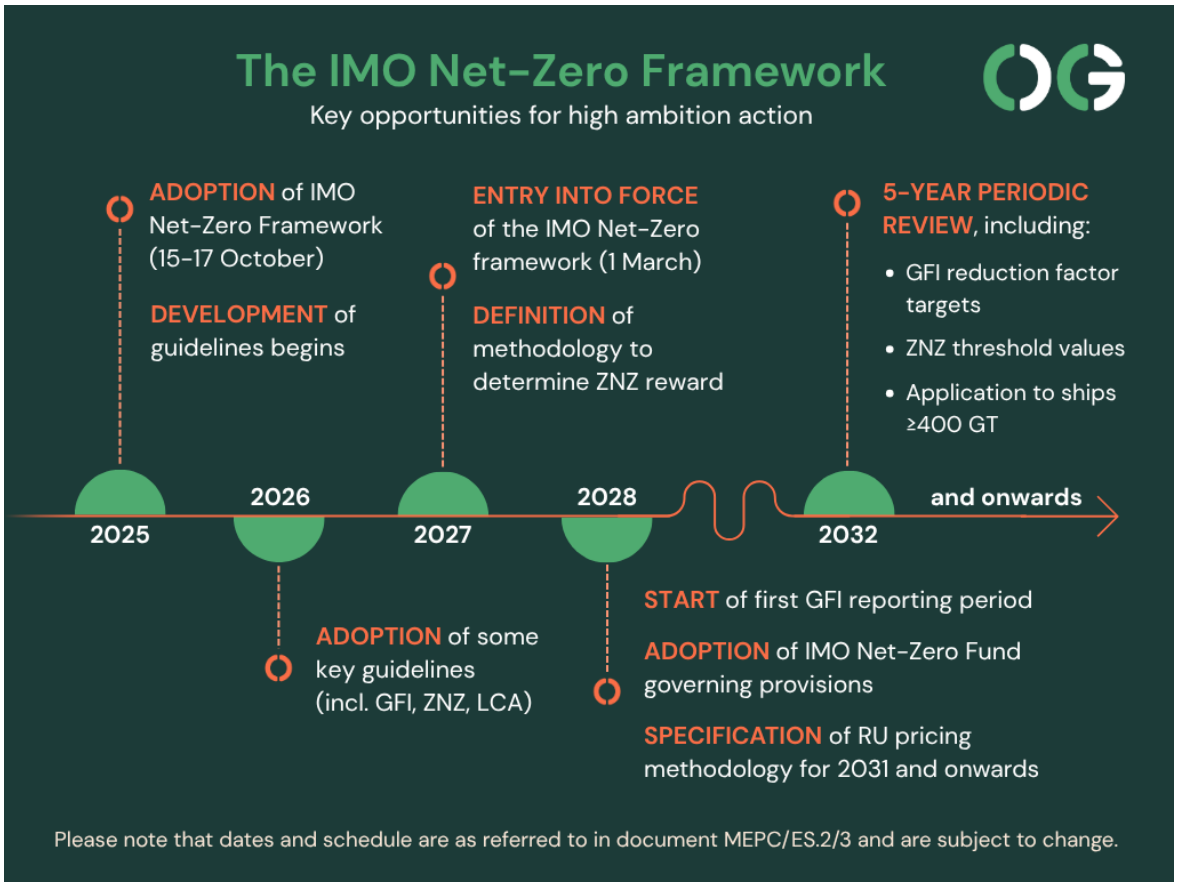
OPPORTUNITY GREEN

Opportunities for high ambition action through the IMO Net-Zero Framework

Policy briefing | July 2025

The IMO Net-Zero Framework

The 'IMO Net-Zero Framework' was approved at the 83rd meeting of the Marine Environment Protection Committee (MEPC 83) in April 2025. It is intended to become a legally binding framework to reduce GHG emissions from ships globally. The framework combines technical and economic elements under a 'two-



The opportunities included here do not constitute an exhaustive list but are only those discussed in this briefing.

tiered global fuel standard (GFS)'. It sets binding emissions intensity reduction targets for ships, requiring penalty payments for those who fail to meet them.[1]

Although it represents a significant achievement, the IMO Net-Zero Framework in its current form, does not incentivise the ambitious emissions reductions needed to meet the commitments of the 2023 IMO GHG Strategy (the 2023 Strategy), nor raise the funds necessary to ensure a just and equitable transition, amongst other shortcomings.

However, there are still several opportunities for high ambition action to influence the further development of the IMO Net-Zero Framework in a manner that prioritises ambitious emissions reductions and a just and equitable transition.

The following sections highlight some of these opportunities, in no particular order.

Key areas for further ambition

1. GHG fuel intensity reduction factors

The IMO Net-Zero Framework will require ships to calculate their GHG Fuel Intensity (GFI), following annual targets (reduction factors) that will increase in stringency progressively until 2050. However, the current GFI reduction factors, set until 2035, lack the strength to effectively incentivise ships to decrease their emissions fast enough to reach the 2023 Strategy's targets. According to assessments by Transport & Environment[i] and UCL[ii], the Framework will lead to around 10% absolute emissions reduction by 2030, as opposed to the 2023 Strategy's 'striving for' goal of 30%.

Future targets for the years 2036 to 2040 will be determined by January 2032. In addition, all GFI reduction factors are set to be reviewed periodically under the IMO Net-Zero Framework's legislative review (every five years). The processes for setting the 2036-2040 targets, and reviewing the reduction factors more generally, present key opportunities to influence the rate of emissions reductions in the sector.

Stricter and more ambitious base and direct compliance targets would ensure that a higher percentage of emissions are penalised by the agreement, and that there are stronger incentives to transition to zero and near-zero fuels and technology (ZNZs). Moreover, further guidelines surrounding the GFI (which would

[1] See our IMO Net-Zero Framework factsheet, https://www.opportunitygreen.org/factsheet-imo-net-zero-framework

include calculations of the attained annual GFI, compliance approaches, reporting and verification, and guidance on submitting data) will be adopted in 2026.

2. Generation and distribution of revenue

The Framework will generate revenue through its penalty pricing mechanism, which requires non-compliant ships to purchase remedial units (RUs) from a central registry. Alternatively, it is also possible for non-compliant ships to buy surplus units (SUs) from other ships or use previously awarded SUs, within a two-year validity period.

The estimated sum of $10-15bn generated per year by the pricing mechanism is far less than what could have been raised under a flat rate universal levy ($40-60bn annually between 2025-2050 according to a 2023 modelling by the World Bank). [iii] The revenues generated under the IMO Net-Zero Framework are significantly lower than what is necessary to finance the promised ZNZ reward and support a just and equitable transition. The transition to fully decarbonise shipping by 2050 is estimated to require approximately $1.2-1.6tn in investments,[iv] with about $400bn needed by 2030 alone in order to enable the level of e-fuel production required to achieve the IMO's 2023 targets.[v]

A higher RU price will help secure further funds to support the transition while increasing the incentive to transition away from GHG emitting energy sources. RUs are currently priced at $100 at Tier 1 and $380 at Tier 2 for the years 2027 to 2030. However, in January 2028 the IMO will determine a new methodology for setting the price from 2031 onwards[2], giving an opportunity to push for more ambitious numbers.

a. Just and equitable transition

The current text on revenue disbursement[3] for purposes related to a just and equitable transition lacks clarity. Although the IMO Net-Zero Framework states that revenue will be disbursed under this priority area, including through several predetermined activity areas, the text as a whole remains open for further clarification on the percentage of total funds that will be reserved for this purpose, exactly what activities will fall within the scope of eligible spending purposes, who

[2] As referred in the draft work plan (Document MEPC/ES.2/3)

[3] See Regulation 41, Paragraph 1.2 on "Disbursement of revenue" accessible at https://wwwcdn.imo.org/localresources/en/MediaCentre/HotTopics/Documents/Circular%20Letter%20No.5005%20-%20Draft%20Revised%20Marpol%20Annex%20Vi%20%28Secretariat%29.pdf

will be eligible to receive funds and how they can be accessed. This will occur during the development of non-binding guidelines, starting in October 2025.

The development of the governing provisions related to the IMO Net-Zero Fund is a key opportunity for States to account for the needs of developing countries, in particular the most climate vulnerable countries, and prevent revenue streams disproportionately benefiting already wealthy countries and companies. These will be adopted in 2028.

b. Rewards for ZNZ uptake

The IMO Net-Zero Framework states that "Ships may receive rewards from the IMO Net-Zero Fund for the ZNZs used, taking into account guidelines to be developed by the Organization". However, further specification on the operation of this mechanism is yet to be developed. The methodology for determining the reward price, and the reward price itself, will be decided by 1 March 2027 and every five years thereafter.

Without careful specification of the ZNZ reward, the framework risks running out of the required funds needed to support a just and equitable transition.

3. Regulations and guidelines on ZNZs

a. Uptake of the lowest emission ZNZs

ZNZs, as defined in the IMO Net-Zero Framework, refer to zero or near-zero GHG emission technologies, fuels and/or energy sources. These must fall below a maximum GHG intensity threshold of 19g CO_2e/MJ, lowering to 14g CO_2e/MJ after 2035. The initial threshold means that while until 2035 the most polluting energy sources will be penalised, certain fuels derived from unsustainable feedstocks[i], such as used cooking oil (UCO), will be permitted. It also does not provide clarity on how technologies, for example onboard carbon capture and storage will be treated under the Framework.

As mentioned above, ships that use ZNZs may receive a monetary reward from the IMO Net-Zero Fund, subject to further detail developed in non-binding guidelines. The development of these guidelines is therefore an opportunity to support a targeted reward mechanism that encourages the lowest emission ZNZ solutions, such as green hydrogen-derived fuels and technologies and energy sources that avoid fuel use (e.g. wind propulsion, solar energy, direct electrification).

To ensure timely commercial viability and early uptake of these solutions, the pending guidelines should be designed to provide clear regulatory certainty and confidence to investors, producers and shipowners. It is also possible to review the threshold values for ZNZs during the IMO Net-Zero Framework's periodic review (every five years).

b. The LCA Guidelines and biofuels

The IMO Net-Zero Framework has no safeguards concerning the use of biofuels. This is problematic as unregulated biofuel use can pose risks to the environment, including biodiversity loss, water scarcity and deforestation due to their extensive land use demands. Furthermore, in some cases they may pose increased burden on food security with higher prices due to competition on food, water, and polluting fertilisers.

The LCA Guidelines (guidelines on life cycle GHG intensity of marine fuels), currently under development, will provide official well-to-wake values of marine fuels, therefore determining how individual energy sources are considered under the Net-Zero Framework. The International Council for Clean Transportation highlights [vi] that by accounting for the full lifecycle of biofuels emissions in the LCA Guidelines, including indirect impacts on land use change (ILUC), States can get a clearer picture of their environmental impacts, which in some cases can be worse than traditional fossil fuels. This would help ensure shipping stays firmly on track towards real, scalable solutions.

The LCA Guidelines are set to be finalised in 2026. It is therefore important to push for the inclusion of ILUC factors and safeguards against biofuels to ensure stronger support for the uptake of long-term solutions, such as wind propulsion and hydrogen-based fuels.

4. Vessel size

The measures will apply to ships of 5,000 Gross Tonnage (GT) and above sailing in international waters, with the exclusion of military vessels and state operations, and platforms and ships not propelled by mechanical means. The inclusion of ships above 400 GT and semi-submersible vessels will be examined at a later date.

Increasing the scope of ships covered by the Framework will allow the regulation of a larger percentage of emissions. Based on data collected[vii] by the European Commission, 8,525 vessels between 400 – 4,999 GT called at EU ports in 2023 alone, making up an estimated 19.28 $MtCO_2e$ of emissions, 15% of European shipping's total.[viii] Although this report only shows data in the EU, it highlights the importance of monitoring GHG emissions of smaller vessels.

The application of the Framework to ships of 400 GT and above shall be reviewed during the IMO Net-Zero Framework's periodic review every five years. This makes the first periodic review in 2032 a key opportunity to expand the portion of total emissions captured by the Framework.

Summary of next steps and action plan

The IMO Net-Zero Framework is set to be adopted at an Extraordinary MEPC on 14 to 17 October 2025[4]. Unless consensus can be assumed, MARPOL amendments are adopted by a two-thirds majority of Parties to the Convention present and voting, in this case, Parties who have ratified Annex VI.

Governments have a unique opportunity to strengthen the Framework before and after it enters into force in 2027, by developing a robust set of guidelines on critical policy details. The process of development of the LCA Guidelines provides an additional route for action in relation to identifying accurate well-to-wake values of marine fuels. Further opportunities for revision of ambition will be provided in the periodic regulatory review of the IMO Net-Zero Framework, and the 2032 GFI setting deadline.

Although the measures have been approved, the opportunity for ambition is far from over. Now more than ever, States must champion greater ambition while most importantly amplifying the voices of those most impacted by climate change, ensuring no one is left behind.

[4] Schedule tentatively agreed, subject to change.

Opportunities for increasing ambition in the IMO Net-Zero Framework (NZF)		
Year	**Opportunity**	**Ambitious outcome**
2026	**Guidelines to be adopted for:**	
	• **Lifecycle analysis (LCA)** of marine fuels' GHG intensity	LCA must account for emissions from indirect land use change (ILUC) to safeguard against biofuels.
	• **Zero- and near-zero (ZNZ)** technologies, fuels and energy sources	Guidelines should create regulatory certainty for investors, producers and shipowners to facilitate investment in the lowest emission solutions.
	• **GHG Fuel Intensity (GFI)** target compliance reporting and calculation methodology for attained annual GFI	GFI calculation methodologies and compliance reporting should be stringent to ensure that all emissions are properly being monitored and accounted for.
2027	Set methodology for calculating **ZNZ reward** values	The reward price should be set to adequately incentivise ZNZ uptake, but specifications should ensure that revenues are proportionately distributed between ZNZ rewards and measures to ensure the maritime energy transition is just and equitable.
2028	Set methodology for calculating **penalties** for ships exceeding GFI thresholds from 2031	Penalties, or remedial units (RUs), should be high to incentivise the transition from polluting fuels to ZNZs, and to increase Net-Zero Fund revenues.
	Net-Zero Fund governing provisions to be decided	Revenues should be distributed on the basis of the needs of developing countries, particularly the most climate vulnerable countries, to drive a just and equitable transition and prevent revenues disproportionately benefiting already wealthy countries and companies.
2032	**First five-yearly periodic review for:**	
	• **GFI reduction factors** (for 2036 – 2040)	GFI reduction compliance targets should be high to maximise emissions penalised and strengthen incentives to transition to ZNZs.
	• GFI thresholds for **ZNZ fuels and technologies**	ZNZ GFI thresholds should be low to ensure only the lowest-emission technologies receive rewards, and that unsustainable alternative fuels do not.
	• Possible extension of regulations to **small vessels**	The NZF should be applied to ships above 400 GT, not just above 5,000 GT, to penalise all emissions.

[i] Transport & Environment (T&E). (2025). IMO Net-Zero Framework: Assessing the impact of the IMO's draft Net-Zero Framework. https://www.transportenvironment.org/uploads/files/Impact-of-the-IMOs-draft-Net-Zero-Framework-April-2025.pdf Accessed June 2025

[ii] UCL Shipping and Oceans Research Group. (2025). IMO's Net Zero Framework sends a clear signal to shipowners to order ammonia dual fuel ships, but remaining uncertainties undermine early investment in e-fuels. https://www.shippingandoceans.com/post/imo-net-zero-framework-sends-a-clear-signal-to-shipowners-to-order-ammonia-dual-fuel-ships Accessed June 2025

[iii] Dominioni, Goran; Rojon, Isabelle; Salgmann, Rico; Englert, Dominik; Gleeson, Cáit; Lagouvardou, Sotiria. 2023. Distributing Carbon Revenues from Shipping. © World Bank. http://hdl.handle.net/10986/39876 License: CC BY 3.0 IGO. Accessed June 2025

[iv] Global Maritime Forum. (2020). The scale of investment needed to decarbonize international shipping. https://globalmaritimeforum.org/news/the-scale-of-investment-needed-to-decarbonize-international-shipping/ Accessed 2025

[v] UMAS, UCL The Barlett Energy Institute. (2025). The cost of capital challenge in delivering a just and equitable transition for shipping. https://www.umas.co.uk/wp-content/uploads/2025/03/The-cost-of-capital-challenge-in-delivering-a-just-and-equitable-transition-for-shipping-final.pdf Accessed June 2025.

[vi] International Council for Clean Transportation (ICCT). (2025). Four changes would make the IMO Net-Zero Framework more effective. https://theicct.org/four-changes-would-make-the-imo-net-zero-framework-more-effective-apr25/ Accessed June 2025.

[vii] European Commission. (2025). Review of Regulation (EU) 2015/757 on the monitoring, reporting and verification of greenhouse gas emissions from maritime transport in relation to the potential inclusion of ships below 5,000 gross tonnage but not below 400 gross tonnage. https://climate.ec.europa.eu/document/download/dc0e2810-b32c-4366-86d5-9b7ef97ad785_en?filename=Review%20of%20the%20EU%20maritime%20MRV%20regulation%20on%20the%20possible%20inclusion%20of%20smaller%20ships.pdf Accessed June 2025.

[viii] International Council on Clean Transportation (ICCT). (2023). The maritime sector in the European Union Emissions Trading System. https://theicct.org/wp-content/uploads/2023/12/ID-52-%E2%80%93-EU-ETS-Policy-Update-A4-60060-v2.pdf Accessed July 2025.