OPPORTUNITY GREEN

The ‘IMO Net-Zero Framework’ – what is it and how does it work?

Fact Sheet | 01 May 2025

Summary

The International Maritime Organization (IMO) Net-Zero Framework is in the process of becoming a legally binding regulation that will reduce greenhouse gas (GHG) emissions from international shipping. Its core emissions reduction mechanism is a ‘two-tiered global fuel standard (GFS)’ that includes GHG pricing on *some* emissions. There is no universal pricing. There is also a reward for ships using zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs).

A fund (the IMO Net-Zero Fund) will be set up to handle revenue generated by the emissions pricing element of the regulation. Other than funding the reward for ZNZs, revenue *could* be distributed for purposes broadly related to facilitating a just and equitable transition. There are still a lot of details to be agreed before the IMO Net-Zero Framework can be operational – these details will be included in guidelines.

This document answers some commonly asked questions about the Framework.

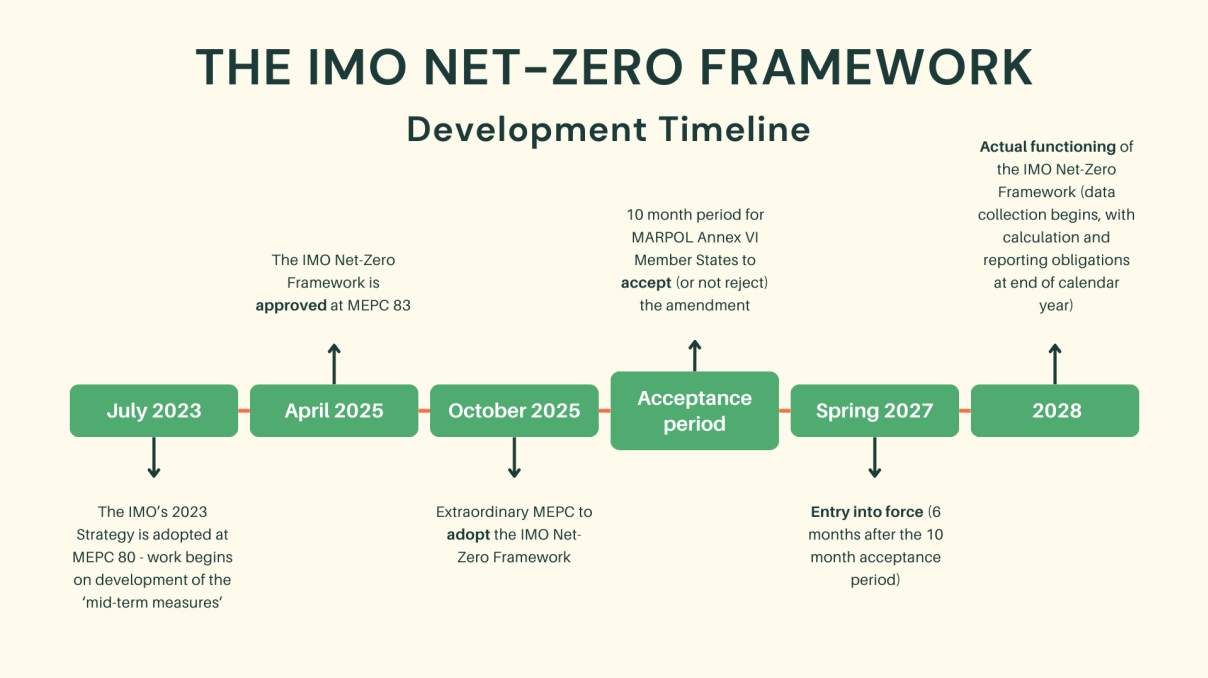
Where are we and how did we get here?

The IMO Net-Zero Framework is a regulation that was 'approved' on the 11th of April 2025 at the 83rd meeting of the Marine Environment Protection Committee (MEPC 83).[1] This is

one step in the process of establishing a legally binding framework to reduce GHG emissions from ships globally.

If it makes it through the legislative amendment process (requiring adoption and acceptance), the IMO Net-Zero Framework will be included in a new Chapter 5 of Annex VI (Prevention of air pollution from ships) to the International Convention for the Prevention of Pollution from Ships (MARPOL). The regulation will enter into force in 2027 (making it legally binding on Annex VI parties), but the practical operation of the regulation will not begin until 2028.

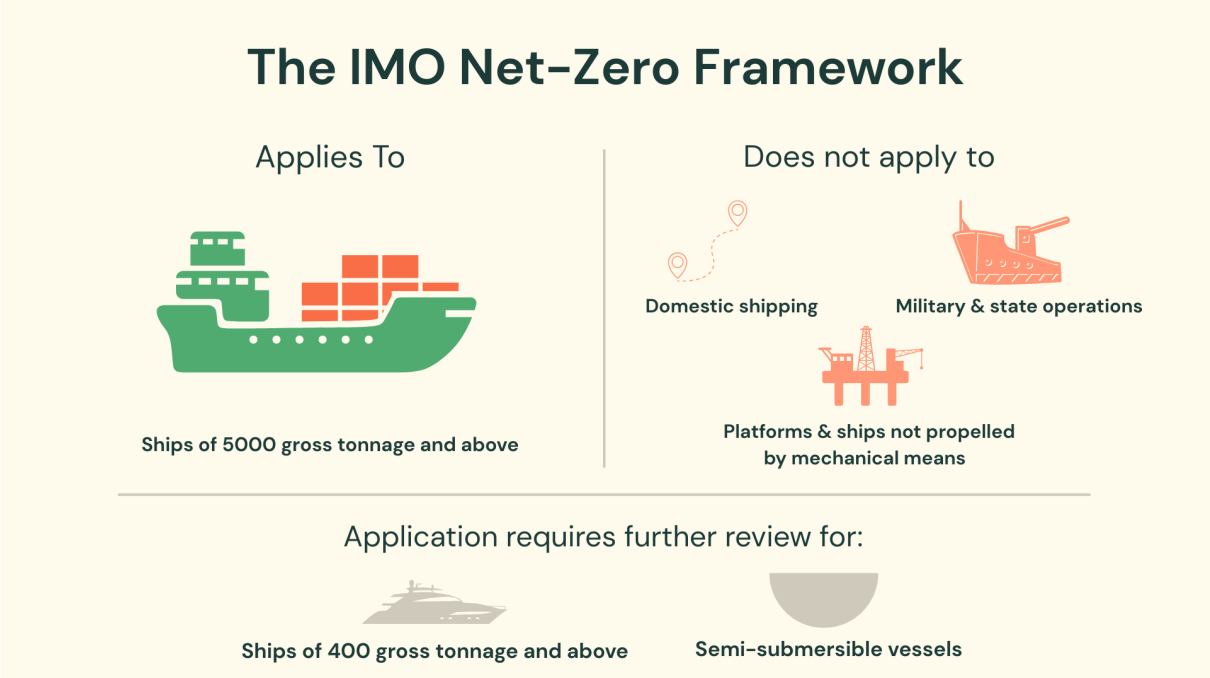
We have created a separate Fact Sheet to explain the details of the legislative amendment process, available here. The following timeline gives a high-level overview:



[1] The text of the IMO Net-Zero Framework as approved at MEPC 83 is publicly accessible at: International Maritime Organization, 'Circular Letter No.5005, Subject: Draft Revised MARPOL Annex VI' (Circular letter, 11 April 2025) https://wwwcdn.imo.org/localresources/en/MediaCentre/HotTopics/Documents/Circular%20Letter%20No.5005%20-%20Draft%20Revised%20Marpol%20Annex%20Vi%20%28Secretariat%29.pdf accessed 24 April 2024.

What do you need to know about how the IMO Net-Zero Framework works?

1) Who does the IMO Net-Zero Framework apply to? As an international treaty, States who are parties to MARPOL Annex VI are obliged to give effect to the provisions, but it is ships that will be required to make operational changes to meet the new standards. The Net-Zero Framework introduces mandatory rules for ships of 5000 gross tonnage and above. It does not apply to ships that exclusively travel on domestic voyages, military vessels and other ships operating on government non-commercial service, and some additional categories of vessel.[2] The regulation will be enforced by port states who are parties to MARPOL Annex VI. Any vessel that calls at a port in a MARPOL Annex VI State must be able to prove that it is compliant.



2) How does the emissions reductions mechanism work? Ships will be required to calculate their **GHG Fuel Intensity (GFI)** – basically how much GHG is produced per unit of energy used - every year. Each year, ships are given two target levels for their GFI, which get stricter over time until 2050. These targets are set as a percentage reduction from a specific reference value representing the average GFI of international shipping in 2008.[3] There is a 'base target' and a stricter 'direct compliance target'. The numbers for these targets have only been set until 2035. In 2032, the targets for 2036-2040 will be set.

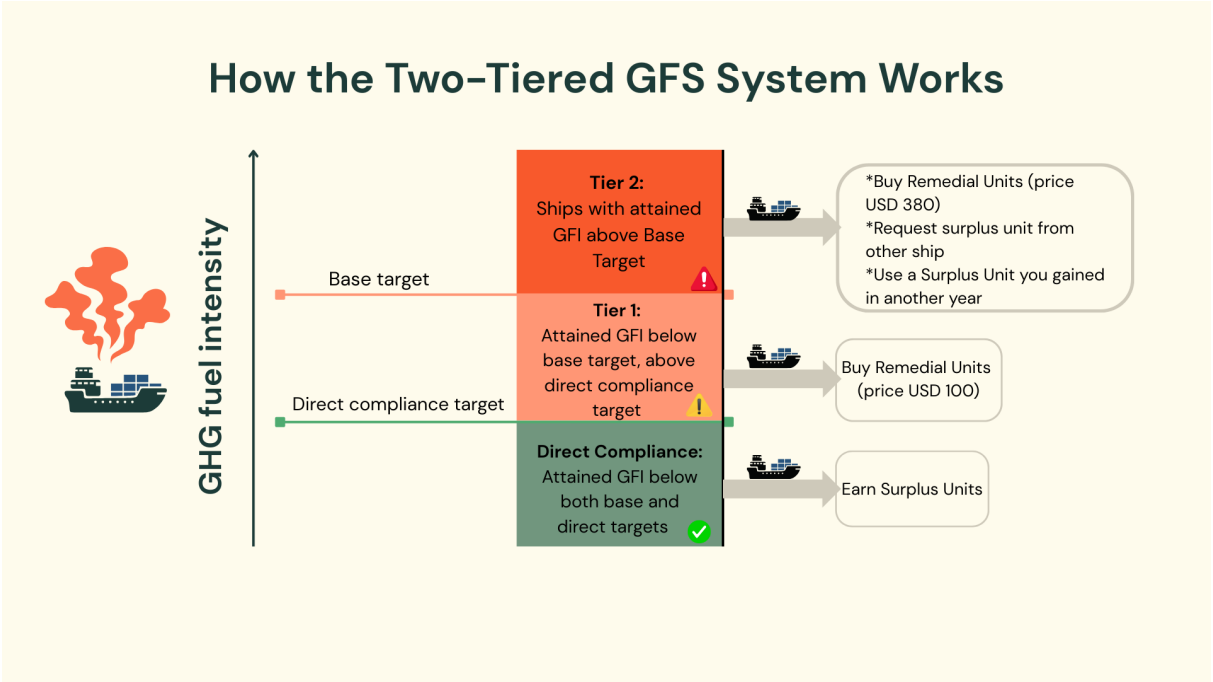
[2] Semi-submersible vessels, vessels not propelled by mechanical means, and platforms.
[3] Equivalent to 93.3 gCO2eq/MJ (Well-to-Wake), representing the average GFI of international shipping in year 2008.

Annual GFI reduction factors (in % relative to the GFI reference value - 93.3 gCO2eq/MJ)		
Year	Base target	Direct compliance target
2028	4%	17%
2029	6%	19%
2030	8%	21%
2031	12.4%	25.4%
2032	16.8%	29.8%
2033	21.2%	34.2%
2034	25.6%	38.6%
2035	30%	43%

Emissions above the direct compliance target, but below the base target make up 'Tier 1'. Emissions in this band are priced at US$100 per tonne CO2eq on a well-to-wake basis. Emissions higher than the base target make up 'Tier 2'. Emissions in Tier 2 are priced at US$380 per tonne CO2eq on a well-to-wake basis.

For ships to comply with the rules without needing further action, their annual 'attained' GFI should be less than, or equal to, the most stringent 'target GFI' (the direct compliance target). If a ship is compliant in this way, it can receive 'surplus units', equal to its 'positive compliance balance'. More details on the calculation and assignment of surplus units will be developed at a later date in guidelines. These units are valid for two years only. They can be transferred (sold) to other non-compliant ships – but only once. They can also be stored by the compliant ship for use in later years when the targets become more stringent, or they can be voluntarily cancelled at that ship's discretion.

Ships with higher emissions may still be compliant, however, they must either buy 'remedial units' to balance the 'compliance deficit', or, in more limited circumstances, they may be able to buy surplus units from another ship or use a 'banked' surplus unit from a previous year. The price of the remedial unit will depend on the intensity of emissions (emissions in the higher fuel intensity band, Tier 2, will be priced at US$380, and in the lower at US$100).



The **IMO GFI Registry** will be used to track each ship's emissions data (verified by the ships' flag State administration), compliance status, credits, and payments.

What will it achieve and Opportunity Green's view on its effectiveness?

The text approved at MEPC 83 will not drive the ambition needed to get international shipping on track to meet its own emissions reduction targets (agreed in 2023), let alone a 1.5 aligned decarbonisation trajectory. It also fails to ensure that the nature of shipping's energy transition will be just and equitable. The key things to know are:

Emissions reductions? The IMO's 2023 Strategy sets targets to reduce GHG emissions from international shipping by 20%, striving for 30% by 2030 and 70%, striving for 80% by 2040, aiming for net-zero emissions by/around 2050. Analyses indicate that the IMO Net-Zero Framework will fall short of these goals, let alone align with the Paris Agreement's 1.5C pathway. Transport & Environment (T&E) estimates that emissions reductions could be

only 8% by 2030, significantly below the IMO's minimum 2030 target.[4] Similar results are reported by the UCL Bartlett Institute - approximately 10% emissions reductions by 2030.[5] There are several explanations for the emissions reductions inadequacy of the IMO Net-Zero Framework: A large portion of emissions are excluded from the regulation, the GFI reduction targets are nowhere near stringent enough to reduce absolute GHG emissions in line with the IMO's 2023 GHG Strategy, and the framework fails to incentivise adequate early deployment of long-term zero-emission fuels and energy solutions.

Revenue generation? The framework has GHG pricing mechanism aspects, including penalties (remedial unit payments) for ships exceeding the emissions intensity thresholds. Estimates suggest the mechanism could generate approximately $10-15 billion annually until 2035.[6] This is a very limited pot compared to the revenues that could have been generated under proposals for a universal levy. Analyses suggests that $10-15 billion dollars in annual revenues will neither be sufficient to support the widespread adoption of zero- and near-zero GHG fuels through a scalable ZNZ reward, nor able to support a just and equitable transition.

Supporting a just and equitable transition? The IMO Net-Zero Framework specifies that revenues generated by the measure should be disbursed for a limited number of purposes, including as a reward to first movers in the uptake of ZNZ fuels and technologies, but also for five objectives linked to a just and equitable transition. The language used to outline the disbursement purposes related to a just and equitable transition in the Net-Zero Framework lacks clarity. There is a risk that it could be interpreted to restrict spending to a very limited number of purposes. This will have serious implications on justice and equity. For example, spending carbon revenues exclusively on international shipping will limit some developing countries' access to carbon revenues. Some developing countries, including many small island developing states (SIDS) and least developed countries (LDCs), as well as landlocked developing countries, may have limited opportunities to spend revenues in those sectors.

There is also no predetermined apportioning of revenues to each purpose (e.g., x% to reward, y% to just and equitable transition related spending). If the reward is prioritised in the disbursement of revenues, there would be very limited money left to fund any additional purposes. Transport and Environment note that the estimated revenues needed for the funding of an effective ZNZ reward alone will run out by 2032 under the current revenue generation scenarios.[7] Without clear and transparent allocation strategies, there's a serious risk that developing countries, in particular SIDS and LDCs do

[4] Transport & Environment, 'IMO Net-Zero Framework: Assessing the impact of the IMO's draft Net-Zero Framework' (Briefing, April 2025) https://www.transportenvironment.org/uploads/files/Impact-of-the-IMOs-draft-Net-Zero-Framework-April-2025.pdf accessed 16 April 2025.
[5] Smith, T, Frosch, A., Fricaudet, M., Majidova, P., Oluteye, D., Baresic, D. & Rehmatulla, N. (2025) An overview of the discussions from IMO's 83rd Marine Environment Protection Committee, London, UK.
[6] Transport & Environment (n4); Smith et al (n5).
[7] Transport & Environment (n4).

not receive adequate support during shipping's transition and in broader climate-related activities, exacerbating existing inequalities.

The two-tier GFS structure also includes a credit trading element (for compliance with the Base Target in Tier 2). This may have implications for the nature of the transition. Credit trading systems will predominantly favour commercial actors in the established shipping and trading nations, particularly those in developed economies. Using private credit trading systems as a means of compliance could also be seen as a way of moving money from underperforming (higher GHG emitting) ships to overperforming (lower GHG emitting) ships. Due to pre-existing geographical inequities, flexibility mechanisms risk entrenching financial flows in ships/regions with high access to capital or existing GHG regulation, increasing regressive effects on other States. The potential impacts of a credit trading system could be balanced by targeted revenue investment, however, the limited pot and uncertainty regarding spending priorities does not ensure this.