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« IMO and EU : Between pressure and collaboration on environmental issues »

The globalization of maritime transport raises the crucial question of normative sources, balancing international organizations, regional frameworks, and state-level initiatives, as a fierce competition unfolds between these various sources of law and public policy. While maritime transport alone is not responsible for climate change, it nonetheless contributes 2% to 3% of global anthropogenic GHG emissions each year. This is equivalent to the total annual GHG footprint of Germany. Underneath, shipping also acts as a powerful engine of the commercial economy within the architecture of globalization. How does the maritime transport sector integrate these environmental challenges, and what are the forces in presence?

The contradiction between infinite economic growth and finite natural resources has been brought into sharp focus since the 1970s with the Meadows Report (*The Limits to Growth*), commissioned by the Club of Rome. Fifty years later, despite consecutive reports from the IPCC (Intergovernmental Panel on Climate Change), no systemic structural shift has challenged our economic growth model. However, faced with increasingly palpable climate disruptions and a civil society highly sensitized to these challenges, the environmental cause has firmly entered the international maritime political agenda. This was illustrated by the organization of the "One Ocean Summit" forum in February 2022, under the French presidency of the Council of the EU. This international summit aimed to "*strengthen cooperation for a sustainable alliance with the ocean.*" Numerous stakeholders from the maritime, financial, and political worlds spoke out in favor of enhanced protection for the marine environment.

The stated ambitions were wide-ranging, encompassing the expansion of the global network of Marine Protected Areas (MPAs), the negotiation of an international treaty under UN aegis for the sustainable use of the high seas and the protection of its biodiversity, the fight against illegal fishing, seafarers' enrollment in eco-labels, port authorities' commitments to develop shoreside electricity, and pledges to reduce plastic consumption. These vast themes demand a coordinated response at the international level to achieve any real impact. Nevertheless, as the adage goes, "*promises only bind those who listen to them.*" In the face of skyrocketing quantitative targets announced by both the public and private sectors to preserve the marine environment, can international governance instruments truly realize their ambitions?

The IMO: a drive for universalism

The IMO (International Maritime Organization) is the specialized United Nations agency tasked with establishing global standards to ensure maritime safety, security, and the prevention of ship-source pollution. It stands as the unique institution gathering 174 Member States, alongside dozens of professional associations and NGOs concerned with the impact of shipping on human elements and the environment. It was born in 1948 with the signing of the Geneva Convention, which established the Inter-Governmental Maritime Consultative Organization (IMCO), later renamed the IMO in 1982.

Due to its intrinsically cross-border nature, international shipping must be governed within a global political framework whose standards carry universal validity. This ensures that the rules of the game remain as equitable as possible, thereby countering potential windfalls and excessive market distortions. Marine environmental protection within the IMO has historically advanced at the pace of major maritime disasters that mobilized international public opinion and directly impacted victim States. The sinking of the tanker *Torrey Canyon* flying the Liberian flag in March 1967 marked a pivotal turning point for the international organization, leading to the creation of several technical bodies with expanded competencies, including the Legal Committee and the Technical Cooperation Committee.

The subsequent groundings of the *Amoco Cadiz* in March 1978 and the *Tanio* in 1980 highlighted critical deficiencies in vessel inspection conditions, justifying the predominant role now granted to Port State Control. Later, the oil spill caused by the *Exxon Valdez* initiated the global generalization of double hulls for tankers and a structural strengthening of rules governing liability and compensation for oil pollution damage.

The IMO's environmental work subsequently intensified and hardened, leading to the creation in 1973 of the Marine Environment Protection Committee (MEPC). This committee is responsible for preventing and combating ship-source marine pollution through the amendment or adoption of international conventions.

The decision-making process

The decision-making process within the IMO is highly complex due to the technical nature of the standards and the large number of Member States. To foster cooperation and prevent any breakdown in international negotiations, consensus is the operational rule, and voting remains the exception. This approach effectively rationalizes decision-making within a large membership and across expanded competencies.

The entry into force of Conventions depends on reaching a specific cumulative tonnage threshold of the flag States that ratify them over time. In 1948, the founding States of the IMCO shared the entirety of global tonnage among themselves; the shipowner's nationality directly matched the vessel's flag. Very rapidly, the shift of global tonnage toward more competitive open registries disrupted the balance of power among States within the IMO. Today, the genuine, substantial link binding a shipowner and their vessel to their flag State has become largely distended. Shipowners routinely opt for the most economically favorable registries, capitalising on flexible fiscal, administrative, social, and sometimes environmental legislations. By 2019, 80% of the global merchant fleet was controlled by only ten flags. Does this structural imbalance interfere with negotiations within the IMO? On paper, one would be tempted to say yes, since States are simultaneously those who draft the rules and those subsequently tasked with enforcing them. In practice, however, only a handful of States lead the negotiating game due to their technical expertise and deep networks of influence. On climate issues, for instance, three primary blocs emerge:

The first bloc, which is the most favorable to ambitious environmental measures, originates from Western nations—more precisely from Northern Europe, spearheaded by Norway—alongside active European States such as Germany and France, but also including the United States and certain Pacific Island States (Marshall Islands, Solomon Islands).

The second bloc can be defined as an intermediate group, comprising Japan, Singapore, South Korea, and Indonesia.

The third bloc, led by China, counts among its members Brazil, Argentina, India, the United Arab Emirates, and South Africa. This group remains highly cautious regarding climate mandates for various reasons, including slowing domestic economies and/or an extreme dependency on international maritime shipping. Their strategy typically avoids frontal opposition, aiming instead to secure *a minima* agreements whose actual effectiveness remains highly debatable.

On the margins of these influential state blocs, the IMO allows maritime industry representatives (ICS, BIMCO, WSC) as well as NGOs representing civil society interests (professional and environmental defense associations) to access negotiations through observer status and contribute to the development of international law. Among these environmental NGOs are the *World Wide Fund for Nature* (WWF), the *International Union for Conservation of Nature* (IUCN), and *Greenpeace International*. These organizations have successfully driven forward work related to Particularly Sensitive Sea Areas (PSSAs) and ballast water management, thereby bolstering the political legitimacy of IMO decisions. Notably, the European Commission holds an observer status but speaks out very rarely; a common, unified general line is negotiated and established by EU Member States prior to IMO negotiating sessions.

Recent milestones: Prioritizing the climate agenda

In recent years, the IMO's work has intensely focused on greenhouse gas (GHG) emissions and energy efficiency measures—sometimes, unfortunately, to the detriment of alternative environmental topics. In June 2021, the MEPC adopted the so-called "short-term measure," focusing on the carbon intensity of vessels throughout the 2020s. The adopted amendments to the MARPOL Convention encompass

technical and operational requirements to improve ships' energy efficiency, aiming to meet the targets established in the 2018 IMO *Initial Strategy*

on the reduction of GHG emissions from ships. The IMO pursues a general objective to decarbonize maritime transport as soon as possible within this century, following a trajectory aligned with the goals of the 2015 Paris Agreement, broken down into intermediate "levels of ambition": reducing vessels' carbon intensity (emissions per cargo-mile) by 40% by 2030 and by 70% by 2050 compared to a 2008 baseline, while cutting the total annual volume of GHG emissions in 2050 by at least 50% compared to 2008.

New binding measures will enter into force in 2023 with the implementation of the Energy Efficiency Existing Ship Index (EEXI), calculated for each vessel against a baseline framework, alongside the Carbon Intensity Indicator (CII)¹. From 2023 to 2030, the CII will mandate annual reduction factors necessary to ensure continuous improvement in a vessel's operational carbon intensity, targeting a 40% reduction in the global fleet's carbon intensity by 2030. The operational delta between a vessel's actual operational CII and its required CII (a threshold that will tighten year after year) will be used to grade the ship, ranging from A (for low carbon intensity) to E (for a high carbon intensity). Top-performing vessels may be incentivized through reduced port dues. If a vessel is graded **D** for three consecutive years, or **E** once, it must submit a corrective action plan to achieve the required index **C** (at a minimum). Shipowners will be required to present annual energy efficiency data for each vessel. To optimize itineraries, weather routing services are—or soon will be—capable of assisting vessels and ocean carriers in monitoring and controlling their GHG emissions.

During the Glasgow COP26 and MEPC 77 (autumn 2021), numerous States, including France, highlighted that the IMO's current objective of reducing shipping GHG emissions by 50% by 2050 does not go far enough to address the global shipping industry's impact on climate change. A recent publication by the British shipbroker Simpson Spence Young noted a 4.9% increase in shipping CO₂ emissions in 2021 compared to 2020 and 2019. Several factors explain this phenomenon: the post-Covid global economic recovery, the expansion of trade volumes in tonne-miles, increased sailing speeds for specific vessel categories, and heightened port congestion. The IMO is scheduled to revise its *Initial Strategy* by 2023, where one of the pivotal stakes will be to determine whether the objective of net-zero GHG emissions by 2050 is maintained, or if a less ambitious target will be selected instead. The IMO is frequently criticized for its policy of incremental steps, its lack of ambition, its legislative slowness, and its absence of monitoring and enforcement mechanisms, leading to an uneven implementation of international conventions. These criticisms are inherent to international law in general; nonetheless, it serves to establish universal strategic guidelines.

This is illustrated by the various Memoranda of Understanding (MoU) on maritime safety, which individual States or coalitions of States are responsible for enforcing. These MoUs do not carry normative legal value; the objective is to achieve enhanced vessel monitoring in ports through harmonized procedures and in enforcement of international conventions. The IMO contributed to the systematic signing of regional Port State Control agreements and worked to preserve cooperative links (reciprocal representation, information sharing, and exchange of material and administrative resources). Under pressure from a public demanding greater environmental protection, certain States or coalitions of States wish to push further with ambitious standards that sometimes challenge the IMO's drive for universalism while stimulating its work.

The EU or environmental leadership?

The EU's environmental policy accelerated in recent years through the Green Deal and the "Climate Law." The EU's updated strategy targets a 55% reduction in GHG emissions by 2030 compared to 1990 levels (up from the previous 40% target). Carbon neutrality is locked in for 2050 and must irrigate all European public policies, whether in energy, industry, agriculture, or transport.

To achieve significant contractions in CO₂ emissions, the industry must simultaneously consume less energy (maximize energy efficiency) and deploy cleaner energy types (renewable and low-carbon fuels). Mirroring the IMO, the EU adopts the principle of technological neutrality, leaving it to operators and markets to select the best pathways; only cumulative GHG emissions matter.

¹ The index used is the CO₂ emitted divided by the product of the distance traveled and the ship's capacity.

It is interesting to note that Liquefied Natural Gas (LNG) is still considered a transition maritime fuel. Yet, it remains a fossil fuel (approximately 15% less carbon-intensive than petroleum-derived fuels) that is furthermore subject to varying degrees of fugitive methane emissions (methane slip) —a greenhouse gas 80 times more powerful than CO₂ over a 20-year timeline and 30 times more at 100 years. This choice leaves certain NGOs perplexed, as they fear that a quarter of European maritime traffic could be powered by LNG-fueled vessels by 2030, without forgetting the massive investments required in port infrastructure to distribute LNG. The August 2021 IPCC report also singled out natural gas and its production, holding it responsible according to experts for 0.3°C of the 1.1°C global warming trend [INDEX]. The IEA (International Energy Agency), alongside the World Bank, called for a complete halt to investments in oil, coal, and natural gas. Why, then, do regulators maintain this neutrality toward LNG? It must not be forgotten that LNG is currently the only available "alternative fuel" on an industrial scale, and an increasing number of shipowners wish to convert to it. The fleet in service and on order reportedly represents nearly 10% of global tonnage.

In its quest for greening, the EU must account for potential unintended side effects that could arise, such as distortions of competition between operators, the risk of evasive port calls (*escales d'évitement*), and the relocation of transshipment activities outside the Union. Fuel costs are a pivotal variable in the economic performance of vessel operators, especially in a context of soaring energy prices. They can range from 35% of operating costs (OPEX) for a small tanker to 53% for a container ship or bulk carrier. One of the primary mechanisms to accelerate the sector's decarbonization is to narrow the price gap between conventional and alternative marine fuels conventional fossil fuels, which are currently tax-exempt, and alternative fuels. These regulatory choices inevitably drag along port economy strategies, some of which depend very heavily on fossil energies in terms of vessel calls. In the future, the distribution network could shrink to a few large multi-service industrial-port hubs, abandoning secondary ports that fail to execute their structural transition. This configuration could raise serious questions regarding road modal shift. Between economic competitiveness, safeguarding established interests, and the eco-energetic transition, the equation remains highly complex.

Implementation of normative and market-based mechanisms

Regarding a normative approach, the proposed "FuelEU Maritime" regulation aims to stimulate the adoption of sustainable fuels. Ocean carriers will be required to evaluate and have verified by an independent, accredited body the annual carbon intensity of each of its vessels, calculated on a lifecycle basis (Well-to-Wake). GHG emission reduction milestones are locked in against a 2020 baseline, scaling up from 2% in 2025 to 75% by 2050. This mandate covers 100% of intra-EU voyages and 50% of international voyages between the EU and third countries. The deployment of Onshore Power Supply (OPS) or the use of zero-emission fuel at berth will become mandatory for passenger vessels and container ships by 2030. In the event of non-compliance, financial penalties will be enforced, extending, in cases of unpaid fines, to the formal banishment of the vessel from EU ports.

Concurrently, in July 2021, the European Commission proposed to incorporate the maritime sector within the EU Emissions Trading System (EU ETS) under the "Fit for 55" legislative package. The ETS establishes an absolute cap on allowable emissions and lets the market dictate their price. Quota pricing is unpredictable and highly vulnerable to market speculation. This system is already proven across the industrial and aviation sectors in Europe. Corporations receive or purchase emission allowances which they can trade among themselves. Each year, they must surrender a volume of allowances (1 allowance = 1 tonne of CO₂) matching their verified emissions from the preceding year. Since 2013, the scope of the EU ETS expanded to new sectors, currently covering over 11,000 industrial facilities and power plants across the EU and European Economic Area (EEA) nations (Norway, Liechtenstein, and Iceland), alongside flights operating within this zone. This architecture represents approximately 45% of the European Union's total GHG emissions.

Vessels transporting passengers or commercial cargo to or from EU Member State ports, boasting a gross tonnage (GT) exceeding 5,000 units, would be required to purchase and surrender emission allowances. The proposal advocates for these mandates to be progressively phased in between 2023 and 2026. Starting in 2023, vessels would be required to surrender allowances equivalent to 20% of their verified emissions, a ratio scaling up to 45% in 2024, 70% in 2025, and 100% from 2026 onward. This European ETS would also apply to 50% of the emissions generated by vessels on voyages to or from a non-EU third country. The generated revenues will serve to fund the deployment of decarbonized marine propulsion technologies. Some actors express anxieties over the emergence of multiple regional

ETS frameworks, which would force shipowners to juggle various localized regulations at the risk of double taxation.

Nevertheless, the EU's actions align with a strategic determination to facilitate the design of global international measures aimed at accelerating alternative fuel adoption worldwide. The Union submitted powerful proposals to this end during recent MEPC sessions. It challenges and stimulates the IMO to adopt more ambitious standards for environmental protection, a pioneering approach it has successfully tested before. The prior EU adoption of the MRV (Monitoring, Reporting, and Verification) regulation for ship-source GHG emissions directly prompted the IMO to deploy a similar data collection system shortly thereafter.

Emissions linked to maritime traffic calling at or departing from Union ports account for 11% of all transport sector CO₂ emissions within the EU, and 3% to 4% of the EU's total CO₂ footprint. However, the true reach of the EU's proactive stance must be contextualized, as it governs only 15% of the world's merchant shipping. Consequently, detractors of these measures argue that an uncoordinated, unilateral EU adoption risks yielding a negligible impact on global climate change while heavily penalizing the Eurozone's economic competitiveness, particularly within the current energy crisis context. Others, more optimistic, view this framework as a lever to boost the competitiveness of European shipping as a pioneer and leader in decarbonization. The dilemmas surrounding the eco-energetic transition are dense and complex. Yet, regional initiatives, operating through an iterative process, allow the industry to test and refine a regulatory model that can subsequently be duplicated on a global scale—the only level truly capable of resolving the climate crisis.

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