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[Duarte Lynce de Faria](#)*

Posted Date: 28 August 2024

doi: 10.20944/preprints202408.1973.v1

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Article

Crossing the "European Green Deal" Maritime Measures and the Unfair Competition on the ETS tax Regime—The Deviation Traffic Danger between EU and Non-EU Hub Ports!

Duarte Lynce de Faria

Portuguese Maritime College "Infante D. Henrique" Research and Development Center (CID), Oeiras, Portugal;
duartefaria@enautica.pt

Abstract: The maritime industry contributes to over 80% of global trade and ranks as the sixth-largest emitter of greenhouse gases. The International Maritime Organization has taken strides to reduce these emissions, while the European Union spearheads efforts to establish sustainable maritime transport. However, meeting decarbonisation targets poses significant challenges, with the potential implications of adopting an EU Emission Trading System (ETS) on shipping allowances, particularly at specific borders. If not managed effectively, this could result in diversifying regular container shipping routes away from EU ports, potentially leading to increased shipping emissions and disrupting the logistics trade and security chain. These challenges are exacerbated by the International Maritime Organization's lack of a carbon fee on bunkering, which creates an imbalance. The ETS Directive has fostered unfair competition between EU and non-EU ports due to discrepancies in applying emission unit allowances. It is imperative to implement preventive measures to contain and prevent the shift of operations from EU ports to nearby ports, ensure equitable treatment of EU transshipment ports and their competitors, and thwart carbon leakage. Additionally, the recent Houthis attacks on the Red Sea have significantly impacted shipping costs on the Cape of Good Hope route to Europe, necessitating increased allowances to and from Europe.

Keywords: Decarbonisation; Emission Unit Allowances; EU ETS Directive; European Green Deal; International Maritime Organization; Traffic Deviation; Transshipment Ports.

1. Introduction¹

Climate change and the transition to clean energy have emphasised the need for governments, international organisations, financial institutions, investors and consumers to achieve environmental sustainability, including the maritime sector. It is important to note that maritime transport is the primary mode of global trade, accounting for over 80% of all trade.

Nevertheless, the maritime industry is the sixth-largest emitter of greenhouse gases (GHGs) due to its size, representing around 3% of global anthropogenic emissions, despite being more efficient

¹ This article's framework and maritime safety scenario are based on our book, "The (New) Law of Maritime Safety—the Ship, States, Conventions and their Autonomy," 2nd edition, Almedina, Coimbra, Portugal, October 2023, ISBN 978-989-40-1295-5.

than air or road transport for moving goods. The International Maritime Organisation (IMO) has predicted that emissions could increase by 250% by 2050 if no action is taken to counter it.

Maritime transport also has negative environmental impacts, such as the discharge of gases like sulphur oxides, nitrogen oxides, and aerosols into the sea and oil spills. However, they are less frequent and have significant consequences when they do occur. Maintaining the traditional shipping business is not sustainable. Those not taking sustainability standards will face increasing fees and significant financial penalties.

Shipowners who wish to participate in commercial maritime routes involving European ports must comply with increasingly demanding environmental criteria in the short term. The IMO must adopt these criteria to avoid other international and port state control organisations taking unilateral measures.

While fleet modernisation costs are significant, proactive operators can benefit from favourable credit conditions for investment in green technology. In the long term, those not investing in green technology will become less competitive as their fleet's energy efficiency reduces and the market sanctions them.

Those who invest in fleet modernisation and green technology may become more competitive by increasing fuel efficiency, provided appropriate incentives are given, and no financial penalties are imposed.

It is also necessary to investigate the impact of ship owners collecting advance payments from shippers for allowances due in the following year (EU MRV), as this could increase consumer costs.

Considering our history and continued backing of decarbonisation policies, assessing how the allowances will affect the EU ETS maritime framework is essential. This analysis is necessary to prevent and deter traffic diversion in the main hub ports of EU members. We also look for a flexible solution to guarantee that our GHG reduction goals are not compromised.

This study does not adhere to the traditional empirical research process for data collection. Instead, it has analysed various EU and IMO documents and public statements for solutions to endorse the EU Commission's action.

The paper aims to identify unfair conditions resulting from traffic deviation at the port hubs of EU member states near the EU's southern border and enhance the fair competition of EU ports against neighbouring ports.

As a result, we will explore possible solutions and measures to rectify this unfair situation, which could disrupt the EU internal market and the corresponding logistic chain.

Therefore, the problem statement and the goal of the research can be announced as follows:

"The EU Emission Trading System (EU ETS) forward to include shipping emissions - the impact on the hub's traffic deviation and possible solutions".

2. Literature Review and Methodology

A limited amount of literature is available on the subject we intend to explore in this paper. The previous and updated study is slightly concerned² and only reflects (abstract) *"on the potential implications of the EGD for the countries in the EU's Southern Neighbourhood, especially in the energy sector, agriculture and food system, trade in raw materials, climate action, and circular economy"*.

This research will contribute to a critical overview of the EGD on the EU's Southern Members, taking a different approach due to the traffic deviation from EU hubs to neighbouring countries, especially in Northern Africa and Turkey.

The limited availability of literature has made it easy to summarise international and EU maritime initiatives aimed at reducing greenhouse gas emissions. It is important to highlight key points that will significantly impact our proposals to adapt the existing EU ETS maritime regulation.

Of course, as the previous authors emphasised in the abstract, the EGD can be a win-win situation for the EU and its southern neighbours, enabling the implementation of EU green inputs and creating a market for green products.

However, we must adhere to some changes and adaptations to prevent unfair trade situations affecting southern EU countries.

Given the limited critical literature on the EU ETS question we are addressing, it would be helpful for our turn to offer a brief overview of the key decarbonisation policies in the maritime and port sectors at the IMO and EU levels.

Then, we will analyse the impact of the EU ETS on the unfair situation at the EU border. We suggest practical measures to avoid or prevent hub traffic deviation without jeopardising the EU ETS regime. Lastly, we will discuss the constraints on Red Sea routing, the combined impact, and the EU ETS allowance payment.

3. Overview of International Maritime Framework on Decarbonisation

3.1. Overview of IMO Planning and Commitments

MARPOL is the primary international convention preventing marine pollution from ships, with the latest supplement (Annex VI) to prevent pollution from ship emissions. As of 2020, the maximum permitted sulphur content was reduced to 0.5% outside emission control areas and 0.1% within emission control areas, requiring a fuel with lower sulphur content or emission abatement systems like scrubbers.

Since 2013, MARPOL Annex VI has provided for technical and operational energy efficiency measures that help reduce combustion emissions, including the "Energy Efficiency Design Index" (EEDI) for new ships and the Ship Energy Efficiency Management Plan (SEEMP) for the world fleet.

In 2018, IMO adopted an initial strategy for reducing GHG emissions from ships, setting out a vision that confirmed IMO's commitment to reducing GHG emissions from international shipping. It has adopted a strategy to reduce greenhouse gas (GHG) emissions, with a target of at least a 50% reduction by 2050 compared to 2008.

² Serena Sandri, Hussam Hussein, Nooh Alshyab & Jacek Sagatowski (22 Jul 2023): The European Green Deal: Challenges and opportunities for the Southern Mediterranean, Mediterranean Politics, DOI: 10.1080/13629395.2023.2237295. See "abstract" on page 1.

In October 2018, IMO approved a follow-up programme intended to be used as a planning tool in meeting the timelines identified in the Initial IMO Strategy up to 2023.

In October 2020, a new version of the EEDI³ (the EEXI) was proposed for retroactive application, while SEEMP is expected to require operational efficiency improvement objectives. Despite criticisms of ambiguity and lack of specificity, the draft was approved at the 75th meeting of the IMO's MEPC in November 2020 and has been in force since January 1, 2023. Meanwhile, in June 2021, the new EEDI was adopted at the 76th meeting.

In July 2023, IMO adopted the 2023 IMO Strategy on Reducing GHG Emissions from Ships, following the agreed-upon programme of follow-up actions⁴. Therefore, IMO is committed to the goals as follows:

- (1) Carbon intensity of the ship to decline through further improvement of the energy efficiency for new ships to review to strengthen the energy efficiency design requirements for ships;
- (2) carbon intensity of international shipping to decline to reduce CO₂ emissions per transport work, as an average across international shipping, by at least 40% by 2030, compared to 2008;
- (3) uptake of zero or near-zero GHG emission technologies, fuels and energy sources to increase uptake of zero or near-zero GHG emission technologies, fuels and energy sources to represent at least 5%, striving for 10% of the energy used by international shipping by 2030; and
- (4) GHG emissions from international shipping to reach net zero to peak GHG emissions from international shipping as soon as possible and to reach net-zero GHG emissions by or around, i.e. close to 2050, considering different national circumstances, whilst pursuing efforts towards phasing them out as called for in the vision consistent with the long-term temperature goal set out in Article 2 of the Paris Agreement.

Furthermore, indicative checkpoints to reach net-zero GHG emissions from international shipping and done by IMO are as follows:

- (1) To reduce the total annual GHG emissions from international shipping by at least 20%, striving for 30% by 2030, compared to 2008; and
- (2) To reduce the total annual GHG emissions from international shipping by at least 70%, striving for 80% by 2040, compared to 2008.

3.2. Overview of the European Union's Planning and Commitments

3.2.1. The European Green Deal (EGD)

The need for global and European Union regulation and an implementation roadmap is essential to accomplishing the new ambitious decarbonisation goals.

The IMO measures to reduce GHG emissions have been generally postponed and need to be sufficiently ambitious for the expected goals. Therefore, the European Union policy is essential to reducing ships' greenhouse gas emissions.

With a robust package, the European Commission decided on December 11, 2019, to send the European Parliament, the European Council, the Economic and Social Committee, and the Committee

³ EEXI - Efficiency Design Index for Existing Ships.

⁴ Annex 15 of Resolution MEPC.377(80), adopted on 7 July 2023.

of the Regions a communication called "European Green Deal" (EGD)⁵. With this Communication, the Commission proposes to tackle climate and environmental challenges through a new strategy for sustainable growth.

In conjunction with other international efforts and responses to the 2030 Agenda and the implementation of the UN Sustainable Development Goals, the Commission aims to achieve zero net emissions of greenhouse gases by 2050 and decouple growth from resource use.

This transition strategy should be citizen-focused, participatory, equitable, and inclusive (leaving no one behind), protecting natural capital, health, and well-being from environmental risks. It intends to draw an evolutionary roadmap on the main policies and measures for implementing the EGD. This situation requires adopting new transformative policies and the resulting implementation measures.

- (i). The EGD sets out its objectives and then defines the policies and measures to achieve them. The eight objectives are as follows:
- (ii). Raise the EU's climate ambition for 2030 and 2050;
- (iii). Provide clean, secure and affordable energy;
- (iv). Mobilise industry for the circular and clean economy;
- (v). Build and renovate in an energy and resource-efficient manner;
- (vi). Accelerate the transition to sustainable and intelligent mobility;
- (vii). "From farm to fork": designing a fair, healthy and environmentally friendly food system;
- (viii). Preserve and restore ecosystems and biodiversity;
- (ix). Adopt a zero pollution ambition for an environment free of toxic substances.

Then, under the title *"Integrating sustainability into all European Union policies"*, the EGD elaborates on the various possible ways of financing policies and measures to achieve the eight objectives outlined above. The Commission estimates that achieving the EGD by 2030 will require an additional annual investment of €260 billion, or around 1.5% of 2018 GDP, with public and private funding.

3.2.2. On the Maritime Port Sector

The maritime port sector aims to integrate it into a wide decarbonisation perspective. It is widely believed that the sector should be regulated in matters with a global impact, such as energy transition and decarbonisation.

However, any regulation in this sector must consider the impact of international maritime transport to prevent unfair situations.

Therefore, a roadmap that can be practically implemented in the maritime port sector is necessary. This roadmap should have targets and measures that are financially sustainable (from both public and private sources), realistic, reliable, and agreed upon by public authorities and private agents.

The most challenging issue for the fleet would be the energy transition. It may be crucial to adopt measures to change the paradigm in ships, especially in new builds, such as obligating ports to provide electrification of terminals for ships at berth – the on-shore power supply, OPS – and limiting the cleaning of "scrubbers" – the exhaust gas cleaning systems or filtering systems of exhaust emissions from ships, EGCS – in port.

⁵ See https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0008.02/DOC_1&format=PDF.

However, starting from the current situation and forecasts, it is necessary to launch the appropriate measures and policies. In the case of maritime transport and ports, there are some points of interest to the EGD which have a significant impact on the sector, namely the following eight:

- (i) The vision of how to achieve climate neutrality by 2050⁶;
- (ii) Carbon pricing throughout the economy (i.e. including shipping);
- (iii) The continued decarbonisation of the energy system is essential for achieving climate objectives;
- (iv) Building smart and innovative infrastructure contributing to climate neutrality under the TEN-E, such as smart grids, hydrogen grids, carbon capture, storage and use, and energy storage, also enabling sectoral integration;
- (v) The use of the green and digital challenge, together with the industrial strategy and the objective of modernising the economy, to design a new action plan for the circular economy, focusing on resource-intensive sectors such as textiles, construction, electronics and plastics;
- (vi) The assumption is that transport (road, rail, aviation and maritime/inland waterways) is responsible for 25% of the European Union's greenhouse gas emissions, and these figures continue to rise:
- (vii) Regulating access to ports for the most polluting ships and making ships at berth use shore-side electricity (On-shore Power Supply – OPS);
- (viii) The promotion of a sustainable "blue economy" to alleviate multiple pressures on land resources and in the fight against climate change;

3.2.3. The EU TEN-T/CEF Revision and the CBAM as a Carbon Border-Adjusting Mechanism

Turning to the proposed revision of the guidelines for trans-European transport networks (TEN-T)⁷, it is important to understand the need to strengthen the last-mile connections to the network's endpoints by improving port intermodality.

The Commission has intended to introduce qualitative requirements for improving the "last mile" connection. Regarding alternative fuel infrastructure, besides considering minimum requirements, the question is whether, geographically, quantitative objectives per ocean basin rather than per port alone should be considered⁸.

The current European Union transport policy framework (Regulation No 2013/1315) aims to facilitate European transport and reduce regional, economic and social disparities by developing interconnectable air, road, rail and maritime infrastructure.

⁶ A Clean Planet for All – A long-term EU strategy for a thriving, modern, competitive and climate-neutral economy [COM (2018) 773].

⁷ The trans-European transport networks have several connection corridors, including the Atlantic Corridor, which develop various projects of geographic interconnection. That Corridor connects the ports of the Iberian Peninsula with the port of Le Havre and the cities of Strasbourg and Mannheim with conventional and high-speed railway lines, promoting continuity between Lisbon, Madrid, Paris, Strasbourg, Mannheim and Le Havre. The corridor has a multimodal dimension, using rail, road, inland waterway and maritime transport. The Connecting Europe Facility (CEF) is the fund that acts as a strategic instrument to support investment in transport, energy and digitalization infrastructures. See <https://ec.europa.eu/transport/themes/infrastructure>.

⁸ <https://ec.europa.eu/transport/sites/transport/files/2019-stf-consultation-analysis.pdf>.

One of the most important aspects of this framework is revising the guidelines, which set out national and Union investments in transport infrastructure and funding targets under specific initiatives, particularly the Connecting Europe Facility (CEF).

The guidelines were revised to adopt measures to ensure the decarbonisation and reduction of air pollutant emissions within the transport system, measures concerning the resilience and quality of infrastructure, and measures providing for innovation, digitalisation, and automation.

The main objectives to be included in the revised network guidelines were facilitating multimodal transport chains, ensuring connectivity, reducing environmental costs, applying EU quality standards and innovative transport solutions across the board, establishing cross-border physical infrastructure, improving dual use of the network, removing bottlenecks and reducing transport emissions by 90%.

The network's adjustment and redesign must consider changes in transport flows within the Union and with third countries, enhance accessibility and connectivity with all regions, and provide for the control of cross-border mobility.

The progressive decarbonisation of the transport sector requires that energy policy (particularly the TEN-E framework) and transport infrastructure policy (TEN-T) be closely interlinked to reduce transport emissions. One indispensable measure for this objective will be the mandatory construction of infrastructure to supply low-emission vehicles.

However, given their differentiation, whether ships should be integrated into the network policy is questionable. It seems much more appropriate to initiate decarbonisation in the maritime port sector by acting in ports through grid or energy infrastructures (for example, by adopting an on-power shore supply facility or creating an energy self-sustainable community) in maritime terminals.

In addition, better coordination is required between the core network corridors and the Rail Freight Corridors network, the Inland Waterway Transport network, Short Sea Shipping initiatives and nodes in urban areas, and the transport chain in general to improve multimodal services in the proximity of the trans-European transport network's terminal points ("Last Mile").

Another important aspect to consider is whether the requirements of certain core network infrastructures should be extended to the whole network, namely, alternative fuels, road quality and safety infrastructures, the components of the comprehensive network, and the digital and intelligent infrastructure, rail interoperability. This includes traffic management systems (ERTMS, "The European Rail Traffic Management System"), urban nodes and the transport chain.

In addition, the revision of the TEN-T should be articulated with national energy, climate and air quality plans, noise abatement plans and (river) basin management plans.

Network infrastructures need to be more resilient in adapting to climate change (waterways, roads, railways and ports), in requiring better structural quality (bridges and tunnels), in preparing for civil emergencies (contingency planning) and in responding to public order and security changes (military mobility, investment monitoring and foreign investment, particularly in ports and terminals).

Innovation, digitalisation, and automation issues must be reviewed in light of the objective of decarbonising the transport sector, enhancing the progressive automation of transport, and integrating new equipment such as drones.

The requirements of the intelligent and digital network components must be readjusted, with a finer definition of the digital components required in each mode of transport to boost innovative, sustainable and efficient services.

Regarding policy options for the network, different priorities could guide its development: clean fuels (adapting infrastructure to this end), infrastructure efficiency and resilience (particularly in multimodality), and innovation and digitalisation (energy efficiency as the standard)—or a combination of the three priorities.

European decarbonisation will require measures that regulate activity between companies in the Union and third countries and others that prevent the relocation of companies outside the Union (CBAM, "Carbon Border Adjustment Mechanism").

The solution could be introducing an import tax for non-EU companies that do not meet the Union's benchmarks. In this way, the price of imports should reflect the emissions at the production source.

However, the compatibility of this system with World Trade Organisation rules may be questioned, and the sectors to which CBAM may be applied may be chosen jointly⁹. This system implies a generic application to all imports, especially in energy-intensive industrial sectors such as cement, steel, aluminium, hydrocarbon refining, paper, glass, chemicals, and fertilisers.

3.2.4. The EU Green Ports Initiative and the Alternative Marine Fuels

Another key topic concerns the issue of "green ports", i.e., the Commission's initiative to study the capacity of Europe's seaports to become "green" ports. The study will list the factors affecting that capacity and seek to maintain or improve their economic development.

It is also important to consider the reduction of emissions in ports (through the OPS connection) and the reduction of road traffic through better integration into the city's road network and the greater use of railways. In these terms, adopting a sustainable, intelligent mobility strategy is essential to achieve the progressive decarbonisation of ports.

Regarding the review of the air quality directives, the Commission aims to set new benchmarks for avoiding high concentrations of pollution, aligning them more closely with the recommendations of the World Health Organisation, whose guidelines are being revised.

The review also aims to improve all clean ambient air legislation, considering lessons learned from the 2019 assessment¹⁰. This evaluation concluded that the directives were ineffective enough and that some of their objectives had yet to be achieved.

The initiative aims to improve legislation on air quality to avoid, prevent or reduce harmful effects of air pollution on human health and the environment, in line with the ambition to eliminate all polluting emissions, as expressed in the European Green Deal.

The European Parliament has produced a preliminary report on air quality directives and the ongoing review. The report outlines several recommendations for the sector¹¹, including supporting the Commission's plan to eliminate polluting emissions.

⁹ See <https://www.europarl.europa.eu/committees/pt/towards-a-wto-compatible-eu-carbon-borde/product-details/20210204CAN59622>.

¹⁰ "Fitness Check of the Ambient Air Quality Directives" in <https://ec.europa.eu/environment/air/pdf/SWD2019427F1AAQ%20Fitness%20Check.pdf>.)

¹¹ In https://www.europarl.europa.eu/doceo/document/ENVI-PR-663232_EN.pdf.

It emphasises the need for a holistic approach to tackle air pollution, which requires integrating air quality into EU policies such as climate, energy, transport, industry, agriculture, and waste.

The report recommends that the Commission and the member states strengthen their emissions legislation, focusing on reducing emissions at the source. It warns that most member states will unlikely meet the emission reduction commitments set by Directive No 2016/2284/EU (NCE, "National Emission Ceilings Directive") for 2030 and 2050.

The report also calls for stringent measures to reduce emissions from transport, including road, maritime, and aviation, industrial installations, agriculture, and energy production.

As part of the "*FuelEU Maritime Initiative*", the Commission aims to introduce an obligation to prohibit emissions by certain types of ships, particularly ferries and cruise ships, while berthed or anchored in port by adopting electricity grid connection systems (On-shore Power Supply, OPS).

The Commission's proposal intends to regulate the demand for clean fuels and increase incentives for their use. This proposal will be complemented by revising the Alternative Fuel Infrastructure Directive (Directive No 2014/94/EU) (AFID Directive).

The Alternative Marine Fuels Initiative aims to regulate the demand for infrastructure and the use of alternative fuels. However, meeting the objective depends on global developments, the different roadmaps for ships to reduce emissions, and the definition of specific objectives in conjunction with the AFID Directive. Meeting the objective will not be easy without stimulating investment in new technologies and research.

Four possible roadmaps for reducing emissions are as follows: mandatory OPS in port for the most polluting ships with few exceptions (essentially, ferries, cruise and container ships, with individual verification of emission levels); life cycle GHG emission cap linked to mandatory OPS for the most polluting ships (target ships will be similar to the previous one); identical to the previous one with GHG emission calculation to be done by "pool" of ships or with incentives for those exceeding the requirements (somewhat similar to the EU ETS carbon credit system); include energy efficiency of ships (grams of CO₂/tonne per nautical mile) – for example in the "slow steaming" decision – as a basis for the decision on alternative fuels obligation.

Ship operators are more concerned about alternative fuels than the OPS link, which reinforces the idea of starting the process with OPS facilities in ports. Adopting roadmaps can only occur by linking the alternative fuels initiative with the AFID, Renewable Energy Directive (RED), and Energy Taxation Directive (ETD). On the other hand, certain generic definitions, such as "most polluting/polluting ships," require attention, including whether to cover the emission of all GHG gases or only CO₂, the interaction with the ETS system, and whether ports will be obliged to install the OPS network or if there will be exceptions from the point of view of balancing investments with demand (or specific funding for this purpose).

The AFID Directive requires member states to assess the necessity of OPS systems for inland and maritime navigation in ports. The aim is to ensure that these systems are deployed promptly in priority ports and other ports by the end of 2025 unless there is no demand or the deployment costs outweigh the benefits, including environmental ones. Additionally, the Directive requires member states to provide fixed and mobile refuelling points for LNG bunkers, at least in core ports, by the end of 2025.

The Directive will evaluate the term "alternative fuels" and specify the types of fuels involved, including their differentiation by production source, such as fossil or renewable. Methane and

ammonia may be added to the list of alternative fuels, which means that LNG will be included under this definition.

The OPS and LNG bunker matters should be discussed among all participants in the maritime-port sector, including ship operators, port authorities, and energy suppliers at each port. This discussion will ensure that a balance is found between supply and demand. There is an urgent need for investment in OPS systems and LNG bunker terminals in ports.

Current studies on alternative fuels cover various types such as biofuels, ammonia, hydrogen, assisted propulsion technology (such as wind-assisted propulsion and "hull air cavity lubrication")¹² and other emerging technologies.

4. The Problem Statement: the EU Emission Trading System (EU ETS) Forward to Include Shipping Emissions - The Impact on the Hub's Traffic Deviation

4.1. The New Measures Applied to the Maritime and Port Sector

The European Union has amended Directive No 2003/87/EC to include shipping emissions in the EU ETS and extend this to other sectors. The EU ETS has operated since 2005 and was the world's first. Based on the carbon market and its increased price, the installations covered by the system have reduced emissions by about 35% from 2005 to 2019¹³.

This initiative aimed to reduce greenhouse gas (GHG) emissions by at least 55% by 2030. The system covers emissions of carbon dioxide (CO₂), nitrous oxide (N₂O), and perfluorocarbon (PFC) – created in aluminium production. So far, the system has covered heat and power plants, intensive industries (refineries, steel plants, cement plants, ceramic and cellulose plants, petrochemical plants, among others), commercial aviation, and producers of N₂O and PFC.

The EU ETS review has included the first amendment to the "Market Stability Reserve" (MSR), which also aimed to adapt it to the global aviation system known as CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation). However, more than the carbon market is required to achieve the intended emissions reduction within the set deadlines. Other complementary policies are well needed, particularly in transportation and energy, which impact investments in infrastructure and clean technologies.

This EU ETS global package shall result in a 43% reduction in emissions in 2030 (compared to 2005), consistent with the global reduction target of 40% by the same date. With the new target (55% in 2030, about 1990), the reduction rate has needed to be reviewed, with the corresponding legislative changes, particularly in the maritime and aviation sectors, whose emissions have grown internationally by about 50% since 1990.

In the maritime sector, the increase in emissions in recent decades and the limited options for decarbonisation make it essential to adopt measures starting from the pandemic recovery itself.

¹² It consists of injecting air into the wet surfaces of the ship's hull to improve its hydrodynamics.

¹³ The "Fit For 55" package in July 2021 considered a basket of measures to address GHG emissions for the shipping sector: Extension of ETS to Maritime Transport (ETS), Revision of the Renewable Energy Directive (RED), Revision of Alternative Fuels Infrastructure Directive (AFIR), Revision of the Energy Taxation Directive (ETD), and New FuelEU Regulation. However, the IMO push forward an international assessment and implementation of efficient measures for climatic transition has been delayed, dangerously jeopardising the EU efforts.

Although emissions from bunker fuel sold in the European Union are monitored, they are not covered by the EU ETS system or any other Union climate legislation and are outside the Paris Agreement.

The Commission has decided to extend the ETS to maritime transport and analyse emissions from buildings, road transport, and potentially all fossil fuels to improve their efficiency, expanding the EU emissions market. In parallel with the ETS and the MSR review, innovation and modernisation funds should be set up to support the desired transition and decarbonisation¹⁴.

4.2. The Critics of EU ETS on the Impact of the Traffic Deviation

Despite the merits of the EU policy on including maritime transport in the EU ETS framework, this issue has led to many different positions.

While there is a generic commitment by ship operators to reduce emissions, a July 2020 study published by ECSA (European Community Shipowners' Association) and ICS (International Chamber of Shipping) highlights a very significant set of disadvantages that will result from including international shipping in the regional emissions market, preferring the global option of a version of Market-Based Measure (MBM)¹⁵.

Although one can defend the Commission's proposal to include maritime transport in the carbon market, the final wording could be clearer, given that the options range from intra-European trade to global maritime trade, considering some or all journeys.

A somewhat conciliatory hypothesis, which does not greatly affect international maritime trade, could be to link a significant part of the emissions of ocean transport (i.e., long distance). Another directly related aspect is the application of the proceeds of the maritime ETS market to investment in the sector and, if necessary, to benefit from the aviation scheme (CORSIA), which, like shipping, is mainly international.

Given that the IMO is not proceeding towards decarbonisation at equal speed, the ETS Directive has created unfair competition between EU ports and neighbouring non-EU ports because emission unit allowances (EUAs) apply differently or may not apply.

The current plan for ETS Maritime has raised serious concerns about the system's extra-EU application, which could lead to carbon and business leakage at the expense of EU ports. The revised ETS Directive includes a "port of call" definition that only incorporates ports where ships stop to load or unload cargo or embark or disembark passengers while excluding calls in "neighbouring container transshipment ports."

However, loopholes allow shipping companies to evade ETS costs related to extra-EU voyages. For instance, they can easily avoid or reduce these costs by calling at ports outside the EU or through transshipment. That means that shipping companies can change the order of their port calls and add a non-EU port before calling in the EU.

However, the EU ETS Implementing Regulation has ruled out this option for some ports, including Tanger Med (Morocco) and East Port Said (Egypt), which are excluded from the definition

¹⁴ ETS revenues (from the allowances market) will be allocated to EU Member States and the EU budget. For this purpose, port authorities (and, generally, managing bodies) must include port projects in each Member State's national energy and climate plans.

¹⁵ See <https://www.ecsa.eu/sites/default/files/publications/CESA-ICS-2020-Study-on-UE-ETS.pdf>.

of "port of call" under the ETS. Nevertheless, this evasion option remains possible in all other non-EU ports.

Another option for shipping companies is transshipment evasion using the hub-and-spoke model. They can drop off cargo in a non-EU transshipment port and then distribute it via smaller (feeder) vessels to EU ports (this is happening now, and simultaneously, with the routes diverted by Cape of Good Hope due to the Houthis threat).

This option may lead to a shift in port traffic and transshipment activities from EU ports to non-EU ports, resulting in significant business and economic losses. Theoretically, this evasion option is possible at any non-EU port, including Tanger Med and East Port Said.

Moreover, the Energy Taxation Directive (ETD) states that EU countries are required to achieve cumulative end-use energy savings for the entire obligation period (running from 2021 to 2030), equivalent to new annual savings of at least 0.8% of final energy consumption in 2021-2023, at least 1.3% in 2024-2025, 1.5% in 2026-2027, and 1.9% in 2028-2030.

This Directive is currently under review. The 2021 proposal introduces taxation on fuels supplied by vessels in intra-EU waterborne navigation.

A new taxation is overcome because the bunkering activity triggers taxation. If a ship bunkers in an EU port and is followed by another call at an EU port, all the bunkered fuel will be taxed. Thus, such a proposal would impact EU ports, especially those with important bunkering activities.

So, together with the EU ETS, it would imply an extra taxation on top of the ETS charge for short-sea shipping (SSS) within the EU.

However, the review was not approved last April, and the document seems to be being held again¹⁶.

5. The Possible Solutions for EU ETS Revision

5.1. Discussion and Analyses of Some of the Incoming Proposals

Given these risks and loopholes, the EU Commission must take action to prevent carbon and business leakage, protect EU ports, and ensure that the ETS Maritime achieves its intended goals. Although the revised ETS Directive contains measures to address the risks of carbon and business leakage, more must be done to close the loopholes, allowing shipping companies to evade ETS costs.

It is reassuring that the revised ETS Directive contains a review clause that requires the Commission to monitor port traffic changes and propose measures to address evasion if it is established. Nonetheless, proactive measures are essential to prevent these risks from materialising.

On June 18, 2024, the member states listed below proposed temporary solutions during the Council meeting for Transport, Telecommunications, and Energy¹⁷. These solutions aim to prevent

¹⁶ During the first semester of 2024, the Belgian EU Presidency tried to reach an overall political agreement to review the Energy Taxation Directive. However, it failed during the last meeting of the Council Taxation Working Party on 25 April 2024, when different delegations opposed (or made reservations) the compromise proposal, particularly about the maritime pillar. Consequently, the file seems to be on hold again. See ESPO C-4314, 07 May 2024.

¹⁷ See the letter announced by Spain in ST-11036-2024-INIT_en. pdf and ESPO Circular ESPO C-4355 25 June 2024, EU ETS Member States letter on carbon and business leakage discussed in Transport Council. This

unfair competition between ports within the EU and ports outside the EU. The proposed member states (nine) are Portugal, Spain, Italy, Greece, Croatia, Malta, Cyprus, Lithuania, and Romania.

Six proposals by those Member states have been launched to balance the unfair situation as follows:

- (i) a targeted maritime-related adjustment of the ETS Directive – we will support changes presented by the Commission, as appropriate, directed at keeping the competitiveness of EU ports and shipowners, especially focused on transshipment operations;
- (ii) a transitory "stop the clock" clause, for instance, allowing for a deferred period of application of ETS (rejected at once);
- (iii) concrete measures to contain and avoid the shift of operations from EU ports to neighbouring third countries ports, already in its 2024 report or before if needed – time is of the essence to avoid the shift of operations;
- (iv) ensure a level playing field in the treatment of the EU transshipment ports and their competitors in neighbouring third countries;
- (v) the close monitoring of the list of third country ports within the 300 nautical miles – for the time being, only two have been identified, but other ports may need building conditions to join this list;
- (vi) a consistent action within international fora, especially in IMO, to implement a market-based measure to reduce greenhouse gas emissions – as members of IMO, we will strive in this direction. We should collectively strive for global action at the IMO level immediately.

Spain has also pointed out that the important thing is to tax the emissions of containers according to their origin and route, not the ship they travel on, which is the newest approach that has to be evaluated.

On the same Transport Council, the Commission stated that it intends to publish a report with the first monitoring results by the end of this year and assess which adaptations, if any, are needed to review the legislation. Nevertheless, it seems to be too late to act.

However, with the full support of the proposals mentioned, adopting an expedited and additional method for monitoring traffic deviation is pivotal.

Suppose we remove the "stop the clock" clause (which is not in line with the decarbonising policy). In that case, the remaining proposals must be developed to be effective or are medium-term measures that cannot prevent the hub's traffic deviation. Some of the ideas are feasible, but it must be noted that losing a regular line call in a hub port will take more than ten years to get it back.

It must be stressed that the transshipment services will be transferred outside the EU area, often increasing the distance sailed by vessels and, thus, the carbon leakage, jeopardising the environmental goals.

5.2. As a Result to be Discussed: The New Feasible Proposals in Line with the ETS Directive

In the previous paragraph, it was clear that the feasible measures took time to prevent traffic deviation at the EU hub. Implementing a carbon tax at an IMO level must better align with the EU's decarbonisation policy. This situation raises the question of whether there is a practical and simple solution to reduce or eliminate the trend of traffic deviation.

is the second letter endorsed, following a previous one subscribed by seven Member states (except Lithuania and Romania) in the last quarter of 2023.

We must consider another measure that is clearly stated as follows:

*Until traffic deviations are confirmed, the proposal will delay the accountability and payment of EU Allowances (EUA), especially in the southern hub EU ports. According to the Directive, the MRV (Regulation No 2015/757) should be submitted by March 2025, while the EUAs should be surrendered by September 2025.*¹⁸

Thus, this solution seems suitable as it allows for the monitoring and study of the behaviour of the markets and shipping lines without causing any disruption to the parties involved.

The computing/payment of the allowances resulting from the calls in the EU ports less than 300 miles from neighbouring ports shall be suspended and computed in an autonomous account until assertive and accurate monitoring of traffic deviations is performed over those ports. In such a case, several articles of the Directive may support this measure and should be interpreted extensively to prevent/sustain that behaviour.

The Directive requires MRV (Regulation No 2015/757) to be submitted in March 2025 and EUA to be surrendered in September 2025. This solution seemed appropriate because it allows for monitoring and analysis of the markets and shipping lines' behaviour without causing any disruption to the involved parties

This solution was the most adequate for the time being. It does not hamper parts while giving time to monitor/study the behaviour of markets and shipping lines. It would refrain from deviation plans for the shipping lines and should be publicly announced immediately.

However, this proposal is too difficult to manage due to the changes to the MRV System and accountability. In that case, we must also consider what is clearly stated in the ETS directive.

Recalling number 3 of article 3gg of the ETS Directive (2003/87/EC), the Commission is in charge of monitoring the implementation of the chapter, especially what concerns namely:

- (a) *"to detect evasive behaviour to prevent such behaviour at an early stage" and*
- (b) *"monitor impacts regarding, among other things, possible transport cost increases, market distortions and changes in port traffic, such as port evasion and shifts of transshipment hubs, the overall competitiveness of the maritime sector in the Member States, and in particular impacts on those shipping services that constitute essential services of territorial continuity.*

In cases of high risk or traffic deviation, the Commission must propose measures to ensure the effective implementation of maritime transport regulations. These responsibilities include measures to address the trend of shipping companies attempting to evade the requirements of this Directive.

It shall implement preventive and reactive measures to avoid (and contain) the shift of operations from EU ports to neighbouring ports, ensure a level playing field in treating the EU transshipment ports and their competitors, and avoid carbon leakage.

¹⁸ The EU MRV regulation establishes rules whereby shipping companies report the reported carbon dioxide (CO₂) emissions annually and other relevant information from ships calling EEA ports. CO₂ emissions are the largest component of greenhouse gas emissions from maritime transport. Hence, after 1 January 2024, the scope of the MRV regulation has expanded to include CH₄ and N₂O emissions from shipping. According to a study commissioned by the Royal Belgian Shipowners' Association (see a summary at https://www.seanews.com.tr/eus-emissions-trading-system-fraught-with-contractual-risks/200421/#google_vignette), the ETS is fraught with ambiguities and contractual risks for shipowners, operators, and charterers, especially when it states that the responsible entity must be the same for EU MRV and EU ETS.

The proposed measure, specifically in number 3 of article 3gg of the Directive, suggests an immediate and expedited method of deviation assessment on the main hub ports on the southern flank of the EU. This action is designed to prevent traffic loss to non-European countries (North Africa and Turkey, namely), thereby maintaining the competitiveness of EU ports.

On the other hand, an expedited method must be implemented to address the traffic congestion at the main EU ports near the EU border within a 3—to 6-month timeframe. This approach is essential to activate the Commission initiative because waiting for a full report will take too long (as the Commission proposes, one year).

It is urgent to amend the ETS Directive or expedite the Commission's action to contain the forecasted diversion of regular container lines near non-EU ports. This diversion increases shipping emissions and degrades the logistics trade and security chain.

Preventive and reactive measures must be implemented to avoid and contain the operations shift from EU ports to neighbouring ports. This situation will ensure a level playing field in treating the EU transshipment ports and their competitors and prevent carbon leakage.

The proposed action, specifically outlined in number 3 of article 3gg of the Directive, suggests an immediate and expedited method of deviation assessment on the main hub ports on the southern flank of the EU.

This action is designed to prevent traffic loss to non-European countries, thereby maintaining the competitiveness of EU ports and ensuring a level playing field for EU transshipment ports and their competitors.

5.3. What Are the Impacts Over the Regular Lines due to Red Sea Attacks on the Merchant Navy?

Over the past ten months, the Houthis' missile attacks on ships have caused many shipping routes to be diverted, avoiding crossing the Red Sea. The consequences of the Cape of Good Hope's lengthy voyage diversion for Europe-bound vessels has multiplied fuel consumption, adding around 9.000 nautical miles, or 80%, to the distance sailed¹⁹.

However, the EU hub southern ports may behave differently regarding traffic deviation. The first calls of western ports in the Mediterranean and Atlantic will benefit from the rerouting over the Cape of Good Hope. On the other hand, the centre and eastern ports must have a decrease in the big ship calls (the "mammoths"). Therefore, the number of "feeders" must increase, impacting the number of ships sailing in the Mediterranean and causing carbon leakage.

The combined impact of rerouting ships at the Cape of Good Hope and the new ETS allowances will affect various port categories differently. Western ports will experience increased traffic volume, potentially leading to partial coverage of ETS allowances for shippers and possible congestion. Other

¹⁹Clarksons Research has reported that container ship transits from the Gulf of Aden to the Mediterranean decreased by 91% in the first half of December due to diversifying around 620 vessels. Bunker and crude tanker transits decreased by 37% and 31%, respectively. Meanwhile, tonnage arrivals at Cape of Good Hope have increased 81% since December (see Clarkson Research report on assessing the impact of the Red Sea situation on the shipping market on 3rd January 2024 and <https://www.offshore-energy.biz/shippings-eu-ets-costs-could-nearly-triple-due-to-red-sea-crisis-oceanscore-says/>, 12th March 2024). However, if the EU ETS reaches 100% of emissions (last phase), we would see another 250% increase, bringing the cost mark-up per box to around €80. This does not consider that changes in sailing speeds, vessel sizes and utilisations, and the overall energy efficiency of the vessel used will all significantly impact the costs.

centre and eastern Mediterranean ports will experience a decrease in traffic, along with congestion on the new feeder routes and additional charges due to the new ETS allowances.

6. Conclusions

The European Commission's "European Green Deal" communication, sent on December 11, 2019, proposes a comprehensive strategy to tackle climate and environmental challenges. The proposed plan aims to achieve sustainable growth by adopting new transformative policies and measures which are citizen-focused, participatory, equitable, and inclusive, ensuring that no one is left behind.

The Commission aims to draw an evolutionary roadmap on the main policies and measures for implementing the European Green Deal (EGD), which should be aligned with the 2030 Agenda and the UN Sustainable Development Goals.

The European Union is taking significant steps to address climate change by amending Directive No 2003/87/EC to include shipping emissions in the EU ETS. This initiative aims to reduce GHG emissions by at least 55% by 2030. The EU ETS has operated since 2005 and was the world's first carbon market.

This EU ETS legislation will result in a 43% reduction in emissions in 2030 compared to 2005, consistent with the global reduction target of 40% by the same date. With the new target (55% in 2030, about 1990), the reduction rate needs to be reviewed, and the corresponding legislative changes need to be made, particularly in the maritime and aviation sectors. These sectors' emissions have grown internationally by about 50% since 1990, making it essential to adopt measures starting from the pandemic recovery itself.

The cost of the EU ETS in shipping is a significant concern and will vary based on the type and segment of the ship. The full financial impact of the system will be seen after some time, as it will be phased in over the next few years.

According to an analysis by Clarksons Research, a VLCC sailing from Ras Tanura to Rotterdam will require approximately \$200,000 in allowances this year, which represents 4% of current freight costs, based on 2022 trading patterns and an EUA price of \$90 per ton. These data are expected to increase to 10% in 2026 when the EU ETS is fully implemented.

These figures demonstrate the substantial financial incentives established by the EU ETS to decrease greenhouse gas emissions shortly. They also highlight the importance of using well-established and effective technology to enhance fuel efficiency. Even a minor reduction in fuel consumption can significantly impact companies' EU ETS expenses, enabling them to remain competitive.

Given that the IMO is not proceeding towards decarbonisation at equal speed, the ETS Directive has created serious unfair competition. Therefore, it is essential to adopt measures that ensure a level playing field and a fair transition towards a low-carbon economy.

The two effective proposals of this study, supported by the research and legislative documents in force, are as follows:

(a) Delaying the payment of EU Allowances (EUA) until it is confirmed whether traffic deviations are occurring. Therefore, postponing the EUA accountability and payment could be considered, especially in the South Hub EU ports, to avoid traffic deviations and monitoring to confirm and measure their existence and/or

(b) Taking immediate action of the Commission, based on number 3 of article 3gg of the Directive, by an expedited method of deviation assessment on the main hub ports on the southern flank of the EU (three to six months in timeframe). This action is designed to prevent traffic loss to non-European countries (North Africa and Turkey, namely), thereby maintaining the competitiveness of EU ports.

At present, we must consider other increasing costs and ETS credits: container ship transits from the Gulf of Aden to the Mediterranean decreased by 91% in the first half of December due to the diversion of around 620 vessels and bunker and crude tanker transits decreased by 37% and 31%, respectively, due to Houthis attacks. It should be noted that routing vessels from Asia to Europe via Africa adds approximately nine to fourteen days to the original itinerary.

These ships' increased speeds are in force to compensate for at least some of the longer distance, keeping sailing times and the additional cargo needed at adequate levels to and from Europe. However, of course, this impacts bunker consumption and emissions and, consequently, the ETS credits.

In the EU South (and nearby), Tanger Med and Algeciras ports are almost congested, with more requests to handle extra cargo than planned. However, the impact is global: major transshipment hubs (such as Singapore) face severe congestion and declining port productivity due to a huge change in regular line patterns and vessel rerouting.

Carriers and shippers will continue to face challenges and concerns in the remaining year and probably the next one, with most companies still diverting around Africa and with increasing logistic costs over the consumers. This diversion, plus the ETS diversion, would cause multiple changes in maritime patterns and the logistic chain.

The adoption of an amendment to the ETS Directive is urgently needed. Alternatively, the Commission should take expedited action to contain the forecast diverting of regular container lines near non-EU ports. This diversion is increasing emissions from shipping and degrading the logistics trade and security chain.

It shall implement preventive and reactive measures to avoid (and contain) the shift of operations from EU ports to neighbouring ports, ensure a level playing field in treating the EU transshipment ports and their competitors, and avoid carbon leakage.

It should be noted that a "perfect storm" seems to be arriving regarding shipping costs to Europe. Therefore, the European Commission must take immediate action to sustain this unfair competition and playing field!

Marcus Aurelius, the Roman Emperor, has noted that we have to act when he recalled that:
"Waste no more time arguing about what a good man should be. Be one".

Nomenclature

AFID	Alternative Fuel Infrastructure Directive - Directive No 2014/94/EU
AFIR	Alternative Fuel Infrastructure Regulation
AIS	Automatic Identification System
CBAM	Carbon Border Adjustment Mechanism
CEF	Connecting Europe Facility
CII	Carbon Intensity Indicator
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation

COSS	Committee on Safe Seas and the Prevention of Pollution from Ships
CSND	Clean Sea Net Data
ECSA	European Community Shipowners' Association
EEDI	Energy Efficiency Design Index
EES	Entry-Exit System
EEXI	Efficiency Design Index for Existing Ships
EGCS	Exhaust Gas Cleaning Systems
EGD	European Green Deal
EMSA	European Maritime Safety Agency
ERTMS	European Rail Traffic Management System
ETD	Energy Taxation Directive
ETIAS	European Travel and Information System
ETS	Emission Trade System
EU Taxonomy	Taxonomy of the European Union
EUAs	Emission Unit Allowances
FSC	Flag State Control
GDP	Gross Domestic Product
GFS	GHG Fuel Standard
GHG	Greenhouse gases
ICS	International Chamber of Shipping
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
LDCs	Least Developed Countries
LRIT	Long Range Identification and Tracking
MAI	Maritime Accident Investigation
MARPOL	International Convention for the Prevention of Pollution from Ships
MBM	Market-Based Measures
MEPC	Marine Environment Protection Committee
MGO	Marine Gas Oil
MRV	Monit., Report. And Verifying CO2 Emission Maritime Transport
MSR	Market Stability Reserve
NCE	National Emission Ceilings Directive - Directive No 2016/2284/EU
OPS	On-Shore Power Supply
PFCs	Perfluorocarbon Emissions
PRF	Port Reception Facilities Directive - Directive No 2019/883/EU
PSR	Port Services Regulation
RED	Renewable Energy Directive
SEEMP	Ship Energy Efficiency Management Plan
SIDS	Small Island Developing States
SLLP	Poseidon's Principles and the Sustainability Linked Loan Principle
SSN	Safe Sea Net
SSS	Short Sea Shipping
TEG	Technical Expert Group for Taxonomy

TEN-E	Trans-European Energy Network
TEN-T	Trans-European Transport Network
UNCTAD	United Nations Conference on Trade and Development
UNFCCC	United Nations Framework Convention on Climate Change

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