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FuelEU and Beyond |Université Le Havre-Normandie | 5 December 2025

Extension of the EU ETS to Maritime Transport: Interaction with FuelEU Maritime

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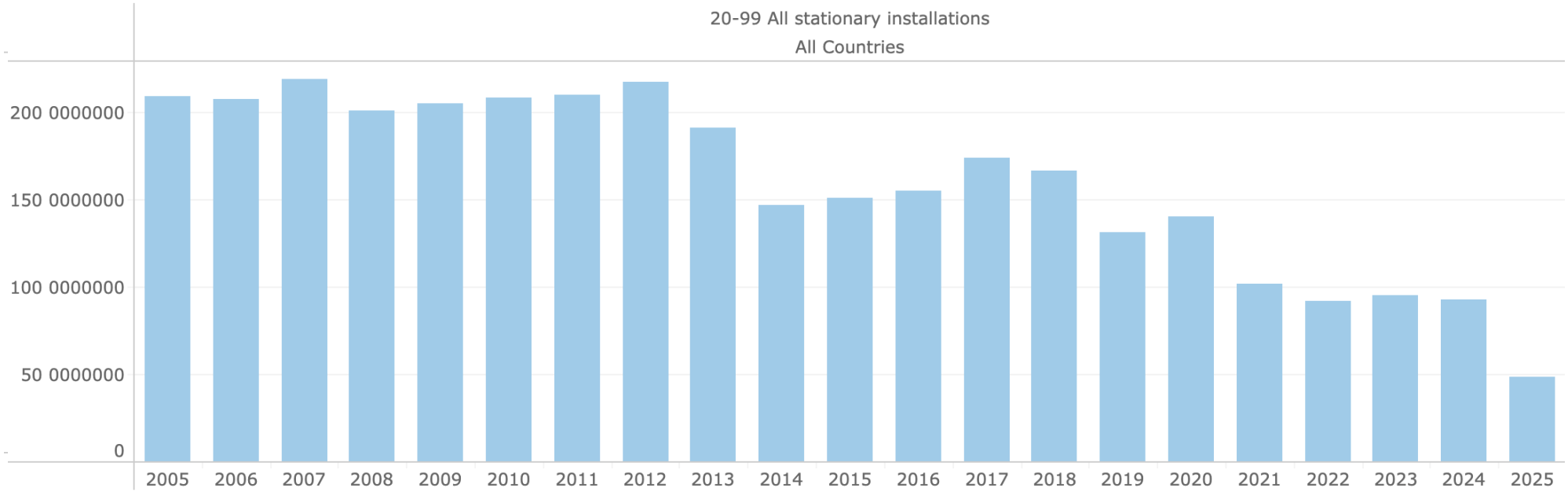
European Union Emissions Trading System

EU ETS - Directive 2003/87/EC

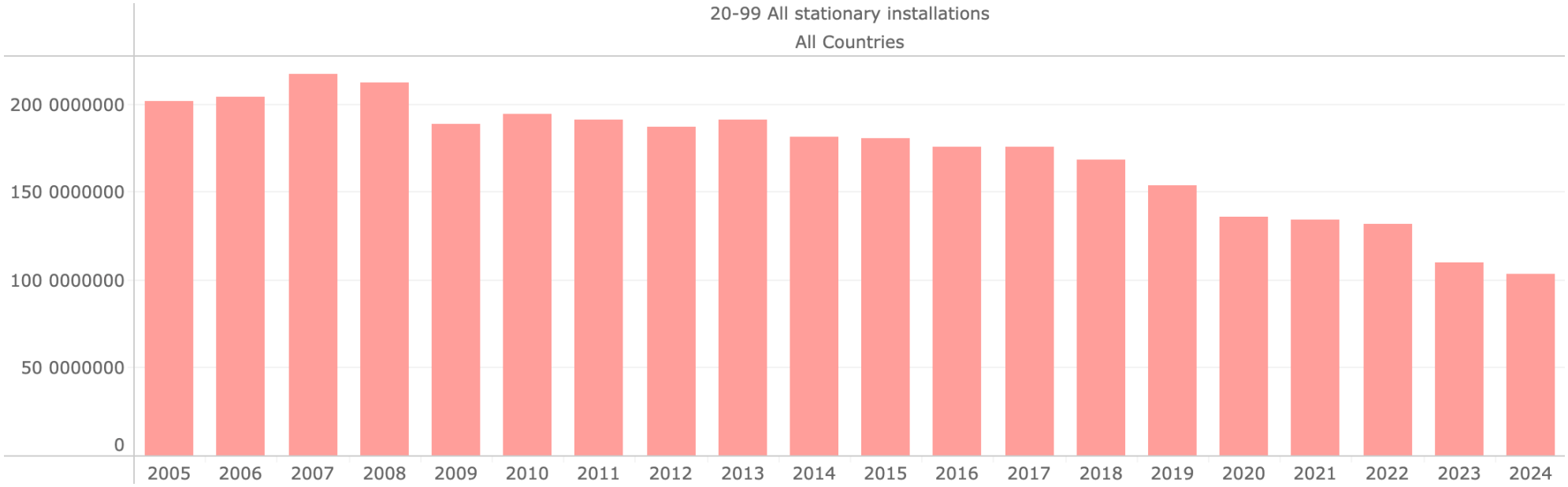
- In place since 2005
- **Declining cap** on aggregate covered emissions in the European Economic Area
- Obligation to surrender allowances equal to previous year's emissions (now around **€80/ton**)
- Has been covering electricity and heat producers, energy-intensive industries and intra-European flights
- **Strengthened and expanded** in 2023 with Directive (EU) 2023/959

EU ETS – Total allocated allowances (2005-2025)



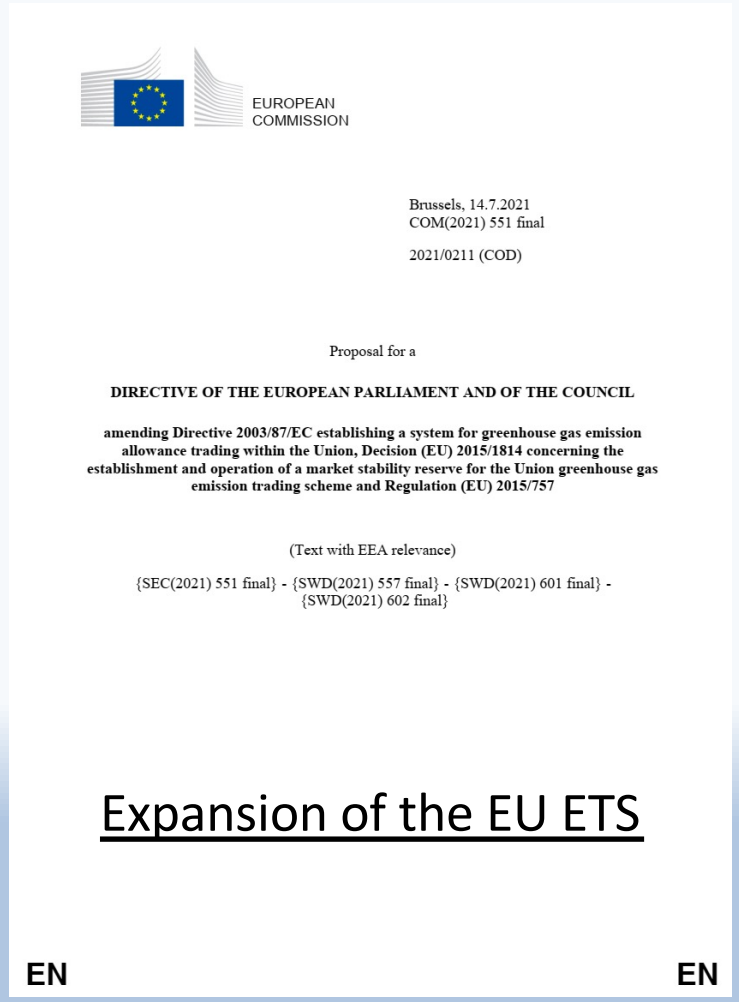
Source: European Environment Agency

EU ETS emissions are now around 50% below 2005 levels and on track to achieve the 2030 ETS target of -62% (Source: European Commission, 2025)



Source: European Environment Agency

Fit for 55 - Shipping



EUROPEAN COMMISSION

Brussels, 14.7.2021
COM(2021) 551 final

2021/0211 (COD)

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

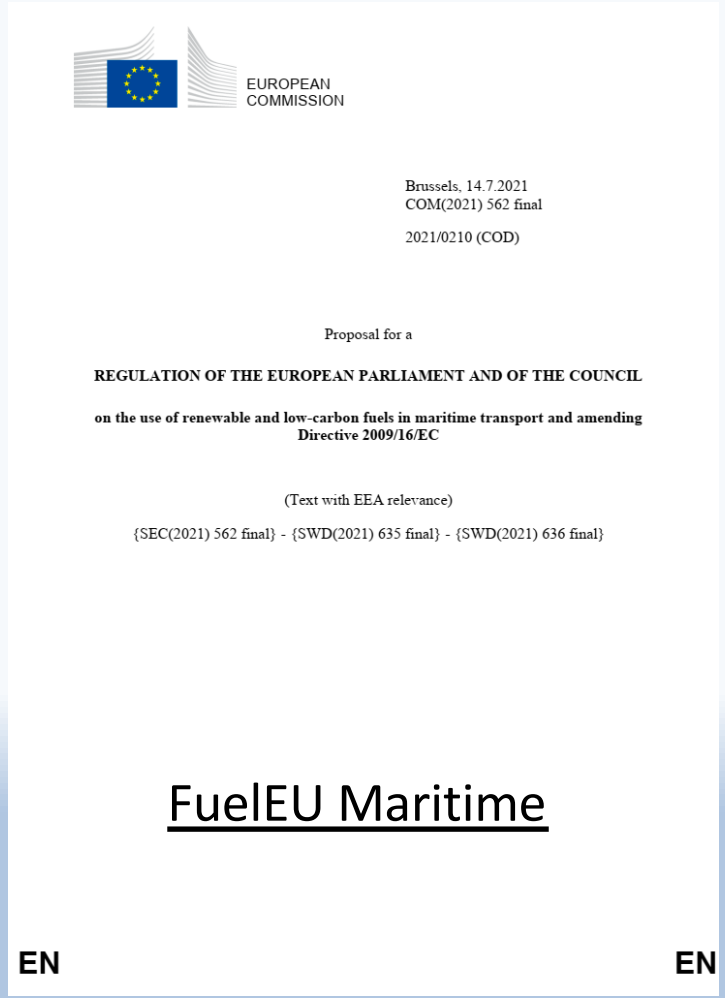
amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757

(Text with EEA relevance)

{SEC(2021) 551 final} - {SWD(2021) 557 final} - {SWD(2021) 601 final} - {SWD(2021) 602 final}

EN EN

Expansion of the EU ETS



EUROPEAN COMMISSION

Brussels, 14.7.2021
COM(2021) 562 final

2021/0210 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the use of renewable and low-carbon fuels in maritime transport and amending Directive 2009/16/EC

(Text with EEA relevance)

{SEC(2021) 562 final} - {SWD(2021) 635 final} - {SWD(2021) 636 final}

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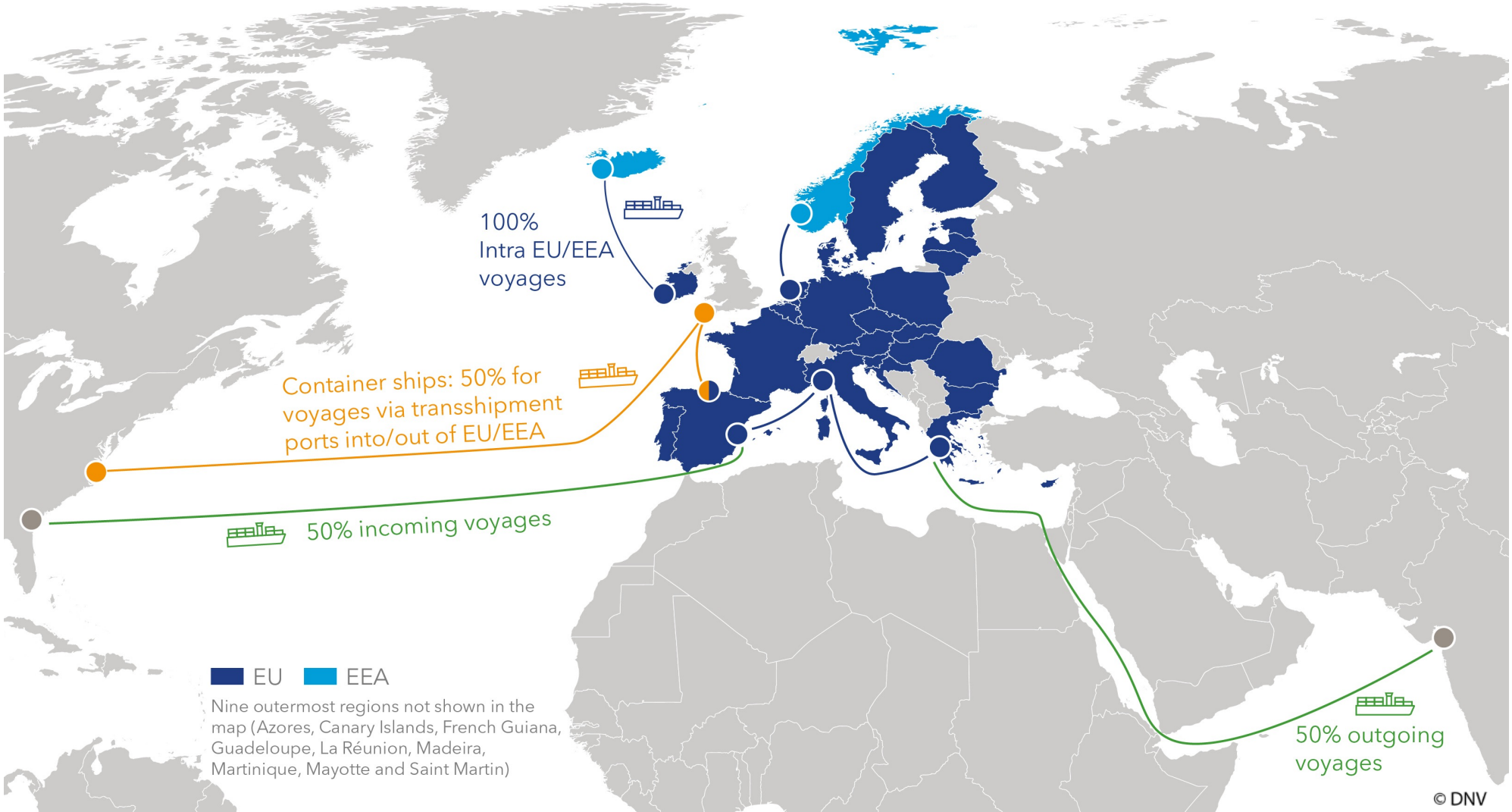
FuelEU Maritime

Maritime EU ETS - Regulatory design

Covered voyages
("Geographical scope")

100% of emissions between and within EEA ports
50% of emissions between EEA and non-EEA ports
(EU ETS Directive, Article 3ga)

With some derogations to prevent carbon leakage



Source: https://www.dnv.com/maritime/insights/topics/eu-emissions-trading-system/

Maritime EU ETS - Regulatory design

Who is responsible for surrendering the allowances?

The shipping company

(EU ETS Directive, Articles 3gb and 3(w))

(w) 'shipping company' means the shipowner or any other organisation or person, such as the manager or the bareboat charterer, that has assumed the responsibility for the operation of the ship from the shipowner and that, on assuming such responsibility, has agreed to take over all the duties and responsibilities imposed by the International Management Code for the Safe Operation of Ships and for Pollution Prevention, set out in Annex I to Regulation (EC) No 336/2006 of the European Parliament and of the Council ([1]);

Maritime EU ETS - Regulatory design

Who is responsible for surrendering the allowances?

BUT see also:

Article 3gc

Provisions for transfer of the costs of the EU ETS from the shipping company to another entity

Member States shall take the necessary measures to ensure that when the ultimate responsibility for the purchase of the fuel, or the operation of the ship, or both, is assumed by an entity other than the shipping company pursuant to a contractual arrangement, the shipping company is entitled to reimbursement from that entity for the costs arising from the surrender of allowances.

Maritime EU ETS - Regulatory design

Ship coverage

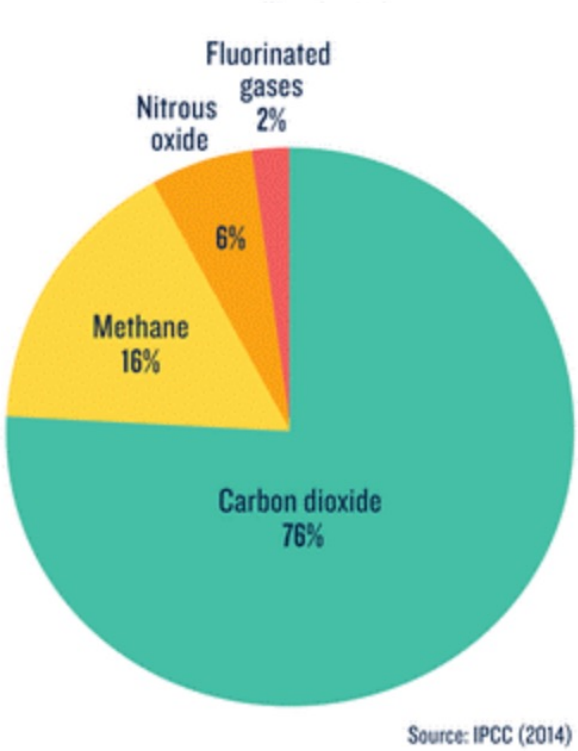
Ships ≥ 5000 Gross Tonnage
transporting cargo or passengers for commercial purposes
(EU ETS Directive, Annex I)

<u>Exemptions:</u>

- warships
- naval auxiliaries
- fishcatching or fish-processing ships
- wooden ships of a primitive build
- ships not propelled by mechanical means
- government ships used for non-commercial purposes

Maritime EU ETS - Regulatory design

GHG coverage



Carbon dioxide

But also methane and nitrous oxide from 1 January 2026

(EU ETS Directive, Annex I)

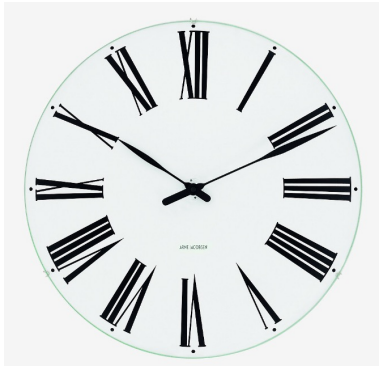
Maritime EU ETS - Regulatory design

Allowance allocation

Auctioning for shipping companies, no free allocation

(EU ETS Directive, Article 10)

Maritime EU ETS - Regulatory design



Phase-in schedule 2025-2027

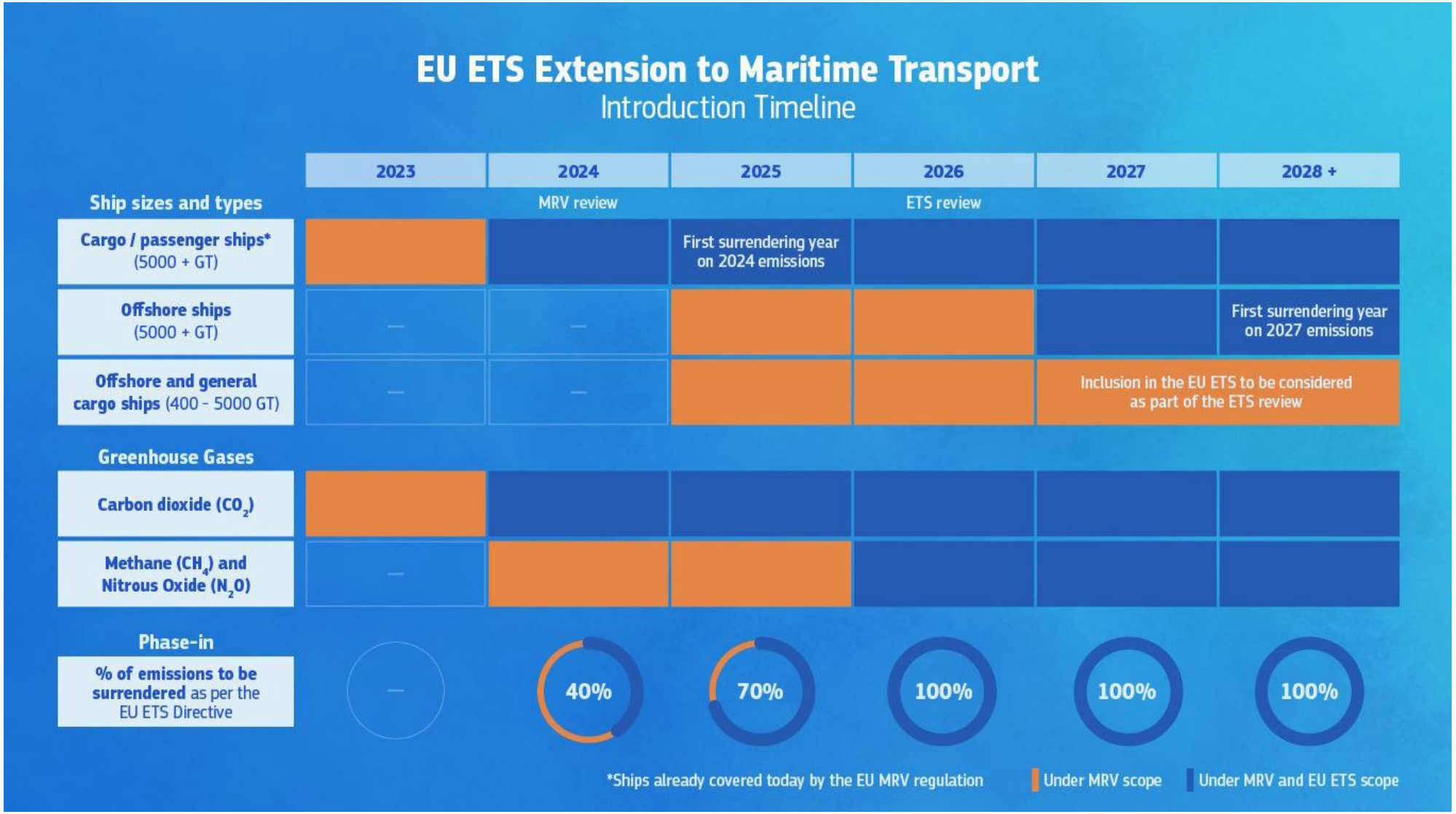
(EU ETS Directive, Article 3gb)

Shipping companies shall be liable to surrender allowances according to the following schedule:

(a) 40 % of verified emissions reported for 2024 that would be subject to surrender requirements in accordance with Article 12;

(b) 70 % of verified emissions reported for 2025 that would be subject to surrender requirements in accordance with Article 12;

(c) 100 % of verified emissions reported for 2026 and each year thereafter in accordance with Article 12.


EU ETS Extension to Maritime Transport
Introduction Timeline
2023
2024
2025
2026
2027
2028 +
Ship sizes and types
MRV review
ETS review
Cargo / passenger ships* (5000 + GT)
First surrendering year on 2024 emissions
Offshore ships (5000 + GT)
First surrendering year on 2027 emissions
Offshore and general cargo ships (400 - 5000 GT)
Inclusion in the EU ETS to be considered as part of the ETS review
Greenhouse Gases
Carbon dioxide (CO_2)
Methane (CH_4) and Nitrous Oxide (N_2O)
Phase-in
% of emissions to be surrendered as per the EU ETS Directive
40%
70%
100%
100%
100%
*Ships already covered today by the EU MRV regulation
Under MRV scope
Under MRV and EU ETS scope

What does the EU ETS actually aim to achieve?

Transnational Environmental Law (2024) **13**(2), 312–336
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ARTICLE

The Legal Objectives of the EU Emissions Trading System: An Evaluation Framework

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(First published online 27 August 2024)

Abstract
Climate policies are often evaluated using criteria that are heterogeneous and misaligned with the stated aims of these policies. By combining legal research methods with insights from economic theory, we systematically map and analyze the legal objectives of the European Union (EU) Emissions Trading System (ETS), a key climate policy instrument. We find that the EU ETS is shaped by a nuanced internal normative framework, the principal goal of which is emissions reduction, combined with three secondary goals of cost-effectiveness, economic efficiency and equity, and a meta-goal of coherence. Based on the contents and interrelations of these legal objectives, we formulate evaluation criteria that can be used to critically analyze and evaluate the EU ETS performance in a more comprehensive, transparent, and comparable manner. The resulting methodology is applicable to other environmental policies and jurisdictions.

Keywords: European Union Emissions Trading System (EU ETS); Legal goals; Hierarchy; Normative framework; Evaluation criteria

1. Introduction

The European Union (EU) Emissions Trading System (ETS) is often characterized as a

- **Primary objective** =

Reduction of **aggregate emissions** from covered sectors (not necessarily shipping per se!)

- **Secondary objectives** =

Minimization and fair distribution of costs

- **Coherence with other policies** (e.g., FuelEU Maritime) is **key** because it can affect **all** policy objectives

What does the EU ETS actually aim to achieve?

I. Emissions Reductions — **Does this option ensure a sufficient reduction of the aggregate emissions covered by the EU ETS?**

I(i) Consistency with climate objectives:
Does it ensure that the emissions cap declines in a trajectory consistent with the applicable climate goals (notably the European Climate Law and Paris Agreement targets)?

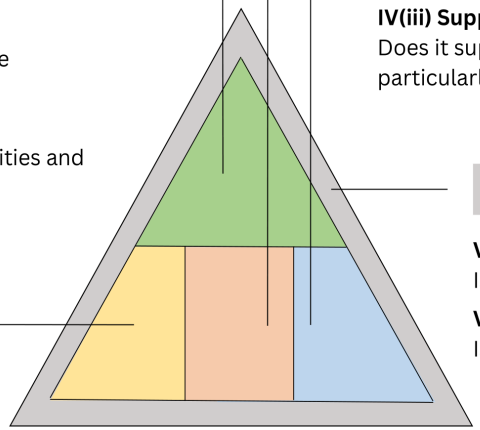
I(ii) Environmental integrity:
Does it ensure reliable emissions reductions, by preventing emissions inaccuracies, non-compliance and market abuse?

I(iii) Avoidance of carbon leakage:
Does it mitigate the risk of relocation of covered activities to third jurisdictions without comparable carbon constraints?

II. Cost-effectiveness — **Does this option contribute to realizing the emissions reduction target of the EU ETS at the lowest possible cost?**

II(i) Proper ETS market functioning:
Does it contribute to transparency, liquidity and predictability in the emissions trading market?

II(ii) Reduction of ETS administrative costs:
Does it reduce administrative costs incurred on government authorities and compliance entities, particularly smaller emitters?



III. Economic Efficiency — **Does this option contribute to a positive difference between the overall economic benefits and costs of the EU ETS for society?**

III(i) Minimization of impact on economic development and employment:
Does it have the least possible impact on economic development and employment?

III(ii) Avoidance of competitive distortions in the internal market:
Does it avoid competitive distortions in the internal market?

III(iii) Promotion of innovation and investments:
Does it promote innovation and investments in climate mitigation or adaptation?

IV. Equity — **Does this option contribute to equity at a national, EU and extra-EU level?**

IV(i) Just transition of society and labour:
Does it contribute to a just transition of society and labour to a low-carbon economy?

IV(ii) Solidarity among EU Member States:
Does it distribute burdens fairly among EU Member States?

IV(iii) Support to third countries:
Does it support climate mitigation or adaptation actions in third countries, particularly vulnerable ones?

V. Coherence — **Is this option coherent with other legal norms and policies?**

V(i) Legal (internal) coherence:
Is it coherent with other norms of the legal system?

V(ii) Policy (external) coherence:
Is it coherent with other (EU or non-EU) policies?

EU ETS vs FuelEU Maritime

Feature	Maritime EU ETS	FuelEU Maritime
Primary objective	**Absolute reduction** of **overall GHG emissions** covered by the cap	**Relative reduction** of **shipping GHG emissions** by reducing the GHG intensity of the energy used onboard ships
How It works	Shipping companies must **buy and surrender allowances** to cover their verified emissions	Shipping companies must **meet annual GHG-intensity limits**, which tighten over time (pooling possible)
Entry into force	**2024** (phase-in 2024-2026)	**2025** (progressively higher GHG intensity limits)
Vessels covered	Ships ≥ 5000 GT (with exemptions)	Ships ≥ 5000 GT (with exemptions)
GHGs covered	CO_2 now – CH_4 and N_2O from 2026 (**tank-to-wake**)	CO_2, CH_4, N_2O from the start (**well-to-wake**)

EU ETS vs FuelEU Maritime (cont.)

Feature	Maritime EU ETS	FuelEU Maritime
Geographical scope	• 100% of emissions on intra-EEA voyages • 50% of emissions on EEA–non-EEA voyages	• 100% of energy for intra-EEA voyages • 50% of energy for EEA–non-EEA voyages
Exemptions	Temporary exemptions for small islands, outermost regions, EU Member States without land border etc. (until 31 December **2030**)	Temporary exemptions for small islands, outermost regions, EU Member States without land border etc. (until 31 December **2029**)
Technology mandates	**None**	**Onshore power supply** obligations for passenger and container ships as of 2030
Penalties for non-compliance	Strict monetary penalties + Expulsion order / flag detention as measures of last resort	Strict monetary penalties + Expulsion order / flag detention as measures of last resort
Long-term signal	**Uncertainty about carbon price** but it will likely rise over time as the supply of allowances shrinks	Clear trajectory to 80% GHG intensity reduction by 2050 – **uncertainty about costs, infrastructure, fuels**

EU ETS and FuelEU: Synergy or double burden?

- Both regulations apply **in parallel** to same ships and voyages
- Both share the same monitoring and reporting system (EU MRV Regulation)
- Different objectives (**EU ETS broader objectives** not focused on shipping per se but on aggregate emissions covered by cap)
- Some consider them as complementary – others perceive them as double burden
- The truth is that, like in most cases of policy interaction, the parallel application of EU ETS and FuelEU generates both **benefits** and **costs**

EU ETS and FuelEU: Stronger decarbonization incentives

- EU ETS on its own **would not** incentivize sufficient GHG reductions from shipping

- Around 70% of emissions to be reduced from the inclusion of shipping in the EU ETS **will come from stationary installations**, because GHG abatement options in shipping are more expensive (Source: Commission Impact Assessment, 2021)

- Without FuelEU, there was a risk that shipping would **lag behind** by acting myopically and then fail to catch up once EU ETS allowances become scarcer (and more expensive than now)

- Also, FuelEU's **well-to-wake scope** complements the EU ETS – effects on fuel supply chain beyond the shipping sector

EU ETS and FuelEU: Higher costs for shipping companies

- By definition, FuelEU functions **against** the cost-effectiveness objective of the EU ETS (by mandating more expensive fuel blends)
- Double administrative burden (also for authorities)
- Complicates strategic decision making for shipping companies
- More pressure on smaller firms, risk of **increased market concentration** (Franc and Sutto, 2014)
- Higher risk of **carbon leakage**

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126

WMU Journal of Maritime Affairs
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ARTICLE

Mitigating carbon leakage in maritime transport

Manolis Kotzampasakis[1,2] · David R. Wooley[3]

Received: 19 May 2025 / Accepted: 30 September 2025

Abstract
The risk of ships circumventing domestic climate regulatio
house gas emissions while negatively impacting port comp
This article identifies regulatory options to effectively mitig
lights the main trade-offs that each option may involve. It
(i) a qualitative law and economics review of shipping com
bilities and incentives, and (ii) a comparative legal study of
tion policies in the European Union and the United States.
that maritime carbon leakage can materialize in four main
tions thereof: reflagging, port evasion, ship substitution, an
states can mitigate it with regulatory countermeasures that
increase the costs of evasion, and/or decrease the costs of co
companies. Carbon leakage countermeasures may take the f
the regulation that generates the risk of carbon leakage, co
policy measures, or synergies with foreign and internationa
Almost all identified carbon leakage mitigation options imply
trade-offs for the regulating jurisdiction.

Keywords Maritime transport · Shipping · Decarbonization
Port evasion · Mitigation

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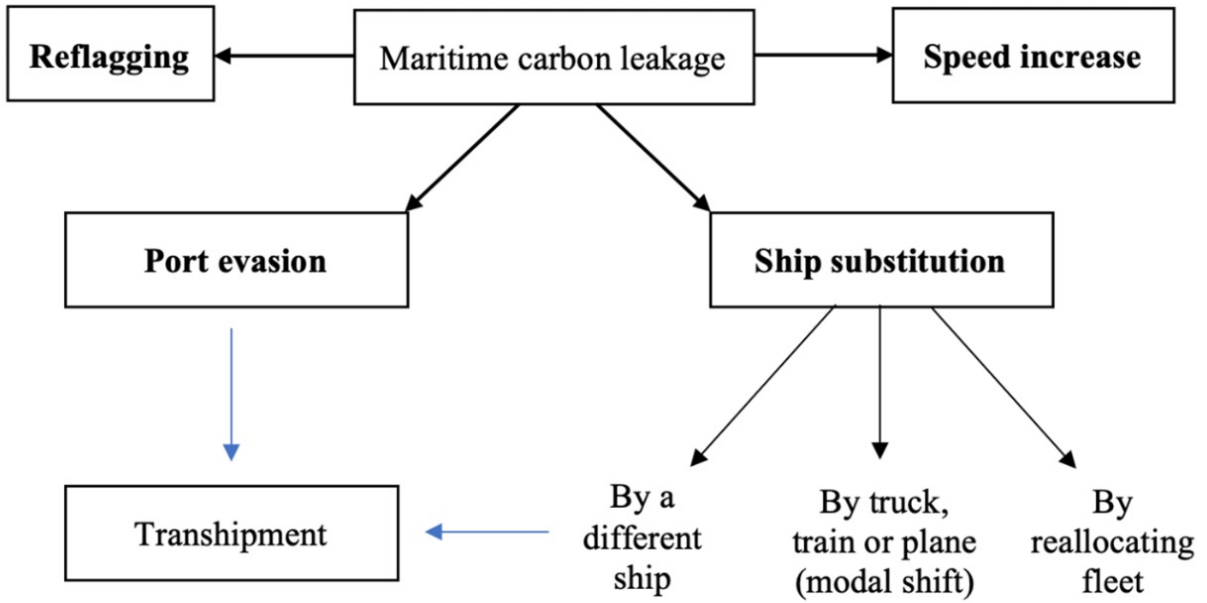

Fig. 1 Forms of maritime carbon leakage

EU ETS and FuelEU: Higher economic impacts on vulnerable states & populations

Least Developed Countries and Small Island Developing States countries **rely on trade with the EU** (high impact on goods with low weight-to-value ratio)

Table 62: Main LDC and SIDS exporters to the EU

Country	SIDS/LDC status	% Share of exports to the EU
Cabo Verde	SIDS	83%
São Tomé and Principe	SIDS and LDC	70%
Marshall Islands	SIDS	62%
Liberia	LDC	57%
Antigua and Barbuda	SIDS	50%
Bangladesh	LDC	46%
Guyana	SIDS	46%
Comoros	SIDS and LDC	46%
Bahamas	SIDS	39%
Malawi	LDC	38%

Source: UNCTAD trade data 2019

EU ETS and FuelEU: Higher economic impacts on vulnerable states & populations

- Impacts also in Europe, particularly for populations on **islands**, **remote coastal areas and outermost regions**

- Cost of living and consumer welfare in some EU Member States to be affected more (Malta, Greece, Croatia, Italy, Germany, Spain, France, Sweden)
  (Goyal and Llop, 2024)

- Exemptions from FuelEU and EU ETS are temporary and insufficient

→ **Solution**: **just allocation of revenues** from both EU ETS and FuelEU

→ **Otherwise, social acceptability and political viability of EU maritime climate policy can be jeopardized**

Thank you for your attention

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