

EU ETS Observatory

12th September 2026

Puertos del Estado



Based on Report 2
Data up to March 2026

Introduction.

Since 1 January 2024, ships above 5,000 GT are within the scope of the EU-ETS.

For large container vessels operating on transoceanic routes, the scheme entails a significant additional cost, which may create an incentive for shipping companies to reorganise their services around hub ports located in neighbouring non-EU countries.

The reconfiguration of maritime networks to reduce exposure to the EU ETS may have several adverse effects:

- **Environmental effectiveness.** The relocation of port calls and traffic outside the EEA may shift emissions beyond the scope of the EU ETS and reduce its environmental effectiveness.
- **Economic competitiveness.** Reduced direct connectivity with major deep-sea routes may increase logistics costs and delivery times, thereby undermining the competitiveness of the EU economy.

- **Economic security.** Greater reliance on hubs outside the EU may reduce European control over critical segments of supply chains.
- **External transport costs.** A shift of freight from short-sea shipping to road transport may increase emissions, congestion, accidents and pressure on land-based infrastructure.

In this context, Puertos del Estado has established an observatory to identify potential reorganisations of maritime traffic flows aimed at avoiding or reducing shipping companies' exposure to the EU ETS. The observatory will also contribute to identifying and, where appropriate, proposing targeted measures to safeguard the environmental effectiveness of the system, while preserving the competitiveness and economic security of the Union.

Impact of EU-ETS on vessels operational cost.

EU-ETS	For large container vessels operating on transoceanic routes, the full implementation of this regulation is expected to increase navigation costs by around 28 per cent . For instance, for a 20,000 TEU container vessel sailing between Singapore and Rotterdam via the Suez Canal , fuel costs would amount to approximately €1.1 million , with a further €335,000 arising from the application of the EU ETS . On the same voyage undertaken via the Cape of Good Hope , fuel costs would rise to around €1.6 million , with an additional €476,000 due to the application of the EU ETS*
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Other causes of changes in maritime traffic.

Around the time maritime transport was included in the EU ETS, a number of regulatory and geostrategic developments also affected maritime traffic, making it more difficult to determine the individual contribution of each of these “disruptions” to the observed changes in shipping routes.

Red Sea Crisis	At the end of 2023, in response to attacks on maritime traffic in the Red Sea, shipping companies stopped using the Suez Canal and switched to the Cape of Good Hope route
End of the CBER	On 25 April 2024, the European Commission stopped renewing the CBER (Consortia Block Exemption Regulation), which allowed shipping companies to establish cooperation agreements that, under certain conditions, were exempt from the antitrust rules applicable within the EU.

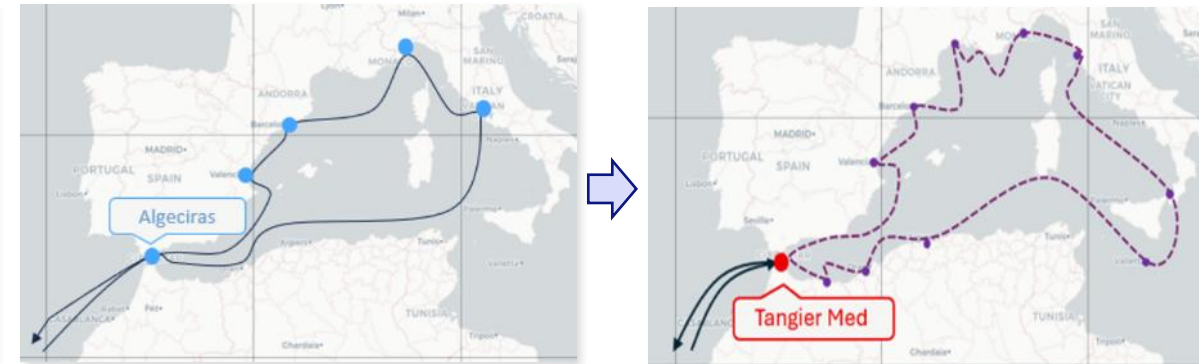
*VLSFO €435/t (\$500 @ 1.15 USD/EUR) · ETS €80/tCO₂

EU ETS avoidance strategies.

Route Transformation: Port calls at neighbouring-country ports when entering or exiting the EU maritime area. This strategy does not break the continuity of the service, as the same vessel covers both the transoceanic leg and the EU access or exit leg.



Route splitting: The strategy consists of splitting the original route into two distinct legs. Transoceanic vessels call at hub ports in neighbouring countries. From these locations, cargo is distributed to or consolidated from EEA countries via feeder routes.



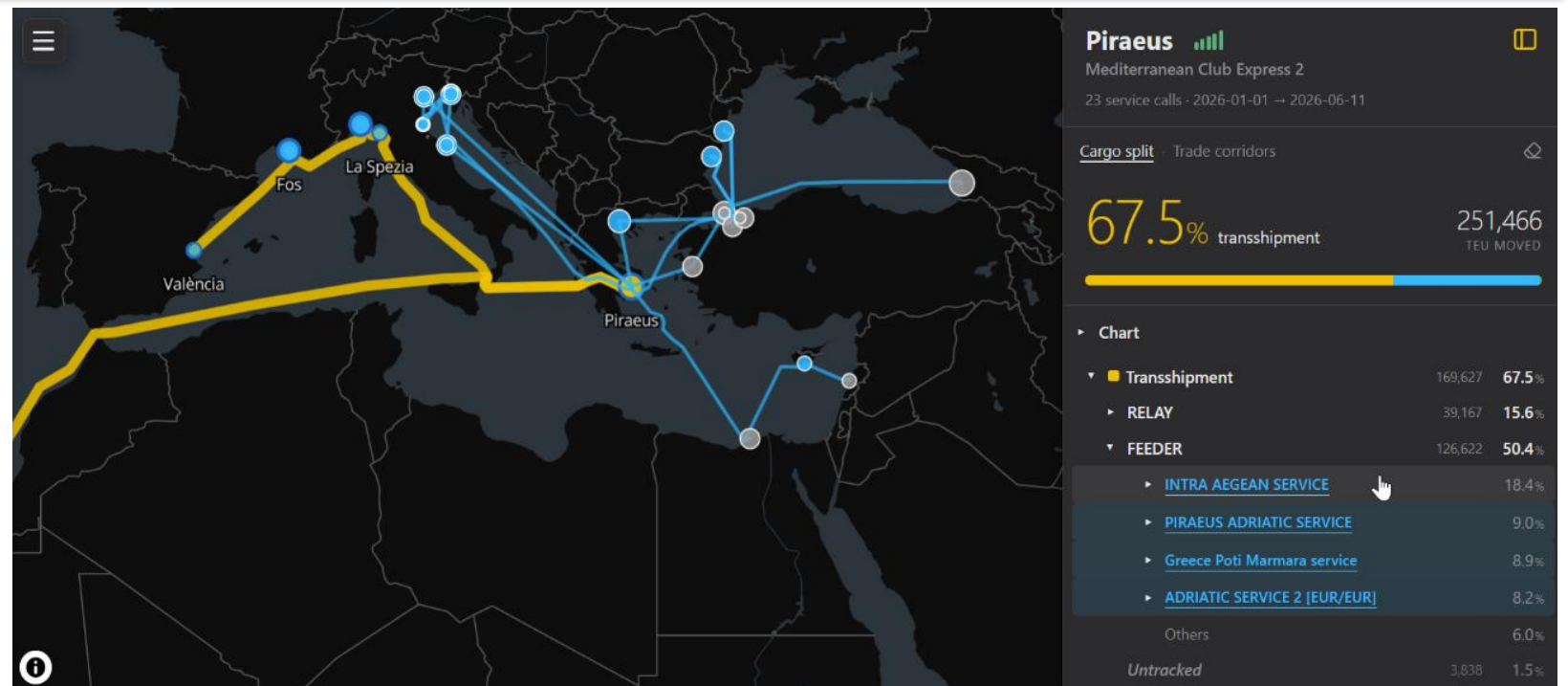
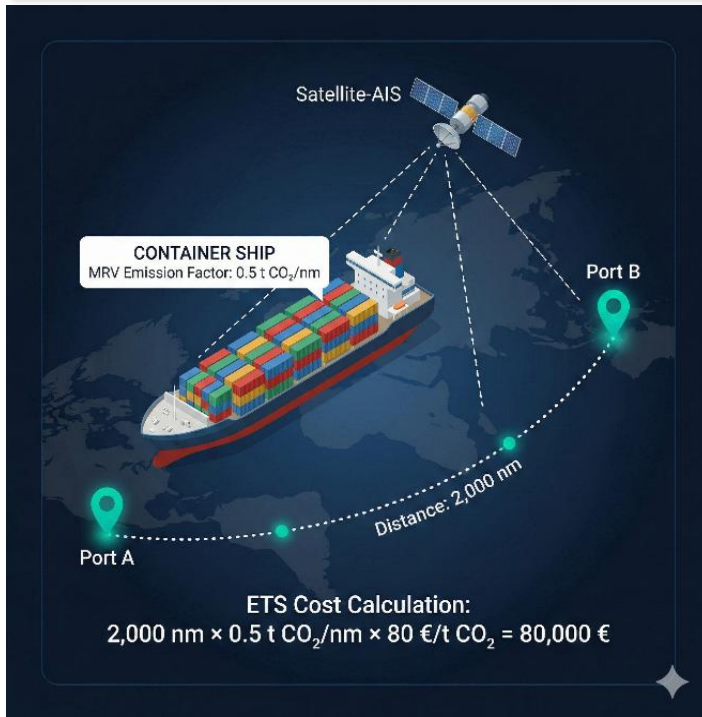
Modal backshift from sea to road: freight previously carried by sea through roll-on/roll-off maritime services returns to a fully road-based transport model



Observatory Data monitoring System: Vessel and container tracking data sets.

The Observatory's data platform includes:

- **A vessel-tracking dataset** based on AIS data, which makes it possible to reconstruct maritime service routes and analyse how they evolve over time.
- **A container-tracking dataset** which makes it possible to estimate the evolution of transshipment activity and direct connectivity. The latter is defined in this study as the percentage of containers that arrive at a port without having been transshipped outside EUROMED*.



*Defined later in this document

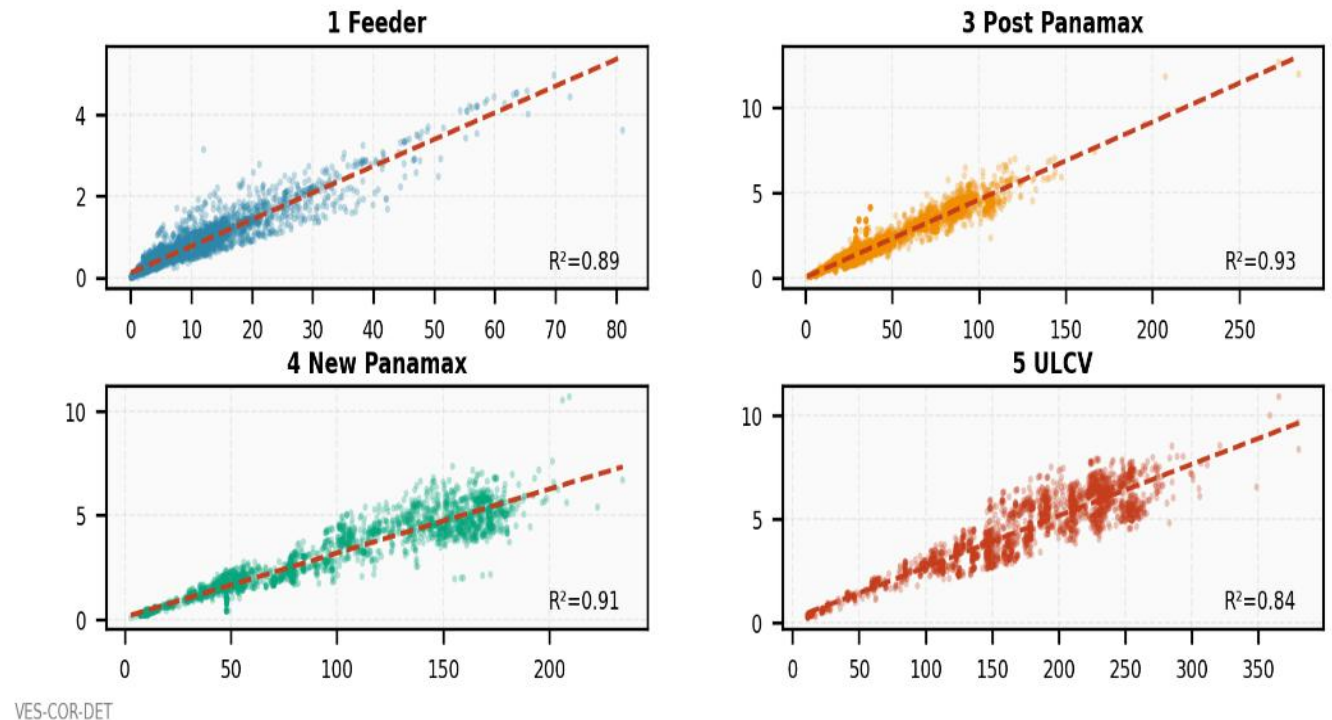
Data Monitoring System: The TEU-mile indicator.

- **TEU-miles of a vessel** = Vessel TEU capacity × (distance to the origin port + distance to the destination port)
- **TEU-miles of a port** = Sum of the TEU-miles of all vessels calling at the port.
- **Share_TEU-mile** = Percentage of total EUROMED TEU-miles attributable to a port.

Advantages of the TEU_mile & share_TEU_mile

- **CO₂ emissions:** Strongly correlated with the CO₂ emissions reported by vessels.
- **Connectivity:** Enables the identification of changes in port connectivity.
- **Fast:** Fast computation and automated data exploration capability.
- **Robust:** The TEU-mile share makes it possible to identify changes in the traffic balance between the EU and its neighboring countries (*EEA ports vs EEA+ ports*), even in situations involving structural changes such as those introduced by the Red Sea crisis.

kTEU-Miles vs CO₂ - EUROMED EXTRA (Individual Calls)



Data Monitoring System: Regional scope.



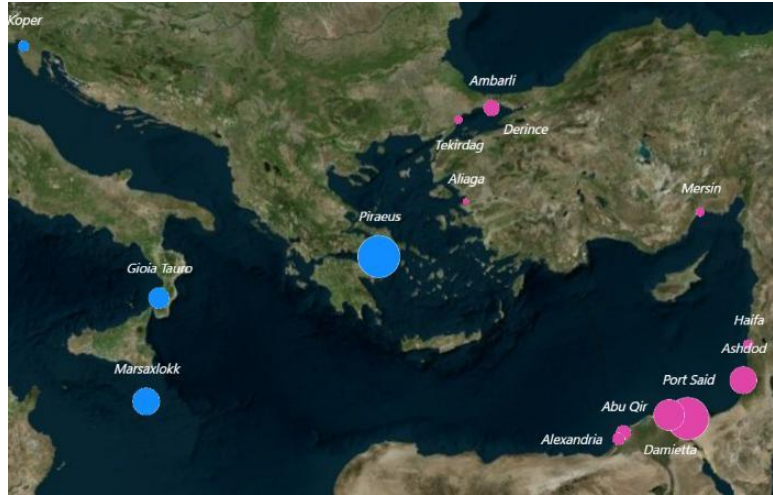
- **EEA**
Ports in EU Member States
- **EEA+**
Ports in EU neighboring countries located within 300 nautical miles.
- **EUROMED**
Ports in the EEA and EEA+ regions
- ⇒ **EUROMED Gateway Calls**
Calls at EUROMED ports by vessels operating on transoceanic (deep-sea) routes. TEU miles of gateway port considers only the deep-sea leg

Data Monitoring System: Regional scope. Regions analyzed

NORTH SEA.



EAST MED.

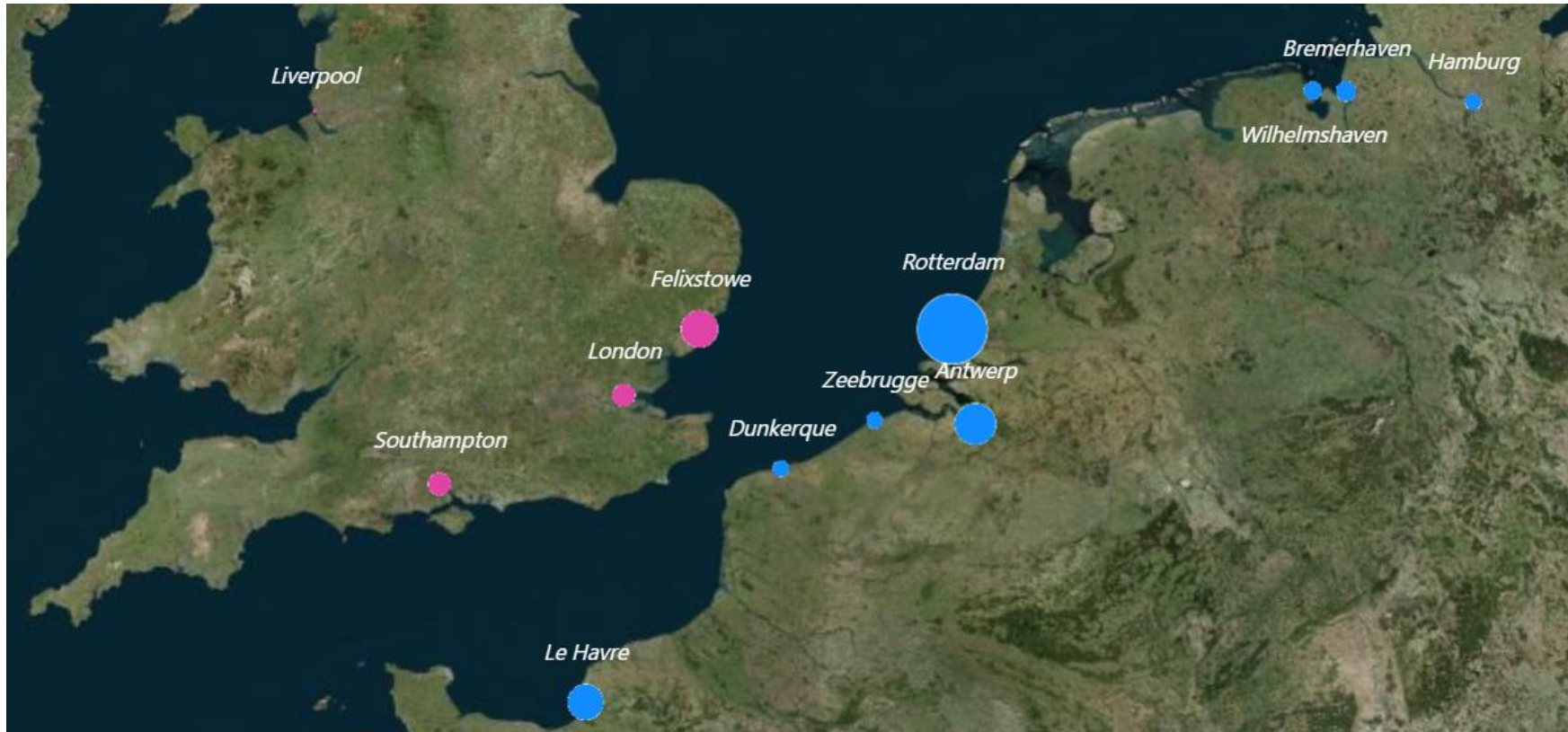


WEST MED.



- **EEA** Ports of EEA countries
- **EEA+** Ports of neighbouring countries. All neighbouring ports are within 300 miles.

NORTH SEA.



● EEA Ports of EEA countries

● EEA+ Ports of neighbouring countries. All neighbouring ports are within 300 miles.

NORTH SEA. Evolution over time in the number of deep-sea container vessel port-calls and TEU_miles.

UK (NON-EU PORTS)

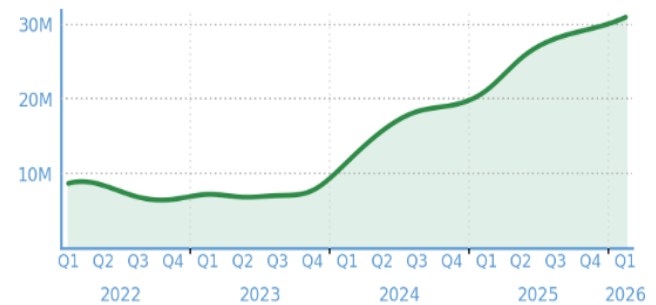
CALLS

UK



kTEUm

UK



EU PORTS

CALLS

NORTH EUROPE EEA



kTEUm

NORTH EUROPE EEA



Port calls of deep-sea container vessels

Following the closure of the Suez Canal, **UK** show a sustained growth, while **EU ports** show no significant change.

TEU-miles of deep-sea container vessels

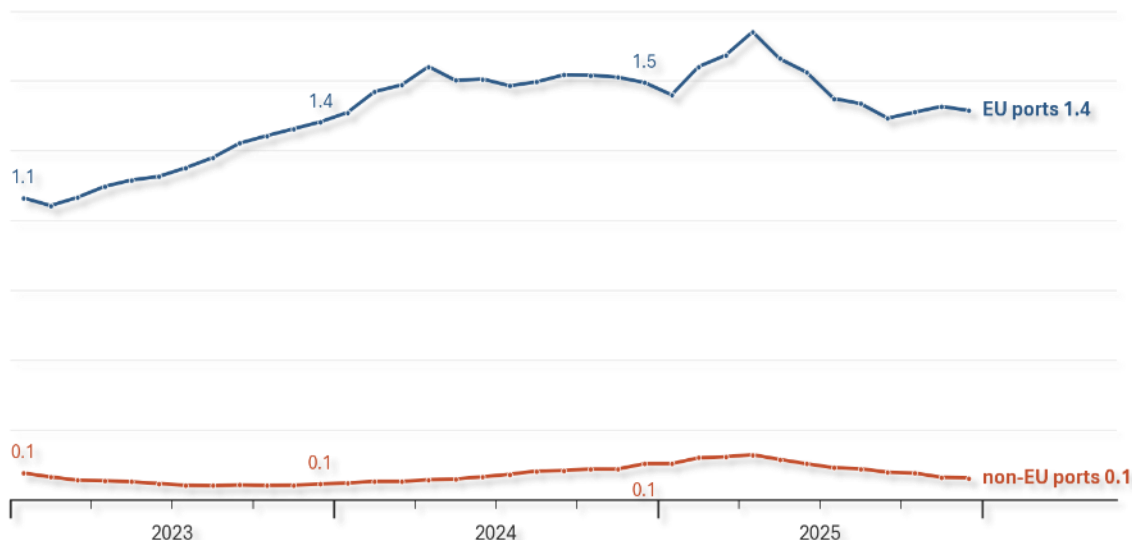
Following the closure of the Suez Canal, **UK** show a rapid increase followed by sustained growth, while **EU ports** show rapid increase followed by a subsequent levelling-off.

Following the closure of the Suez Canal, both indicators **showed clearly diverging trends** in EU ports and UK ports.

NORTH SEA. Evolution over time of transshipment and direct connectivity *

Northern Europe + Baltic — transshipment at EU vs non-EU ports

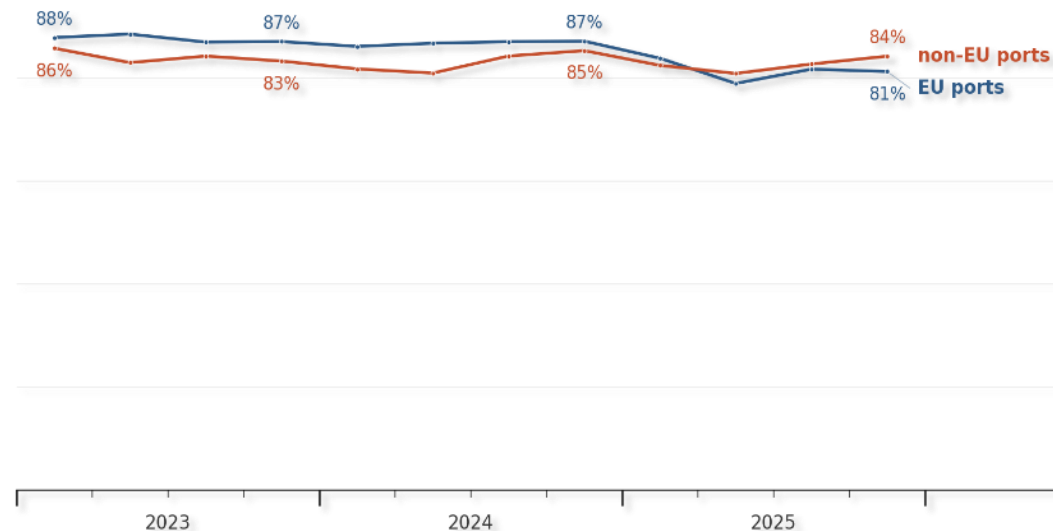
million TEU per month, 3-month moving average



Despite the sustained increase in deep-sea vessels calls in non-UE ports, transshipment activity remains broadly stable at around 0,1 millions TEU per month. *These findings are consistent with a reconfiguration of maritime services aimed at reducing EU-ETS costs.*

Northern Europe & Baltic

% of long-haul imports delivered direct — (V0)

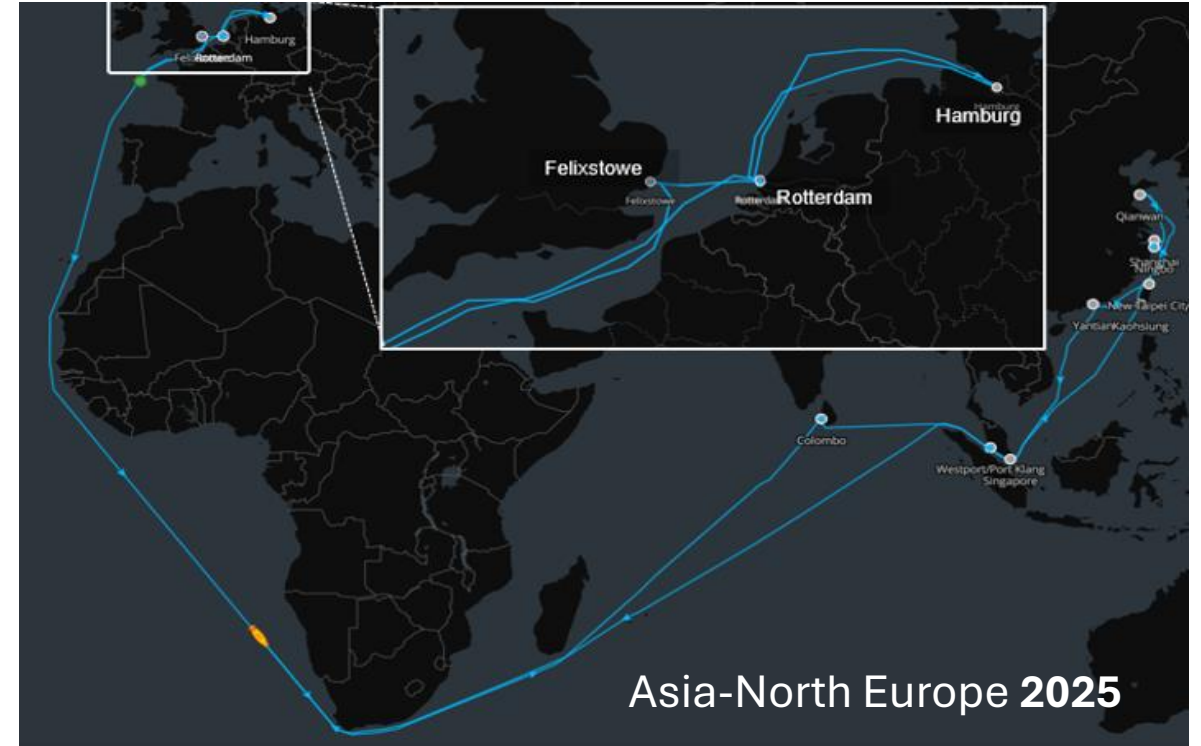


The **direct connectivity ratio of EU ports have been reduced from 88% to 81%**. *This trend warrants close monitoring, as, if it persists, it could indicate the emergence of potential EU ETS avoidance strategies based on the fragmentation of shipping routes.*

NORTH SEA. Maritime service transformation (case study)



In Northern Europe, Rotterdam served as both the main entry and exit gateway, with intermediate calls at Hamburg and Felixstowe



Calls continue to be made at the same Northern European ports, but the rotation has changed significantly. Services still enter Northern Europe via Rotterdam, but now depart through Felixstowe, ***indicating a clear reconfiguration of the port-call sequence.***

NORTH SEA. What could be the causes of the increase in the UK's connectivity?

Has there been a significant improvement in the UK's economic activity?

The United Kingdom has not experienced economic growth that would explain higher import–export traffic.

Has there been a reduction in operating costs at UK ports?

In the current inflationary environment, there are no signs that operating costs have decreased.

Are there structural congestion problems at Northern European ports?

There have been congestion problems at Northern European ports, but due to short-term factors such as strikes.

Did UK ports have better infrastructure or large available capacity?

Investments are being made to upgrade and develop new infrastructure, indicating that the ports were not previously adequately equipped.

Could the closure of the Suez Canal have given any advantage to UK ports?

The increase in distance implied by routing via the Cape of Good Hope affects all ports equally.

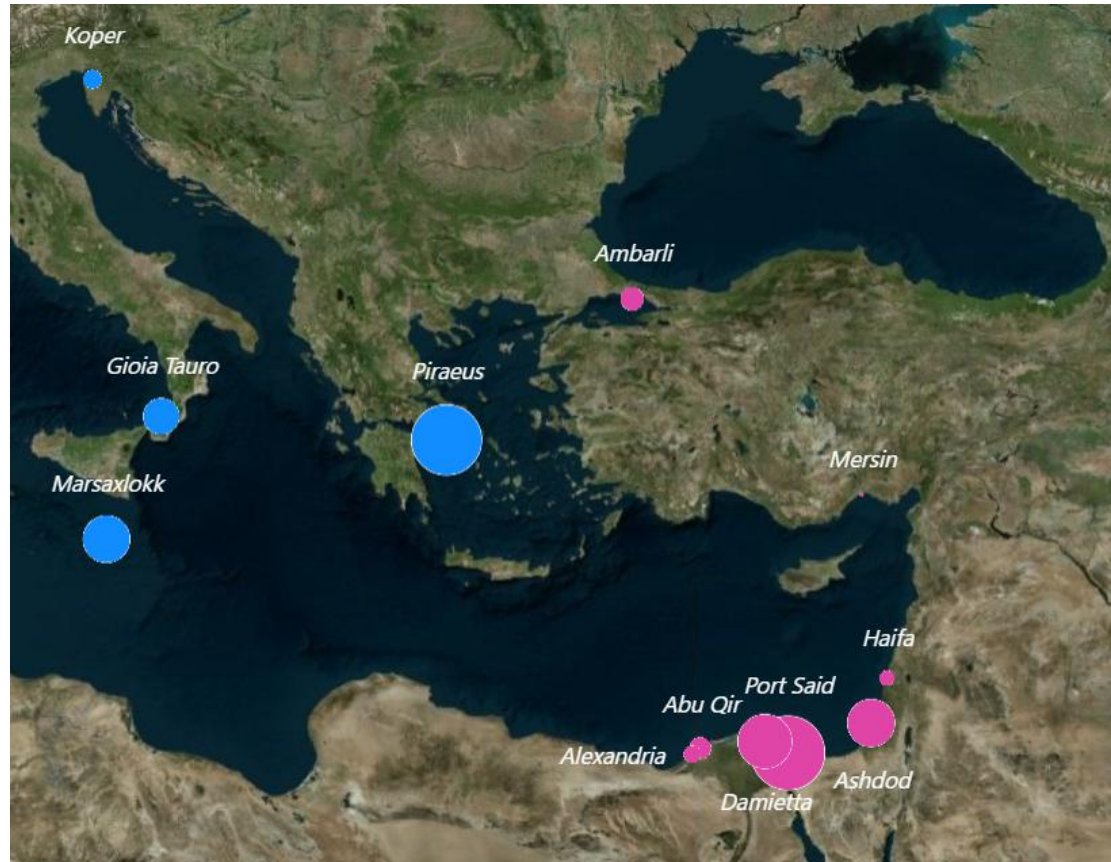
Could the expiration of the CBER have given any advantage to UK ports?

The expiration of the CBER coincided with the simultaneous end of the UK's equivalent competition exemption.

Is there any other factor that could increase the profitability of a transoceanic service if it makes an intermediate call at UK ports?

Diverting an Ultra Large Container Vessel (ULCV) coming from Asia to a UK port can represent an approximate saving of €1 million in ETS costs per rotation.

EAST - MED.



● EEA Ports of EEA countries

● EEA+ Ports of neighbouring countries.
All neighbouring ports are within 300 miles.

EAST - MED. Evolution over time in the number of container vessel port-calls and TEU_miles.

NON-EU PORTS

CALLS

non-EU East Med — deep-sea



kTEUm

non-EU East Med



EU PORTS

CALLS

EU East Med — deep-sea



kTEUm

EU East Med



Port calls of deep-sea container vessels

Following the closure of the Suez Canal, **non-EU ports** show a sharp initial decline followed by a gradual recovery, while EU ports experience a similarly sharp decline but no subsequent recovery.

TEU-miles of deep-sea container vessels

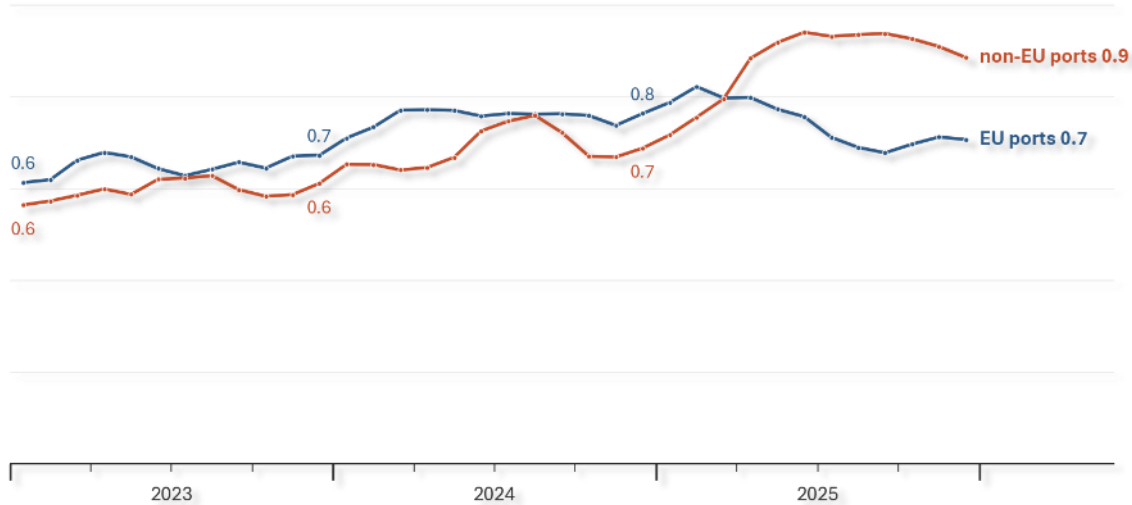
Following the closure of the Suez Canal, **non-EU ports** show a sharp initial increase followed by sustained growth, while **EU ports** experience a sharp initial decline with no significant subsequent recovery.

Following the closure of the Suez Canal, both indicators **showed clearly diverging trends** in EU ports and non-EU ports.

EAST-MED. Evolution over time of transshipment and *direct connectivity*.

Eastern Mediterranean — transshipment at EU vs non-EU ports

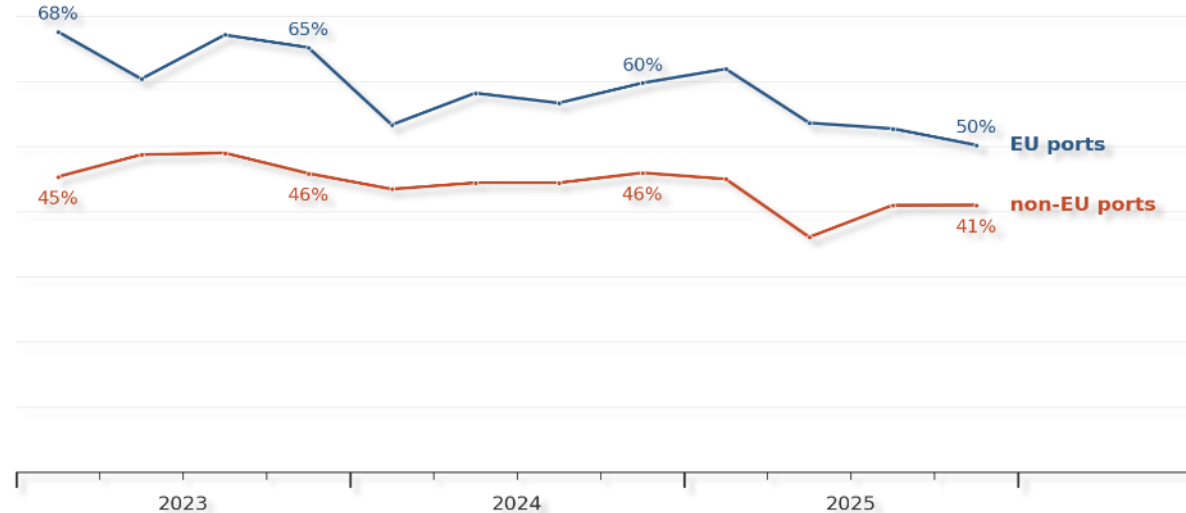
million TEU per month, 3-month moving average



Between 2023 and 2025, transshipment activity increased substantially at non-EU ports, while remaining broadly stable at EU ports. **As a result, EU ports have lost relative share of the region's total transshipment traffic.** *This divergence is consistent with strategies aimed at avoiding or reducing EU ETS-related costs.*

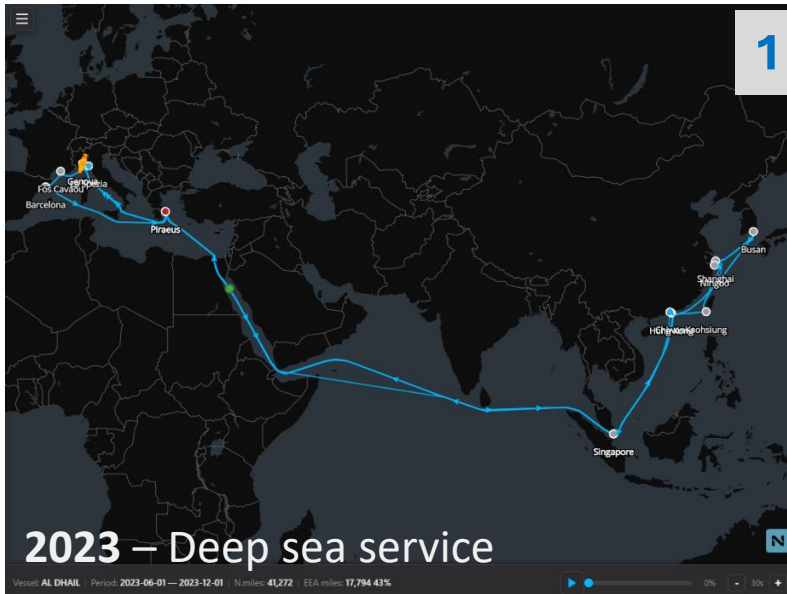
Eastern Mediterranean

% of long-haul imports delivered direct — (V0)



Since early 2024, the direct connectivity ratio of EU ports has declined from 68% to 50%. Some deep-sea services that previously called directly at EU ports have been replaced by feeder services routed through non-EU neighbouring ports. *This reconfiguration is consistent with EU-ETS evasive strategies based on service transformation or fragmentation.*

EAST - MED. Maritime service transformation and splitting (case study)



1. **2023** Piraeus is the first Mediterranean hub
2. **2024** Piraeus remains as the first Mediterranean hub
3. **2025** Port Said becomes the new HUB of the Eastern Mediterranean
4. **2025** Route splitting: Piraeus now connects indirectly to the original deep-sea service via a feeder service through Port Said.



EAST – MED. What could be the causes of the increase in Egypt’s activity?

Has there been a significant improvement in Egypt’s economic activity?

Egypt has not experienced economic growth that would explain higher import–export traffic.

Has there been a reduction in operating costs at Egyptian ports?

In the current inflationary environment, there is no evidence that operating costs have fallen.

Are there structural congestion problems in EU ports in the Eastern Mediterranean?

EU ports in this region have not shown congestion problems; Piraeus has available capacity.

Do Egyptian ports have better infrastructure or greater capacity?

The Port of Piraeus has available capacity. Egyptian ports have undergone investment and upgrades.

Could the closure of the Suez Canal have given Egyptian ports any advantage?

The Port of Piraeus is now on the shortest route from Asia to the central Mediterranean.

Could the expiration of the CBER have given Egyptian ports any advantage?

In Egypt there are laws and authorities aimed at protecting competition and prohibiting monopolistic practices.

Can the ETS explain Egypt’s higher activity compared to Greece, considering Port Said is a “transshipment port of a neighbouring country”?

This measure is not effective in the case of a route disruption such as that occurring in a Hub-and-Spoke system. Moreover, ports such as Abu Qir, Alexandria and Damietta operate without this constraint.

WEST MED.



- **EEA** Ports of EEA countries
- **EEA+** Ports of neighbouring countries.
All neighbouring ports are within 300 miles.

WEST - MED. Evolution over time in the number of container vessel port-calls and TEU_miles.

NON-EU PORTS

DEEP-SEA CALLS

Western Mediterranean EEA+



DEEP-SEA KTEU MILES

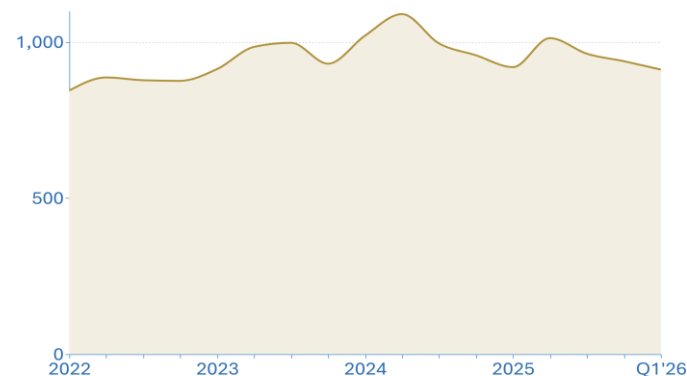
Western Mediterranean EEA+



EU PORTS

DEEP-SEA CALLS

Western Mediterranean EEA



DEEP-SEA KTEU MILES

Western Mediterranean EEA



Port calls of deep-sea container vessels

Following the closure of the Suez Canal, non-EU ports recorded a sharp initial increase followed by sustained growth, resulting in a net increase of 18% compared with 2022. EU ports also experienced an initial rise, but this was followed by several fluctuations, leading to a net increase of 1% over the same period.

TEU-miles of deep-sea container vessels

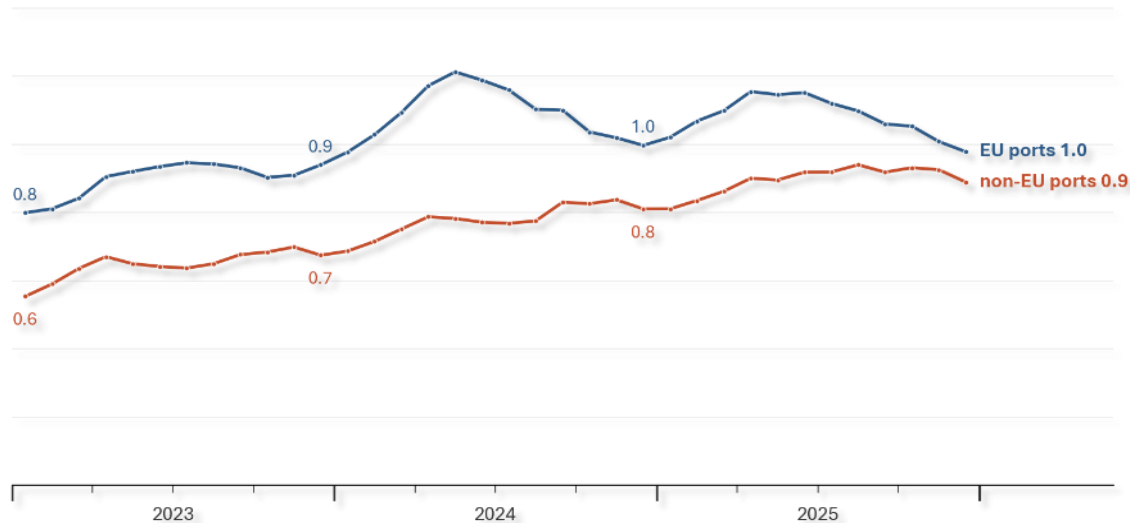
Following the closure of the Suez Canal, both EU and non-EU ports recorded a sharp increase, followed by a gradual decline displaying a broadly similar pattern across the two groups.

Following the closure of the Suez Canal, both groups display broadly similar trends, but **the increase in deep-sea port calls is clearly stronger at non-EU ports.**

WEST-MED. Evolution over time of transshipment and direct connectivity

Western Mediterranean — transshipment at EU vs non-EU ports

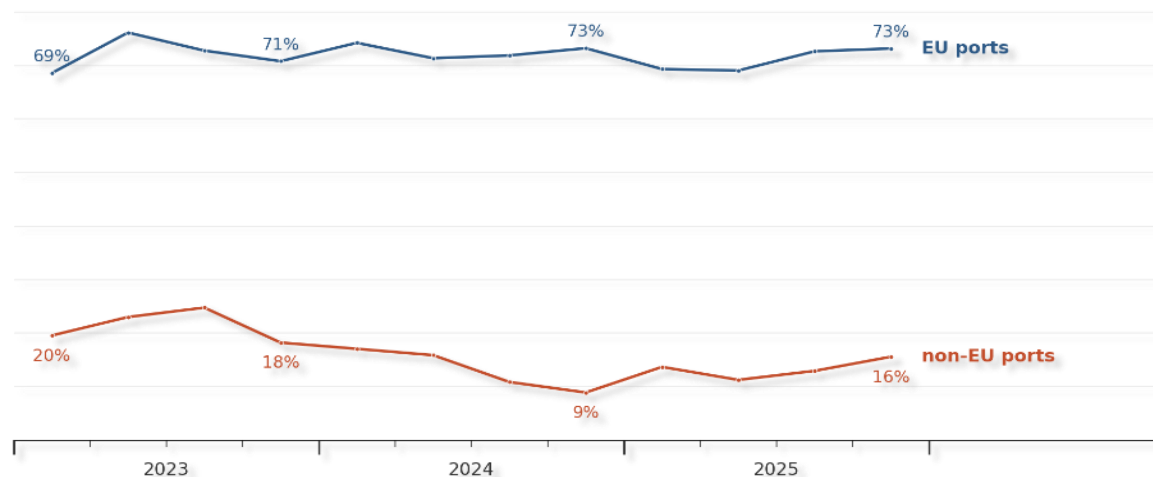
million TEU per month, 3-month moving average



Between 2023 and 2025, transshipment activity increased by around 60% at non-EU ports. By contrast, EU ports, recorded a net increase of around 20%. **As a result, EU ports lost relative share of the region's total transshipment traffic.** *This divergence is consistent with strategies aimed at avoiding or reducing EU ETS-related costs.*

Western Mediterranean & Atlantic

% of long-haul imports delivered direct — (V0)

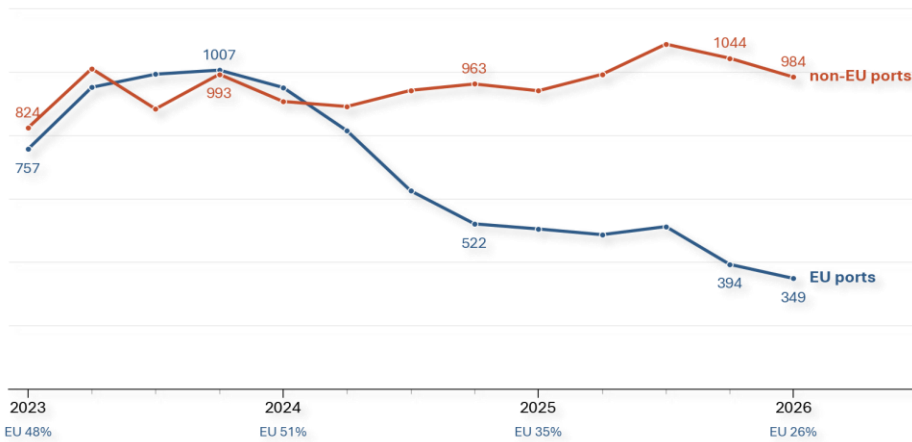


Between 2023 and 2025, the direct connectivity ratio of EU ports in the region increased from 69% to 73%. The available evidence therefore does not point, in this region, to a substitution of direct deep-sea services by indirect connections for containers with origin or destination in the EU.

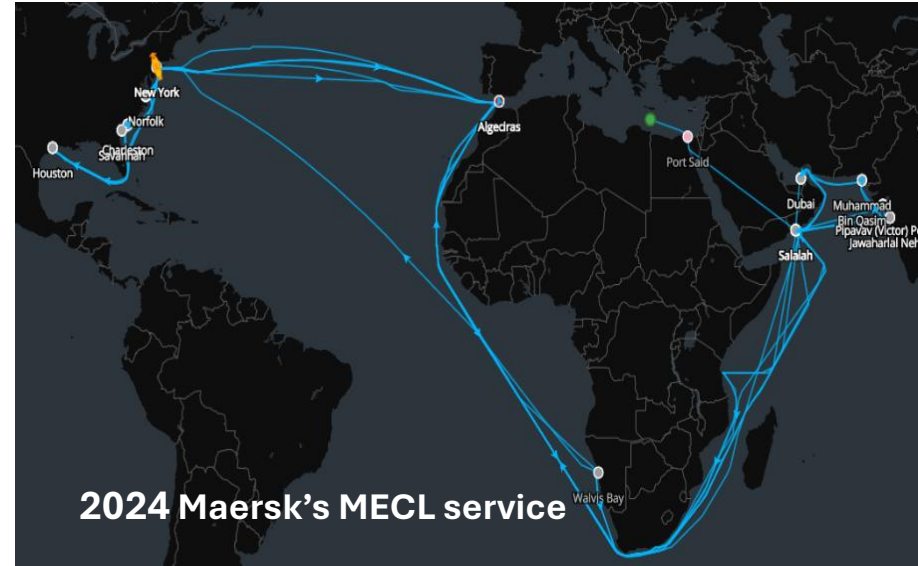
WEST - MED. Maritime service transformation

Pure relay at EUROMED ports — EU vs non-EU ports

thousand TEU relayed between two remote regions, per quarter

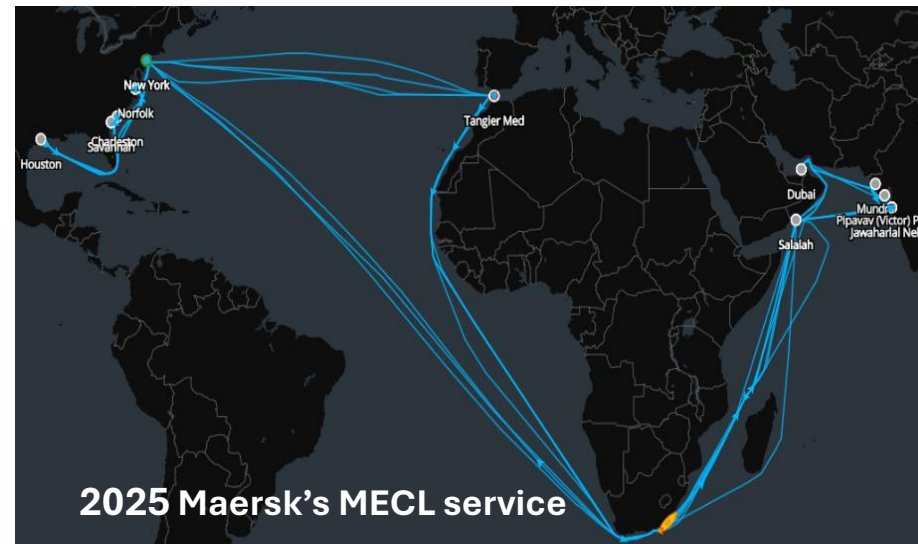


Following the closure of the Suez Canal, transshipment activity generated by deep-sea services linking Asia and the Americas (pure relay) declined by around 65% in EU Mediterranean countries, while remaining broadly stable in non-EU countries. This divergence in trends is consistent with strategies aimed at avoiding EU ETS-related costs.



Maersk's MECL service connects the US East Coast with the Middle East and India.

Before 2024, the service called at Algieras in both directions.

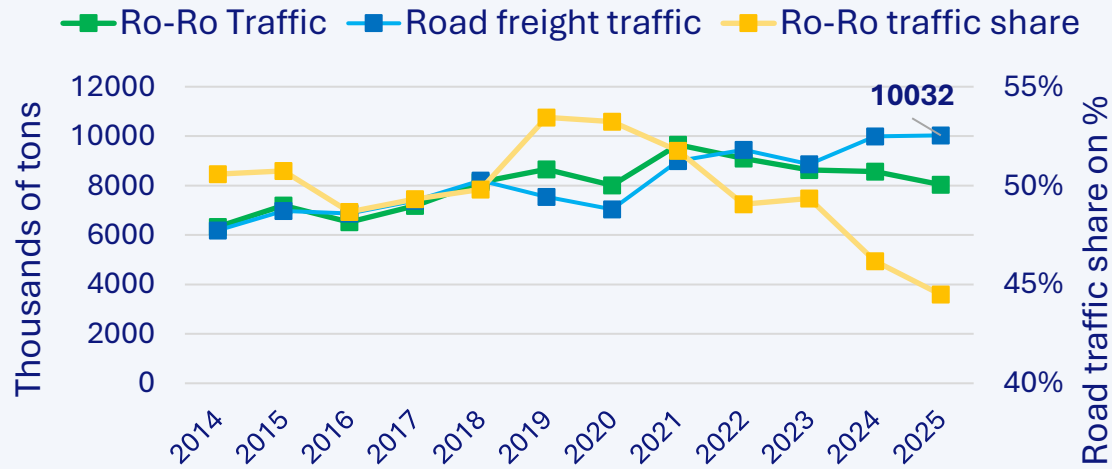


In 2025, Tangier Med took over the role previously performed by Algieras, leaving emission allowances worth €33 million outside the scope of the EU ETS.

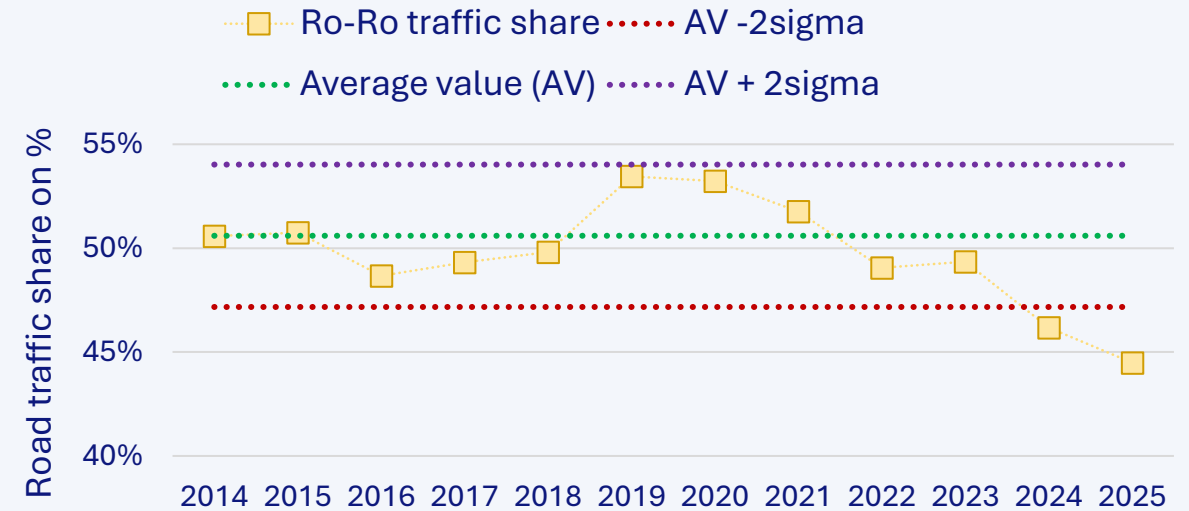
Risk of modal backshift from sea to road. Variation over time of Spain-Italy Ro-Ro traffic.

Truck movements between Italy and Spain using Ro-Ro services incur additional costs related to the EU ETS, while road-only transport is currently not subject to equivalent charges. **This regulatory asymmetry places Ro-Ro transport chains at a competitive disadvantage compared with all-road alternatives.**

Trends over time in Ro-Ro traffic, road freight traffic, and the Ro-Ro traffic share between Spain and Italy



Assessment of the change in the Ro-Ro traffic share.



The share of freight carried by ro-ro services relative to total road freight traffic between Spain and Italy fell from 49.4% in 2023 to 44.5% in 2025*. The analysis indicates that this decline cannot be explained by random fluctuations. *Both the scale of the reduction and the period over which it occurred suggest that the fall in the ro-ro share may be associated, at least partially, with the inclusion of maritime transport within the EU ETS.*

* Data provided by the Spanish Shortsea Promotion Center (SPC-Spain)

Investments in container terminals in ports of neighboring countries

Since 2021, significant investments have been made in ports of EU neighbouring countries

- **New ports:**

Morocco: Nador West Med and Dakhla Atlantique

- **New terminals:**

Egypt: Abu Qir, Damietta and Alexandria **Turkey:** Mersin **UK:** London Gateway

- **Improvement of existing facilities** (increase draught, expand berthing lines and storage surfaces, and install new handling equipment to handle ultra large container vessels)

Egypt: Port Said **Israel:** Ashdod and Haifa **Turkey:** Aliaga and Asyaport **UK:** Felixstowe and Southampton

Investments in maritime container terminals during the 2021–2029 period on EU and neighbouring countries.

	Investment (€Millions)		Throughput (Millions TEU per Year)	
	Non-EU	EU	Non-EU	EU
North Europe	1500	1924	2.8	6.3
East Med	5108	948	16.9	2.7
West Med	2796	2738	6.4	7.1
Total amount	9404	5610	26.1	16.1

The estimated combined operational capacity of EU of the ports listed above is expected to increase from 32.35 million TEU per year in 2024 to 54.5 million TEU per year in 2029, **representing a 68% increase in this period.**

Measures proposed by de Observatory: Measure 1 - Preventing route transformation

Extension of the criteria for the designation of “neighbouring container transshipment ports”.

This measure aims to prevent route transformation by broadening the criteria for designating “neighbouring container transshipment ports”.

The current definition, based on transshipment activity levels, is not fully effective, as some neighbouring ports can accommodate large container vessels despite having a low transshipment ratio.

Route transformation



Proposal: Classify as “neighboring container transshipment ports” those ports that meet the following two conditions:

- They have infrastructure and equipment **capable of handling vessels** with a capacity of more than **10,000 TEU**.
- The **Deep Sea Ratio** ($\sum kTM \text{ Deep-Sea-Containerships} / \sum kTM \text{ All-Containerships}$) is equal to, or exceeds, **60%** over the two-year review period.

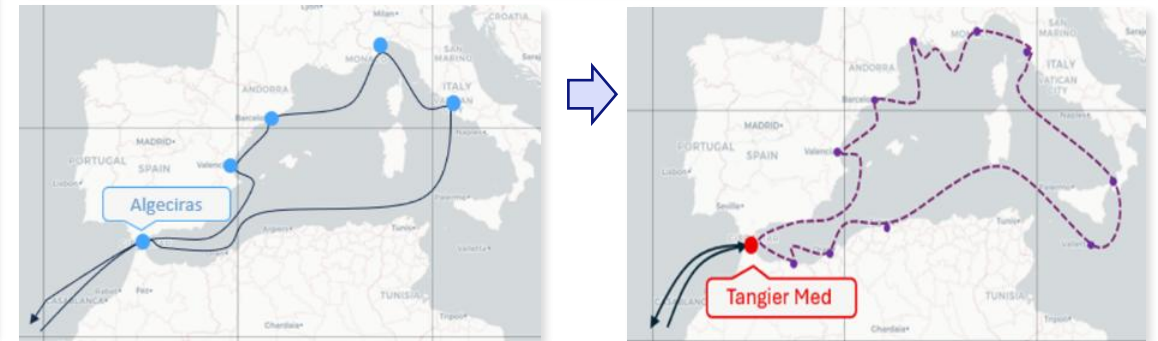
Currently, only Tanger Med and Port Said are classified as neighboring container transshipment ports. Under the proposed criterion, **Felixstowe, Southampton, London, Ashdod, Damietta, and Abu Qir would also be included.**

Measures proposed by the Observatory: Measure 2 - Preventing route transformation.

Carbon leakage factor for deep-sea routes at risk

This measure is intended to prevent the fragmentation of long-haul maritime routes calling at EU ports and their replacement by services structured around transshipment hubs located outside the Union. **Under such a model, deep-sea services would operate outside the scope of the EU framework** and would be complemented by feeder services connecting those hubs with EU ports.

Route splitting



The measure would consist of **applying a discount to the volume of emissions subject to the surrender of emission allowances for voyages exceeding 3,000 nautical miles** operated by container vessels with an origin or destination in the EU.

Distance travelled (nautical miles)	Carbon Leakage Factor (% of emissions for which allowances must be surrendered)
Less than 3000 nm	Emission allowances for 50%
Between 3000 and 5000 nm	Emission allowances for 40%
Between 5000 and 8000 nm	Emission allowances for 25%
Between 8000 and 13000 nm	Emission allowances for 20%
More than 13000 nm	Emission allowances for 15%

The discount would be implemented through **a reduction factor, referred to as the Carbon Leakage Factor**, which would determine the share of emissions from each voyage that is subject to the surrender of emission allowances.

The level of the discount would be proportionate to the potential savings resulting from route fragmentation

Measures - Conclusions

Measure 1: This measure would increase the amount of CO₂ and revenues under the EU-ETS scope as follows:

	Additional CO ₂ included in the EU-ETS (million tonnes)	Additional revenue (€ million)
Suez Canal closed	4,4	355
Suez Canal open	3,2	257

Measure 2: This measure would reduce the volume of CO₂ emissions reported under the system and would therefore result in a loss of revenue. Nevertheless, it would help prevent avoidance strategies that could substantially reduce both the CO₂ emissions reported under the EU ETS and the revenues generated by the system over the medium term.

	CO ₂ excluded from the EU-ETS (million tonnes)	Reduction in revenue (€ million)
Suez Canal closed	10,6	795
Suez Canal open	3,6	272

The cost of implementing Measure 2 under the Suez Canal open scenario would be very similar to the additional revenue generated by implementing Measure 1.

Complementarity: Measure 1 increases the overall emissions-related costs borne by shipping companies. **This increase in costs could strengthen the incentive to split direct deep-sea services. To mitigate this risk, Measure 1 should be implemented alongside Measure 2.**