

When the Pirate King Begins Decarbonizing

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The international shipping industry emits nearly 3% of global greenhouse gases each year, but over 90% of global trade relies on ships for transportation. In November 2022, the European Parliament, Council, and Commission reached an agreement to include ships over 5,000 tons docking at EU ports in the EU Emissions Trading System (EU ETS). For journeys departing from or returning to outside the EU, 50% of the emissions will be accounted for, and 100% for intra-EU journeys.

Shipping companies must act swiftly because within the next five to ten years, many customers will no longer accept carbon footprints of this magnitude in the global supply chain. As ships have a lifespan of 20 to 25 years, implementing comprehensive zero-emission plans within a decade requires deploying feasible technologies on a larger scale and at lower costs. Zero-emission fuels are significantly more expensive than conventional fuels, leading to a 40% to 60% increase in total ship ownership costs, depending on the shipping route.

According to the EU's 2020 Monitoring, Reporting, and Verification (MRV) report, the EU ETS will result in a €1.4 million increase in operational costs for each container ship by 2026. Bulk carriers will face a 15% increase in operational costs for intra-EU journeys and 85% for extra-EU journeys, amounting to €260,000 per ship. For tankers, the additional cost will be €1 million by 2026. The additional costs may be passed on between operators and lessees in long-term lease agreements, but small fleet operators may find it challenging to transfer the costs entirely and have to bear significant increases in operational expenses.

While the EU ETS is a well-intentioned market-based measure, if the system continues to maintain regional regulations, shipping companies may reconfigure routes and supply chain networks to avoid intra-EU voyages. As long as the EU carbon trading price remains above €25 per tonne, non-EU ports will become highly attractive, and shipping companies may relocate transshipment hubs to these ports. This could result in dividing container shipping routes between North African ports and European ports, increasing emissions by 0.5%-24% and 1%-5% respectively on the transatlantic and eastern routes.

To offset the pressure of fuel cost differences, green corridors and collaborative partnerships along the supply chain become crucial. Green corridors refer to specific trade routes between major port hubs that support zero-emission solutions. If all value chain participants, including fuel producers, shippers, and regulatory bodies, join the green corridors, clear regulations and safety standards will provide fuel producers with procurement certainty and send a strong signal to ship operators, shipyards, and engine manufacturers to increase investment in zero-emission shipping.

As the Pirate King begins decarbonizing, global shipping routes will reconfigure. Adherence to the regulations could increase shipping operational costs by 17% to 33% when entering and exiting the EU economic zone, leading to a synchronous increase in global prices. Taiwan's consumer prices would also rise by 0.02% in our rough estimate. Decarbonization efforts in the shipping industry cannot rely solely on the EU ETS regional regulations, but in combination with green corridors, there is a greater chance of achieving the 1.5°C warming limit target sooner.

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