

A Data-Driven Look at Emerging Patterns in Maritime Emissions

VesselBot's report analyzes 72,516 maritime voyages, revealing complex efficiency trends and vessel performance disparities driving industry transformation.

ATHENS, GREECE, July 31, 2025 /EINPresswire.com/ -- In its latest quarterly analysis titled "[Decoding Maritime Emissions, Q2 2025](#): A Data-Driven Look at Emerging Patterns," [VesselBot](#) delivers unprecedented granular analysis that examines the maritime industry through an entirely new lens. This comprehensive study analyzes maritime performance by vessel size, age, shipbuilding origin, and trade route, providing groundbreaking insights into fleet performance variations.

Using enriched primary data collected from 72,516 voyages completed by 4,865 different vessels, between April-June 2025, the report uncovers complex efficiency trends that define the current maritime landscape.

Key findings from VesselBot's vessel-level monitoring and analysis reveal:

- **Complex Efficiency Trends:** Total emissions dropped to 46.8 million tons, a 4.5% decrease from Q2 2024, while the fleet grew by 8%. Voyage counts declined slightly by 0.3%, and emissions intensity improved along with higher vessel utilization.



Decoding Maritime Emissions Report Q2 2025 by VesselBot



- **Vessel Size Performance Disparities:** Smaller vessels, like Feeder ships, have higher intensities (253.5 on average, 29% above the overall average intensity of all voyages). Conversely, larger vessels, such as VLCS, show lower intensities (60.4 on average, 69% less than the average intensity of all voyages).
- **Most Emissions-Intensive Voyages:** Analysis of 943 high-intensity voyages (800+ gCO₂e/TEU km) reveals that these trips are completed by smaller vessels that carry less cargo: on average, they carried only 407 TEU. In contrast, the average TEU carried for all 72,516 voyages in Q2 2025 was 2,660. There are also other important factors to consider, such as speed, utilization, and time spent in port.
- **Age-Related Efficiency Patterns:** Vessels over 20 years old exhibit the highest emissions intensity at 234.7 g CO₂e/TEU km, while the 51% fleet increase in the age group "Up to 5 years old" demonstrates rapid fleet modernization with improved environmental performance.
- **Shipbuilding Origin Impact:** With 53.3% of vessels up to 5 years old being Chinese-built versus 22.4% South Korean, the analysis reveals distinct performance characteristics, with South Korean-built vessels showing the lowest emissions intensity due to their larger capacity and longer-distance operations.
- **Route-Specific Carbon Hotspots:** Analysis of major fronthaul trades reveals significant differences in emissions intensity performance, with Asia-North Europe routes reaching the highest average emissions, 13,185 tons per voyage, while maintaining the lowest WTW intensity at 57.35 g CO₂e/TEU km.

Carrier and vessel performance can vary widely over time, influenced by a range of commercial factors and trade lane dynamics," emphasized VesselBot's CEO C. Komodromos. "Our in-depth analysis captures these shifts in real time, offering stakeholders a clearer, more accurate picture of overall market performance. Rather than depending on outdated historical data, VesselBot's near-real-time, vessel-level granular analysis uncovers the complex variables that genuinely affect environmental performance. This level of insight empowers stakeholders to make an important shift to pinpoint operational inefficiencies, factor sustainability as another KPI in their overall assessment along with reliability and freight cost, and make well-informed decisions to improve both logistics and sustainability outcomes."

The report provides a detailed analysis of voyage emissions patterns, fleet age distribution impact, shipbuilding country performance comparisons, and route-specific emissions intensity mapping, providing maritime stakeholders with the granular insights needed to navigate an increasingly complex operational environment.

The complete report [is available here](#).

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