Clarity to complexity

by Alexa Ivy

The global shipping industry stands at a pivotal point as it prepares for a fresh wave of environmental regulations. In October 2025, the International Maritime Organization (IMO) will probably ratify new greenhouse gas (GHG) reduction measures; meanwhile, the European Union's FuelEU Maritime Regulation will take effect in January. For shipowners and operators, these overlapping frameworks mark a decisive shift toward long-term emissions reduction and present a complex challenge in aligning commercial performance with regulatory compliance.

Unlike earlier regulatory models that set fixed technical or prescriptive standards in response to specific incidents, the upcoming rules are built around performance-based outcomes. FuelEU Maritime, for example, demands a gradual reduction in the GHG intensity of energy used by ships, but it does not prescribe how that should be achieved. Instead, shipping lines are expected to assess their own routes, vessel types, and operational decisions to reach increasingly ambitious targets – starting with a 2% reduction from 2025 and escalating to 80% by 2050. This flexibility introduces both opportunities and uncertainty. Companies must now evaluate a broader range of decisions, from fuel selection and engine technology to voyage routing and energy-saving investments, without a single, standardised blueprint for success.

In this shifting landscape, Baltic Exchange has developed a suite of tools designed to bring clarity to complexity. The Fuel Equivalence Converter and FuelEU Maritime Calculator offer shipowners, charterers, and operators a practical way to assess the impact of fuel choices and technology investments on both emissions and commercial outcomes. At the heart of these tools is the need to translate regulation into executable strategy – helping users test assumptions, project returns, and plan for long-term compliance.

The toolbox

The Fuel Equivalence Converter addresses a longstanding challenge in the industry: how to compare various fuels, such as gases with liquids, on a simple and consistent basis. With multiple alternative fuels now available (including LNG, methanol, ammonia, and biodiesel), each with varying energy contents, emissions profiles, and pricing structures, making accurate like-for-like comparisons has become increasingly difficult.

The tool standardises these variables, allowing users to assess different fuel types based on energy equivalence, carbon intensity, and onboard storage implications. This capability is essential under regulations like FuelEU Maritime, where compliance is judged on a fuel's GHG intensity per unit of energy rather than by simple fuel categorisation. The FuelEU calculation tool also factors in real-world variables, such as engine type and voyage profile, enabling more accurate assessments of performance. This means shipowners can better understand not only how a fuel performs environmentally, but what it means for operational cost and return on investment.

This becomes especially useful with transitional fuels like dual-fuel LNG. While it is often seen as a stepping stone toward decarbonisation, its actual emissions performance varies significantly depending on the engine used and operational parameters. The FuelEU Maritime Calculator allows users to account for these nuances, helping them evaluate whether LNG – or any other fuel – makes commercial and environmental sense for their specific context.

In addition, the Calculator helps shipping companies determine how close they

Photos: Baltic Exchange

are to regulatory compliance, and what the cost of non-compliance might be. It allows users to input their vessel specifications, fuel consumption, voyage details, and operational behaviour to estimate a vessel's GHG intensity score and measure it against FuelEU Maritime targets. The tool simulates different scenarios to determine potential penalties or credit requirements and offers insights into how changes in fuel type, speed, or technology adoption might influence outcomes. This functionality is particularly valuable given the introduction of the FuelEU Maritime credit trading system, where over-performing vessels can generate compliance credits that others may purchase to meet requirements. The Calculator supports financial planning by estimating how much these credits may be worth or cost, helping companies budget for potential exposure in this evolving market.

Green sprouts green

One of the strongest findings emerging from the use of these tools is that environmental performance and commercial efficiency are not mutually exclusive. Many times, emissions reductions can deliver real economic returns. Some energy-saving technologies, for instance, are already achieving payback in under two years, particularly when combined with incentives or avoided penalties. By modelling different investment options, users can identify which technologies or operational changes offer the best value for their fleet.

Operational efficiency is a critical part of the decarbonisation equation. Decisions such as optimising vessel speed, refining port call scheduling, and improving route planning can lead to significant emissions reductions without major capital expenditure. The Baltic Exchange tools encourage users to explore these areas by linking emissions performance with real-world operational data. This provides a holistic view of how different strategies, both aboard and onshore, can contribute to regulatory compliance while maintaining or improving commercial outcomes.

At the same time, the industry is seeing growing interest in market-based mechanisms that help bridge the gap between regulation and commercial decision-making. Baltic Exchange's indices and pricing tools are already playing a vital role in this area. During recent events such as the Red Sea crisis, the TC20 index responded immediately to route shifts via the Cape of Good Hope, offering transparent, real-time insights into changing cost structures and voyage durations. These signals are now proving essential as operators face new emissions-related costs, such as FuelEU Maritime penalties, biofuel premiums, and carbon pricing.

Empowered

The need for trusted, timely, and transparent data will only grow. Baltic Exchange continues to expand its support for members with updated tools, tailored insights, and new capabilities aligned with emerging regulations. The goal is not to dictate what companies should do but to empower them with the information they need to make the right choices for their operations, their bottom lines, and the environment.

As October's IMO ratification approaches and FuelEU Maritime's first compliance year draws nearer, the Baltic Exchange's tools are set to play an increasingly central role in helping the maritime sector meet its decarbonisation goals. In a world where regulatory clarity is often elusive, these practical solutions are providing the confidence, comparability, and strategic foresight the industry needs to chart a sustainable path forward. ■