Sailing blind?

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FuelEU Maritime might be the new kid on the block, but it has teeth and will bite. Coming into effect at the start of 2025, the Regulation is part of the EU's Fit for 55 toolkit to help the block achieve climate neutrality by mid-century. Representing a new age of legislation, FuelEU Maritime provides clear incentives for change, not only through high financial penalties for non-compliance but also by shifting calculations on asset value. If the industry needed any more reason to transition to alternative fuels, look no further.

FuelEU Maritime is poised to succeed where the International Maritime Organization's (IMO) Carbon Intensity Indicator (CII) has failed. The former stands apart from the latter with more stringent and enforced penalties, unlike CII, which relies on market acceptance. In other words, FuelEU Maritime wields a stick – but it also offers a carrot.

Penalties for non-compliance are robustly enforced and, at €2,400 per tonne of very-low sulphur fuel oil (VLSFO)-energy equivalent, they are high enough to encourage investment in low-carbon bunkers and alternative-fuel 'ready' vessels. A recent analysis by OceanScore also affirms that penalties could reach an average of €520,000 per vessel annually for passenger ships and €214,000 for container carriers. The stakes are high whether the market likes it or not.

The benefits of compliance are tangible. **According to an 'explainer' by the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping (MMMCZCS)**, in 2025 itself, paying the premium for blending biodiesel will generally be cheaper than paying the penalty on a per tonne of abatement basis. Further, vessels that are compliant or in excess will open the door to new business opportunities for their owners through pooling. Ultimately, this could increase asset value and provide access to easier financing.

With the business case for taking FuelEU Maritime seriously now clear, how prepared is the industry? According to DNV, there could be up to seven times more deficit than surplus of compliance units across the industry when the data for 2025 is finalised. This shows that from year one, the majority of shipowners will have to take some form of action, be it pooling, borrowing, or paying a penalty. The urgency is, therefore, clear: shipping must take immediate action to avoid penalties and seize emerging opportunities.

Shipyard order books show the tides are turning. **The latest data from Clarksons Research** shows that around a third of all newbuild orders in the first half of 2024 were for vessels capable of using alternative fuels, including liquefied natural gas (LNG), methanol, ammonia, liquefied petroleum gas, and hydrogen.

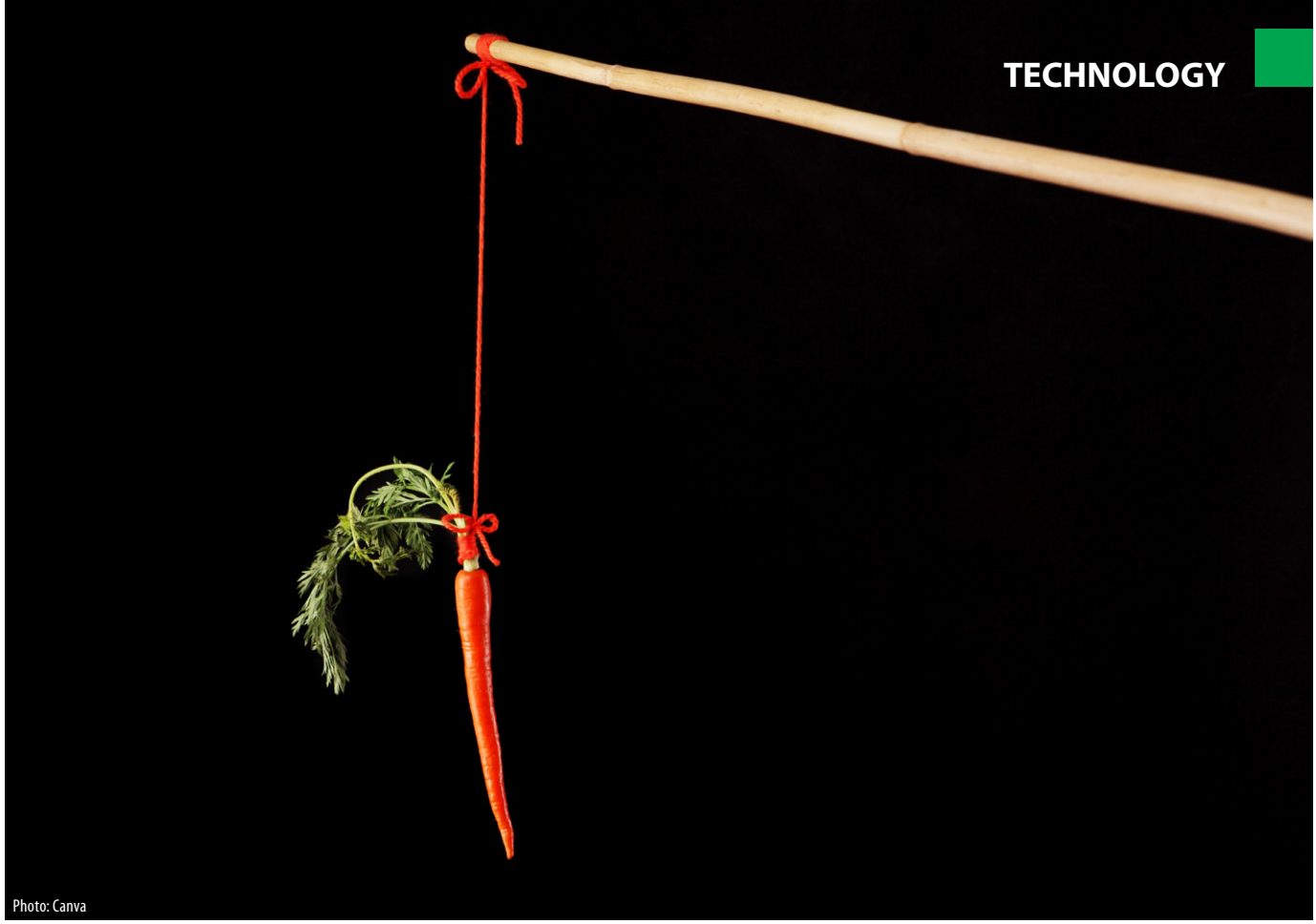
The importance of preparation

FuelEU Maritime will not exist in a vacuum. When looked at holistically, this Regulation will build on the foundations of the EU Emissions Trading System (EU ETS) to accelerate shipping's decarbonisation and will help the industry take the leap towards new fuels as it targets fuel greenhouse gas (GHG) intensity. It also comes at a time when the industry has already been exposed to the impacts of the IMO's CII and the EU ETS. One of the key differentiators of FuelEU Maritime is, therefore, that shipowners and charterers are learning the importance of preparation and the underpinning role of data in informing compliance strategies.

Larger companies, naturally, have an advantage in being able to plan ahead, while smaller operators may struggle to get on the front foot. Faced with resource constraints and knowledge gaps, many lack the bandwidth to take a proactive approach to FuelEU Maritime and, by this time next year, will end up 'playing firefighter,' scrambling to find drop-in fuels or pooling solutions to avoid paying hefty fines. Fleet data is, therefore, a critical asset for making informed decisions. As well as monitoring compliance deficits and surpluses, it also allows owners to weigh the cost-benefit analysis of different compliance strategies.

Simulations based on NAPA's performance models and pooling cost estimates released by the MMMCZCS already reveal a snapshot of the scale of the potential costs involved – although exact prices will be set by the market. Consider a typical Capesize bulk carrier operating between Brazil and Rotterdam that consumes approximately 16,700 tonnes of fuel annually (both VLSFO 380 CST and low-sulphur marine gas oil). With a GHG intensity of 91.4 grams of CO_2/megajoule, the vessel would face a compliance deficit of 703.70t CO_2. This represents nearly €450,750 in penalties for 2025, adding 5.1% to bunkering costs. Alternatively, based on MMMCZCS' estimates that external pooling will come at the price of around €420/t, the cost increase would instead be 0.9%.

By contrast, a ro-ro vessel equipped with rotor sails and operated between EU ports in the Northern Atlantic can generate a compliance surplus of 1,750/t/year. One such vessel can, therefore, offer significant 'excess' through pooling and offset the emissions of nearly 2.5 bulkers from the first example. Considering the €420/t estimate for the



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price of pooling, the surplus could generate just under €207,000 in additional revenue through pooling, which represents a reduction of nearly 3% in bunkering costs.

The missing piece of the puzzle

Going above and beyond compliance with regulations has its rewards. Surplus compliance has value and can create an additional source of revenue for shipowners through pooling.

Early movers who invested in LNG or low-carbon-fuelled vessels or wind-assisted propulsion will benefit from 'excess' compliance – while the emission reductions mandated by FuelEU Maritime stand at 2%. This gives these owners a strategic advantage and opportunity to 'pool' such vessels with others in fleets that fall short on compliance – or look at opportunities to pool their ships with other companies for a defined period.

As new opportunities arise, markets for surplus exchange are expected to follow. Several new companies have already cropped up to facilitate the pooling option across companies. Tapping into this opportunity depends on being able to quantify the extent of a fleet's current and future compliance (or non-compliance). The missing piece of the puzzle is data.

While there's still no definitive test for how prepared the industry is for FuelEU Maritime, we can see that scale, alternative fuel pricing, and bunker availability all continue to pose challenges to compliance. In this climate, short-to-mid-term strategies to prepare for the Regulation for most owners are likely to be based on either adopting drop-in biofuel and/or wind-assisted propulsion, as well as pooling, borrowing, or simply paying penalties for others. In practice, there are several more variables at play. From vying for and securing the availability of alternative fuels at ports to navigating the cost of pooling, there are many considerations for companies looking to assess those options against the cost of paying penalties.

Digital platforms, like NAPA's FuelEU Maritime module (part of NAPA Fleet Intelligence), help streamline this wealth of information to give shipowners and charterers all the facts to make decisions based on data and evidence. Using data from noon reports on the quantity and type of fuel consumed on board, the module enables owners to visualise compliance shortfalls or surpluses for every ship – even on a voyage-per-voyage basis. Critically, it allows shipping companies to test different compliance strategies, including pooling, banking or borrowing, and see how each option would move the dial on their fleet's compliance status. They can compare these approaches with the cost of potential penalties, as well as gain an accurate estimate of how much surplus they will be able to offer through pooling, be it with other vessels in the fleet or with other owners. **The module's initial roll-out across 1,500 vessels through ClassNK's ZETA platform** demonstrates its potential to help owners-operators understand the carbon and bottom-line impact of the new Regulation on their operations.

The role of digital technologies in shipping's green transition is to ensure that companies have a robust understanding of their operations and compliance options to avoid sailing blind. As such, digital technologies can ensure compliance, profitability, and strategic advantage during the industry's energy transition. ■