

Cure worse than illness?

by Rob Mortimer, CEO, Fuelre4m

The global conversation around decarbonisation has reached a fever pitch, with the International Maritime Organization (IMO) even failing to reach a decision on the Net-zero Framework during the autumn meeting of the Marine Environment Protection Committee – the vote delaying the decision for a year. Policymakers, NGOs, and industry leaders line up to hail new technologies as the silver bullet that will deliver a clean future. Hydrogen, ammonia, synthetic fuels, electrification, you-name-it – the list is long and growing. Projections estimate that 2050 Baltic international shipping CO₂ emissions (for IMO-registered ships) will be ~48% lower than 2008 levels. Each new announcement is made with a sense of inevitability, as if the mere fact that an alternative exists means fossil fuels should be discarded immediately. But the uncomfortable truth is this: we cannot yet answer the most important question. Better than what?

Until that question is answered with evidence, data, and accountability, there is a real risk that in rushing to embrace the new, we may create something worse than the old. If the cure proves more damaging than the illness, nothing has been achieved. The world deserves honesty – not slogans – and this is where the maritime sector must take a firmer, more disciplined stance.

The mirage

In every cycle of innovation, there is a temptation to believe in miracles; in the Next Big Thing that will send the competition to the ash heap of history. The shipping industry has seen this before with liquefied natural gas (LNG). Heralded as the clean (transition) fuel of its era, it was rolled out at speed across fleets without a full grasp of the life-cycle of

methane slip that undermines much of its environmental benefit.

The lesson is painful but vital. Simply switching fuels or technologies without holistic measurement can replace one set of problems with another. Today, hydrogen, ammonia, and synthetic fuels are being elevated in the same way... and before we fully understand the safety implications, the production emissions, and the infrastructure realities.

The maritime sector cannot afford to repeat the LNG experience. We need innovation, sure enough, but we need it grounded in rigorous measurement, not marketing.

The unfashionable but unavoidable reality

It has become politically incorrect to say this, but fossil fuels remain the backbone of global transport. More than 90%

of world trade moves by sea, and almost all of it depends on oil-based fuels. No amount of ambition alters the scale of that reality.

This is not a defence of the status quo. Fossil fuels will – must – decline. But in the interim, until viable large-scale alternatives are ready, the world will continue to consume more barrels a day. Millions more. The question is whether those barrels are burned wastefully or optimised to deliver every possible unit of efficiency.

That is the space where companies like Fuelre4m are working: not to defend fossil fuels indefinitely but to ensure that each drop is used with maximum efficiency, minimum waste, and a measurable reduction in emissions. Optimisation is not glamorous, but it is measurable, immediate, and available today.

Optimising existing fuels is not an excuse for delay. It is the pragmatic bridge



Photo: Fuelre4m

between aspiration and reality. Every percentage point of efficiency gained in existing operations reduces emissions right now, without waiting for infrastructure, regulation, or technology to catch up. In practical terms, that means extending the useful life of existing assets while making them cleaner. Zero retrofit – or limited technology addition. Reducing waste and inefficiency that needlessly add to emissions. Delivering verifiable data that can be audited – not simply promised.

Our company's work in maritime is built on this philosophy. By focusing on real-world optimisation of fossil fuels in use today, the industry can buy the time and space to develop tomorrow's fuels properly – without forcing immature solutions into the market.

Accountability for all

If fossil fuels are to be scrutinised and regulated to the last decimal point of emissions, then new fuels must be subject to the same discipline. Yet too often, new solutions are exempt from critical questioning simply because they are new.

The message must be consistent: any fuel or technology must prove that it is better – both demonstrably and measurably better, across its whole life cycle. That includes: production emissions and energy intensity; supply chain safety and pollutant profile; and real-world performance in maritime conditions.

Without such accountability, we risk sleepwalking into new dependencies that are no more sustainable than the ones we are leaving behind. A fuel that

looks 'green' in theory but creates larger upstream emissions in practice does not solve the problem.

Progress through discipline

The scale of maritime decarbonisation is almost unimaginable. To replace oil-based fuels at scale would require trillions in investment, new global infrastructure, and radical redesigns of ship technologies. It will happen over decades, not years.

That long horizon creates risk. If industry abandons fossil fuels prematurely, without fully functional alternatives, the result will be disruption to trade, higher costs, and potentially higher emissions elsewhere in the value chain. If industry clings to fossil fuels indefinitely, we lock in unacceptable levels of warming.

The only rational path is a dual approach: squeeze every possible drop of efficiency from current fuels while developing and testing new alternatives under the most rigorous conditions. This is not caution. It is discipline. It is what genuine progress looks like.

As such, "better than what?" should be the first question-test applied to any decarbonisation pathway. It should be asked relentlessly of every new technology and each optimisation claim. Without that benchmark, the conversation is

reduced to aspiration and marketing spin. Take hydrogen. Is it better than fossil fuels produced under optimised, measured conditions? Only if its production is decarbonised, its distribution made safe, and its life-cycle emissions proven lower in practice. Ammonia, methanol, biofuels, and electrification must pass the same test.

The industry must demand hard evidence, not theoretical models. And until that evidence is robust, fossil fuels optimised to their maximum potential remain not just necessary but responsible.

Fuelre4m has been working with partners across the industry to apply this thinking in practice. Optimisation technologies, when deployed across fleets, demonstrate that immediate emission reductions are achievable without waiting for new fuels to mature. This is not an abstract argument. It is measurable, verifiable, and already delivering results. Partnerships are essential because no single company or solution will solve the decarbonisation challenge alone. By working across the supply chain, ship-owners, fuel suppliers, technology providers, regulators – the industry at large – can ensure that progress is made on multiple fronts, with accountability embedded at every stage.

Realism without defeatism

The shipping industry is at a crossroads, with the debate polarised between climate urgency and industrial reality. Either we must decarbonise overnight, or we are accused of dragging our feet. The truth lies in the middle. Urgency without realism leads to failure. Realism without urgency leads to complacency. The maritime industry cannot afford either.

Decarbonisation is not a beauty contest of new ideas. It is a battlefield where reason can sharpen itself to the benefit of transport & logistics and all those who rely on it (you and me and pretty much everybody else on the third rock from the Sun). It should ask 'why?' instead of wowing the high shine of the polished surface.

If we hold ourselves accountable at every step, the shipping industry can transition with integrity – and ensure that the next era of fuels is truly worthy of replacing the last. ■



Fuelre4m empowers businesses to operate more sustainably by revolutionising the use of fossil fuels. The company's product range, Re4mx, is a powerful, completely organic, fossil fuel reforming nanobiotechnology that enhances the combustion process in engines.

By breaking down impurities and complex hydrocarbons in liquid fossil fuels, the tech ensures a more efficient and cleaner burn, resulting in increased power output, lower fuel consumption, and a significant reduction in harmful emissions. Visit fuelre4m.com to learn more.