The third pillar: a contractual architecture for maritime decarbonisation

In the run up to the UN climate conference – "COP26" in Glasgow, we are pleased to share guest author - Haris Zografakis' thoughts on the need for a new contractual structure in shipping to immediately reduce GHG emissions rather than simply waiting for regulation. Our guest author explains why climate activist Greta Thunberg would hate demurrage and would not be too keen on privity of contract either when the climate crisis is here, and solutions are needed now.

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Written by Haris Zografakis, Stephenson Harwood LLP

It is short-sighted to approach maritime decarbonisation as a mere regulatory compliance exercise. It is a revolution that will herald a new era. The real challenge is not only technological. We need to rethink the contractual architecture of the entire edifice of international maritime trade. Here's why we need a change and how to do it.

The environmental paradox

Sea transport is the most environmentally friendly way of carrying goods; and yet, cargo ship operations are often grossly inefficient, for example the practice of "Steam Fast, Then Wait" (SFTW): ships sail to their port of destination at their service speed, without regard for the conditions at that port. Largely as a result of this, dry bulk carriers and tankers spend about 8-10% of their entire life at anchorage.

Academic research suggests that eradicating SFTW and introducing Just-in-Time (JiT) practices, which are widely adopted in supply chains, would result in emissions' savings in the order of 20-25%.

This is equivalent to about 200 million tons of CO2 per year. Of course, it is simplistic to treat all ships in the same way. If we only take bulkers and tankers, the figure is roughly halved to 100 million. Or if we only take containerships, we come to savings of about 80 million tons of CO2 per year. To put this in context, the annual CO2 emissions of Norway in 2019 were about 45 million tons.

The contractual foundations of the environmental paradox

Maritime contracts have developed sophisticated (the uninitiated would say arcane) mechanisms for allocating the financial cost of operational inefficiencies to shipowners or charterers (or buyers or sellers of cargo): demurrage, laycan, "utmost dispatch", speed warranties, ballast voyages, off-hire. A cost for one party – a profit opportunity for the other. The entire edifice of international maritime trade (including the sale contract and the letter of credit) is made up of building blocks that allocate the financial cost of inefficiencies.

Demurrage as part of the environmental paradox

Laytime & Demurrage are words that only shipping people understand. An elegant construct, according to shipping lawyers. 150 years of jurisprudence, hundreds of court judgments and arbitration awards, thousands of pages of commentary and jurisprudence.

Demurrage is all about compensating the shipowner for the consequences of delay. "Liquidated damages for the vessel's detention beyond the laytime" is the legal definition. Some of this delay is at port, the result of delays in the cargo operations, but most of it is at the anchorage, caused by the inefficiency of SFTW.

Quite simply, voyage charters incentivise vessels to steam fast, tender NOR as soon as possible, and then wait, earning demurrage.

As a consequence, the environmental cost of demurrage across the shipping industry is comparable to the annual emissions of an entire country. Put differently, at the level of the fleet owned by one single large shipowning group, or chartered by one single large trader, the savings of eradicating SFTW would be comparable to the savings of 3.5 million tons estimated for the entire Tesla fleet of cars worldwide.

The Era of Sail, the Era of Steam, the Era of Oil, the Era of Decarbonisation

Turn the clock back one hundred years. The Era of Sail was drawing to a close.

"*Gard's core business – the sailing ship fleet – had collapsed more rapidly than anyone had expected by 1919 … The result was that Gard's fleet was severely reduced … Gard's managing director Gjerulf Fløystad … had taken a decision in 1915 that was to have far-reaching consequences: amending the statutes so that Gard could also accept owners and managers of steamships. With the sailing fleet continuing to shrink, the issue was one of life or death for Gard.*"

At the same time, as the market was evolving in response to the transition from sail to steam, so did the contractual framework of shipping: charterparties. As stated by a pre-eminent treatise on laytime and demurrage *"The development of the law of laytime and demurrage has been closely allied to the historical and social changes that took place as sail gave way to steam"*.

Are SFTW and demurrage, products of the transition from the Era of Sail to the Era of Steam, compatible with the Era of Decarbonisation?

It has been estimated that investment of USD 3 trillion is required for the shipping industry to decarbonise. Will all those innovative new ships burning super-expensive fuels (and subject to carbon taxes) sail fast, then wait, spending 8% of their life waiting at anchorage?

"If something cannot go on forever, it will stop", to quote the Stein law from economics. The only questions are when and how.

"Right here, right now" or *"Da mihi castitatem et continentam, sed noli modo"*

To address "when and how", choose your preferred perspective: market or environment.

Shipping is a pragmatic, traditional, down-to-earth industry. Let's start with the market. In August 2021, the Baltic Exchange started publishing EEOI metrics alongside freight rates for main cargo routes: *"this benchmark will provide the shipping industry with a valuable point of reference as the market seeks to factor in carbon emissions alongside charter rates"*.

Reality check: the venerable Baltic Exchange uses carbon emissions in the same sentence as charter rates. Today, in 2021. Not in 2050.

The introduction of Carbon Intensity Indicators from 2023 will make efficiency savings an imperative for every ship. Lloyds Register estimate that the majority of the world's dry bulker and tanker fleet will not comply. All Classification societies offer tools for measurement and improvement of vessels' carbon efficiency. Several companies have developed ways to measure and predict any vessel's future CII rating and others compare the carbon efficiency of different ships to inform chartering decisions.

The existing fleet will either adapt in the 2020s, or will become a graveyard of stranded assets, as ships that score low in CII become less attractive to their charterers and to their financiers. The Sea Cargo Charter and the Poseidon Principles are the first stepping stones along that path.

This is not speculation about the uncertain details of the implementation of the EU ETS, or about the level and structure of fuel taxes or carbon pricing, or other developments that are still in gestation. Those are all hard-nosed, market considerations borne out of the existing regulatory framework. To paraphrase activist Greta Thunberg – the climate crisis is right here, and changes need to be made right now.

If we change perspective and look at the science around emissions, a ton of CO2 saved today achieves greater environmental benefit than a ton saved in 2030 or in 2040. GHG emissions accumulate and impact upon our available carbon budget. Scientific research on "committed

emissions" is clear: the rate of renewal of the world's fleet is slow, and millions of tons of CO2 are already "committed" by the ships that exist today and those that will be built in coming years that will be powered by fossil fuels. Put simply, the less the shipping industry does to optimise the existing fleet during this decade, the deeper and more painful the actions will need to be in the 2030s and 2040s.

The science is clear; the economics are clear; the market signals are clear: inefficiencies in maritime operations – and, above all, SFTW – will be eradicated. Not in 2050, but during this decade. If this is a temporal contest between Saint Augustine and Greta Thunberg, Greta wins: "Right here, right now", is not merely a slogan. It is a factual description of the present maritime decarbonisation framework.

The regulation paradox

Martin Stopford explains that the shipping industry *"… operates within a strict economic regime, which would be immediately recognizable by 19th century classical economists. It is, more or less, the "perfect" market place at work, an economic Jurassic Park where the dinosaurs or classical economics roam free …".*

Faced with the decarbonisation challenge, this liberal, lightly regulated, free market, suddenly assumes an almost Soviet posture: regulation is the word on everyone's lips. IMO should do this. The EU should do that. Or not, depending on which side of the argument you may be on.

It is a paradox that history's most successful free market laments the absence of regulation. Will centuries of freedom be replaced by a perfect regulatory environment? Will international maritime trade become as tightly regulated as passenger air transport?

The decarbonisation future is not yet known, but let's regulate it: is regulation a panacea or a chimaera?

Freedom of contract: a necessary but not sufficient condition

As the foundations of SFTW and the other operational inefficiencies are contractual, then we can look to contract for a cure. Freedom of contract under English law makes this perfectly possible.

Regulations identify the problem and provide a framework, but the solutions are contractual. The environmental paradox can be addressed through a new contractual architecture, without falling victim to the regulation paradox.

But here's the rub: contracts under English law are bilateral and cannot be enforced against third parties. The industry is fragmented. The environmental paradox is systemic; resolving it requires industry-wide co-ordination at scale, not bilateral action. The virtual arrival solution failed to eradicate SFTW in the 2010s because it was hopelessly bilateral. Freedom of contract will not resolve the problem by itself; it is a necessary, but not a sufficient, condition.

Privity of contract: sacrosanct or an obstacle to decarbonisation?

International maritime trade is a web of contracts, a web of bilateral agreements. The reflection of fragmentation on the legal plane is the English law principle of privity of contract, which has served maritime trade well for 200 years. It's the closest to a shared deity we have in shipping – let's call him God Chitty, just for the amusement of lawyers.

Sadly, if decarbonisation requires collaboration, then privity of contract is an obstacle. It encourages individualism and discourages multi-party solutions.

In a contest between the environmental imperative and privity of contract – in a battle between Chitty and Greta, will Greta lose?

An International Convention on Maritime Decarbonisation?

If fragmentation and the bilateral structure of maritime trade are impediments to decarbonisation, and if regulation is an improbable or too partial solution, how do we create a new multilateral legal architecture, that can truly support collaborative solutions?

Do we need an International Convention on Maritime Decarbonisation? How about the Hague-Visby Rules for the Era of Decarbonisation?

An international convention is the perfect multilateral instrument. Indeed, when incorporated into contracts, the best of both worlds is possible: The Clause Paramount surely counts as one of the most effective tools in any area of law.

A convention requires a decade to draft and a decade, or longer, to be ratified and come into force. Some never are: the Hamburg Rules, or the International Convention on the Sale of Goods or the Rotterdam Rules have yet to be ratified by a sufficient number of states to come into force.

Is there hope for a Decarbonisation Convention at a time when the traditional international institutions are currently under fire? Political scientists call that *"institutional erosion"*. For the latest example, see the UK government's announcement of its support for a net zero target for shipping by 2050, in direct contravention to IMO's 50% target.

An International Convention is perfectly possible, but unachievable within the available time-scale, especially in view of institutional erosion. The solutions must be found elsewhere.

As Bill Gates commented - "It's a mistake to think of innovation only in the strict, technological sense. Innovation is not just a matter of inventing a new machine or a new process; it's also coming up with new approaches to business models, supply chains, markets and policies… Innovation is both new devices and new ways of doing things".

Shipping can save emissions equivalent to those of an entire country, with the existing ships, the existing fuels, in the present critical decade, without regulatory intervention. It is achievable through a *"new way of doing things"*: we need a new contractual architecture.

The Third Pillar

Let's draw the threads together.

The contractual architecture of international maritime trade encourages inefficiencies, such as SFTW, which have a huge carbon footprint. The existing regulatory framework highlights the problem. Market pressure will become unbearable. Technology will not in itself provide solutions, and the investment required to decarbonise will simply accentuate the need for operational efficiency. A different type of innovation is indispensable, a new way of doing things. A new contractual architecture is perfectly possible without any regulatory or statutory intervention. However, the fragmented nature of the industry and the bilateral nature of contractual relations is an obstacle to collaboration. Multilateral solutions could be found through a Decarbonisation Convention, but the process would be slow and the outcome uncertain, especially at the present time of institutional erosion. Meanwhile, the GHG emissions from inefficiencies such as SFTW accumulate by amounts as great as the emissions of an entire country.

Maritime decarbonisation requires what I call the Third Pillar in the architecture of contracts. International maritime trade currently rests on two contractual pillars: safety and commercial orders. Decarbonisation is the Third Pillar, i.e. a contractual framework for decarbonisation actions and measures that will trump commercial orders, but will yield to safety.

The Third Pillar will require two elements:

Firstly, provisions that can be enforced bilaterally and will discourage operational inefficiencies, while promoting decarbonisation at every stage: optimized voyages, wind propulsion, electricity supplies at port, freight rates dependent on CO2 efficiency, sharing of carbon credits, insets or offsets, emission warranties that will replace speed and consumption warranties.

Secondly, structures to support those solutions that require multilateral collaboration, ranging from new fuels to voluntary carbon markets and multilateral voyage optimization. None of these can effectively be pursued bilaterally but – equally – cannot wait for the years or decades required for regulation or international conventions. These multilateral structures will be incorporated in, and enforced through, contracts. The maritime industry has a history of collaboration in the face of common risks or to achieve collective benefits: the Inter-Club Agreement for sharing liabilities for cargo claims, or the pooling of P&I risks through the International Group or, indeed, the very concept of General Average.

We are seeing several collaborative initiatives focused on the adoption of new fuels and new technologies. But collaborative initiatives in relation to the contractual architecture have attracted less attention, perhaps because of a mistaken expectation that regulation will solve everything. As a result, there is less discussion around innovation through a "new way of doing things". I am aware of only one such initiative, in which I'm involved, the BV Solution. A project that seeks to eradicate SFTW through multilateral voyage optimization within a new contractual framework. According to optimization specialists Napa, the BV Solution achieves GHG reductions comparable to those of Just-in-Time, but without the drawbacks.

Maritime decarbonisation will prompt a large number of innovations across many areas, both technological and in "new ways of doing things". We can – and should – be agnostic about the ultimate mix of solutions, but we need to recognise that we need a new contractual architecture to make them happen. Our present contractual structures are simply unfit for the new Era. Greta hates demurrage, and she is not that keen on privity of contract either.

Haris Zografakis is a partner at the London office of Stephenson Harwood LLP. He served on the drafting committee of the Sea Cargo Charter and is now its legal advisor. Haris comments around a new contractual architecture can be followed on LinkedIn.