Bucket of green steam?

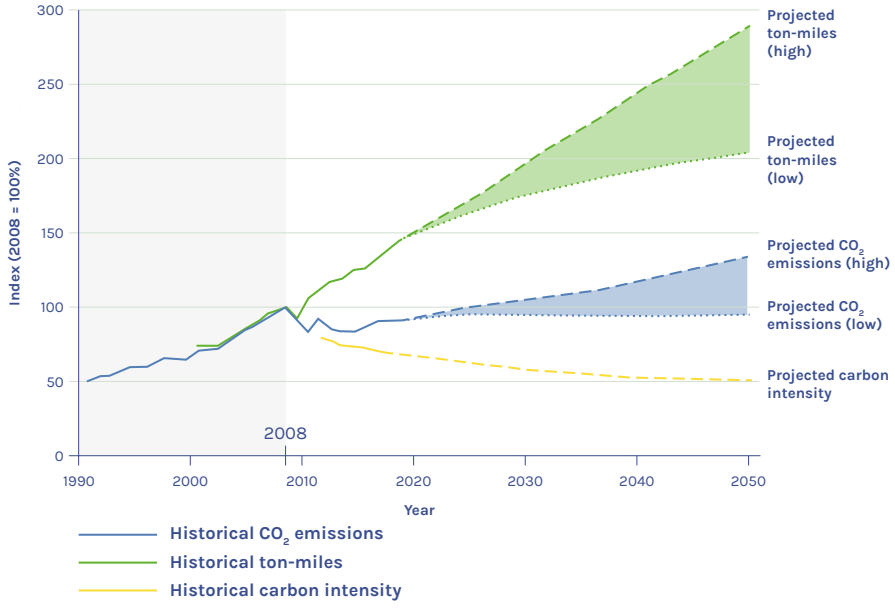
by Przemysław Myszka

"Shipping is an essential global industry which is currently on an emissions trajectory that is dramatically out of line with the Paris Agreement temperature goal," reads *Closing the Gap. An Overview of the Policy Options to Close the Competitiveness Gap and Enable an Equitable Zero-Emission Fuel Transition in Shipping*, a report prepared by UMAS on behalf of the Getting to Zero Coalition. If the transport community, both off- and ashore, truly cares about the environment and wants to participate in keeping the global temperature rise below one and a half centigrade, then there is no other option for it than to become zero-emission – and do so relatively fast. Fortunately, UMAS marks, several measures can get the sector to the Promised Land by mid-century. Implementing some of them will be essential, which isn't to say others cannot put a match to setting the green revolution alight. The authors also note that decarbonising shipping is something more than what next-gen marine fuel goes into the tank – in that the transition should be fair, reducing inequality instead of hammering the fractures between the well-off and the underprivileged.

In 2018, the entire shipping industry released an estimated 1,076mt of greenhouse gas emissions (GHG-E), which translates to the widely publicised figure of 2.9%, the sector's share in total anthropogenic carbon footprint. Should the industry do nothing, its emissions will rise by 90-130% by 2050 (counting from a 2008 baseline) following an increase in traffic powered by fossil fuels.

In spring 2018, the International Maritime Organization (IMO) signed off on its Initial GHG Strategy: halving international shipping's absolute annual GHG-E by 2050 (again, versus the 2008 starting point), plus reducing the sector's carbon intensity by at least 40% till this decade's end. All of this is to align international shipping with the 1.5°C-Paris Agreement target. UMAS adds that domestic shipping, which falls under national jurisdiction, should join the effort as quickly as possible since it accounts for 30% of the industry's total GHG-E.

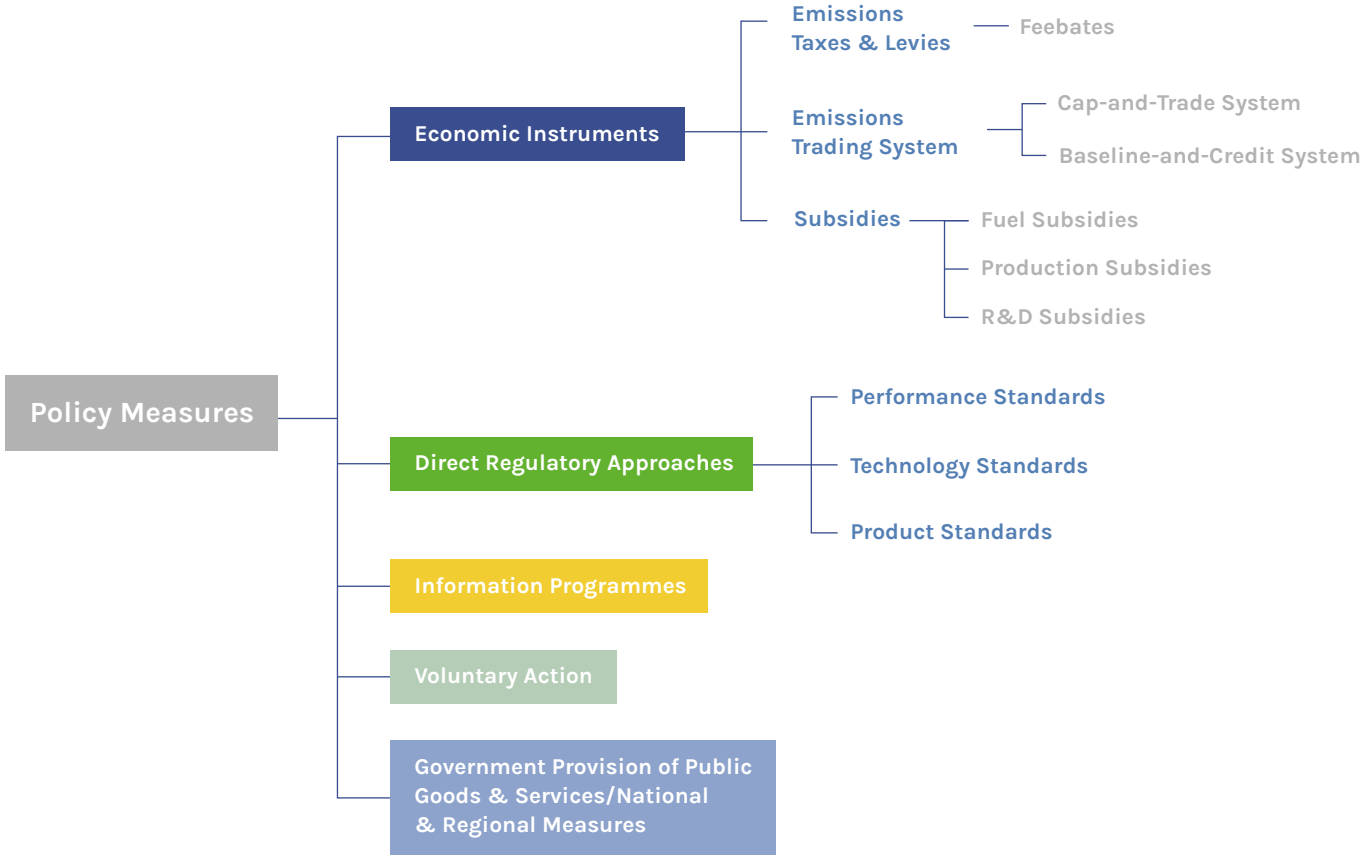
Fig. 1. Historical and projected international shipping emissions and trade metrics, indexed in 2008, for 1990-2050



Source for all figs. and Tab. 1: UMAS' Closing the Gap. An Overview of the Policy Options to Close the Competitiveness Gap and Enable an Equitable Zero-Emission Fuel Transition in Shipping

In essence, UMAS sees only one possible way to marry the increase in transport demand with making shipping climate-neutral: transitioning to zero-emission fuels, which should become the dominant energy source by the 2040s. Because these will be at best double the price of fossil bunkers throughout the 30s and 40s, incentives are needed to close the gap. Preferably, a whole bucket of policies – economic and political (global, regional, and national), plus informational and voluntary for good measure. If played out with skill, shipping might, without batting an eyelid, call itself the most environmentally friendly transport mode. Sink or swim.

Fig. 2. Overview of climate mitigation measures



Economic policies

Economic instruments for decarbonising shipping revolve around market-based measures (MBMs) used by regulatory bodies to narrow the price spread between fossil and zero-emission fuels. It can be done by increasing the cost of using the former (by imposing a price on carbon) or lowering the latter's (through subsidies, tax breaks, and funding research & development).

Economic policies can generate mind-boggling revenues, counted in billions of dollars annually, which could be recycled to aid shipping in the transition. They can also incentivise fleet renewal towards tonnage that performs better than a set reference point, thus receiving rebates generated from collected fees (hence their name: feebates).

Better late than never, the IMO decided to start working on mid-term GHG-E cutting measures at the 76th meeting of its Marine Environment Protection Committee in June 2021. These include MBMs, not necessarily a novelty topic to the IMO, looming at its agenda-horizon since 2003, but with discussions null and void from 2013.

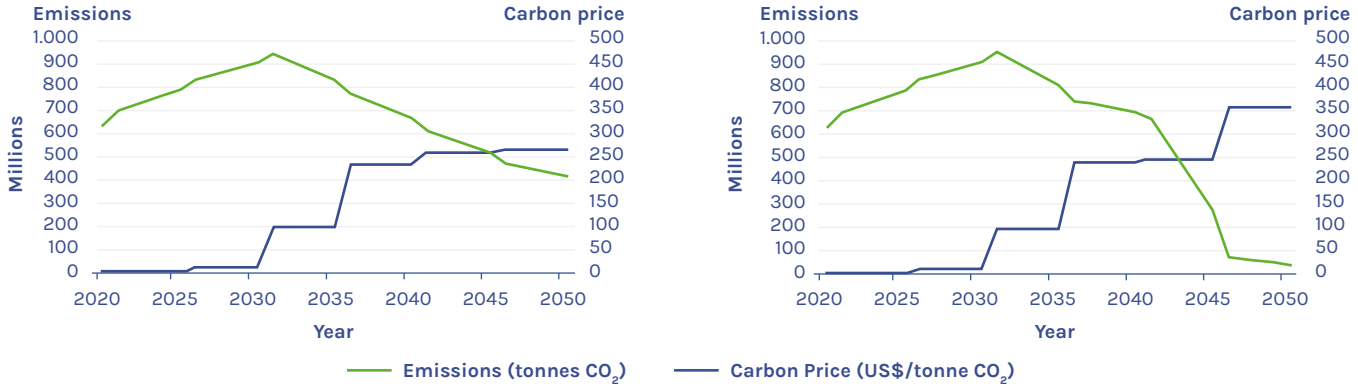
Carbon price & revenue recycling

Setting a carbon price – on the amount of fossil fuel consumed or CO_2/GHG emitted – would be the most straightforward solution. Authors of *Closing the Gap* scrutinised two scenarios in this regard: axing by half or entirely beheading absolute emissions by the middle of the current century. The analysis was conducted on the assumption that carbon pricing is the only measure undertaken to fulfil IMO's obligations.

In both cases, carbon pricing starts in 2025, beginning with a modest 11 US dollars per one tonne of CO_2. GHG-E reach their highest five years later when the levy goes up to around \$100/tCO_2. For the -50% scenario, the carbon price averages at \$173/tCO_2, peaking at \$264/tCO_2. Interestingly, the levy in the -100% storyline isn't much higher and averages at \$191/tCO_2 (though its peak reaches \$360/tCO_2).

However, the authors note that a more aggressive pricing approach might be sounder, "[…] it could be better to set the initial carbon price at a higher level than the model and follow a smoother

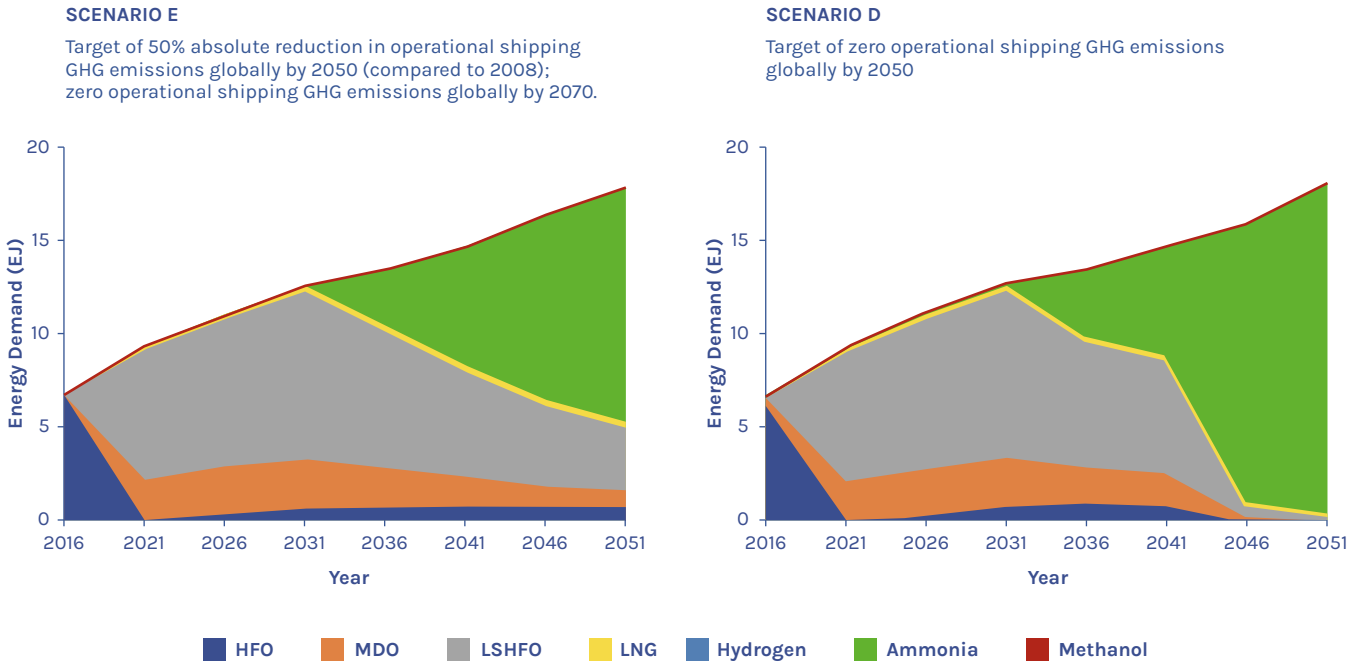
Fig. 3. Carbon price trajectories and their associated emission trajectories



increase, thereby easing potential economic shocks of sharp price increases. This could also help to ensure there is an emergence phase of the transition during the 2020s (e.g. funding RD&D to reach five percent zero-emission fuel penetration by 2030), which enables shipping-specific cost reductions prior to the more rapid uptake of new fuels scheduled for the 2030s."

Pricing will also depend on the degree to which the revenues will be recycled, i.e., returned to the industry to support decarbonisation. If all funds were to come back, the carbon price could be lowered by half.

Fig. 4. Projected future marine fuel demand



In the -100% scenario, this would mean an average of \$96-191/tCO_2 (peaking at \$179-358/tCO_2). UMAS also underlines that "[…] the expectation of what the carbon price will be in the future is key to establishing the business case for zero-emission investments. Price corridors – i.e. setting a band of minimum and maximum carbon prices – could be implemented to offset some of the business uncertainty with future carbon pricing."

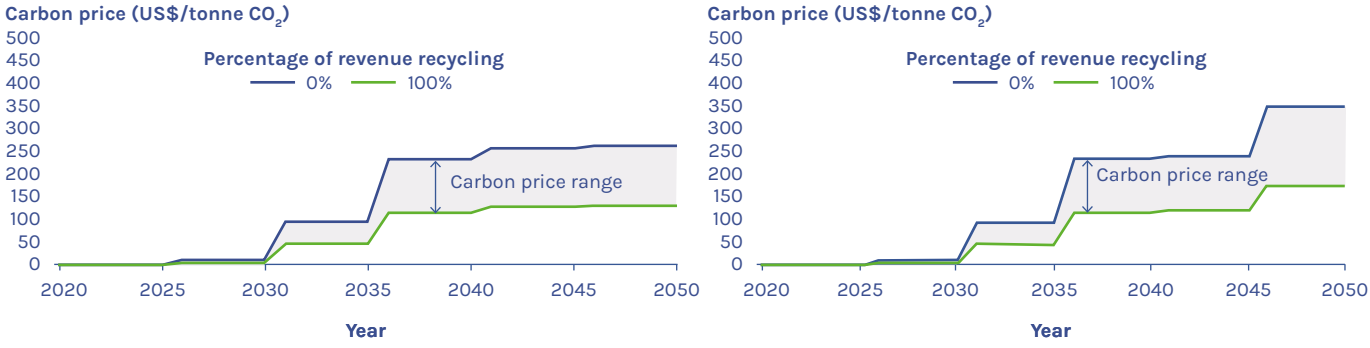
Depending on the level of recycling, yearly revenues gathered under the -50% scenario tot up to \$53-105b, rounding up \$1.3-2.6tr in 2025-2050. As such, these funds would cover the \$1.0-1.4tr of investment need for (partial) decarbonisation of shipping as estimated by UMAS. The figures for the -100% case are \$41-81b/year, \$1.0-2.0tr, and \$1.4-2.0tr, respectively. "A higher carbon price and a faster decarbonisation trajectory in the scenario targeting full decarbonisation by 2050 result in a lower amount of total revenue generated. That is because, in this scenario, emissions reduce rapidly from the early 2040s to achieve zero emissions by 2050 and with that, the potential for generating revenues decreases as well," explain the authors of *Closing the Gap*.

UMAS notes that recycling all the revenues would leave no money for supporting what the authors call least developed countries and small island developing states, two groups worst-hit by climate change. These nations don't have the means to counter what is already happening, let alone bear the brunt of greening their logistics chains.

Fig. 5. Fuel price projections

		Lower bound				Upper bound			
		$/GJ				$/GJ			
Primary energy source	**Fuel**	**2020**	**2030**	**2040**	**2050**	**2020**	**2030**	**2040**	**2050**
Oil	LSHFO	8	11	11	11	8	11	11	11
Biomass	Bio-diesel	22	24	27	29	25	49	74	98
Biomass	Bio-methanol wood	23	25	27	30	24	48	72	96
Biomass	Bio-methanol waste stream	19	21	23	25	20	40	61	81
Substitution price for biofuels		9	19	26	33				
Renewable electricity	E-diesel	130	114	99	83	208	182	156	130
Renewable electricity	E-methanol	84	73	63	52	136	118	101	83
Renewable electricity	E-LNG	69	60	51	42	113	98	84	69
Renewable electricity	E-ammonia	55	47	39	30	96	82	68	55
Renewable electricity	E-hydrogen	52	44	36	28	92	79	65	52
Natural gas	NG-ammonia	28	26	24	23	46	43	40	38
Natural gas	NG-hydrogen	25	23	21	19	44	40	37	34

Fig. 6. Carbon price trajectories based on the degree of revenue recycling



One solution would be to have a higher than needed decarbonisation carbon price, generating surplus revenue for subsidising other projects. These investments could include crew training for Global South populations to provide them with future hi-end jobs like handling remotely-operated vessels. The funds could also be used for setting up future fuel production plants. For instance, the International Energy Agency (IEA) reports that currently, almost all capacity for producing zero-emission hydrogen and fuels based on it are in advanced economies and China, meaning that less developed countries might end up throwing themselves at others' mercy. Transferring money and technology would, in turn, help the Global South to become independent – from extractivism and imports.

"The language in the Initial GHG Strategy […] was a hard-fought political compromise that does not specify how the principles should be interpreted or operationalised," *Closing the Gap* reads. While it prescribes a socio-economic analysis of climate policy measures ahead of implementation, it doesn't specify how such impacts, especially disproportionate ones, could be addressed.

Fig. 7. Future revenue range from carbon price based on the degree of revenue recycling

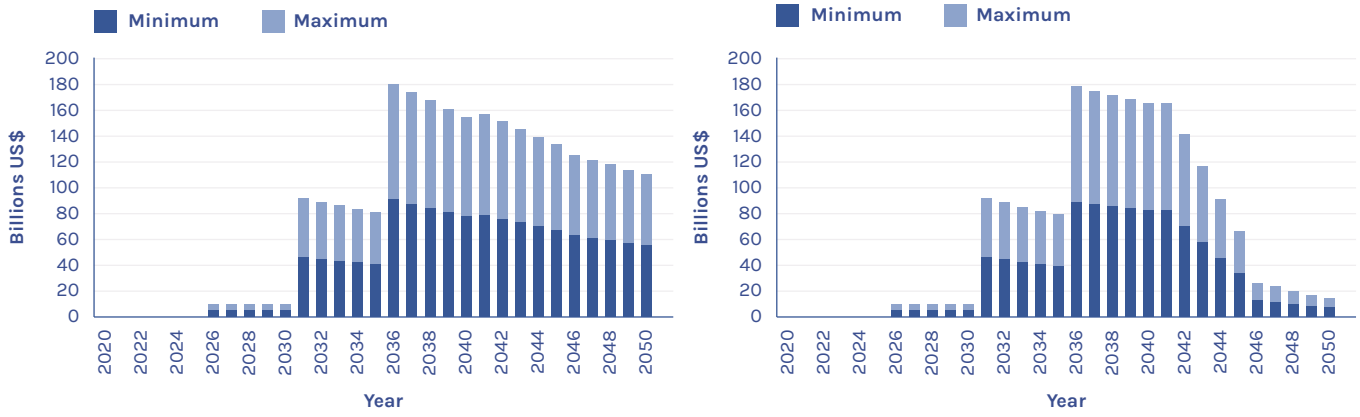


Fig. 8. Total investment needs compared to total revenues that could be generated

BASED ON SCENARIO E which has a target of 50% absolute reduction in operational shipping GHG emissions globally by 2050 (compared to 2008); zero operational shipping GHG emissions globally by 2070.

BASED ON SCENARIO E which has a target of zero operational shipping GHG emissions globally by 2050.

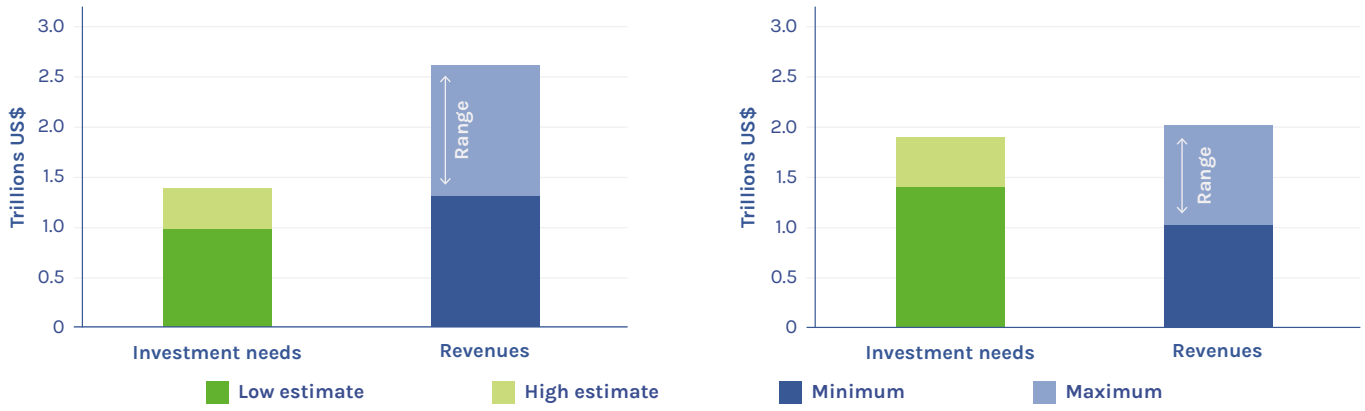


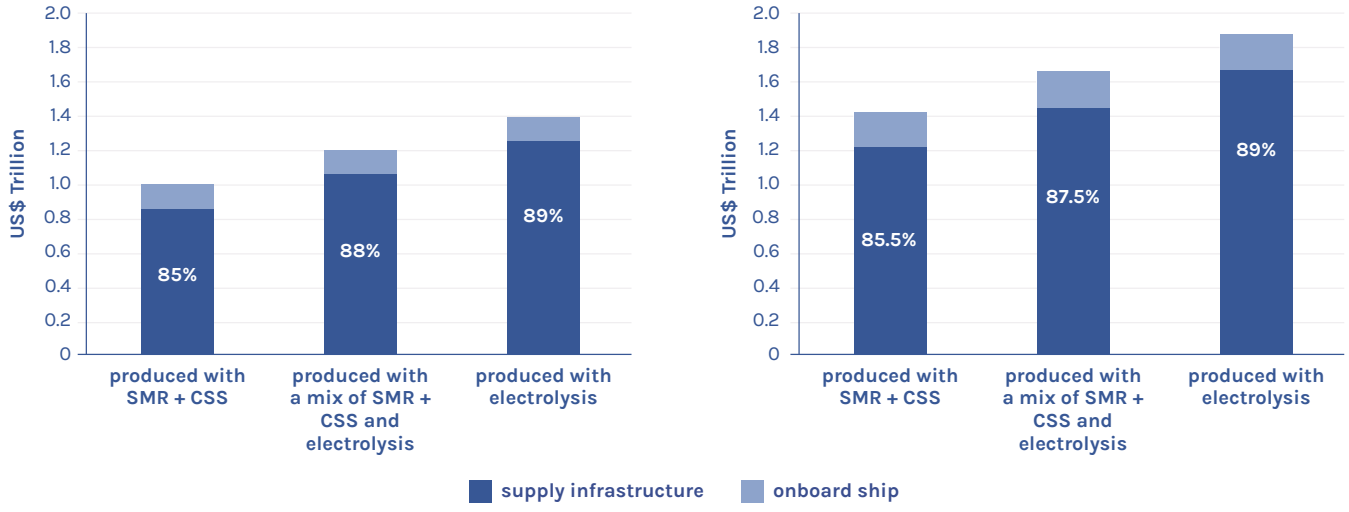
Fig. 9. Total investments needed to decarbonise shipping

SCENARIO E

Target of 50% absolute reduction in operational shipping GHG emissions globally by 2050 (compared to 2008); zero operational shipping GHG emissions globally by 2070.

SCENARIO D

Target of zero operational shipping GHG emissions globally by 2050.



Photos: Canva

Feebates

A feebate system is when an emission or carbon intensity benchmark is put in place, adjustable to keep track of the changes. The demarcation line separates those underperforming, who incur a fee, from those going beyond the minimum, hence awarded.

"A feebate mechanism offers added value by providing incentives for continuous improvement in carbon intensity, investment in zero-emission fuels and technologies and more efficient operations, thereby stimulating innovation and reducing emissions," UMAS observes. Still, they caution, a feebate scheme is as good as the accuracy of the set benchmark. It may also make it exceptionally difficult for companies whose fleets are red-flagged, as they will have to pay the penalties whilst scrambling to renew their tonnage to start receiving feebates.

Then again, a feebate system would be largely passive in management. Revenues would be directly recycled, evading a redistribution system, thus lowering the administrative expenses gnawing at the fund.

Emission trading system(s)

In a sense, an emission trading system (ETS) is the opposite of carbon pricing. The regulator regiments an overall emission target, leaving the topic of sorting out the goal-hitting carbon price to the market.

There are different ETS set-ups, but UMAS argues that the cap-and-trade (CAT) one is more probable in achieving the targeted outcome. Under a CAT ETS, an upper limit on GHG-E is set while allowances are traded (some might be distributed for free, e.g., to ease the initial collision). Those better performing can earn extra money, whereas others continue to operate (and pollute) as long as they can afford to buy another CO_2 tonne.

However, the authors of *Closing the Gap* note that a CAT ETS has certain drawbacks. First, it doesn't incentivise companies to surpass the system's targets. Second, the price volatility of carbon allowances doesn't add to daily business nor longer-term investment certainty. If the set-up's design fails, market prices can rapidly fall due to global shocks. In this instance, companies are discouraged from making green investments because the market promotes the contrary – burning fossil fuels.

Such a situation was the fate of the European Union's ETS in the wake of multiple 21st crises, prompting the block to slim down its ETS to ramp up the prices. The current proposal of the European Commission is to increase the EU ETS reduction target for 2030 to -61% (vs 2005). This move would increase the prices to €90-130/tCO_2 in 2030, sharply contrasting with the below €10 prices seen in 2011-2017. Since the EU intends to make shipping part of its ETS, shipowners and operators have at least a more or less informed insight into what it will mean to serve the Fit for 55-EU market cost-wise.

Subsidies

The United Nations' definition of an environmental subsidy is "current or capital transfer that is intended to support activities which protect the environment or reduce the use and extraction of natural resources." Consequently, subsidies decrease the price of zero-emission fuels rather than increase the cost of fossil fuels.

UMAS brings forth three types of subsidies that can help decarbonise shipping. First, fuel subsidies – cash handouts or tax breaks per unit of fuel or GHG-E reduction. Second, production subsidies – allocated to lower fuel production costs, set up the bunkering infrastructure, and construct zero-emission vessels. Third, R&D subsidies – supporting technological breakthroughs that lower the cost of zero-emission fuels (e.g., more efficient and cheaper electrolysers and storage). These are, authors of *Closing the Gap* say, "[…] examples of policy options which promote and support the production of alternative zero-emission fuels. As such, they complement demand-side policy, […] carbon pricing or command-and-control measures. Combining both demand- and supply-side policies is viewed as a more effective mix than stimulating only one side of an energy transition."

Subsidies have their own set of challenges. They may go against state aid rules, which from a combating climate change perspective is an argument against prohibiting state support and an exit point from the profit-over-environment/ethics system. Subsidisation can also turn into winner-picking, which runs the risk of betting on the wrong horse. This uncertainty can be circumvented by basing the decision on the best scientific understanding (or aggravated by letting petty political and corporate interests take precedence over environmental care).

Speaking of discrimination: according to research outlined in *Fossil Fuel Welfare versus the Climate*, annual fossil fuel subsidies amass to $2.9tr – and over $5.0tr by adding the externalities. In contrast, IEA calculates that $1.71tr/year in clean energy and energy efficiency is needed by 2035 to nail the 1.5°C goal (the UN's Intergovernmental Panel on Climate Change sets the figure at $2.38tr/year in 2016-2035 – still lower than what fossil fuel companies get; compare that to annual climate finance flows in 2017-2018 averaging at $574b). Author of the cited report, Alex Lenferna from 350.org (one of the few global eco-NGOs not hijacked by Big Oil & Gas), sounds the alarm, "[…] if we reinvested that fossil fuel welfare into social and ecological welfare, we could create a much more socially and ecologically prosperous future." UMAS adds, "While subsidies alone are unlikely to decarbonise the shipping industry, they could play an important role in closing the competitiveness gap by lowering the prices of zero-emission technologies and fuels and stimulating RD&D and innovation. They could also be designed to support an equitable transition […]."

In the end, it seems, the discussion shouldn't centre around ideological dead-end chop logic whether subsidies are bad or good per se – but to what end they are used. To decarbonise shipping in particular, and the world in general, green subsidies should go in, while the dirty ones– out the window.

Direct regulatory approaches

Called command-and-control measures, they set standards that directly aim at decreasing ship emissions, therefore indirectly making fossil fuels more expensive. "They could have a positive effect on RD&D and stimulate the uptake of alternative fuels in a similar way to carbon pricing. By mandating certain outcomes, they can also bypass some of the market barriers and failures and guide investments in a way that avoids locking in infrastructural choices and stranding of assets," says UMAS.

Performance / emission standards

These lay down mandatory performance targets by capping certain activities' maximum allowable GHG-E or carbon intensity. However, it is done without setting in stone the specific technologies and techniques of achieving the end.

There are some already in place or just around the corner regulations. These include the Energy Efficiency Design Index (EEDI: a CO_2 intensity metric which considers a ship's total emissions, at the design stage, relative to the transport work done by the vessel resulting in grams of CO_2 per tonne nautical mile); the Energy Efficiency Existing Ship Index (EEXI: which will apply technical efficiency standards to the existing fleet); and Carbon Intensity Indicator (CII: requiring ships to achieve a specified annual operational carbon intensity).

Taken alone, UMAS remarks, "[…] the stringency levels of these standards are currently too low to lead to significant emissions reductions and, by themselves, will not cause the sector to even meet the IMO's minimum level of ambition." While there is a relatively high certainty that performance standards will achieve their goals, it is outside their scope to decrease absolute GHG-E. More shipping activity by better performing vessels, hence cheaper operation-wise, will nevertheless increase emissions.

Technology standards

These, in contrast, do determine which solutions are applied – without setting the overall outcome. "With regards to decarbonising shipping, technology standards could, for example, mandate the use of wind propulsion technology, set mandatory speed limits, and phase out or ban the use of fossil fuels altogether," reads *Closing the Gap*.

Implementing technology standards across the board can stumble over a variety of obstacles. While specific solutions are already mature enough, think wind assistance, it might take significant time before supply meets demand (including shipyards' capacity to install rotors or sails on both newbuilds and retrofits). At the same time, a uniform **speed limit** may be beneficial for this-and-that route or vessel but backfire when applied to others.

Product standards

These define the characteristics of a given product, fuels among others, either banning the use of those that fall out the parameters or labelling them so that clients (shipowners and operators) and their customers (shippers, freight forwarders) can make an informed decision when determining what product or service to buy.

Emission Control Areas (ECA) are probably the most widely known applications of product standards insofar as they mandate the use of compliant fuels for lowering

sulphur and nitrogen oxides. Enforcement is another issue, as some may decide to cheat, hoping to slip under the radar given the authorities' lack of capacity to check all traffic within an ECA.

Heading towards shipping decarbonisation, UMAS considers that "[…] product standards could, for example, specify the maximum (lifecycle) carbon content of marine fuels used and set sustainability standards for marine fuels (e.g. biofuels)." Blending could act as a transitional solution, used already today when the questionable CO_2 lowering benefit of liquefied natural gas (LNG) is patched up by adding bioLNG (whose GHG credentials can also be controversial, especially if manure is the base source, as animal agriculture is one of the leading polluters; refuse can be used for producing bioLNG, too, though this is the function of rampant consumption and food wastage; the question is whether we turn waste into resource or don't litter in the first place).

Authors of *Closing the Gap* speak in favour of direct regulatory approaches as they have proven effective and "[…] can be less cost-intensive to develop for the regulatory body because their design is relatively simple compared to MBMs." On the other hand, performance, technology, and product standards don't generate revenue for recycling, which could be used to speed things up and aid a just transition. Regulations are also prone to political pushing and shoving. It means that less affluent countries might get exemptions because they cannot afford to comply at the same pace as advanced economies. However, doing so could aggravate their situation, as older and dirtier non-compliant-otherwise fleets would be forced to serve their supply chains.

Information programmes (governance-by-disclosure / information-based governance)

These are all about transparency – in the case of shipping decarbonisation, of the costs & benefits of different options. UMAS notes, "Indeed, there has been a significant rise in focus on carbon disclosures in annual reports and ethical investing in general. This points to a need for greater information disclosure in any decarbonisation measures."

As things stand today, there are two GHG-E information-gathering systems. First, the IMO Data Collection System (DCS) for ship fuel oil consumption (although its data sets are confidential). Second, the EU Monitoring, Reporting and Verifying Regulation (EU MRV) collects data on CO_2 emissions from maritime transport, which are then available under the Regulation.

Closing the Gap reads that "[…] despite their important role in alleviating market failures, available evidence – both in- and outside the maritime sector – suggests that the actual impact of information policies in terms of emissions reductions is small. Therefore, information programmes are best suited to be a complementary instrument to enhance the effectiveness of other policy measures aimed at driving shipping's decarbonisation." In other words, GHG-E data fit best for sharing knowledge and best practices – towards creating well-informed regulations and making sure runner-ups, often less developed players, pick the optimal solutions. Ideally, with equitable transition in mind, best practices should be distributed in an open-source way.

Voluntary measures

These are actions undertaken by any party interested in greening the shipping industry meant to go beyond the regulatory minimum. While alone they likely won't decarbonise the shipping sector, they are an essential driver of R&D (e.g., investments in pioneering low- or zero-emission tonnage) and demand (e.g., when cargo owners decide to use eco-friendly logistics chains only).

Since it is mostly large players with significant PR outreach that embark upon voluntary measures, they can raise awareness throughout the industry (and who knows, maybe catch the public eye, too) and encourage others to follow suit. Information sharing is crucial as well, since other players might feel compelled to invest in a given solution as it benefits their competitors.

Yet, publicity is one thing; hard data is another. UMAS cautions in this regard, "[…] numerous studies have been critical of the role of voluntary/private initiatives in the past. […] of 23 voluntary programmes across 18 countries […] many of the programmes did not meet their target for emissions reductions, and only voluntary programmes which were tied to future regulations were generally successful in meeting their goals."

As Naomi Klein points out in the chapter *No messiahs: the green billionaires won't save us* of her book *This Changes Everything: Capitalism vs. the Climate*, fighting climate change cannot be left to those who have made profits on exacerbating the problem and who might feel motivated to drive future earnings out of 'disaster capitalism.' Over-the-top declarations of the Bransons and Gates, coupled with underperformance of the Obamas of this world, should be taken with a pinch of salt. Better sceptical than sorry.

Then again, as reported in the previous issue when rounding up the **Baltic transport highlights of 2021**, there is this organic, bottom-up movement that blazes the trail.

Tab. 1. Examples of voluntary initiatives in the maritime sector

Name	Date of establishment	Overview
Cargo Owners Zero Emission Vessel Initiative	2020	Under this initiative, shippers/buyers make commitments to provide a specific volume of freight to zero-emission vessel(s) and have set a target for exclusively buying zero-emission maritime freight by 2040. Shippers/buyers will also track their maritime emissions to check alignment with their goals.
Clean Cargo	2002	Focused on improving environmental performance in marine container transport using standardised tools for measurement, evaluation, and reporting.
Climate Bonds Initiative: Shipping Criteria	2020	An international organisation working to mobilise the $100tr bond market for climate change solutions by promoting investments in projects and assets necessary for a rapid transition to a low-carbon and climate-resilient economy. The Shipping Criteria provide a definition for evaluating whether a shipping project contributes to climate change mitigation.
Environmental Ship Index	2011	Identifies seagoing ships that perform better in reducing air emissions than required by the current emission standards of the IMO.
Poseidon Principles	2019	This initiative is aimed at financiers and provides a framework for integrating climate considerations into lending decisions to promote international shipping's decarbonisation.
Science Based Targets Initiative	Yet to be launched	Aims to drive ambitious climate action in the private sector by enabling companies to set science-based emission reduction targets. It is a partnership between the Carbon Disclosure Project, the United Nations Global Compact, the World Resources Institute, and the World Wide Fund for Nature.
Sea Cargo Charter	2020	Addressing charterers, this initiative provides a global framework for aligning chartering activities with responsible environmental behaviour to drive international shipping's decarbonisation.
Sustainable Shipping Initiative	2010	A multi-stakeholder collective driving change through cross-sectoral collaboration to create a more sustainable maritime industry.

National & regional policy measures

These are divided into ship- and land-side actions. The former target the decarbonisation of both international and domestic shipping, plus inland navigation and fisheries. The latter focuses on investing in the production and supply of zero-emission marine fuels, following money put into producing renewable energy.

To stimulate lowering domestic shipping's GHG-E, the IMO has urged its Member States to develop and update a voluntary National Action Plan. Yet, this has been met with limited success (*Closing the Gap* mentions that only India, Japan, the Marshall Islands, Norway, and the UK have submitted their plans).

Notwithstanding, several countries and organisations are at the forefront of implementing their own measures. Norway, for starters, wants to reduce its domestic shipping and fisheries' GHG-E by half by 2030. In four years, the country's fjords will become zero-emission areas (covering not only GHG-E but also other air pollutants). Norway is also known for making strides in hybrid and battery-powered shipping.

The UK has tabled the Clean Maritime Plan, which includes encouraging the uptake of low-carbon fuels and supporting green innovation (including zero-emission propulsion technologies). The 2021 United Nations Climate Change Conference in Glasgow also saw the emergence of the Clydebank Declaration. In it, governments plan to establish 'green corridors:' maritime routes decarbonised from end to end, sea- and land-wise. Germany has its National Hydrogen Strategy, including works on hydrogen as a marine fuel. There is also the Pacific Blue Shipping Partnership, a multi-country initiative for a large-scale blended finance investment to facilitate Pacific island countries' transition to zero-carbon domestic shipping by mid-century (with a 40% reduction by 2030).

The EU, apart from including shipping in its ETS, is also working on the FuelEU Maritime Regulation. It aims at stimulating the uptake of sustainable maritime fuels and zero-emission technologies. The FuelEU Maritime Regulation wants to introduce a goal-based fuel GHG-E intensity target, increasing its stringency over time, thus requiring operators to reduce the carbon footprint of the energy used onboard ships calling at EU ports. In addition, the block

wants to advance cold ironing, mandating that vessels berthing at EU quays draw energy from the shore (from 2030). The main bone of contention with FuelEU Maritime is whether LNG fits the sustainable fuel definition while regarding onshore power supply – if the supplied electricity comes from renewable sources.

Authors of *Closing the Gap* summarise this thread by saying, "[…] these national and regional approaches may assist in the development of the market for zero-emission fuels. In stimulating demand for these fuels on a smaller scale, the development and production of zero-emission fuels can be initially shielded from the market pressures and barriers of the wider industry before supply is scaled up over time."

Less is more?

This article's main body was ready ahead of the Kremlin's aggression on Ukraine. In a manner of just days, the world took a U-turn, and it seems that there is no turning back to pre-24 February 2022 times.

It remains to be seen what will be the war's impact on combating climate change. Perhaps the EU will catch the wave and transition towards a zero-emission economy faster to sever its ties with Russia's oil & gas. It may, however, lead to importing more shale gas from the US, extraction of which causes higher GHG-E than when using traditional methods and pollutes the areas in the drill shafts' vicinity. It might also lessen the restrictions on fracking in Europe. Taking in crude oil from Canadian tar sands will have an even more catastrophic effect on the environment at large.

One also gets the impression that the analysis laid forth in *Closing the Gap* includes an unspoken assumption, namely that global trade will more or less continue to function in the foreseeable future as it does today. After all, as the late Mark Fisher wrote in his *Capitalist Realism: Is There No Alternative?*: it is easier to imagine the crack of doom than the end of capitalism.

In his disturbing yet razor-sharp essays, Fisher surfaces the dominating system's capacity to devour initiatives seemingly at odds with it, e.g., consumers can save the environment – they 'just' need to make the right buys. For instance, capitalism is inherently unable to raise the question of the justness of owning a car. Rather, it lures into changing your old vehicle for a new one – this time hybrid or electric. Such "remedies," however, cannot patch the system's internal failure – that infinite growth is impossible when there are finite resources (in addition, redistributed upwards). It results in "glitches," capitalism's externalities that remind us that the larger system, Earth, has its arsenal of countermeasures of restoring balance. As capitalism feeds on societies, there are internal glitches, too, the rising prevalence of mental illnesses, loneliness, and feeling out of place and needless, particularly scrutinised by Fisher. Cynism or hipster irony, he adds, also became part of capitalism's toolbox – attitudes that sabotage the will to act.

Is it possible to imagine, maybe not capitalism's fall, but less trade, although still with increasingly greener fleets? Fewer purchases, sourced locally and of higher durability? Handicraft over factory production? More refurbishment instead of wastage? Essentially, a new strenuous age that builds character and ensures an equitable future for the generations to come, say nothing of the environment, in place of instant gratification-consumerism? There are, it appears, two conflicting meanings to the saying "less is more." □