

The IMO's legal remit on upstream fuel emissions

How the International Maritime Organization can regulate the emissions from the full lifecycle of fuels for shipping

April 2023

A study by



Written by Aoife O'Leary of Opportunity Green

April 2023

About Opportunity Green

Opportunity Green is an NGO changing the way we tackle climate change. We build ambitious coalitions, support climate vulnerable countries and find innovative legal pathways for bold climate action. At Opportunity Green we believe lawyers are obligated to analyse the existing legal systems and regulations to stop climate change. We use legal innovation to forge new pathways on climate action or where that is not possible, find pathways within the present legal structure to facilitate the legislation needed to slash carbon pollution.

Acknowledgements

This paper was written by Aoife O'Leary of Opportunity Green. Opportunity Green would like to acknowledge the generous support of ClimateWorks Foundation and Oceankind who have made this paper possible. The author would also like to acknowledge the valuable input from Aline Douxfils and Anyès Nauwelaerts of Belgium and Nikita Pavlenko of the International Council on Clean Transportation. Any errors remain the author's own. This report draws heavily on the earlier report written in 2018 by Jennifer Brown and Aoife O'Leary while at the Environmental Defense Fund in conjunction with the Sabin Center for Climate Change Law at Columbia University New York which can be accessed [here](#).

Further information

Aoife O'Leary

CEO, Opportunity Green

aoife@opportunitygreen.org

www.opportunitygreen.org

Executive summary

This paper investigates the potential legal avenues for the International Maritime Organization (IMO) to regulate the full lifecycle of shipping fuel emissions. It finds that the IMO has broad powers to enact almost any required measure.

Currently, the shipping industry is almost entirely reliant on fossil fuels. Presently, most of the climate damage occurs downstream when the fuel is burnt on ships and emissions enter the air. However, alternative fuels need to be developed to transition to a zero emissions sector. There are a variety of potential fuels that shipping could use, with little to no downstream emissions. But many of these fuels could cause more climate and environmental damage upstream, at the feedstock, transport and / or production stage. Therefore, if the IMO were only to regulate the downstream emissions occurring on the ship, it would fail to address the bulk of shipping's climate impact and shift the responsibility towards other regulators such as national governments – which would not send the correct investment signal to the industry, and be especially problematic given the inherently international nature of the sector.

Fortunately, the IMO has a number of options for regulating the upstream emissions of shipping fuels. It is beyond the scope of this paper to analyse which of these would be the most effective from a climate perspective. Rather, the purpose of this paper is to consider whether any of the options are within the remit of the IMO to enact.

There are three principal reasons why the IMO can regulate upstream emissions that are considered in this paper:

- Such regulation is consistent with IMO objectives and purposes;
- It is consistent with existing IMO practice on environmental regulation and fuels; and,
- It is within the IMO's competency and there are no legal limits preventing regulation.

The Convention on the International Maritime Organization (the IMO Convention) established the IMO and gave it very broad objectives, and comprehensive powers to achieve those objectives. The objectives include the “prevention and control of marine pollution from ships” (Article 1(a)). The UN Convention on the Law of the Sea (UNCLOS) reinforces the broad powers of the IMO and tasks the IMO specifically with preventing, reducing and controlling pollution of the marine environment.

A parallel can be drawn with the aviation industry where there was no specific authority given to the International Civil Aviation Organization (ICAO) to regulate upstream emissions. However, ICAO found that regulating upstream emissions was clearly within its remit to reduce the climate impact of aviation. This led to the adoption of the resolution establishing the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the subsequent implementation of this market-based measure for the treatment of aviation CO₂ emissions. CORSIA takes into account the full lifecycle emissions of the fuel used in aviation, including those upstream and airlines must purchase offsets accordingly. The IMO following this path would also lead to consistency with another United Nations organisation.

There are no limits placed on the ability of the IMO to regulate upstream emissions in either the competency of the IMO's Marine Environment Protection Committee, nor in the content that could be included in the International Convention for the Prevention of Pollution from Ships (MARPOL Convention). Indeed, it is important to understand that MARPOL regulates countries and not ships, so while any provisions can restrict what a ship can or should do, it is also a convention addressed

clearly to countries, that countries will have to implement. This leaves scope to design measures that include upstream emissions.

The principle of No More Favourable Treatment, where MARPOL signatories can impose MARPOL regulations on all ships that stop in their ports, regardless of whether the flag state of the ship is a MARPOL signatory, provides an effective enforcement route for any upstream emission regulation. This could be done in a number of ways, and could likely involve some kind of certification process (the specific design of which is beyond the scope of this paper). In addition, there are clear and easy methods, primarily through the use of transparency mechanisms, of designing any future regulation of shipping emissions which would ensure there is no risk of double-counting, nor conflict with any reporting of emissions under the Intergovernmental Panel on Climate Change (IPCC) Guidelines.

In conclusion, the IMO has all the powers necessary to regulate the emissions from the full lifecycle of any shipping fuels, including the ability to place that regulation within the existing MARPOL Convention.

Contents

Executive summary	3
Introduction	6
IMO discussions to date.....	7
The Convention on the International Maritime Organization.....	7
IMO Objectives and Purposes.....	7
Consistency with existing IMO practice on environmental regulation and fuels	8
Within the IMO's competency there are no legal limits preventing regulation	8
The Law of the Sea	9
Comparison with Aviation	9
The Marine Environment Protection Committee (MEPC).....	11
MARPOL Regulates Countries (Not Ships).....	11
Restrictions in MARPOL	11
No More Favourable Treatment (NMFT).....	12
Avoiding double counting of emission reductions	13
Conclusion.....	14

Introduction

To phase out the emissions of the shipping industry, alternative fuels will be required. There are a number of fuels that have the potential to form part of the future fuel mix. However, due to their high upstream emissions, the adoption of several of these fuels could lead to the shipping sector simply transferring its emissions from ‘sea to land’.

Fuels release emissions at different stages of their lifecycle: when they are produced, refined, transported, or when they are grown if they are bioderived.¹ This means that their upstream emissions, and wider environmental impacts, can cause significant damage to the climate even before reaching a ship’s tank.

For example, (blue) hydrogen from natural gas could result in a virtually emissions-free fuel for a ship at the consumption (i.e., downstream) stage. But on land, the production of this fuel could be responsible for significant upstream fugitive methane emissions - which should be fully monitored, alongside the variable levels of CO₂ capture at the carbon capture and storage (CCS) stage.² Thus, if the IMO only regulates the downstream emissions from the ship, it could be missing a large part of shipping’s climate impact. It is beyond the scope of this paper to discuss the future fuels from a climate perspective. What this paper will do is consider the legal basis for the IMO to regulate the upstream emissions of those fuels.

The Legal Basis for the IMO Climate Measures³ (MEPC 76/INF.22) paper examined the ability of the IMO to enact climate measures very broadly. That study concluded that the IMO had broad powers to enact almost any required measure. While that paper did not examine the question of the regulation of the upstream emissions of shipping fuels, much of the analysis is relevant to the current question and will be drawn on below.

First, the IMO has the authority to regulate greenhouse gases (GHGs) from shipping, and indeed, has been doing so for years. The IMO Convention established the IMO, and gave it very broad objectives, and powers to achieve those objectives. The objectives include the “prevention and control of marine pollution from ships” (Article 1(a)).

The powers to achieve this objective include the drafting of conventions, agreements or other suitable instruments, and performing functions related to the objectives of the IMO. The powers are very broad and nowhere limit the type of marine pollution that the IMO Convention covers to exclude emissions of greenhouse gases. Indeed, state practice both within the IMO and in wider climate venues such as the United Nations Framework Convention on Climate Change (UNFCCC) confirms that members of the IMO interpret the term “marine pollution” to encompass greenhouse gases.

There is no longer a debate on whether the IMO has the competency to regulate greenhouse gases that are emitted from ships. However, the question has been raised whether this clear authority also extends to the regulation of greenhouse gases that are emitted upstream, such as in the production of fuels that will be later burned on ships. This paper will answer this question by considering the

¹ Gilbert, P et al. (2018) ‘Assessment of full life-cycle air emissions of alternative shipping fuels’, *Journal of Cleaner Production*, 172, pp. 855-866.

²*Ibid.*

³ O’Leary, Aoife, and Brown, Jennifer. *The Legal Basis for IMO Climate Measures*, Environmental Defense Fund and the Sabin Center for Climate Change Law at Columbia Law School. 2018.

authority in the IMO Convention, the Law of the Sea, and other relevant international law and practice.

IMO discussions to date

The IMO has been discussing how to regulate the lifecycle of fuels for some time, at the IMO's Marine Environment Protection Committee (MEPC). At MEPC 79 (December 2022), there were three main suggestions on the table of how the emissions from future shipping fuels should be regulated:

1. Well to Wake (WTW): including all lifecycle emissions from production to emission on the ship.
2. Tank to Wake (TTW): including only the emissions emitted on the ship.
3. TTW now and WTW later: combining both concepts.

One of the suggested reasons why the IMO should not regulate the full lifecycle of fuels by countries that hold that position is a concern over the IMO's legal remit, i.e., does the IMO have the power under international law to enact something that would affect the production of fuel in national jurisdictions around the world? Answering this question is the central point of this paper and will be done at length below.

There are two other concerns with regulating the full lifecycle of emissions that can also be seen as legal questions or adjacent to the legality of the IMO's remit. These are:

- The potential for overlap with the UNFCCC remit, where countries report emissions on land in their Nationally Determined Contributions – dealt with in the section on double counting below (see page 13).
- If the IMO can find a certification process that can be relied upon to work around the world – dealt with in the section on the principle of No More Favourable Treatment (see page 12).

The Convention on the International Maritime Organization

There are three principal reasons why the IMO can regulate the upstream emissions of the shipping sector, that are considered in this paper:

- Such regulation is consistent with IMO objectives and purposes;
- It is consistent with existing IMO practice on environmental regulation & fuels; and,
- It is within the IMO's competency and there are no legal limits preventing regulation.

Each of these will be considered in turn.

IMO Objectives and Purposes

The IMO Convention was agreed in Geneva on March 6, 1948.⁴ It established the IMO (at that time called the Inter-Governmental Maritime Consultative Organization or IMCO). Article 1 of the Convention provides that the purpose of the IMO is, *inter alia*:

To provide machinery for co-operation among Governments in the field of governmental regulation and practices relating to technical matters of all kinds affecting shipping engaged in international trade; to encourage and facilitate the general adoption of the highest practicable standards in matters concerning the maritime safety, efficiency of navigation and prevention and control of marine pollution from ships; and to deal with administrative and legal matters related to the purposes set out in this Article.

⁴ Convention on the International Maritime Organization, 1948, Article 1.

The Convention further empowers and requires the IMO to undertake specific steps to achieve these aims:

[T]he Organization shall: consider and make recommendations... Provide for the drafting of conventions, agreements, or other suitable instruments, and recommend these to governments and to intergovernmental organizations, and convene such conferences as may be necessary; ... Perform functions arising in connection with [the above activities], in particular those assigned to it by or under international instruments relating to maritime matters and the effect of shipping on the marine environment.⁵ [emphasis added]

The powers are very broad and do not limit the IMO's jurisdiction to only emissions occurring on or from the ship. The IMO is required to take action to treat the effect of shipping on the marine environment in the most general sense; it is not limited to dealing with the effect of shipping on the marine environment caused by direct ship emissions alone. Where land-based shipping-related activities also affect the marine environment, then such activities will also be included within the IMO's scope. Therefore, where the production of fuels on land, for use in shipping, affects the marine environment (for example by introducing greenhouse gases to the environment generally, which can then contribute to, *inter alia*, ocean acidification), then that production is covered by the Convention. Nothing in the Convention provides a narrower definition that might exclude emissions on land in the production of maritime fuels.

Consistency with existing IMO practice on environmental regulation and fuels

Moreover, existing practice of the IMO and the MEPC has been to address environmental measures using regulations that affect the production of fuels on land, rather than just the fuel consumed on the ship. An example would be the sulphur cap where the IMO regulated to reduce the amount of sulphur being emitted into the atmosphere from ships.⁶ The final regulation could be complied with by either installing a 'scrubber' on the ship, or by using a fuel that had a lower sulphur content. For the second option, the production of the fuel with a lower sulphur content took place on land.

Indeed, the IMO has often regulated the production of fuel on land by requiring fuel to be of a certain standard in order for ships to use it. The regulation of upstream (greenhouse gases) GHGs from shipping fuels could be dealt with similarly. The IMO could very easily require that ships using hydrogen can only use hydrogen produced in a specific way, i.e., implement a fuel standard. Alternatively, if there was a GHG levy in place, ships using hydrogen produced in a certain way (e.g., green hydrogen) could pay nothing while those using the same fuel produced in a different way (e.g., blue hydrogen) pay an appropriate portion of the levy.⁷

IMO's competency contains no legal limits preventing regulation

As noted above, the IMO Convention confers very broad powers on the IMO to address marine pollution. They are not limited to measures that only regulate the emissions from the stack of the ship, and the IMO Convention places no restriction on the IMO agreeing to measures that would regulate or impact the production of fuels on land; indeed the IMO's toolbox already includes measures that have a similar effect. Nor does the Convention stop the IMO from imposing a fuel levy, with the value calculated on the full lifecycle of how that fuel was produced in any country

⁵ Convention on the International Maritime Organization 1948, Article 2.

⁶ Resolution MEPC.320(74) - 2019 Guidelines for Consistent Implementation of the 0.50% Sulphur Limit under MARPOL Annex VI - (adopted on 17 May 2019).

⁷ These are simply illustrative examples, it's beyond the scope of this paper to design an appropriate measure to ensure emissions reductions. This paper is simply investigating the legal powers of the IMO to set such regulations.

around the world. Indeed, the relevant founding article specifically authorizes the IMO to “perform functions” and draft conventions, agreements or other suitable instruments arising in connection with its powers to address marine pollution. It thus provides the legal basis by which the IMO may establish and administer rules that affect the full lifecycle of shipping fuels, including the production of shipping fuels on land.

Nowhere in the Convention is there a legal limit placed upon the types of instruments that can be enacted by the members of the IMO. Therefore, the only limit upon what measures can be agreed at the IMO is the political agreement of the members themselves. States came together to form the IMO, to gain the benefits from working together across the international maritime sector. If the members of the IMO now agree that to reduce the impact of the maritime sector on the climate, the IMO should establish rules relating to the upstream emissions of fuels for the shipping sector, there is nothing in the Convention preventing this.

The Law of the Sea

The UN Convention on the Law of the Sea (UNCLOS) through Articles 194, 207 and 211 - 213 states that countries must prevent, reduce and control pollution of the marine environment from land-based pollution. Specifically in Article 207(4) it gives the IMO the mandate in stating:

*"States, acting especially through **competent international organizations** or diplomatic conference, **shall endeavour to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution of the marine environment from land-based sources**, taking into account characteristic regional features, the economic capacity of developing States and their need for economic development. Such rules, standards and recommended practices and procedures shall be re-examined from time to time as necessary."*

The reference to “competent international organizations” clearly includes the IMO. This is further supported by UNCLOS Article 194, which calls for the use of “all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source.” These UNCLOS provisions underscore that for the purpose of protecting the marine environment and from the perspective of international law, the damaging effect of maritime traffic, viewed holistically, is more important than whether the emission occurred on land or at sea, though the Convention is clear that States have the duty to protect the marine environment from harm through pollution released at sea or on land. The legal nexus for regulation is that the fuel will ultimately be used in a ship and there is no dispute that IMO authority covers everything related to the vessel.

Comparison with Aviation

It is useful to look to another international transport sector, aviation, where the same issue has been tackled. In 2016, the International Civil Aviation Organization (ICAO) adopted a resolution establishing the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), a market-based measure. ICAO’s foundational document, the 1944 Chicago Convention on International Civil Aviation,⁸ contains no express provision allowing ICAO to adopt regulations on the full lifecycle of aviation fuels. But Article 37 of the Chicago Convention authorizes ICAO to adopt

⁸ 'Convention On International Civil Aviation - Doc 7300' (Icao.int, 2018).

international standards and recommended practices (SARPs) addressing, *inter alia*, matters concerning the safety and efficiency of air navigation.

After ICAO's Assembly of Member States adopted a resolution establishing global aspirational goals for addressing greenhouse gas emissions as an essential element of promoting the sustainable growth of international aviation, the Assembly then expressly recognised a market-based measure to reduce emissions as a necessary element of a broader set of measures to help ICAO achieve these goals. This provided the foundation for ICAO Member States to come together and formally request ICAO's Council to develop and adopt the SARPs that put CORSIA into effect, which was an exercise of the authority provided under Article 37. As part of this process, ICAO has put in place rules for the full lifecycle regulation of aviation fuels.

University Maritime Advisory Services (UMAS) and the Environmental Defense Fund (EDF) previously considered what the ICAO regulations of upstream emissions could inform the IMO in the paper *Exploring the relevance of ICAO's Sustainable Aviation Fuels framework for the IMO*.⁹ A summary from that paper, on the emissions regulated by ICAO, is relevant here:

"The ICAO framework and guidelines for SAF require that all GHG emissions, except the non-CO2 emissions from the aircraft tailpipe, are accounted for. The framework covers full lifecycle CO2 emissions and other GHG emissions from upstream activities, including nitrous oxide (N2O) and methane (CH4), expressed in 100-year global warming potential (GWP100) as carbon dioxide equivalent (CO2e). ...

The approach taken by ICAO for [sustainable aviation fuels] SAF requires that direct and indirect emissions are estimated for the full lifecycle of a fuel, from the initial feedstock extraction/production to its final use/combustion in an engine. It protects against an outcome where fossil fuels are replaced by SAF with comparable or even higher lifecycle emissions."

The paper goes on to state that ICAO regulates these upstream emissions by breaking "*emissions down into two main components: core lifecycle value and [Indirect Land Use Change]... Emission pathways for each SAF are defined based on the feedstock, the conversion process, and the country of production.*"¹⁰

These ICAO regulations provide a direct parallel with the IMO situation considered in this paper. ICAO had no express authorisation for, but no express limitation from, regulating the upstream emissions from aviation fuels, but through its Member States it chose to do so. The IMO and its Member States could adopt the same approach. Arguably, the IMO is on even surer footing than ICAO was, as the IMO has express authority to adopt measures to deal with "marine pollution," unlike ICAO which adopted measures to deal with aviation greenhouse gas emissions as a matter concerning the safety and efficiency of air navigation.

⁹ Rehmatulla, N et al. (2020) *Exploring the Relevance of ICAO's Sustainable Aviation Fuels Framework for the IMO*. University Maritime Advisory Services and Environmental Defense Fund, 30 June 2020, available at: https://www.edf.org/sites/default/files/content/Exploring_the_relevance_of_ICAO_SAF_for_the_IMO_July_2020.pdf.

¹⁰ *Ibid.*

The Marine Environment Protection Committee (MEPC)

Article 37 of the IMO Convention establishes the MEPC as a committee of the IMO that includes all Members of the IMO. Article 38 states MEPC's purposes, which are (among others) to:

consider any matter within the scope of the Organization concerned with the prevention and control of marine pollution from ships and in particular shall:

(a) Perform such functions as are or may be conferred upon the Organization by or under international conventions for the prevention and control of marine pollution from ships . . .

(e) Consider and take appropriate action with respect to any other matters falling within the scope of the Organization which would contribute to the prevention and control of marine pollution from ships including co-operation on environmental matters with other international organizations.¹¹

There is no express or implied limit upon the powers of MEPC in this Article, other than that it cannot act on measures falling outside the competence of the IMO (and the broad competence of the IMO is dealt with above). The language on its face is broad enough to allow the MEPC to consider and act in any way the Committee deems appropriate, upon any matter falling within the scope of the IMO which would contribute to the prevention and control of marine pollution from ships, including regulation on the upstream stages of those fuels' lifecycle.

MARPOL Regulates Countries (Not Ships)

It is likely that the MARPOL Convention would be amended to provide for the regulation of fuel production, and it is important to discuss the legal jurisdiction of MARPOL here. The parties to MARPOL¹² are countries, and the actual obligations imposed by MARPOL apply to countries and not ships, as Article 1 states, "the Parties to the Convention undertake to give effect to the provisions of the present Convention and those Annexes thereto." These countries then apply the regulations in MARPOL to ships. Article 5(4) of MARPOL refines this by stating that it applies not only to ships which are flagged in one of the countries that are a signatory to MARPOL, but also that signatories to MARPOL can apply these regulations to ships that are flagged in other non-signatory countries. This is the principle of No More Favourable Treatment (NMFT).

Regulation 18 of Annex VI requires all States to ensure the availability of fuel oils compliant with MARPOL rules at ports and terminals, setting a clear precedent for the regulation of the production of fuel on land. Parties could agree to new provisions of MARPOL that did not primarily apply to ships (e.g., that all members of the Convention must ensure all hydrogen produced for shipping fuel must be produced using only renewable energy and not fossil fuels). There is nothing in MARPOL which restricts the design of measures to only apply to emissions on board ships.

Restrictions in MARPOL

Article 16 of MARPOL sets out two restrictions upon amendments to the Convention. The first is in Article 16(6), which requires that any amendment which relates to the structure of a ship shall only apply to ships for which the building contract is agreed or, if no building contract, the keel laid, after the date on which the amendment comes into force, unless expressly provided otherwise. This

¹¹ Convention on the International Maritime Organization, 1948, Article 38.

¹² International Convention for the Prevention of Pollution from Ships (MARPOL), 1973, Annex VI amended 2011.

should not affect any regulation of the fuel produced for shipping on land (or at least any future regulation could easily be designed to ensure it did not conflict with this restriction).

The second restriction is in Article 16(7), which states that any amendment to MARPOL “shall relate to the substance of that Protocol or Annex and shall be consistent with the articles of the present Convention.”

Firstly, there is no reason to suppose that any regulation of the production of fuels would conflict with the existing provisions of MARPOL, and care could be taken to ensure during drafting that it did not conflict. The parties to MARPOL are the ultimate arbiters of whether something relates to the substance of the Protocol and is consistent with the Convention.

MARPOL originally only regulated discharges into the sea of oil, noxious liquid substances, sewage, and garbage, but not any discharges into the air. The introduction of Annex VI was the first time air pollution was regulated under MARPOL, and was regarded by the parties to MARPOL as relating to the substance of the Convention and consistent with its articles. On this basis, it seems that there is no reason to suppose that agreeing to regulate the production of fuels on land to further deal with greenhouse gases from shipping would conflict with the substance of MARPOL, as long as the parties agree to it. The parties to Annex VI already decided that greenhouse gases were close enough to traditional air pollutants that amending Annex VI to include greenhouse gases created no conflict, so there is no reason why they cannot decide that agreeing to regulate the greenhouse gases from the full lifecycle of fuels does not also relate to the substance of MARPOL.

No More Favourable Treatment (NMFT)

NMFT is a standard principle in the IMO, included in most regulations to ensure they can be effective without worldwide ratification. NMFT requires that any country which is a party to a particular treaty must apply the rules of that treaty to all the ships that stop in that country’s ports, regardless of the flag of that ship. That includes ships that are flying the flag of a country which is not a party to the particular instrument. For example, MARPOL Article 5(4) requires that “with respect to the ship of non-Parties to the Convention, Parties shall apply the requirements of the present Convention as may be necessary to ensure that no more favourable treatment is given to such ships.”

The application of NMFT will mean that if an instrument is established that regulates the upstream emissions of fuels produced for shipping, the countries that decide to participate will be able to ensure there is no market distortion for any ships calling at their ports. This will also create pressure for other countries to sign up to the Convention¹³ as, in order to call at the ports of countries that have signed up, any ship would have to comply with the regulations on upstream emissions or be able to show that they had done so.

Depending on what the final measure agreed is, this could be done in a number of ways. A full discussion of the technical means for certifying fuels, including their upstream emissions, is beyond the scope of this paper but Lloyd’s Register have gone some way to answering this question in their *Tracing the true carbon intensity of sustainable marine fuels* report.¹⁴

¹³ Or sign up only to MARPOL Annex VI as it is possible for States to do so without ratifying the entire MARPOL Convention as Annex VI is an optional Annex.

¹⁴ Lloyd’s Register (2023) *Tracing the true carbon intensity of sustainable marine fuels*. Available at: <https://www.lr.org/en/marine-shipping/webinars-virtual-events/report-tracing-the-true-carbon-intensity-of-sustainable-marine-fuels/> (Accessed: 27 February 2023).

Avoiding double counting of emission reductions

If the IMO regulates the full lifecycle of emissions from shipping fuels which occur on land, a question of double counting could arise. Double counting is when the same emission reduction is counted more than once towards a mitigation commitment. This could be where the IMO imposes a mandatory reduction measure, and a country also claims the same emissions reductions in order to meet their Paris Agreement commitments through the UNFCCC.

However, there are a number of ways to reduce the risk of double counting. The first is to ensure that all emissions accounting is public, so that any reduction claims can be verified independently. The IMO's current Data Collection System (DCS) does not allow for full transparency, and so the risk of double counting is very high, regardless of what regulation the IMO finally decides on. In order to mitigate this risk, much of the DCS data should be made public.

The second important way to reduce the risk of double counting would be for this risk to be taken into account in the design of the measure. At the moment, there is no regulation against which a shipowner or country could claim an emission reduction. If you are a shipowner and you reduce your emissions through the use of green hydrogen as a fuel, there are several ways that you can record that your ship has reduced its climate impact, but none of them raise an issue of double counting: you will have less emissions to report to the DCS every year, and you would get a higher rating under the IMO's Carbon Intensity Indicator (CII), but neither of these require you to claim an emissions reduction which would also run the risk of being (double) counted elsewhere.

The IMO is discussing the potential of introducing a number of different mechanisms to reduce emissions, such as a GHG levy and/or an emissions fuel standard. If carefully designed, these also need not raise double counting issues. For example, the levy as proposed by the Marshall Islands and Solomon Islands¹⁵ would raise no potential double counting issues as it does not require countries or ships to count emissions reductions. Rather ships would pay a levy per ton of GHG emitted (which should lead to emissions reductions, though assessing the potential reductions from that measure is beyond the scope of this paper). Similarly, a fuel standard would simply require ships to use a certain type of fuel and again, it would not necessarily require certain emissions accounting.

The third important way for the IMO to ensure that double counting is avoided is to ensure that the enforcement of the measure does not rely on flag States. Relying on flag States is problematic because they often have little nexus to either the journeys the ship undertakes, or where fuel is produced or purchased. Currently the Data Collection System in the IMO relies on flag States as the primary method of emissions reporting to the IMO, but this can be contrasted with the method under the EU Monitoring, Reporting and Verification Regulation¹⁶ where the flag state of the ship is irrelevant and the system is based on port calls. UMAS and EDF already examined how the IMO could prevent double counting in their 2020 paper and concluded that:

“The IMO should make sure that reporting rules include safeguards to prevent double claiming of emissions reductions. Specifically, the IMO should not develop a reporting regime that is based around flag states, but rather one that should be administered directly and centrally by the IMO.”

It would be entirely within the IMO's remit to design a system that relied on the voyages of ships rather than their flag States' monitoring.

¹⁵ MEPC 76/7/12 Proposal for IMO to establish a universal mandatory greenhouse gas levy.

¹⁶ Regulation 2015/757.

A separate though related issue is the question of the double reporting of emissions (double counting refers to the potential for double counting *reductions*). Some countries have suggested that the IMO can only regulate emissions on ships because under the UNFCCC regime, countries report emissions on land in their Nationally Determined Contributions (NDCs). While it is correct that countries should report emissions on land in their NDCs, this is not a reason for the IMO not to take into account the upstream emissions. With the finalisation of the Paris Rulebook and Art 6 at COP26, the UNFCCC did create some very high-level provisions for this as explained by one expert:

*"Article 6.4 states that corresponding adjustments will also be required for "other international mitigation purposes". This open-ended term is interpreted by a consensus of experts to refer to the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and similar schemes to be agreed to by the International Maritime Organization (IMO) and other international organizations."*¹⁷

Thus, there is a clear acknowledgement that when the IMO regulates, there simply needs to be an adjustment to national government reporting.

Finally, the approach ICAO have taken could also be replicated in the IMO, which is to work to identify key parts of the fuel lifecycle that are at high risk of double-counting and then these can be used to assess double-counting risks for certain pathways and make the corresponding adjustments with GHG inventories, or otherwise excluding those credits from the lifecycle of a given fuel.

Conclusion

Nowhere are any of the IMO's powers limited specifically to emissions from the ship but rather allow the IMO to regulate the full lifecycle of shipping fuels, including the upstream emissions. Similarly, there is nothing in MARPOL which restricts that Convention to emissions from the ship only. As long as IMO members follow the correct procedures to agree a regulation on the full lifecycle of fuels, then there can be no concern of the IMO exceeding its jurisdiction. The only explicit limits upon amendments to MARPOL are that they should relate to the substance of that Protocol or Annex in MARPOL and must be consistent with the articles of MARPOL. There is no reason to suppose that an amendment to MARPOL that includes the emissions from the production of shipping fuels would not be consistent with the substance of MARPOL.

¹⁷ Ben Rattenbery (2021) *COP26: the impact on carbon markets and policy*. Available at <https://www.sylvera.com/blog/cop26-the-impact-on-carbon-markets-and-policy> (accessed 05 April 2023).