

**COMPARATIVE ANALYSIS OF CANDIDATE MID-TERM MEASURES****Fact sheet**

<b>Name of the candidate measure:</b>	<b>Simplified Global GHG Fuel Standard (GFS)</b>
<b>Reference document(s):</b>	ISWG-GHG 15/3/6 and ISWG-GHG 15/3/7.

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## 1 Feasibility of the proposed candidate measure

<b>1.1 Scope and compliance options</b>	
1.1.1 Substances covered (GHG/CO <sub>2</sub> )	<p>The simplified Global (GHG) Fuel Standard, complete with suggested possible draft regulatory text to implement the measure, as set out in document ISWG-GHG 15/3/6 (ICS), sets a standard for reducing the GHG intensity of marine fuels (CO<sub>2e</sub>).</p>
1.1.2 Phases of GHG emissions covered (WtT / TtW / WtW)	<p>This will depend on the LCA Guidelines and the approach taken with respect to how upstream emissions are to be addressed by the 2023 IMO Strategy on reduction of GHG emissions from ships, but could be based on TtW emissions adjusted to take account of the lifecycle emissions of fuel (i.e. WtT emissions too).</p> <p>There may be pragmatic reasons for special consideration with respect to how the upstream emissions of fuels such as methanol, ammonia and hydrogen produced from fossil feedstocks are initially treated by the measure, in the best interests of promoting the uptake of these fuels before green versions become available which are produced using renewable electricity.</p>
1.1.3 Acceptable approaches for compliance (e.g. in-sector/out-of-sector offsetting, CCS, etc.)	<p>This depends on what Member States decide with regard to the treatment of upstream emissions, but the measure would be based on the consumption of marine fuels and there would be no provision for out-of-sector offsetting such as the purchase of carbon allowances from other sectors.</p> <p>Compliance with the GHG intensity requirement could also be achieved using technologies such as carbon capture and storage, pursuant to regulation 4 of MARPOL Annex VI “Equivalentents” – and a provision for this has been included in the suggested draft regulatory text in the annex to document ISWG-GHG 15/3/6.</p>
<b>1.2 Likelihood to achieve a consistent implementation of the measure</b>	
1.2.1 Provisions to ensure global availability of alternative fuels and technologies	<p>The primary purpose of the simplified Global GHG Fuel Standard (GFS), being a technical measure, is to reduce the GHG intensity of marine fuels e.g., by 5% by 2030 with an aggressive tightening of this standard after 2030 (provided that this is also supported by a separate economic measure that will incentivize the production and uptake of low- and zero-GHG fuels necessary to accelerate transition to net zero, mid-century).</p> <p>The simplified version of the GFS uses an approach which is similar to that used for the IMO 2020 global sulphur limit as set out in regulation 14.1 of MARPOL Annex VI. All ships to which the GFS regulation applies will be required to use fuel that complies with a standard for reduced GHG intensity compared to 2019 (or whatever reference year may be agreed).</p> <p>This should send a clear and unambiguous signal to energy producers and fuel suppliers with regard to the demand for alternative fuels with a reduced GHG intensity which they will</p>

	<p>need to supply by 2030, and in future years, as may be decided, as the permitted GHG intensity of marine fuels is further reduced.</p> <p>The simpler approach is different to that proposed by Austria et al. in document ISWG-GHG 13/4/7 with its proposed requirement – which uses what seems to be an excessively complex system of verification – for ships to reduce the GHG intensity of the fuels which they use during a period of one calendar year, rather than, as suggested by ICS, simply requiring ships to use fuels which meet a specified mandatory standard, which shipping companies, their customers, Port State Control and, most importantly, fuel suppliers can clearly understand.</p> <p>Without a mandatory standard for the GHG intensity of the fuel which all ships to which the regulation applies must use, as set out in the simplified GFS proposal, fuel producers and suppliers, being aware that there will still be a demand for less expensive fuels with a higher GHG intensity than the agreed standard which ships are still legally permitted to use after 2030, may not be fully committed to producing fuels with a lower GHG intensity – which for the standard set for 2030 is likely to require the use by many ships (amongst other fuels) of large quantities of biofuels and blends.</p> <p>It is emphasised, however, that significant production and availability of low- and zero-GHG fuels such as methanol, ammonia, hydrogen and synthetic fuels, which will be needed to achieve net zero, is only likely to occur after 2030 and will only be possible if the GFS is complemented by an economic measure to achieve the necessary take-off point by 2030, such as the Fund and Reward (feebate) mechanism as set out in documents ISWG-GHG 14/3 (ICS) and ISWG-GHG 14/3/1 (Japan).</p>
<p>1.2.2 Provisions to limit administrative burden for ships and Administrations</p>	<p>As the simplified GHG fuel standard, unlike the system set out in document ISWG-GHG 13/4/7, does not require a system whereby ships need to verify, via annual audits undertaken by external bodies acting on behalf of their Administration, that the average GHG intensity of a variety of different fuel types which they may use over the course of calendar year complies with the standard, it greatly limits the administrative burden for ships and Administrations.</p> <p>As the use of fuels required to comply with the standard can be recorded on the Bunker Delivery Note<sup>1</sup>, which can be checked by the Administration and port State control, there will be no need for an additional system of verification or the establishment of additional databases, thus minimising the administrative burden both for the ship and its Administration (as well as for the Organization).</p>

<sup>1</sup> Subject to amendment of appendix V of MARPOL Annex VI.

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### 1.3 Compatibility and consistency with existing regimes/regulations

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1.3.1 Consistency with UNFCCC and the Paris Agreement

By helping to create a market for low- and zero-GHG fuels, especially for the decade of 2030, and by sending a clear signal to energy producers and fuel suppliers about the maximum permitted GHG intensity of the marine fuels which must be made available globally to help achieve the transition to net zero, mid-century (in combination with an economic measure that provides incentives to first movers), the simplified GFS is consistent with the objectives of UNFCCC and the Paris Agreement.

The need to be cognizant of the UNFCCC principle of CBDR-RC will be achieved by the measure being adopted in combination, within a basket of measures, with an economic measure such as the Fund and Reward (feebate) mechanism, with a significant proportion of the contributions to be made by ships to the IMO fund established by the economic measure to be used to support GHG reduction efforts of developing countries, in particular Least Developed Countries (LDCs) and Small Island Developing States (SIDS), including measures to facilitate the production and supply in developing countries' ports of the alternative fuels that will be required to comply with the GFS.

1.3.2 Coordination / overlap with other international, regional and national initiatives

The EU is about to apply its FuelEU Maritime Regulation to ships, including non-EU ships trading with EU ports, and depending on what GHG intensity standards are agreed for the GFS, and their implementation dates, ships might need to comply with different standards.

However, this simpler GFS mechanism, as set out by ICS, has the advantage that it will not require ships to participate in two separate verification regimes (or trading systems) with differing and potentially conflicting requirements.

1.3.3 Compatibility with other IMO regulations

The Fund and Reward measure would be implemented via amendments to MARPOL Annex VI in a separate chapter to the proposed economic measure, and would be similar in approach to that used for the IMO 2020 global sulphur limit as set out in regulation 14.1 of MARPOL Annex VI.

The possible draft regulations set out in the annex to document ISWG-GHG 15/3/6 suggest Guidelines to be developed based on resolution MEPC. 320(74) *2019 Guidelines for consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI* including pro-forma FONAR.

This technical measure would also complement the 2021 amendments to MARPOL Annex VI to improve the carbon intensity of the world fleet, and the mandatory use of fuels with a lower GHG intensity would help ships to improve their A-E performance rating.

## 2 Effectiveness of the proposed candidate measure

### 2.1 Expected reductions in GHG emissions

2.1.1 Levels of GHG reduction with associated timeframe

In combination with an economic measure, as part of a basket of measures, such as the Fund and Reward (feebate) measure, this simplified GFS is intended to help ensure net zero emissions from international shipping by 2050 (or whatever mid-century target might be agreed by MEPC 80 as part of the 2023 IMO GHG Strategy on reduction of GHG emissions from ships).

In the meantime, in combination with an economic measure, it should help to ensure that 5% of the energy used by shipping is generated from low- or zero-GHG fuels by 2030, equivalent to reducing CO<sub>2</sub>/CO<sub>2</sub>e emissions by around 50 million tonnes per year.

Importantly, the regulatory architecture would also be in place to mandate further reductions in the GHG intensity of fuels that would be necessary after 2030 to achieve a net zero goal, mid-century.

It is emphasised that unless the measure is adopted alongside an economic measure which will incentivize first movers by closing the cost gap to achieve a take-off point by 2030 for the production and uptake of low- and zero-GHG fuels with a far lower GHG intensity than that required by the standard to be agreed for 2030, then the alternative fuels required to achieve net zero, mid-century, will not be available in the 2030s in the quantities required to allow the GHG intensity standard to be further reduced to the extent required, after 2030, if achievement of a net zero goal, mid-century is to remain plausible.

2.1.2 Provisions to avoid unintended outcomes that could increase GHG emissions

As all ships covered by the simplified GFS measure would be required to use fuels with a lower GHG intensity than in whichever reference year was used, with the GHG intensity of these fuels being determined by the LCA Guidelines, there should not be any unintended outcomes that will increase total GHG emissions by the world fleet, as energy producers would be given a clear signal to provide the low-GHG fuels required to meet the standard agreed for 2030.

However, if the measure fails to ensure that energy producers and fuel suppliers provide sufficient quantities of the fuels needed to comply with the GHG intensity standard in 2030 – which is likely to be the case if meaningful rewards are not provided to first movers by a separate economic measure to reduce the cost gap – then the suggested regulations require a review to be completed by 2028 to analyse the cost and availability of the low- and zero-GHG fuels that will be needed to comply, before a final decision is taken by the MEPC to proceed with implementation in 2030. This review can also take account of any new information with respect to potential unintended outcomes.

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**2.2 Incentives for first movers**

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2.2.1 Provisions for reducing/bridging the price gap between conventional and low-carbon solutions

As this is a technical measure intended to reduce the GHG intensity of all fuels used by ships, this is not directly applicable unless seen in combination with an economic measure.

However, ships which choose to meet or exceed the GHG intensity standard before 2030 would, via the economic measure introduced as part of the basket of measures, receive rewards before 2030 for GHG emissions prevented by the use of eligible alternative fuels via the IMO fund, whilst having the additional incentive of being required to make a smaller contribution to the IMO Fund than ships using conventional fuel oil.

2.2.2 Provisions to ensure a level playing field

The requirement for ships to comply with a GHG intensity standard would apply to all ships registered with flag States that are Parties to MARPOL Annex VI. Compliance would also be enforced via Port State Control to ships registered with non-Parties in accordance with the no more favourable treatment principle, in the same way that the 2020 sulphur limits are enforced.

2.2.3 Provisions to ensure global access to technology

As this a technical measure intended to reduce the GHG intensity of all fuels used by ships, this is not applicable unless seen in combination with an economic measure, although, as explained above, compliance with the fuel standard could also be achieved with carbon capture technologies (which would also be incentivized by the Fund and Reward (feebate) measure).

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**2.3 Compatibility of different elements within the basket of measures**

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2.3.1 Identification where elements of the measure are complementary to each other without overlap or redundancy

It is intended that this technical measure will complement the development of a Fund and Reward (feebate system) as an economic measure within a separate chapter of MARPOL Annex VI, given that – unless incentives are provided to reduce the cost gap – a fuel standard on its own will not be sufficient to ensure that the necessary quantities of low and zero GHG fuels will be available, especially when the permitted GHG intensity of fuels is further reduced in the 2030s.

This GFS as set out in document ISWG-GHG 15/3/6 (ICS) is simpler to implement as all it requires ships to comply is to use fuels which meet a mandatory fuel standard, and avoids any overlap or redundancy by avoiding additional complexity such as a Surplus Reward System, which would seem to have elements or characteristics of an economic measure.

2.3.2 Provisions to avoid double accounting, payment, reward or punishment

As mentioned in 1.3.2 above, the EU is about to apply its FuelEU Maritime Regulation to ships, including non-EU ships trading with EU ports, and depending on what GHG intensity standards are agreed for the GFS, ships might need to comply with different standards.

However, this simpler GFS mechanism will not require ships to participate in two different verification regimes (or trading systems) with differing and potentially conflicting requirements.

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**2.4 Process for development and implementation**

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2.4.1 Possible legal framework	The measure will be implemented via amendments to MARPOL Annex VI. The annex to document ISWG-GHG 15/3/6 set outs suggested text of possible draft amendments to MARPOL Annex VI to add, <i>inter alia</i> , a new chapter 7 "Global GHG Fuel Standard".
2.4.2 Expected timeframe for development and implementation	Given the urgency, and the simplicity of the draft regulation included in the annex to document ISWG-GHG 15/3/6, it should – with political will – be possible for necessary amendments to MARPOL Annex VI to be finalised and adopted by 2025, supported by a combined comprehensive impact assessment of both the GFS and the proposed Fund and Reward (feebate) economic measure.
2.4.3 Mechanisms of accountability and adjustment	The suggested possible draft amendments to MARPOL Annex VI contain a review clause, with a review to be completed by 2028 of the cost and availability of the fuels required to comply with the GHG intensity standard in 2030 prior to a decision by the MEPC on whether to proceed with implementation in 2030.

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### 3 Potential impacts on States of the proposed candidate measure

<b>3.1 Initial impact assessment</b>	
3.1.1 Does the proposal provide a description of impacts on ships and emissions?	<p>Yes, document ISWG-GHG 15/3/6 explains that the advantage of the simpler approach suggested by ICS is that it should be far easier to conduct a comprehensive impact assessment of the measure for the year 2030, in combination with an assessment of the impact of the economic measure. Moreover, unlike the economic measure, the cost impacts of the simplified GFS measure suggested by ICS would not occur until 2030.</p> <p>Document ISWG-GHG 15/3/7 (ICS) examines the impacts of a simplified GFS in combination with an economic measure.</p>
3.1.2 8 Impact criteria assessed	Document ISWG-GHG 15/3/7 examines the cost impact of the measure in combination with the Fund and Reward (feebate) mechanism.
3.1.3 Potential positive and negative impacts	<p>The positive impacts are that by sending a clear demand signal to energy producers and suppliers, the simplified GFS, in combination with an economic measure, could – depending on the standard set for 2030 – allow international shipping to reduce its total GHG emissions by an additional 5% by 2030.</p> <p>The obvious potential negative impact is the additional cost of marine fuel that complies with the fuel standard.</p>
3.1.4 Extent of the impacts on States	<p>All Member States will be affected negatively by the consequences of climate change. By helping the international shipping sector to decarbonize as soon as possible, this measure will be of significant benefit to all Member States, including LDCs and SIDS, contributing to the goal agreed by UNFCCC Parties of reducing global GHG emissions to levels required so that average global temperatures do not increase by more than 1.5°C.</p> <p>As explained in 1.2.2 above, the administrative burden on States will be limited especially when compared to the proposal set out in document ISWG-GHG 13/4/7.</p>
3.1.5 Description of methodological tools and data sources used	To help identify if a measure (including the GFS) might have disproportionately negative impacts on States, for the initial impact assessment contained in document ISWG-GHG 12/3/8 (ICS), Clarksons Research used its comprehensive database of time series data related to commercial shipping markets, including bunker prices, freight rates and time charter rates, to test how the impact of increases in fuels cost due to a measure compared with recent, 5 and 10 year price variability of marine fuel oil.
<b>3.2 Possible disproportionately negative impacts</b>	
3.2.1 Is the measure likely to result in disproportionately negative impacts on States?	In summary, the initial impact assessment contained in document ISWG-GHG 12/3/8 – which analysed the volatility of marine fuel oil prices over the past ten years on freight rates and the price of delivered cargo for a variety of trade routes and cargo types, with a focus on developing countries geographically remote from their

	<p>markets – suggests that an increase of costs of up to and in excess of US\$150 per tonne of marine fuel would be unlikely to have disproportionately negative impacts on States.</p> <p>As explained in document ISWG-GHG 15/3/7 (ICS), which examined the possible combined impacts of both a simplified GFS (technical measure) and a flat rate (levy) contribution to an IMO Fund (economic measure), it is likely that many ships may comply with the GHG intensity standard agreed for 2030 using a 20% biofuel blend, the additional cost of which might be between US\$40 and US\$80 per tonne of fuel (possibly to the lower end of this range as the cost of such fuel might be expected to decrease as more of it is produced to satisfy increased demand created by the fuel standard).</p> <p>Based on the analysis by Clarksons Research, the measure would therefore seem unlikely to result in disproportionately negative impacts on States, either on its own or in combination with an economic measure such as the Fund and Reward (feebate) measure.</p> <p>As explained in 1.2.2 above, the administrative burden on States of the simplified GFS will be limited especially when compared to the proposal set out in document ISWG-GHG 13/4/7.</p>
<p>3.2.2 Description of how these impacts could be addressed (e.g.: avoided, remedied, mitigated), as appropriate</p>	<p>As mentioned in 3.2.1 above, if the additional cost of low GHG intensity fuels required to comply with the measure was between US\$40 and US\$80 per tonne of fuel, then – subject to confirmation by the comprehensive impact assessment – it is unlikely that there would be disproportionately negative impacts that might require mitigation.</p>

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