CARBON MARKET WATCH

Shipping Forecasts:

Scoring the decarbonisation proposals under the International Maritime Organisation's market-based measures (MBM) shipping strategies

POLICY BRIEF September 2024

A new greenhouse gas strategy for international shipping

For years, voices emanating from the international shipping industry have talked about introducing measures to reduce their greenhouse gas (GHG) emissions, which accounted for nearly 3% of the global total in 2018, and could increase by half by 2050.

Regrettably, there was little progress prior to the summer 2023 revision of the unambitious 2018 'GHG Strategy' of the International Maritime Organisation (IMO). From a low starting point, it now aspires to reduce emissions by a modest 20% (striving for 30%) by 2030 and 70% (striving for 80%) by 2040 compared to 2008 emissions. The ambition is to reach net zero emissions by (or around) 2050.

The strategy also plans for a 5% uptake (striving for 10%) of zero-emission fuels and technologies by 2030. This is an improvement compared to the previous approach as it now indicates the organisation is navigating towards bringing its aims and ambitions in line with climate science. However, it is nowhere near enough to be aligned with the urgent need to cap global heating to less than 1.5°C above pre-industrial levels as enshrined in the Paris Agreement.

Given the lack of ambition, Carbon Market Watch (CMW) asserts that the minimum aim of the shipping sector should be to achieve the 'striving' emission reduction targets of the strategy. Strong market-based measures (MBM) can help to get back on track in the immediate future, while in the medium term, the strategy's ambitions must be revised upwards.

Assessing proposals for market-based measures

Over recent months and years, several countries and organisations have discussed and put forward proposals of so-called 'mid-term measures' aimed at contributing to the shipping industry's GHG strategy objectives. Ahead of the 83rd session of the Marine Environment Protection Committee (MEPC) in 2025, it is expected that important negotiations will already take place at MEPC 82, in September and October 2024, to discuss differing perspectives on what those measures should look like.

To understand the extent to which these various propositions contribute to climate action, and the just and equitable transition, CMW commissioned environmental consultancy 'CE Delft' to develop a methodology to assess the proposals.

The methodology provides assessment criteria developed upon the principles for market-based measures elaborated by the Clean Shipping Coalition and CMW, and tools to assess all mid-term measures including those tackling technical elements of the IMO's GHG strategy, such as the GHG fuel standard (GFS). This assessment investigates the economic elements, and thus focuses exclusively on the carbon pricing aspect of the proposals.

Navigating the IMO

CMW analysed the four proposals for a GHG pricing scheme submitted by countries and other parties to the IMO ahead of the 30 September to 4 October 2024 MEPC 82 meeting in London, UK.

In the next chapters, we present a detailed assessment of these perspectives.

The strategy outlines that "a basket of candidate mid-term measure(s), delivering on the reduction targets, should be developed and finalised comprised of both:

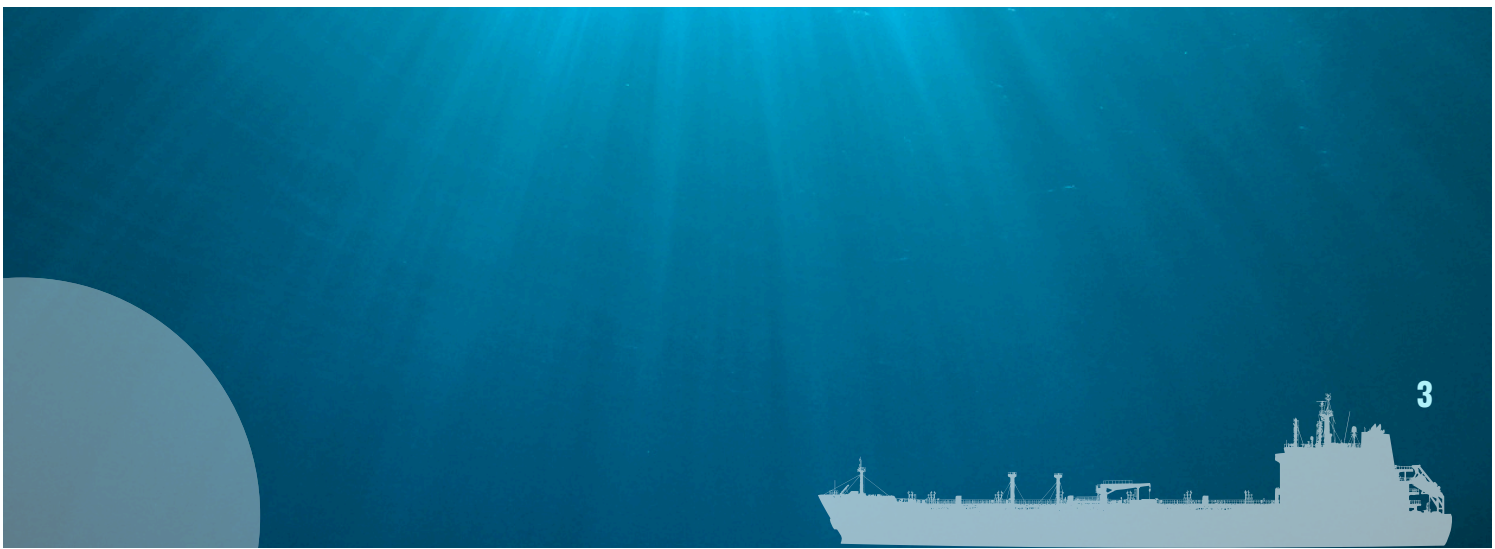
1. a technical element, namely a goal-based marine fuel standard regulating the phased reduction of the marine fuel's GHG intensity; and
2. an economic element, on the basis of a maritime GHG emissions pricing mechanism[1]."

The timeline of the 2023 IMO strategy declares mid-term measures to be approved at MEPC 83 (Spring 2025) and adopted at an extraordinary session of the MEPC set to be specially convened in Autumn 2025 to allow for the entry into force of the measures in 2027.

The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention aimed at the prevention of pollution from ships caused by operational or accidental causes. It is widely considered that amending the MARPOL Annex VI is by far the most straight-forward, efficient and logical way to implement the MBM, and therefore, the only realistic option to abate the maritime sector's emissions this decade.

Proposals can be accessed via the IMO portal.

[1] IMO, RESOLUTION MEPC.377(80) "2023 IMO STRATEGY ON REDUCTION OF GHG EMISSIONS FROM SHIPS," 2023



How do the proposals fare?

Our assessment methodology was developed on the following criteria to score the proposals:

1. Bring the shipping sector in line with the Paris Agreement's 1.5 °C target (including well-to-take (WtT) or well-to-wake (WtW) emission scopes) (30 points);
2. Decrease pollution from ships as soon as possible in this decade (30 points);
3. Support countries most at risk from climate change impacts, and countries and workers most dependent on shipping (20 points);
4. Raise revenues to help decarbonise the sector by supporting research and infrastructure development (10 points);
5. Accurate monitoring, truthful reporting and effective enforcement (4 points);
6. GHG emissions scope (3 points);
7. No undermining of more climate ambitious regulations in countries or regions (3 points).

Proposed by

Austria et al. (EU/Japan)

SCORE: B

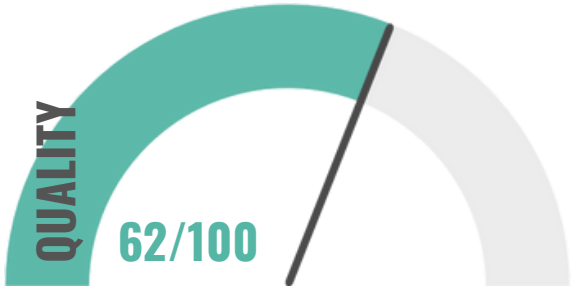
Austria et al. (EU/Japan) presents a fairly good overall score. While the levy of $100 / tCO2e is outlined for 2027, further detail for subsequent years is lacking including for 2030, 2040, and 2050 milestones. Ambition is limited, complying with the IMO's GHG strategy, which targets net zero by 2050, but not before.

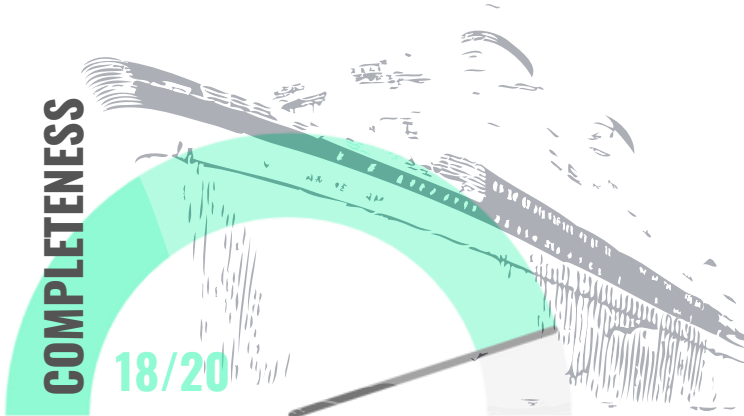
There's potential for improvement. A positive rating is warranted, but the levy should be included in MARPOL Annex VI amendments. We recommend an increase beyond $150 / tCO2e, which, as per the Comprehensive Impact Assessment, would add certainty to early energy efficiency investments that reduce fuel demand and, thus, the overall cost of meeting the strategy's target. The allocation of revenue to Least Developed Countries (LDCs) and Small Island Developing States (SIDS) also scores well, although this could be improved by better definition of the distribution keys for each allocation stream.

There is a clear need to significantly increase the share of revenues directed towards research, development, and innovation (R&D&I). The proposal could also better allocate R&D&I funds to LDCs and SIDS, currently scoring poorly on that front.

On monitoring, the proposal receives a perfect score, but would benefit from further clarification. As is the case for other GHGs, black carbon emissions should also be covered by the levy or other appropriate measures to abate those emissions. Additionally, the levy should be considered as complementary to national or regional climate measures, ensuring it doesn't obstruct more ambitious efforts taking place at other levels of governance.

Overall, the proposal earns a good score but has significant potential for further improvement, especially by raising the amount of the levy that can be measured against incremental five year targets (2030, 2035, etc), and strengthening provisions for R&D&I, particularly for LDCs and SIDS.





Proposed by

Bahamas et al.

SCORE: C

The Bahamas, Liberia and the International Chamber of Shipping (ICS) present a modest proposal that has much room for improvement. The contribution value is only provided as a broad range, from $6.25 to 100 / tCO2e—an overly large and vague span. In latest submissions, a value of $18.75 / tCO2e has been suggested, yet only for “illustrative purposes”. From the outset, this value is far too low to effectively discourage the use of polluting marine fuels. Furthermore, the proposal should abandon the Tank-to-Wake (TtW) approach in favour of the more comprehensive Well-to-Wake (WtW) framework.

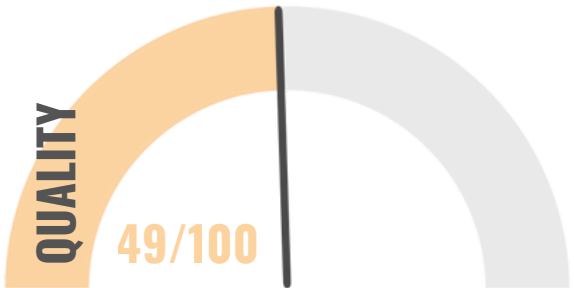
On a more positive note, the suggestion to amend Annex VI of MARPOL is welcome, as is the suggestion for both contribution and reward levels. However, those must be raised to make a meaningful impact.

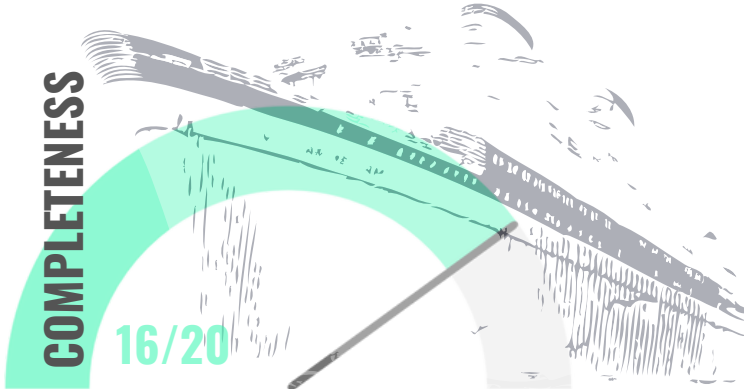
The proposal promotes the need to support workers and developing countries through its plan to create an International Maritime Sustainability Fund (IMSF) financed by the Zero-Emission Shipping Fund (ZESF). Yet, no specific share or amount of the ZESF is indicated for the IMSF, leaving a crucial aspect underdeveloped. Similarly, while R&D funding is mentioned, no specified allocation or percentage is provided, weakening the overall strategy.

Monitoring earns a perfect score, measuring all relevant GHG emissions - carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) - as ‘CO2 equivalent,’ in keeping with the IMO GHG strategy. Coverage of black carbon emissions should also be addressed, whether via this measure or another.

Rejection of double counting emissions is commendable, but detail is lacking on how regional schemes can complement IMO measures for voyages within specific regions.

Overall, while the monitoring and enforcement mechanisms seem robust, and the implementation via Annex VI is efficient, the proposal falls short due to its lack of specificity regarding contribution levels and funding allocations for developing countries and R&D.





Proposed by

Belize et al. (Pacifics)

SCORE: A+

The Pacifics proposal scores strongly. It brings a critical focus to achieving zero GHG emissions from the sector with a high levy at $150 / tCO2e, though a more ambitious timeline for reaching this target could be set than by 2050.

This proposal earns a perfect score for its clarity — no trial periods, no phased approach — offering universal coverage including concrete amendments to MARPOL Annex VI and a strong price signal well before 2030.

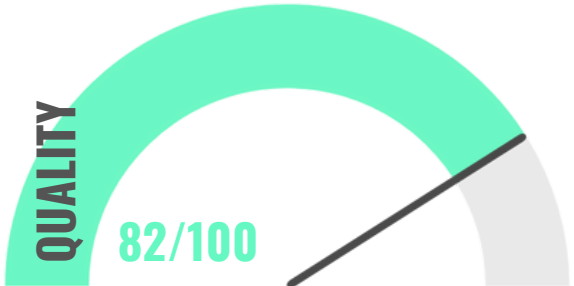
For its focus on supporting climate-vulnerable nations, the proposal receives high marks, but could be further improved by better addressing the just transition for workers. Incorporating provisions for the retraining and reskilling of workers in levy-funded areas would enhance the proposal's impact.

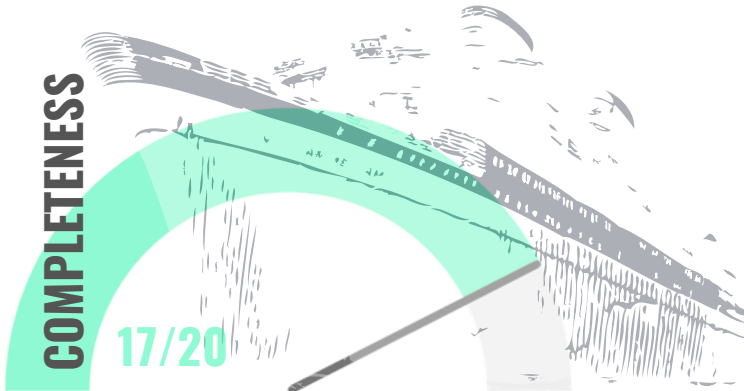
On raising revenues and how it would direct them toward decarbonisation efforts, including in developing countries, the proposal again receives a perfect rating. The plan is clear, without a need for addition.

While the reporting and verification provisions are solid, they could be strengthened by detailing further enforcement powers to Flag States. Though the proposal refers to GHGs in a general sense, it would have been useful to specify the gases and particulate pollutants covered — such as CO2, CH4, N2O, and black carbon.

Crucially, the proposal should make clear that the levy would not replace existing or future national and regional climate measures, nor would it limit other levels of governance from pursuing more ambitious climate goals.

Overall, Belize et al. (Pacifics) stands out from the rest as the most complete and well-developed proposal, highlighted by how it would raise essential revenues to support the countries most in need.





Proposed by

Canada

SCORE: C

Canada's proposal has a welcome approach to its contribution level set at a fairly high value of $130 / tCO2e, based on WtW emissions. However, the score could be improved by setting higher contribution levels for 2040 and 2050, and by aiming for carbon neutrality before mid-century.

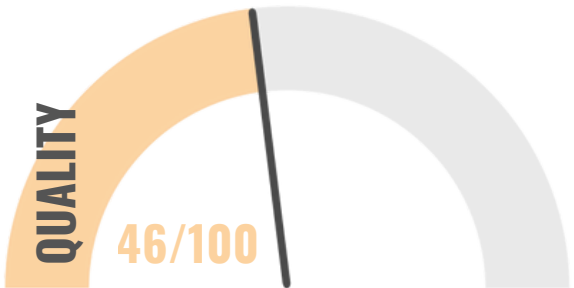
The proposal earns a positive score for its decision to introduce a relatively high tariff before 2030 and for its intention to amend MARPOL Annex VI. However, it falls short by failing to include specific, concrete amendments or detailing the respective obligations, leaving this aspect underdeveloped.

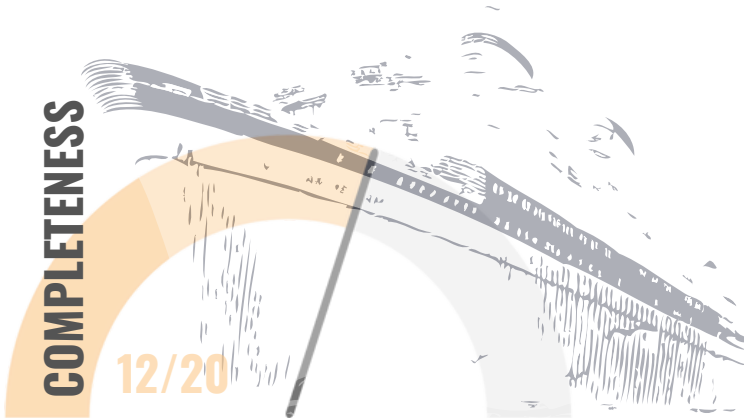
There is a significant lack of detail regarding revenue. While the scheme would raise substantial funds, these would be directed to pre-existing funds complying with some eligibility criteria, yet without enough clarity on how revenues would be used exactly. Furthermore, it is notable that completely absent from the proposal is funding for research, development, and innovation (R&D&I).

The roles of Flag and Port States are also in need of a more explicit definition. Though the proposal still earns a positive score for monitoring, it would benefit from covering black carbon emissions or addressing them under an alternative measure.

Importantly, the proposal should clarify that the charge does not replace existing or future national or regional climate measures, and it should not substitute higher climate ambitions at other governance levels.

In summary, this is a modest proposal that could have achieved a higher score had there been more thorough consideration of revenue, and it provided concrete Annex VI amendments.





The case of the Angola et al. proposal

Like the Austria et al. (EU/Japan) proposal, the Angola et al. proposal suggests the adoption of a GHG fuel standard (GFS) coupled with a flexibility compliance mechanism. The GFS suggests a trajectory along which covered ships must meet the maximal GHG fuel intensity (GFI) cap that has been set for given years and reduces over time. This is a similar scheme to the EU's FuelEU Maritime regulation.

The flexibility compliance mechanism allows a ship or fleet, if it is above the required GFI, to comply by means of purchasing deficit units (termed Remedial Units). On the contrary, over compliant ships or fleets can sell their surplus units, generating profit.

The problem is that the Angola et al. proposal projects the flexibility compliance mechanism included under its technical element as an economic element despite it being unsuited and insufficient for this purpose.

A flexibility compliance mechanism can help to ensure realistic application of the GFS, reinforcing the technical element (considering the various life spans of vessels, various national and regional capacities to retrofit or replace fleets, and build supply chain for e-fuel supply).

However, this standalone flexibility compliance mechanism would effectively blow climate action out of the water and enable ship owners on or below the GHG intensity trajectory to torpedo the polluter pays principle, thereby disincentivising decarbonisation.

In the absence of pooling, only ships above the trajectory of the GFI would have to purchase remedial units. The fact that few (and potentially zero) ships would pay for their pollution would raise a mere $0.5-11 billion compared with an estimated $53-127 billion under an emissions trading system or levy.[2] The difference is by a factor of an astounding 12 to 106 times.

This proposal is unsuitable as it fails to consider the just and equitable transition, which should be considered of equal importance to the uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources as part of the 2023 IMO GHG strategy.

The potential revenues raised would be far from sufficient to address both of these aspects. Annual disbursement to eligible zero and near zero fuels rise to $7 billion with a GFI flexibility mechanism, compared to a maximum of $29 billion with a $150-300 / tCO2e levy.

With regards to the budget available for other revenue disbursement categories (including equitable transition or capacity building), $0.1-0.2 billion would be available each year with the GFI flexibility mechanism and $9 to 87 billion with the high levy.[3]

For the above reasons, the Angola et al. proposal is not considered to be a market-based measure (MBM) and is therefore not assessed in this exercise.

2 Over the period 2027-2040. Source: DNV, Comprehensive impact assessment of the basket of candidate mid-term GHG reduction measures – Task 2: Assessment of impacts on the fleet - Final report (for the IMO), 2024, p20. Scenario with levy ranging between $150 and 300/tCO2e.

3 Over the period 2027-2040. Source: DNV, Comprehensive impact assessment of the basket of candidate mid-term GHG reduction measures – Task 2: Assessment of impacts on the fleet - Final report (for the IMO), 2024, p21

ANNEX
SCORESHEETS

Proposed by

SCORE: B

Austria et al. (EU/Japan)

Documents assessed: ISWG-GHG 17/2/2, ISWG-GHG 16/2/9, ISWG-GHG 15/3/2, ISWG-GHG 13/4/8

Quality of the proposal: 62/100 **Completeness of the proposal: 18/20**

Criteria	Score	Key areas for improvement
Aligned with 1.5°C Paris Agreement target?	14/30	Moderate score. A starting value of $100 / tCO2e is applied for 2027 but without any increase thereafter (also not in Annex VI amendments). Minimum levels for 2030, 2040, 2050 could have been suggested. Ambition also doesn't go further than IMO GHG strategy of reaching net zero around 2050
Emissions reductions before 2030?	24/30	The levy level should be included in Annex VI amendments, and the $100 / tCO2e price could be raised to above 150.
Support countries most at risk from climate change, and countries and workers most dependent on shipping?	17/20	Good score. The share of revenues going to LDC/SIDS could be further increased
Revenues raised to decarbonise the sector by supporting R&D&I?	0/10	Terrible score. The share of revenues going to R&D&I must be raised and the proposal could better guarantee that revenues go to LDC/SIDS.
Accurate monitoring, truthful reporting and effective enforcement?	4/4	The proposal suggests using the existing IMO Fuel Oil Data Collection System (DCS) and describes Port and Flag States duties.
Wide scope of GHG emissions?	3/3	CO2, CH4 and N2O are covered. Black carbon would need to be addressed too under the levy and under tailored regulation urgently.
Complements more climate ambitious regulations in relevant countries & regions?	0/3	The proposal should specify that the levy does not replace existing or future national and regional climate measures, and doesn't prevent other governance levels from increasing their climate ambition
CONCLUSION	62/100	**Good total score. The level of the levy can be substantially improved and incremental targets set for the years ahead. Likewise, provisions relating to use of revenues for R&D&I, especially for LDC/SIDS, could be reinforced.**

Proposed by

SCORE: C

Bahamas, Liberia and ICS - Fund and Reward (Feebate)

Documents assessed: ISWG-GHG 17/2/5, ISWG-GHG 16/2/3, based on/considering ISWG-GHG 16/2/2 (ICS), ISWG-GHG 13/4/9 (ICS), ISWG-GHG 12/3/9 (Argentina et al.), MEPC 78/7/5 and ISWG-GHG 12/3/17 (both by Japan), MEPC 76/7/12 (Marshall Islands and Solomon Islands), MEPC 76/7/7 (Denmark et al.), as well as previous submissions by ICS: ISWG-GHG 14/3 (ICS), ISWG-GHG 15/3/8 (ICS), ISWG-GHG 12/3/8 (ICS), ISWG-GHG 16/2/1 (ICS)

Quality of the proposal: 49/100 **Completeness of the proposal: 16/20**

Criteria	Score	Key areas for improvement
Aligned with 1.5°C Paris Agreement target?	8/30	No contribution value is determined, but a wide range, from $6.25 to 100 / tCO2e. This span is too large and too vague. This minimal value is far too low to disincentivise use of polluting marine fuels from the outset. TtW needs to be dropped in preference for WtW.
Emissions reductions before 2030?	23/30	It is welcome that the proposal suggests to amend Annex VI of MARPOL and that the levels of the contribution and reward would be indicated there. The contribution level (pre-2030 and beyond) should be raised.
Support countries most at risk from climate change, and countries and workers most dependent on shipping?	11/20	The need to support workers and developing countries is acknowledged. Proponents suggest creating an IMSF dedicated to developing countries and funded by the ZESF. However, the dedicated share or amount of the ZESF flowing to the IMSF is not indicated.
Revenues raised to decarbonise the sector by supporting R&D&I?	0/10	Beyond a mere mention that IMSF could fund R&D projects, details are missing on the specific share or amount.
Accurate monitoring, truthful reporting and effective enforcement?	4/4	The proposal suggests using the existing IMO Fuel Oil Data Collection System (DCS) and describes Port and Flag States duties.
Wide scope of GHG emissions?	3/3	The proposal mentions CO2e, which, according to IMO GHG Strategy, should cover CO2, CH4 and N2O. Black carbon would also need to be addressed under the levy and under tailored regulation urgently.
Complements more climate ambitious regulations in relevant countries & regions?	0/3	The proposal rejects double counting (i.e. pricing) of emissions (e.g. in regional schemes) but does not go so far as to state that such schemes could replace IMO measures for voyages within that specific region.
CONCLUSION	49/100	**A modest score. While monitoring and enforcement aspects seem robust and the scheme's implementation via Annex VI amendment is efficient, the proposal significantly lacks detail over the level of contribution and the volume of funding allocated to developing countries and R&D.**

Proposed by

SCORE: A+

Belize et al. (Pacifics) - Universal mandatory GHG levy

Documents assessed: ISWG-GHG 17/2/14; ISWG-GHG 16/2/6; MEPC 76/7/12; MEPC76-INF23; MEPC 77/7/4; ISWG-GHG 13/4/11

Quality of the proposal: 82/100 **Completeness of the proposal: 17/20**

Criteria	Score	Key areas for improvement
Aligned with 1.5°C Paris Agreement target?	16/30	A high levy at $150 / tCO2e. Key issue to be addressed is the year in which the scheme must reach 0 GHG sector emissions, which should be before 2050.
Emissions reductions before 2030?	30/30	Would be introduced with no trial period and no phase in. Universal coverage, substantiated text to amend MARPOL Annex VI and a sufficiently high price signal pre-2030.
Support countries most at risk from climate change, and countries and workers most dependent on shipping?	19/20	In-depth focus on supporting countries at most risk of climate change. Can be enhanced by including the just transition for workers in the areas to be funded by the levy, for purposes including retraining and reskilling
Revenues raised to decarbonise the sector by supporting R&D&I?	10/10	Raising revenues to support decarbonisation including in developing countries with size of support clearly indicated.
Accurate monitoring, truthful reporting and effective enforcement?	4/4	The provisions for reporting and verification are robust, but could be further improved by detailing further enforcement by Flag States
Wide scope of GHG emissions?	3/3	Proposal refers to GHGs in general, but this could be fortified by listing the covered gases and particulate pollutants (CO2, CH4, N2O, and black carbon, which should also be covered under tailored regulation urgently).
Complements more climate ambitious regulations in relevant countries & regions?	0/3	The proposal should specify that the levy does not replace existing or future national and regional climate measures, and doesn't prevent other levels of governance from enacting higher climate ambition
CONCLUSION	82/100	**Great score, the only proposal that is considered both complete and fully developed, and raises revenue to be used to support countries most in need. A+**

Proposed by

SCORE: C

Canada (Direct per-tonne-of-CO2-equivalent regulatory charge)

Documents assessed: ISWG-GHG 16/2/16

Quality of the proposal: 46/100 **Completeness of the proposal: 12/20**

Criteria	Score	Key areas for improvement
Aligned with 1.5°C Paris Agreement target?	16/30	Fairly high contribution ($130 / tCO2e) and WtW emissions basis is welcome. The score could be improved if the proposal had indicated a (higher) contribution level for 2040 and 2050 and aimed at reaching carbon neutrality before mid-century.
Emissions reductions before 2030?	20/30	It is positive that the scheme has a fairly high charge as a starting point before 2030 and suggests to amend MARPOL Annex VI, but definitive amendments are missing. The proposal also requires further development on the respective obligations.
Support countries most at risk from climate change, and countries and workers most dependent on shipping?	5/20	Significant detail is lacking from revenue considerations. The scheme would raise revenues but they would go to other, pre-existing funds, without specifying enough what they would be used for.
Revenues raised to decarbonise the sector by supporting R&D&I?	0/10	Another significant gap: no indication regarding the funding of R&D&I.
Accurate monitoring, truthful reporting and effective enforcement?	2/4	Specific roles of Flag and Port States need to be described.
Wide scope of GHG emissions?	3/3	Black carbon emissions should be covered by the levy and under tailored regulation urgently.
Complements more climate ambitious regulations in relevant countries & regions?	0/3	The proposal should specify that the charge does not replace existing or future national or regional climate measures, and doesn't seek to stop other governance levels going further in their own climate ambition.
CONCLUSION	46/100	**A modest score, but with potential to be higher, should the revenue side have been developed and the proposal suggested specific Annex VI amendments.**

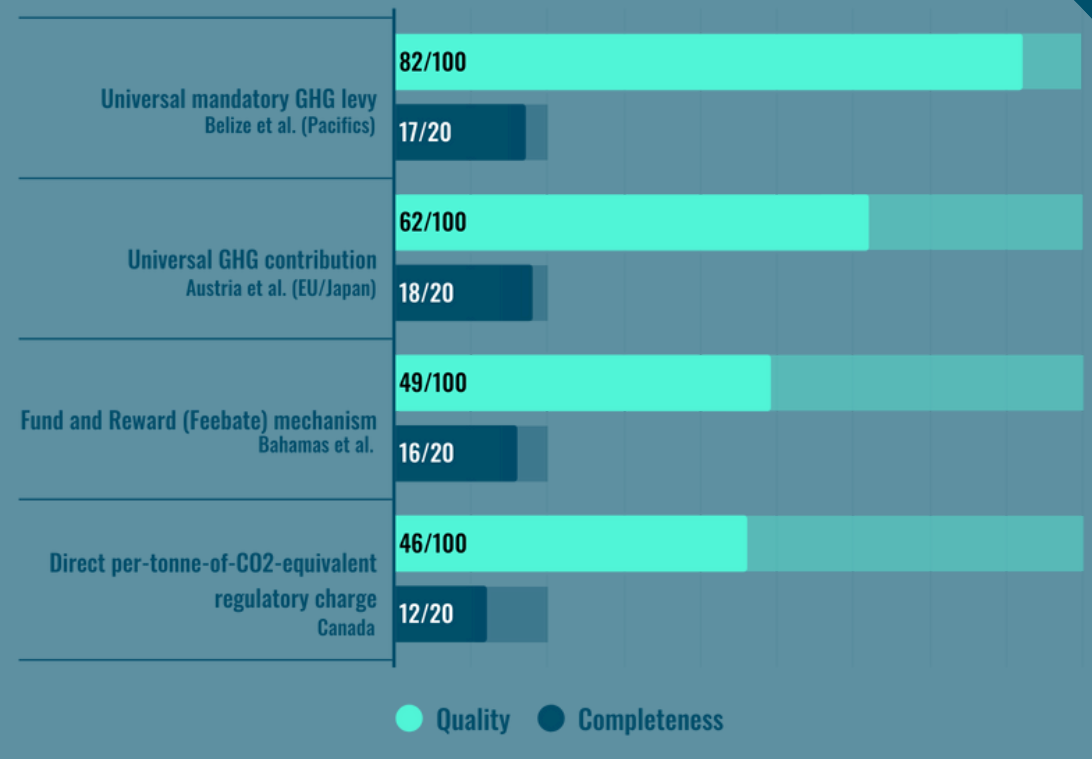
Conclusion

Based on our assessment, the Pacifics proposal ranks the highest by far (82/100), followed by the EU/Japan proposal (62/100), the Bahamas et al. (49/100) and Canadian (46/100) proposals.

The Angola et al. proposal, despite making valuable suggestions for a greenhouse gas fuel standard, does not address the economic element of the IMO's GHG strategy and cannot be considered as a market-based measure. It is therefore not included in our evaluation.

When national delegations meet to discuss these proposals, they must be mindful of the task in hand, to raise sufficient revenue to finance the just and equitable transition in shipping and to encourage uptake of green fuels.

Across the various strategic dimensions that we assess, the Pacifics proposal scores highest and Carbon Market Watch recommends that parties should support it.



CARBON MARKET WATCH

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