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FURTHER CONSIDERATION OF THE DEVELOPMENT OF CANDIDATE MID-TERM MEASURE(S)

Position paper on the mid-term measures and impacts on the Caribbean region

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SUMMARY

Executive summary: The economic stability and growth of the Caribbean region is reliant on its maritime sector. As climate change intensifies, the need for globally coordinated strategies to finance and secure technologies for the decarbonization of the maritime sector is critical. For the Caribbean, events like Hurricane Beryl underscore the need for adaptive strategies to protect and upgrade maritime infrastructure, maintain operational continuity and ensure a just and equitable transition. At the IMO GHG Workshop held in Belize in July 2024, the implementation of a universal levy on shipping emissions to transition the sector, proposed in document ISWG-GHG 16/2/6 (Belize et al.) was discussed. The co-sponsors recommend to proceed with the negotiating process for the Organization's mid-term measures – which should be fair, inclusive and transparent –, whilst considering the annex to this document with preliminary findings of the impacts of the implementation of the 2023 IMO GHG Strategy on the Caribbean region.

Strategic direction, if applicable: 3

Output: 3.2

Action to be taken: Paragraph 23

Related documents: ISWG-GHG 16/2/6 and MEPC 82/INF.48

Introduction

1 MEPC 81 concluded with the initiation of drafting for Chapter V of MARPOL Annex VI, and the invitation to interested Member States and international organizations to work intersessionally. Since MEPC 81, the comprehensive impact assessment (CIA) of the basket of candidate mid-term measures has been concluded. Representatives from the Caribbean

region that co-sponsored proposals for mid-term measures played an active part in the Steering Committee of the CIA and worked closely with several Member States at meetings since MEPC 81. In July 2024, Belize co-hosted with the Kingdom of the Netherlands and the Organization a two-day regional workshop to facilitate constructive collaboration on the subject of mid-term measures. The co-sponsors of this document are committed to the *2023 IMO Strategy on Reduction of GHG emissions from Ships* (2023 IMO GHG Strategy), including the commitment to agree a set of mid-term measures at MEPC 83, as well as the commitment to pay particular attention to the needs of developing countries, especially small island developing States (SIDS) and least developed countries (LDCs).

2 Considering the above, this submission aims to combine details from the circumstances faced by Caribbean SIDS and shared by many other SIDS and developing countries, with our involvement in measure proposals, intersessional work, and the CIA, to provide specific recommendations to the further development at ISWG-GHG 17 and MEPC 82 of the mid-term measures, under agenda item 2.

Shipping and trade in the Caribbean context

3 Shipping and trade play a vital role in the economic structure of Caribbean countries and territories, in particular members of the Caribbean Community (CARICOM).¹ CARICOM economies are characterized by heavy reliance on a few key sectors which depend on effective shipping to, from, and within the region. Among the most important of these is the tourism industry, including cruise shipping, which contributes significantly to the GDP and employment, over 40% and over 50%, respectively, in some countries like Antigua and Barbuda, the Bahamas and Barbados.²

4 The region exports various goods, such as minerals, agricultural products, and manufactured items, while importing machinery, transportation equipment, and consumer goods. In 2022, CARICOM countries collectively imported goods worth approximately \$47.1 billion and exported goods valued at around \$43.7 billion.³ Their main trading partners are the United States, the European Union, Canada, and China. Shipping also serves as the backbone for intraregional trade within CARICOM. Goods such as agricultural products, manufactured goods, and energy resources are transported across the Caribbean Sea, fostering economic interdependence among Member States. The intraregional trade, while modest in volume compared to international trade, is crucial for the region's economic stability and resilience.

¹ CARICOM consists of 15 members (Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago) and five Associate Members (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Turks and Caicos Islands).

² World Travel and Tourism Council (WTTTC) (2024), 'Caribbean Economic Impact Report', <https://researchhub.wttc.org/product/caribbean-economic-impact-report>

³ The Observatory of Economic Complexity (OEC), 'CARICOM', https://oec.world/en/profile/international_organization/caribbean-community

The maritime industry servicing Caribbean economies – the need for a technologically inclusive transition

5 The maritime industry servicing the many Caribbean economies features a diverse range of ships with different ownership patterns, catering to different needs and industries. This includes container ships, bulk carriers, tankers, and passenger ships. In 2020, approximately 24.5 million containers transited the Caribbean.⁴ Approximately 42 cruise lines offered itineraries in the Caribbean in 2024, representing a significant portion of the global cruise market.⁵ Caribbean economies are expected to capture almost 40% of the world's cruise market, reflecting its strong and growing capacity post-pandemic.⁶

6 Like many other developing countries and especially SIDS and LDCs, shipping in the Caribbean is characterized by poor connectivity, few regional bulk/container ports and underdeveloped intraregional transportation networks, which makes transportation expensive. UN Trade and Development (UNCTAD) estimates that freight costs for transport of imports for SIDS are approximately 7% higher than the global average.⁷ Moreover, short-sea shipping (SSS) is critical to the regional logistics network, particularly given the islands' close proximity and obvious lack of any land-based alternative network. While there is some variation in inter-island transport distances, they are generally short, often less than a few hundred kilometres.⁸ This proximity allows for easier connectivity but also means that emissions intensities could be disproportionately high due to the frequent starting and stopping of ships, which is less efficient than for continuous operation. Further information on this can be found in document MEPC 82/INF.48 (Antigua and Barbuda et al.).

7 Consistent with many other SIDS and LDCs, the fleet servicing Caribbean economies predominantly consists of older ships. According to the UNCTAD Review of Maritime Transport 2023 report, the average age of the global commercial fleet is around 21.9 years by the number of ships and 11.5 years by cargo capacity,⁹ but Caribbean ships often exceed these averages. Many ships in the Caribbean, in particular cargo ships, are 20 to 30 years old, and a significant fraction of smaller ships under 500 GT, used for inter-island trade, average just over 35 years old.¹⁰ New ships require significant capital investment, which is prohibitive for many regional operators due to the high cost and poor access to capital, common with circumstances in many SIDS, LDCs, and low-income countries. Additionally, regional operators often rely on leased or second-hand ships, which are generally older and less efficient. This situation limits the region's ability to upgrade its maritime fleet and contributes to higher operational costs and reduced competitiveness. Unless these circumstances are considered in the design of mid-term measures, they will lead to additional GHG policy risks, rapidly increase transport costs in the region, and lead to further diminution of Caribbean economies' ownership, operation and control of their shipping services.

⁴ United Nations Economic Commission for Latin America and the Caribbean (ECLAC) (2021), '2020 Port Report: the impact of the coronavirus disease (COVID-19) pandemic on the shipping trade, trans-shipment and throughput of container ports in Latin America and the Caribbean', <https://www.cepal.org/en/publications/47017-2020-port-report-impact-coronavirus-disease-covid-19-pandemic-shipping-trade>

⁵ Cruise Industry News (2024), '2024 Cruise Industry News Annual Report', <https://www.cruiseindustrynews.com/store/product/annual-reports/2024-cruise-industry-news-annual-report/>

⁶ Cruise Industry News (2024) 'Caribbean Set for Another Record Year', <https://cruiseindustrynews.com/cruise-news/2024/03/cin-2024-annual-report-caribbean-set-for-another-record-year/#:~:text=CIN%202024%20Annual%20Report%3A%20Caribbean%20Set%20for%20Another%20Record%20Year,-March%202024%2C%202024&text=According%20to%202024%20Cruise%20Industry,of%20the%20world's%20cruise%20market.>

The impact of climate change on the Caribbean – the need for in- and out-of-sector investment

8 Climate change poses a significant threat to Caribbean countries, as it does for many other SIDS and low-income countries. One of its most immediate effects is the increase in the frequency and intensity of hurricanes and tropical storms. Most recently, in June and July 2024, Hurricane Beryl, simultaneously the earliest category 4/5 hurricane on record, made landfall in the Caribbean, causing widespread destruction. The storm, with winds reaching 165 mph, devastated Petite Martinique, Carriacou, Grenada, parts of Saint Vincent and the Grenadines, Jamaica, Barbados, Saint Lucia, and Trinidad and Tobago. The hurricane claimed at least six lives and caused significant damage to homes, infrastructure, and power and communications networks. The estimated costs of Beryl already range in the billions, and its severity highlights the increasing intensity of storms due to climate change, emphasizing the urgent need for effective mitigation and adaptation strategies in the region.

9 By 2050, climate damages in the Caribbean are projected to increase significantly, with climate-related disruptions potentially costing the region \$22 billion annually.¹¹ The impacts of climate disasters extend beyond immediate physical damage, leading to long-term economic setbacks, increased debt, and hindered growth. Adaptation needs include investing in more robust infrastructure, improving early warning systems, and adopting sustainable practices to mitigate, adapt to, and recover from loss and damage caused by climate change impacts. This underscores the need for investment in the region's maritime sector to ensure a resilient, sustainable shipping transition, as well as investment in broader (out of sector) climate mitigation and adaptation strategies.

Analysis of proposals based on potential estimated impacts on Caribbean States and regionally owned fleets

10 Considering the urgent need to address the economic impacts of regulating GHG emissions in the shipping industry, particularly in regions as vulnerable as the Caribbean, the co-sponsors welcome the outcome of the reports and findings of the CIA of the mid-term measures on States and the fleet completed by UNCTAD and DNV, respectively. This section provides a preliminary assessment of the feasibility, desirability, and effectiveness of the measures that have been made by their proponents at ISWG-GHG 16 Caribbean region, using the assessment conducted by UNCTAD and DNV. The basis for this includes preliminary findings on the impact on Caribbean States derived from these reports that can be found in annex 1.

7 UN Trade and Development (UNCTAD) (2021), 'Small island developing states face uphill battle in COVID-19 recovery', <https://unctad.org/news/small-island-developing-states-face-uphill-battle-covid-19-recovery>

8 Inter-American Development Bank (IDB) (2018), 'Short-Sea Shipping Network and Finance Model for the Caribbean', <https://publications.iadb.org/en/short-sea-shipping-network-and-finance-model-caribbean>

9 UN Trade and Development (UNCTAD) (2023), Review of Maritime Transport 2023, https://unctad.org/system/files/official-document/rmt2023_en.pdf

10 The Caribbean Shipping Association (CSA), <https://caribbeanshipping.org>

11 Ramón Bueno 'The Caribbean and Climate Change: The Costs of Inaction', Stockholm Environment Institute (SEI), <https://www.iied.org/sites/default/files/pdfs/migrate/G02498.pdf>

11 According to the DNV assessment, the cost intensity of the fleet¹² is expected to increase significantly over the coming decades. By 2030, the cost intensity is projected to rise by 16% to 47%, and by 2050, it could increase by as much as 71% to 85%. These increases are attributed to the investments required for new technologies and retrofits, as well as increasing fuel/energy costs, to meet GHG reduction goals set by the Organization. The specific results show that when considered only as a transport cost increase (e.g. the effects of a transition driven by a GFS policy), this transport cost increase will negatively impact GDP growth for economies in the Caribbean region more strongly than the global average GDP impact.

12 DNV's assessment highlights that achieving the GHG emission reduction trajectories will require significant changes in fuel use and energy efficiency. For instance, low-GHG emission fuels such as electro fuels and biofuels, along with technologies like onboard carbon capture and storage (CCS), are essential for achieving the ambitious GHG reduction targets. However, these technologies and fuels come with high costs and supply constraints, making their widespread adoption challenging for the Caribbean region.

13 Based on these analyses and given the proposals currently on the table, the following elements have been identified:

Most supportive elements for the transition

14 Universal mandatory levy with just and equitable transition: proposals that combine a GFS with an emissions pricing mechanism (e.g. \$150/tCO_{2e} levy) and revenue distribution to support reward for low/zero GHG fuels (D4), as well as revenue use to address disproportionately negative impacts (DNI), have the least GDP impact on developing economies generally, and particularly on SIDS and LDCs including Caribbean economies. Measures that include a universal mandatory levy have the highest potential to contribute to a just and equitable transition that leaves no State or seafarer behind, which, for the reasons described in the first and second sections in this document, are critical for Caribbean economies.

15 Targeted revenue use is critical for addressing impacts on States and ensuring equity in relation to climate impacts: UNCTAD's modelling shows that the magnitude and way revenues are targeted and deployed can make a fundamental difference as to whether developing countries, SIDS and LDCs, face greater than average global impacts, worsening existing inequalities, or whether the mid-term measures can contribute towards addressing DNI and a just and equitable transition. The diversity of many economies, their impacts and their specific risks and opportunities, including those in the Caribbean, justify why both in-sector and out-of-sector uses of revenue are critical to equity, including for uses such as pollution mitigation, climate adaptation, training for seafarers on new fuels and technologies, and compensation for affected communities. This approach helps ensure that developing countries, especially those in vulnerable regions, receive support to transition to cleaner technologies and adapt to the impacts of climate change.

Supportive elements for the transition

16 Global Fuel Standard: a well-to-wake (WtW) global fuel standard for shipping is shown in DNV's modelling to be important for transitioning the industry. It ensures a consistent and unified approach to reducing greenhouse gas emissions, which is critical for mitigating climate change impacts that disproportionately affect SIDS and LDCs. This standard promotes the

¹² The costs associated with operating the fleet (including capital costs, operational costs, fuel costs, and costs related to regulatory compliance) are expected to rise relative to the amount of cargo transported.

adoption of cleaner fuels and technologies across all shipping routes, improving air quality and reducing environmental degradation. However, the results show that if used in isolation, e.g. without a universal mandatory levy, this element would result in a higher transport cost increase and stronger negative impacts in developing countries, SIDS and LDCs, including Caribbean economies.

Least supportive elements for the transition

17 Complex compliance mechanisms: proposals involving complex flexible compliance mechanisms, such as the use of Goal-based Fuel Standards (GFS) combined with sustainability criteria and a trading system for surplus and deficit units, present significant challenges. According to UNCTAD's modelling, this only results in marginal differences to scenarios that do not include flexible compliance mechanisms. They can create barriers to compliance and potentially lead to economic disadvantages for shipping companies and countries insufficiently supported or unable to meet stringent standards. A levy with large revenue deployment would reduce barriers and enhance compliance. Further, options like pooling and credit trading in shipping disrupt the mandate for an equitable transition as they privilege shipping companies with experience in such alternatives. Such shipping companies are more able to buy and accumulate surplus units and use their market power in credit/pooling markets, potentially leading to higher costs, market distortions, and limited opportunities for smaller shipping firms in the Caribbean and similar regions.

18 Fuel standard with limited or untargeted revenue disbursement for developing countries: proposals focused primarily on sectoral-only measures, such as a feebate system, that reward only early adopters of low-carbon technologies within the shipping sector, also pose a challenge. While these approaches incentivize the sector's transition to greener practices, they do not adequately address broader impacts on GDP identified in UNCTAD's assessment, and concerns that arise when decarbonizing the shipping industry. Further, such incentives are unlikely to be distributed to shipowners in countries and regions with shipping profiles similar to that of the Caribbean. Finally, the emphasis on reinvesting funds within the sector limits the availability of resources for broader economic, social, and climate adaptation, which is crucial for regions like the Caribbean that face multiple vulnerabilities.

Progress on the design of the technical and economic measures in ongoing negotiations

19 Considering the above, progress on the design of the technical and economic measures to transition the global shipping industry and address the impacts of climate on the shipping industry must proceed in a just and equitable manner. This requires that not only in the outcome of negotiations, but equally in the process and procedures engaged, an emphasis is placed on ensuring that the highest standards of transparency and inclusivity in the multilateral negotiating process at the Organization are respected and exemplified. In this regard, we take note of the meeting in Bonn, Germany, held on 8 to 9 June, and the subsequent process that created a compilation of delegations' textual suggestions that do not reflect the viewpoints of Caribbean SIDS. The co-sponsors therefore reiterate the need for a considered approach in future processes and in the eventual text, that adequately consider the region's challenges, shared by many developing countries, and in particular SIDS and LDCs.

20 Furthermore, the co-sponsors note that discussions on a technical measure, such as the global fuel standard (GFS), should proceed at the same pace as the economic measures, such as the levy. Delaying the design of a stand-alone economic measure while developing the GFS would be prejudicial to proponents of stand-alone economic measures (such as the measure proposal co-sponsored by Belize et al. in document ISWG-GHG 16/2/6), and incorporating a flexibility mechanism into the technical measure (i.e. a GFS with flexibility) should not be used to delay the development of the economic measure.

21 The Caribbean region has been, and continues to be, committed to IMO negotiations, and particularly those put in place to ensure implementation of the 2023 IMO GHG Strategy. The region is a proponent of a just and equitable transition which is a key element of the strategy and urges the Organization to implement comprehensive technical and economic measures to mitigate GHG emissions from international shipping, ensuring that these measures take adequate account of the particular needs of SIDS and LDCs, including the Caribbean region. Only through an inclusive approach will the 2023 IMO GHG Strategy deliver an effective green transition that improves economic prospects, creates jobs, and enhances resilience against climate impacts for the region.

Considerations and proposals for the Working Group

22 In light of the aforementioned analysis, the following considerations are critical for the Caribbean co-sponsors in the further design of the candidate mid-term measures:

- .1 Economic measure: a universal levy on shipping emissions, which ensures that all carbon emitters contribute proportionately. This levy should be based on the "polluter pays" principle and generate substantial funding for just and equitable transition projects in the Caribbean, both in the sector and out of the sector. The levy must be set at a level that effectively incentivizes the shift to green fuels and technologies, while also providing financial resources for broader socio-economic and climate change needs;
- .2 technical measure: a WtW approach for GHG Fuel Intensity (GFI) standards, applying them to all ships of 400 GT and above. This comprehensive approach accounts for the entire life cycle of emissions of fuels, from production to consumption, ensuring that all environmental impacts are considered. This standard is crucial for accurately assessing and managing the carbon footprint of maritime activities;
- .3 infrastructure investment and capacity-building: prioritize in-sector funding for port infrastructure upgrades that support the transition to zero and near-zero-emission fuels. Funding should also be allocated to training/capacity-building of seafarers and seafarer training institutions, particularly for safety in handling new types of fuels and ships. Investments should also include the development of bunkering facilities for alternative fuels, retrofitting existing ships, and enhancement of port infrastructure to accommodate new types of ships and technologies. The training of seafarers and infrastructural upgrades are essential for ensuring the safety of seafarers, enabling the adoption of cleaner technologies, and reducing emissions from the maritime sector;
- .4 fund disbursement strategy: develop a fund disbursement strategy that moves beyond per capita income criteria (i.e. GDP per capita and GNI per capita) as the sole criterion. This strategy should include considerations such as vulnerability to climate impacts, readiness for transition, and particular needs of SIDS and LDCs. A more inclusive and equitable approach ensures that all countries in the region can access necessary funds for climate adaptation and mitigation projects;
- .5 fund management: create a transitional committee composed of geographically diverse representatives to oversee the management of the funds. This committee should be responsible for exploring and proposing designs for fund management, ensuring that resources are distributed

equitably and used effectively. The governance structure should be transparent, accountable, and adaptable to changing needs, with regular reviews and adjustments to maintain fairness and effectiveness;

- .6 administrative capacity and implementation challenges: the administrative capacity required to implement and manage complex compliance mechanisms, like those involving trading surplus and deficit units, may place an undue burden on Caribbean nations. Smaller and less economically developed countries may struggle with the administrative and technical demands of such systems. This could lead to uneven implementation and potentially disadvantage smaller economies; and
- .7 potential for market distortions: proposals involving market-based mechanisms, such as trading units or pooling systems, could lead to market distortions if not carefully regulated. There is a risk that larger, more economically powerful nations or companies could dominate the market, securing surplus units at lower costs and potentially leaving smaller entities with fewer resources and higher compliance costs.

Action requested of the Working Group

23 The Group is invited to consider this document, in particular the considerations and proposals in paragraph 22 and the analysis in the annex, and take action as appropriate.

ANNEX

PRELIMINARY FINDINGS OF THE IMPACTS OF THE IMPLEMENTATION OF THE 2023 IMO GHG STRATEGY ON THE CARIBBEAN REGION

1 As part of the process for implementing the 2023 IMO GHG Strategy, UN Trade and Development (UNCTAD) was commissioned to undertake an assessment of impacts on States. The Steering Committee and IMO Secretariat have now submitted its comprehensive impact analysis of the basket of candidate mid-term measures¹ report to MEPC 82, which provides insights on how proposed mid-term measures could impact countries, including from the Caribbean.²

2 For the Caribbean region, just two countries – the Dominican Republic (the DR), and Trinidad and Tobago – have been represented as individual economies, with remaining countries and territories in the region included within two aggregates/groups – namely, the Rest of Caribbean (RoC)³ and Rest of American SIDS (RoAS).⁴ This means that for now, save for the two named countries, results are only available for these overall groups. The results (at a group of economy level) smooth out some of the variations in impacts that in practice occur from country to country, but still provide important regional information especially on the relative impacts of different policies (e.g. the impact of a levy).

Scenarios for comparison

3 There are 22 different scenarios modelled in the Global Trade Analysis Project (GTAP) model used by UNCTAD. These include variations of a range of policy parameters as well as revenue distributions (see table 1 below). This analysis looks at just five scenarios to test several key questions in the context of these Caribbean economies:

- .1 compared to other economies, how are Caribbean economies impacted in a scenario without a levy and revenue distribution?;
- .2 what is the impact on Caribbean economies of a levy in combination with a GFS relative to a GFS and flexibility mechanism – comparing scenarios 32 and 26 with scenario 24?;
- .3 what is the impact on Caribbean economies of a lower (\$30-\$120/tCO₂) and higher levy price (\$150-\$300/tCO₂) – comparing scenarios 32 and 26, respectively?; and

¹ The UNCTAD modelling has used GTAP to understand impacts on States. This model is constrained in that it cannot model every country in the world and so a subset of 112 economies and groups of economies have been used.

² It should be noted that the scenario assumptions and specifications drive all the conclusions. Revenue use has been prioritized in countries based on the % change in their GDP and population size, and changing the way revenues are disbursed (e.g. not to include population size) would change the results described here.

³ RoC: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, British Virgin Islands, Cayman Islands, Cuba, Curaçao, Dominica, Grenada, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Turks and Caicos, US Virgin Islands.

⁴ RoAS: Belize, Falkland Islands (Malvinas)/Malvinas*, Guyana, South Georgia and South Sandwich Islands, Suriname. *Note: "A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas)."

.4 what is the impact on Caribbean economies of constraining revenue use 'just' to SIDS and LDCs, rather than to all developing economies (including SIDS and LDCs) – comparing variants of scenarios 32 and 26?.

4 Alongside results for the Caribbean economies, the presentation also includes results for neighbouring countries – Colombia, Costa Rica, as well as Pacific SIDS (Rest of Oceania), and for the groupings used in the UNCTAD report (SIDS, LDCs, developing economies, world).

General findings and interpretations

5 In the study of GDP impacts for Caribbean economies in 2030 and 2050, a consistent pattern emerges across all groups (see table 1 below). Initially, the magnitude of the economic impacts is lower in 2030, but they increase over time, becoming larger by 2050. This trend is observed across all groups, indicating a general trajectory of worsening economic impacts over the long term. Specifically, the impacts on the DR and the RoC appear to be similar, while Trinidad and Tobago and RoAS experience larger impacts compared to DR and RoC. The baseline scenario in this analysis represents the condition under which there is no implementation of a carbon levy or any specific revenue distribution mechanisms. This scenario assumes the continuation of current practices and policies, where shipping emissions are not mitigated through new financial or regulatory interventions.

Figure 1: cost intensity differences between scenarios

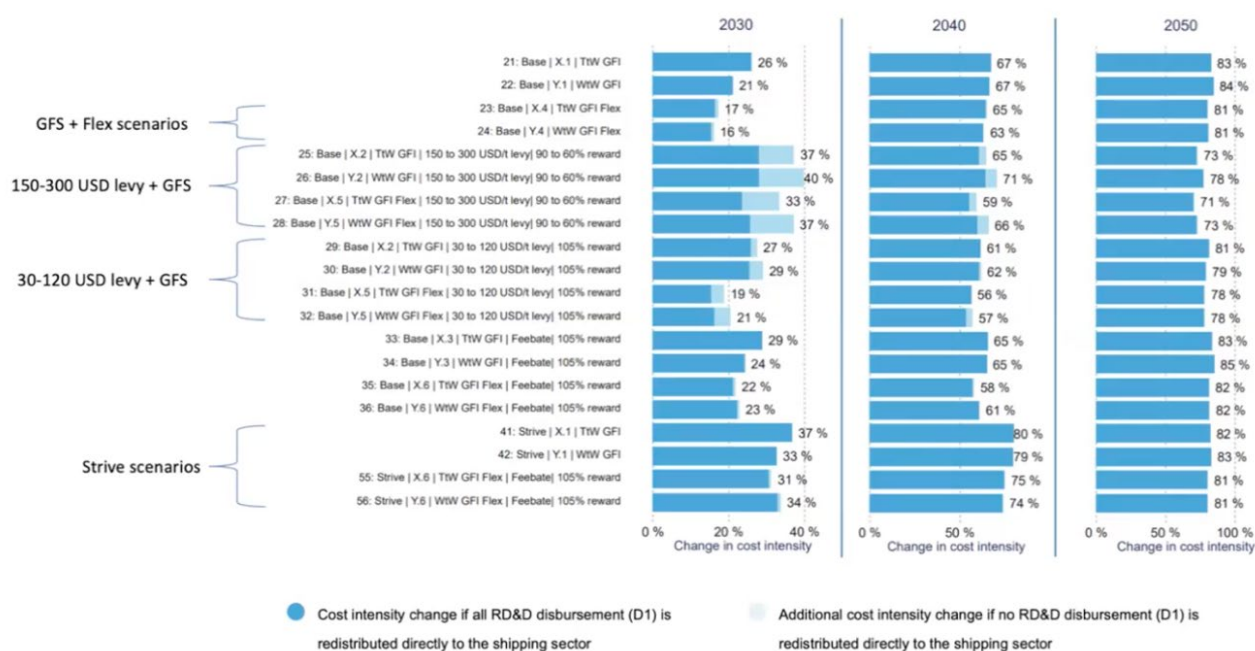


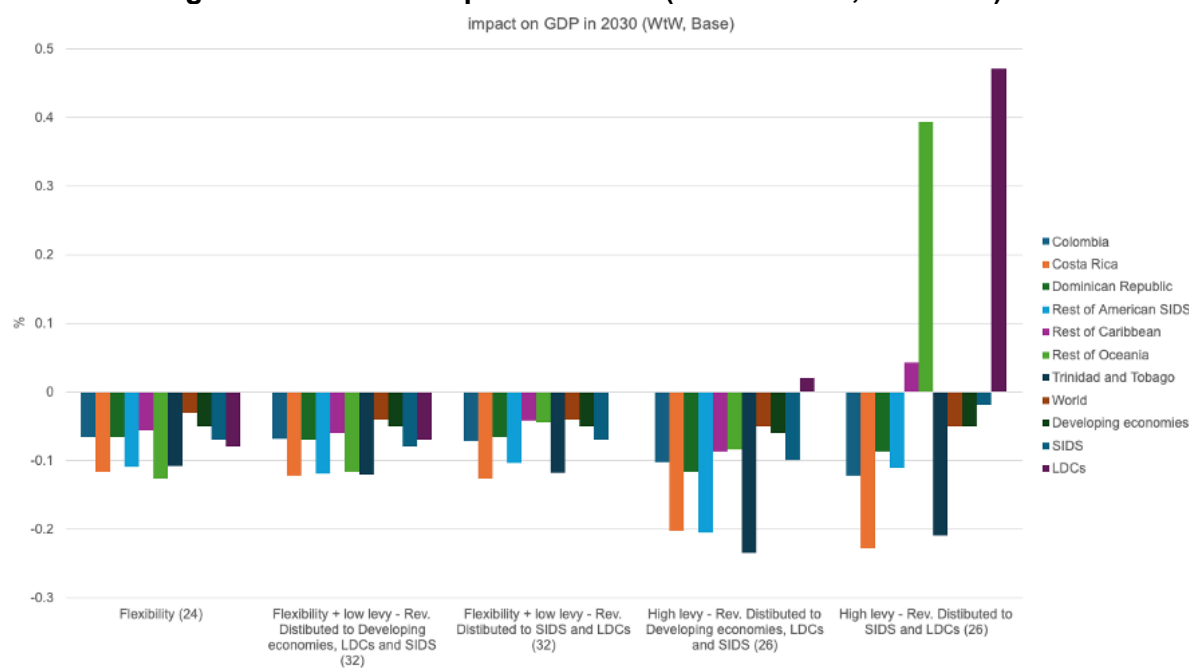
Table 1: summary of key GDP impacts based on various scenarios

Scenario	Levy	Revenue Distribution	Beneficiary Countries Groupings	Feebate	GFI Flexibility	GFI scope	GDP Impact by 2050 (World) Compared to BAULG	GDP impact by 2030 (World) Compared to BAULG
26	Yes	No	Hypothetical-none	No	No	WtW	-0.15%	-0.08%
	Yes	Yes	All Economies	No	No	WtW	-0.09%	-0.05%
	Yes	Yes	Developing, LDCs & SIDS	No	No	WtW	-0.09%	-0.05%
31	Yes	Yes	LDCs & SIDS	No	No	WtW	-0.08%	-0.05%
	Yes	No	Hypothetical-none	No	Yes	TtW	-0.15%	-0.04%
	Yes	Yes	All Economies	No	Yes	TtW	-0.14%	-0.03%
	Yes	Yes	Developing, LDCs & SIDS	No	Yes	TtW	-0.14%	-0.03%
32	Yes	Yes	LDCs & SIDS	No	Yes	TtW	-0.14%	-0.03%
	Yes	No	Hypothetical-none	No	Yes	WtW	-0.15%	-0.04%
	Yes	Yes	All Economies	No	Yes	WtW	-0.14%	-0.04%
	Yes	Yes	Developing, LDCs & SIDS	No	Yes	WtW	-0.14%	-0.04%
46	Yes	Yes	LDCs & SIDS	No	Yes	WtW	-0.14%	-0.04%
	Yes	No	Hypothetical-none	No	No	WtW	-0.15%	-0.10%
	Yes	Yes	All Economies	No	No	WtW	-0.11%	-0.07%
21	Yes	Yes	Developing, LDCs & SIDS	No	No	WtW	-0.11%	-0.07%
	Yes	Yes	LDCs & SIDS	No	No	WtW	-0.10%	-0.07%
21	No	No	None	No	No	TtW	-0.16%	-0.04%
22	No	No	None	No	No	WtW	-0.16%	-0.04%
23	No	No	None	No	Yes	TtW	-0.16%	-0.04%
24	No	No	None	No	Yes	WtW	-0.16%	-0.03%
36	No	No	None	Yes	Yes	WtW	-0.16%	-0.04%
43	No	No	None	No	Yes	TtW	-0.16%	-0.04%

Short-run 2030

6 In the short-run, by 2030, the impacts do not entirely follow the same pattern as observed for 2050. Without a levy or revenue mechanism, the results are quite similar to the long-run findings, with Trinidad and Tobago and RoAS experiencing worse impacts than DR and RoC. Moreover, Trinidad and Tobago and RoAS are impacted more than the SIDS aggregate, while DR and RoC are impacted less, aligning more closely with the developing economies aggregate. With the introduction of a levy, the effects vary: some economies experience larger impacts, while others see lesser impacts when compared to the scenario with "no levy" (scenario 24). The differences in GDP impacts between a "low levy" price and the "no levy" scenarios are minor or negligible. However, the differences become more pronounced with a "high levy" price, where RoAS and Trinidad and Tobago see an increase in impact, DR experiences a modest increase, and RoC transitions from negative to positive GDP impacts if revenues are restricted to SIDS and LDCs. The impact on RoAS is mitigated under the "high levy" price scenario with restricted revenues to SIDS and LDCs, but this combination does not alter the impact on Trinidad and Tobago.

Figure 2: short-run impacts on GDP (scenarios 24, 32 and 26)

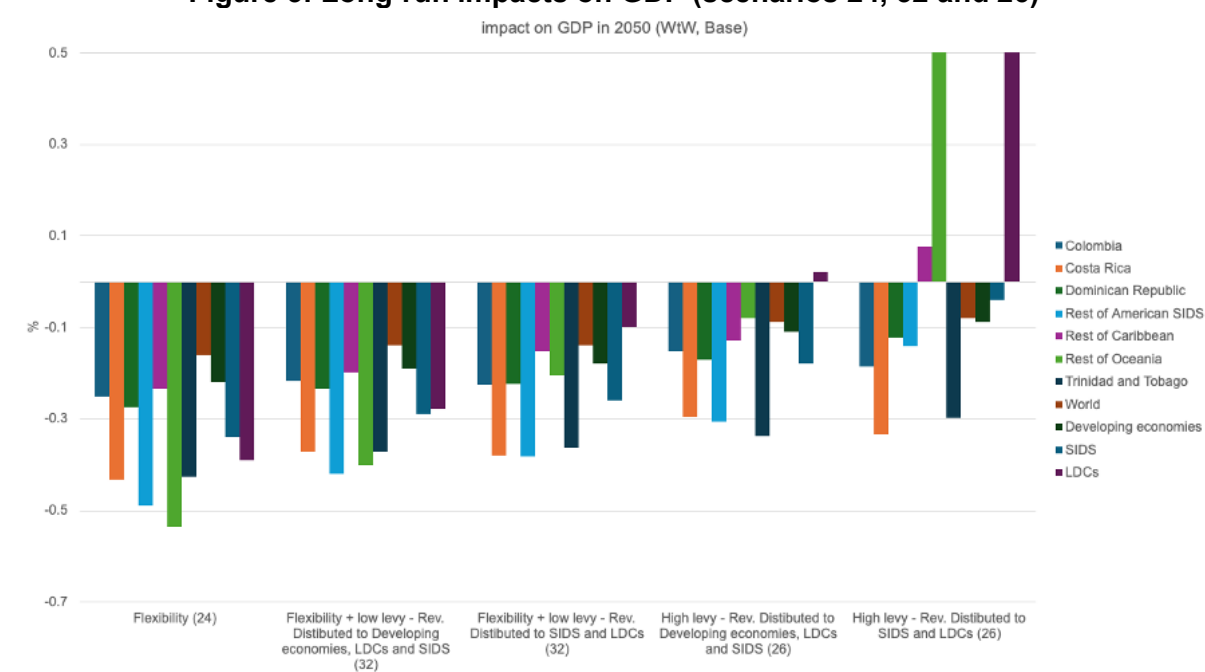


Long-run 2050 (Scenarios 24, 32 and 26)

7 When examining scenarios 24, 32, and 26 in the long-run, it becomes evident that scenarios including a levy (32 and 26) result in smaller GDP impacts for all Caribbean economies and groups compared to scenario 24, which involves no levy and only a flexibility mechanism. Interestingly, a higher levy price (scenario 26) results in smaller GDP impacts than a lower levy price (scenario 32). This outcome is attributed to the higher levy price's ability to incentivize greater energy efficiency and a shift towards a lower energy cost fuel mix, which reduces long-term cost intensity. Additionally, the revenue generated from the levy provides significant economic stimulus in Caribbean economies, enhancing their economic outcomes.

8 The distribution of revenue, particularly when targeted at SIDS and LDCs, generally produces stronger benefits and even positive impacts on Caribbean economies. For example, the RoC group can become net beneficiaries because of these revenues. There are, however, different sensitivities and variabilities depending on the specific economy. Trinidad and Tobago consistently show a GDP impact of -0.4% to -0.3% relative to the baseline scenario (BAULG), indicating limited sensitivity. In contrast, RoC exhibits greater variability, with GDP impacts ranging from -0.25% to +0.8% relative to BAULG. The response of the RoC group is similar to that of Pacific SIDS, but more extreme, with stronger negative impacts in scenario 24 and higher positive impacts in scenario 32, where revenues are directed to SIDS and LDCs.

Figure 3: Long-run impacts on GDP (scenarios 24, 32 and 26)



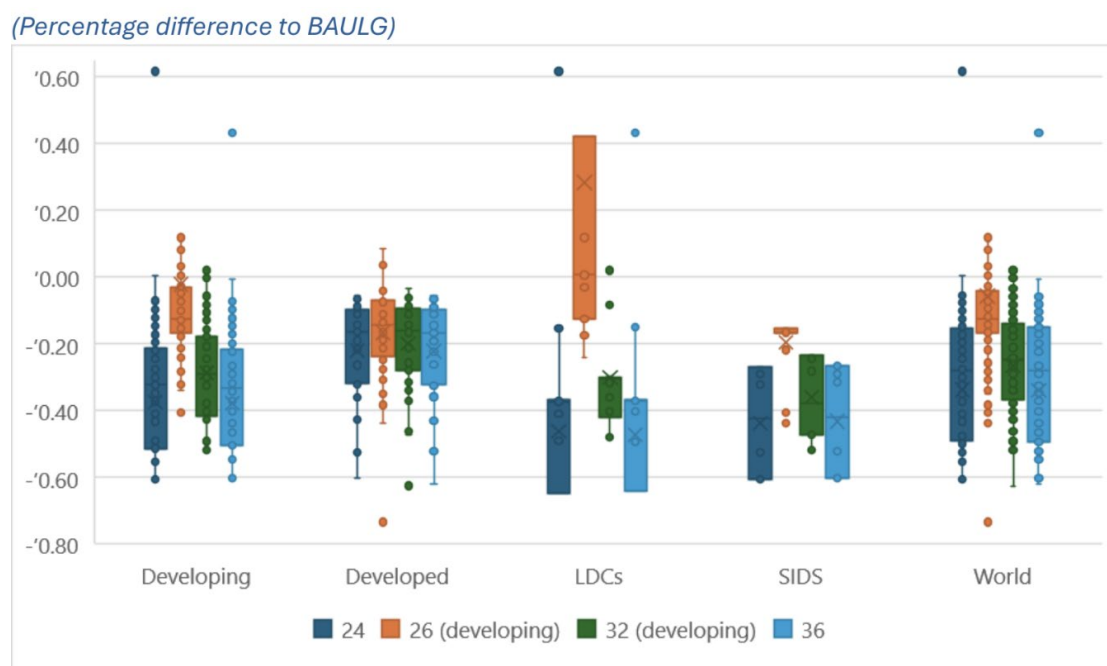
Long-run 2050 (scenario 24)

9 In the long-run, particularly by 2050 under scenario 24, the analysis reveals that without a levy or revenue distribution mechanism, all Caribbean economies and groups are more negatively impacted in terms of GDP compared to the world average. However, these negative impacts are less severe than those experienced by Pacific SIDS. Within the Caribbean, RoC and DR have GDP impacts similar to the developing economy aggregate and smaller impacts than the SIDS aggregate. In contrast, RoAS and Trinidad and Tobago show GDP impacts akin to the LDC group and larger impacts than the SIDS aggregate.

Preliminary conclusions from this analysis

10 The UNCTAD assessment highlights how the impacts of various scenarios differ across the region. It suggests that Caribbean economies are at significant risk under the baseline scenario (BAULG), which assumes no new interventions such as carbon levies or specific revenue distribution mechanisms. Without these measures, the region faces worsening GDP impacts due to the continued emissions from shipping. This scenario underscores the urgent need for policy changes, as the current trajectory will likely exacerbate economic vulnerabilities, particularly in the most climate-sensitive areas. The implementation of targeted revenue distribution, particularly towards SIDS and LDCs, is crucial. Such measures can provide stronger economic benefits, helping to offset the costs of transitioning to greener practices and even turning negative GDP impacts into positive outcomes in some cases, such as the Rest of the Caribbean (RoC) group.

Figure 4: Real GDP impact in 2050 by economy (four scenarios: 24, 26, 32 and 36)



Dominican Republic (DR) and Rest of the Caribbean (RoC)

11 The Dominican Republic and the RoC exhibit similar GDP impact patterns, with initial impacts being smaller in 2030 but increasing significantly by 2050. Under the baseline scenario, these regions are more negatively impacted compared to the world average but less so than Pacific SIDS. However, they fare better when compared to the overall SIDS aggregate. The introduction of a carbon levy, especially at higher rates, offers a more favourable economic outcome, as seen in scenarios 32 and 26. The higher levy prices encourage energy efficiency and a shift towards a lower energy cost fuel mix, providing economic stimulus that can mitigate long-term negative impacts. This is particularly beneficial for the RoC, which can see a transition from negative to positive GDP impacts when revenues are directed specifically to SIDS and LDCs.

Trinidad and Tobago and Rest of American SIDS (RoAS)

12 Trinidad and Tobago and the Rest of American SIDS consistently show larger GDP impacts compared to the Dominican Republic and the RoC, indicating greater vulnerability to economic shocks from shipping emissions. By 2050, under scenario 24, both TT and RoAS experience GDP impacts similar to the LDC group and higher than the SIDS aggregate, highlighting their heightened susceptibility to adverse economic conditions. The introduction of a levy, particularly under scenarios 32 and 26, helps to reduce these negative impacts. However, Trinidad and Tobago shows limited sensitivity to changes in levy price, maintaining a GDP impact range of -0.4% to -0.3% relative to the baseline. In contrast, RoAS benefits more noticeably from the "higher levy" price scenario, especially when revenues are targeted at SIDS and LDCs, demonstrating the importance of targeted financial mechanisms in mitigating economic challenges.