

**Note by the International Maritime Organization to the to the second part of the 2021 session of the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA 52-55)  
Glasgow, United Kingdom, 31 October to 6 November 2021**

**Agenda item 12(g)  
“Methodological issues under the Convention: emissions from fuel used for international aviation and maritime transport”**

**UPDATE ON IMO’S WORK TO ADDRESS GHG EMISSIONS FROM INTERNATIONAL SHIPPING**

**SUMMARY**

The International Maritime Organization (IMO) contributes to international efforts to address climate change by regulating GHG emissions from shipping.

Three years after adoption of the *Initial IMO Strategy on reduction of GHG emissions from ships* (Initial IMO Strategy) which sets the global framework for further action, MEPC 76 adopted in June 2021 a mandatory short-term GHG reduction measure which combines a technical and an operational approach to reduce the carbon intensity of international shipping by at least 40% in 2030 compared to 2008.

As it prepares for the upcoming review of the Initial IMO Strategy in 2023, IMO’s Marine Environment Protection Committee (MEPC) and its Intersessional Working Group on Reduction of Greenhouse Gas Emissions from Ships (ISWG-GHG) are now considering the development of mid- and long-term GHG reduction measures to pursue further GHG reduction. In parallel, as part of its efforts to encourage the uptake of sustainable low-carbon and zero-carbon maritime fuels in the near future, IMO has started to develop new guidelines on the lifecycle GHG/carbon intensity of alternative marine fuels.

In line with the Initial IMO Strategy, impacts on States of candidate measures are being assessed with a view to ensuring that no one is left behind. In this regard, IMO has conducted a comprehensive impact assessment of the short-term GHG reduction measure on States before its adoption and is currently working on how to improve the impact assessment process in the context of further measure development and how to keep the impact of the measure under review.

**CONTEXT**

1 Carrying more than 80% of the international trade of goods in volume, international shipping has increased fourfold over the past 50 years to a total of 11 billion tonnes<sup>1</sup> which makes it a key enabler of global commerce. As such, most of the elements of the 2030

<sup>1</sup> *Review of Maritime Transport 2020*. UNCTAD

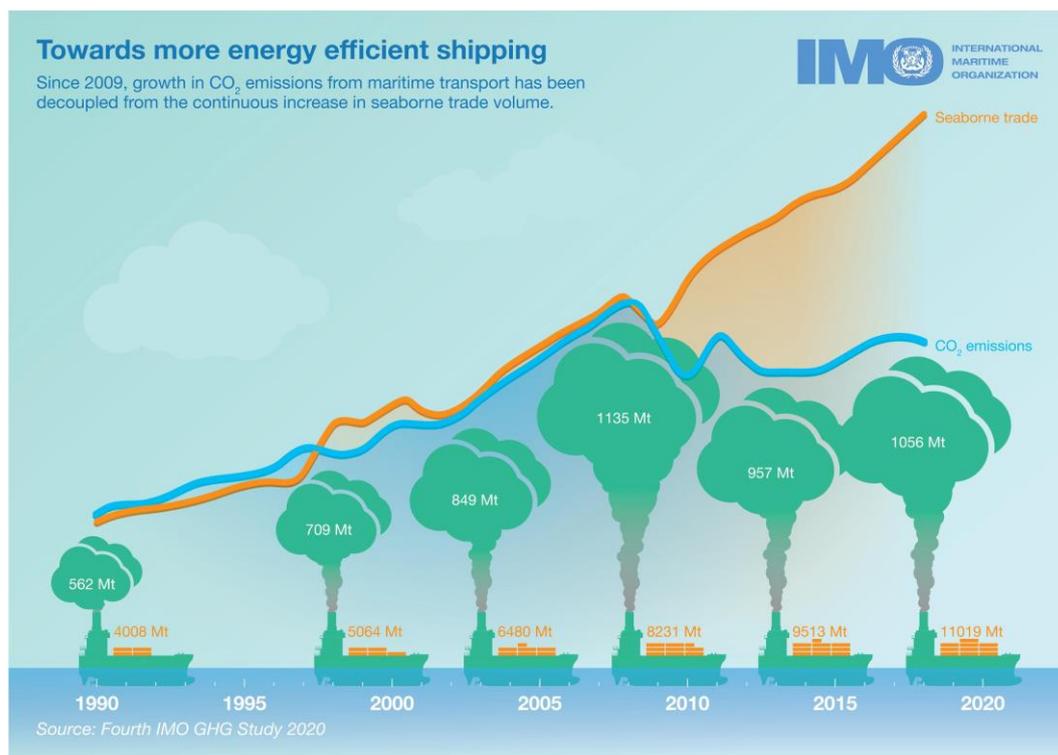
Agenda for Sustainable Development will only be realized with a sustainable maritime transport sector supporting world trade and facilitating global economy<sup>2</sup>.

2 The International Maritime Organization (IMO) is a specialized United Nations agency and the global standard-setting authority for the safety, security and environmental performance of international shipping. Its main role is to create a regulatory framework for the shipping industry that is fair and effective, universally adopted and universally implemented. This can be summed up by IMO's mission statement: "Safe, secure and efficient shipping on clean oceans".

## 1 IMO'S REGULATORY WORK TO REDUCE GHG EMISSIONS FROM INTERNATIONAL SHIPPING

3 For over a decade now, IMO has been acting to reduce GHG emissions from international shipping. A timeline summing up these actions is provided in Annex 1 of this document.

4 Shipping is the most cost-effective and energy efficient mode of mass cargo transport, and since 2009 the increase of CO<sub>2</sub> emissions of international maritime transport has been effectively decoupled from the continuous growth of global seaborne trade volume (see Figure 1). GHG emissions from international shipping still account for about 2.5% of global anthropogenic GHG emissions<sup>3</sup>.



**Figure 1: CO<sub>2</sub> emissions of global maritime transport and global seaborne trade**

5 In 2018, Member States adopted the [Initial IMO Strategy on reduction of GHG emissions from ships](https://www.imo.org/en/MediaCentre/HotTopics/Pages/SustainableDevelopmentGoals.aspx) (resolution MEPC.304(72)), setting out IMO's ambition to reduce carbon intensity (emissions per transport work) by at least 40% by 2030, pursuing efforts towards 70% by 2050, and to reduce total annual GHG emissions from international shipping by at least 50% by 2050 compared to 2008, working towards phasing them out as soon as

<sup>2</sup> <https://www.imo.org/en/MediaCentre/HotTopics/Pages/SustainableDevelopmentGoals.aspx>

<sup>3</sup> Fourth IMO GHG Study 2020

possible<sup>4</sup>. The Initial IMO Strategy envisages the 2050 level of ambition as “a point in a pathway of CO<sub>2</sub> emissions reduction consistent with the Paris Agreement temperature goals”.

6 The Initial IMO GHG Strategy represents a global framework for Member States and the industry, setting out a vision for shipping decarbonization, levels of ambition to reduce GHG emissions and guiding principles; and includes candidate short-, mid- and long-term measures with possible timelines and an assessment of their impacts on States. A revised IMO GHG Strategy is to be adopted in 2023.

7 Since the adoption of its Initial Strategy, IMO has been actively working on transposing the commitments into mandatory requirements that apply to individual ships from all flags to ensure that the levels of ambition are effectively achieved in line with the agreed timelines. As such, IMO’s commitments do not just remain aspirational targets but lay down a binding regulatory framework that applies to the world fleet and is enforced globally, both the ship’s flag State as well as any port State the ship visits.

8 IMO regulations apply worldwide without discrimination, thus providing a global equal level playing field, preventing distortion of specific trade flows and trade agreements, avoiding carbon leakage or sub-optimal shipping in certain parts of the world.

## **Follow-up actions of the Initial IMO Strategy on reduction of GHG emissions from ships**

### ***Energy Efficiency Design Index***

9 The [Energy Efficiency Design Index](#) (EEDI) is a performance-based mandatory mechanism for newly constructed ships aiming at promoting the use of more energy efficient (less polluting) equipment and engines while leaving the choice of these technologies to the shipowner. The EEDI requires a minimum energy efficiency level per capacity-mile (e.g. tonne-mile) for different ship type and size segments. Since 1 January 2013, new ship design needs to meet the reference level for their ship type.

10 The CO<sub>2</sub> reduction level for the EEDI Phase 1 was set at 10% in 2015 and is tightened incrementally by 10% every five years until 2025. In November 2020, MEPC 75 agreed to strengthen the EEDI “phase 3” requirements for most ship types, including containerships, gas carriers, general cargo ships and LNG carriers, and brought forward the expected entry into force date of EEDI Phase 3 from 2025 to 1 April 2022 for these ships. This means that new ships built from that date must be significantly more energy efficient than a reference line representing the average efficiency for ships built between 2000 and 2010. For example, for a containership of 200,000 deadweight tonnes and above, the EEDI reduction rate is set at 50% from 2022, instead of 30% from 2025.

11 By August 2021, EEDI values for over 7,000 ships have been reported to IMO. The mandatory improvement of design energy efficiency of these new ships that have entered the market since 2013, has effectively contributed to improve the world fleet’s carbon intensity.

### ***Publication of the Fourth IMO GHG Study 2020***

12 The [Fourth IMO GHG Study](#) was approved at MEPC 75 in November 2020<sup>5</sup>. The study reveals that GHG emissions from shipping (international, domestic and fishing) have increased from 977 million tonnes in 2012 to 1,076 million tonnes in 2018 (9.6% increase, but decreased in 2018) bringing the share of shipping emissions in global anthropogenic emissions from 2.76% to 2.89%. However, the study finds that carbon intensity has improved by about 30% between 2008 and 2018 for international shipping as a whole, as well as for

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<sup>4</sup> The *Initial IMO Strategy on reduction of GHG emissions from ships* is available on the IMO website [here](#)

<sup>5</sup> The *Fourth IMO GHG Study 2020* is available on the IMO website [here](#)

most ship types. The study also forecasts that under business-as-usual scenarios, by 2050 emissions from shipping will represent 90 to 130% of their 2008 value.

### ***Short-term measure to reduce the carbon intensity of international shipping (EEXI and CII rating)***

13 Despite the difficulties imposed by the COVID-19 pandemic and postponements of meetings during the first half of 2020, IMO Member States worked constructively to ensure that the Organization would remain on track with the implementation of the short-term measure aiming to reach the ambition set in the 2018 Initial IMO Strategy and also providing important building blocks for future GHG reduction measures.

14 The mandatory short-term measure adopted during a virtual session of MEPC in June 2021 consists of combined technical and operational approaches to reduce the carbon intensity of international shipping. Starting from 1 January 2023, all ships of 400 GT and above will be required to calculate their Energy Efficiency Existing Ship Index (EEXI) and to implement technical means to improve their energy efficiency. Ships are required to meet a specific required EEXI which is based on a required reduction factor (expressed as a percentage relative to the EEDI baseline) equivalent to EEDI phase 2 or 3, thus creating a level playing field between old and new ships.

15 Starting also from 1 January 2023, all ships of 5,000 gross tonnage and above will be required to calculate and report their operational carbon intensity using indicators (CII) which link the GHG emissions to the transport work (carrying capacity) of ships. In 2024, ships will be rated (A, B, C, D, E - where A is the best) against a reference line and required reduction factors, which will be incorporated in their mandatory documentation to be issued by Administrations. Ships rated E or D for three consecutive years, will have to submit a corrective action plan, to show how the required index (C or above) would be achieved. Administrations, port authorities and other stakeholders, as appropriate, are also encouraged to provide incentives to ships rated as A or B.

16 A clause requires IMO to review the effectiveness of the implementation of the CII and EEXI requirements, by 1 January 2026 at the latest, and, if necessary, develop and adopt further amendments. MEPC 76 agreed to also keep under review the impacts on States of the aforesaid amendments to MARPOL Annex VI, paying particular attention to the needs of developing countries, especially Least Developed Countries (LDCs) and Small Island Developing States (SIDS) so that any necessary adjustments can be made.

17 MEPC 76 adopted the following guidelines supporting the implementation of the short-term measure:

- Method of calculation of the attained EEXI;
- Survey and certification of the EEXI;
- Shaft / engine power limitation system to comply with the EEXI requirements and use of a power reserve;
- Operational CII and the calculation methods;
- Reference lines for use with operational CII;
- Operational carbon intensity reduction factors relative to reference lines; and
- Operational carbon intensity rating of ships.

18 The IMO carbon intensity rating system is expected to enhance the private sector's involvement in promoting low-carbon shipping. It will allow the financial sector, e.g. banks and insurance companies, but also charterers and cargo owners to use the mandatory ratings of these ships in a way to steer investment and equity to the most efficient ships.

19 The new regulations may also constitute building blocks for future GHG reduction measures to be developed in the mid- and long-term.

## **Assessment of impact on States**

### ***Comprehensive impact assessment on short-term measure***

20 According to the Initial IMO Strategy, the adoption of emissions reduction measures should be supported by an evidence-based impact assessment taking into account, as appropriate, analysis tools and models. MEPC 74 approved a *Procedure for assessing impacts on States of candidate measures*, as was reported in IMO's submission to SBSTA 50. The terms of reference for the comprehensive impact assessment of the short-term measure on States were approved by MEPC 75. They are set out for information in Annex 2 of this document. In line with the Initial IMO Strategy, particular attention is paid to the needs of developing countries, in particular SIDS and LDCs.

21 Despite a very short timeframe, IMO conducted in spring 2021 a comprehensive impact assessment of the short-term measure, with the contribution of external stakeholders, including UNCTAD. The outcome of this impact assessment is available on IMODOCS<sup>6</sup> (documents MEPC 76/7/13 and MEPC 76/INF.68 and addendum) and was approved by MEPC 76.

### ***Lessons-learned exercise***

21 MEPC 76 agreed to keep under review the impacts on States of the aforesaid amendments to MARPOL Annex VI so that any necessary adjustments can be made, and to initiate a lessons-learned exercise of the comprehensive impact assessment.

22 The Intersessional Working Group on reduction of GHG emissions from ships (ISWG-GHG) 10, which met from 18 to 22 October 2021, considered how to further progress work on impact assessments and how to keep under review the impacts of the short-term measure to reduce carbon intensity adopted at MEPC 76. The group recommended that further work should be continued at future ISWG-GHG meetings and an Ad-hoc Expert Workshop on Impact Assessments should meet to consider concrete proposals for improving the impact assessment procedure and provide recommendations to the Group as part of the lessons-learned exercise.

## **National Action Plans**

23 A resolution on [National Action Plans \(NAP\)](#) MEPC.327(75) was adopted in November 2020 at MEPC 75 urging Member States to develop and update a voluntary NAP with a view to contributing to reducing GHG emissions from international shipping by supporting actions at national level, such as cooperation between the ports and shipping industry as well as along the maritime value chain.<sup>7</sup>

## **IMO action to promote the uptake of alternative low-carbon and zero-carbon maritime fuels**

### ***2021 IMO Symposium on alternative low-carbon and zero-carbon fuels***

24 Technological innovation and the global introduction of alternative fuels and/or energy sources for international shipping will be integral to achieve the ambition set out in

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<sup>6</sup> <https://docs.imo.org/>

<sup>7</sup> The submitted national action plans and strategies are available on the IMO website [here](#)

the Initial IMO Strategy. The *2021 IMO Symposium on alternative low-carbon and zero-carbon fuels for shipping* organized in February 2021 presented state-of-the-art in research and innovation, discussed the advancement of alternative low- and zero-carbon fuels in international shipping, and looked at initiatives to promote the availability, affordability and uptake of future marine fuels<sup>8</sup>.

### ***Lifecycle GHG/carbon intensity assessment for maritime fuels***

25 Lifecycle GHG/carbon intensity assessment (LCA) of maritime fuels is a key element supporting the uptake of alternative fuels. ISWG-GHG 9, which took place from 15 to 17 September 2021, considered concrete proposals to encourage the uptake of alternative low-carbon and zero-carbon fuels, including the development of lifecycle GHG/carbon intensity guidelines for all relevant types of fuels. This work is expected to continue in 2022 with a view to finalizing standalone guidelines addressing the well-to-wake (WTW) emissions of shipping.

### **Consideration of proposals for other measures**

#### ***International Maritime Research and Development Board***

26 MEPC 75 discussed an industry-led proposal for the establishment of a non-governmental International Maritime Research and Development Board (IMRB) and related fund (IMRF). Following discussion, the Committee acknowledged the proposal and noted diverging views and concerns on the proposed mechanism, with regards to various administrative, legal and governance aspects. A revised IMRB proposal was discussed at MEPC 76, however due to lack of time, the Committee could not finish the full consideration of it and related commenting documents as not all delegations were able to express their views. Consequently, the Committee agreed that the discussion would be resumed at its next session (MEPC 77, to be held from 22 to 26 November 2021).

#### ***Initial consideration of mid- and long-term measures***

27 At MEPC 76, the Committee approved a [work plan for development of mid- and long-term measures](#) aiming at supporting the achievement of the vision and the levels of ambition agreed in the Initial IMO Strategy, as set out for information in annex 3. The work plan consists of three main phases:

- Phase I – Collation and initial consideration of proposals for measures;
- Phase II – Assessment and selection of measure(s) to further develop; and
- Phase III – Development of (a) measure(s) to be finalized within (an) agreed target date(s).

28 ISWG-GHG 10 considered various proposals for mid-term measures to reduce GHG emissions and compared their main features and implications without selecting nor excluding any at this stage. The proposals presented covered: a GHG levy, a GHG fuel standard, a GHG cap-and-trade system, and possible combinations of these; as well as the legal framework of mid-term measures, principles of possible market-based measures, and principles of carbon pricing, management and disbursement of carbon revenues.

29 ISWG-GHG 10 invited the proponents of concrete proposals for mid-term measures that had not done so yet to prepare an initial assessment of impacts on States of their proposal and to further consider the development/refining proposals for mid-term measures for consideration during Phase I of the Work plan.

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<sup>8</sup> The IMO Symposium's presentations and recordings are available on the IMO website [here](#)

30 MEPC 77 is expected to consider the outcomes of ISWG-GHG 9 and 10 and to further discuss the IMRB proposal, proposals related to the revision of the Initial Strategy and strengthened 2050 ambition, expansion of the IMO ship fuel oil consumption data collection system (DCS), as well as other topics which have been deferred to MEPC 77. These topics include the use of biofuels related matters, the prediction and verification of emissions savings with wind-propulsion systems, and proposals to reflect onboard CO<sub>2</sub> captured in EEDI and EEXI.

## **2 CAPACITY-BUILDING AND TECHNICAL COOPERATION ACTIVITIES**

### ***Multi-donor trust fund to support implementation of the Initial IMO Strategy***

31 In May 2019, IMO established a voluntary multi-donor trust fund ([GHG TC-Trust Fund](#)), to provide a dedicated source of financial support for technical cooperation and capacity-building activities to support the implementation of the Initial IMO Strategy.

### ***The Integrated Technical Cooperation Programme (ITCP)***

32 To help developing countries improve their ability to comply with international rules and standards relating to maritime safety and the prevention and control of maritime pollution, IMO has developed an Integrated Technical Cooperation Programme (ITCP), which is designed to assist Governments which lack the technical knowledge and resources that are needed to operate a shipping industry safely and efficiently.

33 The COVID-19 pandemic has undoubtedly impacted the work of IMO in the implementation of capacity-building activities delivered through the Organization's ITCP. Consequently, the Secretariat has continued to adapt its working practices to meet the new challenges and to develop new implementation methodologies, taking into account the lessons learned and experience gained. In 2020, two national workshops on MARPOL Annex VI and the Initial IMO Strategy were delivered virtually for the benefit of Algeria and Lebanon, aimed at enhancing awareness, knowledge, and skills of participants on relevant aspects of MARPOL Annex VI, as well as to facilitate the process to ratify, implement and/or enforce MARPOL Annex VI.

34 Support to IMO's GHG-related activities under the ITCP is a clear priority for the Organization. For the years 2022-2023, it has been decided to reinstate under the ITCP, a dedicated global programme entitled "*Reducing atmospheric emissions from ships and in ports and effective implementation of MARPOL Annex VI and the Initial IMO GHG Strategy*". It would assist Member States with the implementation of the Initial IMO Strategy, thereby increasing energy efficiency measures for ships, as well as reducing atmospheric pollution from ships, including when in ports. In addition, national and regional training and capacity-building activities support Member States for following up the outcomes of impact assessments of candidate measures and to better understand IMO's Data Collection System (DCS).

### ***GHG SMART training programme***

35 To support specific needs of Least Developed Countries (LDCs) and Small Island Developing States (SIDS), IMO together with (and with the financial support of) the Republic of Korea started in 2020 a Sustainable Maritime Transport (GHG Smart) training programme which support the implementation of the Initial IMO Strategy by building sufficient capacity, especially among SIDS and LDCs. The first capacity building training is a long-term programme which will be hold at the end of 2021.

### ***Global Maritime Technology Cooperation Centres Network (GMN)***

36 In 2017, IMO has set up five Maritime Technology Cooperation Centres (MTCCs) in Latin America, the Caribbean, Pacific, Asia and Africa, with financial assistance from the European Union. These five MTCCs constitute the Global MTCC Network (GMN), which is implementing the IMO project titled “*Capacity Building for Climate Mitigation in the Maritime Shipping Industry*”<sup>9</sup>. This network promotes the uptake of low-carbon technologies and operations in maritime transport in developing countries with a view to limiting GHG emissions from their shipping sectors through technical assistance and capacity building. The role of MTCCs is specifically mentioned in the Initial IMO Strategy.

37 The network has completed a range of pilot projects over the past years. Tangible results have already been observed, for example in port energy audits and retrofitting of domestic ships for better energy efficiency. The MTCCs engaged with over 100 participating countries, resulting in more than 3,000 participants across 70 maritime energy efficiency workshops to date. Furthermore, the MTCCs have been working with over 2,000 participating ships to deliver sets of fuel oil consumption data which can help inform and support energy efficiency improvement.

### ***GreenVoyage2050***

38 The IMO-Norway GreenVoyage2050 project<sup>10</sup> is building on the earlier GEF-UNDP-IMO GloMEEP project's most successful activities and supports countries in the implementation of concrete measures that are identified in a country's National Ship Emissions Reduction Strategy (NSERS)/National Action Plan, while mirroring earlier activities of GloMEEP in new partner countries. The project is initiating and promoting global efforts to demonstrate and test technical solutions for reducing GHG emissions, as well as enhancing knowledge and information sharing to support the Initial IMO Strategy. Several developing countries, including LDCs and SIDS, across the globe are participating in the project, including strategic partners from the private sector, who contribute expertise and experience through the project's Global Industry Alliance to Support Low Carbon Shipping (GIA).

### ***GloFouling Partnerships***

39 IMO, through the Global Environment Facility/UNDP funded GloFouling Partnerships project<sup>11</sup> seeks to increase the level of implementation of IMO's Biofouling Guidelines and the use of best practices for other maritime sectors, with a wide range of activities that includes assistance for policy definition and implementation, delivery of training courses for technical capacity building, catalysing investment in technology R&D, spurring information sharing and a strong component of awareness raising on the issue and its solutions.

40 The work of GloFouling Partnerships has showcased close interlinkages between maritime GHG reduction potential and protection of marine biodiversity through implementation of the IMO Biofouling Guidelines as state-of-the-art management of biofouling will result in significant fuel efficiency gains, in addition to minimizing the transfer of invasive aquatic species to local marine environments. The project is currently undertaking a study to quantify fuel consumption savings resulting from biofouling management measures that are readily available and highlight their role in the overall reduction of GHG emissions in the short term.

### ***Blue Solutions***

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<sup>9</sup> The Global MTCC Network website is available [here](#)

<sup>10</sup> The GreenVoyage2050 project website is available [here](#)

<sup>11</sup> The GloFouling Partnerships project website is available [here](#)

41 IMO has partnered with the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) to undertake the preparatory project and to develop a full project proposal to reduce maritime transport emissions in East and Southeast Asian countries with the support of the International Climate Initiative (IKI) of Germany.

42 This partnership is the first step towards an ambitious Asia Maritime Transport Emissions project (known as the Blue Solutions Project), which will aim to support East and Southeast Asian countries in identifying opportunities to prevent and reduce transport emissions. The full-size project, once approved, will target reduction of GHG and other pollutant emissions from ships within ports, and from hinterland transport through energy efficiency improvements, optimized processes and innovative technologies (“blue solutions”), with the aimed start of the project by early 2022.

### ***Innovation Forum***

43 IMO, together with the United Nations Environment Programme (UNEP) and the Government of Norway have jointly organized the IMO-UNEP-Norway Zero-and Low-Emission Innovation Forum (the Innovation Forum) from 27 to 29 September 2021.

44 This Innovation Forum, which was attended by more than 1,000 participants, served as a global platform to exchange best practice between competent international policy makers, maritime, climate change/environmental administrations, technology developers, maritime industry, ports and financial community, with the overall ambition to promote inclusive innovation in relation to maritime decarbonization globally and to disseminate latest developments with the focus on developing countries, LDCs and SIDS.

45 The Innovation Forum showcased inclusive novel technologies to reduce GHG emissions in maritime; best practices of R&D enabling environment, potential financing sources and solutions; ongoing projects; and models of innovation which could further foster both R&D and innovation deployment, which was found especially crucial for developing countries, LDCs and SIDS.

46 The Innovation Forum identified a number of strategies for the transition to a low- and zero-carbon maritime future, including strengthened cooperation between maritime decarbonization projects, initiatives, linking R&D centres in developed countries closer to regional centres and existing projects in the developing world, building capacity on finance options of the maritime community and on maritime decarbonization needs of the financial community. Cooperation and coordination were key messages, with recognizing IMO’s key role in this and overall in making maritime innovation more inclusive.

### ***FIN-SMART***

47 The IMO-EBRD-World Bank co-lead Financing Sustainable Maritime Transport (FIN-SMART) roundtable is a platform for regular dialogue among key maritime stakeholders, especially the financial institutions, on addressing the financial challenges related to the transition of shipping to a more sustainable and resilient future, with a focus on maritime decarbonization financing.

48 The roundtable and its various workstreams, launched in 2020, have been providing a platform between Member State representatives, International Financial Institutions (IFIs), representatives of private banks, other key maritime stakeholders to identify maritime decarbonization investment risks, opportunities and potential financial solutions, with a special emphasis on financing needs and options in developing countries, particularly LDCs and SIDS.

### ***NextGEN***

49 IMO and the Government of Singapore have launched in 2020 the Green and Efficient Navigation (NextGEN) initiative<sup>12</sup>, which aims to facilitate information sharing and collaboration on decarbonization initiatives and projects in the field of maritime, presenting an opportunity to provide an online platform of collaboration across the maritime value chain. The online portal aims to facilitate information sharing among stakeholders, identify opportunities for and gaps in maritime decarbonization, and build networks and platforms for collaboration.

### ***Outreach and communication activities***

50 On the occasion of the United Nations-led Ministerial-level Thematic Forums from 21 to 25 June 2021) on energy action, the GMN project, with the leadership of the government of Kenya has showcased best practices and lessons learned through the Global Maritime Technology Cooperation Centres Network (GMN) in maritime decarbonization, and support for maritime energy efficiency.

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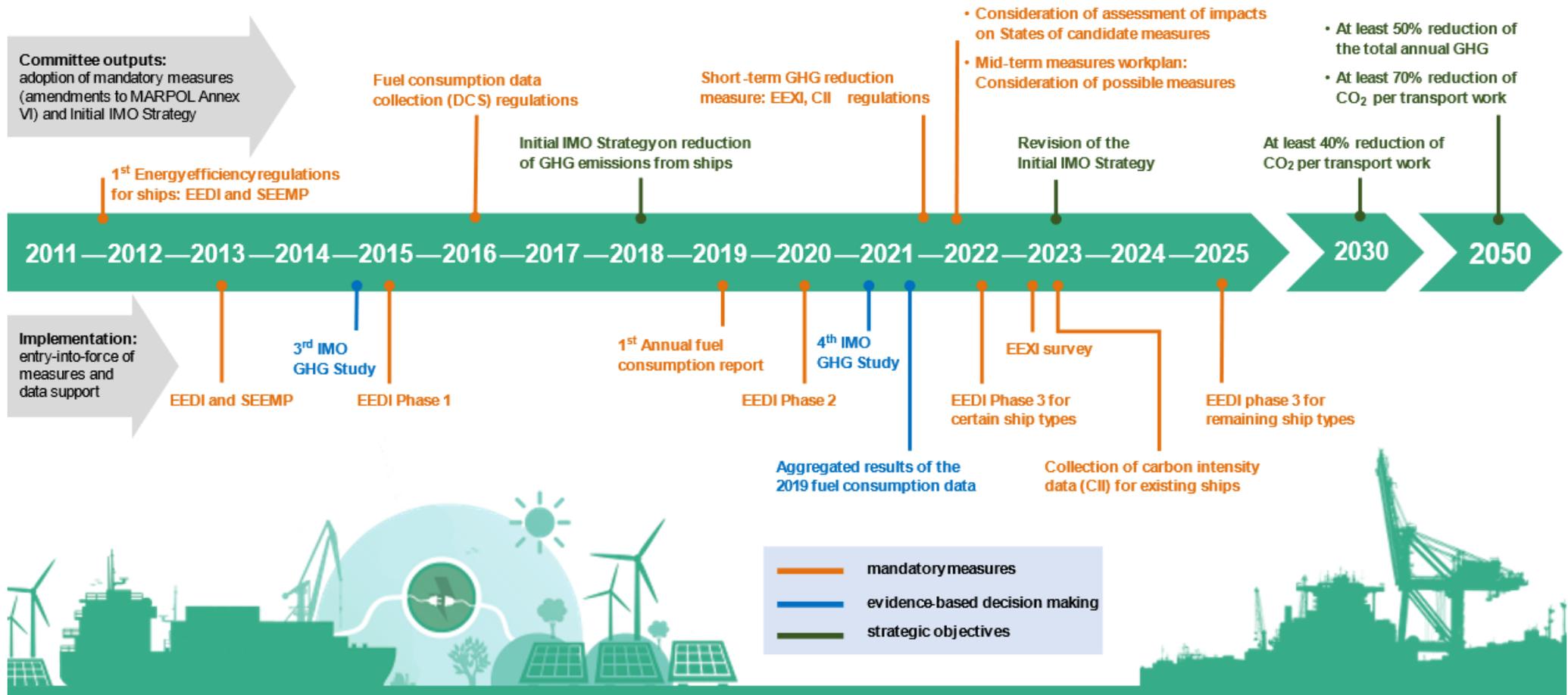
<sup>12</sup> The NextGEN initiative website is available [here](#)

## ANNEX 1 – ADDRESSING CLIMATE CHANGE: A DECADE OF ACTION TO CUT GHG EMISSIONS FROM SHIPPING



# Addressing climate change

A decade of **regulatory action** to cut GHG emissions from shipping:  
towards phasing out GHG emissions from shipping as soon as possible in this century



## ANNEX 2 - TERMS OF REFERENCE AND ARRANGEMENTS FOR THE CONDUCT OF A COMPREHENSIVE IMPACT ASSESSMENT OF THE SHORT-TERM MEASURE BEFORE MEPC 76

1 In accordance with the *Initial IMO Strategy on reduction of GHG emissions from ships* (resolution MEPC.304(72)), the impacts on States of a measure should be assessed and taken into account as appropriate before adoption of the measure. A comprehensive impact assessment of the short-term measure should be conducted as set out in the *Procedure for assessing impacts on States of candidate measures* (MEPC.1/Circ.885).

2 The comprehensive impact assessment should assess the impacts on States of the short-term measure, including developing countries, in particular, on least developed countries (LDCs) and small island developing States (SIDS), and take into account, as appropriate:

- .1 initial and detailed impacts assessments of individual elements forming part of the proposed combined measure including a detailed description of the method and sources of data utilized;<sup>1</sup>
- .2 relevant available information from the IMO ship fuel oil consumption database and the *Fourth IMO GHG Study 2020*;
- .3 documents submitted to ISWG-GHG 7 on assessing the impacts on States, in particular documents ISWG-GHG 7/2/10 (Mexico, Solomon Islands and Tonga) (ISWG-GHG 7/2/11 (Solomon Islands and Tonga); ISWG-GHG 7/2/34 (Argentina et al.), ISWG-GHG 7/2/36 (Secretariat), the Review of the comprehensiveness of the impact assessments submitted to the 7th Session of the International Maritime Organization's Intersessional Working Group on the Reduction of GHG Emissions from Ships and any other relevant document submitted to ISWG-GHG 7; and
- .4 any relevant information for assessing the impacts on States provided by interested Member States and International Organizations.<sup>2</sup>

3 The comprehensive impact assessment of the short-term measure should be commensurate to its complexity and nature, and include the elements identified in MEPC.1/Circ.885, in particular, paragraphs 8 and 15, and take into account the following:

- .1 a review of peer-reviewed literature, including ex-post analysis;
- .2 a statistically relevant number of case studies, to be possible complemented by a number of illustrative case studies representative of broader trade conditions that might be shared across developing countries, including SIDS, LDCs and countries remote from their import/export markets;
- .3 to the extent already possible, the disproportionate impacts on States, including developing countries, in particular LDCs and SIDS, of the measure, in the context of the COVID-19 pandemic, and consider potential additional impacts of the measure on projected economic scenarios;
- .4 the identification of areas of missing data;

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<sup>1</sup> Whenever such disclosure is possible.

<sup>2</sup> Member States and international organizations are invited to submit relevant information to the Secretariat ([ghg@imo.org](mailto:ghg@imo.org)) at their earliest convenience; a deadline will be set up by the Steering Committee at its first meeting.

- .5 an assessment of possible impacts on States arising from the resulting changes and performance of the global fleet as indicated in paragraph 4.11 of the Initial Strategy;<sup>3</sup>
- .6 any basic stakeholder analysis (SHA) undertaken by Member States to understand the amount of speed reduction-based delay acceptable to various commodities to avoid any disproportionately negative impacts; and
- .7 an assessment of whether the measure is likely to result in disproportionately negative impacts on States, including developing countries, in particular, on LDCs and SIDs.

4 The comprehensive impact assessment should be policy neutral.

### **Steering Committee**

5 In line with the practice for the conduct of IMO GHG studies, a Steering Committee of Member States should be established following an agreement by the Committee at its seventy-fifth session. The Steering Committee should be geographically balanced (e.g. with reference to the five United Nations regions), and appropriately represent developing and developed countries. Relevant stakeholders should also be represented.

6 The Steering Committee should be of a manageable size. Taking into account the importance of the comprehensive impact assessment and the need for the Steering Committee to be established in a transparent, open and fair manner, the Secretary-General should as soon as possible invite nominations from all Member States by issuance of a circular letter. Depending on the number of nominations to be received, the size and members of the Steering Committee should be decided and announced by the Secretary-General accordingly. The Steering Committee should be coordinated by the Vice-Chair of the Marine Environment Protection Committee, in line with the practice for the Ad hoc Capacity-building Needs Analysis Group (ACAG).

7 The Steering Committee should:

- .1 act as a focal point for the Committee;
- .2 consider and agree on the outline of the comprehensive impact assessment and associated timeline;
- .3 review and monitor the progress of the comprehensive impact assessment, including providing feedback on the main methods, databases and data sources to be used, in line with agreed timelines; and
- .4 confirm that the comprehensive impact assessment meets the Terms of Reference set out in paragraphs 2 to 4.

8 The Steering Committee should provide recommendations to the Committee. It should as much as possible, work by consensus, make all efforts to ensure timely completion of the comprehensive impact assessment, aim at assisting the Committee to make evidence-based decisions, and undertake its work using modern communication methods, e.g. by email and teleconferencing.

### **Contract and implementation**

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<sup>3</sup> With the focus on ships' safety, operation and transport cost, as well as the extent to which ships will be able to meet the requirements of the short-term measure, retrofitting and commercial behavior, substitution effects for a sample of relevant commodities and trade flows, additional administrative burden of implementation and cost-effectiveness of the measure and potential disproportionately negative impacts on States, including developing countries, in particular, on SIDS and LDCs.

9 The Secretariat will be responsible for initiating and facilitating the process of conducting the comprehensive impact assessment.

10 The Secretariat is invited to involve UNCTAD, in the conduct of the comprehensive impact assessment. Other UN agencies, UN regional commissions and relevant stakeholders may be consulted.

11 The Secretariat should organize an expert workshop/webinar on the draft final comprehensive impact assessment ahead of MEPC 76.

12 Interested Member States and international organizations are invited to provide relevant information that may inform the comprehensive impact assessment through the Secretariat.

13 Member States and international organizations are invited to financially contribute to the comprehensive impact assessment by means of a donation to the GHG-TC Trust Fund.

### **Delivery of the comprehensive impact assessment**

14 The final comprehensive impact assessment of the short-term measure should be submitted to the seventy-sixth session of the Marine Environment Protection Committee to be held in spring 2021 for its consideration and analysis of measures to be implemented to address, as appropriate, any identified disproportionate impacts on developing States, including SIDS, LDCs, and countries remote from their export markets.

15 On the basis of the comprehensive impact assessment, a framework for reviewing impacts on States including developing countries, in particular on LDCs and SIDS, and countries remote from their export markets of the measure adopted, and addressing disproportionately negative impacts on States, as appropriate, should be considered.

16 The Committee will consider experience gained from the impact assessment in the development of future comprehensive impact assessments, as well as in preparing for the review of the measure, to be completed by 1 January 2026.

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## ANNEX 3 – WORK PLAN FOR DEVELOPMENT OF MID- AND LONG-TERM MEASURES AS A FOLLOW UP OF THE INITIAL IMO STRATEGY ON REDUCTION OF GHG EMISSIONS FROM SHIPS

1 This work plan is developed to progress development of mid- and long-term measures in line with the *Initial IMO strategy on reduction of GHG from ships* and its Programme of follow-up actions.

2 The work plan aims at supporting the achievement of the vision and the levels of ambition agreed in the Initial Strategy.

3 The work plan consists of three main phases:

- .1 Phase I – Collation and initial consideration of proposals for measures;
- .2 Phase II – Assessment and selection of measures(s) to further develop; and
- .3 Phase III – Development of(a) measure(s) to be finalized within (an) agreed target date(s).

4 The implementation of the work plan includes the assessment of impacts on States of the proposed measures in accordance with the *Procedure for assessing impacts on States of candidate measures* set out in MEPC.1/Circ.885, taking into account the outcome of the lessons-learned exercise from the comprehensive impact assessment of the short-term measure<sup>4</sup>.

5 Once a measure is adopted and enacted, the Committee should keep its implementation and impacts under review, upon request of Member States, so that any necessary adjustments may be made.

### **Phase I: Collation and initial consideration of proposals for measures**

6 *Purpose:* To table various proposals for measures in order to be able to understand and compare their main features and implications.

7 *What to do:* Identify the key issues to consider in relation to each proposed measure, along with considerations of their potential impacts on States in application of MEPC.1/Circ.885. The key issues should include, but not be limited to, the following elements:

- .1 main characteristics and features of the measure, including in particular the scope of application, the appropriate IMO legal framework envisaged (new or existing), whether alternative methods of compliance may be used, and all other relevant elements enabling its understanding and implications;
- .2 identification of emissions reduction potential, when the measure will start taking effect, and reductions to be expected by 2050;
- .3 potential implications on the shipping industry, in particular on technical and operational aspects, and on costs and investment needs for the maritime industry;

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<sup>4</sup> As set out in resolution MEPC.328(76).

- .4 implementation and enforcement aspects, such as actions that would need to be taken by industry stakeholders, by national Administrations as flag States and port States, etc.;
- .5 legal aspects and relationship with relevant international law; and
- .6 indication of the total workload for the Organization including expected time frame for development, approval, adoption and implementation of the measure, and suggestions on how to expedite the work.

8 *Time period:* Spring 2021 to spring 2022. The first phase of the work plan may require frequent meetings between MEPC 76 and MEPC 78 and may entail an added workload both on the Committee and the Secretariat.

### **Phase II: Assessment and selection of measures to further develop**

9 *Purpose:* To identify (a) candidate measure(s) to develop further in priority.

10 *What to do:* Build upon information from Phase I to select the measure(s) to further develop in priority. This decision should be based on an assessment of the proposed measures, in particular their feasibility, their effectiveness to deliver the long-term levels of ambition of the Initial Strategy and their potential impacts on States.

11 *Time period:* Spring 2022 to spring 2023. The Committee's decision on measures to develop in priority may be taken in conjunction with the revision of the Initial Strategy. The second phase of the work plan may also necessitate frequent meetings in a format to be decided by the Committee.

### **Phase III: Development of (a) measure(s) to be finalized within (an) agreed target date(s)**

12 *Purpose:* In the case of amending existing legal instruments, prepare amendments as appropriate. In the case of developing a new legal instrument, prepare a framework for consideration by the Committee in order to decide on the way forward.

13 *What to do:* Develop and adopt the measure(s), along with the assessments of impacts on States in application of MEPC.1/Circ.885<sup>5</sup>. In order to support this process, a detailed outline of the framework supporting information and assessment of how the selected measure(s) will meet the long-term levels of ambition could be undertaken.

14 *Timeline:* Target date(s) to be agreed in conjunction with the IMO Strategy on reduction of GHG emissions from ships.

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<sup>5</sup> As may be amended.