

**Note by the International Maritime Organization (IMO) to the sixty-fourth session of the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA 64) Bonn, Germany, 8-18 June 2026**

**Agenda item 11 (b)  
"Methodological issues: 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 action to address climate change by regulating greenhouse gas (GHG) emissions from international shipping.

Since SBSTA 63 in November 2025, IMO's Marine Environment Protection Committee (MEPC) and the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG) held one session each (MEPC 84 and ISWG-GHG 21).

This note is an update of the IMO submission to SBSTA 63 and focusses on the latest developments on various GHG-related workstreams at IMO.

**Update on the development of mid-term GHG reduction measures**

1 As presented in previous IMO submissions to SBSTA, the Marine Environment Protection Committee (MEPC) of IMO, and its Intersessional Working Group on Reduction of Greenhouse Gas (GHG) Emissions from Ships (ISWG-GHG), have been developing a "basket of mid-term GHG reduction measures", aimed at delivering on the reduction targets of the [2023 IMO Strategy on reduction of GHG emissions from ships](#) (2023 IMO GHG Strategy). The text of the draft amendments to MARPOL Annex VI on the IMO Net-Zero Framework was approved by MEPC 83 (April 2025), with a view to adoption at the second extraordinary session of MEPC (MEPC/ES.2) in October 2025.

2 During MEPC/ES.2, held to consider the adoption of the draft amendments introducing the IMO Net-Zero Framework in MARPOL Annex VI, the Committee agreed to adjourn the session for a period of one year. This adjournment enabled further efforts to forge a broader consensus on the draft IMO Net-Zero Framework, reconcile remaining differences and respond to the concerns of Member States in relation with the draft amendments, including any necessary adjustments and further development of supporting measures.

3 Following the terms of reference approved by MEPC 83, ISWG-GHG 20 and 21, respectively held the week following the extraordinary session and the week before MEPC 84 in April 2026, made progress on the development of implementing provisions of the draft IMO Net-Zero Framework, with a view to providing further clarifications on technical and operationalization aspects of the framework and addressing some of the concerns expressed. This work was made subject, and without prejudice to, the adoption of amendments on the

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IMO Net-Zero Framework, following the adjournment of the Marine Environment Protection Committee Extraordinary Session.

4 During ISWG-GHG 21, the Group developed texts to be used as a basis for further work on the development of the GHG Fuel Intensity (GFI) calculation, verification and reporting guidelines/guidance, i.e. draft GFI calculation guidelines, draft amendments to the *2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity*, and a draft guidance on how to monitor, report and verify the energy derived from wind propulsion systems (WPS). The Group also developed base texts for further work on sustainable fuel certification, with the development of draft guidelines on requirements and procedures for recognition of sustainable fuel certification schemes and reporting of certification activities (SFCS guidelines), including draft terms of reference for the SFCS Assessment Group. To support the development of the SFCS guidelines in relation to chain of custody models for fuel supply traceability, the IMO Secretariat will organize a dedicated expert workshop ahead of MEPC 85.

5 The Group also discussed the way forward in relation to developing draft guidelines on rewards for zero or near-zero GHG emission technologies fuels and/or energy sources (ZNZs), the methodology to determine such rewards, and possible governing provisions, including possible disbursement of revenue, for the proposed IMO Net-Zero Fund.

6 As for the IMO GFI Registry, a centralized data platform for the reporting of GFI, ISWG-GHG 21 invited the IMO Secretariat to provide to a future session more information on the possible costs involved in its establishment and operationalization, and to continue further work on developing the registry's functional requirements, taking into account interoperability with existing reporting requirements to the [IMO Data Collection System](#) (DCS), cyber security, data governance and geographical inclusivity aspects.

7 MEPC 84 considered how to address remaining concerns and issues with the draft IMO Net-Zero Framework and exchanged views on the preferred way forward on how to ensure making concrete progress in addressing those concerns, in view of the adoption of IMO mid-term measures without any further delay.

8 Some delegations called for the adoption of the draft IMO Net-Zero Framework in its current form and invited to address potential remaining concerns through the development of implementing guidelines and relevant instruments. While other delegations suggested amending the text of the draft IMO Net-Zero Framework or considering alternative proposals to address concerns previously expressed, in particular related to the potential economic burdens of the measures on the shipping industry and States, the global availability of alternative fuels, the role of transitional fuels, and the use of MARPOL Annex VI to introduce an economic element.

9 In considering how to address the concerns expressed and forge a broader consensus on IMO's mid-term measures, all delegations that spoke expressed their continued commitment and willingness to work together towards convergence on a global measure. To facilitate focused discussions, the Committee agreed on the holding of two ISWG-GHG meetings ahead of MEPC 85 (30 November to 3 December 2026), respectively from 1 to 4 September and 23 to 27 November. Member States are invited to submit proposals on how to address concerns with the draft amendments to MARPOL Annex VI on the Net-Zero Framework, in line with the 2023 IMO GHG Strategy. MEPC 84 also agreed to resume the second extraordinary session of MEPC (adjourned in October 2025) on 4 December 2026, subject to confirmation by MEPC 85.

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## Life cycle GHG intensity assessment (LCA) of marine fuels

10 As presented in the previous IMO submission to SBSTA, MEPC 80 (July 2023) adopted *Guidelines on life cycle GHG intensity of marine fuels* (LCA Guidelines), allowing for a Well-to-Wake (WtW) calculation, including Well-to-Tank (WtT) and Tank-to-Wake (TtW) emission factors, of total GHG emissions related to the production and on-board use of marine fuels. These Guidelines are a key implementation instrument of the mid-term GHG reduction measures, providing a robust international framework to assess the GHG intensity and sustainability of marine fuels with the overall objective of reducing GHG emissions within the boundaries of the energy system of international shipping and preventing a shift of emissions to other sectors.

11 MEPC 81 (March 2024) adopted *2024 Guidelines on life cycle GHG intensity of marine fuels* (2024 LCA Guidelines), including amendments on a revised calculation for default emission factors and new templates for their submission; and established a Working Group on Life Cycle GHG Intensity of Marine Fuels under the UN's Joint Group of Experts on Scientific Aspects of Marine Environmental Protection (GESAMP-LCA WG).

12 The GESAMP-LCA WG was tasked to provide the best possible scientific and technical assessment of issues related to the implementation of the LCA Guidelines, such as methodological refinement of the emission quantification to ensure the integrity of the data provided, refine and explore indicators and approaches under the sustainability themes/aspects, and methodological requirements with regard to certification. The Group is currently composed of 13 experts, acting in their individual capacity, and has held three sessions since its establishment. The fourth meeting of the Group is scheduled for 29 June to 3 July 2026.

13 The first report of the GESAMP-LCA WG was submitted to MEPC 83 and based on the recommendation of the Group, the Committee approved the *Methodology for submission, scientific review and recommendation of proposed default emission factors by GESAMP-LCA WG* (MEPC.1/Circ.916) and invited further nominations of experts.

14 Since MEPC 83, a total of forty-eight (48) proposals for default emission factors for well-to-tank (WtT) and twenty-nine (29) proposals for default emission factors for tank-to-wake (TtW), relating to ethanol, liquefied natural gas (methane), ammonia and renewable diesel (HVO), have been submitted to GESAMP-LCA WG for review. Based on the Group's review and recommendations, MEPC 84 started considering initial default emission factors.

15 MEPC 84 endorsed GESAMP-LCA WG's recommendations on sustainability theme/aspect regarding direct land use change (DLUC) and invited the Group to submit a detailed report to MEPC 85 on its proposed risk-based classification approach for indirect land use change (ILUC). The Committee also invited GESAMP-LCA WG to continue its work on defining system boundaries for onboard carbon capture systems (OCCS), and on the development of an accounting methodology for carbon capture utilization (CCU), taking into account relevant existing frameworks, such as IPCC Guidelines and ICAO/CORSIA frameworks.

## Implementation and review of the short-term GHG reduction measure

16 MEPC 80 (July 2023) adopted a *Review plan of the short-term GHG reduction measure*, to be completed by 1 January 2026, to review the short-term measure currently in force to reduce GHG emissions from ships by enhancing the energy efficiency of the global fleet. These regulations, adopted in 2021 and effective since 1 January 2023, require existing ships to measure their energy efficiency by calculating their attained Energy Efficiency Existing

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Ship Index (EEXI) and to continuously improve their annual operational carbon intensity indicator (CII) rating.

17 MEPC 82 (September/October 2024) agreed on a two-phase approach to address a number of key challenges or gaps identified in the implementation of the short-term measures over the past years, ranging from CII impact on individual ships assessments or operational energy efficiency performance and potential penalization of ships on short voyages to the lack of incentivization for port call efficiency and just-in-time (JIT) arrival of ships. Following the agreed two-phased approach, some of the challenges and gaps were to be addressed before 1 January 2026 (Phase 1), while others after 1 January 2026 (Phase 2).

18 MEPC 83 finalized Phase 1 by adopting amendments to the *2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines* (resolution MEPC.400(83)) and defining new CII reduction factors for 2027 to 2030, resulting in a 21.5% reduction in 2030 compared to 2019; and approving draft amendments to MARPOL Annex VI on clarification of entries and data reporting of ship fuel oil consumption data and operational carbon intensity, accessibility to the IMO Ship Fuel Oil Consumption Database (IMO DCS) and review clause of the short-term GHG reduction measure. These amendments were adopted by MEPC 84 and are expected to enter into force on 1 September 2027.

19 With regard to Phase 2, MEPC 84 adopted amendments to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods* (CII Guidelines, G1) and the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan* (2024 SEEMP Guidelines) to prevent unintended impacts on CII calculations arising from the enhanced IMO DCS granularity reporting, resulting from the adoption of the related amendments to MARPOL Annex VI. The Committee also expressed interest in enhancing the SEEMP framework and further developing the CII metrics, including to better reflect operational realities of international shipping.

### **Update on emissions and the carbon intensity and efficiency of the fleet**

20 In 2024, fuel oil consumption data was reported by nearly 30,000 ships, which reported the use of 223 million tonnes of fuel, which is 5.7% higher than in 2023. Conjunctural changes in seaborne navigation patterns (e.g. ships rerouting from the Red Sea/Suez Canal to the Cape of Good Hope) are potentially important factors contributing to the increase in fuel consumption in 2024 compared with previous years, owing to the increase in distance travelled. The use of alternative fuels continues to increase, representing almost 7.5% of total fuel consumption, compared to 6.5% in 2023 and 5.3% in 2022.

21 The latest report on the carbon intensity of the existing fleet between 2019 and 2024 highlights progress made towards reducing the carbon intensity of international shipping by at least 40% in 2030, compared to 2008 levels. When comparing to 2008 levels, carbon intensity has improved by 31.5% and 38.6% in 2024, using the supply-based and demand-based measurement approach, respectively.

### **Onboard Carbon Capture and Storage (OCCS)**

22 MEPC 84 continued its work on the development of a regulatory framework for the use of Onboard Carbon Capture and Storage (OCCS) and agreed to develop specific methodological guidance on OCCS accounting, verification, and certification.

23 A revised work plan on the development of a regulatory framework for the use of OCCS was adopted by MEPC 84, aiming at completion of the work in 2028.

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**Measurement and verification of non-CO<sub>2</sub> GHG emissions (methane and nitrous oxide)**

24 MEPC 84 developed three sets of guidelines on measurement of non-CO<sub>2</sub> GHG emissions, i.e. methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), and agreed that, without prejudice to any future mandatory frameworks, actual Tank-to-Wake emission values for CH<sub>4</sub> and/or N<sub>2</sub>O emissions may be quantified, on a voluntary basis, using the following approaches:

- .1 engine load monitoring, using the *Guidelines for engine load monitoring (ELM) and calculation of emission values* (ELM Guidelines), in conjunction with the *2026 Guidelines for test-bed and onboard measurements of CH<sub>4</sub> and/or N<sub>2</sub>O emissions from marine diesel engines*; and/or
- .2 continuous emissions measurement system, using the *Guidelines for continuous emission monitoring systems (CEMS) used to quantify CH<sub>4</sub> and/or N<sub>2</sub>O emissions from marine diesel engines*.

25 MEPC 84 also encouraged interested Member States and international organizations to conduct voluntary measurements and studies using the aforementioned approaches, and share information on their implementation at a future session.

**Fifth IMO GHG Study**

26 To support evidence-based decision-making when addressing GHG emissions from international shipping, IMO regularly conducts [studies](#) to estimate global emissions from the sector and project possible developments. The [Fourth IMO GHG Study](#) was published in 2020, providing emission inventories, carbon intensity trends as well as emission projections for global shipping.

27 MEPC 84 approved the terms of reference for the Fifth IMO GHG Study to inform, inter alia, the review of the 2023 IMO GHG Strategy, assess the differences before and after the implementation of short-term measures starting in 2023 and provide the Organization with relevant GHG emission data which could inform the Committee's GHG related policy discussions. For the first time, the Fifth IMO GHG Study will provide estimates of emissions on a Well-to-Wake basis, in addition to the traditional estimates tank-to-wake (TtW) emissions.

28 The Fifth IMO GHG Study will cover the period from 2018 to 2025, providing an updated inventory of GHG emissions from international shipping, and revised estimates of the world fleet's GHG fuel intensity and carbon intensity. It will also include emissions projections for 2025-2050. The Study is expected to be finalized by spring 2028.

**Development of the necessary safety regulatory framework allowing safe handling of alternative fuels on board ships**

29 IMO's Maritime Safety Committee (MSC), established at its 108th session (May 2024), a Correspondence Group on the Development of a Safety Regulatory Framework to Support the Reduction of GHG Emissions from Ships using New Technologies and Alternative Fuels (GHG Safety), to capture detailed information on new technologies and alternative fuels, and to assess safety obstacles and gaps in existing regulations for the use of these new technologies.

30 The Correspondence Group on GHG safety identified 51 existing barriers and gaps with current IMO regulation that might delay the use of alternative fuels (e.g. biofuels, methanol, ammonia, hydrogen, etc.) and emerging technologies (e.g. fuel cells, battery energy

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storage, wind propulsion, air lubrication, onboard carbon capture, etc.), and made 32 recommendations to address these issues, some of which are already being implemented.

31 MSC 110 (June 2025) updated the list of regulatory gaps, endorsed detailed recommendations to address them and assigned specific tasks to the IMO Sub-Committees on Carriage of Cargoes and Containers (CCC), Ship Design and Construction (SDC), Ship Systems and Equipment (SSE) and Human Element, Training and Watchkeeping (HTW):

- .1 CCC 11 (September 2025) finalized draft interim guidelines for the use of ammonia cargo as fuel and draft interim guidelines for ships using hydrogen as fuel, which were both adopted by MSC 111 in May 2026. CCC 12 (September 2026) is expected to finalize the revision of guidelines for ethanol/methanol as fuel and consider amendments to the IGF Code for LNG-fuelled ships;
- .2 SDC 12 (January 2026) agreed to establish the Working Group on GHG Safety and instructed it to develop a work plan for the revision of the Code of Safety for Nuclear Merchant Ships (resolution A.491(XII)). The Sub-Committee also instructed the Working Group to continue developing interim guidelines on wind-assisted propulsion, including a safety gap analysis and risk assessment for ships using these technologies, as well as continue working on the safe use of battery energy storage systems (BESS);
- .3 SSE 12 (March 2026) agreed on a draft work plan for the development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels falling under its purview, which foresees the development of provisions to address specific fire risks from alternative fuels, as well as advanced waste heat recovery systems; and
- .4 HTW 11 (February 2025) finalized *Generic interim guidelines on training for seafarers on ships using alternative fuels and new technologies*, approved by MSC 110 (STCW.7/Circ.25); and HTW 12 (February 2026) finalized draft interim guidelines on training for seafarers on ships using methanol or ethanol as fuel and draft interim guidelines on training for seafarers on ships using ammonia as fuel, which were both approved by MSC 111. The Sub-Committee also noted that the work related to the development of training provisions for seafarers on ships using alternative fuels should be separate from the work on the comprehensive review of the STCW Convention and Code.

32 MSC 111 endorsed related work plans for Sub-Committees under its purview. In addition, MSC 111 approved draft amendments to SOLAS regulation II-1/2, II-1/55, II-1/56 and II-1/57 and draft amendments to IGF Code in relation to the application of the IGF Code to confirm gaseous fuels are within its scope.

**Informed policy making, capacity-building, technical cooperation and other supporting activities**

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33 IMO supports developing countries, in particular SIDS and LDCs, in addressing GHG emissions from international shipping through its Technical Cooperation (TC) programmes, a dedicated TC fund and a wide portfolio of projects dedicated to climate action. In addition, the [IMO multi-donor GHG Trust Fund](#), established in 2019, continues to fund important projects and studies supporting the implementation of the 2023 IMO GHG Strategy and inform decision making on IMO's GHG reduction measures.

34 The [IMO Future Fuels and Technology \(FFT\) project](#), funded by the Republic of Korea, supports informed policy making regarding IMO's regulatory discussions on advancing the implementation of the *2023 IMO Strategy on Reduction of GHG Emissions from ships* by promoting knowledge exchange and providing access to the latest information on alternative fuels and technologies. To achieve this goal, the FFT Project conducts global studies and research to support evidence-based decision-making at IMO on the reduction of GHG emissions from international shipping. The FFT Project, in collaboration with the GreenVoyage2050 programme, the World Maritime University (WMU), and the International Renewable Energy Agency (IRENA), has initiated a global study to assess the current status on the development of infrastructure required to enable the large-scale uptake of renewable fuels. The outcome of the study is expected to be released in the third quarter of 2026. Furthermore, the FFT Project has developed an online portal ([futurefuels.imo.org](http://futurefuels.imo.org)), launched in April 2024, aiming at providing free and easy access to the latest developments and research on alternative fuels and technologies, including pricing information. The FFT online portal has been created in collaboration with more than 20 data providers, including international organizations, industry groups, and other relevant stakeholders. Finally, the FFT Project regularly organizes Technical Seminars designed to enhance understanding of the readiness and latest developments related to alternative fuels and technologies. To date, the project has organized Seminars on Onboard Carbon Capture and Storage (OCCS) systems (September 2025); the energy transition of shipping (during Hong Kong Maritime Week in November 2025); marine biofuels (February 2026); and methane-based fuels (May 2026). The next Technical Seminar will be dedicated to ammonia as a marine fuel and will be held at IMO Headquarters on 17 September 2026.

35 The [GreenVoyage2050 Programme](#) is in its Phase II (2024-2030) with over USD 27 million in funding from the Governments of Denmark, Finland, France, Germany, the Netherlands, Norway and IMO's Integrated Technical Cooperation Programme (ITCP). The Programme is expanding annually through open calls inviting new partner countries. During the reporting period, 12 countries joined the Programme and are receiving targeted support. Bangladesh, Egypt, Colombia, Ghana, Mexico, Nigeria, Senegal and South Africa are advancing the development of National Action Plans (NAPs) to address GHG emissions from ships, while India, Indonesia, Türkiye and Viet Nam are undertaking feasibility studies to support pilot projects on maritime decarbonization. Strategic partnerships were also strengthened, including collaboration with the International PtX Hub to advance work on alternative fuels and support NAP implementation. The Programme is also developing a new grant facility aimed at co-funding innovative low- and zero-carbon projects in developing countries. A study on the supply and demand of alternative marine fuels in Jamaica was finalized, with findings expected to inform the development of a Regional Maritime Decarbonization Roadmap. Through its Global Industry Alliance to Support Low Carbon Shipping, the Programme continues to develop practical tools and guidance, including a Wind Propulsion Technology Guide based on real-world user experience (planned for publication in Q2 2026), and a questionnaire targeting alternative fuel producers. Collaboration also continued with the Port of Tema, Ghana, to support the implementation of just-in-time ship arrivals aimed at reducing ship and port emissions. The Programme further expanded activities on capacity-building and inclusivity. A study on career pathways and gender diversity advancement in maritime decarbonization was developed. New training courses were

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delivered, including a global train-the-trainers course on alternative fuels and a new course on Integrated Maritime-Energy Policy Planning.

36 The **Global Maritime Technology Cooperation Centres Network (GMN) project**, funded by the European Union, is currently in its second phase (€10 million, 2024–2027), with a primary focus on implementing technology demonstration pilot projects aimed at GHG emissions from ports and vessels. The GMN Phase II project supports developing countries, particularly LDCs and SIDS, in meeting the IMOs energy efficiency and GHG reduction targets. In 2025, GMN Phase II made significant progress in its technology demonstration pilot projects. A total of six pilot projects were initiated, with implementation and procurement processes advancing across all participating regions, including two in Africa, three in the Caribbean, and one in Latin America. These include piloting a port call data-sharing solution at two ports in Namibia; marine grade solar panel installation onboard interisland ferry in Mauritius; deploying a vertical-axis wind turbine to enhance the renewable energy mix in port operations in Saint Kitts and Nevis; installing a marine battery system to pilot a ZEROe RoPAX vessel in Barbados; implementing advanced hull coating solutions for target vessels in Trinidad and Tobago; and introducing an AI-driven fuel optimization and performance management system onboard a ferry in Mexico. Several additional pilot projects will be identified in the Pacific region in 2026. More than 1,000 participants were engaged through five regional and seven national capacity-building workshops to promote awareness of financing options for maritime decarbonization and the integration of SDG 5 (Gender Equality) into maritime decarbonization initiatives.

37 The **Future-Ready Shipping in Africa (FRS) project**, funded by the European Union (€5 million, 2025-2029), is a newly launched project, designed to support the African continent's transition towards a sustainable, decarbonized, and digitally advance maritime sector through four strategic objectives: (i) Strengthening maritime governance; (ii) Advancing alternative fuel infrastructure; (iii) Enhancing digitalization and Maritime Single Window (MSW) implementation; and (iv) Upgrading maritime education and training (MET). The project aims to select five beneficiary Member States under each strategic objective and provide in-country technical assistance, such as through legal drafting, feasibility studies, readiness assessments, development of national roadmaps and green and digitalization curricula. Open call for Expression of Interests was initiated in Q1 2026, the final selection of beneficiary Member States is ongoing.

38 As additional dedicated support to African countries, the **Green Transition of Shipping in Africa programme**, funded by the IMO GHG TC-Trust Fund through a contribution from Denmark, was designed to support African nations in implementing IMO's GHG reduction measures and advancing the energy transition in shipping. In 2025, the programme delivered a series of activities that strengthened awareness, cooperation and practical action on maritime decarbonization across the continent.

39 The Sustainable Maritime Transport Training Programme (**GHG-SMART**), funded by the Republic of Korea (USD 4.5 million, 2020 to 2026), supports SIDS and LDCs with the implementation of the 2023 IMO GHG Strategy through capacity-building in maritime decarbonization, with annual training cycles comprised of theoretical and practical sessions and study visits complemented with post-training scholarships at the World Maritime University. The project has entered its final year and since 2022 has provided long-term training opportunities for over 100 professionals from nearly 50 SIDS from 47 SIDS and LDCs from Africa, Asia and the Caribbean and Pacific regions have been trained on relevant regulatory, policy, technological and financial aspects of maritime decarbonization. In 2025, the GHG-SMART programme trained 23 participants from 13 SIDS and LDCs, namely Bangladesh, Belize, the Democratic Republic of the Congo, Dominican Republic, Guinea-Bissau, Madagascar, Mauritania, Mauritius, Nepal, Seychelles, Suriname, the United Republic

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of Tanzania and Vanuatu. Of the participants, 56.6% were women, reflecting a strong gender balance achieved through its design, which ensures equitable participation. In 2026, further 30 professionals from 30 SIDS and LDCs (Angola, Bahamas, Comoros, Cook Islands, Fiji, (The) Gambia, Jamaica, Malawi, Nauru, Palau, Papua New Guinea, Saint Lucia, Saint Vincent and the Grenadines, Somalia, Togo, Uganda, Zambia) are currently being trained as part of in programme. Full scholarships for Master's in Maritime Energy Management at the World Maritime University (WMU) have been awarded to participants from Zambia, Uganda, Grenada and The Gambia so far under a model recognition scheme to facilitate post training learning opportunities and professional development. The programme is currently in the process of operationalizing an alumni network of maritime professionals trained in maritime decarbonization from SIDS and LDCs to further strengthen international and regional collaboration. The project provides training on regulatory, policy, technological and financial aspects of maritime decarbonization and is undertaking a global assessment of climate finance in maritime decarbonization to further strengthen its relevant training modules.

40 The **SMART-C GHG Project** (2023-2027, USD 4 million, supported by the Republic of Korea) is providing tailored support to the Philippines and Viet Nam to advance the implementation of the *2023 IMO Strategy on Reduction of GHG Emissions from Ships*, while also benefiting other ASEAN countries through regional activities. The project focuses on three key areas: supporting the development of National Action Plans (NAPs) on maritime decarbonization, strengthening national GHG emissions data collection and monitoring systems, and enhancing the capacity of maritime administrations and relevant stakeholders including seafarers. The project has undertaken baseline assessments to support the development of NAPs in both pilot countries and completed gap analyses of existing GHG emissions data collection arrangements, which provide the foundation for strengthening national data systems and informing future policy and implementation measures. At the same time, a series of national capacity-building activities have been delivered to strengthen technical knowledge, facilitate experience sharing and promote coordinated action towards maritime decarbonization.

41 IMO has also recently launched two new additional projects. The **Blue Solutions project**, implemented by IMO together with PEMSEA and supported by Germany (2026-2030, USD 6 million), focuses on Southeast Asia and focuses on maritime decarbonization technology demonstration pilot activities, policy and regulatory development (including potential NAP support) and regional cooperation to advance low- and zero-emission shipping. While the IMO-EBRD-World Bank **FINSMART+ project**, supported by the GEF (USD 1.2 million) aims to accelerate the uptake of alternative fuels and technologies, support investment in sustainable port and maritime infrastructure, and promote a more equitable and inclusive maritime energy transition, with a strong focus on strengthening financial knowledge of developing countries maritime administrations, support them in developing bankable project proposals, resulting in on the ground investment in maritime decarbonization.

42 IMO has also addressed specific needs through its dedicated Technical Cooperation Fund. The global programme on **Supporting Climate Action and Clean Air in Shipping** continued to assist Member States in ratifying and effectively implementing MARPOL Annex VI, the *2023 IMO Strategy on Reduction of GHG Emissions from Ships*, the consistent implementation of the global 0.50% sulphur limit (IMO 2020), the sulphur/nitrogen oxide emission control areas (ECAs) and the NO<sub>x</sub> Technical Code. Further work on the implementation of MARPOL Annex VI included the preparation of an online handbook to support flag, port and coastal States in the practical and consistent application of its provisions. It has also supported countries to establish a "Baseline Training Framework for Seafarers in Decarbonization with the Maritime Just Transition Task Force", followed up by a Seminar on training of seafarers on ships using alternative fuels and new technologies. Furthermore, under the ITCP, IMO also started to support development of a Green maritime corridor pre-

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feasibility study and inclusion in National Action Plan for Barbados and is undertaking the development of an implementation manual on MARPOL Annex VI.

43 A [Voluntary Multi-Donor Trust Fund \(VMDTF\)](#) was established in March 2023 to assist the in-person attendance of developing countries, especially SIDS and LDCs, in IMO meetings, specifically MEPC and ISWG-GHG, as well as other meetings related to GHG matters. For MEPC 84 and ISWG-GHG 21, the attendance of representatives from 32 countries were funded through the trust fund.

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