INTERNATIONAL MARITIME ORGANIZATION

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DRAFT REPORT OF THE MARINE ENVIRONMENT PROTECTION COMMITTEE ON ITS SEVENTY-SEVENTH SESSION[1]

1 INTRODUCTION – ADOPTION OF THE AGENDA

1.1 The seventy-seventh session of the Marine Environment Protection Committee was held remotely from 22 to 26 November 2021, chaired by Mr. H. Saito (Japan). The Vice-Chair of the Committee, Mr. H. Conway (Liberia), was also present.

1.2 The session was attended by 114 Members and 3 Associate Members; 4 representatives from the United Nations Programmes, specialized agencies and other entities; 11 observers from intergovernmental organizations with agreements of cooperation; and 54 observers from non-governmental organizations in consultative status, as listed in document MEPC 77/INF.1.

Opening address of the Secretary-General

1.3 The Secretary-General welcomed participants and delivered his opening address, the full text of which can be downloaded from the IMO website at the following link: https://www.imo.org/en/MediaCentre/SecretaryGeneral/Pages/Secretary-GeneralsSpeechesToMeetings.aspx

[1] Delegations wishing to comment on this draft report should submit their comments to MED@imo.org by UTC 11.59 p.m. on Friday, 10 December 2021.

Chair's remarks

1.4 The Chair thanked the Secretary-General for his opening address and stated that his advice and requests would be given every consideration in the deliberations of the Committee.

Measures taken to facilitate the remote session

1.5 The Committee recalled that at the extraordinary session of all IMO Committees (ALCOM/ES), held in September 2020, the Committees jointly approved Interim guidance to facilitate remote sessions of the Committees during the COVID-19 pandemic (MSC-LEG-MEPC-TCC-FAL.1/Circ.1), and had agreed in particular to:

.1 waive rule 3 of their respective rules of procedure, in part, to allow sessions to be held remotely;

.2 accept, for the purpose of facilitating remote sessions, electronically submitted credentials, with originals to follow; and

.3 consider Members that had submitted valid credentials, were registered at OMRS and were listed as participants in the remote session, as "present" within rule 28(1) of its rules of procedure.

Adoption of the agenda and related matters

1.6 The Committee adopted the agenda (MEPC 77/1) and agreed to be guided in its work by the provisional timetable (MEPC 77/1/1, annex 1, as further revised).

1.7 The Committee noted document MEPC 77/1/1 (Chair) setting out the proposals by the Chair, in consultation with the Secretariat, with regard to arrangements for the remote session, taking into account the *Interim guidance to facilitate remote sessions of the Committees during the COVID-19 pandemic*.

1.8 The Committee generally agreed to the Chair's proposals on the arrangements for the remote session as set out in documents MEPC 77/1/1 and MEPC 77/1/1/Add.1(Chair).

1.9 In this context, the Committee further agreed to the Chair's proposals in relation to the documents considered by correspondence prior to the virtual meeting (MEPC 77/1/1, annex 3), having noted document MEPC 77/1/1/Add.1 providing a collation of all comments received by

correspondence and explanations on how these comments had been addressed. The Committee noted that the above-mentioned Chair's proposals would be reflected under relevant agenda items.

1.10 The Committee also generally agreed to defer the consideration of the documents listed in annex 4 to document MEPC 77/1/1 to MEPC 78.

Credentials

1.11 The Committee noted that the credentials of 109 delegations attending the session were in due and proper form.

2 DECISIONS OF OTHER BODIES

MATTERS CONSIDERED BY CORRESPONDENCE PRIOR TO THE VIRTUAL MEETING

2.1 Following consideration by correspondence, prior to the virtual meeting, in accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 1 on agenda item 2), the Committee noted the decisions and outcomes of MSC 103 (MEPC 77/2), FAL 45 (MEPC 77/2/1), C 125 (MEPC 77/2/2) and LEG 108 (MEPC 77/2/3) with regard to its work, and agreed to take action as appropriate under the relevant agenda items.

2.2 During the virtual meeting, the Committee also reconfirmed the Chair's proposals in annex 3 to document MEPC 77/1/1, as set out in the following paragraphs 2.3 and 2.4.

2.3 In relation to the outcome of MSC 103, the Committee recalled that MEPC 76 had concurrently approved two new outputs, on "Development of an entrant training manual for PSC personnel" and "Development of guidance in relation to IMSAS to assist in the implementation of the III Code by Member States", for inclusion in the biennial agenda of the III Sub-Committee for 2022-2023 and the provisional agenda for III 8 (MEPC 76/15, paragraphs 10.2 and 12.5).

2.4 In relation to the outcome of C 125, the Committee instructed the Secretariat to develop a draft priority list of conventions under the Committee's purview for which a consolidated version would be most beneficial, for consideration by MEPC 78.

2.5 The outcome of MSC 104, relevant to the work of the Committee, was considered under the relevant agenda item 10 as it entailed decisions emanating from the outcomes of the III Sub-Committee (see section 10).

MATTERS CONSIDERED DURING THE VIRTUAL MEETING

Urgent matters emanating from the thirty-fourth extraordinary session of the Council

2.6 The Committee was informed that the Council had agreed to refer the application for consultative status submitted by the Zero Emissions Ship Technology Association (ZESTAs) for further screening by the Committee and had decided that the recommendation of the Committee could be reported directly to the forthcoming session of the Assembly (paragraph 15(c).6 of C/ES.34/D and documents C 125/WP.4 and C 124/5(c)).

2.7 The Committee established an informal group, chaired by the Vice-Chair of the Committee, Mr. Harry Conway of Liberia, meeting outside normal working hours to further screen the application submitted by ZESTAs and advise the Committee accordingly.

2.8 In considering the report of the Informal Group (MEPC 77/WP.11), the Committee noted the Group's view that ZESTAs had experience which was not represented in other groups or organizations with observer status at IMO, specifically in relation to the zero emission technologies of wind, hydrogen and marine batteries and therefore such expertise would be valuable in the context of IMO's work in reducing GHG emissions. The Committee also noted that ZESTAs general objectives were aligned with IMO's initial GHG strategy and that the organization had good capacity to support the work of IMO.

2.9 The Committee also noted the view of some members of the Informal Group that, while ZESTAs members had experience in zero emission technologies, the organization itself did not have a track record of publications on the subject and that more evidence was needed to ensure that it could contribute to the work of IMO.

2.10 The delegation of China expressed the view that any organization or individual with expertise relevant to the work of the Organization should be welcomed to make their contribution through various means, including being invited as an expert or as an observer organization with consultative status. In referring to the fact that ZESTAs was not a truly international organization with only few members from Europe and Canada, the delegation of China stressed that in the past recommendations/decisions to grant consultative status had always been made on a unanimous basis following Council Members' satisfaction that the

applying organizations had met the conditions set out in the established rules and Guidelines, any exception to this would be detrimental to the reputation of the Organization, and would adversely affect the future work of the Organization.

2.11 Following consideration, the Committee concurred with the Informal Group's view to recommend to the Assembly at its thirty-second session that consultative status be granted to ZESTAs on a provisional basis of two years, after which time that status be reviewed to ensure that ZESTAs was making a valuable contribution to the work of the IMO.

2.12 The delegation of China, supported by the delegation of the Russian Federation, reserved its position with regard to the Committee's recommendation to A 32.

3 IDENTIFICATION AND PROTECTION OF SPECIAL AREAS, ECAs AND PSSAs

3.1 Following consideration by correspondence, prior to the virtual meeting, in accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 2 on agenda item 3), the Committee noted the information provided in documents MEPC 77/INF.27 (France et al.) and MEPC 77/INF.28 (France) with regard to ongoing work towards a proposal on the identification of the Western Mediterranean Sea as a PSSA to minimize the risk of ship strikes with cetaceans.

4 HARMFUL AQUATIC ORGANISMS IN BALLAST WATER

MATTERS CONSIDERED BY CORRESPONDENCE PRIOR TO THE VIRTUAL MEETING

4.1 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 3 on agenda item 4), as well as document MEPC 77/1/1/Add.1 (paragraphs 11 and 23.1), the Committee considered by correspondence, prior to the virtual meeting, the following documents:

.1 MEPC 77/4 (Islamic Republic of Iran), containing an application for Basic Approval of the RADClean® BWMS;

.2 MEPC 77/4/1 (Japan), containing an application for Final Approval of JFE BallastAce® that makes use of NEO-CHLOR MARINE®;

.3 MEPC 77/4/2 (Republic of Korea), containing an application for Final Approval of the HiBallast NF™ ballast water management system;

.4 MEPC 77/4/4 (Secretariat), containing the report of the forty-first meeting of the GESAMP-Ballast Water Working Group;

.5 MEPC 77/4/11 (IACS), proposing a unified interpretation of regulation B-3.10 of the BWM Convention concerning the deadline for compliance with the D-2 standard for ships constructed before 8 September 2017 but which do not have an initial survey associated with the IOPPC until after 8 September 2019;

.6 MEPC 77/INF.4 (Liberia), providing information on the type approval of the SeaCURE Ballast Water Management System;

.7 MEPC 77/INF.7 (Netherlands), providing information on the type approval of the MICROFADE II BWMS;

.8 MEPC 77/INF.12 (Denmark), providing information on the amendment of the type approval of the CompactClean Ballast Water Management System;

.9 MEPC 77/INF.13 (Norway), providing information on the type approval of the Purestream™ BWMS;

.10 MEPC 77/INF.14 (Republic of Korea), providing information on the type approval of the TECHCROSS Inc. Electro-Cleen™ System (ECS) Ballast Water Management System;

.11 MEPC 77/INF.15 (Republic of Korea), providing information on the type approval of the S&SYS Co., Ltd. Purimar™ Ballast Water Management System;

.12 MEPC 77/INF.16 (Republic of Korea), providing information on a standardized operating record of BWMS with real-time monitoring system and its utilization in port State control work;

.13 MEPC 77/INF.17 (Republic of Korea), providing information on the type approval of the HANLA IMS Co., Ltd. EcoGuardian™ Ballast Water Management System;

.14 MEPC 77/INF.21 (China), providing information on the type approval of the NiBallast™ Ballast Water Management System; and

.15 MEPC 77/INF.26 (Bolivia et al.), providing information on a tool for invasive species data analysis.

4.2 During the virtual meeting, the Committee reconfirmed the endorsement of the Chair's proposals in annex 3 to document MEPC 77/1/1, as well as document MEPC 77/1/1/Add.1, as set out in the following paragraphs 4.3 to 4.9.

Approval of ballast water management systems that make use of Active Substances

4.3 The Committee agreed to:

.1 not grant Final Approval to the FlowSafe ballast water management system submitted by Cyprus in document MEPC 75/4/11;

.2 grant Basic Approval to the RADClean® BWMS submitted by the Islamic Republic of Iran in document MEPC 77/4;

.3 grant Final Approval to JFE BallastAce® That Makes Use of NEO-CHLOR MARINE® submitted by Japan in document MEPC 77/4/1; and

.4 grant Final Approval to HiBallast NF™ submitted by the Republic of Korea in document MEPC 77/4/2.

Organizational arrangements related to the evaluation and approval of ballast water management systems

4.4 The Committee noted the GESAMP-BWWG's views that:

.1 the relevant Administration should check that the Operations, Maintenance and Safety Manual (OMSM) and other relevant information was adequately updated to incorporate proposed changes, and that any changes from the original BWMS should be clearly indicated in the application; and

.2 submitting Administrations should conduct a careful completeness check to ensure that the application satisfied all the provisions contained in Procedure

(G9) (paragraph 2.3.4 of the Methodology for information gathering and conduct of work of the GESAMP-BWWG (BWM.2/Circ.13/Rev.4)).

4.5 The Committee also noted the GESAMP-BWWG's view that a Stocktaking Workshop was necessary, and the suggested terms of reference, and invited Member States to submit relevant data to the Secretariat for consideration by the GESAMP-BWWG in its evaluation of TRO sensors at its next Stocktaking Workshop.

4.6 The Committee instructed the Ballast Water Review Group (see also paragraph 4.10.3) to consider the proposal to develop procedures for conducting re-evaluations of ballast water management systems which make use of Active Substances and to advise the Committee accordingly.

Unified interpretation of regulation B-3.10 of the BWM Convention

4.7 The Committee instructed the PPR Sub-Committee, at its ninth session, to consider document MEPC 77/4/11 (IACS), under its agenda item 16 (Unified interpretation to provisions of IMO environment-related conventions), and to advise the Committee accordingly.

Type approval of ballast water management systems

4.8 The Committee noted the information regarding type-approved ballast water management systems provided in documents MEPC 77/INF.4 (Liberia), MEPC 77/INF.7 (Netherlands), MEPC 77/INF.12 (Denmark), MEPC 77/INF.13 (Norway), MEPC 77/INF.14, MEPC 77/INF.15 and MEPC 77/INF.17 (Republic of Korea), and MEPC 77/INF.21 (China).

Information on other matters related to the implementation of the BWM Convention

4.9 The Committee noted the information contained in documents MEPC 77/INF.16 (Republic of Korea) on a standardized operating record of ballast water management systems with real-time monitoring system and its utilization for port State control; and MEPC 77/INF.26 (Bolivia et al.) on the construction of a regional platform for information on invasive species to support the implementation of the BWM Convention in the ROCRAM area.

MATTERS CONSIDERED DURING THE VIRTUAL MEETING

Establishment of the Ballast Water Review Group

4.10 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraph 5) and its annex 2, as well as document MEPC 77/1/1/Add.1

(paragraphs 3 to 8), the Committee established the Ballast Water Review Group with the following terms of reference (see also paragraph 4.19):

.1 prepare, with a view to finalization, the draft BWM.2 circular on guidance for the application of the BWM Convention to ships operating at ports with challenging water quality, using document MEPC 76/4 and Corr.1 as the basis and taking into account documents MEPC 76/4/4, MEPC 76/4/5, MEPC 76/4/6, MEPC 76/4/7, MEPC 76/4/8, MEPC 77/4/8, MEPC 77/4/10 (paragraph 15) and PPR 5/23/2; and in the event that the draft circular cannot be finalized, advise the Committee on the way forward for finalizing it;

.2 consider the draft unified interpretation of regulations E-1.1.1 and E-1.1.5 of the BWM Convention proposed in document MEPC 77/4/6 and advise the Committee accordingly; and

.3 consider the proposal to develop procedures for conducting re-evaluations of ballast water management systems which make use of Active Substances and advise the Committee accordingly.

Matters considered in plenary

4.11 During the virtual meeting, the Committee had for its consideration the following matters under this agenda item:

.1 application of the BWM Convention to specific ship types; and

.2 the experience-building phase associated with the BWM Convention.

4.12 Due to time constraints, having considered the relevant proposals by the Chair, the Committee took action as set out in the following paragraphs 4.13 to 4.18.

Application of the BWM Convention to specific ship types

4.13 The Committee had for its consideration four documents submitted to MEPC 74 and two documents submitted to MEPC 75 that had been deferred to MEPC 76, which had further deferred them to this session, as follows:

.1 document MEPC 74/4/13 (Russian Federation), containing proposals with regard to the application of the BWM Convention to specific ship types, in particular to multipurpose salvage ships; and proposing to amend regulation A-5 of the BWM Convention and *the Guidelines for ballast water management equivalent compliance (G3)*, in order to apply provisions for equivalent compliance also to ships designed and used for emergency response, search and rescue, oil spill response and emergency towing;

.2 documents MEPC 74/4/18, MEPC 74/4/19 and MEPC 74/4/20 (Turkey), highlighting the technical and operational challenges of retrofitting BWMS on specialized tugboats, following up from relevant submissions in documents MEPC 72/4/8 and MEPC 73/15/2; proposing that a guidance document be developed; and also proposing to evaluate the need for a possible amendment to the Convention;

.3 document MEPC 75/4/7 (Australia, Canada and New Zealand), proposing a new circular on options for compliance with the BWM Convention for all ships required to meet the regulation D-2 performance standard; and expressing the view that making amendments based on specific ship types risked fragmentation of the Convention and that such amendments made prior to the end of the experience-building phase (EBP) risked pre-empting the results of the EBP and might lead to implementation issues being addressed in an uncoordinated manner, which might result in inadequate or ineffective long-term changes being made to the Convention; and

.4 document MEPC 75/4/8 (Russian Federation), providing comments on document MEPC 75/4/7 that, while acknowledging that the draft circular proposed in document MEPC 75/4/7 could be a very useful document for Administrations when seeking solutions for compliance with the Convention, there might be some exceptional cases, either related to specific ship types or specific circumstances, to which the options listed in the draft circular would not be suitable; that for exceptional cases urgent measures might be required that could imply either amendments to the Convention or a clear guidance; and that such amendments based on specific ship types would not risk fragmentation of the Convention.

4.14 Having noted that there had been intersessional deliberations among some key delegations with a view to achieving compromise that might be agreeable to all parties involved, the Committee invited interested Member States and international organizations to work intersessionally and submit updated proposals to the next session.

The experience-building phase associated with the BWM Convention

4.15 The Committee had for its consideration one document submitted to MEPC 76 which had been deferred to this session, and five documents dealing with this matter submitted to MEPC 77, as follows:

.1 document MEPC 76/4/2 (Liberia et al.), discussing entries in the ballast water record book (BWRB); proposing that the guidance provided in Appendix II of the BWM Convention (Form of the Ballast Water Record Book) be reviewed as part of the experience-building phase (EBP); and also proposing that the review should identify any need for an improvement of the Convention in light of experience gained with the BWRB as part of the package of amendments following the conclusion of the EBP, and consider whether additional guidance on entries in the BWRB was necessary;

.2 document MEPC 77/4/3 (Canada), sharing the results of scientific research on ballast water management system performance, as well as experience with potential approaches for compliance assessment during port State control in Canada; and suggesting, based on information gathered to date, that areas of focus for the data analysis and Convention review stages of the EBP should include increasing the performance and reliability of current BWMS and improving the practicality of compliance assessment and enforcement;

.3 document MEPC 77/4/5 (Secretariat), providing an update on the EBP, including an update on data gathered and work undertaken by the Secretariat and the World Maritime University (WMU) to progress data gathering and analysis;

.4 document MEPC 77/4/7 (ICS et al.), proposing to extend the EBP in order to provide sufficient time for the various stages of the EBP to be effective and ensure follow-up decisions relating to a review of the BWM Convention were

meaningful and based on sufficient feedback and data; expressing concern that, with the limited amount of data received by MEPC 76, the data analysis stage could not reasonably be initiated as the review would not be meaningful; and proposing to extend the EBP timeline by two years as a minimum;

.5 document MEPC 77/4/9 (India), commenting on the proposal to extend the EBP and highlighting the need to review Appendix II of the BWM Convention concerning the BWRB entries; expressing the view that, while supporting the proposal to extend the EBP by a minimum of two years, there was enough information available to review Appendix II of the BWM Convention; and proposing to develop a revised BWRB as well as guidance on entries in the BWRB incorporating the above revision of the BWRB; and

.6 MEPC 77/4/10 (Brazil), presenting the status of ongoing studies in Brazil during the EBP regarding the implementation of the D-2 standard, including the results of a survey relating to the training of inspectors, entailing inspections conducted on a ship that had performed ballast water exchange (BWE) exclusively and on a ship that had performed both BWE and ballast water treatment (BWT); and commenting on the use of BWE+BWT in ports with challenging water quality, which was a separate matter that had been referred to the Ballast Water Review Group.

4.16 The Committee noted that, since the submission of the last update by the Secretariat through document MEPC 77/4/5, there had been substantial further data collection through WMU, and by the time of this session there was available data from 35 Member States and seven other stakeholders corresponding to approximately 15,000 ships, which was being analysed with a view to submission of the full data analysis report by the Secretariat to MEPC 78.

4.17 In light of this, the Chair proposed that, as data analysis under the EBP was ongoing and the Secretariat would submit the full data analysis report to MEPC 78, the Committee should consider the proposals contained in the submitted documents at the next session in conjunction with the report, while the information contained in these documents should be considered by the Secretariat and WMU in the context of the data analysis.

4.18 Consequently, the Committee invited the Secretariat and WMU to consider the information contained in these documents in the context of the data analysis and submit the full data analysis report to MEPC 78, and noted the proposals contained in the documents for further consideration at the next session in conjunction with the report. With respect to the data analysis to be provided to MEPC 78, the Secretariat and WMU were requested to highlight in their report data received and analysis conducted relating to the biological efficacy of BWMS in accordance with compliance with regulation D-2 of the BWM Convention differentiating, as much as possible, between BWMS approved in accordance with the BWMS Code and those approved in accordance with earlier versions of the Guidelines (G8).

Report of the Ballast Water Review Group

4.19 Having considered the report of the Ballast Water Review Group (MEPC 77/WP.10), the Committee approved it in general and took action as outlined below.

Application of the BWM Convention to ships operating at ports with challenging water quality

4.20 The Committee noted that the group had for its consideration the following documents:

.1 MEPC 76/4 and Corr.1 (Liberia et al.), proposing a draft BWM circular on application of the BWM Convention to ships operating at ports with challenging water quality, intended to provide all stakeholders including Member States and shipowners with a clear understanding of the Committee's expectations in terms of ballast water management requirements for ships operating at ports with challenging water quality;

.2 MEPC 76/4/4 (China), commenting on document MEPC 76/4 and proposing modifications to the draft guidance on the application of the BWM Convention to ships operating at ports with challenging water quality as set out in the annex to document MEPC 76/4;

.3 MEPC 76/4/5 (Republic of Korea), providing comments on the draft BWM circular on application of the BWM Convention to ships operating at ports with challenging water quality;

.4 MEPC 76/4/6 (Norway), commenting on the draft BWM circular on application of the BWM Convention to ships operating at ports with challenging water quality as submitted by Liberia et al.;

.5 MEPC 76/4/7 (INTERTANKO), providing information on reports submitted by INTERTANKO members on their ships that experienced issues with their ballast water management systems (BWMS) at ports with challenging water quality;

.6 MEPC 76/4/8 (Marshall Islands), providing comments on document MEPC 76/4 and a revised draft BWM circular on guidance on application of the BWM Convention to ships operating at ports with challenging water quality;

.7 MEPC 77/4/8 (Denmark and Germany), providing comments on document MEPC 76/4 and proposing a more BWMS-specific approach for ships operating at ports with challenging water quality as part of the experience-building phase associated with the BWM Convention (EBP);

.8 MEPC 77/4/10 (Brazil), paragraph 15, commenting on the use of ballast water exchange plus treatment (BWE+BWT) in ports with challenging water quality; and

.9 PPR 5/23/2 (Canada), addressing the proposals made in document MEPC 71/4/21 (Republic of Korea) with regard to ports with challenging water quality, in general agreeing that the use of BWE+BWT could assist in dealing with ballast water from such ports but it needed further consideration.

4.21 The Committee also noted that, due to the large number of issues to resolve, the group was not able to finalize the draft BWM.2 circular on guidance for the application of the BWM Convention to ships operating at ports with challenging water quality at this session, and focused on fundamental elements that could form the basis for future deliberations with a view to finalizing it.

4.22 The Committee invited Member States and international organizations to submit further proposals with regard to guidance on measures that might be taken when BWMS

encounter challenging uptake water quality, taking into account the fundamental elements established at this session as set out in annex 2 to the group's report (MEPC 77/WP.10).

Unified interpretation of regulations E-1.1.1 and E-1.1.5 of the BWM Convention

4.23 The Committee noted that the group had for its consideration document MEPC 77/4/6 (Republic of Korea and IACS), proposing a unified interpretation of regulations E-1.1.1 and E-1.1.5 of the BWM Convention concerning a common date to be used for determining the implementation of mandatory commissioning testing of individual ballast water management systems in accordance with resolution MEPC.325(75) and taking into account BWM.2/Circ.70/Rev.1.

4.24 The Committee approved the unified interpretation of the *Date to be used for determining the implementation of mandatory commissioning testing of individual ballast water management systems in accordance with resolution MEPC.325(75)* as set out in annex 1 to the group's report (MEPC 77/WP.10), and instructed the Secretariat to circulate it by means of BWM.2/Circ.76.

Procedures for conducting re-evaluations of ballast water management systems

4.25 The Committee noted that, due to time constraints, the group was not able to consider the proposal to develop procedures for conducting re-evaluations of ballast water management systems which make use of Active Substances, and instructed the group to consider this matter at a future session.

Future work

4.26 The Committee noted the request of the Group on re-establishment of the Review Group at MEPC 78, in accordance with the provisions of regulation D-5 of the BWM Convention.

5 AIR POLLUTION PREVENTION

MATTERS CONSIDERED BY CORRESPONDENCE PRIOR TO THE VIRTUAL MEETING

5.1 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 4 on agenda item 5), the Committee considered by correspondence, prior to the virtual meeting, the following documents:

.1 MEPC 77/INF.8 (Netherlands), providing a study on developing onboard sampling methods of fuel oil intended to be used or carried for use on board a ship;

.2 MEPC 77/INF.10 (China), providing information on the structure of the shipboard photovoltaic-driven exhaust gas cleaning system (EGCS) and the application in China; and

.3 MEPC 77/INF.20 (China), providing information on the development of onshore power supply in China.

5.2 Having reconfirmed the Chair's proposals in annex 3 to document MEPC 77/1/1 during the virtual meeting, the Committee noted the information provided in documents MEPC 77/INF.8, MEPC 77/INF.10 and MEPC 77/INF.20.

MATTERS CONSIDERED DURING THE VIRTUAL MEETING

Establishment of the Working Group on Air Pollution and Energy Efficiency

5.3 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraph 5 and annex 2) and as updated by document MEPC 77/1/1/Add.1 (paragraphs 9 and 10), the Committee established the Working Group on Air Pollution and Energy Efficiency and instructed it, taking into account the comments (including those submitted by correspondence prior to the virtual meeting and reflected in document MEPC 77/1/1/Add.1) and decisions made in plenary, to (see also paragraph 6.7):

.1 finalize the draft 2021 Guidelines for exhaust gas cleaning systems (2021 EGCS Guidelines), using annex 9 to document PPR 7/22/Add.1 as the basis, taking into account documents MEPC 75/10/2 (United States), MEPC 75/10/3 (IACS), MEPC 76/9/3 (Republic of Korea) and MEPC 76/9/4 (China);

.2 finalize the draft revised title and scope of work of output 1.23 on "Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment, including conditions and areas", using annex 11 to document PPR 7/22/Add.1 as the basis, taking into account documents MEPC 75/10/5 (CLIA), MEPC 75/INF.10 (Sweden), MEPC 75/INF.13 (Greece), MEPC 76/9/1 (ICES), MEPC 76/9/2 (Austria et al.),

MEPC 76/9/6 (Japan), MEPC 76/9/8 (FOEI et al.), MEPC 76/INF.5 (ICES), MEPC 76/INF.11 (Belgium), MEPC 76/INF.33 (Japan), MEPC 76/INF.38 (Cyprus), MEPC 76/INF.42 (China) and MEPC 77/9/1 (FOEI et al.);

.3 finalize the draft revised MEPC circular on *Guidance on indication of ongoing compliance in the case of the failure of a single monitoring instrument, and recommended actions to take if the exhaust gas cleaning system (EGCS) fails to meet the provisions of the EGCS Guidelines*, using annex 10 to document PPR 7/22/Add.1 as the basis, taking into account documents MEPC 75/5/3 (Republic of Korea), MEPC76/5/5 (Austria et al.), MEPC 77/5 (China et al.) and MEPC 77/5/1 (China);

.4 consider and prepare amendments to the *2013 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI* (MEPC.1/Circ.815), using the annex to document MEPC 77/6 (Comoros et al.) as a basis, taking into account documents MEPC 74/5/30 (China), MEPC 74/INF.39 (China), MEPC 75/INF.26 (Comoros), MEPC 76/6/2 (China et al.), MEPC 76/6/6 (Finland and Germany), MEPC 76/6/7 (France), MEPC 76/6/8 (France), MEPC 76/6/10 (Comoros and RINA), MEPC 76/7/31 (Comoros and RINA) and MEPC 76/INF.30 (Comoros and RINA); and

.5 consider documents MEPC 75/5 (Secretariat), MEPC 75/5/Add.1 (Secretariat), MEPC 75/5/1 (Secretariat), MEPC 75/INF.4 (Secretariat) and MEPC 75/INF.9 (Secretariat) concerning data collection and analysis under regulation 18 of MARPOL Annex VI, in particular the recommendation of the Correspondence Group in document MEPC 75/5/1 on the inclusion of flashpoint as mandatory information in the bunker delivery note, and advise the Committee accordingly.

Report of the Working Group on Air Pollution and Energy Efficiency

5.4 Having considered the report of the Working Group (MEPC 77/WP.8), the Committee approved the report in general and took action as indicated below.

2021 Guidelines for exhaust gas cleaning systems

5.5 The Committee noted that the Working Group had considered the draft MEPC resolution on the 2020 Guidelines for exhaust gas cleaning systems, as had been prepared by PPR 7 (PPR 7/22/Add.1, annex 9), along with the following documents:

.1 MEPC 75/10/2 (United States), proposing technical edits to the draft MEPC resolution on the 2020 Guidelines for exhaust gas cleaning systems, specifically in relation to the definition for Phenanthrene equivalent", or PAH, provided in table 3 of the draft guidelines, and the measurement of "turbidity" provided in paragraph 10.2.6 of the draft guidelines;

.2 MEPC 75/10/3 (IACS), proposing changes to the draft MEPC resolution on the 2020 Guidelines for exhaust gas cleaning systems, including proposed changes in the application provisions, the definitions, sections 2, 4 and 10, and appendix 3;

.3 MEPC 76/9/3 (Republic of Korea), proposing modification to the technical requirements for the phenanthrene equivalent analysis wavelengths for washwater discharge from exhaust gas cleaning systems;

.4 MEPC 76/9/4 (China), commenting on "Phenanthrene equivalent" as contained in the draft MEPC resolution on the 2020 Guidelines for exhaust gas cleaning systems.

5.6 The Committee also noted that the Working Group had finalized its review of the draft revised guidelines (MEPC 77/WP.8, annex 1). The observer from CLIA made a statement regarding paragraph 10.1.7.1 of the draft 2021 EGCS Guidelines, as prepared by the Working Group, and invited the Committee to consider adding the clarifying text proposed in paragraph 15 of document MEPC 75/10/3 to the end of paragraph 10.1.7.1 of the draft 2021 EGCS Guidelines, as in its absence the use of the open loop monitoring systems for water that was stored in temporary tanks would be prohibited and many ships under construction with hybrid EGCSs would be impacted. As requested, the statement by the observer from CLIA is set out in annex 13. In response, the observer from IMAReST advised that the running PAH limit at any point, as given by the draft 2021 EGCS Guidelines, was a function, in part, of the rated power of the at that time connected combustion units and was, hence, incompatible with admixture of discharge streams from storage systems (where there is no rated power) for

which now a specific provision has been provided in paragraph 10.1.7.1 of the draft 2021 EGCS Guidelines. Following consideration, the Committee agreed with the outcome of the Working Group in this regard.

5.7 Subsequently, the Committee adopted resolution MEPC.340(77) on *2021 Guidelines for exhaust gas cleaning systems*, as set out in annex 1.

Guidance on indication of ongoing compliance in the case of the failure of a single monitoring instrument, and recommended actions to take if the exhaust gas cleaning system (EGCS) fails to meet the provisions of the EGCS Guidelines* (*MEPC.1/Circ.883)

5.8 The Committee noted that the Working Group had considered the draft revision of MEPC.1/Circ.883, which had been prepared by PPR 7 (PPR 7/22/Add.1, annex 10), along with the following documents:

.1 MEPC 75/5/3 (Republic of Korea), proposing amendments to the Guidance in MEPC.1/Circ.883, and recommending actions to allow the tentative use of non-compliant fuel oil when the exhaust gas cleaning system (EGCS) failed to meet the provisions of the 2015 EGCS Guidelines;

.2 MEPC 76/5/5 (Austria et al.), commenting on the proposals set out in document MEPC 75/5/3 and its annex concerning draft amendments to MEPC.1/Circ.883, suggesting alternative amendments to the draft circular and proposing its possible integration into the draft EGCS Guidelines;

.3 MEPC 77/5 (China et al.), commenting on document MEPC 76/5/5 and proposing alternative amendments to paragraphs 6, 11 and 12 of the draft revised MEPC.1/Circ.883, as a compromise text against document MEPC 76/5/5; and

.4 MEPC 77/5/1 (China), commenting on the proposals set out in document MEPC 75/5/3, analysing the impact of ships continuing to sail in the case of the failure of the exhaust gas cleaning system, and proposing relevant changes to circular MEPC.1/Circ.883 in light of document MEPC 76/5/5, with both the perspective of ship operators and the point of view of competent authorities having been taken into consideration.

5.9 The Committee noted that the Working Group had extensively discussed the proposals in the documents listed in paragraph 5.7 during its review of the draft revised MEPC.1/Circ.883.

5.10 Following consideration of the draft revised guidance prepared by the Working Group (MEPC 77/WP.8, annex 2), the Committee approved MEPC.1/Circ.883/Rev.1 on *Guidance on indication of ongoing compliance in the case of the failure of a single monitoring instrument, and recommended actions to take if the exhaust gas cleaning system (EGCS) fails to meet the provisions of the EGCS Guidelines*.

Title and scope of work of output 1.23 on "Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment, including conditions and areas"

5.11 The Committee noted that the Working Group had considered the recommendation by PPR 7 for the title of output 1.23, originally proposed in document MEPC 74/14/1 (Austria et al.), to be revised to "Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment, including conditions and areas", as well as the draft scope of work of the output agreed by PPR 7 (PPR 7/22/Add.1, annex 11). The Committee also noted that, in this context, the Working Group had considered the following documents:

.1 MEPC 75/10/5 (CLIA), providing comments on the report of the GESAMP Task Team on Exhaust Gas Cleaning Systems (PPR 7/INF.23), which in CLIA's view did not give sufficient consideration to the studies set out in documents MEPC 74/INF.24 (Japan), PPR 7/INF.18 (CLIA and INTERFERRY) and the information provided in document MEPC 74/INF.27 (CLIA), and inviting the Committee to ensure that further third-party evaluation of EGCS discharge water fully considers the three aforementioned studies as well as any updates or follow-on versions that become available in the time required;

.2 MEPC 75/INF.10 (Sweden), containing a report by IVL Swedish Environmental Research Institute on a risk assessment of discharge water from EGCS;

.3 MEPC 75/INF.13 (Greece), containing an environmental impact assessment of EGCS effluent discharges by the Massachusetts Institute of Technology (MIT);

.4 MEPC 76/9/1 (ICES), recommending actions to reduce the impacts on the marine environment following wide-scale use of exhaust gas cleaning systems and the associated water discharge; presenting the highlights of the second ICES Viewpoint entitled "Scrubber discharge water from ships – risks to the marine environment and recommendations to reduce impacts" and of the background study on which the Viewpoint was based;

.5 MEPC 76/9/2 (Austria et al.), proposing a modification to the draft scope of work for output 1.23, namely deletion of the word "possible" from the following item in the draft scope of work set out in annex 11 to document PPR 7/22/Add.1: "Identify, and develop as appropriate, possible regulatory measures and instruments"; and providing early proposals for relevant draft guidelines and regulations, as set out in the appendix to the document, to address key aspects and develop the elements outlined in parts 1 to 4 of the draft scope of work agreed by PPR 7, with the aim of achieving early consensus on the scope and the way forward;

.6 MEPC 76/9/6 (Japan), providing comments on document MEPC 76/9/2; expressing concerns on the proposed procedure in document MEPC 76/9/2; informing the Committee of the draft guideline for risk assessment of the discharge water from EGCS developed by Japan and set out in the annex to document MEPC 76/INF.33 (Japan); and proposing, inter alia, that the target completion year of output 1.23 be extended to 2023 to ensure sufficient time for discussions and that the GESAMP EGCS Task Team be re-established to review the two draft guidelines for risk and impact assessment of discharge water from EGCS presented in documents MEPC 76/9/2 and MEPC 76/INF.33 and submit an initial report to PPR 9 and a final report to PPR 10;

.7 MEPC 76/9/8 (FOEI et al.), providing comments on documents MEPC 76/9/1 (ICES) and MEPC 76/9/2 (Austria et al.); proposing that the title of output 1.23 be amended to "Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment, including if, when, or where discharges should be allowed" based on the information contained in those and other documents; and supporting the call

by ICES for a rapid transition to compliant fuels which meet the sulphur air emission limits without the use of exhaust gas cleaning systems.

.8 MEPC 76/INF.5 (ICES), providing the background information referenced in document MEPC 76/9/1, specifically the ICES "Viewpoint" article entitled "Scrubber discharge water from ships – risks to the marine environment and recommendations to reduce impacts" and the scientific report by Hassellöv et al. (2020) upon which the Viewpoint article was based;

.9 MEPC 76/INF.11 (Belgium), providing the results of an analysis undertaken by Belgium on the potential impact of washwater effluents from exhaust gas cleaning systems on water acidification in the southern North Sea;

.10 document MEPC 76/INF.33 (Japan), providing the draft guidelines for risk assessment of the discharge water from EGCS in the annex to the document as a reference document for further discussion on output 1.23 at MEPC 76 and PPR 9;

.11 MEPC 76/INF.38 (Cyprus), presenting a summary of the findings of the first phase of a study of an exhaust gas cleaning system discharge water sampling and analysis, during which discharge water samples from 25 Cyprus-flagged vessels equipped with open-loop exhaust gas cleaning systems were sampled and analysed between July 2019 and October 2020;

.12 MEPC 76/INF.42 (China), introducing an updated method on the simulation of discharge and diffusion of liquid effluents from exhaust gas cleaning systems that is based on the operation modes of ships and three-dimensional hydrodynamic modelling of the specific water area and may provide a profile on the behaviour and potential impact of the pollutants in the liquid effluents (washwater) discharged from exhaust gas cleaning systems; and

.13 MEPC 77/9/1 (FOEI et al.), providing comments on documents MEPC 76/9/1, MEPC 76/9/2 and MEPC 76/9/6, and urging the Committee to approve the scope of work on scrubber discharges, identify zero-discharge areas, and require the work to be undertaken as a matter of urgency.

5.12 In this regard, the Committee noted that the Working Group had agreed not to change the output title proposed by PPR 7 and had also agreed to delete the word "possible" from the following item in the draft scope of work prepared by PPR 7: "Identify, and develop as appropriate, possible regulatory measures and instruments".

5.13 The Committee also noted that the Working Group had agreed for the target completion year of the output to remain as 2022, with a view to the work being finalized by PPR 9. The Committee further noted that the Working Group, in light of the target completion year being kept as 2022, had agreed not to request the Committee to invite GESAMP to re-establish the GESAMP EGCS Task Team as there was insufficient time between the end of MEPC 77 and the deadlines for submission of documents to PPR 9 for the GESAMP EGCS Task Team to be re-established and consider the draft guidelines in documents MEPC 76/9/2 and MEPC 76/INF.33. In this regard, the observer from CLIA invited the Committee to reconsider the target completion year and extend it to 2023 in order to allow sufficient time for GESAMP to provide additional input to the PPR Sub-Committee and MEPC, as appropriate. However, the Committee noted a lack of sufficient support for the target completion year to be extended to 2023.

5.14 Subsequently, the Committee agreed to the title of output 1.23 being "Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment, including conditions and areas". The Committee also agreed to the scope of work, as set out in annex 3 to document MEPC 77/WP.8, with a target completion year of 2022.

5.15 In this context, the Committee forwarded documents MEPC 75/10/5, MEPC 75/INF.10, MEPC 75/INF.13, MEPC 76/9/1, MEPC 76/9/2, MEPC 76/9/6, MEPC 76/9/8, MEPC 76/INF.5, MEPC 76/INF.11, MEPC 76/INF.33, MEPC 76/INF.38 and MEPC 76/INF.42 to PPR 9 for further consideration.

Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI

5.16 With regard to proposed amendments to the *2013 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI* (MEPC.1/Circ.815), the Committee noted that the Working Group had considered the following documents:

.1 MEPC 74/5/30 (China), providing an acquisition method to obtain the wind propulsion system force matrix, which is presented in *2013 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI* (MEPC.1/Circ.815), based on wind tunnel model testing, and proposing to add the wind tunnel model tests to circular MEPC.1/Circ.815 as a supplemental method;

.2 MEPC 74/INF.39 (China), providing findings on a VLCC with wind propulsion system of hard airfoil sails when assessing and verifying EEDI for it according to relevant MEPC circulars;

.3 MEPC 75/INF.26 (Comoros), giving an overview of wind propulsion solutions and associated developments;

.4 MEPC 76/6/2 (China et al.), proposing draft amendments to MEPC.1/Circ.815, based on documents MEPC 62/INF.34 (Germany) and MEPC 74/5/30, with a view to reflecting the effect of the wind propulsion system by providing the global wind probability matrix and technical guidance for the conduct and the verification of performance tests;

.5 MEPC 76/6/6 (Finland and Germany), making additional suggestions to the proposals in document MEPC 76/6/2 and proposing draft amendments to MEPC.1/Circ.815 with the aim of incentivizing wind propulsion systems within the EEDI/EEXI framework;

.6 MEPC 76/6/7 (France), proposing amendments to MEPC.1/Circ.815 which are additional to those already proposed in document MEPC 76/6/2, consisting mainly of the addition of a second option for wind tunnel model test methods;

.7 MEPC 76/6/8 (France), proposing amendments to MEPC.1/Circ.815 additional to those proposed in document MEPC 76/6/2, consisting of the consolidation of the calculation of the wind propulsion system force matrix and a proposal to amend all references to the EEDI in the 2013 Guidance to also include the EEXI;

.8 MEPC 76/6/10 (Comoros and RINA) commenting on documents MEPC 76/6/2 and MEPC 76/6/6; supporting, inter alia, a further evaluation of the use of a global or other wind specification, taking into account that depending on the type and size of wind propulsors as well as the ship design, the methods described in documents MEPC 76/6/2 and MEPC 76/6/6 may in some cases not yet be completely adequate; and recommending that efforts be combined to arrive at regulations that cover wind propulsion technology application to new and existing ships in a technically sound and practical manner;

.9 MEPC 76/7/31 (Comoros and RINA) and MEPC 76/INF.30 (Comoros and RINA), presenting the key findings of a Joint Industry Project on the performance assessment of wind propulsion systems and associated regulatory issues, including EEDI; and

.10 MEPC 77/6 (Comoros et al.), proposing draft amendments to the MEPC.1/Circ.815, based on documents MEPC 62/INF.34, MEPC 74/5/30 and all documents submitted to MEPC 76 on the issue of Wind Assisted Propulsion Systems (WAPS), with a view to reflecting the effect of the wind assisted propulsion systems by providing the global wind probability matrix and by recently updated and available technical guidance, also for the purpose of reflecting more realistically the positive effect of WAPS in the attained EEDI.

5.17 The Committee noted that the Working Group had developed amendments to the *2013 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI* (MEPC.1/Circ.815), following consideration of the proposals in the documents listed in paragraph 5.14, which had been incorporated into a complete updated draft guidance document (MEPC 77/WP.8, annex 4).

5.18 Following consideration, the Committee approved MEPC.1/Circ.896 on *2021 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI and EEXI*. In this connection, the Committee authorized the Secretariat, when preparing the final text of the circular, to effect any editorial corrections that may be identified, as appropriate.

Reporting of fuel oil quality and availability under MARPOL Annex VI

5.19 With regard to reporting of fuel oil quality and availability under MARPOL Annex VI, the Committee noted that the Working Group had considered the following documents:

.1 MEPC 75/5 (Secretariat), MEPC 75/INF.9 (Secretariat) and MEPC 75/5/Add.1 (Secretariat), containing recommendations to improve reporting under MARPOL Annex VI based on reports prepared by the Secretariat on a preliminary overview of data on fuel oil quality and availability available in the MARPOL Annex VI module in GISIS; and

.2 MEPC 75/5/1 (Secretariat) and MEPC 75/INF.4 (Secretariat), containing the report of the Correspondence Group on Data Collection and Analysis under regulation 18 of MARPOL Annex VI, including recommendations for updating the MARPOL Annex VI GISIS module and a proposed amendment to appendix V of MARPOL Annex VI to include flashpoint as mandatory information in the bunker delivery note (BDN).

5.20 Concerning the proposed amendment to appendix V of MARPOL Annex VI, to include flashpoint as mandatory information in the bunker delivery note (MEPC 75/5/1, paragraph 54 and annex 4), the Committee noted the outcome of the Working Group's deliberations, specifically that the Group had not prepared draft amendments to MARPOL Annex VI. In this regard, the Committee noted that the Working Group had agreed that while the preparation of draft amendments to appendix V of MARPOL Annex VI to include flashpoint was a simple exercise, it was preferable to await the outcome of the work being carried out by MSC on development of further measures to enhance the safety of ships relating to the use of fuel oil. The Committee also noted the Working Group's view that once MSC had determined and agreed on the flashpoint data that ought to be recorded and reported in relation to safety, then corresponding draft amendments to appendix V of MARPOL Annex VI could be prepared by the Committee.

5.21 The delegation of the Cook Islands expressed its disappointment that the Committee was still deliberating on the issue of flashpoint of oil fuels and how that should be reported. In that regard, the Committee confirmed that MSC and MEPC would continue to work closely on this matter.

5.22 In relation to the recommendations set out in documents MEPC 75/5 (paragraph 10), MEPC 75/5/Add.1 (paragraph 5) and MEPC 75/5/1 (paragraphs 50 to 60) with regard to updating and improving the MARPOL Annex VI GISIS module, the Committee instructed the Secretariat to proceed with the improvements in line with the aforementioned recommendations, which include the addition of a voluntary checkbox for flashpoint to the regulation 18.9.6 tab of the MARPOL Annex VI GISIS module (see MEPC 75/5/1, paragraph 55.1) ;

5.23 Subsequently, the Committee agreed to invite MSC 105 to note the status of the work undertaken at MEPC in relation to flashpoint of fuel oil, as reported in paragraphs 5.20 to 5.22.

Online training course on the "Uniform implementation and control of the sulphur content limits"

5.24 The Committee noted with appreciation the offer by Spain to Member States and others interested of the possibility to carry out an online training course on the "Uniform implementation and control of the sulphur content limits". In this regard, the Committee also noted that:

.1 the training course was mainly addressed to Flag Administration inspectors and port State control officers as an activity under the Memorandum of Technical Cooperation between Spain and IMO; and

.2 the initial version of the training course was being offered in Spanish, but an English version would follow soon; and

.3 more information was available at https://www.centrojovellanos.es/

6 ENERGY EFFICIENCY OF SHIPS

MATTERS CONSIDERED BY CORRESPONDENCE PRIOR TO THE VIRTUAL MEETING

6.1 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 5 on agenda item 6), the Committee considered by correspondence, prior to the virtual meeting, the following documents:

.1 MEPC 77/6/1 (Secretariat), providing a report of the fuel oil consumption data for 2020 submitted to the IMO Ship Fuel Oil Consumption Database in GISIS, together with recommendations to improve the reporting process;

.2 MEPC 77/INF.3 (Secretariat), providing the tenth summary of data and graphical representations of the information in the EEDI database; and

.3 MEPC 74/5/7 (Secretariat), providing information on the status of the IMO model course 4.05 on "Energy efficient operation of ships", and advising that this model course could benefit from being updated but that an alternative would be to make reference to up-to-date presentation and training materials and other resources prepared under the GloMEEP and GMN projects.

6.2 During the virtual meeting, the Committee reconfirmed the Chair's proposals in annex 3 to document MEPC 77/1/1 and the updates provided in document MEPC 77/1/1/Add.1 (Chair), as set out in the following paragraphs 6.3 to 6.6.

Data submitted to the IMO Ship Fuel Oil Consumption Database for 2020

6.3 With regard to the fuel oil consumption data and the recommendations set out in document MEPC 77/6/1, the Committee:

.1 approved, in principle, the summary report of fuel oil consumption data submitted to the IMO Ship Fuel Oil Consumption Database for 2020 as set out in the annex to document MEPC 77/6/1;

.2 agreed with the proposed recommendations in paragraph 9 of document MEPC 77/6/1 with regard to further improvement to the IMO Ship Fuel Oil Consumption Database module in GISIS;

.3 requested Administrations/recognized organizations to pay attention to the matters described in paragraph 10 of document MEPC 77/6/1 when reporting relevant data; and

.4 invited Member States and international organizations to submit further comments and proposals to a future session of the Committee in relation to the proposal in paragraph 11 of document MEPC 77/6/1 concerning

amending the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73)).

6.4 The Committee noted that during the correspondence period, IACS had expressed its agreement with the Chair's proposals, as reproduced in paragraph 6.3, and had requested that the following statement be included in the report of the Committee:

"With regard to the issues mentioned in paragraph 10 of document MEPC 77/6/1 (Secretariat), the observer from IACS advised that the mis-categorization issue mentioned in paragraph 10.2 had been acknowledged and addressed by improving IACS members' voluntary reporting procedures. Further, IACS welcomed with appreciation the proposal in paragraph 9.1 of the same document regarding improvements to the reporting process and the Ship Fuel Oil Consumption module in GISIS. In respect of the invitation in paragraph 11 of the same document to provide proposals to amend *the 2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships*, as set out in resolution MEPC.308(73), to include ethane and biofuels to facilitate reporting these fuels to the GISIS module with the appropriate CF values, IACS noted that it had submitted document MEPC 76/6/9 on the ethane CF value."

Status of technological development of the EEDI database

6.5 The Committee noted the information in document MEPC 77/INF.3 (Secretariat) providing the tenth summary of data and graphical representations of the information in the EEDI database.

Model course on the energy efficient operation of ships

6.6 The Committee instructed the Secretariat to not update the model course 4.05 on the Energy efficient operation of ships at this stage, but instead to support IMO's capacity-building initiatives, inter alia, the ITCP Energy Efficiency Global Programme, GMN-MTCC, Green Voyage 2050 and RoK-SMART, to deliver training on the energy efficient operation of ships and to ensure that their presentation and training materials and other resources are widely disseminated and made available via the IMO website.

MATTERS CONSIDERED DURING THE VIRTUAL MEETING

Instructions to the Working Group on Air Pollution and Energy Efficiency

6.7 The Committee recalled that the Working Group on Air Pollution and Energy Efficiency had been established under agenda item 5 (Air pollution prevention) and that matters relating to energy efficiency had been referred to the Group (see paragraph 5.3).

Report of the Working Group on Air Pollution and Energy Efficiency

6.8 The Committee recalled that it had considered the report of the Working Group on Air Pollution and Energy Efficiency in its entirety under agenda item 5. Specifically with regard to the outcome of the Working Group on matters relating to energy efficiency of ships, the Committee recalled that it had approved MEPC.1/Circ[…] on *2021 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI and EEXI* (see paragraphs 5.16 to 5.18).

MATTERS DEFERRED TO MEPC 78

6.9 As proposed in document MEPC 77/1/1 (annex 4), the Committee agreed to defer the consideration of documents MEPC 77/6/2 (Germany), MEPC 77/INF.29 (Germany), MEPC 76/6 (Japan), MEPC 76/6/3 (China), MEPC 76/6/5 (CESA), MEPC 76/6/9 (IACS), MEPC 76/INF.27 (Japan), MEPC 75/6/4 (INTERTANKO), MEPC 74/5 (IACS) and MEPC 74/5/6 (ICS, ITF and ASEF) to MEPC 78.

7 REDUCTION OF GHG EMISSIONS FROM SHIPS

MATTERS CONSIDERED BY CORRESPONDENCE PRIOR TO THE VIRTUAL MEETING

7.1 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 6 on agenda item 7), the Committee considered by correspondence, prior to the virtual meeting, documents MEPC 77/7/2 (Japan, BIMCO and RINA); MEPC 77/7/5 (Secretariat); MEPC 77/7/7 (IACS); MEPC 77/7/9 (India); MEPC 77/7/13 (Norway); MEPC 77/7/14 (Norway); MEPC 77/7/19 (World Bank); MEPC 77/7/24 (India); MEPC 77/7/25 (Republic of Korea); MEPC 77/7/26 (IACS); MEPC 77/INF.2 (Belgium); MEPC 77/INF.19 (China); MEPC 77/INF.22 (World Bank); MEPC 77/INF.23 (World Bank); MEPC 77/INF.24 (World Bank); MEPC 76/7/1 (Norway); MEPC 76/INF.31 (WWF); MEPC 75/7/7 (Norway); and MEPC 75/INF.25 (FOEI et al.).

7.2 During the virtual meeting, the Committee reconfirmed the endorsement of the Chair's proposals in annex 3 to document MEPC 77/1/1, as set out in the following paragraphs 7.3 to 7.8.

Matters related to the short-term GHG reduction measure and carbon intensity

7.3 The Committee instructed the Correspondence Group on Carbon Intensity Reduction, established by MEPC 76, to consider the following documents as part of the terms of reference agreed at MEPC 76, and to reflect its consideration in the final report to be submitted to MEPC 78:

.1 MEPC 77/7/2 (Japan et al.), proposing draft amendments to the EEXI calculation guidelines and the EEXI survey and certification guidelines to incorporate an alternative method to determine a reference speed (V_{ref}) for EEXI, based on in-service ship performance measurements;

.2 MEPC 77/7/9 (India), proposing to include a correction factor for sludge with the aim for a more accurate calculation of CO_2 emissions in the CII framework;

.3 MEPC 77/7/13 (Norway), proposing to review and update the reference line parameters for combination carriers and suggesting that the reference line for combination carriers should be recalculated so that the slope or rate of reduction is equal to that of bulk carriers, due to their fundamentally similar design;

.4 MEPC 77/7/14 (Norway), proposing a cargo utilization correction factor for standard tankers, bulk carriers and combination carriers above 70,000 DWT; suggesting that using the AER as CII with deadweight as proxy for cargo penalizes ships which manage to optimize their trade patterns to have a higher utilization and that the correction factor should apply to those ships which have a share of laden distance sailed above the average for the industry, correcting for the estimated additional fuel consumption in laden condition and related cargo operation;

.5 MEPC 77/7/24 (India), providing comments on document MEPC 77/7/2; supporting the proposed in-service measurement method for calculation of

EEXI; highlighting an inconsistency in the EEXI Guidelines with respect to calculation of PME(i) for ships fitted with shaft generators and EPL; and proposing an amendment which aims to resolve the above-mentioned issue;

.6 MEPC 77/7/25 (Republic of Korea), commenting on document MEPC 77/7/2; supporting the proposed environmental conditions for in-service performance measurement with double runs for calculation of EEXI in principle; and providing a case study of in-service performance measurement for a large-sized container ship and a further recommendation regarding the onboard witness issue; and

.7 MEPC 77/7/26 (IACS), commenting on document MEPC 77/7/2, in particular on the draft amendments to the EEXI calculation guidelines and associated guidance to incorporate the in-service measurement method.

Cross-referencing tables between the versions of MARPOL Annex VI

7.4 The Committee approved MEPC/Circ.897 on *Cross-reference tables for amendments to MARPOL Annex VI (2021 Revised MARPOL Annex VI)* providing the correlation between the 2021 Revised MARPOL Annex VI and the previous MARPOL Annex VI, set out in the annex to document MEPC 77/7/5 (Secretariat), noting that it was to be applied from 1 November 2022 when the 2021 Revised MARPOL Annex VI would enter into force and that "previous MARPOL Annex VI" refers to MARPOL Annex VI which was in force before that date.

Interpretation of regulation 18.3 of MARPOL Annex VI

7.5 The Committee instructed the PPR Sub-Committee to consider document MEPC 77/7/7 (IACS), proposing a draft unified interpretation of regulation 18.3 of MARPOL Annex VI, related to the use of biofuels, under its agenda item 16 (Unified interpretation to provisions of IMO environment-related conventions), and to advise the Committee accordingly.

Matters related to LNG and low- and zero-carbon fuels

7.6 The Committee instructed ISWG-GHG 11 (see paragraph […]) to consider the following documents:

.1 MEPC 77/7/19, MEPC 77/INF.22, MEPC 77/INF.23 and MEPC 77/INF.24 (all by World Bank), providing information on the recent World Bank research

on bunker fuels and the related reports on Summary for policymakers and industry (MEPC 77/INF.22); Vol. 1: The potential of zero-carbon bunker fuels in developing countries (MEPC 77/INF.23); and Vol. 2: The role of LNG in the transition toward low- and zero-carbon shipping (MEPC 77/INF.24);

.2 MEPC 77/INF.19 (China), proposing different potential technical routes of methane slip treatment devices for different types of marine LNG engines, based on tests related to marine engines using LNG as fuel;

.3 MEPC 76/INF.31 (WWF), setting out a series of sustainability principles for the zero- and low-carbon marine fuels under consideration as substitutes for conventional fossil-based fuels, with a view to contributing to the debate on incentivizing and enabling the uptake of sustainable marine fuels, ensuring that the sustainability of a marine fuel over its entire lifecycle is considered alongside its price, availability and technical feasibility; and

.4 MEPC 75/INF.25 (FOEI et al.), summarizing the key findings of a new study by the International Council on Clean Transportation entitled "The climate implications of using LNG as a marine fuel", with the full study attached to the document, and to advise the Committee accordingly.

Decarbonization of the Belgian maritime sector

7.7 The Committee noted the information in document MEPC 77/INF.2 (Belgium), providing the results of an analysis undertaken on the potential decarbonization methods for the Belgian maritime sector for small vessels (below 5,000 GT).

National Action Plans to address GHG emissions

7.8 The Committee noted the (updated) National Action Plan (NAP) by Norway, as set out in documents MEPC 75/7/7 and MEPC 76/7/1, and invited other Member States to submit their NAPs to the Secretariat to be uploaded on the dedicated space for Member States' National Action Plans on the IMO website as well as to use IMO's capacity-building initiatives to support developing States with the development of a NAP in accordance with resolution MEPC.327(75) on the *Encouragement of Member States to develop and submit voluntary National Action Plans to address GHG emissions from ships*.

Information on contributions to the GHG TC-Trust Fund

7.9 The Committee thanked Governments of Member States for their voluntary financial contribution to the GHG TC-Trust Fund, since MEPC 76, which were as follows: Germany (€80,000), Malaysia (£25,000), the Netherlands (€10,000) and Singapore ($100,000).

7.10 The Committee encouraged Member States and international organizations to consider making a financial contribution to the GHG TC-Trust Fund to further support the Organization's efforts in supporting developing States with the implementation of the Initial Strategy.

MATTERS CONSIDERED DURING THE VIRTUAL MEETING

7.11 The Committee agreed to consider matters under this agenda item in the following order:

.1 proposals related to the 2050 level of ambition and the revision of the Initial IMO GHG Strategy;

.2 outcome of the ninth meeting of the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG 9);

.3 outcome of the tenth meeting of the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG 10) in conjunction with proposals for mid- and long-term GHG reduction measures submitted to this session of the Committee;

.4 revised proposal on the establishment of the International Maritime Research and Development Board (IMRB); and

.5 proposals for the revision of the IMO Ship Fuel Oil Consumption Data Collection System (DCS).

PROPOSALS RELATED TO THE 2050 LEVEL OF AMBITION AND THE REVISION OF THE INITIAL IMO GHG STRATEGY

7.12 The Committee had for its consideration the following documents containing proposals related to the 2050 level of ambition and the revision of the Initial IMO GHG Strategy:

.1 MEPC 77/7/3 (Kiribati et al.), proposing that the Committee – in recognition of the recent reports of the UN Intergovernmental Panel on Climate Change (IPCC) – should recognize that international maritime transport must reach zero GHG emissions no later than 2050, and inviting the Committee to adopt at this session a statement, in the form a resolution, to that effect;

.2 MEPC 77/7/15 (Costa Rica et al.), identifying those aspects of the Initial IMO GHG Strategy that should be revised, including the need to strengthen the levels of ambition for 2030 and 2050 and to introduce new levels of ambition for 2040; and, recognizing the urgency reflected in recent scientific assessments, proposing that the Committee adopt a 2050 level of ambition of zero emissions for the international shipping sector, along with 2030 and 2040 levels of ambition on a trajectory to achieve zero emissions, at the latest, by 2050; and identifying a process to undertake the revision of the Initial Strategy, including its scope and terms of reference;

.3 MEPC 77/7/18 (WWF et al.), drawing attention to the publication by the IPCC of the first part of three working group reports published as part of the Sixth Assessment Cycle, in particular the Working Group I report focusing on the physical science basis of climate change;

.4 MEPC 77/7/20 (Austria et al.), commenting favourably on, and supporting in general, the aims set out in document MEPC 77/7/15, suggesting to expedite the revision of the Initial IMO GHG Strategy, and in document MEPC 77/7/3, calling for the adoption of an MEPC resolution on reducing emissions from shipping; and proposing that the Committee initiate the revision of the Initial IMO GHG Strategy focusing on the need to increase the ambition for emission reductions by 2030 and 2050 and to achieve climate neutrality by 2050 at the latest;

.5 MEPC 77/7/22 (ICS), commenting on document MEPC 77/7/3 and supporting the development of an MEPC resolution focused on a net-zero CO_2 target while recognizing the need to phase out other GHG emissions too, also supporting increasing the level of ambition in the revised IMO GHG Strategy, including consideration of a target of net-zero annual CO_2 emissions by 2050, and suggesting that for such a high level of ambition to

be plausible, the Committee must immediately approve at this session the IMRB and IMRF, as set out in document MEPC 76/7/7, and develop an appropriate global MBM;

.6 MEPC 77/7/27 (Iceland et al.), supporting the proposals contained in document MEPC 77/7/3 for the Organization to reach zero GHG emissions from international shipping by 2050 and reiterating recent scientific findings related to climate change; and

.7 MEPC 77/7/32 (IMarEST), supporting and commenting on the proposal made in document MEPC 77/7/3 while recognizing that a significant increase in RD&D support is required, as demonstrated in document MEPC 77/7/1; linking that proposal's justification to earlier IMarEST submissions, the work of IPCC and some industry coalitions regarding levels of ambition and action already happening in zero-emission fuels/shipping; and recommending to use the evidence contained in it when considering next steps on mid-term measures as well as working arrangements.

7.13 The Committee recalled that the Initial IMO Strategy on Reduction of GHG emissions from ships foresaw the adoption of a Revised Strategy in spring 2023 and that its Programme of follow-up actions up to 2023 envisaged that MEPC 77 should initiate the revision of the Initial Strategy taking into account IMO DCS data and other relevant information.

7.14 The Committee noted a statement by the UNFCCC Secretariat, set out in annex 13, providing an update on UNFCCC matters, including a summary of the outcome of the UNFCCC Climate Change Conference (COP 26) held in October and November 2021 in Glasgow (United Kingdom).

7.15 The Committee also noted that the IMO Secretariat, led by the Secretary-General, had actively participated in COP 26 and that a report would be submitted to MEPC 78.

7.16 The Committee took note of the information provided and requested the Secretariat to continue its well-established cooperation with the UNFCCC Secretariat and its attendance at relevant UNFCCC meetings, and to continue, as appropriate, to bring the outcome of the Organization's work to the attention of appropriate UNFCCC bodies and meetings.

7.17 In considering proposals related to the 2050 level of ambition and the revision of the Initial IMO GHG Strategy, a vast number of delegations took the floor.

7.18 During the discussion, the following views, inter alia, were expressed by Member States:

.1 the Organization should send a clear and strong signal to the outside world on its willingness to strengthen its climate ambitions and to remain credible;

.2 reaching zero GHG emissions by 2050 at the latest from international shipping was essential to keep the Paris Agreement temperature goals within reach;

.3 scientific evidence, including the *Fourth IMO GHG Study 2020* and the IPCC Sixth Assessment Report, was clear enough to support the adoption of a zero-carbon target for shipping by 2050;

.4 the Revised Strategy should include possible intermediate absolute emissions reduction targets for 2030 and perhaps 2040, ensuring a reduction pathway in line with the 1.5°C temperature goal;

.5 there were merits in the aims of the resolution proposed in document MEPC 77/7/3; however, there was very limited time available at this session, and a discussion on the resolution might lead to a diversion of the discussion from the concrete proposals for mid- and long-term measures, which would result in actual emission reductions, therefore preference should be given to initiating the revision of the Strategy;

.6 the proposed resolution did not comply with the requirements of the United Nations Framework Convention on Climate Change, the Paris Agreement and the Glasgow Climate Pact, nor did it reflect the principle of "common but differentiated responsibilities" and principle of fairness; the proposed resolution did not mention the mechanisms and measures needed to achieve the target nor did it address the problems of finance, feasibility, technology transfer and capacity-building for developing countries;

.7 mutual trust and understanding among Member States must be reinforced to develop global regulations;

.8 there was a need for GHG emissions of all sectors to peak as soon as possible and to define unambiguous levels of ambition for 2050 as a matter of urgency and before the revision of the Strategy by means of an MEPC resolution;

.9 the draft resolution would send a simple, clear and voluntary message of the Organization's commitment to a 1.5°C agenda to signal to the markets and the global community that the Organization was on course to reduce GHG emissions from ships;

.10 shipping received unprecedented attention on the occasion of COP26 and the Organization should respond to the expectations of the global community to keep the Paris Agreement temperature goals alive;

.11 any revised ambition should be taken as part of the revision of the Strategy and follow a thorough review process which should remain inclusive for all Member States, especially developing countries, including SIDS and LDCs, and take into account their interests and needs, in order to ensure a fair and equitable transition;

.12 the Revised Strategy should aim at avoiding distortions of international trade by shipping, which was indispensable to the world, as well as avoiding disproportionately negative impacts on developing countries, especially SIDS and LDCs, which were the most vulnerable countries;

.13 the Organization should recognize that developing countries had a right to their fair share of the carbon budget of shipping, acknowledge the impact of the COVID-19 pandemic on trade and States, and recognize the obligation of developed countries to provide climate finance and help developing countries with capacity-building and technical cooperation;

.14 there was a need for all sectors to accelerate their efforts to reduce GHG emissions as underlined in the Sixth IPCC Report and the Glasgow Climate

Pact; the longer the Organization waits with action, the bigger the impacts of climate change would be and the bigger the costs of inaction;

.15 a strengthened ambition would require increased investments in RD&D to support shipping decarbonization;

.16 the review should include, inter alia, an update of the list of candidate measures and an update of the section on impact on States in light of the lessons-learned exercise of the comprehensive impact assessment of the short-term measures;

.17 it was preferable to focus the Committee's efforts on concrete proposals rather than a resolution, at least at this stage, otherwise, the Organization might be perceived as producing words instead of taking action;

.18 the Organization should be more aggressive in dealing with climate change but targets would have to be credible, plausible, and their implications had to be carefully assessed;

.19 "disproportionately negative impact" should be defined in the Revised Strategy to ensure a common understanding of what disproportionately negative impacts were to avoid misunderstanding at the time of assessing and addressing said impacts, as it was the case at the time of the assessment of short-term measures during MEPC 76;

.20 the revision of the Strategy should address the question of negative impacts on States and how to operationalize the CBDR principle in the context of reduction of GHG from shipping;

.21 the Revised Strategy should address the apparent tension between the non-discrimination and No-More Favorable Treatment principles and the principle of common but differentiated responsibilities;

.22 although setting a carbon neutrality target for shipping by 2050 could be supported, this should be accompanied by increased efforts to assist developing countries in the transition so that no one was left behind;

.23 the terms of reference for the revision of the Strategy should not limit the discussion to particular elements of the Strategy nor prejudge the results of the revision;

.24 the revision of the Strategy should be done using a "package approach" instead of adopting a resolution only on the level of ambition but without reference to other elements of the Initial Strategy, while also mentioning the outcomes of the lessons-learned exercise of the comprehensive impact assessment of the short-term measure; therefore the revision of the Strategy should cover all elements of the Initial Strategy;

.25 due attention should be given to the role of the shipping industry as they would have to ensure compliance with the objective of achieving climate neutrality and future GHG reduction measures;

.26 the adoption of ambitious targets for the decarbonization of shipping should be based on scientific data, especially the data of the shipping industry, to ensure sustainable development of the shipping industry;

.27 any revised ambition should take into account efforts made by other sectors, the share of shipping in total emissions, the potential of shipping decarbonization, as well as the need to pursue all other SDGs, which reflected commitments of the international community;

.28 there was a need to address concerns over the global availability of new fuels and technologies and port infrastructure before agreeing on the level of ambition for 2050;

.29 the Organization should duly evaluate the impact of complete decarbonization of shipping by 2050 on socio-economic development, including the impacts on developing countries, in light of their needs and priorities;

.30 the revision of the Initial Strategy should address technology transfer, the feasibility of strengthened ambitions and specific features of the industry;

.31 adoption of a resolution on net-zero emission shipping by 2050 would not undermine the Initial Strategy, which already included a vision to phase out GHG emissions of international shipping as soon as possible in this century;

.32 the Organization should urgently develop and adopt mid-term measures which should enter into force by the middle of this decade so as to translate its goals into concrete action;

.33 there was a need to avoid sending confusing and false signals that would be misinterpreted by the outside world on the integrity and credibility of the Organization and its decision-making process; in this regard the Organization should reflect equity and the principle of common but differentiated responsibilities with respective capabilities, in light of national circumstances, and developed countries should take the lead in addressing climate change;

.34 reference to the recent IPCC reports should be made with caution, and one should not prejudge the findings of the IPCC AR6 synthesis until its completion by the end of 2022;

.35 ambition should reflect the need to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty;

.36 the objective of carbon neutrality by 2050 was not fully in line with the language of the Paris Agreement and the Glasgow Climate Pact;

.37 current regulations in MARPOL Annex VI concerning reduction of GHG emissions from ships alone were insufficient to reduce GHG emissions to achieve the Paris Agreement temperature goals; and noting the IPCC analysis of anthropogenic global warming due to past and ongoing emissions, and in light of the present trends described in the IPCC reports, it should be recognized that international shipping reaching zero GHG emissions by 2050 at the latest would be essential to keep the Paris Agreement temperature goals within reach;

.38 the Revised Strategy should contribute to accelerating the Organization's efforts to reduce Black Carbon emissions from international shipping, in particular in the Arctic region;

.39 the statement by the Secretary-General of the United Nations, at the Second United Nations Sustainable Transport Conference held in October 2021, emphasizing that international shipping and aviation's current commitments were not aligned with the Paris Agreement, should be kept in mind;

.40 the Organization would need to follow the highest possible ambition so that international shipping would take its fair share of global efforts to reduce GHG emissions;

.41 there was a need for international action on reducing GHG emissions from shipping by the Organization and to avoid regional or national action which might lead to a patchwork of regulations and even questions before the WTO, and consequently there was a call on all Member States to work together within IMO;

.42 the Organization should maintain and enhance ambition and at the same time ensure a fair and equitable transition;

.43 the Work plan for the development of mid- and long-term measures approved at MEPC 76 should be taken into account; it foresaw carrying out assessments of the possible impacts on States of the candidate measures in parallel with the consideration and development of medium and long-term measures, as those measures had a high potential to distort international trade and have negative impacts on the economies of developing countries; and

.44 regarding negative impacts on States, in particular developing countries, including SIDS and LDCs, the conclusions of the "lessons learned" exercise should be incorporated in the revision of the Initial Strategy.

7.19 During the discussion, the following views, inter alia, were expressed by observer organizations:

.1 the adoption of a net zero target for 2050 could only be supported if the Organization took the necessary actions to make such an ambitious target plausible; as an immediate step this meant increasing Technology Readiness Levels by 2030, which would be dependent on whether or not the Committee established the IMRB/F;

.2 there was a need to halve GHG emissions shipping emissions by 2030, and to give the industry a clear signal on the direction of travel and also an indication on the scale of the effort needed, along with addressing Black Carbon emissions urgently;

.3 the Organization needed to act to address GHG emissions from international shipping taking into account impacts on States and the need to support RD&D;

.4 the resolution should be supported as it would provide clarity on the Organization's ambition; and

.5 international shipping needed to contribute to global efforts to eliminate GHG emissions before 2050 and should take concrete measures to reduce emissions of Black Carbon in the Arctic region and then globally.

7.20 In the course of the discussion, the Committee noted that a number of delegations stressed the need for the Organization to send a clear signal on its commitment to reduce GHG emissions from ships to achieve zero emissions by 2050, as stated by many, or net-zero emissions by 2050, as stated by others. Some delegations also suggested that the revision of the Initial Strategy should include revision or inclusion of possible intermediate targets to ensure a reduction pathway in line with the 1.5°C temperature goal. The Committee also noted that a number of delegations stressed that in the revision process, building upon the guiding principles of the Initial Strategy, due consideration should be given to impacts on States and scaling up action and support to developing countries, including finance, technology transfer and capacity-building to ensure a fair and just transition.

7.21 Following consideration, the Committee, in view of the urgency for all sectors to accelerate their efforts to reduce GHG emissions as emphasized in the recent IPCC reports[2] and the Glasgow Climate Pact, recognized the need to strengthen the ambition of the Initial IMO GHG Strategy during its revision process.

7.22 In this regard, the Committee agreed to initiate the revision of the *Initial IMO Strategy on Reduction of GHG Emissions from Ships*, as foreseen by the Initial Strategy, with the following terms of reference:

> Taking into account the progress made by the Organization since the adoption of the Initial GHG Strategy, the "key stages" for the adoption of a Revised IMO GHG Strategy, as set out in section 6.2 of the Initial GHG Strategy, relevant data, and in accordance with the timeline described in the *Programme of follow-up actions of the Initial IMO Strategy on Reduction of GHG Emissions from Ships up to 2023*, conduct a revision of the Initial GHG Strategy with a final draft Revised IMO GHG Strategy to be considered by MEPC 80 (spring 2023), with a view to adoption.

7.23 In accordance with the agreed terms of reference, the Committee invited interested Member States and international organizations to work together and to submit concrete proposals for a revised IMO GHG Strategy to MEPC 78 for consideration. The Committee also agreed that sufficient time should be allocated to ensure the timely completion of the revision of the Initial Strategy.

7.24 The delegation of the Cook Islands, supported by the delegations of Palau and Vanuatu, stated that the revised IMO GHG strategy should ensure that, consistent with the Initial Strategy, due consideration must be given to assessing impact on States and identifying and addressing any disproportionately negative impacts, and that in scaling up support to developing countries, particular attention should be paid to SIDS and LDCs.

7.25 As requested, the statements made by the delegations of Argentina, Belgium, Brazil (supported by Angola, Argentina, Chile, China, Cuba, Ecuador, Egypt, the Islamic Republic of Iran, the Russian Federation, Saudi Arabia and South Africa), China, Denmark, Germany, India, the Netherlands, Saudi Arabia, Slovenia, Spain, Tonga (supported by Belgium, Canada, Croatia, Cyprus, Denmark, Estonia, Fiji, Finland, France, Georgia, Germany, Greece, Iceland,

[2] Reference is made to the contribution of Working Group I to the IPCC Sixth Assessment Report and the IPCC Special Report on Global Warming of 1.5ºC.

Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, the Marshall Islands, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovenia, Solomon Islands, Spain, Sweden, Tuvalu, Ukraine, the United Kingdom, the United States and the observers from CESA and the European Commission), Vanuatu and by the observers from ICS, INTERCARGO and CSC are set out in annex 13.

NINTH MEETING OF THE INTERSESSIONAL WORKING GROUP ON REDUCTION OF GHG EMISSIONS FROM SHIPS (ISWG-GHG 9)

7.26 The Committee noted that the ninth meeting of the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG 9) had been held remotely from 15 to 17 September 2021 and that its report had been submitted to it as document MEPC 77/WP.6.

7.27 Having considered the report of ISWG-GHG 9 (MEPC 77/WP.6), the Committee approved it in general and took action as described below.

Development of draft lifecycle GHG/carbon intensity guidelines for marine fuels (LCA guidelines)

7.28 The Committee noted that ISWG-GHG 9 had focused on the development of draft stand-alone lifecycle GHG/carbon intensity guidelines for marine fuels (draft LCA guidelines) taking into account documents submitted to the seventh and ninth meeting of ISWG-GHG, and to MEPC 76.

7.29 The Committee noted the discussion and the progress made in the development of the draft LCA guidelines, including the identified priority areas for further work to advance the development of the guidelines, as follows:

.1 overall development of the draft LCA guidelines:

.1 further development of the draft LCA guidelines, using the text contained in annex 1 of document MEPC 77/WP.6 as a basis;

.2 development of specific sections of the draft LCA guidelines, taking into account relevant standards, in particular:

.1 identification of sustainability criteria; and

.2 determination of criteria to identify appropriate fuel (pathway) certification schemes in the context of standalone voluntary LCA guidelines;

.3 identifying approaches for regular review of both upstream and downstream (default) emission values:

.1 the Secretariat to prepare a detailed overview of existing processes within the Organization for methodological review of substances and/or technologies; and

.2 development of further proposals on how to determine (default) emission values of future fuels and their associated pathways, including fugitive emissions, for upstream and downstream emission; and to identify a possible mechanism for reviewing the emission values under the Guidelines.

7.30 Following consideration, the Committee:

.1 requested the Secretariat to submit to ISWG-GHG 11 an overview of existing processes within the Organization for review of substances and/or technologies by means of scientific expert groups;

.2 invited interested Member States and international organizations to involve expert advice, as appropriate, to inform on the development of the draft LCA guidelines; and

.3 invited interested Member States and international organizations to submit proposals to ISWG-GHG 11 on the further development of the draft LCA guidelines.

Reduction of methane slip and emissions of Volatile Organic Compounds (VOCs)

7.31 The Committee noted the discussions of ISWG-GHG 9 on the reduction of methane slip, and that methane emissions would be further considered in the context of the lifecycle GHG/carbon intensity guidelines by ISWG-GHG 11.

7.32 The Committee, having noted the discussions of ISWG-GHG 9 on the reduction of emissions of Volatile Organic Compounds (VOCs):

.1 invited interested Member States and international organizations to provide more information, in particular on technical opportunities to reduce VOC emissions from shipping and proposals on how to best improve the current IMO regulatory framework; and

.2 instructed the PPR Sub-Committee to investigate how the reduction of VOC emissions could be further addressed under its agenda item on "Any other business".

TENTH MEETING OF THE INTERSESSIONAL WORKING GROUP ON REDUCTION OF GHG EMISSIONS FROM SHIPS AND CONSIDERATION OF PROPOSALS FOR MID- AND LONG-TERM MEASURES SUBMITTED TO THIS SESSION

7.33 The Committee noted that the tenth meeting of the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG 10) had been held remotely from 18 to 22 October 2021 and that its report had been submitted in document MEPC 77/WP.7.

7.34 Having considered the report of ISWG-GHG 10 and the additional information provided orally by the Chair of the Working Group, Mr. Sveinung Oftedal (Norway), the Committee approved the report in general and took action as described below.

Interim report of the Correspondence Group on Carbon Intensity Reduction

7.35 The Committee noted the Group's discussion on the interim report of the Correspondence Group on Carbon Intensity Reduction set out in document MEPC 77/7/10 (China et al.) and endorsed the Group's recommendations on issues arising from the interim report as set out in paragraphs 9 to 17 of document MEPC 77/WP.7.

7.36 The Committee noted the urgency of adopting the outstanding guidelines associated with the implementation of the short-term measure at MEPC 78 to allow sufficient time for ships, Administrations and ROs for preparation and implementation of the short-term measure when it entered into effect in November 2022.

7.37 The Committee agreed to relax the deadline for submission of the final report of the Correspondence Group on Carbon Intensity Reduction by the nine-week document deadline of MEPC 78.

Development of a mandatory carbon intensity code

7.38 The Committee noted the Group's discussions on the consideration of the scope of and timeline for the development of a mandatory carbon intensity code (CIC), as set out in paragraphs 20 to 23 of document MEPC 77/WP.7.

7.39 The Committee noted the Group's view that it was premature to conclude on the possible timing for initiating the work on the development of the code and the scope of the code, and the Group's intention to revisit this issue when initiating the process of development of the code.

7.40 The Committee noted that the Group had requested the Secretariat, taking into account document ISWG-GHG 10/3 (United States), to identify options for a possible timeline for the development of a code and to review the content of guidelines from a technical/legal point of view with a view to identifying a possible scope, for consideration by the ISWG-GHG at a future session.

Consideration of concrete proposals on how to keep the impacts of the short-term measure under review

7.41 The Committee noted the Group's discussion on how to keep the impacts of the short-term measure under review, as set out in paragraphs 27 to 50 of document MEPC 77/WP.7.

7.2 The Committee invited interested Member States and international organizations to submit concrete proposals on how to keep the impacts of the short-term measure under review to ISWG-GHG 11 and to submit relevant information on the observed impacts, as appropriate, when the short-term measure would enter into effect.

7.43 The Committee also invited interested Member States and international organizations to submit concrete proposal to ISWG-GHG 11 on how to address data gaps in conducting impact assessments.

Consideration of concrete proposals on how to undertake a lessons-learned exercise of the comprehensive impact assessment of the short-term measure

7.44 The Committee noted the Group's discussion on how to undertake a lessons-learned exercise of the comprehensive impact assessment of the short-term measure, as set out in paragraphs 27 to 50 of document MEPC 77/WP.7.

7.45 In this regard, the Committee invited the Technical Cooperation Committee to request Member States to provide resources and nominate experts for a roster in order to assist developing countries, in particular LDCs and SIDS, with conducting an initial impact assessment of proposals for a measure which they would put forward, as necessary.

7.46 The Committee also invited the Secretariat to liaise with UNCTAD, as well as other international organizations, as appropriate, to consider the possibility of making relevant data and models available.

7.47 The Committee endorsed the Group's recommendation that the outcome of the lessons-learned exercise also serve as the outcome of the review of MEPC.1/Circ.885 and that the lessons-learned exercise of the comprehensive impact assessment of the short-term measure should be completed by MEPC 79 in order to apply the improved procedure from Phase II of the Work plan for the development of mid- and long-term measures (MEPC 76/15/Add.2, annex 14).

Consideration of mid-term GHG reduction measures in the context of Phase I of the Work plan for the development of mid- and long-term measures

7.48 The Committee noted the Group's consideration of mid-term GHG reduction measures in the context of Phase I of the Work plan for the development of mid- and long-term measures, as set out in paragraphs 51 to 60 of document MEPC 77/WP.7. In this context, the Committee noted that the Group had considered documents referred to it by MEPC 76, namely documents MEPC 76/7/2 (Norway), MEPC 76/7/9 (Australia et al.), MEPC 76/7/11 (Belgium et al.), MEPC 76/7/12 (Marshall Islands and Solomon Islands), MEPC 76/7/15 (Denmark et al.), MEPC 76/7/39 (ICS et al.), MEPC 76/7/40 (Belgium), MEPC 76/7/42 (Netherlands and OECD), MEPC 76/7/60 (Pacific Environment), and MEPC 76/INF.22 (Belgium et al.) as well as seven additional documents submitted to ISWG-GHG 10, namely documents ISWG-GHG 10/5 (World Bank), ISWG-GHG 10/5/1 (Finland), ISWG-GHG 10/5/2 (ICS and INTERCARGO), ISWG-GHG 10/5/3 (Austria et al.), ISWG-GHG 10/5/4 (Norway), ISWG-GHG 10/5/5 (Norway and United States), and

ISWG-GHG 10/5/6 (Norway). The Committee further noted that the Group considered the proposals and comments contained in the above-mentioned documents in accordance with Phase I of the Work plan using, as appropriate, a list of overarching key issues to be considered to progress the development of mid- and long-term measures, as developed by the Chair of the Group (MEPC 77/WP.7, annex 1).

7.49 The Committee requested the Secretariat to prepare an information document for ISWG-GHG 12, summarizing previous discussions on market-based measures which took place in the Organization, including the report of the work undertaken by the Expert Group on Feasibility Study and Impact Assessment of Possible Market-based Measures as set out in document MEPC 61/INF.2, and the collation of views expressed at ISWG-GHG 10 on proposed mid-term measures in accordance with the key issues and elements listed in paragraph 7 of the Work plan.

7.50 The Committee invited the proponents of concrete proposals for mid-term measures that had not yet done so to prepare an initial impact assessment of their proposal in accordance with the *Procedure for assessing impacts on States of candidate measures* for consideration by ISWG-GHG 12.

7.51 The Committee encouraged proponents of candidate mid-term measures, as well as any other delegations, to further consider the development/refining of proposals for mid-term measures for consideration during Phase I of the Work plan, also taking into account the views expressed at ISWG-GHG 10.

7.52 In conjunction with the consideration of the outcome of ISWG-GHG 10 on mid-term GHG reduction measures in the context of Phase I of the Work plan for the development of mid- and long-term measures, the Committee also considered documents submitted to this session providing proposals and comments related to specific candidate measures or to general principles on the development of mid- and long-term measures, as follows:

.1 MEPC 77/7/4 (Marshall Islands and Solomon Islands), aiming at implementing the proposal set out in document MEPC 76/7/12 (Marshall Islands and Solomon Islands) for a mandatory levy on all greenhouse gas (GHG) emissions from international shipping and proposing draft amendments to MARPOL Annex VI for the creation of an International Greenhouse Gas Levy Fund (GHGF) to collect and manage the levy;

.2 MEPC 77/7/8 (Bangladesh et al.), highlighting the need for continued maintenance of a comprehensive global maritime regulatory framework for the development of GHG reduction measures under IMO, free of any regional extraterritorial regulatory patchwork that would undermine efficient international maritime transport;

.3 MEPC 77/7/12 (Austria et al.), proposing a number of criteria for assessment and comparison of carbon pricing measures building on the list of criteria identified in document MEPC 76/7/15 (Denmark et al.); developing them further to address specific issues related to market-based measures; and proposing to use the suggested criteria to guide and enhance future discussions on carbon pricing measures, namely a GHG levy and a cap-and-trade scheme;

.4 MEPC 77/7/16 (Norway), proposing a fuel GHG intensity limit and an emissions cap and trading system as a package of mid- and long-term measures that would establish a cap and a price on GHG emissions through trading of allowances, while the fuel GHG intensity limit would set a mandatory technical requirement; suggesting that both measures would work together in providing a robust framework to ensure the supply and uptake of sustainable low- and zero-carbon fuels; and stating that the proposal needed to be further developed, including the legal framework, and to assess key issues, such as impacts on States and implications for various parts of the maritime industry;

.5 MEPC 77/7/17 (CSC), summarizing the key principles that any market-based measure (MBM) agreed at IMO level would need to follow in order for it to be a fair and effective tool for contributing to the decarbonization of international shipping;

.6 MEPC 77/7/23 (ICS), suggesting that the cap-and-trade system proposed in document MEPC 77/7/16 (Norway) would need to be considered alongside the proposal for a carbon levy set out in document ISWG-GHG 10/5/2 (ICS and INTERCARGO) and the similar proposal by the Marshall Islands and the Solomon Islands; that it would be premature, and inconsistent with the Work plan agreed at MEPC 76, for MEPC 77 to agree "in principle" to

establishing a fuel GHG intensity limit and an emissions cap and trading scheme as a package of mid- and long-term measures to be considered further; and

.7 MEPC 77/7/28 (IAPH), commenting on MEPC 77/7/19 (World Bank) and highlighting some of the key considerations from the ports' perspective when addressing proposals for mid- and long-term measures; stressing the need for an early adoption of a global market-based measure and advocating that the targeted allocation of generated revenues to port-related investments for low- and zero-carbon fuels have the potential to serve the targets of the Initial IMO Strategy while also contributing to an equitable energy transition of shipping.

7.53 In considering the outcome of ISWG-GHG 10 in relation to the consideration of mid-term GHG reduction measures in the context of Phase I of the Work plan for the development of mid- and long-term measures, and the related documents submitted to MEPC 77, the following views, inter alia, were expressed:

.1 the GHG emission reduction ambition should set the frame for the work on mid- and long-term measures and every next measure to be developed should guarantee that the ambition for emission reduction would be met;

.2 the levels of ambition could be achieved either through a technical measure with a revenue component as a compliance mechanism, or through a combined measure with one technical element and one carbon pricing element;

.3 IMO was deemed able to design an emission trading system (ETS) and make it function well to cut emissions of international shipping;

.4 funds generated by a carbon pricing mechanism should be directed towards developing countries, in particular SIDS and LDCs, addressing potential disproportionate impacts;

.5 existing structures should be used to ensure effective and transparent use of funds, if any;

.6 the main two criteria for developing the mid-term measures should be, firstly their ability to keep IMO in line with the 1.5°C objective and, secondly their ability to achieve an equitable transition;

.7 a combination of a technical measure, such as a low-GHG fuel standard, and a market-based measure, either a levy or a cap-and-trade scheme, could provide a sufficiently effective basket of measures to enable IMO to aim for full decarbonization of shipping by 2050;

.8 a global approach led by the Organization should ensure maintaining an inclusive level playing field, and it was crucial to avoid a patchwork of unilateral regulations that would increase the compliance cost and regulatory complexity for international shipping;

.9 a global carbon levy on international shipping would offer a level playing field and could send the right price signals to encourage the uptake of low- and zero-carbon solutions;

.10 guiding principles or criteria which incorporated wide-ranging interests should be identified prior to the development of MBMs;

.11 MBMs should be able to limit, or at least, effectively minimize competitive distortion and be developed without penalizing global trade and growth;

.12 a holistic and balanced approach should be ensured in advance through the deployment of alternative fuels and further critical changes in the fuel supply chain; all the stakeholders involved in this process should be engaged in a fair and equal manner in order to ensure a fair balance between energy supply and demand;

.13 a carbon pricing measure was an instrument to put into effect the polluter-pays principle, which had, in addition, the potential to send an appropriate price signal, reduce the price gap between alternative and fossil fuels and moreover generate revenues that could be used to facilitate the transition of the sector;

.14 it was pertinent to first consider and agree on a set of criteria against which each measure could be assessed as they could be designed in various forms and might imply complex legal and practical considerations;

.15 the lessons-learned exercise of the short-term measure needed to be finalized in order to improve the impact assessment procedure which would be necessary before adoption of the mid-term measures;

.16 the measures included in the basket should be goal-based and these measures should be set following a discussion and evaluation of their effectiveness, efficiency and impact of candidate measures, taking into consideration their strength and timing;

.17 MBMs should be agreed and implemented as soon as possible, in order to achieve net-zero emissions;

.18 in considering MBMs, particular attention should be paid to the predictability of their cost and on how the collected financial resource, through the levy style, could be used;

.19 it was important when developing MBMs to firstly demonstrate a small prototype model operation and monitor the supply of decarbonized fuel ships and fuel production itself;

.20 the current proposals for mid-term measures needed to be improved with reference to the experience gained in developing the package of the short-term measures; At this stage, any candidate measure, including any type of MBMs, was just "possible" option rather than "default" option;

.21 mid-term measures should be combined with the existing short-term and future long-term measures as a package to advance the decarbonization transition of the international shipping industry. Therefore, mid-term measures should be compatible with the existing short-term measures in order to avoid duplication or conflict.

.22 in the absence of commercially available alternative maritime fuels and innovative technologies, the fuel standard and MBMs would lead to rationing the amount of maritime trade, and the development of measures could cause disastrous consequences for countries, especially LDCs and SIDS, which relied heavily on maritime transport. Therefore, the development of measures and the impact assessment and addressing disproportionately negative impacts should be regarded as a package; thus, feasibility studies and potential impacts of the measures should be thoroughly conducted in advance;

.23 an important tool to reduce carbon emissions in the shipping sector was the development of low-carbon (maritime) fuels (LCF), which had also been recognized and endorsed in the civil aviation sector by ICAO;

.24 most developing countries had no prior experience with a carbon market, and this would imply that financial support, capacity-building and technology transfer would be needed from developed countries;

.25 it was crucial for the credibility of the Organization that the discussions on mid-term measures and their impact assessments began as soon as possible and be adopted in record time as was done for the short-term measure;

.26 assessing and addressing impacts on States, in particular on developing countries, SIDS and LDCs, was a key element of the development of mid- and long-term measures;

.27 principles were already enshrined in the Initial Strategy and the process of defining criteria could be simplified in order not to delay the work of the Organization on developing concrete measures;

.28 progress could be made by focusing on the substance within the concrete proposals and by discussing how these contributed to GHG reduction in two key ways: firstly, their ambition to stay aligned with the 1.5°C objective, and secondly, equity in addressing disproportionate negative impacts on States;

.29 adopting a basket of measures should be the best way to avoid duplication and double counting;

.30 the Committee should further consider several principles to be taken into account, including the need for MBMs to be mindful of the impacts on countries, not impose inappropriate economic burden, take into account the principle of common but differentiated responsibilities, special circumstances and respective capabilities and the principle of non-discrimination in equal and fair opportunities, minimize leakage, should not cause any distortion to international trade, take into account the importance of maritime transportation on global emissions and international trade and recognize past achievements;

.31 MBMs themselves did not lead to emissions reductions, policymakers were the ones to guide the effort in emissions mitigation and MBMs were a complement to structural efforts to be undertaken by Member States and the Organization;

.32 the Organization had to adopt now an MBM in the form of a carbon levy because it was the only way that the market could engage the decarbonization transition; the question was therefore not whether there was a need to have a MBM or not, but rather what impact carbon pricing would have on GHG emissions, who would manage the revenue, and how this would provide for adaptation, mitigation and compensation in the sense of international environmental treaty law;

.33 some of the proposals for measures oversimplified their assumptions and effects, even when they addressed very complex issues;

.34 in addition to the impact of medium and long-term measures on trade, there were the impacts on States, particularly developing States, in particular SIDS and LDCs, which in the case of these measures could potentially be much greater than those of short-term measures; it was highly doubtful that the funds raised by any universal tax could compensate all developing countries impacted by it and also fund R&D;

.35 principles for MBMs should be developed, as ICAO did, as more than 80% of world trade takes place on ships;

.36 it was premature to discuss MBMs;

.37 as contained in document MEPC 77/7/8 (Bangladesh et al.), the right of sovereign States to enact laws within their borders was respected; however, regional authorities could not impose their domestic laws on voyages mostly outside their jurisdiction, which would raise serious issues in relation to international maritime law;

.38 document MEPC 77/7/8 should be considered separately from the proposals for mid-term measures;

.39 any carbon price should be high enough to incentivize change, and it would be best if the stringency grew over time;

.40 it was better to discuss the details of the proposed mid-term measures; while any discussions on principles could occur within the discussion on the revision of the Strategy;

.41 if a mandatory levy on all GHG emissions from international shipping, which should be supported, was implemented, freight rates and consumers prices should be carefully monitored in SIDS to then be mitigated, should the said levy lead to additional financial pressure on end consumers; the Organization could develop such a monitoring tool for use by regional MTCCs in association with countries concerned; funds collected via said levy could help mitigating such end-consumer prices;

.42 mid-term measures should be developed as a basket; should include a revenue-generating element as proposed in document MEPC 76/7/12 (Marshall Islands and Solomon Islands); the revenue should be under international control to facilitate an equitable transition; and the majority of revenue should be dedicated to the priority needs of developing States, in particular SIDS and LDCs;

.43 regulation and setting standards, as well as raising revenues, were both needed in order to provide the reduction of GHG and raise revenues such as for R&D, LDCs and SIDS; the mid-term measures should follow an emissions reduction pathway that would meet the Paris Agreement 1.5 degrees temperature goal;

.44 a fuel standard or similar command measure was needed in the basket of measures, though a fuel standard on its own could drive change but would not address equity;

.45 a basket of measures could not be taken in isolation, but must include a comprehensive impact assessment, a consideration of viability, as well as an assessment of impacts on global trade, and impacts on countries distant from their markets;

.46 not just an impact assessment was needed, but also the adoption of measures to address any identified impacts;

.47 regional legislation would undermine the effectiveness of the Organization, as a UN specialized organization, in effectively regulation GHG emissions from international shipping;

.48 it was necessary to follow the Work Plan approved by MEPC 76 and take into account that the Intersessional Working Group had already begun consideration of these proposals under Phase 1 of the Plan, and there was no need to discuss in detail or take decisions regarding the same proposals in the Committee; what the Committee should be discussing was an agreed and consensus-based framework for MBM to structure the follow-up of specific proposals for medium-term measures;

.49 with regard to MBMs, there was a need to have a balance between the measures and their impacts; the implementation of a MBM should come with an impact assessment with a clear mechanism to implement the principle of CBDR; while impact was a consequence of every effort made by the Organization, it should be considered to also take measures to minimize the impact;

.50 there was an urgent need to consider both technical and MBMs in order to proceed and a basket of measures could be evaluated and adopted for the mid-and long-term measures; while trying to achieve this, MBMs should not be duplicative and the Organization and its Member States should aim to agree upon a single global MBM; progress with the measures should be done pragmatically, realistically, logically and not be overly ambitious;

.51 the principles proposed in document MEPC 77/7/17 (CSC) could not be supported; the quick discussion and the absence of trial phases or exemptions was unacceptable for an intergovernmental platform; such elements were determined depending on the technical content of the measure and could not be predetermined;

.52 it should be noted that the Committee had already approved the ISWG-GHG 10 report and so it had already agreed on the preference for all MBMs to remain on the table and of course this would include the MBMs as were identified in document MEPC 61/INF.2 as well as the feasibility studies and impact assessments of possible market-based measures contained therein; all these proposed measures would have to go to ISWG-GHG 12;

.53 MBMs should not be used as a punishment method, and the approach that "who pays can pollute" should be avoided;

.54 any agreed MBM must decrease climate pollution from ships as soon as possible in this decade, and bridge the price gap between fossil and zero-carbon sustainable fuels; bring shipping in line with the Paris Agreement's 1.5°C target; and help reach a zero-GHG sector by 2050 as called for in document MEPC 77/7/3, and by the 14 countries at COP 26 that launched the "Declaration on Zero Emission Shipping by 2050";

.55 places on the front lines of climate change, the first to be endangered, such as Pacific islands and Arctic communities, deserved quick and substantive action this decade as they were fighting for their very existence;

.56 the aspect of certification of carbon content in fuel would become a needed element in several measures and the potential of setting mandatory

requirements for reduced carbon content in fuel for ships should not be ruled out as a potentially efficient regulatory mechanism;

.57 keeping in mind that this Organization on several occasions had rejected fleet averaging mechanisms when considering other measures, it was important to understand and recognize that such a fleet averaging mechanism was integral to a mandatory carbon content fuel standard for it to work;

.58 MBMs should send a clear signal to the market on the future regulation, and should be goal-based and technology neutral;

.59 document MEPC 77/7/28 (IAPH) called for a significant share of an MBM generated revenue to be allocated to land-side infrastructure, including port-related investments, in developing countries in particular, in order to facilitate the global deployment and use of low- and zero-carbon fuels and to contribute in parallel to an equitable energy transition of shipping;

.60 decisions taken at the IMO would have a major impact on the marine fuels sector, and would set the pace for the transition to low and zero-emission shipping; the market would have to respond with fuels and technology solutions, and we would need to ensure that they were technically feasible, safe to use and truly sustainable; to achieve this, we would need the right regulatory signals;

.61 for sustainability, we would need a holistic approach, taking a full well-to-wake lifecycle emissions into account; anything else would discourage or even eliminate several options that are carbon neutral when looking at full life cycle emissions; and

.62 a gradual phase-in of a low GHG intensity limit could be a very effective tool to ensure predictable levels of demand, which the supply side would respond to.

7.54 The statements made by the delegations of Argentina, the Bahamas, Greece, India, Tuvalu and Vanuatu, and by the observers from IAPH, IBIA and CSC are set out in annex 13.

7.55 Following consideration, the Chair, in his summing up, stated:

".1 his appreciation to all delegations for their constructive interventions and his satisfaction to note that, following the adoption of the short-term measure at the last session, the Committee had moved forward with the consideration of concrete proposals for mid-term measures in accordance with Phase I of the Work Plan;

.2 the adoption of the Work Plan had provided the Organization with a structured path for assessing the different proposals for candidate short-term measures; the purpose of Phase I of the Work Plan was to better understand and compare the main features and implications of the different proposals; and the consideration of proposals by the Committee during this week contributed to their overall assessment;

.3 delegations had raised the point that the mid-term measures should be developed to ensure achieving the 2050 level of ambition set out in the Strategy, also underlining that the Organization was ready to consider concrete measures to deliver on its agreed strategic commitments;

.4 delegations expressed a clear preference for keeping all proposals on the table for the moment, also in view of considering a possible basket of mid-term measures; possible approaches, i.e. technical or operational measures, or a combination thereof; and possible compatibility with existing regulations in MARPOL Annex VI;

.5 delegations made reference to "guiding principles" for the development of mid-term measures, and in particular for possible market-based measures, and how a discussion on those principles in the context of Phase I of the Work Plan could support the further consideration of concrete proposals for measures; and

.6 the importance of initiating initial impact assessments of the various proposals, for so far this had not been done yet, even though no single mid-term measure or combination of measures had been identified yet; and as also discussed in the context of the lessons-learned exercise, the importance of assessing possible impacts, both negative and positive, of the

various proposals or a combination thereof in an early stage to facilitate future discussions."

7.56 In conclusion, the Committee:

.1 agreed to forward all documents considered under this part of agenda item 7, including proposals for concrete measures and for guiding principles, to ISWG-GHG 12 for further consideration in the context of Phase I of the Work Plan;

.2 invited all delegations to continue their constructive consideration of the proposals for mid-term GHG reduction measures, including of the technical and political elements contained therein, with a view to advancing to Phase II of the Work Plan in spring 2022 in accordance with the timelines set out in the Work Plan; and

.3 invited all proponents of measures, as well as any other delegations, to engage intersessionally in an active dialogue in relation to the different proposals and approaches on the table, and to further assess the possible impacts on States of their respective proposals or a combination thereof.

7.57 In this regard, the Committee noted an intervention by the delegation of Argentina, supported by the delegation of Brazil, that ISWG-GHG 12 should also consider the initial impact assessments accompanying the proposals of mid-term measures as part of its further assessment of the proposals under Phase I of the Work Plan.

How to address the increasing workload on reduction of GHG emissions from ships and proposals for alternative working arrangements

7.58 The Committee noted the Group's discussion on document ISWG-GHG 10/5/1 (Finland) intended to clarify some issues presented in document MEPC 76/7/9 (Australia et al.), which contained a proposal for new working arrangements to accelerate discussions on various GHG-related work streams, in particular the establishment of a Standing Technical Group on Reduction of GHG Emissions from Ships (ST-GHG) to replace the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG) in the future.

7.59 The Committee noted the Group's discussion and the support from a majority of delegations that took the floor during ISWG-GHG 10 for the proposal for a Standing Technical Group on Reduction of GHG emissions from Ships (ST-GHG) to replace the ISWG-GHG in the future, and also noted the concerns raised by several delegations in this regard.

7.60 In the ensuing discussion, the following views, inter alia, were expressed:

.1 there was an urgent need to consider new working arrangements to address the increasing workload of GHG-related issues in general and especially the need to organize technical preparatory work in a structured, transparent and predictable manner, while also emphasizing that this matter could be further discussed, either intersessionnally or at an expert workshop prior to MEPC 78;

.2 there was a need to address those concerns expressed at ISWG-GHG 10 regarding, inter alia, inclusiveness, administrative burden for delegations, in particular smaller delegations, multilingualism, transparency, efficiency, adherence to the method of work of the Committee and frequency of meetings when further considering possible alternative GHG working arrangements;

.3 because of the various concerns, it was preferred to keep the present arrangements of ISWG-GHG;

.4 the discussion at C/ES 34 (document C/ES.34/D) highlighted the need to respect multilingualism by the Organization when establishing subsidiary bodies, and it was therefore suggested to keep the Council's discussion into consideration when further considering possible alternative GHG working;

.5 a working group or standing technical group would not adequately address the concerns of how to address the increasing workload of GHG-related issues and GHG matters could be better served by the establishment of a dedicated Sub-Committee;

.6 the Committee had already considered the establishment of a stand-alone GHG group five years ago (MEPC 69 and MEPC 70), and regrettably the Committee had not made any progress on this matter, and was now falling

behind in its obligation to address other important environmental issues and that GHG matters should be dealt with in a stand-alone group; and

.7 there was a need to apply the provisions in paragraph 6.12 of the Committees' Method of Work (MSC-MEPC.1/Circ.5/Rev.2) in setting the deadline for submissions to ISWG-GHG meetings as the current six-week deadline caused difficulties for some delegations to consider bulky documents in English only.

7.61 The statements made by the delegations of China (supported by the delegations of Brazil, Chile and the United Arab Emirates) and Tuvalu are set out in annex 13.

7.62 Following consideration, the Committee instructed ISWG-GHG 12 to further consider the matter on how to address the increasing workload on reduction of GHG emissions from ships and possible alternative working arrangements taking into account the comments made at this session, and invited Member States and international organizations to submit further proposals to ISWG-GHG 12.

Revised terms of reference for the Correspondence Group on Carbon Intensity Reduction

7.63 Further to paragraph 7.3 on matters considered by correspondence prior to the virtual meeting related to the short-term GHG reduction measure and carbon intensity, the Committee agreed to the revise the terms of reference for the Correspondence Group on Carbon Intensity Reduction as follows:

".1 further consider and finalize the draft updated *Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)*, using documents MEPC 76/7/6 and MEPC 76/INF.9 as a basis, taking into account document MEPC 76/7/37, comments and decisions made at ISWG-GHG 8 and MEPC 76, and paying particular attention to the role and structure of the SEEMP for ships to which regulation 28 applies and other proposals for inclusion into the SEEMP guidelines, as set out in paragraph 15 of document MEPC 76/7/6;

.2 further consider and update existing guidelines, procedures or guidance, taking into account comments and decisions made at ISWG-GHG 8 and MEPC 76, including:

.1 *2017 Guidelines for administration verification of ship fuel oil consumption data* (resolution MEPC.292(71));

.2 *2017 Guidelines for the development and management of the IMO Ship Fuel Oil Consumption Database* (resolution MEPC.293(71));

.3 *Procedure on Submission of data to the IMO data collection system of fuel oil consumption of ships from a State not Party to MARPOL Annex VI* (MEPC.1/Circ.871); and

.4 *Procedures for port State control, 2019* (resolution A.1138(31));

.3 develop draft guidelines on correction factors for certain ship types, operational profiles and/or voyages for the CII calculations (G5) as appropriate, using document MEPC 76/7/5 as a basis and using the assessment criteria provided in document MEPC 76/7/23 as a guidance, taking into account documents ISWG-GHG 8/3, ISWG-GHG 8/3/1, ISWG-GHG 8/3/2, MEPC 76/7/19, MEPC 76/7/21, MEPC 76/7/25, MEPC 76/7/26, MEPC 76/7/27, MEPC 76/7/29, MEPC 76/7/34, MEPC 76/7/36, MEPC 76/7/43, MEPC 76/7/46, MEPC 76/7/52, MEPC 76/7/53, MEPC 76/7/55, MEPC 76/INF.41, <u>MEPC 77/7/9, MEPC 77/7/13 and MEPC 77/7/14</u> and to consider a separate category for HSC RoPax, using document MEPC 76/7/14 as a basis, also taking into account comments and decisions made at ISWG-GHG 8 and MEPC 76,

.4 develop in new or existing guidelines specific guidance on:

.1 the audit and verification processes of SEEMP including the framework for verification of the SEEMP by administrations and verification of revised SEEMP for ships required to develop a plan of corrective actions (PCA);

.2 develop possible parameters and templates for reporting, verification and submission of data for trial CIIs of individual ships on voluntary basis, as specified in G1 and for other trial metrics of offshore and marine contracting vessels, taking into account documents MEPC 76/5/1, MEPC 76/5/3, MEPC 76/7/34 and MEPC 76/7/47; and

.3 aggregation and reporting of ship's fuel consumption data to the new Administration and/or company in the event of change from one Administration to another and/or from one company to another;

.5 consider proposed amendments to the EEXI calculation guidelines and the EEXI survey and certification guidelines to incorporate the in-service measurement method to determine a reference speed taking into account documents MEPC 77/7/2 (Japan et al.), MEPC 77/7/24 (India), MEPC 77/7/25 (Republic of Korea) and MEPC 77/7/26 (IACS), and advise the Committee accordingly; and

.6 submit a final report to MEPC 78 in 2022, to be first considered by ISWG-GHG 12."

REVISED PROPOSAL FOR AN INTERNATIONAL MARITIME RESEARCH AND DEVELOPMENT BOARD

7.64 The Committee recalled that MEPC 75 had acknowledged the proposal by industry organizations to establish an International Maritime Research and Development Board (IMRB) and the associated IMO Maritime Research Fund (IMRF) and had noted diverging views and concerns on the proposal contained in document MEPC 75/7/4 (ICS et al.), in particular with regard to various operational, administrative, legal and governance aspects.

7.65 The Committee also recalled that due to lack of time MEPC 76 could not finish the full consideration of the revised IMRB proposal and associated amendments to MARPOL Annex VI in document MEPC 76/7/7 (Denmark et al.), and related commenting documents as not all delegations were able to express their views; and that consequently MEPC 76 had agreed that the discussion would be resumed at this session.

7.66 The Committee had for its consideration the following documents containing proposals an comments related to the revised proposal for an IMRB submitted to this session:

.1 MEPC 77/7 (ICS), outlining a prototype developed by ICS for an automated IMRF R&D contribution system intended to demonstrate to Member States how this would work in the context of the proposal set out in document MEPC 76/7/7 to establish an IMRB and IMRF; suggesting that the establishment of the IMRF would involve minimal administrative burdens with this prototype; and proposing that if it were deemed to be appropriate, it could form the basis of a future R&D payment system;

.2 MEPC 77/7/1 (ICS et al.), presenting an analysis suggesting the need to rapidly increase the maturity of Technology Readiness Levels (TRLs) to meet the challenge of decarbonizing shipping within the Initial IMO GHG Strategy timeline, and to accelerate R&D of zero-carbon technologies through the proposed establishment of an IMRB, including the projects which the IMRB might oversee and containing a comprehensive analysis of the projects that would be required to increase TRLs for zero-carbon technologies suitable for maritime application;

.3 MEPC 77/7/6 (Japan et al.), commenting on issues raised at MEPC 76 on the comprehensive proposal set out in document MEPC 76/7/7, to be further considered at MEPC 77 to establish the IMRB and IMRF such as current R&D levels, deployment, equitable access to technology, level of ambition and impact on States; and suggesting the vital importance of MEPC 77 approving the proposed amendments to MARPOL Annex VI if the Organization were to successfully deliver the current level of ambition for 2050 and maintain its leadership for the decarbonization of international shipping;

.4 MEPC 77/7/21 (ICS), commenting on document MEPC 77/7/1 and providing an illustrative example of how intellectual property issues could be addressed for R&D projects commissioned by the IMRB, as proposed in document MEPC 76/7/7, and how knowledge generated from these projects could be shared for the benefit of all Member States;

.5 MEPC 77/7/30 (Turkey), commenting on document MEPC 77/7/6 and providing proposed principles on the IMRB in terms of intellectual property rights (IPRs) and suggesting that clear rules and procedures for any benefit sharing mechanism should be established; and

.6 MEPC 77/7/31 (Turkey), commenting on document MEPC 77/7/6 and providing proposed principles, responsibilities and commitments in relation to the establishment of the International Maritime Research Board (IMRB).

7.67 In considering the proposal on the establishment of the IMRB, associated fund and related commenting documents, the Committee recalled that it resumed its discussion which had been suspended at the last session (see document MEPC 76/15, paragraph 7.72) due to lack of time. Therefore, the views expressed during MEPC 76, as set out in paragraph 7.71 of document MEPC 76/15, should be considered in conjunction with the views listed in the paragraph below.

7.68 In the ensuing discussion the following views were expressed:

.1 it was important to agree to specific actions that enabled the Organization to meet the agreed ambitions to accelerate the transition of the world's fleet to the use of zero GHG fuels;

.2 available evidence demonstrated that the level of technical work and applied research and development devoted to zero-GHG marine research projects lagged far behind the investments seen in other sectors;

.3 transition to alternative fuels was needed in order to avoid building ships and creating fuel infrastructure that might end up as stranded assets because well-intentioned but mistaken investment decisions were made;

.4 it was the time to expand technical work on shipping decarbonization and the sharing of what was learned, not years from now after potentially stumbling into technical paths that would lead to dead ends that were not technically or economically feasible;

.5 the mandatory IMRB contribution, although not intended to be a market-based measure in theory, would, in practice, function this way; in this case, it would equal a mid-term measure and would entail impacts that would have to be assessed before its implementation;

.6 the argument that the resources levied through a mandatory contribution would be sufficient for the purposes intended by the proponents was questioned; a feasibility study to assess the amount necessary to produce the desired outcomes would need to be part of any propositions, as well as the need to have a specific mechanism to ensure universal access to technologies for new low-emissions fuels;

.7 funds raised by an IMRF would be most likely destined for research and development processes in developed countries, where research was already in advanced stages, as shown in document MEPC 77/7/1;

.8 the logic of the principle of common but differentiated responsibilities and equity should not be subverted;

.9 the issue of intellectual property must also be considered in this discussion, and documents MEPC 77/7/21 and MEPC 77/7/31 took important steps in the right direction in this regard, but still lacked the depth and broad consideration needed to tackle all of the concerns;

.10 taking into account the fact that the IMRB Board would be made up of non-governmental experts, attention should be paid to the active involvement of experts who might be appointed;

.11 in the transitional period, regional bodies could make a contribution to capacity-building to support the development of projects, among other points, and the Committee should therefore continue to support the activities of regional centres, in particular the Latin America MTCC;

.12 it was hoped that the proposal could be approved at this session;

.13 according to research data published so far, to achieve the Initial IMO Strategy it would be necessary to deliver a significant number of zero-carbon ships by 2030, so that, considering the lifespan of the ships, the majority of ships operating in international trade would be using zero-carbon fuels by 2050;

.14 unnecessary overlapping investments were being made as competition between countries to develop zero-carbon ships intensified; and it was feared that this was delaying the commercialization of zero-carbon ships;

.15 for the establishment of IMRB, a new specific instrument would be more appropriate as it would need to accommodate the organization and governance of a complex mechanism;

.16 IMRB should be further developed as a short-term measure in the framework of the work plan approved by MEPC 76;

.17 the decarbonization of shipping would likely require much more funds than assumed in the original proposal and a larger contribution, in US dollars, per ton of fuel than suggested, should be envisaged;

.18 IMRB was fully supported; however, the most important reason in the delay on this issue was that the views and concerns as expressed by Member States regarding draft amendments during the previous sessions of the Committee were not reflected in the modified documents submitted to MEPC 77;

.19 intellectual property rights issues were not discussed at MEPC 75 and MEPC 76 due to lack of enough information and time constraints;

.20 what was needed right now was a mechanism where currently immature or monitoring technologies were being demonstrated in developing countries with the help of technology providers, the regional MTCCs, financial institutions and local private sector in developing regions;

.21 the most diligent step of all was to create this mechanism through "IMO CARES" as a prerequisite for the creation of an R&D fund, and the Organization should be encouraged to establish such a North-South mechanism, which would ensure that IMO's resolution on technical technology transfer, and capacity building was respected and supported by other States;

.22 an update on the "IMO CARES" project by the Secretariat to MEPC 78 would be appreciated;

.23 there was concern with the process of accessing the outcome of the research and development and access to technology and infrastructure by developing States;

.24 implementing such measures to the existing MARPOL Convention would be easier and faster than developing a new treaty; however, as a technical instrument, the MARPOL Convention should continue to serve for operational matters relating to ships, rather than the regulatory framework for any fund contribution;

.25 the proposal should be supported and the most recent amendments appropriately responded to developing countries' needs; and the fact that the IMRB would come at no cost to the Organization clearly supplemented the suggestions for mid-term measures which would support the use of alternative fuels;

.26 IMRB was seen by some as a positive step, but it had been designed to only fund research and development and would not support deployment and use of new fuels or assistance needed in developing countries in the coming decades;

.27 IMRB would not generate sufficient funds to significantly increase research;

.28 as was seen with the example of the COVID-19 vaccine, rapid development of a solution might happen in one country, but solutions would not be automatically available in the developing world;

.29 less developed countries should not pay royalties for intellectual property rights (IPRs), part of royalty profits should be directed as assistance to such countries in implementing decarbonization technologies in the maritime merchant fleet;

.30 low- or zero-carbon technologies with high technologies readiness levels should be prioritized to accelerate their practical deployment;

.31 technical cooperation, technology transfer and capacity building were an absolute prerequisite for developing countries to be part of the decarbonization journey;

.32 R&D coordinated by the Organization would be supported; the cooperation projects, like the MTCCs and GreenVoyage 2050 carried out by the Organization were also good initiatives promoting technical cooperation and technologies transfer which should be incentivized; and a mechanism should be put in place for developing countries to get access to the technology, considering the international nature of shipping;

.33 the "IMO CARES" programme would enable the demonstration of green technologies and support long-term technology operations;

.34 there was still a need for further consideration of some aspects of the IMRB, such as coordination by the Organization of the proposed IMRB and other national, regional or international relevant programmes in order to avoid duplication of research work; further clarification on the timing and not the least resourcing, meaning how much Secretariat resources would be dedicated to this, perhaps to the detriment of other important work streams; how to address the issues of fuel infrastructure and fuel production, and finally, the implementation of the mechanism;

.35 a way forward for IMRB could be to incorporate this initiative within the levy proposed by Marshall Islands and Solomon Islands;

.36 the IMRB proposal should be considered with caution and in any case be more linked to governments rather than the industry;

.37 a mandatory taxation should not be supported;

.38 the IMRB proposal was not fit for purpose as the US$2 rate would not allow enough revenue to be collected to meet the scale of investment that was

needed in the near-term to decarbonize international shipping and to address disproportionate negative impacts on States from adopted GHG reduction measures;

.39 the necessary funding of R&D, and particularly deployment, was also an integral part of the proposal contained in document MEPC 76/7/12, and that proposal was the only way to take forward the key elements of the IMRB;

.40 many interventions were encouraging and following the "code red" IPCC report, IMRF was the Organization's best immediate chance to make zero emissions possible within the required timelines, also taking into account the outcomes of COP 26;

.41 none of the issues raised were insurmountable or provided any justification to delay approval at this session; the IMRB would come at no cost for governments or tax payers; but what was needed at this stage was political willingness to move forward with the proposed IMRB rather than being set back by several years;

.42 the IMRB proposal came too little too late, and was therefore not needed at this stage because there was already sufficient investment that was going into the R&D for new marine technologies, both by private and public actors;

.43 the proposal for a carbon levy submitted by Marshall Islands and Solomon Islands already incorporated R&D elements together with a more appropriately ambitious carbon pricing mechanism of USD 100/tonne as opposed to the IMRB's USD 0.7/tonne;

.44 achieving clarity on the complex issue of intellectual property rights was indispensable for innovative industry action;

.45 the collection of funds from the market and redistribution of it through a fund was clearly a market-based measure and should be considered in that context; and

.46 there had not been any considerations of the legal framework and the party obligations therein which should be a basic prerequisite for a Committee approval of a measure.

7.69 The statements made by the delegations of Panama and Vietnam, and by the observer from WSC are set out in annex 13.

7.70 Following consideration, the Committee:

.1 thanked the co-sponsors of the IRMB proposal and associated fund for their updated proposal, which also addressed a number of the concerns expressed by delegations during earlier consideration of the proposal;

.2 noted the increased support for the proposal to establish an IMRB and associated fund, but also noted that while many delegations saw merit in the establishment of an IMRB in principle, many other delegations opposed the approval of the proposal because of remaining concerns related to, inter alia, technology transfer, redistribution of funds, governance mechanism and access to R&D; and

.3 instructed ISWG-GHG 12 to further consider the proposal for an IMRB and associated fund as part of its consideration of proposals for mid-term measures under Phase I of the Work plan for development of mid- and long-term GHG reduction measures.

7.71 In this regard, the Committee noted that ISWG-GHG, in accordance with the Initial Strategy, could also consider other submitted proposals for establishing an International Maritime Research Board to coordinate and oversee the Organization's research and development activities addressing marine propulsion, alternative low-carbon and zero-carbon fuels, and innovative technologies to further enhance the energy efficiency of ships as a candidate short-term measure.

7.72 As requested, the statement made by the observer from ICS is set out in annex 13.

PROPOSALS FOR REVISION OF THE IMO SHIP FUEL OIL CONSUMPTION DATA COLLECTION SYSTEM

7.73 The Committee had, for its consideration, the following documents containing proposals related to revision of the IMO Ship Fuel Oil Consumption Data Collection System (DCS):

.1 MEPC 77/7/11 (Austria et al.), suggesting the inclusion of information on the ship's required and attained Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII) values and rating in the IMO Data Collection System (DCS); and to that purpose containing two main proposals, namely proposing possible draft amendments to Appendix IX of MARPOL Annex VI on Information to be submitted to the IMO Ship Fuel Oil Consumption Database to ensure consistency with the amendments on the short-term measure as adopted at the last session, as well as proposing draft terms of reference for a new work stream for amending the IMO DCS to pave the way for the review of the carbon intensity framework by 1 January 2026 in accordance with regulation 28 of MARPOL Annex VI; and

.2 MEPC 77/7/29 (Pacific Environment and CSC), commenting on the issue of public accessibility for a ship's attained Carbon Intensity Indicator (CII) and associated rating; and proposing the creation of a new public database which would enhance transparency and facilitate public accessibility to carbon intensity data.

7.74 In the ensuing discussion, the Committee noted the two documents and agreed to instruct ISWG-GHG 11 to further consider the proposals with a view to advising MEPC 78 on a way forward.

INTERSESSIONAL MEETINGS

7.75 The Committee approved, subject to endorsement by A 32, the holding of the eleventh and twelfth meetings of the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG) in the first half of 2022, before MEPC 78 (see paragraph 11.[…].

7.76 The Committee agreed to the following terms of reference for ISWG-GHG 11:

"The Intersessional Working Group on Reduction of GHG Emissions from Ships is instructed, taking into account documents submitted to ISWG-GHG 11, to:

.1 further consider the development of draft lifecycle GHG and carbon intensity guidelines for maritime fuels, using annex 1 of document MEPC 77/WP.6 as a basis**,** also taking into account as appropriate documents MEPC 77/7/19, MEPC 77/INF.19, MEPC 77/INF.22, MEPC 77/INF.23, MEPC 77/INF.24, MEPC 76/INF.31 and MEPC 75/INF.25;

.2 consider concrete proposals on how to keep the impacts of the short-term measure under review;

.3 pursue the lessons-learned exercise of the comprehensive impact assessment of the short-term measure, also taking into account the outcome of the Ad-Hoc Expert Workshop on impact assessment, and in particular[3]:

.1 review the *Procedure for assessing impacts on States of candidate measures* (MEPC.1/Circ.885), taking into account the terms of reference for the comprehensive impact assessment of the short-term measure (MEPC 75/18/Add.1, annex 6) and how it was implemented in practice, as well as relevant aspects identified in documents ISWG-GHG 10/4 and ISWG-GHG 10/4/1; and

.2 develop improvements to the existing impact assessment procedure, focusing on elements listed in paragraph 41 of the report of ISWG-GHG 10 (document MEPC 77/WP.7);

.4 consider proposals for the revision of the ship fuel oil consumption Data Collection System (DCS), taking into account documents MEPC 77/7/11 and MEPC 77/7/29 and other related documents; and

.5 submit a written report to MEPC 78."

[3] The outcome of the lessons-learned exercise also serves as the outcome of the review of MEPC.1/Circ.885, as referred to in paragraph 4 of that document, and the exercise should be completed by MEPC 79 in order to apply the improved procedure from Phase II of the Work plan for the development of mid and long-term measures.

7.77 For ISWG-GHG 12, the Committee agreed to the following terms of reference:

"The Intersessional Working Group on Reduction of GHG Emissions from Ships is instructed, taking into account documents submitted to ISWG-GHG 12, relevant documents from previous ISWG-GHG and MEPC sessions, the final report of the Correspondence Group on Carbon Intensity Reduction and any commenting documents on the correspondence group report submitted to MEPC 78, to:

.1 consider any issue arising from the final report of the Correspondence Group on Carbon Intensity Reduction;

.2 consider concrete proposals for mid- and long-term measures and associated impact assessments in the context of Phase I of the Work plan for the development of mid- and long-term measures, including further consideration of those considered by ISWG-GHG 10 and MEPC 77, as well as the proposal to establish an International Maritime Research Board using document MEPC 77/7/6 (Japan et al.) and relevant related documents;

.3 further consider the matter on how to address the increasing workload on reduction of GHG emissions from ships and proposals for possible alternative working arrangements, taking into account comments made in this regard; and

.4 submit a written report to MEPC 78."

7.78 The Committee also agreed to the holding of an ad-hoc expert workshop on impact assessments, before ISWG-GHG 11, with the following terms of reference (see paragraph 11.[…]:

"Taking into account the outcomes of ISWG-GHG 10 and MEPC 77 and relevant documents submitted to ISWG-GHG 11, the Expert Workshop is instructed, to:

.1 review the assumptions and methodologies for both assessing impacts on ships and on States, including in relation to use of reviewed/approved baselines and MACCs and other input data;

.2 identify how to carry out qualitative/stakeholders assessments; and

.3 submit a written report to ISWG-GHG 11."

MATTERS DEFERRED TO MEPC 78

7.79 The Committee endorsed the Chair's proposal, as set out in annex 4 to document MEPC 77/1/1, to defer documents MEPC 76/7/17 (Republic of Korea), MEPC 76/7/22 (Denmark et al.), MEPC 76/7/32 (India) and MEPC 75/7/10 (FOEI et al.) to MEPC 78.

8 FOLLOW-UP WORK EMANATING FROM THE ACTION PLAN TO ADDRESS MARINE PLASTIC LITTER FROM SHIPS

MATTERS CONSIDERED BY CORRESPONDENCE PRIOR TO THE VIRTUAL MEETING

8.1 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 7 on agenda item 8), the Committee considered by correspondence, prior to the virtual meeting, the following documents that had been deferred by MEPC 76 and MEPC 75 to this session:

.1 MEPC 76/8 (Secretariat), containing an updated progress report of the GESAMP Working Group on Sea-based Sources of Marine Litter;

.2 MEPC 75/8 (Secretariat), containing an update on recent inter-agency cooperation and capacity-building activities on marine plastic litter;

.3 MEPC 75/8/5 (Secretariat), containing a progress report of the GESAMP Working Group on Sea-based Sources of Marine Litter;

.4 MEPC 75/INF.19 (Secretariat of the Basel Convention), containing information on the decisions addressing plastic waste adopted by the Conference of the Parties to the Basel Convention at its fourteenth meeting; and

.5 MEPC 75/INF.23, containing the first interim report of the GESAMP Working Group on Sea-based Sources of Marine Litter.

8.2 During the virtual meeting, the Committee reconfirmed the endorsement of the Chair's proposals in annex 3 to document MEPC 77/1/1, as set out in paragraphs 8.3 to 8.5.

GESAMP Working Group on Sea-based Sources of Marine Litter

8.3 The Committee noted the progress reports of the GESAMP Working Group on Sea-based Sources of Marine Litter (MEPC 76/8 and MEPC 75/8/5) and the information in the first interim report (MEPC 75/INF.23), and referred the three documents to the Working Group on Marine Plastic Litter to be taken into account (see paragraph 8.7). In addition, the Committee thanked GESAMP for the work carried out so far, and requested GESAMP to keep the Committee updated on future developments in relation to its work on marine litter.

Recent inter-agency cooperation and capacity-building activities on marine plastic litter

8.4 The Committee noted the update provided in document MEPC 75/8 on recent inter-agency cooperation and capacity-building activities on marine plastic litter, and referred the document to the Working Group on Marine Plastic Litter to be taken into account (see paragraph 8.7).

With regard to addressing plastic waste under the Basel Convention

8.5 The Committee noted the information in document MEPC 75/INF.19 (Secretariat of the Basel Convention) on decisions addressing plastic waste adopted by the fourteenth meeting of the Conference of the Parties to the Basel Convention, and thanked the Secretariat of the Basel Convention.

MATTERS CONSIDERED DURING THE VIRTUAL MEETING

Establishment of the Working Group on Marine Plastic Litter

8.6 The Committee recalled that:

.1 the Correspondence Group on Development of a Strategy to Address Marine Plastic Litter from Ships, which had been established by MEPC 74 and had been coordinated by Singapore, had submitted its report to MEPC 75 (MEPC 75/8/3); and

.2 consideration of the Correspondence Group's report had been deferred to this session due to time constraints at the previous two sessions of the Committee.

8.7 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraph 5) and its annex 2, the Committee established the Working Group on Marine Plastic Litter and instructed it to consider the report of the Correspondence Group

on Development of a Strategy to Address Marine Plastic Litter from Ships (MEPC 75/8/3) and finalize the draft strategy using the annex to document MEPC 75/8/3 as a basis, while taking into account documents MEPC 75/8, MEPC 75/8/5, MEPC 75/INF.23 and MEPC 76/8 (Secretariat).

Matters considered in plenary

8.8 During the virtual meeting, the Committee considered documents, both deferred by MEPC 75 and MEPC 76, and submitted to this session, addressing the following issues:

.1 information and proposal regarding marking of fishing gear;

.2 proposal regarding making the Garbage Record Book mandatory for ships of 100 GT and above; and

.3 other matters related to marine plastic litter.

Information and proposal regarding marking of fishing gear

8.9 In relation to fishing gear, the Committee recalled that consideration of three documents that had been submitted to MEPC 75 had been deferred to this session and noted that an additional document on the matter had been submitted to this session. Therefore, the Committee had for its consideration the following documents concerning fishing gear:

.1 MEPC 75/8/1 (FAO), providing information on the requirements for the effective reporting on abandoned, lost or otherwise discarded fishing gear (ALDFG), which is a crucial part of an effective fishing gear marking system in the context of FAO's Voluntary Guidelines on the Marking of Fishing Gear (VGMFG), as well as providing examples of different gear reporting systems at regional, sub-regional and national levels;

.2 MEPC 75/8/2 (FAO), providing information on fishing gear marking and ALDFG in the context of FAO's VGMFG, as well as reporting results of two stakeholder surveys regarding gear marking and measures to combat ALDFG and challenges facing Member States;

.3 MEPC 75/8/4 (Vanuatu) proposing to address measure 2 contained in the *Action Plan to Address Marine Plastic Litter from Ships* (resolution MEPC.310(73)), i.e. "consider making mandatory, through an appropriate IMO instrument (e.g. MARPOL Annex V), the marking of fishing gear with the IMO Ship Identification Number, in cooperation with the Food and Agriculture Organization of the United Nations (FAO)" through a new regulation 10A in MARPOL Annex V which would require fishing gear to "be marked providing a simple, pragmatic, affordable and verifiable means of identifying ownership of fishing gear or parts of fishing gear and its link with the vessel(s) or operator(s) undertaking the fishing operation in case of accidental loss or discharge of fishing gear as provided for in regulations 7.1.3 and 7.1.4 or illegally discharged under regulation 3"; and

.4 MEPC 77/8/2 (Japan and the United Kingdom), providing comments on document MEPC 75/8/4, specifically to point out that it is not appropriate to uniformly regulate marking of fishing gear through MARPOL Annex V without regard for the characteristics of different types of fishing gear and actual fishing situations in different countries/regions.

8.10 In the ensuing discussion, many delegations spoke in support of the proposal set out in document MEPC 75/8/4 making the marking of fishing gear mandatory through amendments to MARPOL Annex V to combat marine plastic litter and proposed that the PPR Sub-Committee be instructed to develop draft amendments to that effect. A number of these delegations stressed that voluntary measures were not sufficient to reduce the marine plastic litter caused by abandoned, lost, or otherwise discarded fishing gear. It was further noted that this proposal supported action 2 of the *Action Plan to Address Marine Plastic Litter from Ships* (resolution MEPC.310(73)).

8.11 However, many other delegations expressed support for the comments made in document MEPC 77/8/2 that developing voluntary resolutions or guidelines, in cooperation with FAO and regional fisheries management organizations (RFMOs), would avoid potential legal and practical issues associated with a global mandatory requirement for gear marking. Other delegations did not support the proposal in document MEPC 75/8/4, expressing the view that the matter should be regulated through FAO, RFMOs, or at the national level.

8.12 During the discussion, some delegations requested the Secretariat to provide legal advice on the points raised in paragraphs 4 to 6 of document MEPC 77/8/2 concerning the definition of garbage for fishing gear in MARPOL Annex V.

8.13 The representative of FAO made a statement providing a progress report on the implementation of the FAO Voluntary Guidelines for the Marking of Fishing Gear (VGMFG), including developing a technical manual for gear marking, further developing the risk assessment provided in the VGFGM, and working with an RFMO to implement gear marking as a model for other RFMOs in the future. FAO further noted that implementing a mandatory obligation for the marking of fishing gear at this stage would be a challenge due to the current stage of development of affordable and effective gear markings and the lack of a global vessel registration system for fishing vessels. As requested, the statement made by FAO is set out in annex 13.

8.14 Two delegations expressed the view that the proposal to amend MARPOL Annex V was a policy matter and thus should be considered by MEPC rather than the PPR Sub-Committee. Therefore, if sufficient time to discuss the proposal was not available at this session due to time constraints, the Committee should further consider the matter at its next session, with a view to reaching a decision in principle.

8.15 Having considered the views expressed, the Committee agreed to forward documents MEPC 75/8/1, MEPC 75/8/2, MEPC 75/8/4 and MEPC 77/8/2 to PPR 9 and instructed the PPR Sub-Committee to further consider the potential regulatory (mandatory and recommendatory) options for promoting marking of fishing gear, taking into account the work of FAO, with a view to advising the Committee on how to proceed. The Committee also requested the Secretariat to provide legal advice regarding the points raised in paragraphs 4 to 6 of document MEPC 77/8/2.

Proposal regarding making the Garbage Record Book mandatory for ships of 100 GT and above

8.16 The Committee had for its consideration document MEPC 77/8 (Cook Islands et al.), proposing to address measure 9 contained in the Action Plan, i.e. "making the Garbage Record Book mandatory for ships of 100 GT and above" to take actions to further reduce shipping's contribution to marine plastic litter by expanding the obligation to carry a Garbage Record Book to all ships of 100 gross tonnage and above by amending the chapeau of regulation 10.3 and regulation 10.3.6 of MARPOL Annex V.

8.17 In the ensuing discussion, the Committee noted widespread support for the proposal in document MEPC 77/8. One delegation expressed concern with the short time available to implement the proposed change to the requirement for carrying a Garbage Record Book, should the proposed amendment to MARPOL Annex V be approved at this session and adopted by MEPC 78. Another delegation expressed the view that the implications of the proposed measure should be given due consideration and a cost-benefit analysis should be carried out prior to the Committee agreeing to amend MARPOL Annex V.

8.18 Given the widespread support that the proposal in document MEPC 77/8 received the Committee instructed the PPR Sub-Committee to prepare draft amendments to MARPOL Annex V, using document MEPC 77/8 as a basis, taking into account comments made at MEPC 77.

Other matters related to marine plastic litter

8.19 The Committee had for its consideration the following documents:

.1 MEPC 77/8/1 (FOEI, et al.), highlighting the need for further investigation into the prevalence and impact of microplastics from paints and anti-fouling coatings used on ships, as marine plastic pollution remains a grave threat to all marine environments, and urging the Committee to prioritize within the *Action Plan to Address Marine Plastic Litter from Ships* (resolution MEPC.310(73)) the need for further investigation and for action;

.2 MEPC 77/8/3 (Sri Lanka), commenting on document MEPC 75/8/3 and discussing the impacts of the MV X-Press Pearl spill of 11,000 tonnes of plastic pellets off the shore of Colombo, Sri Lanka in May 2021, whose ensuing pollution has caused an overwhelming economic, social and environmental impact, and a legacy of pollution that will continue to have profound and enduring impacts for generations to come, and highlighting the hazardous nature of plastic pellets and the need to establish, inter alia, international guidelines and requirements for loading, unloading, packaging, and emergency response protocols, with clear labelling of containers carrying pellets, and improved stowage instructions; and

.3 MEPC 77/8/4 (FOEI, et al.), commenting on documents submitted to MEPC 75, MEPC 76 and MEPC 77, requesting an update on progress

against all measures contained in resolution MEPC.310(73), adequate time for discussion and identification of next steps, and an update on engagement with the UNEP-led work related to global governance on plastic pollution and a potential negotiating mandate for a new global agreement on plastic pollution.

8.20 The Committee noted the information in documents MEPC 77/8/1 and MEPC 77/8/4.

8.21 With regard to the information and proposals in document MEPC 77/8/3, the Committee agreed to refer the document to PPR 9 and instructed the Sub-Committee to further consider the proposals, including requesting the input of the CCC Sub-Committee as appropriate, with a view to advising the Committee on how best to proceed.

8.22 As requested, the statement made by the observer from FOEI is set out in annex 13.

Report of the Working Group on Marine Plastic Litter

8.23 Having considered the report of the Working Group on Marine Plastic Litter (MEPC 77/WP.9), the Committee approved it in general and took action as outlined below.

IMO Study on Marine Plastic Litter

8.24 The Committee noted the Group's consideration on the matter and consequently requested the Secretariat to engage a consultant, using financial contributions received to date, to review the terms of reference for the IMO Study on Marine Plastic Litter, taking into consideration the outcomes of the GESAMP WG 43 report, and to advise MEPC 78 on how the Study could progress, such that MEPC 78 could make adjustments to the terms of reference as required. The Committee also encouraged Member States and international organizations to make financial contributions to support the initiation of the IMO Study on Marine Plastic Litter.

Strategy to address marine plastic litter from ships

8.25 The Committee adopted resolution MEPC.341(77) on *Strategy to address marine plastic litter from ships*, as set out in annex 2.

Update on the status of the actions in the Action Plan

8.26 The Committee noted the updated status of each action contained in the *Action Plan to Address Marine Plastic Litter from Ships* (resolution MEPC.310(73)) in the form of an annotated table, as set out in annex 2 to document MEPC 77/WP.9, and encouraged submissions to future sessions regarding those actions which required proposals to progress the work.

9 POLLUTION PREVENTION AND RESPONSE

Matters considered by correspondence prior to the virtual meeting

Review of the IBTS Guidelines and amendments to the IOPP Certificate and Oil Record Book

9.1 The Committee noted that the arrangements for the remote session in relation to this agenda item, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 8 on agenda item 9), had been updated following comments by Member States and international organizations on the proposed arrangements, as summarized in paragraphs 14 to 17 of document MEPC 77/1/1/Add.1 (Chair).

9.2 During the virtual meeting, the Committee reconfirmed the Chair's proposal in paragraph 17 of document MEPC 77/1/1/Add.1 to defer consideration of document MEPC 76/9/5 (INTERTANKO) to MEPC 78 to allow the Committee to provide clear instructions to the PPR Sub-Committee on how to proceed in relation to onboard management of oily bilge water and associated record-keeping. Accordingly, consideration of the relevant outcome of PPR 7 (MEPC 75/10/Add.1, paragraph 3.6) and document MEPC 75/10/4 (IACS) was also deferred to MEPC 78.

Matters considered during the virtual meeting

Exhaust gas cleaning systems

9.3 The Committee recalled that documents concerning the draft revised Guidelines for exhaust gas cleaning systems (MEPC 75/10, paragraph 2.19; MEPC 75/10/2; MEPC 75/10/3; MEPC 76/9/3 and MEPC 76/9/4), documents relating to the draft revised MEPC circular on Guidance on indication of ongoing compliance in the case of the failure of a single monitoring instrument, and recommended actions to take if the exhaust gas cleaning system (EGCS) fails to meet the provisions of the EGCS Guidelines (MEPC 75/10, paragraph 2.20; MEPC 75/5/3; MEPC 76/5/5; MEPC 77/5 and MEPC 77/5/1), and documents regarding the title and scope of work of output 1.23 concerning discharge water from exhaust gas cleaning systems

(MEPC 75/10, paragraphs 2.21 to 2.23; MEPC 75/10/5; MEPC 75/INF.10; MEPC 75/INF.13; MEPC 76/9/1; MEPC 76/9/2; MEPC 76/9/6; MEPC 76/9/8; MEPC 76/INF.5; MEPC 76/INF.11; MEPC 76/INF.33; MEPC 76/INF.38; MEPC 76/INF.42 and MEPC 77/9/1) had been considered under agenda item 5 (see paragraphs 5… to 5…).

Reduction of the impact on the Arctic of Black Carbon emissions from international shipping

9.4 The Committee recalled that MEPC 75 and subsequently MEPC 76 had deferred consideration of the action requested of it by PPR 7 (MEPC 75/10, paragraphs 2.21 to 2.23) in relation to reduction of the impact on the Arctic of Black Carbon emissions from international shipping to this session along with the following documents that had been submitted to MEPC 75:

.1 MEPC 75/5/4 (FOEI et al.), discussing the implications for the Arctic of a study submitted to PPR 7 by Finland and Germany as document PPR 7/8, which indicated that blended low sulphur residual fuels that had been developed to meet the IMO 2020 sulphur limit would result in a significant increase in Black Carbon emissions, calling on IMO to mandate an urgent switch to distillates for ships operating in the Arctic, and proposing specific measures in that regard;

.2 MEPC 75/5/5 (FOEI et al.), responding to the initial results reported in document PPR 7/8, reflecting on the implications of the findings of the measurement campaign for shipping's contribution to the climate crisis, calling on IMO to regulate to stop the use of blended low sulphur residual fuels designed to meet the IMO 2020 global sulphur limit, and proposing specific measures in that regard;

.3 MEPC 75/5/6 (ICS), commenting on documents MEPC 75/5/4 and MEPC 75/5/5, expressing the view that available data and analysis did not support the proposed prohibition on the use of low sulphur fuel oils, and recommending that the Committee should instead support the ongoing work of the PPR Sub-Committee and in addition request ISO to consider the aromatic content of marine fuel oils and Estimated Cetane Number (ECN) of marine fuel oils when reviewing the international standard for such fuels (ISO 8217);

.4 MEPC 75/5/7 (IPIECA and IBIA), responding to the claims that very low sulphur fuel oils (VLSFOs) introduced to the market to meet the 0.50% sulphur limit of regulation 14 of MARPOL Annex VI would generally be of a high aromatic nature and could lead to an increase in Black Carbon emissions; commenting that those claims were based on flawed assumptions about the nature of the fuels that were expected to come on the market and that, contrary to the claims made, early data suggested that VLSFOs on average were more paraffinic in nature than the high sulphur fuel oils (HSFOs) they had replaced; and

.5 MEPC 75/10/6 (FOEI, Greenpeace International, et al.), proposing the development and adoption of an MEPC Black Carbon resolution that would set out recommended interim measures to reduce the impact on the Arctic of Black Carbon emissions from international shipping pending the conclusion of the work being carried out by the PPR Sub-Committee to identify Black Carbon abatement policies.

9.5 The Committee also recalled that MEPC 76 had deferred consideration of the relevant action requested of it by PPR 8 (MEPC 76/9/7, paragraphs 2.6 and 2.7) and the following documents submitted to MEPC 76:

.1 MEPC 76/5 (ISO), providing information on the distribution of residual marine (RM) and distilled marine (DM) fuels; concluding, inter alia, that 2020 RM VLSFOs compared to 2018 HSFOs generally being paraffinic in nature and having better ignition and combustion properties in comparison with HSFOs; informing the Committee that ISO/TC28/SC4/WG6 was in the process of reviewing ISO 8217:2017 taking into consideration the outcome of this fuel quality review and taking note of continuing trends and feedback from the industry; and also informing the Committee that ISO/TC28/SC4/WG6 was considering including in the next ISO 8217 standard (expected to be published in 2023) an informative indicator to evaluate whether a fuel tended to have a paraffinic or aromatic character;

.2 MEPC 76/9/9 (FOEI et al.), commenting on the outcome of PPR 8 on Black Carbon and on two options to reduce ship Black Carbon emissions other than an immediate switch to distillates in the Arctic, namely through universal marine engine standards and limiting the aromatic content in marine fuels; and

inviting the Committee to note the likely challenges facing work on marine engine and aromatic standards when considering the option to support a call for an immediate voluntary switch to distillates or other alternative cleaner fuels or forms of propulsion by ships operating in the Arctic;

.3 MEPC 76/9/10 (Greenpeace International, et al.), providing comments on the outcome of PPR 8 regarding Black Carbon and proposing the development and adoption of an MEPC resolution, based on a draft set out in the annex to the document, that would address the voluntary use by ships operating in or near the Arctic of distillate or other cleaner alternative fuels or methods of propulsion;

.4 MEPC 76/INF.43 (China), providing information on Black Carbon measurements collected from the actual operation of two 180,000 DWT bulk carriers of the same series with the same main engine and auxiliary engines and presenting an analysis of the influence of different factors on Black Carbon emissions;

.5 MEPC 76/INF.44 (China), providing measurement results regarding the impact of the marine fuel quality (sulphur content, cetane number), lubricating oil type, speed, engine load, fuel injection characteristics, engine type, after-treatment system, etc. on Black Carbon emissions; identifying the factor with the largest impact on Black Carbon emissions from marine engines on a preliminary basis; and providing input for the Committee to introduce reasonable measures to reduce Black Carbon emissions from Arctic shipping; and

.6 MEPC 76/INF.45 (China), providing information on a measurement campaign conducted by China to study the effect of fuel properties and engine types on the emission characteristics of Black Carbon from ships, including results of particulate matter components analysis (including Elemental Carbon (EC) and Organic Carbon (OC), element type analysis, aliphatic and aromatic analysis, and ionic compositions based on actual ship measurements.

9.6 In addition to the documents deferred from previous sessions, the Committee had for its consideration the following documents submitted to this session:

.1 MEPC 77/9 (Canada et al.), providing comments on the outcome of PPR 8 regarding Black Carbon and proposing the adoption of an MEPC resolution, based on a draft set out in the annex to the document, to support a voluntary use of cleaner fuels by ships operating in or near the Arctic, as a recommended first measure in connection to the phased approach to the consideration of potential regulatory options to address Black Carbon emissions from shipping agreed at PPR 8; and

.2 MEPC 77/INF.11 (China), providing the results of an investigation on elementary characteristics of Black Carbon particulate emissions from marine low-speed, two-stroke diesel engine fueled with heavy fuel oil (HFO) at different loads, an analysis of the significant changes of nanostructure, particle size distribution, and information on the spatial distribution of the main metal elements included in Black Carbon elementary particles.

9.7 The Committee noted the deliberations of PPR 7 in respect of reducing the impact on the Arctic of Black Carbon emissions from international shipping, in particular that PPR 7 had:

.1 noted that Black Carbon emissions from international shipping depended on many factors, inter alia, type of engine, fuel formulation, engine load, and engine maintenance, that more information was required on the composition of the fuel oils compliant with the 0.50% m/m sulphur limit under MARPOL Annex VI, and that more research might be necessary;

.2 requested ISO to provide an update to PPR 8 on its consideration on if it was possible to add a further measure to what was already included in the ISO 8217 standard with a view to providing an approximate indication as to whether a fuel oil was more aromatic or more paraffinic; and

.3 agreed to the draft terms of reference for output 3.3 (Reduction of the impact on the Arctic of Black Carbon emissions from international shipping), as set out in paragraph 4 of document MEPC 74/10/8, on the basis that action

considered under the output could include non-mandatory instruments such as guidance.

9.8 The Committee also noted the subsequent deliberations of PPR 8 on this matter, in particular that PPR 8 had:

.1 noted the final results of a Black Carbon measurement campaign (PPR 8/5/1) submitted by Finland and Germany;

.2 invited Member States and international organizations to submit to future sessions of the Sub-Committee outcomes of additional Black Carbon measurement trials using different types of VLSFOs to collect further information on the possible impact of fuel oil parameters, such as aromatic content, on Black Carbon emissions;

.3 invited ISO to keep the Sub-Committee or MEPC, as appropriate, informed of its ongoing review of ISO 8217, in particular of the possibility to include an additional informative indicator to evaluate whether a fuel tended to be paraffinic or aromatic in character, and to note the discussions at PPR 8 on Black Carbon, including the possible impact of aromaticity of marine fuels on Black Carbon emissions;

.4 encouraged interested Member States and international organizations to undertake further studies on Black Carbon measurement systems to enable accurate and traceable (comparable) measurements of Black Carbon emissions, and submit the results to future sessions of the Sub-Committee;

.5 welcomed the establishment by Canada of the international Technical Working Group (TWG) on the Development of a Standardized Sampling, Conditioning and Measurement Protocol for Black Carbon Emissions from Marine Engines, had noted its work plan and had also noted with appreciation the intention of Canada to submit further details and progress reports of the TWG to future sessions of the Sub-Committee; and

.6 agreed to updated proposed terms of reference for further work on the Reduction of the impact on the Arctic of Black Carbon emissions from international shipping, as set out in paragraph 5.23 of document PPR 8/13.

9.9 Following consideration, the Committee endorsed the terms of reference set out in paragraph 5.23 of document PPR 8/13 for the output on Reduction of the impact on the Arctic of Black Carbon emissions from international shipping and agreed to extend the target completion year of the output to 2023. Having noted the information in documents MEPC 76/INF.43, MEPC 76/INF.44, MEPC 76/INF.45 and MEPC 77/INF.11, the Committee forwarded them to PPR 9 for information.

9.10 With regard to the proposed MEPC resolution on Black Carbon, set out in the annex to document MEPC 77/9, and calling for the voluntary use by ships operating in or near the Arctic of distillate oil fuel of low aromaticity or other cleaner alternative fuels or methods of propulsion, the Committee noted widespread support for the resolution to be adopted at this session.

9.11 Some delegations expressed the view that data on Black Carbon emissions from international shipping was not reliable and, therefore, adoption of the proposed MEPC resolution was premature. In this connection, reference was made to the concerns that had been expressed at MEPC 75 in relation to the inventory of Black Carbon emissions in the Fourth IMO GHG Study 2020 (MEPC 75/18, paragraph 7.58), and the views that had been expressed at PPR 8 in relation to the findings of the Black Carbon measurement campaign that had been reported in document PPR 8/5/1 (Finland and Germany) (PPR 8/13, paragraph 5.7)). These delegations stressed that decisions by the Organization on technical measures should be based on accurate and verifiable data.

9.12 Other delegations, while supporting the proposed MEPC resolution in principle, suggested the deletion of the reference to "low aromaticity", due to aromaticity of marine oil fuels not being well understood and the lack of a readily available test method to check if a fuel (distillate or residual) has low or high aromaticity. The view that the term "near the Arctic" might require clarification was also expressed.

9.13 As requested, the statements made by the delegations of the Russian Federation (supported by the delegation of China) and Saudi Arabia, are set out in annex 13.

9.14 Many of the delegations that supported adoption of the proposed MEPC resolution without modification pointed out its non-binding nature and emphasized the urgency of taking concrete action to reduce the impact on the Arctic of Black Carbon emissions from international shipping.

9.15 In light of the above, the Committee agreed to further develop the draft MEPC resolution proposed in document MEPC 77/9 so as to take into account some of the comments and views expressed.

9.16 Following further consideration, the Committee agreed to a number of modifications to the draft MEPC resolution proposed in document MEPC 77/9. The modifications that were introduced to the draft resolution proposed in the annex to document MEPC 77/9 included the deletion of reference to "low aromaticity, inclusion of a preambular paragraph recalling article 38(a) of the IMO Convention concerning the functions of MEPC, and making the reference to the *Fourth IMO GHG Study* 2020 more general. The term "near the Arctic" was retained with the understanding that it meant in close proximity to the Arctic.

9.17 The delegation of the Russian Federation (supported by the delegations of China and Saudi Arabia) expressed its continued concern in relation to the draft MEPC resolution and also expressed its opposition to it being adopted by the Committee. Other than these concerns, the Committee noted support for the draft MEPC resolution as modified.

9.18 Consequently, the Committee adopted resolution MEPC.342(77) on *Protecting the Arctic from shipping black carbon emissions*, as set out in annex 3.

Draft amendments to MARPOL Annex II

9.19 The Committee recalled that MEPC 75 had noted the finalization of the revision of GESAMP Reports and Studies No.64, which had been published as GESAMP Reports and Studies No.102 (GESAMP Hazard Evaluation Procedure for Chemicals Carried by Ships, 2019) and included a reassigned column E1 and a sub-categorization of column C3 of the GESAMP Hazard Profile table.

9.20 The Committee also recalled that in light of the refinement of column C3 and the reassignment of column E1 of the GESAMP Hazard Profile table, it had requested the Secretariat to prepare the draft consequential amendments to appendix I of MARPOL Annex II and submit them to this session, with a view to approval and subsequent circulation for adoption.

9.21 Having considered the draft amendments to MARPOL Annex II, as prepared by the Secretariat (MEPC 76/9), the Committee approved the draft amendments to MARPOL Annex II, as set out in annex 4 and requested the Secretary-General to circulate them in accordance with MARPOL Article 16(2), with a view to adoption at MEPC 78.

MATTERS DEFERRED TO MEPC 78

9.22 Consideration of the action requested of the Committee by PPR 7 in paragraph 3.6 of document MEPC 75/10/Add.1 was deferred to MEPC 78 along with documents MEPC 75/10/4 and MEPC 76/9/5 (see also paragraph 9.2).

10 REPORTS OF OTHER SUB-COMMITTEES

MATTERS CONSIDERED BY CORRESPONDENCE PRIOR TO THE VIRTUAL MEETING

Outcome of III 7

10.1 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 9 on agenda item 10), as updated by document MEPC 77/1/1/Add.1 (paragraphs 18 and 19), the Committee considered by correspondence, prior to the virtual meeting, paragraphs 2.1 to 2.4, 2.12, 2.13 and 2.17 of document MEPC 77/10 (Secretariat), setting out the action requested of the Committee in connection with the seventh session of the Sub-Committee on Implementation of IMO Instruments (III 7) with regard the following matters:

.1 draft Assembly resolutions prepared by III 7;

.2 the draft Non-exhaustive list of obligations under instruments relevant to the III Code;

.3 the draft Model agreement for the authorization of recognized organizations; and

.4 the process of updating the HSSC.

10.2 During the virtual meeting, the Committee reconfirmed the endorsement of the Chair's proposals in annex 3 to document MEPC 77/1/1 and their updates in paragraphs 18 and 19 of document MEPC 77/1/1/Add.1, as set out in the following paragraphs, 10.3 to 10.15.

Draft Procedures for port State control, 2021

10.3 With regard to the draft Procedures for port State control, 2021 and the associated draft Assembly resolution (III 7/17/Add.1, annex 3), the Committee noted that the *2019 Guidelines for port State control under MARPOL Annex VI chapter 3*

(resolution MEPC.321(74)) had been revised and had been included as appendix 18 to the draft procedures for port State control, 2021. In this connection, the Committee agreed to operative paragraph 4 of the associated draft Assembly resolution being replaced by the following:

"REVOKES resolutions A.1138(31) and MEPC.321(74)."

10.4 In addition, the Committee agreed to the text of paragraph 2.3.2 of the draft guidelines for port State control under MARPOL Annex VI, as contained in appendix 18 of the draft procedures for port State control, 2021, regarding the inclusion of aspects of regulation 13.5.3 of MARPOL Annex VI.

10.5 Subsequently, the Committee approved, in concurrence with MSC 104 (MSC 104/18, paragraphs 13.7.1 and 18.6.4), the draft Procedures for port State control, 2021 and the associated draft Assembly resolution, as amended (see paragraph 10.3), as set out in annex 5, to revoke resolutions A.1138(31) and MEPC.321(74), for submission to the thirty-second session of the Assembly for adoption.

10.6 In this context, the Committee authorized the III Sub-Committee to review the *Guidelines for port State control under the BWM Convention* (resolution MEPC.252(67)), with a view to it being added as a new appendix to the Procedures for port State control in its future version in accordance with the methodology agreed by the Committees, having noted that the resolution made references to resolution A.1088(28), which had been superseded by resolution MEPC.287(71) and thus needed to be updated.

Draft Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2021

10.7 The Committee approved, in concurrence with MSC 104 (MSC 104/18, paragraphs 13.7.2 and 18.6.4), the draft Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2021 and the associated draft Assembly resolution, as set out in annex 6, to revoke resolution A.1140(31), for submission to the thirty-second session of the Assembly for adoption.

Draft 2021 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)

10.8 With regard to the draft 2021 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code), the Committee noted that MSC 104 had agreed to the need to reaffirm the limited scope of IMSAS audits under the STCW Convention and Code and, in the context of approving the draft Assembly resolution on the 2021 Non-exhaustive list, approved a proposal by the Chair to amend the third preambular paragraph of the draft resolution as follows:

> "RECALLING FURTHER resolution A.1141(31), by which it adopted the *2019 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)* (hereafter referred to as the "Non-exhaustive list of obligations") for guidance on the implementation and enforcement of IMO instruments, in particular ~~concerning~~ including the identification of auditable areas relevant to the IMO Member State Audit Scheme, as provided in mandatory provisions of relevant IMO instruments, following successive revocation of resolutions A.1121(30), A.1105(29) and A.1077(28),"

10.9 Subsequently, the Committee approved, in concurrence with MSC 104 (MSC 104/18, paragraphs 13.7.3 and 18.6.4), the draft *2021 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)* and the associated draft Assembly resolution, as amended by MSC 104 (see paragraph 10.8), as set out in annex 7, to revoke resolution A.1141(31), for submission to the thirty-second session of the Assembly for adoption.

Model agreement for the authorization of ROs acting on behalf of an Administration

10.10 The Committee recalled that MSC 102 and MEPC 75 had considered a draft MSC-MEPC.5 circular on Model agreement for the authorization of recognized organizations acting on behalf of the Administration (III 6/15, annex 8), together with documents MSC 102/14/1 and MEPC 75/11/3 (Norway et al.), proposing either the deletion of, or amendments to, paragraph 6.5.5 of the draft Model agreement to address vague and undefined expressions. In this context, the Committees further recalled that it had noted that the text of paragraph 6.5.5 of the draft Model agreement was identical to that of paragraph 5.3.2.4 of the recommendatory part 3 of the *Code for recognized organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)) (MSC 102/24, paragraph 14.5; and MEPC 75/18, paragraph 11.12).

10.11 The Committee also recalled that MSC 102 and MEPC 75 had instructed III 7 to further consider the text of paragraph 6.5.5 only, taking into account the amended text proposed in paragraph 10 of document MSC 102/14/1 and, in this context, to consider also paragraph 5.3.2.4 of the recommendatory part 3 of the RO Code, with a view to advising the Committees on whether the text of both paragraphs should be aligned (MSC 102/24, paragraph 14.8; MEPC 75/18, paragraph 11.12).

10.12 The Committee noted that MSC 104, having considered the relevant outcome of III 7 and noted, in particular, that the Sub-Committee had aligned paragraph 6.5.5 of the draft Model agreement with paragraph 5.3.2.4 of part 3 of the RO Code with respect to the scope of the "statutory certification and services" as defined in the RO Code, had approved the draft MSC-MEPC.5 circular on *Model agreement for the authorization of recognized organizations acting on behalf of the Administration*, as set out in annex 33 to document MSC 104/18/Add.1, subject to MEPC's concurrent decision (MSC 104/18, paragraphs 13.10 and 18.6.5).

10.13 In concurrence with the decision of MSC 104 on this matter, the Committee approved MSC-MEPC.5/Circ.16 on *Model agreement for the authorization of recognized organizations acting on behalf of the Administration*.

Outcome of A 31: Process of updating the Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)

10.14 The Committee recalled that following consideration of document A 31/10/2 (Germany et al.), in connection with the draft Assembly resolution on the Survey Guidelines, A 31 had noted that a number of delegations supported the proposals contained therein, in particular regarding the principle that draft amendments to the Guidelines should be linked to mandatory requirements. The Committee also recalled that, while A 31 had invited MSC 102 and MEPC 75 to consider document A 31/10/2 and to take action as appropriate, consideration of the issue had been postponed to MSC 104 and MEPC 77.

10.15 Having noted the relevant outcome of MSC 104, the Committee concurred with the decision of MSC 104 to instruct III 8 to consider the matter of the process of updating the Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), taking into account documents MSC 102/2/3 (Russian Federation et al.), MSC 102/2/4 (Russian Federation et al.), MSC 103/2/1 (Secretariat), MSC 103/2/2 (Austria et al.) and MSC 104/1/2/Add.1 (Secretariat); to seek the Committees' advice in case of any policy decision needed; and to report back to the Committees accordingly (MSC 104/18, paragraphs 2.5 and 18.6.1).

MATTERS CONSIDERED DURING THE VIRTUAL MEETING

Watertight doors on cargo ships

10.16 The Committee has for its consideration document MEPC 76/10 (Secretariat), setting out the action requested of the Committee in connection with the seventh session of the Sub-Committee on Ship Design and Construction (SDC 7) and relevant decisions of MSC 102, which had been deferred by MEPC 76 to this session.

10.17 The Committee noted that, under the output "Review of mandatory requirements in the SOLAS, MARPOL and Load Lines Conventions and the IBC and IGC Codes regarding watertight doors on cargo ships", SDC 7 had developed draft amendments to MARPOL Annex I, the 1988 LL Protocol, the IBC Code, and the IGC Code (MEPC 76/10, paragraphs 6 and 7; and SDC 7/16, annexes 8, 9, 10, and 11, respectively).

10.18 In this regard, the Committee noted the relevant decisions of MSC 102, MSC 103 and MSC 104, specifically the following:

.1 MSC 102, having considered the outcome of SDC 7 with regard to watertight doors on cargo ships, approved draft amendments to the 1988 LL Protocol, the IBC Code, and the IGC Code, with the approval of the draft amendments to the IBC Code being subject to concurrent approval by MEPC (MEPC 76/10, paragraphs 8 and 9; and MSC 102/24/Add.1, annexes 16, 17 and 18, respectively);

.2 MSC 102, having noted that the amendments to the 1988 LL Protocol, the IBC Code, and the IGC Code would have no impact on existing ships, had agreed to apply them to all ships and had invited MEPC 76 to concur with this decision when considering the draft amendments to MARPOL Annex I (MEPC 76/10, paragraph 11; and MSC 102/24, paragraph 17.30);

.3 MSC 102 has invited MEPC 76 to concurrently approve the draft amendments to the IBC Code (MSC 102/24/Add.1, annex 17) and the corresponding draft amendments to MARPOL Annex I, (MSC 102/24, paragraphs 17.29 and 24.4.3);

.4 MSC 103, having noted that the application provision in the draft amendments to the 1988 Load Lines Protocol and the IGC Code concerning watertight doors warranted further discussion, deferred their adoption to MSC 104 and invited relevant submissions on the issue (MSC 103/21, paragraph 3.19); and

.5 MSC 104, having agreed that the amendments should apply to new and existing ships upon their entry into force, agreed that there was no need to introduce any application provision to the draft amendments, and adopted the amendments to the 1988 Load Lines Protocol and the IGC Code by resolution MSC.491(104) (MSC 104/18, paragraphs 3.7, 3.19, and 3.20; and MSC 104/18/Add.1, annex 1) and resolution MSC.492(104) (MSC 104/18, paragraphs 3.7, 3.21, and 3.22; and MSC 104/18/Add.1, annex 2), respectively.

10.19 In light of the aforementioned decisions of MSC, the Committee approved the draft amendments to the IBC Code, as set out in annex 8, with a view to subsequent adoption at MEPC 78, having concurred with the decision of MSC 102 to apply them to all ships. Consequently, the Committee requested the Secretary-General to circulate the draft amendments to the IBC Code in accordance with MARPOL article 16(2).

10.20 Having considered the corresponding draft amendments to MARPOL Annex I set out in annex 2 to document MEPC 76/10, the Committee agreed that they should apply to existing and new ships, in concurrence with the decision of MSC 102 and MSC 104 concerning the related amendments to the 1988 LL Protocol, the IBC Code, and the IGC Code.

10.21 Subsequently, the Committee approved the draft amendments to MARPOL Annex I, as set out in annex 9, with a view to adoption at MEPC 78. Consequently, the Committee requested the Secretary-General to circulate the draft amendments to MARPOL Annex I in accordance with MARPOL article 16(2).

MATTERS DEFERRED TO MEPC 78

10.22 As proposed in document MEPC 77/1/1 (annex 4), the Committee agreed to defer consideration of the action requested of the Committee by III 7 in paragraphs 2.5 to 2.11 of document MEPC 77/10 to MEPC 78.

11 WORK PROGRAMME OF THE COMMITTEE AND SUBSIDIARY BODIES

MATTERS CONSIDERED BY CORRESPONDENCE PRIOR TO THE VIRTUAL MEETING

11.1 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 10 on agenda item 11), the Committee considered by correspondence, prior to the virtual meeting, the following documents:

.1 MEPC 77/11/1 (Finland et al.), proposing an extension of the existing output 2.15 to address test cycles and providing related amendments to the NO_X Technical Code 2008 (resolution MEPC.177(58)) (NTC 2008) with a view to improving section 3.2 of the NTC 2008 to permit its consistent application;

.2 MEPC 77/11/2 (Marshall Islands et al.), proposing a revision of the *2017 Guidelines addressing additional aspects of the NO_X Technical Code 2008 with regard to particular requirements related to marine diesel engines fitted with Selective Catalytic Reduction (SCR) systems* (resolution MEPC.291(71) as amended by resolution MEPC.313(74)) (2017 SCR Guidelines) to improve their clarity and enable a uniform implementation; and

.3 MEPC 77/INF.6 (EUROMOT), drawing the attention of the Committee to the proposal in document MEPC 77/11/2 on further requirements on the application of paragraph 3.2.8.1 of the 2017 SCR Guidelines and providing a EUROMOT position paper describing proven alternative ways to detect the deterioration rate of SCR performance with the use of currently available technology of NO_X measurement devices.

11.2 During the virtual meeting, the Committee confirmed the Chair's proposals in annex 3 to document MEPC 77/1/1, as set out in the following paragraphs 11.3 to 11.4.

Proposal for new output on multiple engine operational profiles

11.3 The Committee instructed the PPR Sub-Committee to consider document MEPC 77/11/1 (Finland et al.), under agenda item 11 (Development of amendments to MARPOL Annex VI and the NO_X Technical Code on the use of multiple engine operational profiles for a marine diesel engine), and to advise the Committee accordingly.

Proposal for new output matters related to SCR systems

11.4 The Committee instructed the PPR Sub-Committee to consider documents MEPC 77/11/2 (Marshall Islands et al.) and MEPC 77/INF.6 (EUROMOT), under agenda item 19 (Any other business), and to advise the Committee accordingly.

MATTERS CONSIDERED DURING THE VIRTUAL MEETING

Proposals for new outputs

Proposal for new output on amendments to regulation 13.2.2 of MARPOL Annex VI

11.5 The Committee recalled that MEPC 74, having noted the need for an in-depth technical consideration of the proposal, including the possibility of amendments to the *2013 Guidelines as required by regulation 13.2.2 in respect of non-identical replacement engines not required to meet the Tier III limit* (resolution MEPC.230(65)) (2013 Guidelines), had referred document MEPC 74/14/4 (Norway) to PPR 7 for further detailed consideration, with a view to advising the Committee accordingly.

11.6 Having also recalled that the outcome of PPR 7 on this matter had been deferred by MEPC 76 to this session (MEPC 76/15, paragraph 9.10.5), the Committee noted the recommendation by PPR 7 that the output proposed in document MEPC 74/14/4 should be approved and that the scope of the output should also include the development of consequential amendments to the 2013 Guidelines (MEPC 75/10/Add.1, paragraph 3.12).

11.7 Having noted support for the proposal, the Committee agreed to include a new output on "Revision of regulation 13.2.2 of MARPOL Annex VI to clarify that a marine diesel engine replacing a boiler shall be considered a replacement engine" in the post-biennial agenda of the Committee, assigning the PPR Sub-Committee as the associated organ, with one session needed to complete the work.

Proposal for new output on review of the 2014 Standard specification for shipboard incinerators (resolution MEPC.244(66))

11.8 The Committee considered document MEPC 77/11 (China et al.), proposing a new output to develop amendments to the *2014 Standard specification for shipboard incinerators* (resolution MEPC.244(66)) by revising the provisions of its annex 2 on fire protection requirements for incinerators and waste stowage spaces, to remove the discrepancies between resolution MEPC.244(66) and SOLAS chapter II-2, together with the Chair's preliminary assessment of the proposal (MEPC 77/WP.3, annex).

11.9 In this connection, the Committee recalled that SSE 7 had agreed on the need for clarifying the application of the fire protection provisions for incinerators and waste stowage spaces (SSE 7/21, paragraph 20.46), as reflected in document MEPC 77/11.

11.10 Following discussion, the Committee agreed to include a new output on "Review of the *2014 Standard specification for shipboard incinerators* (resolution MEPC.244(66)) on fire protection requirements for incinerators and waste stowage spaces" in the biennial agenda of the SSE Sub-Committee for the 2022-2023 biennium and the provisional agenda for SSE 8, with a target completion year of 2022.

Biennial agenda of the PPR Sub-Committee and provisional agenda for PPR 9

11.11 Having recalled that MEPC 76 had approved the biennial agenda of the PPR Sub-Committee for the 2022-2023 biennium and the provisional agenda for PPR 9 (MEPC 76/15, annexes 15 and 16), the Committee confirmed both.

Biennial agenda of the CCC Sub-Committee and provisional agenda for CCC 8

11.12 Having noted that MSC 104 had approved, subject to MEPC's concurrent decision, the biennial agenda of the CCC Sub-Committee for the 2022-2023 biennium and the provisional agenda for CCC 8 (CCC 7/15, annexes 10 and 11), the Committee approved both and noted, in particular, the updated work plan for the development of new low-flashpoint fuels under the IGF Code (CCC 7/15, annex 2).

Biennial agenda of the III Sub-Committee and provisional agenda for III 8

11.13 The Committee noted that MSC 104 had:

.1 agreed to include a new output on "Development of guidance on assessments and applications of remote surveys, ISM Code audits and ISPS Code verifications", in the biennial agenda of the III Sub-Committee for the 2022-2023 biennium and the provisional agenda for III 8, with a target completion year of 2024;

.2 invited MEPC to consider whether MEPC should be included as parent organ for the output, taking into account that provisions for remote surveys may also be needed for environment-related instruments (MSC 104/18, paragraph 18.6.6); and

.3 had approved, subject to MEPC's concurrent decision, the biennial agenda of the III Sub-Committee for the 2022-2023 biennium and the provisional agenda for III 8 (MEPC 104/18, annexes 37 and 38).

11.14 Subsequently, the Committee agreed to be included as a parent organ for the new output "Development of guidance on assessments and applications of remote surveys, ISM Code audits and ISPS Code verifications" and, in concurrence with MSC 104, approved the biennial agenda of the III Sub-Committee for the 2022-2023 biennium and the provisional agenda for III 8.

Status of outputs of the Committee for the 2020-2021 biennium

11.15 Having recalled that, as per usual practice, the status of outputs would only be produced after the session as an annex to the Committee's report, in accordance with paragraph 9.1 of the *Application of the Strategic Plan of the Organization* (resolution A.1111(30)), to avoid any unnecessary duplication of work, the Committee invited A 32 to note the status report of the outputs of MEPC for the 2020-2021 biennium, as set out in annex 10.

Proposed outputs of MEPC for the 2022-2023 biennium

11.16 The Committee, having considered document MEPC 77/WP.4 (Secretariat), approved the proposed outputs of MEPC for the 2022-2023 biennium and the outputs on the post-biennial agenda of the Committee, as set out in annex 11; and requested the Secretariat to review the outputs, taking into account the outcome of this session, in particular with regard to the proposals for new outputs, and make any necessary modifications as appropriate, for submission to A 32 for endorsement.

Items to be included in the agenda of MEPC 78

11.17 The Committee, having considered document MEPC 77/WP.5 (Secretariat) and taken into account the decisions made at this session, approved the items to be included in the agenda of MEPC 78, as set out in annex 12.

11.18 The delegation of France made an intervention highlighting the need for concrete proposals to MEPC 78 on the revision of the Initial GHG Strategy, and for consideration to be given to the establishment of a Working Group during MEPC 78 to start the work on the revision of the Strategy, particularly in the event of MEPC 78 being an in-person meeting, so as not to overload plenary with the detailed work involved in dealing with that matter.

Tentative dates for MEPC 78 and MEPC 79

11.19 The Committee noted that MEPC 78 and MEPC 79 had been tentatively scheduled to take place from 6 to 10 June 2022 and from 12 to 16 December 2022, respectively.

11.20 The Committee noted interventions by several delegations urging the Secretariat to review the programme of meetings of MEPC and ISWG, with a view to avoiding any clash with the meeting dates of the UNFCCC and its subsidiary bodies, as well as an intervention by the delegation of Brazil suggesting that more meeting days be added to MEPC due to the Committee's heavy workload.

11.21 The Committee, having agreed to the five-day duration for MEPC 78, requested the Secretariat to consider possible adjustments to the dates of MEPC 78 and to inform delegations through the circular letter for MEPC 78,

Correspondence groups

11.22 The Committee recalled that it had decided under agenda item 7 to re-establish the Correspondence Group on Carbon Intensity Reduction.

Intersessional meetings

11.23 The Committee recalled that C 125 had already endorsed, as requested by MEPC 76, the holding of an intersessional meeting of the Working Group on the Evaluation of Safety and Pollution Hazards of Chemicals in 2022.

11.24 The Committee approved, subject to the endorsement by A 32, the holding of the eleventh and twelfth meetings of the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG) in the first half of 2022.

11.25 The Committee also agreed to the holding of a two-day Ad-Hoc Expert Workshop on Impact Assessments before ISWG-GHG 11.

12 APPLICATION OF THE COMMITTEES' METHOD OF WORK

12.1 The Committee noted that no submissions had been made under this agenda item.

13 ELECTION OF THE CHAIR AND VICE-CHAIR FOR 2022

13.1 The Committee, in accordance with rule 18 of its Rules of Procedure, unanimously re-elected Mr. H. Saito (Japan) as Chair and Mr. H. Conway (Liberia) as Vice-Chair, both for 2022.

14 ANY OTHER BUSINESS

MATTERS CONSIDERED BY CORRESPONDENCE PRIOR TO THE VIRTUAL MEETING

14.1 In accordance with the arrangements of the remote session, as outlined in document MEPC 77/1/1 (paragraphs 10 to 13) and its annex 3 (section 11 on agenda item 14), as well as document MEPC 77/1/1/Add.1, paragraphs 20, 21 and 23.3, the Committee considered by correspondence, prior to the virtual meeting, the following documents:

.1 MEPC 77/14 (Austria et al.), inviting the Committee to consider the development of a data transfer mechanism for the Port Reception Facilities module of the Global Integrated Shipping Information System (GISIS);

.2 MEPC 77/14/1 (Secretariat), providing an update on recent work carried out by the Secretariat, in cooperation with other United Nations agencies, on issues relating to the protection of the marine environment;

.3 MEPC 77/14/2 (China), proposing to amend provisions of paragraph 6.2.2 of the *Revised guidelines and specifications for pollution prevention equipment for machinery space bilges of ships* (resolution MEPC.107(40));

.4 MEPC 77/14/3 (Russian Federation), providing information on the outcomes of the regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS) carried out by the Maritime Safety Committee and the Legal Committee, as well as proposals by the Russian Federation for this Committee to assess possible issues of MASS operations within the frames of the current instruments emanating from MEPC;

.5 MEPC 77/14/4 (FOEI et al.), providing information on a report reviewing the contents and volumes of grey water from passenger ships and its management in Alaska and offering recommendations on how to improve grey water management in Alaska and internationally;

.6 MEPC 77/14/5 (China), providing comments on document MEPC 76/15/Add.1 (Secretariat) and inviting the Committee to clarify the definition of UNSP barges in MARPOL Annex VI (2021 Revised) concerning exemption of UNSP barges from survey and certification requirements and to consider providing unified interpretations;

.7 MEPC 77/INF.5 (Secretariat), providing information on the calculation of recycling capacity for meeting the entry-into-force conditions of the Hong Kong Convention;

.8 MEPC 77/INF.9 (Netherlands), providing findings on improved prewash procedures for solidifying or high-viscosity substances (paraffin waxes);

.9 MEPC 77/INF.18 (Republic of Korea), providing information on the 2021 P4G Seoul Summit and Green Future in Oceans held in Seoul, Republic of Korea, on 26 May 2021; and

.10 MEPC 77/INF.25 (Colombia), providing information on the regulation of the criteria for the authorization and control of the maintenance of ships concerning hull cleaning afloat for the prevention of biological pollution.

14.2 During the virtual meeting, the Committee reconfirmed the endorsement of the Chair's proposals in annex 3 to document MEPC 77/1/1, as well as document MEPC 77/1/1/Add.1, as set out in the following paragraphs 14.3 to 14.9.

Communication of information through the Port Reception Facilities module of GISIS

14.3 The Committee instructed the III Sub-Committee to consider document MEPC 77/14 (Austria et al.), under agenda item 16 (Any other business), and to advise the Committee accordingly.

Recent inter-agency activities

14.4 The Committee noted the information contained in document MEPC 77/14/1 (Secretariat) on recent inter-agency activities, and invited the Secretariat to continue its cooperation with other United Nations agencies on issues relating to the protection of the marine environment.

Guidelines for machinery space bilges of ships

14.5 The Committee instructed the PPR Sub-Committee to consider document MEPC 77/14/2 (China), under agenda item [19] (Any other business), and to advise the Committee accordingly on how best to proceed with the matter raised in that document, including the consideration of the possible option proposed by the United Kingdom in paragraph 20 of document MEPC 77/1/1/Add.1 that interested Member States and international organizations be invited to submit proposals for a new output to a future session of the Committee.

Maritime Autonomous Surface Ships

14.6 The Committee thanked the Russian Federation for the information and proposals in document MEPC 77/14/3 and invited interested Member States and international organizations to submit comments and concrete proposals to a future session of the Committee on how best to proceed with the work related to Maritime Autonomous Surface Ships (for example, proposals could address potential working arrangements and/or a draft work plan).

Grey water from ships

14.7 The Committee noted the information in document MEPC 77/14/4 (FOEI et al.) on a report reviewing the contents and volumes of grey water from passenger ships and its management in Alaska, and agreed that a proposal for a new output would need to be submitted should interested Member States wish to pursue the matter further.

Definition of UNSP barges

14.8 The Committee instructed the III Sub-Committee to consider document MEPC 77/14/5 (China), under agenda item 10 (Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)), and to advise the Committee accordingly.

Information on other matters

14.9 The Committee noted the information contained in documents MEPC 77/INF.5 (Secretariat) on the calculation of recycling capacity for meeting the entry-into-force conditions of the Hong Kong Convention; MEPC 77/INF.9 (Netherlands) on improved prewash procedures for solidifying or high-viscosity substances (paraffin waxes); MEPC 77/INF.18 (Republic of Korea) on the 2021 P4G Seoul Summit and Green Future in Oceans; and MEPC 77/INF.25 (Colombia) on work undertaken by the Maritime Authority of Colombia with regard to biofouling management.

MATTERS DEFERRED TO MEPC 78

14.10 As proposed in document MEPC 77/1/1 (annex 4), the Committee agreed to defer the consideration of document MEPC 76/13/1 (World Coatings Council) to MEPC 78.

15 CONSIDERATION OF THE REPORT OF THE COMMITTEE

[15.1 The draft report of the Committee (MEPC 77/WP.1) was prepared by the Secretariat, in consultation with the Chair, and considered by the Committee during the virtual meeting held on 26 November 2021. Subsequently, the Secretariat, in consultation with the Chair, prepared and published on IMODOCS the final draft report (MEPC 77/WP.1/Rev.1) incorporating the changes to document MEPC 77/WP.1 that had been agreed during its consideration in the virtual meeting. Thereafter, delegations wishing to comment on the final draft report were given five working days to do so by correspondence in accordance with paragraph 21 of *the Interim guidance to facilitate remote sessions of the Committees during the COVID-19 pandemic (MSC-LEG-MEPC-TCC-FAL.1/Circ.1)*.]

15.2 *[to be prepared by the Secretariat after the meeting]*

16 ACTION REQUESTED OF OTHER IMO ORGANS

[to be prepared by the Secretariat after the meeting]

ANNEXES

PROVISIONAL LIST OF ANNEXES

PROVISIONAL LIST OF CIRCULARS APPROVED BY MEPC 77

BWM.2/Circ.76	Unified interpretation of regulations E-1.1.1 and E-1.1.5 of the BWM Convention
MEPC.1/Circ.883/Rev.1	Guidance on indication of ongoing compliance in the case of the failure of a single monitoring instrument, and recommended actions to take if the exhaust gas cleaning system (EGCS) fails to meet the provisions of the EGCS Guidelines
MEPC.1/Circ.896	2021 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI and EEXI
MEPC.1/Circ.897	Cross-reference tables for amendments to MARPOL Annex VI (2021 Revised MARPOL Annex VI)
MSC-MEPC.5/Circ.16	Model agreement for the authorization of recognized organizations acting on behalf of the Administration