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**REPORT OF THE MARINE ENVIRONMENT PROTECTION COMMITTEE
ON ITS SEVENTY-SIXTH SESSION**

Attached are annexes 2 to 20 to the report of the Marine Environment Protection Committee on its seventy-sixth session (MEPC 76/15).

(See document MEPC 76/15/Add.1 for annex 1)

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ANNEX 2

**RESOLUTION MEPC.329(76)
(adopted on 17 June 2021)**

**AMENDMENTS TO THE ANNEX OF THE INTERNATIONAL CONVENTION FOR THE
PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE
PROTOCOL OF 1978 RELATING THERETO**

Amendments to MARPOL Annex I

**(Prohibition on the use and carriage for use as fuel of heavy fuel oil
by ships in Arctic waters)**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering and adopting amendments thereto,

HAVING CONSIDERED, at its seventy-sixth session, proposed amendments to MARPOL Annex I concerning the prohibition on the use and carriage for use as fuel of heavy fuel oil by ships in Arctic waters, which were circulated in accordance with article 16(2)(a) of MARPOL,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, amendments to MARPOL Annex I, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(iii) of MARPOL, that the amendments shall be deemed to have been accepted on 1 May 2022 unless prior to that date not less than one third of the Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said amendments shall enter into force on 1 November 2022 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to MARPOL;

5 REQUESTS ALSO the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to MARPOL.

ANNEX

AMENDMENTS TO MARPOL ANNEX I

(Prohibition on the use and carriage for use as fuel of heavy fuel oil by ships in Arctic waters)

1 The title of chapter 9 is amended as follows:

"Chapter 9 – Special requirements for the use or carriage of oils in polar waters"

2 A new regulation 43A is added in chapter 9 after existing regulation 43, as follows:

"Regulation 43A

Special requirements for the use and carriage of oils as fuel in Arctic waters

1 With the exception of ships engaged in securing the safety of ships or in search and rescue operations, and ships dedicated to oil spill preparedness and response, the use and carriage of oils listed in regulation 43.1.2 of this Annex as fuel by ships shall be prohibited in Arctic waters, as defined in regulation 46.2 of this Annex, on or after 1 July 2024.

2 Notwithstanding the provisions of paragraph 1 of this regulation, for ships to which regulation 12A of this Annex or regulation 1.2.1 of chapter 1 of part II-A of the Polar Code applies, the use and carriage of oils listed in regulation 43.1.2 of this Annex as fuel by those ships shall be prohibited in Arctic waters, as defined in regulation 46.2 of this Annex, on or after 1 July 2029.

3 When prior operations have included the use and carriage of oils listed in regulation 43.1.2 of this Annex as fuel, the cleaning or flushing of tanks or pipelines is not required.

4 Notwithstanding the provisions of paragraphs 1 and 2 of this regulation, the Administration of a Party to the present Convention the coastline of which borders on Arctic waters may temporarily waive the requirements of paragraph 1 of this regulation for ships flying the flag of that Party while operating in waters subject to the sovereignty or jurisdiction of that Party, taking into account the guidelines to be developed by the Organization. No waivers issued under this paragraph shall apply on or after 1 July 2029.

5 The Administration of a Party to the present Convention which allows application of paragraph 4 of this regulation shall communicate to the Organization for circulation to the Parties particulars of the waiver thereof, for their information and appropriate action, if any."

ANNEX 3

**RESOLUTION MEPC.330(76)
(adopted on 17 June 2021)**

**AMENDMENTS TO THE ANNEX OF THE INTERNATIONAL CONVENTION FOR THE
PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE
PROTOCOL OF 1978 RELATING THERETO**

Amendments to MARPOL Annexes I and IV

**(Exemption of unmanned non-self-propelled barges from certain survey and
certification requirements)**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering and adopting amendments thereto,

HAVING CONSIDERED, at its seventy-sixth session, proposed amendments to MARPOL Annexes I and IV concerning the exemption of unmanned non-self-propelled (UNSP) barges from survey and certification requirements, which were circulated in accordance with article 16(2)(a) of MARPOL,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, amendments to MARPOL Annexes I and IV, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(iii) of MARPOL, that the amendments shall be deemed to have been accepted on 1 May 2022 unless prior to that date not less than one third of the Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said amendments shall enter into force on 1 November 2022 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments contained in the annexes to all Parties to MARPOL;

5 REQUESTS ALSO the Secretary-General to transmit copies of the present resolution and its annexes to Members of the Organization which are not Parties to MARPOL.

ANNEX

AMENDMENTS TO MARPOL ANNEX I

(Exemption of UNSP barges from certain survey and certification requirements)

Regulation 1

Definitions

1 A new paragraph 40 is added as follows:

"40 *Unmanned non-self-propelled (UNSP) barge* means a barge that:

- .1 is not propelled by mechanical means;
- .2 carries no oil (as defined in regulation 1.1 of this Annex);
- .3 has no machinery fitted that may use oil or generate oil residue (sludge);
- .4 has no oil fuel tank, lubricating oil tank, oily bilge water holding tank and oil residue (sludge) tank; and
- .5 has neither persons nor living animals on board."

Regulation 3

Exemptions and waivers

2 Paragraph 2 is replaced by the following:

"2 Particulars of any such exemption, except those under paragraph 7 of this regulation, granted by the Administration shall be indicated in the Certificate referred to in regulation 7 of this Annex."

3 A new paragraph 7 is added as follows:

"7 The Administration may exempt a UNSP barge* from the requirements of regulations 6.1 and 7.1 of this Annex, by an International Oil Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled Barges, for a period not exceeding five years provided that the UNSP barge has undergone a survey to confirm that the conditions referred to in regulations 1.40.1 to 1.40.5 of this Annex are met.

* Refer to the *Guidelines for exemption of unmanned non-self-propelled barges from certain survey and certification requirements under the MARPOL Convention* (MEPC.1/Circ.892)."

Regulation 8

Issue of endorsement of certificate by another Government

4 Paragraph 4 is replaced by the following:

"4 No International Oil Pollution Prevention Certificate or UNSP Exemption Certificate shall be issued to a ship which is entitled to fly the flag of a State which is not a Party."

Regulation 9

Form of certificate

5 The existing paragraph is numbered as paragraph 1 and a new paragraph 2 is added as follows:

"2 The International Oil Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled Barges shall be drawn up in the form corresponding to the model given in appendix IV to this Annex and shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in the event of a dispute or discrepancy."

6 A new appendix IV is added as follows:

"APPENDIX IV

Form of Exemption Certificate for UNSP Barges

**INTERNATIONAL OIL POLLUTION PREVENTION EXEMPTION CERTIFICATE FOR
UNMANNED NON-SELF-PROPELLED (UNSP) BARGES**

Issued under the provisions of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978, as amended, relating thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

.....
(full designation of the country)

by
(full designation of the competent person or organization
authorized under the provisions of the Convention)

Particulars of ship*

Name of ship
Distinctive number or letters.....
Port of registry
Gross tonnage

THIS IS TO CERTIFY:

1 That the UNSP barge has been surveyed in accordance with regulation 3.7 of Annex I to the Convention;

2 That the survey shows that the UNSP barge:

- .1 is not propelled by mechanical means;
- .2 carries no oil (as defined in regulation 1.1 of Annex I to the Convention);
- .3 has no machinery fitted that may use oil or generate oil residue (sludge);
- .4 has no oil fuel tank, lubricating oil tank, oily bilge water holding tank and oil residue (sludge) tank; and
- .5 has neither persons nor living animals on board; and

3 That the UNSP barge is exempted, under regulation 3.7 of Annex I to the Convention, from the certification and related survey requirements of regulations 6.1 and 7.1 of Annex I to the Convention.

This certificate is valid until (dd/mm/yyyy).....

subject to the exemption conditions being maintained.

Completion date of the survey on which this certificate is based (dd/mm/yyyy).....

* Alternatively, the particulars of the ship may be placed horizontally in boxes.

Issued at
(place of issue of certificate)

.....
(date of issue) (dd/mm/yyyy)

.....
*(signature of duly authorized
official issuing the certificate)*

(seal or stamp of the authority, as appropriate)"

AMENDMENTS TO MARPOL ANNEX IV

(Exemption of UNSP barges from certain survey and certification requirements)

Regulation 1

Definitions

1 A new paragraph 16 is added as follows:

"16 *Unmanned non-self-propelled (UNSP) barge* means a barge that:

- .1 is not propelled by mechanical means;
- .2 has neither persons nor living animals on board;
- .3 is not used for holding sewage during transport; and
- .4 has no arrangements that could produce sewage as defined in regulation 1.3 of this Annex."

Regulation 3

Exceptions

2 The title of the regulation is replaced by the following:

"Exceptions and exemptions"

3 A new paragraph 2 is added as follows:

"2 The Administration may exempt an unmanned non-self-propelled (UNSP) barge* from the requirements of regulations 4.1 and 5.1 of this Annex, by an International Sewage Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled (UNSP) Barges, for a period not exceeding 5 years provided that the barge has undergone a survey to confirm that the conditions referred to in regulations 1.16.1 to 1.16.4 of this Annex are met."

* Refer to the *Guidelines for exemption of unmanned non-self-propelled barges from the survey and certification requirements under the MARPOL Convention* (MEPC.1/Circ.892).

Regulation 6

Issue of endorsement of a Certificate by another Government

4 Paragraph 4 is replaced by the following:

"4 No International Sewage Pollution Prevention Certificate or UNSP Exemption Certificate shall be issued to a ship which is entitled to fly the flag of a State which is not a Party."

Regulation 7

Form of Certificate

5 The existing paragraph is numbered as paragraph 1 and the reference to "appendix" is replaced by "appendix 1".

6 A new paragraph 2 is added as follows:

"2 The International Sewage Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled (UNSP) Barges shall be drawn up in the form corresponding to the model given in appendix II to this Annex and shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in the event of a dispute or discrepancy."

Appendices

7 The existing appendix is numbered as appendix I and a new appendix II is added as follows:

"APPENDIX II

Form of Exemption Certificate for UNSP Barges

INTERNATIONAL SEWAGE POLLUTION PREVENTION EXEMPTION CERTIFICATE FOR UNMANNED NON-SELF-PROPELLED (UNSP) BARGES

Issued under the provisions of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978, as amended, relating thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

.....
(full designation of the country)

by
(full designation of the competent person or organization
authorized under the provisions of the Convention)

Particulars of ship*

Name of ship
Distinctive number or letters
Port of registry
Gross tonnage

THIS IS TO CERTIFY:

1 That the unmanned non-self-propelled (UNSP) barge has been surveyed in accordance with regulation 3.2 of Annex IV to the Convention;

2 That the survey shows that the unmanned non-self-propelled (UNSP) barge:

- .1 is not propelled by mechanical means;
- .2 has neither persons nor living animals on board;
- .3 is not used for holding sewage during transport; and
- .4 has no arrangements that could produce sewage as defined in regulation 1.3 of Annex IV to the Convention; and

3 That the UNSP barge is exempted, under regulation 3.2 of Annex IV to the Convention, from the certification and related survey requirements of regulations 4.1 and 5.1 of Annex IV to the Convention.

This certificate is valid until (dd/mm/yyyy).....

subject to the exemption conditions being maintained.

Completion date of the survey on which this certificate is based (dd/mm/yyyy).....

Issued at
(place of issue of certificate)

* Alternatively, the particulars of the ship may be placed horizontally in boxes.

.....
(date of issue) (dd/mm/yyyy):

.....
*(signature of duly authorized
official issuing the certificate)*

(seal or stamp of the authority, as appropriate)"

ANNEX 4

**RESOLUTION MEPC.331(76)
(adopted on 17 June 2021)**

**AMENDMENTS TO THE INTERNATIONAL CONVENTION ON THE
CONTROL OF HARMFUL ANTI-FOULING SYSTEMS ON SHIPS, 2001**

Amendments to Annexes 1 and 4

(Controls on cybutryne and form of the International Anti-fouling System Certificate)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (the AFS Convention), which specifies the amendment procedure and confers upon the Marine Environment Protection Committee of the Organization the function of considering amendments thereto for adoption by the Parties,

HAVING CONSIDERED, at its seventy-sixth session, proposed amendments to the AFS Convention regarding controls on cybutryne and the form of the International Anti-fouling System Certificate,

1 ADOPTS, in accordance with article 16(2)(c) of the AFS Convention, amendments to Annexes 1 and 4, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(e)(ii) of the AFS Convention, that the amendments shall be deemed to have been accepted on 1 July 2022 unless prior to that date more than one third of the Parties have notified the Secretary-General that they object to the amendments;

3 INVITES the Parties to note that, in accordance with articles 16(2)(f)(ii) and (iii) of the AFS Convention, the said amendments shall enter into force on 1 January 2023 upon their acceptance in accordance with paragraph 2 above;

4 INVITES ALSO the Parties to remind ships that fly their flag and that are confirmed to be affected by the amendments to Annex 1 to the AFS Convention adopted through the present resolution to make a timely request for a survey for the issuance of an International Anti-fouling System Certificate, in the amended model form adopted through the present resolution, using the procedure outlined in paragraphs 4 and 5.3 of the annex to resolution MEPC.195(61), as may be amended by the Organization, so that ships have a valid International Anti-fouling System Certificate on board not later than 24 months after the entry into force of the amendments to Annex 1 to the AFS Convention adopted through the present resolution;

5 INVITES FURTHER the Parties to issue new International Anti-fouling System Certificates, in the amended model form adopted through the present resolution, at the next anti-fouling system application, in the case of ships that are confirmed not to be affected by the amendments to Annex 1 to the AFS Convention adopted through the present resolution;

6 REQUESTS the Secretary-General, for the purposes of article 16(2)(d) of the AFS Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to the AFS Convention;

7 REQUESTS ALSO the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to the AFS Convention;

8 REQUESTS FURTHER the Secretary-General to prepare a consolidated certified text of the AFS Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CONVENTION ON THE
CONTROL OF HARMFUL ANTI-FOULING SYSTEMS ON SHIPS, 2001**

**Annex 1
Controls on anti-fouling systems**

1 The following rows are added to the table in Annex 1 to the 2001 AFS Convention:
"

Anti-fouling system	Control measures	Application	Effective date
Cybutryne CAS No. 28159-98-0	Ships shall not apply or re-apply anti-fouling systems containing this substance	All ships	1 January 2023
Cybutryne CAS No. 28159-98-0	Ships bearing an anti-fouling system that contains this substance in the external coating layer of their hulls or external parts or surfaces on 1 January 2023 shall either: (1) remove the anti-fouling system; or (2) apply a coating that forms a barrier to this substance leaching from the underlying non-compliant anti-fouling system	All ships except: (1) fixed and floating platforms, FSUs, and FPSOs that have been constructed prior to 1 January 2023 and that have not been in dry-dock on or after 1 January 2023; (2) ships not engaged in international voyages; and (3) ships of less than 400 gross tonnage engaged in international voyages, if accepted by the coastal State(s)	At the next scheduled renewal of the anti-fouling system after 1 January 2023, but no later than 60 months following the last application to the ship of an anti-fouling system containing cybutryne

Annex 4**Surveys and certification requirements for anti-fouling systems**

2 Regulation 2(3) is replaced by the following:

"(3) For ships bearing an anti-fouling system controlled under Annex 1 that was applied before the date of entry into force of a control for such a system, the Administration shall issue a Certificate in accordance with paragraphs (1) and (2) of this regulation not later than two years after entry into force of that control. This paragraph shall not affect any requirement for ships to comply with Annex 1."

Appendix 1 to Annex 4**Model form of International Anti-fouling System Certificate**

3 The section of the model form of the International Anti-fouling System Certificate (appendix 1) listing the compliance options for controlled anti-fouling systems on the ship is replaced by the following:

"An anti-fouling system controlled under Annex 1 containing:

	Has not been applied during or after construction of this ship	Has been applied on this ship previously, but has been removed by	Has been applied on this ship previously, but has been covered with a sealer coat applied by	Has been applied on this ship previously, but is not in the external coating layer of the hull or external parts or surfaces on	Was applied on this ship prior to
Organotin compounds which act as biocides	<input type="checkbox"/> <i>(insert name of the facility)</i> on <i>(dd/mm/yyyy)</i> <input type="checkbox"/> <i>(insert name of the facility)</i> on <i>(dd/mm/yyyy)</i> <input type="checkbox"/>	Not applicable	Not applicable
Cybutryne	<input type="checkbox"/> <i>(insert name of the facility)</i> on <i>(dd/mm/yyyy)</i> <input type="checkbox"/> <i>(insert name of the facility)</i> on <i>(dd/mm/yyyy)</i> <input type="checkbox"/>	1 January 2023 <input type="checkbox"/>	1 January 2023, but must be removed or covered with a sealer coat prior to <i>(dd/mm/yyyy)</i> <input type="checkbox"/>

"

ANNEX 5

**RESOLUTION MEPC.332(76)
(adopted on 17 June 2021)**

**AMENDMENTS TO THE 2018 GUIDELINES ON THE METHOD OF CALCULATION OF
THE ATTAINED ENERGY EFFICIENCY DESIGN INDEX (EEDI) FOR NEW SHIPS
(RESOLUTION MEPC.308(73), AS AMENDED BY RESOLUTION MEPC.322(74))**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO that, at its sixty-second session, it adopted, by resolution MEPC.203(62), *Amendments to the annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto* (inclusion of regulations on energy efficiency for ships in MARPOL Annex VI),

NOTING that the aforementioned amendments to MARPOL Annex VI entered into force on 1 January 2013,

NOTING ALSO that regulation 22 (Attained Energy Efficiency Design Index (attained EEDI)) of MARPOL Annex VI, as amended, requires that the EEDI shall be calculated taking into account the guidelines developed by the Organization,

NOTING FURTHER the *2012 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships*, adopted at its sixty-third session by resolution MEPC.212(63), superseded by the *2014 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.245(66)), which were subsequently superseded by the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73)),

NOTING that, at its seventy-fourth session, it adopted, by resolution MEPC.322(74), *Amendments to the 2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships*,

HAVING CONSIDERED, at its seventy-sixth session, proposed amendments to the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended by resolution MEPC.322(74)),

1 ADOPTS amendments to the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended by resolution MEPC.322(74)), as set out in the annex to the present resolution;

2 INVITES Administrations to take into account the aforementioned amendments when developing and enacting national laws which give force to, and implement provisions set forth in regulation 20 of MARPOL Annex VI, as amended;

3 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the amendments to the attention of shipowners, ship operators, shipbuilders, ship designers and any other interested parties;

4 AGREES to keep these Guidelines, as amended, under review, in light of experience gained with their implementation.

ANNEX

**AMENDMENTS TO THE 2018 GUIDELINES ON THE METHOD OF CALCULATION OF
THE ATTAINED ENERGY EFFICIENCY DESIGN INDEX (EEDI) FOR NEW SHIPS**

1 A new section 3 is added, as follows:

"3 Mandatory Reporting of Attained EEDI Values and Related Information

3.1 In accordance with regulation 22.3 of MARPOL Annex VI, for each ship subject to regulation 24, the Administration or any organization duly authorized by it shall report the required and attained EEDI values and relevant information taking into account these Guidelines via electronic communication.

3.2 Information to be reported are as follows:

- .1 applicable EEDI phase (e.g. Phase 1, Phase 2, etc.);
- .2 identification number (IMO Secretariat use only);
- .3 ship type;
- .4 common commercial size reference* (see Note (3) in appendix 5 to these Guidelines), if available;
- .5 DWT or GT (as appropriate);
- .6 year of delivery;
- .7 required EEDI value;
- .8 attained EEDI value;
- .9 dimensional parameters (length L_{pp} (m), breadth B_s (m), and draught (m));
- .10 V_{ref} (knots) and P_{ME} (kW);
- .11 use of innovative technologies (4th and 5th terms in the EEDI equation, if applicable);
- .12 short statement* describing the principal design elements or changes employed to achieve the attained EEDI (as appropriate), if available;
- .13 type of fuel used in the calculation of the attained EEDI, and for dual-fuel engines, the f_{DFgas} ratio; and
- .14 ice class designation (if applicable).

* Not subject to verification.

- 3.3 The information in paragraph 3.2 is not required to be reported for ships for which the required and attained EEDI values had been already reported to the Organization.
 - 3.4 A standardized reporting format for Mandatory Reporting of Attained EEDI Values and Related Information is presented in appendix 5."
- 2 A new appendix 5 is added, as follows:

"APPENDIX 5

STANDARD FORMAT TO SUBMIT EEDI INFORMATION TO BE INCLUDED IN THE EEDI DATABASE

IMO Number (1)	Type of ship (2)	Common commercial size (3)	Capacity (4)		Dimensional parameters			Year of delivery	Applicable phase	Required EEDI	Attained EEDI	Vref (knot) (9)	PME (kW) (10)	Type of fuel (11)	f _{DF} gas (12)	Ice class (13)	EEDI 4th term (Installation of innovative electrical technology)		EEDI 5th term (Installation of innovative mechanical technology)		Short statement as appropriate describing the principal design elements or changes employed to achieve the attained EEDI (15)	
			DWT	GT (5)	Lpp (m) (6)	Bs (m) (7)	Draught (m) (8)										Yes/No	Name, outline and means/ways of performance of technology (14)	Yes/No	Name, outline and means/ways of performance of technology (14)		

- Note:**
- (1) IMO number to be submitted for Secretariat use only.
 - (2) As defined in regulation 2 of MARPOL Annex VI.
 - (3) Common commercial size reference (TEU for containership, CEU (RT43) for ro-ro cargo ship (vehicle carrier), cubic meter for gas carrier and LNG carrier), if available, should be provided.
 - (4) The exact DWT or GT, as appropriate, should be provided. The Secretariat should round the DWT or GT data up to the nearest 500 when these data are subsequently provided to MEPC. (For containerships, 100% DWT should be provided while 70% of DWT should be used when calculating the EEDI value).
 - (5) GT should be provided for a cruise passenger ship having non-conventional propulsion as defined in regulations 2.2.11 and 2.2.19, respectively, of MARPOL Annex VI. Both DWT and GT should be provided for a ro-ro cargo ship (vehicle carrier) as defined in regulation 2.2.27 of MARPOL Annex VI.
 - (6) As defined in paragraph 2.2.13 of the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended). The exact Lpp should be provided. The Secretariat will round the Lpp data up to the nearest 10 when these data are subsequently provided to MEPC.
 - (7) As defined in paragraph 2.2.16 of the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended). The exact Bs should be provided. The Secretariat will round the Bs data up to the nearest 1 when these data are subsequently provided to MEPC.
 - (8) As defined in paragraph 2.2.15 of the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended). The exact draught should be provided. The Secretariat will round the draught data up to the nearest 1 when these data are subsequently provided to MEPC.
 - (9) As defined in paragraph 2.2.2 of the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended). The exact Vref should be provided. The Secretariat will round the Vref data up to the nearest 0.5 when these data are subsequently provided to MEPC.
 - (10) As defined in paragraph 2.2.5.1 of the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended). The exact P_{ME} should be provided. The Secretariat will round the P_{ME} data up to the nearest 100 when these data are subsequently provided to MEPC.
 - (11) As defined in paragraph 2.2.1 of the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended) or other (to be stated). In case of a ship equipped with a dual-fuel engine, type of "primary fuel" should be provided.
 - (12) As defined in paragraph 2.2.1 of the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308 (73), as amended), if applicable.
 - (13) Ice class, which was used to calculate correction factors for ice-classed ships as defined in paragraphs 2.2.8.1 and 2.2.11.1 of the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended), if applicable, should be provided.
 - (14) In the case that the innovative energy efficiency technologies are already included in the *2013 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI* (MEPC.1/Circ.815), the name of technology should be identified. Otherwise, name, outline and means/ways of performance of the technology should be identified.
 - (15) To assist the IMO in assessing relevant design trends, provide a short statement as appropriate, describing the principal design elements or changes employed to achieve the attained EEDI.

ANNEX 6

UNIFIED INTERPRETATION TO REGULATION 2.23 OF MARPOL ANNEX VI

(update to the unified interpretation provided in paragraphs 1.2.3 and 1.2.4 of the annex to MEPC.1/Circ.795/Rev.4)

1 Definition of "new ship"

Regulation 2
Definitions

Regulation 2.23 reads as follows:

"*New ship* means a ship:

- .1 for which the building contract is placed on or after 1 January 2013; or
- .2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2013; or
- .3 the delivery of which is on or after 1 July 2015."

Interpretation:

1.1 For the application of the definition "new ship" as specified in regulation 2.23 to each phase specified in table 1 of regulation 21, it should be interpreted as follows:

- .1 the date specified in regulation 2.23.1 should be replaced with the start date of each phase;
- .2 the date specified in regulation 2.23.2 should be replaced with the date six months after the start date of each phase; and
- .3 the date specified in regulation 2.23.3 should, for Phase 1, 2 and 3, be replaced with the date 48 months after the start date of each phase.

1.2 With the above interpretations, the required EEDI of each phase is applied to the following new ship which falls into one of the categories defined in regulations 2.25 to 2.31 and to which chapter 4 is applicable:

(.....)

- .3 the required EEDI of Phase 2 is applied to the following new ship:
 - .1 for ship types where Phase 2 ends on 31 March 2022*:
 - .1 the building contract of which is placed in Phase 2, and the delivery is before 1 April 2026; or

* Unified Interpretation is applicable when resolution MEPC.324(75) enters into force on 1 April 2022.

- .2 the building contract of which is placed before Phase 2, and the delivery is on or after 1 January 2024 and before 1 April 2026; or

in the absence of a building contract:

- .3 the keel of which is laid or which is at a similar stage of construction on or after 1 July 2020 and before 1 October 2022, and the delivery is before 1 April 2026; or
- .4 the keel of which is laid or which is at a similar stage of construction before 1 July 2020, and the delivery is on or after 1 January 2024 and before 1 April 2026.

- .2 for ship types where Phase 2 ends on 31 December 2024:

- .1 the building contract of which is placed in Phase 2, and the delivery is before 1 January 2029; or
- .2 the building contract of which is placed before Phase 2, and the delivery is on or after 1 January 2024 and before 1 January 2029; or

in the absence of a building contract:

- .3 the keel of which is laid or which is at a similar stage of construction on or after 1 July 2020 and before 1 July 2025, and the delivery is before 1 January 2029; or
- .4 the keel of which is laid or which is at a similar stage of construction before 1 July 2020, and the delivery is on or after 1 January 2024 and before 1 January 2029.

- .4 the required EEDI of Phase 3 is applied to the following new ship:

- .1 for ship types where Phase 3 commences with 1 April 2022 and onwards:

- .1 the building contract of which is placed in Phase 3; or
- .2 the building contract of which is placed before Phase 3, and the delivery is on or after 1 April 2026; or

in the absence of a building contract:

- .3 the keel of which is laid or which is at a similar stage of construction on or after 1 October 2022; or
- .4 the keel of which is laid or which is at a similar stage of construction before 1 October 2022 and the delivery of which is on or after 1 April 2026.

- .2 for ship types where Phase 3 commences with 1 January 2025 and onwards:

- .1 the building contract of which is placed in Phase 3; or
- .2 the building contract of which is placed before Phase 3, and the delivery is on or after 1 January 2029; or

in the absence of a building contract:

- .3 the keel of which is laid or which is at a similar stage of construction on or after 1 July 2025; or
- .4 the keel of which is laid or which is at a similar stage of construction before 1 July 2025 and the delivery of which is on or after 1 January 2029.

(.....)

ANNEX 7

**RESOLUTION MEPC.333(76)
(adopted on 17 June 2021)**

**2021 GUIDELINES ON THE METHOD OF CALCULATION OF THE ATTAINED
ENERGY EFFICIENCY EXISTING SHIP INDEX (EEXI)**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

NOTING that it adopted, by resolution MEPC.328(76), the 2021 revised MARPOL Annex VI, which is expected to enter into force on 1 November 2022 upon its deemed acceptance on 1 May 2022,

NOTING IN PARTICULAR that the 2021 revised MARPOL Annex VI contains amendments concerning mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping,

NOTING FURTHER that regulation 23 of MARPOL Annex VI requires that the attained EEXI shall be calculated taking into account the guidelines developed by the Organization,

RECOGNIZING that the aforementioned amendments to MARPOL Annex VI require relevant guidelines for uniform and effective implementation of the regulations and to provide sufficient lead time for industry to prepare,

HAVING CONSIDERED, at its seventy-sixth session, draft *2021 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)*,

1 ADOPTS the *2021 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)*, as set out in the annex to the present resolution;

2 INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement requirements set forth in regulation 23 of MARPOL Annex VI;

3 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines to the attention of masters, seafarers, shipowners, ship operators and any other interested parties;

4 AGREES to keep the Guidelines under review in light of experience gained with their implementation and in light of the review of EEXI regulations to be completed by the Organization by 1 January 2026 as identified in regulation 25.3 of MARPOL Annex VI.

ANNEX

2021 GUIDELINES ON THE METHOD OF CALCULATION OF THE ATTAINED ENERGY EFFICIENCY EXISTING SHIP INDEX (EEXI)

CONTENTS

- 1 Definitions
- 2 Energy Efficiency Existing Ship Index (EEXI)
 - 2.1 EEXI formula
 - 2.2 Parameters
 - 2.2.1 $P_{ME(i)}$; Power of main engines
 - 2.2.2 $P_{AE(i)}$; Power of auxiliary engines
 - 2.2.3 V_{ref} ; Ship speed
 - 2.2.4 SFC ; Certified specific fuel consumption
 - 2.2.5 C_F ; Conversion factor between fuel consumption and CO₂ emission
 - 2.2.6 Correction factor for ro-ro cargo and ro-ro passenger ships (f_{jRoRo})
 - 2.2.7 Correction factor for ro-ro cargo ships (vehicle carrier) ($f_{cVEHICLE}$)
- APPENDIX Parameters to calculate $V_{ref,app}$

1 Definitions

1.1 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto, as amended.

1.2 For the purpose of these Guidelines, the definitions in MARPOL Annex VI, as amended, apply.

2 Energy Efficiency Existing Ship Index (EEXI)

2.1 EEXI formula

The attained Energy Efficiency Existing Ship Index (EEXI) is a measure of ship's energy efficiency (g/t*nm) and calculated by the following formula:

$$\frac{\left(\prod_{j=1}^n f_j \right) \left(\sum_{i=1}^{nME} P_{ME(i)} \cdot C_{FME(i)} \cdot SFC_{ME(i)} \right) + (P_{AE} \cdot C_{FAE} \cdot SFC_{AE}^*) + \left(\prod_{j=1}^n f_j \cdot \sum_{i=1}^{nPTI} P_{PTI(i)} - \sum_{i=1}^{neff} f_{eff(i)} \cdot P_{AEff(i)} \right) C_{FAE} \cdot SFC_{AE} - \left(\sum_{i=1}^{neff} f_{eff(i)} \cdot P_{eff(i)} \cdot C_{FME} \cdot SFC_{ME}^{**} \right)}{f_i \cdot f_c \cdot f_i \cdot Capacity \cdot f_w \cdot V_{ref} \cdot f_m}$$

* If part of the Normal Maximum Sea Load is provided by shaft generators, SFC_{ME} and C_{FME} may – for that part of the power – be used instead of SFC_{AE} and C_{FAE}

** In case of $P_{PTI(i)} > 0$, the average weighted value of $(SFC_{ME} \cdot C_{FME})$ and $(SFC_{AE} \cdot C_{FAE})$ to be used for calculation of P_{eff}

Note: This formula may not be applicable to a ship having diesel-electric propulsion, turbine propulsion or hybrid propulsion system, except for cruise passenger ships and LNG carriers.

Ships falling into the scope of EEDI requirement can use their attained EEDI calculated in accordance with the *2018 Guidelines on the method of calculation of the attained EEDI for new ships* (resolution MEPC.308(73), as amended, the "EEDI Calculation Guidelines" hereafter) as the attained EEXI if the value of the attained EEDI is equal to or less than that of the required EEXI.

2.2 Parameters

For calculation of the attained EEXI by the formula in paragraph 2.1, parameters under the EEDI Calculation Guidelines apply, unless expressly provided otherwise. In referring to the aforementioned guidelines, the terminology "EEDI" should be read as "EEXI".

2.2.1 $P_{ME(i)}$; Power of main engines

In cases where overridable Shaft / Engine Power Limitation is installed in accordance with the *2021 Guidelines on the shaft / engine power limit to comply with the EEXI requirements and use of a power reserve* (resolution MEPC.335(76)), $P_{ME(i)}$ is 83% of the limited installed power (MCR_{lim}) or 75% of the original installed power (MCR), whichever is lower, for each main engine (i). In cases where the overridable Shaft / Engine Power Limitation and shaft generator(s) are installed, in referring to paragraph 2.2.5.2 (option 1) of the EEDI Calculation Guidelines, " MCR_{ME} " should be read as " MCR_{lim} ".

For LNG carriers having steam turbine or diesel electric propulsion, $P_{ME(i)}$ is 83% of the limited installed power (MCR_{lim} , MPP_{lim}), divided by the electrical efficiency in case of diesel electric propulsion system, for each main engine (i). For LNG carriers, the power from combustion of

the excessive natural boil-off gas in the engines or boilers to avoid releasing to the atmosphere or unnecessary thermal oxidation should be deducted from $P_{ME(i)}$ with the approval of the verifier.

2.2.2 $P_{AE(i)}$; Power of auxiliary engines

2.2.2.1 $P_{AE(i)}$ is calculated in accordance with paragraph 2.2.5.6 of the EEDI Calculation Guidelines.

2.2.2.2 For ships where power of auxiliary engines (P_{AE}) value calculated by paragraphs 2.2.5.6.1 to 2.2.5.6.3 of the EEDI Calculation Guidelines is significantly different from the total power used at normal seagoing, e.g. in cases of passenger ships, the P_{AE} value should be estimated by the consumed electric power (excluding propulsion) in conditions when the ship is engaged in a voyage at reference speed (V_{ref}) as given in the electric power table, divided by the average efficiency of the generator(s) weighted by power (see appendix 2 of the EEDI Calculation Guidelines).

2.2.2.3 In cases where the electric power table is not available, the P_{AE} value may be approximated either by:

- .1 annual average figure of P_{AE} at sea from onboard monitoring obtained prior to the EEXI certification;
- .2 for cruise passenger ships, approximated value of power of auxiliary engines ($P_{AE,app}$), as defined below:

$$P_{AE,app} = 0.1193 \times GT + 1814.4 \quad [\text{kW}]$$

- .3 for ro-ro passenger ships, approximated value of power of auxiliary engines ($P_{AE,app}$), as defined below:

$$P_{AE,app} = 0.866 \times GT^{0.732} \quad [\text{kW}]$$

2.2.3 V_{ref} ; Ship speed

2.2.3.1 For ships falling into the scope of the EEDI requirement, the ship speed V_{ref} should be obtained from an approved speed-power curve as defined in the *2014 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI)*, as amended (resolution MEPC.254(67), as amended).

2.2.3.2 For ships not falling into the scope of the EEDI requirement, the ship speed V_{ref} should be obtained from an estimated speed-power curve as defined in the *2021 Guidelines on survey and certification of the attained EEXI* (resolution MEPC.334(76)).

2.2.3.3 For ships not falling into the scope of the EEDI requirement but whose sea trial results, which may have been calibrated by the tank test, under the EEDI draught and the sea condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines are included in the sea trial report, the ship speed V_{ref} may be obtained from the sea trial report:

$$V_{ref} = V_{S,EEDI} \times \left[\frac{P_{ME}}{P_{S,EEDI}} \right]^{\frac{1}{3}} \quad [\text{knot}]$$

where,

$V_{S,EEDI}$, is the sea trial service speed under the EEDI draught; and

$P_{S,EEDI}$ is power of the main engine corresponding to $V_{S,EEDI}$.

2.2.3.4 For containerships, bulk carriers or tankers not falling into the scope of the EEDI requirement but whose sea trial results, which may have been calibrated by the tank test, under the design load draught and sea condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines are included in the sea trial report, the ship speed V_{ref} may be obtained from the sea trial report:

$$V_{ref} = k^{\frac{1}{3}} \times \left(\frac{DWT_{S,service}}{Capacity} \right)^{\frac{2}{9}} \times V_{S,service} \times \left[\frac{P_{ME}}{P_{S,service}} \right]^{\frac{1}{3}} \quad [\text{knot}]$$

where,

$V_{S,service}$ is the sea trial service speed under the design load draught;

$DWT_{S,service}$ is the deadweight under the design load draught;

$P_{S,service}$ is the power of the main engine corresponding to $V_{S,service}$;

k is the scale coefficient, which should be:

- .1 0.95 for containerships with 120,000 DWT or less;
- .2 0.93 for containerships with more than 120,000 DWT;
- .3 0.97 for bulk carrier with 200,000 DWT or less;
- .4 1.00 for bulk carrier with more than 200,000 DWT;
- .5 0.97 for tanker with 100,000 DWT or less; and
- .6 1.00 for tanker with more than 100,000 DWT.

2.2.3.5 In cases where the speed-power curve is not available or the sea trial report does not contain the EEDI or design load draught condition, the ship speed V_{ref} can be approximated by $V_{ref,app}$ to be obtained from statistical mean of distribution of ship speed and engine power, as defined below:

$$V_{ref,app} = (V_{ref,avg} - m_V) \times \left[\frac{\sum P_{ME}}{0.75 \times MCR_{avg}} \right]^{\frac{1}{3}} \quad [\text{knot}]$$

For LNG carriers having diesel electric propulsion system and cruise passenger ship having non-conventional propulsion,

$$V_{ref,app} = (V_{ref,avg} - m_V) \times \left[\frac{\sum MPP_{Motor}}{MPP_{avg}} \right]^{\frac{1}{3}} \quad [\text{knot}]$$

where,

$V_{ref,avg}$ is a statistical mean of distribution of ship speed in given ship type and ship size, to be calculated as follows:

$$V_{ref,avg} = A \times B^C$$

where

A, B and C are the parameters given in the appendix;

m_V is a performance margin of a ship, which should be 5% of $V_{ref,avg}$ or one knot, whichever is lower; and

MCR_{avg} is a statistical mean of distribution of MCRs for main engines and MPP_{avg} is a statistical mean of distribution of MPPs for motors in given ship type and ship size, to be calculated as follows:

$$MCR_{avg} \text{ or } MPP_{avg} = D \times E^F$$

where

D, E and F are the parameters given in the appendix;

In cases where the overridable Shaft / Engine Power Limitation is installed, the ship speed V_{ref} approximated by $V_{ref,app}$ should be calculated as follows:

$$V_{ref,app} = (V_{ref,avg} - m_V) \times \left[\frac{\sum P_{ME}}{0.75 \times MCR_{avg}} \right]^{\frac{1}{3}} \quad [\text{knot}]$$

For LNG carriers having diesel electric propulsion system and cruise passenger ship having non-conventional propulsion, the ship speed V_{ref} approximated by $V_{ref,app}$ should be calculated as follows:

$$V_{ref,app} = (V_{ref,avg} - m_V) \times \left[\frac{\sum MPP_{lim}}{MPP_{avg}} \right]^{\frac{1}{3}}$$

2.2.3.6 Notwithstanding the above, in cases where the energy saving device* is installed, the effect of the device may be reflected in the ship speed V_{ref} with the approval of the verifier, based on the following methods in accordance with defined quality and technical standards:

- .1 sea trials after installation of the device; and/or
- .2 dedicated model tests; and/or
- .3 numerical calculations.

* Devices that shift the power curve, which results in the change of P_P and V_{ref} , as specified in MEPC.1/Circ.815 on 2013 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI.

2.2.4 SFC; Certified specific fuel consumption

In cases where overridable Shaft / Engine Power Limitation is installed, the *SFC* corresponding to the P_{ME} should be interpolated by using *SFCs* listed in an applicable test report included in an approved NO_x Technical File of the main engine as defined in paragraph 1.3.15 of the NO_x Technical Code.

Notwithstanding the above, the *SFC* specified by the manufacturer or confirmed by the verifier may be used.

For those engines which do not have a test report included in the NO_x Technical File and which do not have the *SFC* specified by the manufacturer or confirmed by the verifier, the *SFC* can be approximated by SFC_{app} defined as follows:

$$SFC_{ME,app} = 190 [g/kWh]$$

$$SFC_{AE,app} = 215 [g/kWh]$$

2.2.5 C_F; Conversion factor between fuel consumption and CO₂ emission

For those engines which do not have a test report included in the NO_x Technical File and which do not have the *SFC* specified by the manufacturer, the C_F corresponding to SFC_{app} should be defined as follows:

$$C_F = 3.114 [t \cdot CO_2/t \cdot Fuel] \text{ for diesel ships (incl. HFO use in practice)}$$

Otherwise, paragraph 2.2.1 of the EEDI Calculation Guidelines applies.

2.2.6 Correction factor for ro-ro cargo and ro-ro passenger ships (f_{jRoRo})

For ro-ro cargo and ro-ro passenger ships, f_{jRoRo} is calculated as follows:

$$f_{jRoRo} = \frac{1}{F_{nL}^\alpha \cdot \left(\frac{L_{pp}}{B_S}\right)^\beta \cdot \left(\frac{B_S}{d_S}\right)^\gamma \cdot \left(\frac{L_{pp}}{V^{1/3}}\right)^\delta} \quad ; \text{ if } f_{jRoRo} > 1 \text{ then } f_j = 1$$

where the Froude number, F_{nL} , is defined as:

$$F_{nL} = \frac{0.5144 \cdot V_{ref,F}}{\sqrt{L_{pp} \cdot g}}$$

where $V_{ref,F}$ is the ship design speed corresponding to 75% of MCR_{ME} :

and the exponents α , β , γ and δ are defined as follows:

Ship type	Exponent:			
	α	β	γ	δ
Ro-ro cargo ship	2.00	0.50	0.75	1.00
Ro-ro passenger ship	2.50	0.75	0.75	1.00

2.2.7 Cubic capacity correction factor for ro-ro cargo ships (vehicle carrier) ($f_{cVEHICLE}$)

For ro-ro cargo ships (vehicle carrier) having a DWT/GT ratio of less than 0.35, the following cubic capacity correction factor, $f_{cVEHICLE}$, should apply:

$$f_{cVEHICLE} = \left(\frac{(DWT/GT)}{0.35} \right)^{-0,8}$$

Where DWT is the capacity and GT is the gross tonnage in accordance with the International Convention of Tonnage Measurement of Ships 1969, annex I, regulation 3.

APPENDIX

Parameters to calculate $V_{ref,avg}$

Ship type	A	B	C
Bulk carrier	10.6585	DWT of the ship	0.02706
Gas carrier	7.4462	DWT of the ship	0.07604
Tanker	8.1358	DWT of the ship	0.05383
Containership	3.2395	DWT of the ship where DWT ≤ 80,000 80,000 where DWT > 80,000	0.18294
General cargo ship	2.4538	DWT of the ship	0.18832
Refrigerated cargo carrier	1.0600	DWT of the ship	0.31518
Combination carrier	8.1391	DWT of the ship	0.05378
LNG carrier	11.0536	DWT of the ship	0.05030
Ro-ro cargo ship (vehicle carrier)	16.6773	DWT of the ship	0.01802
Ro-ro cargo ship	8.0793	DWT of the ship	0.09123
Ro-ro passenger ship	4.1140	DWT of the ship	0.19863
Cruise passenger ship having non-conventional propulsion	5.1240	GT of the ship	0.12714

Parameters to calculate MCR_{avg} or MPP_{avg} (= D x E^F)

Ship type	D	E	F
Bulk carrier	23.7510	DWT of the ship	0.54087
Gas carrier	21.4704	DWT of the ship	0.59522
Tanker	22.8415	DWT of the ship	0.55826
Containership	0.5042	DWT of the ship where DWT ≤ 95,000 95,000 where DWT > 95,000	1.03046
General cargo ship	0.8816	DWT of the ship	0.92050
Refrigerated cargo carrier	0.0272	DWT of the ship	1.38634
Combination carrier	22.8536	DWT of the ship	0.55820
LNG carrier	20.7096	DWT of the ship	0.63477
Ro-ro cargo ship (vehicle carrier)	262.7693	DWT of the ship	0.39973
Ro-ro cargo ship	37.7708	DWT of the ship	0.63450
Ro-ro passenger ship	9.1338	DWT of the ship	0.91116
Cruise passenger ship having non-conventional propulsion	1.3550	GT of the ship	0.88664

Calculation of parameters to calculate $V_{ref,avg}$ and MCR_{avg}

Data sources

1 IHS Fairplay (IHSF) database with the following conditions are used.

Ship type	Ship size	Delivered period	Type of propulsion systems	Population
Bulk carrier	≥ 10,000 DWT	From 1 January 1999 to 1 January 2009	Conventional	2,433
Gas carrier	≥ 2,000 DWT		Conventional	292
Tanker	≥ 4,000 DWT		Conventional	3,345
Containership	≥ 10,000 DWT		Conventional	2,185
General cargo ship	≥ 3,000 DWT		Conventional	1,673
Refrigerated cargo carrier	≥ 3,000 DWT		Conventional	53
Combination carrier	≥ 4,000 DWT		Conventional	3,351
LNG carrier	≥ 10,000 DWT		Conventional, Non-conventional	185
Ro-ro cargo ship (vehicle carrier)	≥ 10,000 DWT		Conventional	301
Ro-ro cargo ship	≥ 1,000 DWT		From 1 January 1998 to 31 December 2010	Conventional
Ro-ro passenger ship	≥ 250 DWT	Conventional		350
Cruise passenger ship having non-conventional propulsion	≥ 25,000 GT	From 1 January 1999 to 1 January 2009	Non-conventional	93

2 Data sets with blank/zero "Service speed", "Capacity" and/or Total kW of M/E" are removed.

3 Ship type is in accordance with table 1 and table 2 of resolution MEPC.231(65) on 2013 Guidelines for calculation of reference lines for use with the Energy Efficiency Design Index (EEDI). However, "Gas carrier" does not include "LNG carrier". Parameters for "LNG carrier" are given separately.

ANNEX 8

**RESOLUTION MEPC.334(76)
(adopted on 17 June 2021)**

**2021 GUIDELINES ON SURVEY AND CERTIFICATION OF THE ATTAINED ENERGY
EFFICIENCY EXISTING SHIP INDEX (EEXI)**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

NOTING that it adopted, by resolution MEPC.328(76), the 2021 revised MARPOL Annex VI, which is expected to enter into force on 1 November 2022 upon its deemed acceptance on 1 May 2022,

NOTING IN PARTICULAR that the 2021 revised MARPOL Annex VI contains amendments concerning mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping,

NOTING FURTHER that regulation 5 (Surveys) of MARPOL Annex VI, as amended, requires that ships to which chapter 4 applies shall also be subject to survey and certification taking into account guidelines developed by the Organization,

RECOGNIZING that the aforementioned amendments to MARPOL Annex VI require relevant guidelines for uniform and effective implementation of the regulations and to provide sufficient lead time for industry to prepare,

HAVING CONSIDERED, at its seventy-sixth session, draft *2021 Guidelines on survey and certification of the Energy Efficiency Existing Ship Index (EEXI)*,

1 ADOPTS the *2021 Guidelines on survey and certification of the Energy Efficiency Existing Ship Index (EEXI)*, as set out in the annex to the present resolution;

2 INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement requirements set forth in regulation 5 of MARPOL Annex VI;

3 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines to the attention of masters, seafarers, shipowners, ship operators and any other interested parties;

4 AGREES to keep the Guidelines under review in light of experience gained with their implementation and in light of the review of EEXI regulations to be completed by the Organization by 1 January 2026 as identified in regulation 25.3 of MARPOL Annex VI.

ANNEX

**2021 GUIDELINES ON SURVEY AND CERTIFICATION OF THE ATTAINED ENERGY
EFFICIENCY EXISTING SHIP INDEX (EEXI)**

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1 GENERAL

The purpose of these guidelines is to assist verifiers of the Energy Efficiency Existing Ship Index (EEXI) of ships in conducting the survey and certification of the EEXI, in accordance with regulations 5, 6, 7, 8 and 9 of MARPOL Annex VI, and assist shipowners, shipbuilders, manufacturers and other interested parties in understanding the procedures for the survey and certification of the EEXI.

2 DEFINITIONS¹

2.1 *Verifier* means an Administration, or organization duly authorized by it, which conducts the survey and certification of the EEXI in accordance with regulations 5, 6, 7, 8 and 9 of MARPOL Annex VI and these Guidelines.

2.2 *Ship of the same type* means a ship the hull form (expressed in the lines such as sheer plan and body plan), excluding additional hull features such as fins, and principal particulars of which are identical to that of the base ship.

2.3 *Tank test* means model towing tests, model self-propulsion tests and model propeller open water tests. Numerical calculations may be accepted as equivalent to model propeller open water tests or used to complement the tank tests conducted (e.g. to evaluate the effect of additional hull features such as fins, etc. on ships' performance), or as a replacement for model tests provided that the methodology and numerical model used have been validated/calibrated against parent hull sea trials and/or model tests, with the approval of the verifier.

2.4 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto, as amended.

2.5 For the purpose of these Guidelines, the definitions in MARPOL Annex VI, as amended, apply.

3 APPLICATION

These Guidelines should be applied to ships for which an application for a survey for verification of the ship's EEXI specified in regulation 5 of MARPOL Annex VI has been submitted to a verifier.

4 PROCEDURES FOR SURVEY AND CERTIFICATION

4.1 General

4.1.1 The attained EEXI should be calculated in accordance with regulation 23 of MARPOL Annex VI and the *2021 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.333(76)) (EEXI Calculation Guidelines).

4.1.2 The 2013 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI (MEPC.1/Circ.815) should be applied for calculation of the attained EEXI, if applicable.

¹ Other terms used in these Guidelines have the same meaning as those defined in the *2018 Guidelines on the method of calculation of the attained EEDI for new ships* (resolution MEPC.308(73), as amended) and the *2021 Guidelines on the method of calculation of the attained EEXI* (resolution MEPC.333(76)).

4.1.3 The information used in the verification process may contain confidential information of submitters, including shipyards, which requires Intellectual Property Rights (IPR) protection. In the case where the submitter wants a non-disclosure agreement with the verifier, the additional information should be provided to the verifier upon mutually agreed terms and conditions.

4.2 Verification of the attained EEXI

4.2.1 For verification of the attained EEXI, an application for a survey and an EEXI Technical File containing the necessary information for the verification and other relevant background documents should be submitted to a verifier, unless the attained EEDI of the ship satisfies the required EEXI.

4.2.2 The EEXI Technical File should be written at least in English. The EEXI Technical File should include, but not be limited to:

- .1 deadweight (DWT) or gross tonnage (GT) for ro-ro passenger ship and cruise passenger ship having non-conventional propulsion;
- .2 the rated installed power (MCR) of the main and auxiliary engines;
- .3 the limited installed power (MCR_{lim}) in cases where the overridable Shaft / Engine Power Limitation system is installed;
- .4 the ship speed (V_{ref});
- .5 the approximate ship speed ($V_{ref,app}$) for pre-EEDI ships in cases where the speed-power curve is not available, as specified in paragraph 2.2.3.5 of the EEXI Calculation Guidelines;
- .6 an approved speed-power curve under the EEDI condition as specified in paragraph 2.2 of the EEDI Calculation Guidelines, which is described in the EEDI Technical File, in cases where regulation 22 of MARPOL Annex VI (Attained EEDI) is applied;
- .7 an estimated speed-power curve under the EEDI condition, or under a different load draught to be calibrated to the EEDI condition, obtained from tank test and/or numerical calculations, if available;
- .8 estimation process and methodology of the power curves, as necessary, including documentation on consistency with the defined quality standards (e.g. ITTC 7.5-03-01-02 and ITTC 7.5-03-01-04 in their latest revisions) and the verification of the numerical set-up with parent hull or the reference set of comparable ships in case of using numerical calculations;
- .9 a sea trial report including sea trial results, which may have been calibrated by the tank test, under the sea condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines, if available;
- .10 calculation process of $V_{ref,app}$ for pre-EEDI ships in cases where the speed-power curve is not available, as specified in paragraph 2.2.3.5 of the EEXI Calculation Guidelines;
- .11 type of fuel;

- .12 the specific fuel consumption (*SFC*) of the main and auxiliary engines, as specified in paragraph 2.2.3 of the EEXI Calculation Guidelines;
- .13 the electric power table² for certain ship types, as necessary, as defined in the EEDI Calculation Guidelines;
- .14 the documented record of annual average figure of the auxiliary engine load at sea obtained prior to the date of application for a survey for verification of the ship's EEXI, as specified in paragraph 2.2.2.3 of the EEXI Calculation Guidelines, if applicable;
- .15 calculation process of $P_{AE,app}$, as specified in paragraph 2.2.2.3 of the EEXI Calculation Guidelines, if applicable;
- .16 principal particulars, ship type and the relevant information to classify the ship as such a ship type, classification notations and an overview of the propulsion system and electricity supply system on board;
- .17 description of energy saving equipment, if available;
- .18 calculated value of the attained EEXI, including the calculation summary, which should contain, at a minimum, each value of the calculation parameters and the calculation process used to determine the attained EEXI; and
- .19 for LNG carriers:
 - .1 type and outline of propulsion systems (such as direct drive diesel, diesel electric, steam turbine);
 - .2 LNG cargo tank capacity in m³ and BOR as defined in paragraph 2.2.5.6.3 of the EEDI Calculation Guidelines;
 - .3 shaft power of the propeller shaft after transmission gear at 100% of the rated output of motor (MPP_{Motor}) and $\eta_{(i)}$ for diesel electric;
 - .4 shaft power of the propeller shaft after transmission gear at the de-rated output of motor ($MPP_{Motor,lim}$) in cases where the overridable Shaft / Engine Power Limitation is installed;
 - .5 maximum continuous rated power ($MCR_{SteamTurbine}$) for steam turbine;
 - .6 limited maximum continuous rated power ($MCR_{SteamTurbine,lim}$) for steam turbine in cases where the overridable Shaft / Engine Power Limitation is installed; and
 - .7 $SFC_{SteamTurbine}$ for steam turbine, as specified in paragraph 2.2.7.2 of the EEDI Calculation Guidelines. If the calculation is not available from the manufacturer, $SFC_{SteamTurbine}$ may be calculated by the submitter.

A sample of an EEXI Technical File is provided in the appendix.

² Electric power tables should be validated separately, taking into account the guidelines set out in appendix 2 of the 2014 *Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI)* (resolution MEPC.254(67), as amended by resolutions MEPC.261(68) and MEPC.309(73)); consolidated text: MEPC.1/Circ.855/Rev.2, as may be further amended).

4.2.3 The *SFC* should be corrected to the value corresponding to the ISO standard reference conditions using the standard lower calorific value of the fuel oil, referring to ISO 15550:2002 and ISO 3046-1:2002. For the confirmation of the *SFC*, a copy of the approved NO_x Technical File and documented summary of the correction calculations should be submitted to the verifier.

4.2.4 For ships equipped with dual-fuel engine(s) using LNG and fuel oil, the *C_F*-factor for gas (LNG) and the specific fuel consumption (*SFC*) of gas fuel should be used by applying the criteria specified in paragraph 4.2.3 of the *2014 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI)*, as amended,³ as a basis for the guidance of the Administration.

4.2.5 Notwithstanding paragraphs 4.2.3 and 4.2.4, in cases where overridable Shaft / Engine Power Limitation is installed, or in cases where engines do not have a test report included in the NO_x Technical File, *SFC* should be calculated in accordance with paragraph 2.2.3 of the EEXI Calculation Guidelines. For this purpose, actual performance records of the engine may be used if satisfactory and acceptable to the verifier.

4.2.6 The verifier may request further information from the submitter, as specified in paragraph 4.2.7 of the EEDI Survey and Certification Guidelines, in addition to that contained in the EEXI Technical File, as necessary, to examine the calculation process of the attained EEXI.

4.2.7 In cases where the sea trial report as specified in paragraph 4.2.2.9 is submitted, the verifier should request further information from the submitter to confirm that:

- .1 the sea trial was conducted in accordance with the conditions specified in paragraphs 4.3.3, 4.3.4 and 4.3.7 of the EEDI Survey and Certification Guidelines, as applicable;
- .2 sea conditions were measured in accordance with ISO 15016:2002 or the equivalent if satisfactory and acceptable to the verifier;
- .3 ship speed was measured in accordance with ISO 15016:2002 or the equivalent if satisfactory and acceptable to the verifier; and
- .4 the measured ship speed was calibrated, if necessary, by taking into account the effects of wind, tide, waves, shallow water and displacement in accordance with ISO 15016:2002 or the equivalent which may be acceptable provided that the concept of the method is transparent for the verifier and publicly available/accessible.

4.2.8 The estimated speed-power curve obtained from the tank test and/or numerical calculations and/or the sea trial results calibrated by the tank test should be reviewed on the basis of the relevant documents in accordance with the EEDI Survey and Certification Guidelines, the defined quality standards (e.g. ITTC 7.5-03-01-02 and ITTC 7.5-03-01-04 in their latest revisions) and the verification of the numerical set-up with parent hull or the reference set of comparable ships.

4.2.9 In cases where the overridable Shaft / Engine Power Limitation system is installed, the verifier should confirm that the system is appropriately installed and sealed in accordance with the *2021 Guidelines on the Shaft / Engine Power Limitation system to comply with the EEXI requirements and use of a power reserve* (resolution MEPC.335(76)) and that a verified Onboard Management Manual (OMM) for overridable Shaft / Engine Power Limitation is on board the ship.

³ Resolution MEPC.254(67), as amended.

4.3 Verification of the attained EEXI in case of major conversion

4.3.1 In cases of a major conversion of a ship taking place at or after the completion date of the survey for EEXI verification specified in regulation 5.4.7 of MARPOL Annex VI, the shipowner should submit to a verifier an application for a general or partial survey with the EEXI Technical File duly revised, based on the conversion made and other relevant background documents.

4.3.2 The background documents should include as a minimum, but are not limited to:

- .1 details of the conversion;
- .2 EEXI parameters changed after the conversion and the technical justifications for each respective parameter;
- .3 reasons for other changes made in the EEXI Technical File, if any; and
- .4 calculated value of the attained EEXI with the calculation summary, which should contain, as a minimum, each value of the calculation parameters and the calculation process used to determine the attained EEXI after the conversion.

4.3.3 The verifier should review the revised EEXI Technical File and other documents submitted and verify the calculation process of the attained EEXI to ensure that it is technically sound and reasonable and follows regulation 23 of MARPOL Annex VI and the EEXI Calculation Guidelines.

4.3.4 For verification of the attained EEXI after the major conversion, speed trials of the ship may be conducted, as necessary.

APPENDIX

SAMPLE OF EEXI TECHNICAL FILE

1 Data

1.1 General information

Shipowner	XXX Shipping Line
Shipbuilder	XXX Shipbuilding Company
Hull no.	12345
IMO no.	94112XX
Ship type	Bulk carrier

1.2 Principal particulars

Length overall	250.0 m
Length between perpendiculars	240.0 m
Breadth, moulded	40.0 m
Depth, moulded	20.0 m
Summer load line draught, moulded	14.0 m
Deadweight at summer load line draught	150,000 tons

1.3 Main engine

Manufacturer	XXX Industries
Type	6J70A
Maximum continuous rating (MCR_{ME})	15,000 kW x 80 rpm
Limited maximum continuous rating with the Engine Power Limitation installed ($MCR_{ME,lim}$)	9,940 kW x 70 rpm
SFC at 75% of MCR_{ME} or 83% of $MCR_{ME,lim}$	166.5 g/kWh
Number of sets	1
Fuel type	Diesel Oil

1.4 Auxiliary engine

Manufacturer	XXX Industries
Type	5J-200
Maximum continuous rating (MCR_{AE})	600 kW x 900 rpm
SFC at 50% MCR_{AE}	220.0 g/kWh
Number of sets	3
Fuel type	Diesel Oil

1.5 Ship speed

Ship speed (V_{ref}) (with the Engine Power Limitation installed)	13.20 knots
---	-------------

2 Power curve

(Example 1; case of the EEDI ship)

An approved speed-power curve contained in the EEDI Technical File is shown in figure 2.1.

(Example 2; case of the pre-EEDI ship)

An estimated speed-power curve obtained from the tank test and/or numerical calculations, if available, is also shown in figure 2.1.

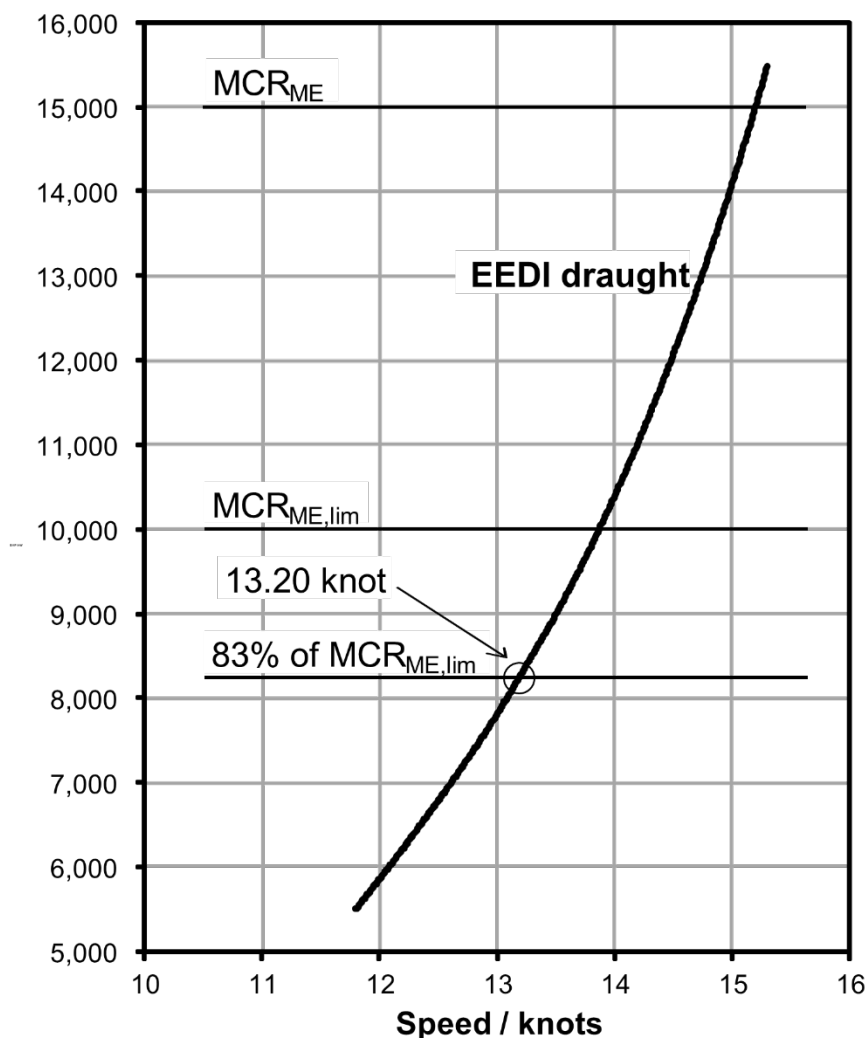


Figure 2.1: Power curve

(Example 3; case of the pre-EEDI ship with sea trial result calibrated to a different load draught)

An estimated speed-power curve under a ballast draught calibrated to the design load draught, obtained from the tank test and/or numerical calculations, if available, is shown in figure 2.2.

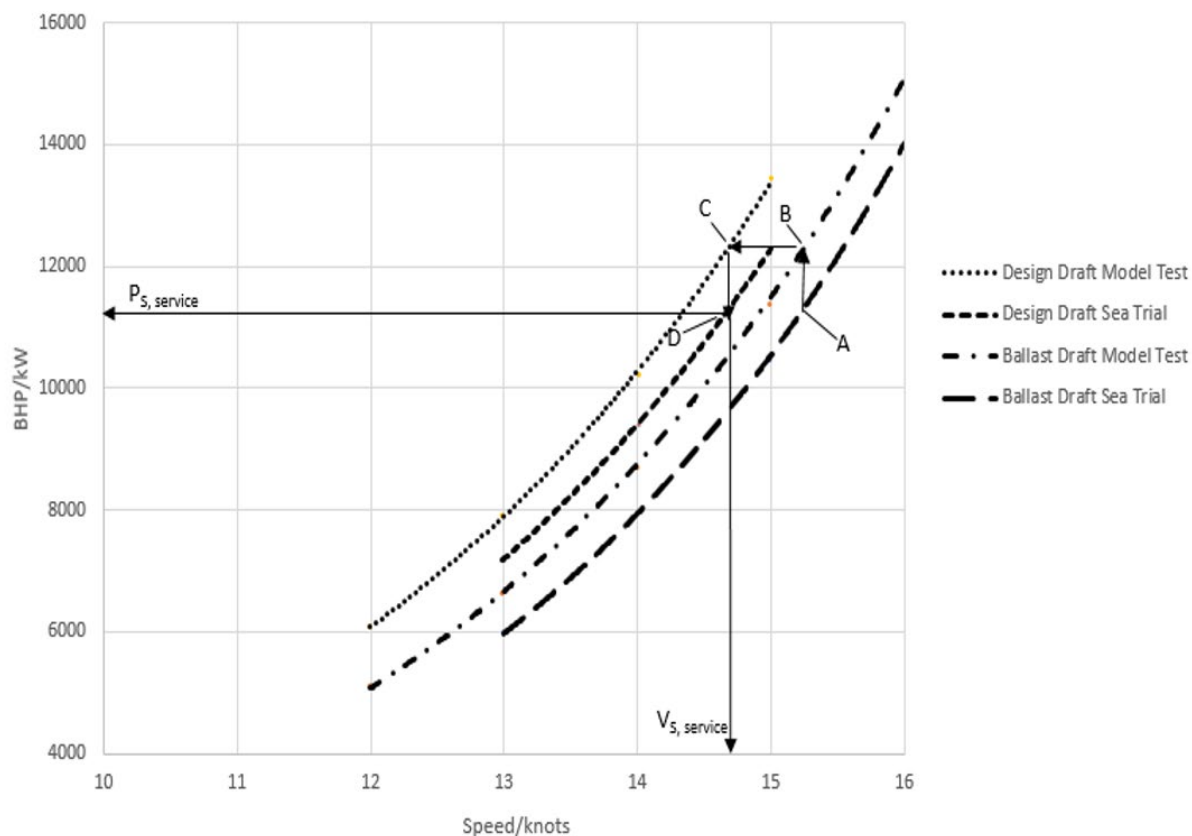


Figure 2.2: Power curve

3 Overview of propulsion system and electric power supply system

3.1 Propulsion system

3.1.1 Main engine

Refer to paragraph 1.3 of this appendix.

3.1.2 Propeller

Type	Fixed pitch propeller
Diameter	7.0 m
Number of blades	4
Number of sets	1

3.2 Electric power supply system

3.2.1 Auxiliary engines

Refer to paragraph 1.4 of this appendix.

3.2.2 Main generators

Manufacturer	XXX Electric
Rated output	560 kW (700 kVA) x 900 rpm
Voltage	AC 450 V
Number of sets	3

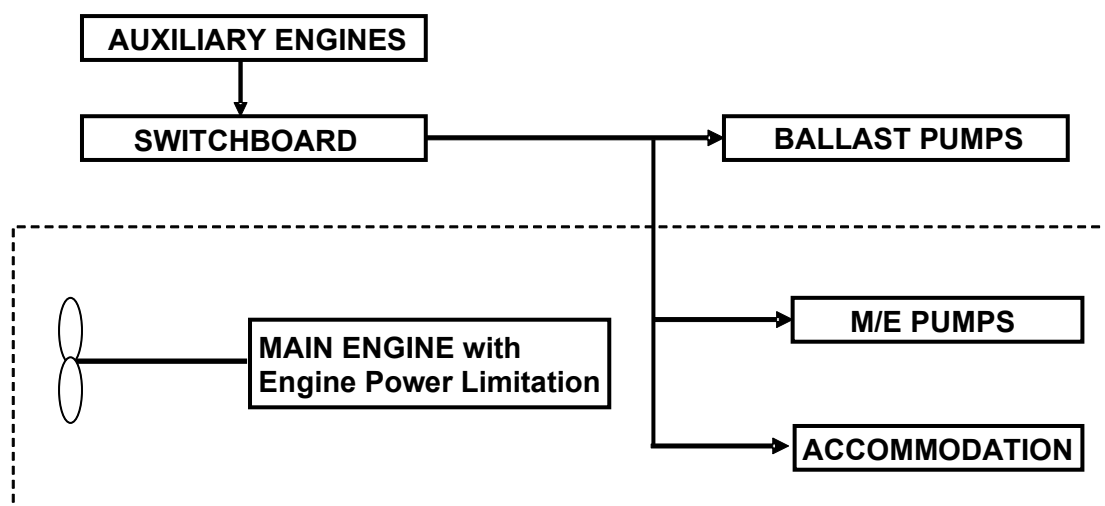


Figure 3.1: Schematic figure of propulsion and electric power supply system

4 Estimation process of speed-power curve

(Example; case of pre-EEDI ship)

Speed-power curve is estimated based on model test results and/or numerical calculations, if available. The flow of the estimation processes is shown below.

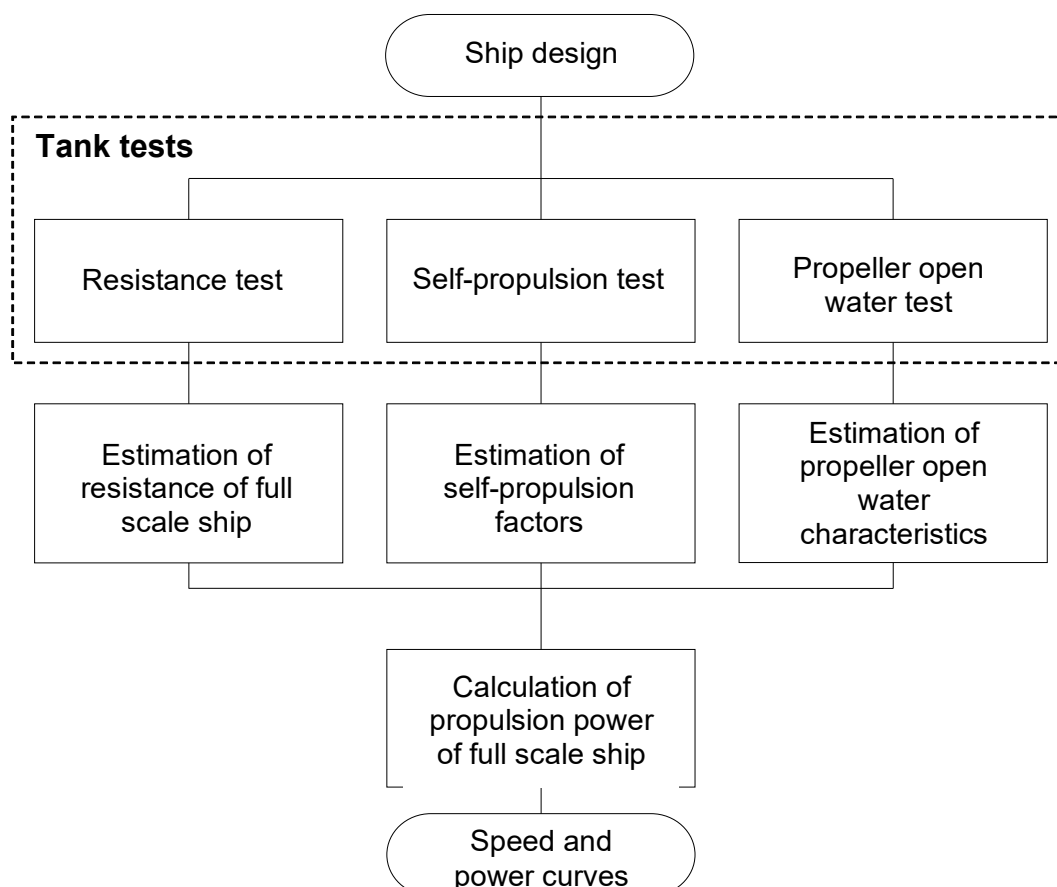


Figure 4: Flow chart of process for estimating speed-power curve from tank tests

5 Description of energy saving equipment

5.1 Energy saving equipment the effects of which are expressed as $P_{AEff(i)}$ and/or $P_{eff(i)}$ in the EEXI calculation formula

N/A

5.2 Other energy saving equipment

(Example)

5.2.1 Rudder fins

5.2.2 Rudder bulb

.....

(Specifications, schematic figures and/or photos, etc. for each piece of equipment or device should be indicated. Alternatively, attachment of a commercial catalogue may be acceptable.)

6 Calculated value of attained EEXI

6.1 Basic data

Type of ship	Capacity DWT	Speed V_{ref} (knots)
Bulk carrier	150,000	13.20

6.2 Main engine

MCR_{ME} (kW)	$MCR_{ME,lim}$ (kW)	P_{ME} (kW)	Type of fuel	C_{FME}	SFC_{ME} (g/kWh)
15,000	9,940	8,250	Diesel oil	3.206	166.5

6.3 Auxiliary engines

P_{AE} (kW)	Type of fuel	C_{FAE}	SFC_{AE} (g/kWh)
625	Diesel oil	3.206	220.0

6.4 Ice class

N/A

6.5 Innovative electrical energy-efficient technology

N/A

6.6 Innovative mechanical energy-efficient technology

N/A

6.7 Cubic capacity correction factor

N/A

6.8 Calculated value of attained EEXI

$$\begin{aligned}
 EEXI &= \frac{(\prod_{j=1}^M f_j)(\sum_{i=1}^{n_{ME}} P_{ME(i)} \cdot C_{FME(i)} \cdot SFC_{ME(i)}) + (P_{AE} \cdot C_{FAE} \cdot SFC_{AE})}{f_i \cdot f_c \cdot f_l \cdot Capacity \cdot f_w \cdot V_{ref} \cdot f_m} \\
 &+ \frac{\{(\prod_{j=1}^M f_j \cdot \sum_{i=1}^{n_{PTI}} P_{PTI(i)} - \sum_{i=1}^{n_{eff}} f_{eff(i)} \cdot P_{AE_{eff(i)}})\} \cdot C_{FAE} \cdot SFC_{AE}}{f_i \cdot f_c \cdot f_l \cdot Capacity \cdot f_w \cdot V_{ref} \cdot f_m} \\
 &- \frac{(\sum_{i=1}^{n_{eff}} f_{eff(i)} \cdot P_{eff(i)} \cdot C_{FME} \cdot SFC_{ME})}{f_i \cdot f_c \cdot f_l \cdot Capacity \cdot f_w \cdot V_{ref} \cdot f_m} \\
 &= \frac{1 \times (8250 \times 3.206 \times 166.5) + (625 \times 3.206 \times 220.0) + 0 - 0}{1 \times 1 \times 1 \times 150000 \times 1 \times 13.20 \times 1} \\
 &= 2.45 \text{ (g - CO}_2\text{/ton} \cdot \text{mile)}
 \end{aligned}$$

attained EEXI: 2.45 g-CO₂/ton mile

ANNEX 9

**RESOLUTION MEPC.335(76)
(adopted on 17 June 2021)**

**2021 GUIDELINES ON THE SHAFT / ENGINE POWER LIMITATION SYSTEM TO
COMPLY WITH THE EEXI REQUIREMENTS AND USE OF A POWER RESERVE**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

NOTING that it adopted, by resolution MEPC.328(76), the 2021 revised MARPOL Annex VI, which is expected to enter into force on 1 November 2022 upon its deemed acceptance on 1 May 2022,

NOTING IN PARTICULAR that the 2021 revised MARPOL Annex VI contains amendments concerning mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping,

NOTING FURTHER that ships may be equipped with a Shaft / Engine Power Limitation system in order to comply with regulation 25 (Required EEXI),

RECOGNIZING that the aforementioned amendments to MARPOL Annex VI require relevant guidelines for uniform and effective implementation of the regulations and to provide sufficient lead time for industry to prepare,

HAVING CONSIDERED, at its seventy-sixth session, draft *2021 Guidelines on the shaft / engine power limitation system to comply with the EEXI requirements and use of a power reserve*,

1 ADOPTS the *2021 Guidelines on the shaft / engine power limitation system to comply with the EEXI requirements and use of a power reserve*, as set out in the annex to the present resolution;

2 INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement requirements set forth in regulations 23 and 25 of MARPOL Annex VI;

3 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines to the attention of masters, seafarers, shipowners, ship operators and any other interested parties;

4 AGREES to keep the Guidelines under review in light of experience gained with their implementation and in light of the review of EEXI regulations to be completed by the Organization by 1 January 2026 as identified in regulation 25.3 of MARPOL Annex VI;

5 NOTES that the Guidelines may be consolidated with possible future guidelines on the shaft / engine power limitation system under the EEDI framework as appropriate upon consideration by the Committee, taking into account circumstances and technical limitation of existing ships.

ANNEX

**2021 GUIDELINES ON THE SHAFT / ENGINE POWER LIMITATION SYSTEM TO
COMPLY WITH THE EEXI REQUIREMENTS AND USE OF A POWER RESERVE**

Table of contents

0	General
1	Definitions
2	Technical requirements for the SHaPoLi / EPL system
3	Use of a power reserve by unlimiting the shaft / engine power limitation
4	Onboard Management Manual (OMM) for SHaPoLi / EPL
5	Demonstration of compliance of the SHaPoLi / EPL system

0 General

The purpose of these Guidelines is to provide technical and operational conditions that the SHaPoLi / EPL system should satisfy in complying with the EEXI requirements and in using a power reserve for existing ships. However, noting that guidelines on the SHaPoLi / EPL system under EEDI framework on new ships are currently considered at the Committee, these guidelines under EEXI and EEDI may be consolidated into one set of guidelines as appropriate upon consideration by the Committee, taking into account circumstances and technical limitation of existing ships.

1 Definitions

1.1 *Shaft power* means the mechanical power transmitted by the propeller shaft to the propeller hub. It is the product of the shaft torque and the shaft rotational speed. In case of multiple propeller shafts, the shaft power means the sum of the power transmitted to all propeller shafts.

1.2 *Engine power* means the mechanical power transmitted from the engine to the propeller shaft. In case of multiple engines, the engine power means the sum of the power transmitted from the engines to the propeller shafts.

1.3 *Overridable Shaft Power Limitation (SHaPoLi) system* means a verified and approved system for the limitation of the maximum shaft power by technical means that can only be overridden by the ship's master or the officer in charge of navigational watch (OICNW) for the purpose of securing the safety of a ship or saving life at sea. (See figure 1 for an illustration of engine load diagram.)

1.4 *Overridable Engine Power Limitation (EPL) system* means a verified and approved system for the limitation of the maximum engine power by technical means that can only be overridden by the ship's master or OICNW for the purpose of securing the safety of a ship or saving life at sea. (See figure 1 for an illustration of engine load diagram.)

1.5 *Power reserve* means shaft / engine power above the limited power which cannot be used in normal operation unless in the case when SHaPoLi / EPL is unlimited for the purpose of securing the ship safety.

1.6 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto, as amended.

1.7 For the purpose of these Guidelines, the definitions in MARPOL Annex VI, as amended, apply.

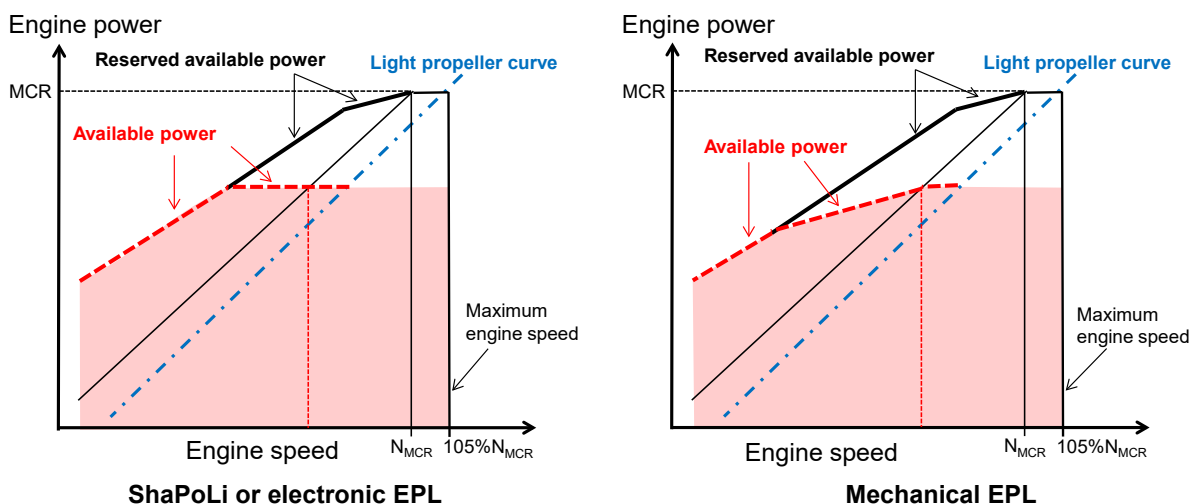


Figure 1: Engine load diagram on Shaft/Engine Power Limitation

2 Technical requirements for the SHaPoLi / EPL system

2.1 Required main systems

The SHaPoLi / EPL system should consist of the following main arrangements:

- .1 SHaPoLi:
 - .1 sensors for measuring the torque and rotational speed delivered to the propeller(s) of the ship. The system includes the amplifier and the analogue to the digital converter;
 - .2 a data recording and processing device for tracking and calculation of the data as given in paragraph 2.2.5.1 of these Guidelines; and
 - .3 a control unit for calculation and limitation of the power transmitted by the shaft to the propeller(s);
- .2 EPL:
 - .1 for the mechanically controlled engine, a sealing device which can physically lock the fuel index by using a mechanical stop screw sealed by wire or an equivalent device with governor limit setting so that the ship's crew cannot release the EPL without permission from the ship's master or OICNW, as shown in figure 2; or
 - .2 for the electronically controlled engine, fuel index limiter which can electronically lock the fuel index or direct limitation of the power in the engine's control system so that the ship's crew cannot release the EPL without permission from the ship's master or OICNW; and
 - .3 where technically possible and feasible, the Sha/PoLi/EPL system should be controlled from the ships' bridge and not require attendance in the machinery space by ship's personnel.

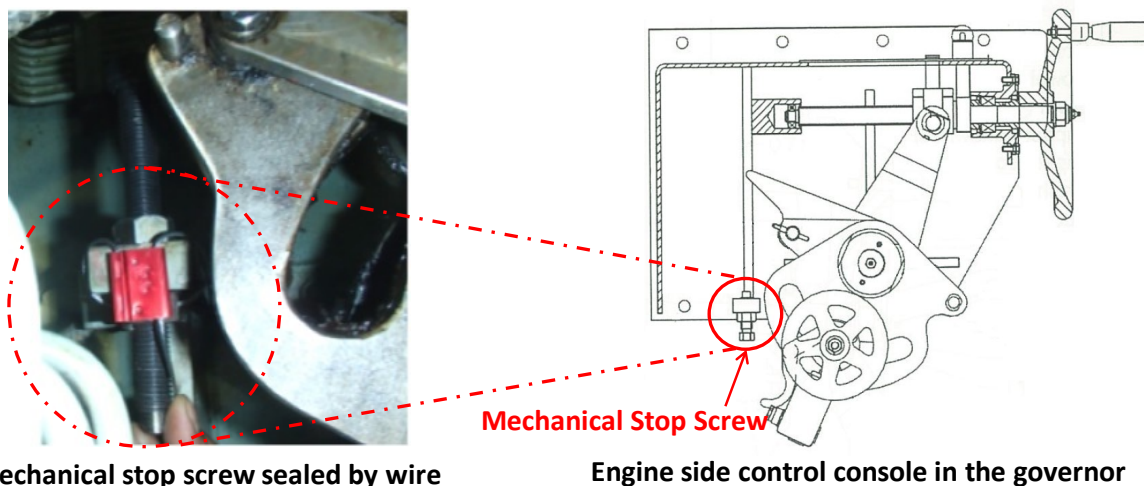


Figure 2: Sealing of mechanical stop screw

2.2 General system requirements

2.2.1 The SHaPoLi / EPL system should be non-permanent but should require the deliberate action of the ship's master or OICNW to enable the use of unlimited shaft / engine power (power reserve) of the ship. For systems that use a Password/PIN to control access to the power reserve override, attention should be paid to ensure that the necessary Password/PIN is always available when override is required.

2.2.2 For SHaPoLi / EPL system for the electronically controlled engine, the control unit should inform the ship's master or OICNW clearly and conspicuously when the ship's shaft / engine power exceeds the limited shaft / engine power as stated in the Onboard Management Manual (OMM) for SHaPoLi / EPL or in any case of system malfunction.

2.2.3 For EPL for the mechanically controlled engine, the sealing device should either:

- .1 visibly indicate removal of the sealing when the ship's engine power exceeds the limited engine power as stated in the OMM for EPL or in any case of system malfunction; or
- .2 be equipped with other systems such as an alert-monitoring system which can indicate when the ship's engine power exceeds the limited engine power as stated in the OMM for EPL or in any case of system malfunction and recording the use of unlimited mode, verified by the Administration or the RO.

2.2.4 The SHaPoLi / EPL system (or each subsystem) should be tamper-proof.

2.2.5 The SHaPoLi / EPL system for the electronically controlled engine should indicate the following data during operation:

- .1 for SHaPoLi, shaft rotational speed, shaft torque and shaft power (and total shaft power in case of multiple shaft arrangements) to be recorded constantly in unlimiting mode; or
- .2 for EPL, a fuel index sealing system or power limitation system which can indicate and record the use of unlimited mode.

2.2.6 The procedure for SHaPoLi / EPL depends on the propulsion system and should be described in the OMM for SHaPoLi / EPL in accordance with section 4 of these Guidelines.

3 Use of a power reserve by un-limiting the shaft / engine power limitation

3.1 The use of a power reserve is only allowed for the purpose of securing the safety of a ship or saving life at sea, consistent with regulation 3.1 of MARPOL Annex VI (e.g. operating in adverse weather and ice-infested waters, participation in search and rescue operations, avoidance of pirates and engine maintenance). Use of a power reserve should not have adverse impact on the propeller, shaft and related systems. It is important that the ship master and OICNW are not restricted from exercising judgement to override the SHaPoLi / EPL when required for safety purposes. The authority for this should be clearly set out in the OMM and/or the Safety Management System manual, as appropriate.

3.2 Any use of a power reserve should be recorded in the record page of the OMM for SHaPoLi / EPL, signed by the master and should be kept on board. The record should include:

- .1 ship type;
- .2 IMO number;
- .3 ship size in DWT and/or GT, as applicable;
- .4 ship's limited shaft / engine power and ship's maximum unlimited shaft / engine power;
- .5 position of the ship and timestamp when the power reserve was used;
- .6 reason for using the power reserve;
- .7 Beaufort number and wave height or ice condition in case of using the power reserve under adverse weather condition;
- .8 supporting evidence (e.g. expected weather condition) in case of using the power reserve for avoidance action;
- .9 records from the SHaPoLi / EPL system for the electronically controlled engine during the power reserve was used; and
- .10 position of the ship and timestamp when the power limit was reactivated or replaced.

3.3 Where an EPL/ShaPoLi override is activated but the power reserve is not subsequently used, this event should be recorded in the bridge and engine-room logbooks. The engine-room logbook should record power used during the period when the override was activated. The EPL/ShaPoLi should be reset as soon as possible, and details of the reset should also be recorded in the bridge and engine-room logbooks.

3.4 In case of having used a power reserve, the ship should without delay notify its Administration or RO responsible for issuing the relevant certificate and the competent authority of the relevant port of destination with the information recorded in accordance with paragraph 3.2. On an annual basis, the Administration should report uses of a power reserve to IMO with the information recorded in accordance with paragraph 3.2.

3.5 Once the risks have been mitigated, the ship should be operated below the certified level of engine power under the SHaPoLi / EPL. The SHaPoLi / EPL system should be reactivated or replaced by the crew immediately after the risks have been prevented and the ship can be safely operated with the limited shaft / engine power. The reactivation or replacement of the SHaPoLi / EPL system should be confirmed (e.g. validation of mechanical sealing) with supporting evidence (e.g. engine power log, photo taken at the occasion of resetting the mechanical sealing) by the Administration or the RO at the earliest opportunity.

3.6 Any defect of the SHaPoLi / EPL system should be reported to the Administration or RO responsible for issuing the relevant certificate in accordance with regulation 5.6 of MARPOL Annex VI.

3.7 The port State control officers should inspect whether the SHaPoLi / EPL system has been properly installed and used in accordance with the IEE Certificate and the OMM as described in section 4 of these Guidelines. If overriding of the SHaPoLi / EPL without proper notification in accordance with paragraph 3.3 of these Guidelines has been detected, the reactivation or replacement of the SHaPoLi / EPL should be immediately conducted in the presence of the Administration or the RO at the port.

4 Onboard Management Manual (OMM) for SHaPoLi / EPL

4.1 The SHaPoLi / EPL system should be accompanied by the OMM for SHaPoLi / EPL that should be permanently on board the ship for inspection.

4.2 The OMM for SHaPoLi / EPL should be verified by the Administration or the RO after a survey verifying the ship's attained EEXI, as required by regulation 5.4 of MARPOL Annex VI.

4.3 The OMM for SHaPoLi / EPL should, as a minimum, include:

.1 SHaPoLi:

- .1 a technical description of the main system as specified in section 2 of these guidelines as well as relevant auxiliary systems;
- .2 identification of key components of the system by manufacturer, model/type, serial number and other details as necessary;
- .3 description of a verification procedure demonstrating that the system is in compliance with the technical description in accordance with items .1 and .2;
- .4 the maximum shaft power for which the unit is designed;
- .5 service, maintenance and calibration requirements of sensors according to sensor manufacturer and a description how to monitor the appropriateness of the calibration intervals, if applicable;
- .6 the SHaPoLi record book for the recording of service, maintenance and calibration of the system;
- .7 the description how the shaft power can be limited and unlimited and how this is displayed by the control unit as required by paragraph 2.2.5 of these Guidelines;

- .8 the description of how the controller limits the power delivered to the propeller shaft;
 - .9 the identification of responsibilities;
 - .10 procedures for notification of the use of power reserve and the detections of malfunctions of the system in accordance with paragraphs 3.4 and 3.5 of these Guidelines;
 - .11 time required for un-limiting the SHaPoLi; and
 - .12 procedures for survey of the SHaPoLi system by the Administration/RO.
- .2 EPL:
- .1 rated installed power (MCR) or motor output (MPP) and engine speed (N_{MCR});
 - .2 limited installed power (MCR_{lim}) or motor output (MPP_{lim}) and engine speed ($N_{MCR,lim}$);
 - .3 technical description of the EPL system;
 - .4 method for sealing the EPL (mechanically controlled engine);
 - .5 method for locking and monitoring the EPL (electronically controlled engine);
 - .6 procedures and methods for releasing the EPL;
 - .7 time required for unlimiting the EPL;
 - .8 procedures for survey of the EPL system by the Administration/RO;
 - .9 procedure for the report on release of the EPL; and
 - .10 administrator of the EPL system.

5 Demonstration of compliance of the SHaPoLi / EPL system

5.1 The demonstration of compliance of the SHaPoLi / EPL system should be verified by an appropriate survey in accordance with regulation 5.4 of MARPOL Annex VI for the verification of the ship's EEXI according to regulation 23. The survey should include the verification and validation of the system by addressing the following items:

- .1 the verification of compliance of the system with the OMM for SHaPoLi / EPL;
- .2 the verification of compliance of the system with the specifications set out in section 2 of these Guidelines; and
- .3 the verification of the OMM for SHaPoLi / EPL that the OMM for SHaPoLi / EPL is in compliance with the specifications set out in section 4 of these Guidelines.

5.2 In cases where the SHaPoLi / EPL system is applied and no changes are made to NO_x critical settings and/or components* outside what is allowed by the engine technical file as defined in the 2008 NO_x Technical Code (NTC 2008), engine re-certification is not needed.

5.3 In cases where the SHaPoLi / EPL system is applied and the NO_x critical settings and/or components are altered beyond what is allowed by the engine technical file as defined in NTC 2008, the engine needs to be re-certified. In such a case, for an EEDI-certified ship where the SHaPoLi / EPL system is applied at a power below that required by regulation 24.5 of MARPOL Annex VI (minimum power requirement), the certified engine power should be at the power satisfying that requirement.

* NO_x critical parameters and components are listed in NO_x Technical File under the section "Components, setting and operating values of the engine which may influence its NO_x emission".

ANNEX 10

**RESOLUTION MEPC.336(76)
(adopted on 17 June 2021)**

**2021 GUIDELINES ON OPERATIONAL CARBON INTENSITY INDICATORS AND THE
CALCULATION METHODS (CII GUIDELINES, G1)**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

NOTING that it adopted, by resolution MEPC.328(76), the 2021 revised MARPOL Annex VI, which is expected to enter into force on 1 November 2022 upon its deemed acceptance on 1 May 2022,

NOTING IN PARTICULAR that the 2021 revised MARPOL Annex VI contains amendments concerning mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping,

NOTING FURTHER that regulation 28.1 of MARPOL Annex VI requires ships to which this regulation apply to calculate the attained annual operational CII taking into account the guidelines developed by the Organization,

RECOGNIZING that the aforementioned amendments to MARPOL Annex VI require relevant guidelines for uniform and effective implementation of the regulations and to provide sufficient lead time for industry to prepare,

HAVING CONSIDERED, at its seventy-sixth session, draft *2021 Guidelines on operational carbon intensity indicators and the calculation methods (CII Guidelines, G1)*,

1 ADOPTS the *2021 Guidelines on operational carbon intensity indicators and the calculation methods (CII Guidelines, G1)*, as set out in the annex to the present resolution;

2 INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement requirements set forth in regulation 28.1 of MARPOL Annex VI;

3 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines to the attention of masters, seafarers, shipowners, ship operators and any other interested parties;

4 AGREES to consider substantiated proposals for CII correction factors for certain ship types, operational profiles and/or voyages with a view to enhancing, as appropriate, the annexed Guidelines before entry into force of the aforementioned amendments to MARPOL Annex VI;

5 AGREES to keep the Guidelines under review in light of experience gained with their implementation and in light of the review of CII regulations to be completed by the Organization by 1 January 2026 as identified in regulation 28.11 of MARPOL Annex VI.

ANNEX

2021 GUIDELINES ON OPERATIONAL CARBON INTENSITY INDICATORS AND THE CALCULATION METHODS (CII GUIDELINES, G1)

1 Introduction

1.1 In the *Initial IMO Strategy on Reduction of GHG Emissions from Ships* (Resolution MEPC.304(72)), the level of ambition on carbon intensity of international shipping is quantified by the CO₂ emissions per transport work, as an average across international shipping.

1.2 These Guidelines address the calculation methods and the applicability of the operational carbon intensity indicator (CII) for individual ships to which chapter 4 of MARPOL Annex VI, as amended, applies.

2 Definitions

2.1 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto, as amended.

2.2 *IMO DCS* means the data collection system for fuel oil consumption of ships referred to in regulation 27 and related provisions of MARPOL Annex VI.

2.3 For the purpose of these Guidelines, the definitions in MARPOL Annex VI, as amended, apply.

2.4 The metrics indicating the average CO₂ emissions per transport work of a ship are generally referred to as operational carbon intensity indicator (CII) in these Guidelines.

.1 A specific CII calculated based on the actual or estimated mass or volume of the shipment carried on board a ship is generally referred to as *demand-based CII*; and

.2 A specific CII, in which calculation the capacity of a ship is taken as proxy of the actual mass or volume of the shipment carried on board, is generally referred to as *supply-based CII*.

2.5 The supply-based CII which uses DWT as the capacity is referred to as *AER*, and the supply-based CII which uses GT as the capacity is referred to as *cgDIST*.

3 Application

3.1 For all ships to which regulation 28 of MARPOL Annex VI applies, the operational carbon intensity indicators defined in section 4 should be applied.

3.2 The operational carbon intensity indicators defined in section 5 are encouraged to be additionally used by ships, where applicable, for trial purposes.

4 Operational carbon intensity indicator (CII) of individual ships for use in implementing regulation 28 of MARPOL Annex VI

In its most simple form, the attained annual operational CII of individual ships is calculated as the ratio of the total mass of CO₂ (M) emitted to the total transport work (W) undertaken in a given calendar year, as follows:

$$\text{attained } CII_{\text{ship}} = M / W \quad (1)$$

4.1 Mass of CO₂ emissions (M)

The total mass of CO₂ is the sum of CO₂ emissions (in grams) from all the fuel oil consumed on board a ship in a given calendar year, as follows:

$$M = FC_j \times C_{F_j} \quad (2)$$

where:

- J is the fuel oil type;
- FC_j is the total mass (in grams) of consumed fuel oil of type J in the calendar year, as reported under IMO DCS; and
- C_{F_j} represents the fuel oil mass to CO₂ mass conversion factor for fuel oil type J , in line with those specified in the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships (resolution MEPC.308(73))*, as may be further amended. In case the type of the fuel oil is not covered by the guidelines, the conversion factor should be obtained from the fuel oil supplier supported by documentary evidence.

4.2 Transport work (W)

In the absence of the data on actual transport work, the supply-based transport work (W_s) can be taken as a proxy, which is defined as the product of a ship's capacity and the distance travelled in a given calendar year, as follows:

$$W_s = C \times D_t \quad (3)$$

where:

- C represents the ship's capacity:
 - For bulk carriers, tankers, container ships, gas carriers, LNG carriers, ro-ro cargo ships, general cargo ships, refrigerated cargo carrier and combination carriers, deadweight tonnage (DWT)¹ should be used as Capacity;
 - For cruise passenger ships, ro-ro cargo ships (vehicle carriers) and ro-ro passenger ships, gross tonnage (GT)² should be used as Capacity; and
- D_t represents the total distance travelled (in nautical miles), as reported under IMO DCS.

¹ Deadweight tonnage (DWT) means the difference in tonnes between the displacement of a ship in water of relative density of 1,025 kg/m³ at the summer load draught and the lightweight of the ship. The summer load draught should be taken as the maximum summer draught as certified in the stability booklet approved by the Administration or any organization recognized by it.

² Gross tonnage (GT) should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969.

5 Operational carbon intensity indicator (CII) of individual ships for trial purpose

The following metrics are encouraged to be used for trial purposes, where applicable:

- .1 Energy Efficiency Performance Indicator (EEPI)

$$EEPI = \frac{M}{C \times D_l}$$

- .2 cbDIST

$$cbDIST = \frac{M}{ALB \times D_t}$$

- .3 clDIST

$$clDIST = \frac{M}{Lanemeter \times D_t}$$

- .4 EEOI, as defined in MEPC.1/Circ.684 on *Guidelines for voluntary use of the ship energy efficiency operational indicator (EEOI)*.

In the formulas above:

- the mass of CO₂ (M), the ship's capacity (C) and the total distance travelled (D_t) are identical with those used to calculate the attained CII of individual ships, as specified in section 4.1 and 4.2;
- D_l means the laden distance travelled (in nautical miles) when the ship is loaded;
- ALB means the number of available lower berths of a cruise passenger ship; and
- $Lanemeter$ means the length (in metres) of the lanes of a ro-ro ship.

ANNEX 11

**RESOLUTION MEPC.337(76)
(adopted on 17 June 2021)**

**2021 GUIDELINES ON THE REFERENCE LINES FOR USE WITH OPERATIONAL
CARBON INTENSITY INDICATORS (CII REFERENCE LINES GUIDELINES, G2)**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

NOTING that it adopted, by resolution MEPC.328(76), the 2021 revised MARPOL Annex VI, which is expected to enter into force on 1 November 2022 upon its deemed acceptance on 1 May 2022,

NOTING IN PARTICULAR that the 2021 revised MARPOL Annex VI contains amendments concerning mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping,

NOTING FURTHER that regulation 28.4 of MARPOL Annex VI requires reference lines to be established for each ship type to which regulation 28 is applicable,

HAVING CONSIDERED, at its seventy-sixth session, draft *2021 Guidelines on the reference lines for use with operational carbon intensity indicators (CII reference lines guidelines, G2)*,

1 ADOPTS the *2021 Guidelines on the reference lines for use with operational carbon intensity indicators (CII reference lines guidelines, G2)*, as set out in the annex to the present resolution;

2 INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement requirements set forth in regulation 28.4 of MARPOL Annex VI;

3 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines to the attention of masters, seafarers, shipowners, ship operators and any other interested parties;

4 AGREES to keep the Guidelines under review in light of experience gained with their implementation and in light of the review of CII regulations to be completed by the Organization by 1 January 2026 as identified in regulation 28.11 of MARPOL Annex VI.

ANNEX

2021 GUIDELINES ON THE REFERENCE LINES FOR USE WITH OPERATIONAL CARBON INTENSITY INDICATORS (CII REFERENCE LINES GUIDELINES, G2)

1 Introduction

1.1 These Guidelines provide the methods to calculate the reference lines for use with operational carbon intensity indicators, and the ship type specific carbon intensity reference lines as referred to in regulation 28 of MARPOL Annex VI.

1.2 One reference line is developed for each ship type to which regulation 28 of MARPOL Annex VI applies, based on the specific indicators stipulated in *2021 Guidelines on operational carbon intensity indicators and the calculation methods* (G1) developed by the Organization, ensuring that only data from comparable ships are included in the calculation of each reference line.

2 Definition

2.1 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto, as amended.

2.2 *IMO DCS* means the data collection system for fuel oil consumption of ships referred to in regulation 27 and related provisions of MARPOL Annex VI.

2.3 For the purpose of these Guidelines, the definitions in MARPOL Annex VI, as amended, apply.

2.4 An operational carbon intensity indicator (CII) reference line is defined as a curve representing the median attained operational carbon intensity performance, as a function of Capacity, of a defined group of ships in year of 2019.

3 Method to develop the CII reference lines

3.1 Given the limited data available for the year of 2008, the operational carbon intensity performance of ship types in year 2019 is taken as the reference.

3.2 For a defined group of ships, the reference line is formulated as follows:

$$CII_{ref} = aCapacity^{-c} \quad (1)$$

where CII_{ref} is the reference value of year 2019, $Capacity$ is identical with the one defined in the specific carbon intensity indicator (CII) for a ship type, as shown in Table. 1; a and c are parameters estimated through median regression fits, taking the attained CII and the Capacity of individual ships collected through IMO DCS in year 2019 as the sample.

4 Ship type specific operational carbon intensity reference lines

The parameters for determining the ship type specific reference lines, for use in Eq.(1), are specified as follows:

Table 1: Parameters for determining the 2019 ship type specific reference lines

Ship type		Capacity	<i>a</i>	<i>c</i>
Bulk carrier	279,000 DWT and above	279,000	4745	0.622
	less than 279,000 DWT	DWT	4745	0.622
Gas carrier	65,000 and above	DWT	14405E7	2.071
	less than 65,000 DWT	DWT	8104	0.639
Tanker		DWT	5247	0.610
Container ship		DWT	1984	0.489
General cargo ship	20,000 DWT and above	DWT	31948	0.792
	less than 20,000 DWT	DWT	588	0.3885
Refrigerated cargo carrier		DWT	4600	0.557
Combination carrier		DWT	40853	0.812
LNG carrier	100,000 DWT and above	DWT	9.827	0.000
	65,000 DWT and above, but less than 100,000 DWT	DWT	14479E10	2.673
	less than 65,000 DWT	65,000	14479E10	2.673
Ro-ro cargo ship (vehicle carrier)		GT	5739	0.631
Ro-ro cargo ship		DWT	10952	0.637
Ro-ro passenger ship		GT	7540	0.587
Cruise passenger ship		GT	930	0.383

ANNEX 12

**RESOLUTION MEPC.338(76)
(adopted on 17 June 2021)**

**2021 GUIDELINES ON THE OPERATIONAL CARBON INTENSITY REDUCTION
FACTORS RELATIVE TO REFERENCE LINES (CII REDUCTION
FACTORS GUIDELINES, G3)**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

NOTING that it adopted, by resolution MEPC.328(76), the 2021 revised MARPOL Annex VI, which is expected to enter into force on 1 November 2022 upon its deemed acceptance on 1 May 2022,

NOTING IN PARTICULAR that the 2021 revised MARPOL Annex VI contains amendments concerning mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping,

NOTING FURTHER that regulation 28.4 of MARPOL Annex VI requires reduction factors to be established for each ship type to which regulation 28 is applicable,

HAVING CONSIDERED, at its seventy-sixth session, draft *2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3)*,

1 ADOPTS the *2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3)*, as set out in the annex to the present resolution;

2 INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement requirements set forth in regulation 28.4 of MARPOL Annex VI;

3 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines to the attention of masters, seafarers, shipowners, ship operators and any other interested parties;

4 AGREES to keep the Guidelines under review in light of experience gained with their implementation and in light of the review of CII regulations to be completed by the Organization by 1 January 2026 as identified in regulation 28.11 of MARPOL Annex VI, and that annual reduction rates for the period 2027-2030 will be further strengthened and developed taking into account that review.

ANNEX

2021 GUIDELINES ON THE OPERATIONAL CARBON INTENSITY REDUCTION FACTORS RELATIVE TO REFERENCE LINES (CII REDUCTION FACTORS GUIDELINES, G3)

1 Introduction

1.1 These Guidelines provide the methods to determine the annual operational carbon intensity reduction factors and their concrete values from year 2023 to 2030, as referred to in regulation 28 of MARPOL Annex VI.

1.2 The annual operational carbon intensity reduction factors apply to each ship type to which regulation 28 of MARPOL Annex VI applies, in a transparent and robust manner, based on the specific carbon intensity indicators stipulated in the *2021 Guidelines on operational carbon intensity indicators and the calculation methods (G1)* (resolution MEPC.336(76)) and the reference lines developed in the *2021 Guidelines on the reference lines for use with operational carbon intensity indicators (G2)*(resolution MEPC.337(76)).

1.3 The reduction factors have been set at the levels to ensure that, in combination with other relevant requirements of MARPOL Annex VI, the reduction in CO₂ emissions per transport work by at least 40% by 2030, compared to 2008, can be achieved as an average across international shipping.

1.4 Section 5 of these Guidelines provides background information on rational ranges of reduction factors of ship types in year 2030 using demand-based measurement and supply-based measurement.

1.5 The Organization should continue to monitor development in annual carbon intensity improvement using both demand-based measurement and supply-based measurement in parallel to the annual analysis of the fuel consumption data reported to the IMO DCS.

2 Definitions

2.1 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto, as amended.

2.2 *IMO DCS* means the data collection system for fuel oil consumption of ships referred to in regulation 27 and related provisions of MARPOL Annex VI.

2.3 For the purpose of these Guidelines, the definitions in MARPOL Annex VI, as amended, apply.

2.4 The annual operational carbon intensity reduction factor, generally denoted as "Z" in regulation 28 of MARPOL Annex VI, is a positive value, stipulating the percentage points of the required annual operational carbon intensity indicator of a ship for a given year lower than the reference value.

3 Method to determine the annual reduction factor of ship types

3.1 Operational carbon intensity of international shipping

Given significant heterogeneity across ship types, the attained annual operational CII of international shipping as a whole is calculated as the ratio of the aggregated mass (in grams) of CO₂ (*aggregated M*) emitted to the aggregated mass (in tonne·nmiles) of transport work (*aggregated W*) undertaken by all individual ships of representative ship types in a given calendar year, as follows:

$$\text{attained } CII_{shipping} = \text{aggregated } M / \text{aggregated } W \quad (1)$$

In the absence of the data on actual annual transport work of individual ships, the aggregated transport work obtained from other reliable sources, such as UNCTAD, can be taken as approximation. The representative ship types refer to bulk carriers, gas carriers, tankers, container ships, general cargo ships, refrigerated cargo carrier and LNG carriers, as per the *Fourth IMO GHG Study 2020*.

3.2 The achieved carbon intensity reduction in international shipping

For a given year y , the achieved carbon intensity reduction in international shipping relative to the reference year y_{ref} , denoted as $R_{shipping,y}$, can be calculated as follows:

$$R_{shipping,y} = 100\% \times (\text{attained } CII_{shipping,y} - \text{attained } CII_{shipping,y_{ref}}) / \text{attained } CII_{shipping,y_{ref}} \quad (2)$$

where the $\text{attained } CII_{shipping,y}$ and $\text{attained } CII_{shipping,y_{ref}}$ represents the attained annual operational carbon intensity of international shipping in year y and in the reference year y_{ref} , as defined in Eq.(1).

The achieved carbon intensity reduction in international shipping can be alternatively calculated on the carbon intensity performance of ship types. Since CII metrics for different ship types may not be identical, the weighted average of the carbon intensity reduction achieved by ship types can be applied, as follows:

$$R_{shipping,y} = \sum_{type} f_{type,y} R_{type,y} \quad (3)$$

In Eq(3),

- $type$ represents the ship type;
- $f_{type,y}$ is the weight, which is equal to the proportion of CO₂ emitted by the ship type to the total CO₂ emissions of international shipping in year y ; and
- $R_{type,y}$ represents the carbon intensity reduction achieved by the ship type in year y , calculated as $R_{type,y} = 100\% \times (\text{attained } CII_{type,y} - \text{attained } CII_{type,y_{ref}}) / \text{attained } CII_{type,y_{ref}}$, where the $\text{attained } CII_{type,y}$ and $\text{attained } CII_{type,y_{ref}}$ represents the attained annual operational carbon intensity of the ship type in year y and in the reference year y_{ref} , as defined in Eq.(4), as follows:

$$\text{attained } CII_{type} = \sum_{ship} M_{ship,t} / \sum_{ship} W_{ship,t} \quad (4)$$

where:

$M_{ship,t}$ and $W_{ship,t}$ represents the total mass of CO₂ emitted from and the total transport work undertaken by a ship of this type in a given calendar year, as stipulated in the *Guidelines on operational carbon intensity indicators and the calculation methods (G1)*.

4 The reduction factors for the required annual operational CII of ship types

4.1 In accordance with regulation 28 of MARPOL Annex VI, the required annual operational CII for a ship is calculated as follows:

$$\text{Required annual operational CII} = (1 - Z / 100) \times CII_R$$

where CII_R is the reference value in year 2019 as defined in the *Guidelines on the reference lines for use with operational carbon intensity indicators (G2)*, Z is a general reference to the reduction factors for the required annual operational CII of ship types from year 2023 to 2030, as specified in table 1.

Table 1: Reduction factor (Z%) for the CII relative to the 2019 reference line

Year	Reduction factor relative to 2019
2023	5%*
2024	7%
2025	9%
2026	11%
2027	- **
2028	- **
2029	- **
2030	- **

Note:

- * Z factors of 1%, 2% and 3% are set for the years of 2020 to 2022, similar as business as usual until entry into force of the measure.
- ** Z factors for the years of 2027 to 2030 to be further strengthened and developed taking into account the review of the short-term measure.

5 Background information on rational ranges of reduction factors of ship types in year 2030

5.1 In the *Initial IMO Strategy on Reduction of GHG Emissions from Ships* (Resolution MEPC.304(72)), the levels of ambition on carbon intensity of international shipping have been set taking year 2008 as reference. The carbon intensity of international shipping in year 2008, as well as the improvement through 2012 to 2018, has been estimated in the *Fourth IMO GHG Study 2020*. However, since the scope and data collection methods applied in the *Fourth IMO GHG Study 2020* were inconsistent with those under IMO DCS, the results derived from the two sources cannot be compared directly.

5.2 To ensure the comparability of the attained carbon intensity of international shipping through year 2023 to 2030 with the reference line, the following methods are applied to calculate the equivalent carbon intensity target in year 2030 ($eR_{shipping,2030}$), taking year 2019 as reference, i.e. how much additional improvement is needed by 2030 from the 2019 performance level.

5.3 The achieved carbon intensity reduction of international shipping in year 2019 relative to year 2008 ($R_{shipping,2019}$) can be estimated as the sum of the achieved carbon intensity reduction of international shipping in year 2018 relative to year 2008 ($R_{shipping,2018}$) as given by the *Fourth IMO GHG Study 2020* and the estimated average annual improvement during 2012 and 2018 ($\bar{r}_{shipping}$), as follows:

$$R_{shipping,2019} = R_{shipping,2018} + \bar{r}_{shipping} \quad (5)$$

5.4 The following provides the calculations using demand-based measurement and supply-based measurement.

5.4.1 Demand-based measurement of 2030 target

As estimated by the *Fourth IMO GHG Study 2020*, the attained CII of international shipping (on aggregated demand-based metric) has reduced by **31.8%** ($R_{shipping,2018} = 31.8\%$) compared to 2008, with an estimated average annual improvement at **1.5** percentage points ($\bar{r}_{shipping} = 1.5\%$). In accordance with Eq.(5), the carbon intensity reduction achieved in year 2019 is estimated as **33.3%** ($R_{shipping,2019} = 33.3\%$).

5.4.2 Supply-based measurement of 2030 target

As estimated by the *Fourth IMO GHG Study 2020*, the attained CII of international shipping (on aggregated supply-based metric) has reduced by **22.0%** ($R_{shipping,2018} = 22.0\%$) compared to 2008, with an estimated average annual improvement at **1.6** percentage points ($\bar{r}_{shipping} = 1.6\%$). In accordance with Eq.(5), the carbon intensity reduction achieved in year 2019 relative to 2008 is estimated as **23.6%** ($R_{shipping,2019} = 23.6\%$).

5.5 Given the achieved carbon intensity reduction of international shipping in year 2019 relative to year 2008, the carbon intensity reduction target of international shipping in year 2030 can be converted to the equivalent target ($eR_{shipping,2030}$) relative to year 2019, as follows:

$$eR_{shipping,2030} = \frac{40\% - R_{shipping,2019}}{1 - R_{shipping,2019}} \quad (6)$$

5.5.1 Demand-based measurement of 2030 target

In accordance with Eq.(6), the equivalent reduction factor of international shipping in year 2030 relative to year 2019 ($eR_{shipping,2030}$) would be at least **10.0%** measured in aggregated demand-based CII metric, i.e. at least additional **10.0%** improvement from the 2019 level is needed by 2030.

5.5.2 Supply-based measurement of 2030 target

In accordance with Eq.(6), the equivalent reduction factor of international shipping in 2030 relative to year 2019 ($eR_{shipping,2030}$) would be at least **21.5%**, measured in aggregated supply-based CII metric, i.e. at least additional **21.5%** improvement from the 2019 level is needed by 2030.

ANNEX 13

**RESOLUTION MEPC.339(76)
(adopted on 17 June 2021)**

**2021 GUIDELINES ON THE OPERATIONAL CARBON INTENSITY
RATING OF SHIPS (CII RATING GUIDELINES, G4)**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

NOTING that it adopted, by resolution MEPC.328(76), the 2021 revised MARPOL Annex VI, which is expected to enter into force on 1 November 2022 upon its deemed acceptance on 1 May 2022,

NOTING IN PARTICULAR that the 2021 revised MARPOL Annex VI contains amendments concerning mandatory goal-based technical and operational measures to reduce carbon intensity of international shipping,

NOTING FURTHER that regulation 28.6 of MARPOL Annex VI requires ships to which this regulation apply to determine operational carbon intensity rating taking into account guidelines developed by the Organization,

RECOGNIZING that the aforementioned amendments to MARPOL Annex VI require relevant guidelines for uniform and effective implementation of the regulations,

HAVING CONSIDERED, at its seventy-sixth session, draft *2021 Guidelines on the operational carbon intensity rating of ships (CII rating guidelines, G4)*,

1 ADOPTS the *2021 Guidelines on the operational carbon intensity rating of ships (CII rating guidelines, G4)*, as set out in the annex to the present resolution;

2 INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement requirements set forth in regulation 28.6 of MARPOL Annex VI;

3 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines to the attention of masters, seafarers, shipowners, ship operators and any other interested parties;

4 AGREES to keep the Guidelines under review in light of experience gained with their implementation, of additional data collected and analysed, and in light of the review of CII regulations to be completed by the Organization by 1 January 2026 as identified in regulation 28.11 of MARPOL Annex VI.

ANNEX

2021 GUIDELINES ON THE OPERATIONAL CARBON INTENSITY RATING OF SHIPS (CII RATING GUIDELINES, G4)

1 Introduction

1.1 These Guidelines provide the methods to assign operational energy efficiency performance ratings to ships, as referred to in regulation 28 of MARPOL Annex VI. On this basis, the boundaries for determining a ship's annual operational carbon intensity performance from year 2023 to 2030 are also provided.

2 Definitions

2.1 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto, as amended.

2.2 *IMO DCS* means the data collection system for fuel oil consumption of ships referred to in regulation 28 and related provisions of MARPOL Annex VI.

2.3 For the purpose of these Guidelines, the definitions in MARPOL Annex VI, as amended, apply.

2.4 *Operational carbon intensity rating* means to assign a ranking label from among the five grades (A, B, C, D and E) to the ship based on the attained annual operational carbon intensity indicator, indicating a major superior, minor superior, moderate, minor inferior, or inferior performance level.

3 Framework of the operational energy efficiency performance rating

3.1 An operational energy efficiency performance rating should be annually assigned to each ship to which regulation 28 of MARPOL Annex VI applies, in a transparent and robust manner, based on the deviation of the attained annual operational carbon intensity indicator (CII) of a ship from the required value.

3.2 To facilitate the rating assignment, for each year from 2023 to 2030, four boundaries are defined for the five-grade rating mechanism, namely superior boundary, lower boundary, upper boundary, and inferior boundary. Thus, a rating can be assigned through comparing the attained annual operational CII of a ship with the boundary values.

3.3 The boundaries are set based on the distribution of CIIs of individual ships in year 2019. The appropriate rating boundaries are expected to generate the following results: the middle 30% of individual ships across the fleet segment, in terms of the attained annual operational CIIs, are to be assigned rating C, while the upper 20% and further upper 15% of individuals are to be assigned rating D and E respectively, the lower 20% and further lower 15% of the individuals are to be assigned rating B and A respectively, as illustrated in figure 1.

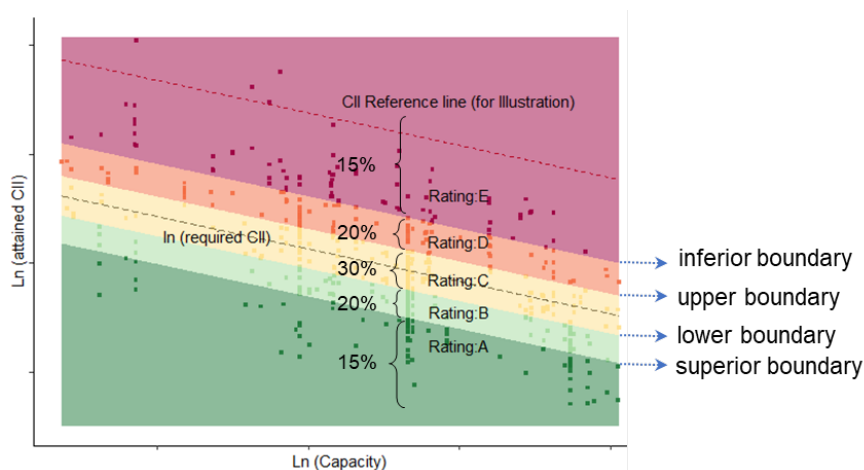


Figure 1: Operational energy efficiency performance rating scale

3.4 Given the incremental operational carbon intensity reduction factors over time, the boundaries for defining performance ratings should be synchronized accordingly, although the relative distance between the boundaries should not change. The rating of a ship would be determined by the attained CII and the predetermined rating boundaries, rather than the attained CII of other ships. Note that the distribution of ship individual ratings in a specific year may not be always identical with the scenario in 2019, where for example 20% may achieve A, 30% may achieve B, 40% may achieve C, 8% may achieve D and 2% may achieve E in a given year.

4 Method to determine the rating boundaries

4.1 The boundaries can be determined by the required annual operational CII in conjunction with the vectors, indicating the direction and distance they deviate from the required value (denoted as dd vectors for easy reference), as illustrated in figure 2.

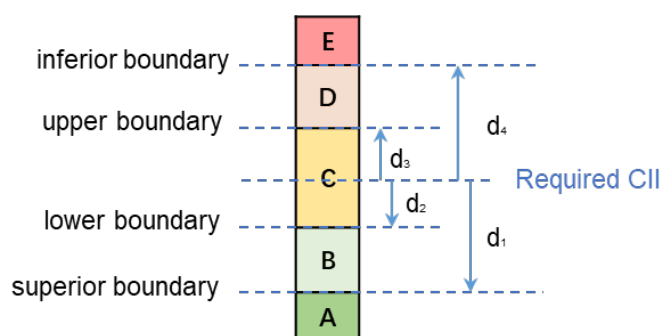


Figure 2: dd vectors and rating bands

4.2 Statistically, the dd vectors depend on the distribution of the attained annual operational CII of ships of the type concerned, which can be estimated through a quantile regression, taking data collected through DCS in year 2019 as the sample.

4.3 The quantile regression model for a specific ship type can be developed as follows:

$$\ln(\text{attained CII}) = \delta^{(p)} - c \ln(\text{Capacity}) + \varepsilon^{(p)}, \quad p = \{0.15, 0.35, 0.50, 0.65, 0.85\} \quad (5)$$

where $Capacity$ is identical with the one used in the operation carbon intensity indicator as specified in the Guidelines on operational carbon intensity indicators and the calculation

methods (G1); p is the typical quantile, meaning the proportion of observations with a lower value is $p\%$; $\delta^{(p)}$ is the constant term, and $\varepsilon^{(p)}$ is the error term.

4.4 The quantile regression lines in logarithm form are illustrated in Fig.3.

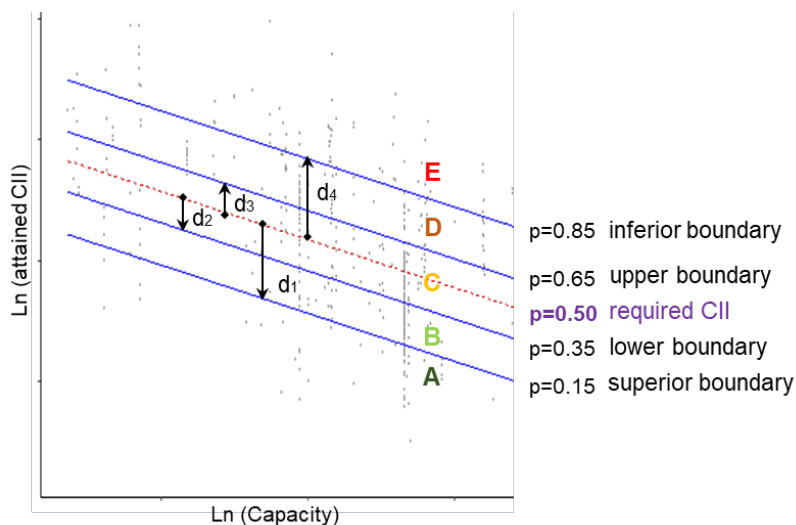


Figure 3: Quantile regression lines in logarithm form

4.5 Then, the dd vectors can be calculated based on the estimates of the intercept ($\hat{\delta}^{(p)}$), in accordance with Eq.(2), as follows:

$$\left. \begin{aligned} d_1 &= \hat{\delta}^{(0.15)} - \hat{\delta}^{(0.50)} \\ d_2 &= \hat{\delta}^{(0.35)} - \hat{\delta}^{(0.50)} \\ d_3 &= \hat{\delta}^{(0.65)} - \hat{\delta}^{(0.50)} \\ d_4 &= \hat{\delta}^{(0.85)} - \hat{\delta}^{(0.50)} \end{aligned} \right\} \quad (6)$$

4.6 Through an exponential transformation of each dd vector, the four boundaries fitted in the original data form can be derived based on the required annual operational carbon intensity indicator ($required\ CII$), as follows:

$$\left. \begin{aligned} \text{superior boundary} &= \exp(d_1) \cdot \text{required } CII \\ \text{lower boundary} &= \exp(d_2) \cdot \text{required } CII \\ \text{upper boundary} &= \exp(d_3) \cdot \text{required } CII \\ \text{inferior boundary} &= \exp(d_4) \cdot \text{required } CII \end{aligned} \right\} \quad (7)$$

Rating boundaries of ship types

The estimated dd vectors after exponential transformation for determining the rating boundaries of ship types are as follows:

Table 1: *dd* vectors for determining the rating boundaries of ship types

Ship type		Capacity in CII calculation	<i>dd</i> vectors (after exponential transformation)			
			exp(d1)	exp(d2)	exp(d3)	exp(d4)
Bulk carrier		DWT	0.86	0.94	1.06	1.18
Gas carrier	65,000 DWT and above	DWT	0.81	0.91	1.12	1.44
	less than 65,000 DWT	DWT	0.85	0.95	1.06	1.25
Tanker		DWT	0.82	0.93	1.08	1.28
Container ship		DWT	0.83	0.94	1.07	1.19
General cargo ship		DWT	0.83	0.94	1.06	1.19
Refrigerated cargo carrier		DWT	0.78	0.91	1.07	1.20
Combination carrier		DWT	0.87	0.96	1.06	1.14
LNG carrier	100,000 DWT and above	DWT	0.89	0.98	1.06	1.13
	less than 100,000 DWT		0.78	0.92	1.10	1.37
Ro-ro cargo ship (vehicle carrier)		GT	0.86	0.94	1.06	1.16
Ro-ro cargo ship		DWT	0.66	0.90	1.11	1.37
Ro-ro passenger ship		GT	0.72	0.90	1.12	1.41
Cruise passenger ship		GT	0.87	0.95	1.06	1.16

By comparing the attained annual operational CII of a specific ship with the four boundaries, a rating can then be assigned. For example, given the required CII of a bulk carrier in a specific year as 10 gCO₂/(dwt.nmile), then the superior boundary, lower boundary, upper boundary, and inferior boundary is 8.6, 9.4, 10.6 and 11.8 gCO₂/(dwt.nmile). If the attained CII is 9 gCO₂/(dwt.nmile), the ship would be rated as "B".

ANNEX 14

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

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

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

3 The work plan consists of three main phases:

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

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

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

Phase I: Collation and initial consideration of proposals for measures

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

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

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

¹ As set out in resolution MEPC.328(76).

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

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

Phase II: Assessment and selection of measures to further develop

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

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

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

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

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

13 *What to do:* Develop and adopt the measure(s), along with the assessments of impacts on States in application of MEPC.1/Circ.885.² In order to support this process, a detailed outline of the framework supporting information and assessment of how the selected measure(s) will meet the long-term levels of ambition could be undertaken.

14 *Timeline:* Target date(s) to be agreed in conjunction with the IMO Strategy on Reduction of GHG Emissions from Ships.

² As may be amended.

ANNEX 15

BIENNIAL AGENDA OF THE PPR SUB-COMMITTEE FOR THE 2022-2023 BIENNIUM

Reference to SD, if applicable	Output number	Description ¹	Parent organ(s)	Associated organ(s)	Coordinating organ	Target completion year
1. Improve implementation	1.3	Validated model training courses	MSC / MEPC	III / PPR/ CCC / SDC / SSE / NCSR	HTW	Continuous
1. Improve implementation	1.11	Measures to harmonize port State control (PSC) activities and procedures worldwide	MSC / MEPC	HTW / PPR / NCSR	III	Continuous
1. Improve implementation	1.12	Review of the 2015 Guidelines for exhaust gas cleaning systems (resolution MEPC.259(68))	MEPC	PPR		2020
Note: A decision on whether output 1.12 will be kept in the 2022-2023 biennial agenda of the PPR Sub-Committee will depend on the outcome of MEPC 77						
1. Improve implementation	1.15	Revised guidance on methodologies that may be used for enumerating viable organisms	MEPC	PPR		2022
1. Improve implementation	1.21	Review of the 2011 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (resolution MEPC.207(62))	MEPC	PPR		2023
1. Improve implementation	1.23	Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment, including conditions and areas	MEPC	PPR		2022

¹ Outputs shown in bold font have been selected for the draft provisional agenda for PPR 9 set out in annex 16.

Reference to SD, if applicable	Output number	Description ¹	Parent organ(s)	Associated organ(s)	Coordinating organ	Target completion year
1. Improve implementation	1.26	Revision of MARPOL Annex IV and associated guidelines to introduce provisions for record-keeping and measures to confirm the lifetime performance of sewage treatment plants	MEPC	III / HTW	PPR	2023
1. Improve implementation	1... ²	Development of an operational guide on the response to spills of Hazardous and Noxious Substances (HNS)	MEPC	PPR		2023
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	MSC	HTW / PPR / SDC / SSE	CCC	Continuous
2. Integrate new and advancing technologies in the regulatory framework	2.13	Review of the IBTS Guidelines and amendments to the IOPP Certificate and Oil Record Book	MEPC	PPR		2020
Note: A decision on whether output 2.13 will be kept in the 2022-2023 biennial agenda of the PPR Sub-Committee will depend on the outcome of MEPC 77						
2. Integrate new and advancing technologies in the regulatory framework	2.15	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	MEPC	PPR		2023

² Moved to the biennial agenda of the Sub-Committee from the post-biennial agenda of MEPC.

Reference to SD, if applicable	Output number	Description ¹	Parent organ(s)	Associated organ(s)	Coordinating organ	Target completion year
2. Integrate new and advancing technologies in the regulatory framework	2.18	Standards for shipboard gasification of waste systems and associated amendments to regulation 16 of MARPOL Annex VI	MEPC	PPR		2023
2. Integrate new and advancing technologies in the regulatory framework	2.19	Revision of guidelines associated with the AFS Convention as a consequence of the introduction of controls on cybutryne	MEPC	PPR		2022
3. Respond to climate change	3.3	Reduction of the impact on the Arctic of Black Carbon emissions from international shipping	MEPC	PPR		2023
4. Engage in ocean governance	4.3	Follow-up work emanating from the Action Plan to address marine plastic litter from ships	MEPC	PPR / III / HTW		2023
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security and environment-related conventions	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR		Continuous
6. Ensure regulatory effectiveness	6.3	Safety and pollution hazards of chemicals and preparation of consequential amendments to the IBC Code	MEPC	PPR		Continuous
6. Ensure regulatory effectiveness	6.11	Development of measures to reduce risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters	MEPC	PPR		2022
6. Ensure regulatory effectiveness	6.15	Role of the human element	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	Continuous

Reference to SD, if applicable	Output number	Description ¹	Parent organ(s)	Associated organ(s)	Coordinating organ	Target completion year
6. Ensure regulatory effectiveness	6.... ³	Development of necessary amendments to MARPOL Annexes I, II, IV, V and VI to allow States with ports in the Arctic region to enter into regional arrangements for port reception facilities (PRFs)	MEPC	PPR		2023

³ Moved to the biennial agenda of the PPR Sub-Committee from the post-biennial agenda of MEPC.

ANNEX 16

PROVISIONAL AGENDA FOR PPR 9

Opening of the session

- 1 Adoption of the agenda
- 2 Decisions of other IMO bodies
- 3 Safety and pollution hazards of chemicals and preparation of consequential amendments to the IBC Code
- 4 Development of an operational guide on the response to spills of Hazardous and Noxious Substances (HNS)
- 5 Revised guidance on methodologies that may be used for enumerating viable organisms
- 6 Revision of guidelines associated with the AFS Convention as a consequence of the introduction of controls on cybutryne
- 7 Review of the 2011 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (resolution MEPC.207(62))
- 8 Reduction of the impact on the Arctic of Black Carbon emissions from international shipping
- 9 Standards for shipboard gasification of waste systems and associated amendments to regulation 16 of MARPOL Annex VI
- 10 Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment, including conditions and areas
- 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
- 12 Development of measures to reduce risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters
- 13 Development of necessary amendments to MARPOL Annexes I, II, IV, V and VI to allow States with ports in the Arctic region to enter into regional arrangements for port reception facilities (PRFs)
- 14 Revision of MARPOL Annex IV and associated guidelines to introduce provisions for record-keeping and measures to confirm the lifetime performance of sewage treatment plants
- 15 Follow-up work emanating from the Action Plan to Address Marine Plastic Litter from Ships
- 16 Unified interpretation to provisions of IMO environment-related conventions

- 17 Biennial agenda and provisional agenda for PPR 10
- 18 Election of Chair and Vice-Chair for 2023
- 19 Any other business
- 20 Report to the Marine Environment Protection Committee

ANNEX 17

STATUS REPORT OF THE OUTPUTS OF MEPC FOR THE 2020-2021 BIENNIUM

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.2	Input on identifying emerging needs of developing countries, in particular SIDS and LDCs to be included in the ITCP	Continuous	TCC	MSC / MEPC / FAL / LEG		Ongoing	Ongoing	MEPC 75/18, section 12; MEPC 76/15, section 11
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	Ongoing		MEPC 75/18, paras.11.3 to 11.5
1. Improve implementation	1.4	Analysis of consolidated audit summary reports	Annual	Assembly	MSC / MEPC / LEG / TCC / III	Council	Completed		MEPC 75/18, paras.11.15 to 11.17
1. Improve implementation	1.5	Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)	Annual	MSC / MEPC	III		Completed		MEPC 75/18, para. 11.11
1. Improve implementation	1.7	Identify thematic priorities within the area of maritime safety and security, marine environmental protection, facilitation of maritime traffic and maritime legislation	Annual	TCC	MSC / MEPC / FAL / LEG		Completed	Completed	MEPC 75/18, section 12; MEPC 76/15, section 11
1. Improve implementation	1.9	Report on activities within the ITCP related to the OPRC Convention and the OPRC-HNS Protocol	Annual	TCC	MEPC		Completed	Completed	MEPC 75/18, section 12; MEPC 76/15, section 11

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.11	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	HTW / PPR / NCSR	III	Ongoing		MEPC 75/18, paras. 11.10 and 11.11
1. Improve implementation	1.12	Review of the 2015 Guidelines for exhaust gas cleaning systems (resolution MEPC.259(68))	2020	MEPC	PPR		In progress	In progress	PPR 7/22, section 11; MEPC 75/18, para. 10.35; MEPC 76/15, para.9.10
Note: PPR 7 had agreed the draft MEPC resolution and MEPC 75 had agreed to defer the consideration of the draft MEPC resolution to MEPC 76 with a view to adoption, thus extending the TCY to 2021, which was further deferred to MEPC 77 for consideration.									
1. Improve implementation	1.13	Review of mandatory requirements in the SOLAS, MARPOL and Load Line Conventions and the IBC and IGC Codes regarding watertight doors on cargo ships	2021	MSC / MEPC	CCC	SDC	In progress		MSC 102/24, para. 17.28; MSC 103/21, paras. 3.19 and 3.33
1. Improve implementation	1.14	Revised guidance on ballast water sampling and analysis	2021	MEPC	PPR		Completed		MEPC 74/18, para. 4.36; PPR 7/22, section 5; and MEPC 75/18, paras. 10.27 to 10.28

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.15	Revised guidance on methodologies that may be used for enumerating viable organisms	2021	MEPC	PPR		In progress	Extended	MEPC 74/17, para. 14.25; PPR 7/22, section 5; and MEPC 75.18, para. 14.2.2; MEPC 76/15, para.12.6
Note: MEPC 75 approved a reduced provisional agenda for PPR 8 that did not include output 1.15. MEPC 76 agreed to extend the TCY to 2022.									
1. Improve implementation	1.17	Development of guidelines for onboard sampling of fuel oil not in-use by the ship	2020	MEPC	PPR		Completed		MEPC 74/18, paras. 5.57 to 5.59; PPR 7/22, section 9; and MEPC 75/18, paras. 10.22 to 10.24
Note: PPR 7 agreed to change the title of the Guidelines to "Guidelines for onboard sampling of fuel oil intended to be used or carried for use on board a ship" (PPR 7/22, para. 9.8), which was further approved by MEPC 75.									
1. Improve implementation	1.18	Measures to ensure quality of fuel oil for use on board ships	2021	MEPC			In progress	In progress	MEPC 74/18, section 5; and MEPC 75/18, section 5; MEPC 76/15, section 4

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.21	Review of the 2011 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (resolution MEPC.207(62))	2021	MEPC			In progress	Extended	MEPC 72/17, para. 15.8; and PPR 7/22, section 7; PPR 8/13, section 4; MEPC 76/15, para.12.6
Note: MEPC 76 approved the request by PPR 8 to extend the TCY to 2023									
1. Improve implementation	1.23	Evaluation and harmonization of rules and guidance on the discharge of liquid effluents from EGCS into waters, including conditions and areas	2021	MEPC			In progress	Extended	MEPC 74/18, para. 14.11; PPR 7/22, section 12; and MEPC 75/18, para.10.35; MEPC 76/15, para.9.10.1
Note: PPR 7 agreed to revise the title to "Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment", subject to approval by MEPC 76 (PPR 7/22, paras. 12.12 and 22.21). Due to time constraints, MEPC 76 agreed to defer the consideration of the scope of work agreed by PPR 7 and the modified title for output 1.23 to MEPC 77. MEPC 77 will have to consider extending the TCY to allow PPR 9 in 2022 to continue working on this output.									
1. Improve implementation	1.24	Review of the BWM Convention based on data gathered in the experience-building phase	2023	MEPC			In progress	In progress	MEPC 74/18, paras. 4.2 to 4.6 and 4.52; MEPC 76/15 section 4

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.25	Urgent measures emanating from issues identified during the experience-building phase of the BWM Convention	2023	MEPC			In progress	In progress	MEPC 74/18, paras. 4.27 and 4.60; and MEPC 75/18, para.4.19; MEPC 76/15 para.4.8
1. Improve implementation	1.26	Revision of MARPOL Annex IV and associated guidelines to introduce provisions for record-keeping and measures to confirm the lifetime performance of sewage treatment plants	2021	MEPC	III / HTW	PPR	In progress	Extended	MEPC 74/18, paras. 14.2 to 14.7; and PPR 7/22, section 16; PPR 8/13, section 7; MEPC76/14, para. 12.6
Note: MEPC 76 approved the request by PPR 8 to extend the TCY to 2023.									
1. Improve implementation	1.33	Development of training provisions for seafarers related to the BWM Convention	2021	MEPC	HTW		In progress	Extended	MEPC 73/19, para. 15.10.1; HTW 7/16, para.12.2
Note: Target completion year extended to 2022 as a consequence of the postponement of HTW 7 and its planned arrangements.									
1. Improve implementation	1.35	Review the Model Agreement for the authorization of recognized organizations acting on behalf of the Administration	2021	MSC / MEPC	III		In progress		MSC 102/24, paras. 14.8, 21.2 and 21.3 (new output relocated); MEPC 75/18, paras. 11.12 and 11.14

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1...	Development of an operational guide on the response to spills of Hazardous and Noxious Substances (HNS)	2022	MEPC	PPR		In progress	Extended	MEPC 74/18, para. 14.20 and MEPC 75/18, paras. 14.1 and 14.2.2; MEPC 76/15, para.12.6
Note: MEPC 75 had agreed to move the above output from the post-biennial agenda of MEPC to the biennial agenda of PPR with a TCY of 2022, as requested by PPR 7. However, MEPC 75 approved a reduced provisional agenda for PPR 8, which does not include this output. Consequently, PPR 8 had agreed to consider including the output in its provisional agenda for PPR 9 and adjust the target completion year accordingly, which was approved by MEPC 76.									
2. Integrate new and advancing technologies in the regulatory framework	2.2	Approved ballast water management systems which make use of Active Substances, taking into account recommendations of the GESAMP-BWWG	Annual	MEPC			Completed	Completed	MEPC 75/18, section 4; MEPC 76/15, section 4
2. Integrate new and advancing technologies in the regulatory framework	2.13	Review of the IBTS Guidelines and amendments to the IOPP Certificate and Oil Record Book	2020	MEPC	PPR		Postponed	In progress	MEPC 74/18, par. 14.25; PPR 7/22, section 16; and MEPC 75/18, para. 10.35; MEPC 76/15, para.9.10.4
Note: MEPC 75 agreed to defer consideration of the two draft MEPC circulars and the draft amendments (PPR 7/22/Add.1, annexes 13, 14 and 15) to MEPC 76, thus the TCY being extended to 2021. MEPC 76 deferred this to MEPC 77 for consideration.									
2. Integrate new and advancing technologies in the regulatory framework	2.14	Amendments to regulation 14 of MARPOL Annex VI to require a dedicated sampling point for fuel oil	2020	MEPC			Completed		MEPC 75/18, sections 3 and 5

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.15	Development of amendments to MARPOL Annex VI and the NOx Technical Code on the use of multiple engine operational profiles for a marine diesel engine	2021	MEPC	PPR		In progress	Extended	PPR 7/22, section 13; and MEPC 75/18, para. 14.2.2; MEPC 76/15, para.12.6
Note: MEPC 76 approved the biennial status report of the PPR Sub-Committee the provisional agenda of PPR 9, thus extending the TCY to 2023.									
2. Integrate new and advancing technologies in the regulatory framework	2.17	Consideration of development of goal-based ship construction standards for all ship types	2021	MSC / MEPC			No work requested by MSC		MSC 102/24, section 7
2. Integrate new and advancing technologies in the regulatory framework	2.18	Standards for shipboard gasification of waste systems and associated amendments to regulation 16 of MARPOL Annex VI	2020	MEPC	PPR		Extended	Extended	MEPC 70/17, paragraph 15.17; PPR 5/24, section 8; MEPC 72/17, para. 15; PPR 7/22, section 10; and MEPC 75/18, para. 14.1; MEPC 76/15, para.12.6
Note: MEPC 75 agreed to extend the TCY of output 2.18 to 2021, as requested by PPR 7. MEPC 76 approved the biennial status report of the PPR Sub-Committee and the provisional agenda of PPR 9, thus further extending the TCY to 2023.									
2. Integrate new and advancing technologies in	2.19	Amendment of Annex 1 to the AFS Convention to include controls on cybutryne, and	2020	MEPC	PPR		Extended	Extended	MEPC 71/17, paragraph 14.3; PPR 5/24, section 19 and

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
the regulatory framework		consequential revision of relevant guidelines							para. 24.2.25; MEPC 73/19, paras. 15.12 to 15.15; PPR 6/20, section 6; MEPC 74/18, paras. 10.19 and 10.20; PPR 7/22, section 6; and MEPC 75/18, paras. 10.14 to 10.21 and 14.1; MEPC 76/15, para.12.6
Note: MEPC 75 agreed to extend the target completion year of output 2.19 to 2022 and approve the change of title of the output to "Revision of guidelines associated with the AFS Convention as a consequence of the introduction of controls on cybutryne", as requested by PPR 7.									
3. Respond to climate change	3.1	Treatment of ozone-depleting substances used by ships	Annual	MEPC			Completed		MEPC 74/18, paras. 5.75 and 5.76
3. Respond to climate change	3.2	Further development of mechanisms needed to achieve the limitation or reduction of CO2 emissions from international shipping	Annual	MEPC			Completed	In progress	MEPC 74/18, sections 6 and 7; MEPC 75/18, sections 6 and 7; MEPC 76/15, sections 6 and 7
3. Respond to climate change	3.3	Reduction of the impact on the Arctic of emissions of black	2021	MEPC	PPR		In progress	In progress	MEPC 71/17, paragraph 5.3; PPR 5/24,

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
		carbon from international shipping							section 7 and para. 24.2.7; MEPC 73/19, paragraph 5.3; PPR 6/20, section 7; MEPC 74/18, para. 5.67; PPR 7/22, section 8; MEPC 75/18, para. 10.35; MEPC 76/15, para.9.10.3
3. Respond to climate change	3.4	Promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships	2021	MEPC			In progress	In progress	MEPC 74/18, sections 7 and 12; and MEPC 75/18, sections 7 and 12; MEPC 76/15, sections 7 and 11
3. Respond to climate change	3.5	Revision of guidelines concerning EEDI and SEEMP	2021	MEPC			In progress	In progress	MEPC 75/18, sections 6 and 7; MEPC 76/15, sections 6 and 7
3. Respond to climate change	3.6	EEDI reviews required under regulation 21.6 of MARPOL Annex VI	2021	MEPC			In progress	In progress	MEPC 75/18, section 3 and para. 6.4; MEPC 76/15, section 6

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
3. Respond to climate change	3.7	Further technical and operational measures for enhancing the energy efficiency of international shipping	2021	MEPC			In progress	In progress	MEPC 75/18, sections 3 and 6; MEPC 76/15, sections 3 and 6
4. Engage in ocean governance	4.1	Identification and protection of Special Areas, ECAs and PSSAs	Continuous	MEPC	NCSR		Ongoing		MEPC 75/18, section 9
4. Engage in ocean governance	4.2	Input to the ITCP on emerging issues relating to sustainable development and achievement of the SDGs	Continuous	TCC	MSC / MEPC / FAL / LEG		Ongoing	Ongoing	MEPC 75/18, section 12; MEPC 76/15, section 11
4. Engage in ocean governance	4.3	Follow-up work emanating from the Action Plan to address marine plastic litter from ships	2021	MEPC	PPR / III / HTW		In progress	Extended	MEPC 72/17, paragraphs 15.2 to 15.6; MEPC 73/19, section 8 and annex 10; MEPC 74/18, paragraph 8.37.1; PPR 7/22, section 17; MEPC 75/18, section 8; PPR 8/13, section 8; MEPC 76/15, para.12.6
Note: In line with the four sessions approved to complete this work, as agreed by MEPC 74, the TCY should be set to 2023 in the biennial agenda of the MEPC/PPR for the 2022-2023 biennium.									
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, environment,	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR		Ongoing	Ongoing	PPR 7/22 section 18; MEPC 75/18,

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
		facilitation, liability and compensation-related conventions		FAL / LEG					paras. 10.34 and 10.35; MEPC 76/15, paras. 4.5, 5.23 and 9.5
6. Ensure regulatory effectiveness	6.3	Safety and pollution hazards of chemicals and preparation of consequential amendments to the IBC Code	Continuous	MEPC	PPR		Ongoing	Ongoing	PPR 7/22, section 3; and MEPC 75/18, paras. 10.3 to 10.12; MEPC 76/15, paras. 9.7 and 9.8
6. Ensure regulatory effectiveness	6.4	Lessons learned and safety issues identified from the analysis of marine safety investigation reports	Annual	MSC / MEPC	III		Completed		III 6/15, section 4
6. Ensure regulatory effectiveness	6.5	Identified issues relating to the implementation of IMO instruments from the analysis of PSC data	Annual	MSC / MEPC	III		Completed		III 6/15, section 6
6. Ensure regulatory effectiveness	6.7	Consideration and analysis of reports on alleged inadequacy of port reception facilities	Annual	MEPC	III		Completed		III 6/15, section 3.
6. Ensure regulatory effectiveness	6.8	Monitoring the worldwide average sulphur content of fuel oils supplied for use on board ships	Annual	MEPC			Completed		MEPC 74/18, paras. 5.52 to 5.56; and MEPC 75/18, paras. 5.1 to 5.5

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.11	Development of measures to reduce risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters	2020	PPR			Extended	Completed	MEPC 74/18, paragraphs 10.22 to 10.25; PPR 7/22, section 14; and MEPC 75/18, paras. 10.29 to 10.33 and 14.1; MEPC 76/15, section 3
Note: MEPC 75 approved the draft amendments to MARPOL Annex I (prohibition on the use and carriage for use as fuel of heavy fuel oil by ships in Arctic waters), with a view to adoption by MEPC 76, and the extension of the TCY of this output to 2021.									
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	No work requested		
6. Ensure regulatory effectiveness	6.30	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC / MEPC	III		Completed		III 6/15, section 8; and MEPC 75/18, paras. 10.26, 11.11 and 11.19
6. Ensure regulatory effectiveness	6.31	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC / MEPC	III	CCC	No work requested		CCC 6/14, section 9; MSC 102/24, paras.21.2 and 21.3
Note: The above output had the number OW 19. However, MSC 102 agreed to relocate it to strategic direction 7 and invited the Council to endorse this decision.									

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
7. Ensure organizational effectiveness	7.1	Endorsed proposals for the development, maintenance and enhancement of information systems and related guidance (GISIS, websites, etc.)	Continuous	Council	MSC / MEPC / FAL / LEG / TCC		Ongoing	Ongoing	MEPC 75/18, para. 16.7; MEPC 76/15, paras.6.6 to 6.11
7. Ensure organizational effectiveness	7.3	Analysis and consideration of reports on partnership arrangements for, and implementation of, environmental programmes	Annual	TCC	MEPC		Completed	Completed	MEPC 75/18, section 12; MEPC 76/15, section 11
7. Ensure organizational effectiveness	7.9	Revised documents on organization and method of work, as appropriate	2021	Council	MSC / FAL / LEG / TCC / MEPC		In progress		MEPC 75/18, section 15
OW. Other work	OW.13	Endorsed proposals for new outputs for the 2020-2021 biennium as accepted by the Committees	Annual	Council	MSC / MEPC / FAL / LEG / TCC		Postponed	Completed	MEPC 75/18, section 14.11; MEPC 76/15, section 12.1 to 12.5
OW. Other work	OW.23	Cooperate with the United Nations on matters of mutual interest, as well as provide relevant input/guidance	2021	Assembly	MSC / MEPC / FAL / LEG / TCC	Council	In progress	In progress	MEPC 75/18, paras.7.3, 7.4 and 8.1; MEPC 76/15, paras.7.5 and 8.1
OW. Other work	OW.24	Cooperate with other international bodies on matters of mutual interest, as well as provide relevant input/guidance	2021	Assembly	MSC / MEPC / FAL / LEG / TCC	Council	In progress	In progress	MEPC 75/18, sections 7 and 12; MEPC 76/15, sections 7 and 11

ANNEX 18

POST-BIENNIAL AGENDA OF MEPC

MEPC 76 agreed to include, subject to endorsement of the Council, in the relevant Sub-Committees' biennial agenda of 2022-2023, the following outputs:

- "Review of the 2014 Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life (MEPC.1/Circ.833) (2014 Guidelines) and identification of next steps", in the provisional agenda of SDC 8, with a target completion year of 2023;
- "Development of an entrant training manual for PSC personnel", in the provisional agenda of III 8, with a target completion year of 2023; and
- "Development of guidance in relation to IMSAS to assist in the implementation of the III Code by Member States", in the provisional agenda of III 8, with a target completion year of 2023.
- "Development of necessary amendments to MARPOL Annexes I, II, IV, V and VI to allow States with ports in the Arctic region to enter into regional arrangements for port reception facilities (PRFs)", in the provisional agenda of PPR 8, with a target completion year of 2023.

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)								
ACCEPTED POST-BIENNIAL OUTPUTS				Parent organ(s)	Associated organ(s)	Coordinating organ	Timescale	Reference
No.	Biennium*	Reference to strategic direction, if applicable	Description					
1	2016-2017	6. Ensure regulatory effectiveness	Development of amendments to regulation 19 of MARPOL Annex VI and development of an associated Exemption Certificate for the exemption of ships not normally engaged on international voyages	MEPC	III		2 sessions	MEPC 71/17, par.14.15
2	2012-2013	OW. Other work	Recommendations related to navigational sonar on crude oil tankers	MSC / MEPC	SDC		1 session	MSC 91/22, para. 19.23

* Biennium when the output was placed on the post-biennial agenda

ANNEX 19

ITEMS TO BE INCLUDED IN THE AGENDA OF MEPC 77

No.*	Item
1	Adoption of the agenda
2	Decisions of other bodies
3	Identification and protection of Special Areas, ECAs and PSSAs
4	Harmful aquatic organisms in ballast water
5	Air pollution prevention
6	Energy efficiency of ships
7	Reduction of GHG emissions from ships
8	Follow-up work emanating from the Action Plan to Address Marine Plastic Litter from Ships
9	Pollution prevention and response
10	Reports of other sub-committees
11	Work programme of the Committee and subsidiary bodies
12	Application of the Committees' method of work
13	Election of the Chair and Vice-Chair
14	Any other business
15	Consideration of the report of the Committee

* The numbering may not correspond to the number of the agenda item in the forthcoming session.

ANNEX 20

STATEMENTS BY DELEGATIONS AND OBSERVERS*

ITEM 1

Statement by the delegation of China

"We have noted that on April 13, the Japanese government decided to dispose of the nuclear contaminated water from the Fukushima nuclear plant accident by discharging it into the sea. As a close neighbor and stakeholder, the Chinese side expresses grave concern over this. Republic of Korea, Russian Federation and many of Latin American and South Pacific countries also publicly voiced their concerns.

Despite doubts and opposition from home and abroad, Japan has unilaterally decided to release the Fukushima nuclear contaminated water into the sea before exhausting all safe ways of disposal and without fully consulting with neighboring countries and the international community. This is highly irresponsible and will severely affect human health and the immediate interests of people in neighboring countries.

The oceans are mankind's shared property. How the contaminated water from the Fukushima nuclear power plant is handled is not merely a domestic issue for Japan. We strongly urge the Japanese side to face up to its responsibility, follow the science, fulfill its international obligations and duly respond to the serious concerns of the international community, neighboring countries and its own people. We ask Japan to reevaluate the issue and revoke the wrong decision. China stands for an early establishment of an IAEA technical working group that includes members from China and other stakeholders to carry out work on Japan's disposal plan as well as the follow-up implementation and international assessment and supervision. Before then it should refrain from wantonly discharging the contaminated water. China will continue to watch closely the developments of the matter together with the international community and reserves the right to make further reactions."

Statement by the delegation of the Democratic People's Republic of Korea

"Thank you, Mr. Chair,

Good afternoon, Good morning, Good evening, distinguished delegates,

Regarding the Japanese government's decision to dump the radioactive waste water into the sea, the international community and experts have expressed great doubts about the rationality and reliability of Japan's radioactive water processing method.

Furthermore, the Japanese people and associates engaged in fishing are themselves strongly opposing their government's decision.

So, it is clear that the discharge of radioactive waste water by Japan can pose a great risk to the marine ecology environment of neighbouring countries including the Democratic People's Republic of Korea, as well as the life safety and health of the people.

* Statements have been included in this annex as provided by delegations/observers, in the order in which they were given, sorted by agenda item, and in the language of submission (including translation into any other language if such translation was provided). Statements are accessible in all official languages on audio file at: <http://docs.imo.org/Meetings/Media.aspx>

Therefore, the Democratic People's Republic of Korea reiterates that Japan should not arbitrarily discharge the radioactive waste water into the sea, being aware of its serious consequences of discharging the water.

Thank you, Mr. Chair"

Statement by the delegation of Japan

"In the previous statement by China, the Democratic People's Republic of Korea and the Republic of Korea, there were some references to the discharge of the ALPS treated water into the sea, which is not the topic at MEPC.

First of all, I'd like to point out that ALPS treated water is not contaminated water but treated water.

The Government of Japan has provided the international community with relevant information. Those include relevant international conferences hosted by the IAEA, the OECD/NEA and other organizations.

The Government of Japan will continue to explain its efforts to the international community in a transparent manner.

The details of the potential impacts of the disposal of ALPS treated water should be discussed based on scientific evidence at appropriate fora with relevant expertise on the issue.

Japan, as a responsible member of the international community, will comply with international law as well as domestic and international rules in discharging the ALPS treated water.

For the implementation of discharge into the sea, Tokyo Electric Power Company (TEPCO) complies with the relevant international law including United Nations Convention on the Law of the Sea, and domestic and international rules and regulations.

The IAEA also acknowledges the discharge into the sea as technically feasible and in line with international practice."

Statement by the delegation of Georgia

"Thank you Mr Chair. Good morning to all. Ivane Abashidze speaking on behalf of the delegation of Georgia.

Mr Secretary General, thank you for your opening statement that set the ball rolling for MEPC 76 highlighting the salient points that this meeting must address. This remains our mission : to continue tackling firmly and, in earnest, the issues that would lead the maritime industry, as a whole, to achieve globally the crucial goals that the maritime industry, responsibly, has set itself and within the target dates that the gravity of our quest demands.

Distinguished delegates, MEPC 76, is as crucial as the previous sessions and, as the ones that follow. It is a continuing process. It opens only two days after the United Nations, last Tuesday, celebrated World Oceans Day that has, as its underlying theme, *Healthy Oceans : Healthy Planet*. How apt to celebrate this day, this year with its specific focus *The Oceans: Life and Livelihoods*, comes back to back with a session of the IMO Committee that has as its raison d'etre the prevention of marine and atmospheric pollution by ships.

Shipping, the life of all nations, coastal states and landlocked countries, and the livelihood, directly and indirectly, of all peoples must carry out its role in consonance with the oceans and the air above us. This is our duty : to protect without falter this common heritage of mankind and to ensure the sustainability of world trade where every shipment counts.

Mr Chair, Distinguished delegates.

This same month there is yet another celebration that the IMO and you, Mr Secretary General, in your video message some days ago has put in front of us, June 25, the Day of the Seafarer and, I hastily add, that also of the spouse of the seafarer.

These last months, challenging times for all of humankind has highlighted what we knew already, that seafarers are indeed key workers. This has been universally recognised and acknowledged. It now goes without saying that the logical follow through is to act on the call of IMO to expand this message to ensure a fair future for the seafarers. Without going into details and specifics it is crucial that these do not remain just statements but also translate into action worldwide by governments and the whole industry for, inter alia, all its maritime workers, offshore and onshore. As the saying goes, it is action that marks the measures of real change and transformation.

Mr Chair, this delegation reiterates the support and commitment of the government of Georgia and of Maritime Georgia that already expressed in other fora, for the work of IMO for the prevention of marine and atmospheric pollution by ships. We are fully conscious that the oceans are the life and livelihood of us all and, particularly coming from a nation of thousands of seafarers, that the support of these key workers and the importance of ensuring for them a fair future is the responsibility of all.

This, firm in the belief that real success can only be achieved globally and through IMO. We are confident that both governments and the whole industry are together four square behind sustainable shipping and the timely attainment and realisation of our never ending quest to ensure healthy oceans for a healthy planet and a fair future for seafarers."

Statement by the observer from Pacific Environment

"Thank you

Sir, it is traditional at this point of the meeting for Members to address recent human or environmental disasters that have a consequence for global shipping. Sir, the disaster that I am living is a disaster that is personal to me, but it is also personal to each and every one of us and especially to the planet. We in the Arctic are convinced that the Arctic is clearly in crisis and the change is happening rapidly beyond compare to human history and our indigenous knowledge. Last month, the Arctic Council released a new report concluding that the Arctic is warming three times faster than the average heating across the whole planet and we face the possibility that major portions of the cryosphere will be gone. Climate heating in the Arctic threatens the global climate and sea level rise around the world is an immediate concern for low-lying cities. A two metre sea level rise will have devastating impacts in many coastal communities and will likely put community infrastructure underwater.

Climate-driven disruptions in my Bering Sea homeland have placed the ecosystem in peril, with devastating impacts on both fisheries and protected resources. The Bering Sea is an exceptional ecosystem of tremendous ecological, economic and cultural importance. It supports one of the largest fisheries in the world and provides critical habitat for marine and terrestrial plants and wildlife. It is home to numerous communities and it is my home.

The IMO has already recognized that the Arctic is vulnerable to the impacts of shipping - but bolder action to protect the Arctic is urgently needed. The entire world looks to the IMO to address international shipping's contribution to the Arctic climate crisis - in hopes the IMO would take meaningful action to reduce both emissions of greenhouse gases as well as emissions of black carbon. An increase in marine traffic heightens the risk of major events like oil spills and whale strikes and introduces millions of gallons of wastewater, chemicals, trash and noise pollution.

Last week, new research has found that Arctic sea ice is thinning twice as fast as previously thought, and while some might be tempted to view this as good news for shipping in the Arctic, it is not good news for me, for my community and other Arctic inhabitants, or for the planet. There can be no doubt that the Arctic is in crisis, and if the Arctic is in crisis, then we are all in crisis.

On behalf of myself and my community, and my colleagues at this meeting, I would like to stress the need for urgent action to reduce shipping's climate warming impacts on the Arctic. An ambitious and effective short term GHG measure consistent with the Paris Agreement temperature goals is needed, as is immediate action to cut black carbon emissions from ships in or near the Arctic.

Thank you"

Statement by the delegation of the Islamic Republic of Iran

"This delegation has also noticed the use of the incorrect term 'Arabian Gulf' in the document submitted by FOEI in MEPC 76/INF.65 in its page 11 and that the delegation may wish to record its concern over the incorrect use of historical terms, and takes the opportunity to draw the attention of our colleague that according to UN resolution ST/CS/SER.A/29 of 10 January 1990 and its subsequent addendum, the standard geographical designation of the body of water between Arabian peninsula and Iran(I.R of) is called Persian Gulf and the full term should always be used. that principle also applies to the terms such as Gulf area, Gulf States etc. When the term Gulfs area under Annexes I and V of the MARPOL Convention is used it refers to Persian Gulf and Gulf of Oman. Having that in mind, this delegation urges all Member States of IMO, NGOs, and IGOs to use the correct name of "Persian Gulf" in their documents and interventions."

ITEM 3

Statement by the delegation of Portugal

"Dear Chair,

We are ready to support the adoption of the draft amendments to MARPOL Annex VI on carbon intensity of ships, as a stepping stone for a regulatory framework that needs to be further improved and made more ambitious.

Having said that, we would like to recall our disappointment with the decision of this Committee to leave the carbon intensity reduction rates for Phase 3 blank. This in our view does not guarantee the achievement of the 2030 target and introduces great uncertainty both for the business and the regulators.

We remain committed to future IMO work on reduction of GHG emissions from ships and believe that IMO should provide global solutions ensuring a level-playing field and the clarity for the industry. However, the discussions this week has yet again showed that the current

IMO working arrangements reached their limit in dealing with the complex GHG issues in an effective and inclusive manner. We need to collectively find a solution that will allow us to deliver on effective mid-term measures in a timely manner"

ITEM 7

Statement by the delegation of Kenya

"My Chairman, Distinguished Delegates,

This delegation thanks the Working Group for paper MEPC.304(72) Agenda Item 7.

We note the impressive progress already made, and register our satisfaction in this regard. This delegation wishes to take cognizance of the major role of the Global MTCC Network (GMN) in building capacity for climate change mitigation in the maritime shipping industry in line with the progressive consideration of the Initial IMO GHG Strategy, towards the reduction of Green House Gas (GHG) emissions from ships in the industry at large. Through GMN, the Maritime Technology Cooperation Centres have navigated through the industry establishing robust linkages, as well as spearheading advancement of technical expertise within developing countries.

Mr. Chairman, Distinguished Delegates, the (GMN) and MTCCs are fast approaching a phase where actual implementation of the Initial IMO Strategy will be of essence to developing countries, who are yet to come full circle into total implementation completion of the short-term candidate measures, as precisely highlighted in the strategy.

We therefore seek consideration for the critical need for sustaining the most crucial mechanism IMO created for capacity building, which is the GMN network. This network, faces an uncertain future as EU funding will no longer be available after December this year, just at that point when developing countries, especially SIDS and LDC, struggle to start implementation of the short-term candidate measures under the Initial IMO GHG Strategy. In this regard, we hereby put in a request to EU to continue the kind support without an interruption and without losing momentum which was precipitated by the most innovative and impactful intervention EU and IMO catalyzed to fight climate change issues.

This delegation wishes to express its gratitude to the European Union for funding the GMN project. We wish however, to encourage the EU to continue in funding a Phase 2 through a tested GMN/MTCC.

As I conclude, I wish to request that Kenya's statement in this regard be appended to the report. We shall be sending a copy of the same to the Secretariat.

Thank you, Mr. Chairman"

Statement by the delegation of Belize

"Thank you, Mr. Chair and good day, to all,

Belize would like to thank the Secretariat and the Steering Committee under the coordination of Mr. Harry Conway of Liberia for all the work made on this matter.

After analyzing the Comprehensive Impact Assessment of Short-Term Measure document given under agenda item MEPC 76-7-13, this delegation is of the view that enhancing the technical cooperation to developing countries is of paramount importance, and this emphasizes the need for sustainable interventions through the Maritime Technology Cooperation Centres (MTCCs). Belize, for instance, along with other Caribbean countries, has benefitted significantly from the MTCC Caribbean.

Thanks to the European Union (EU), we have a working model for technical cooperation on this issue. We request that the EU considers to continue supporting this important global network of MTCCs through the International Maritime Organization. This will ensure that countries like ours can continue to implement the GHG Strategy.

Belize would like to align ourselves in supporting the proposal made by Solomon Island in document MEPC 76-7-62 specifically on the review after three years from the entry into force of the short-term measures whether there are any disproportionately negative impacts on States, SIDS and LDCs in particular.

Mr. Chair, this delegation would like to request that this intervention is included in your report.

Thank you, Mr. Chair."

Statement by the delegation of Indonesia

"We would like to thank the Secretariat for preparing the document 76/7/13. We note the action requested at para 11.5.2 that identifying capacity-building is needed to improve impact assessments, including strengthening the capacity of developing countries, especially SIDS and LDCs.

So it is in this context, this delegation is of view that MTCC is one of the best example in the form of strengthening the capacity, with the support and contribution from donors through IMO's technical cooperation in this area. Indonesia is one of beneficiaries of these projects, and we realize the need to have "lesson learned" for future mechanism development.

Furthermore we would like to also support document 76/7/64 underlining the impact to social and economy which is actual impact posed by the short term-measures... especially for countries that rely on sea transport heavily like Indonesia...

We also wish to encourage the Secretariat to increase the efforts to mobilize more resources and to consider supporting the continuation of the MTCC network which is specifically captured in our initial GHG strategy.

Thank you."

Statement by the delegation of Jamaica

"Thank you Chair.

Good Morning, Good Afternoon and Good Evening Everyone.

Chair we want to start by aligning ourselves with the comments of the distinguished delegates of Kenya, Trinidad & Tobago and others in thanking the EU for their funding of the Maritime Technology Cooperation Centre initiative. Climate change and its impacts are a reality for small island states of the Caribbean. Each year as we face the increasing ferocity of adverse

weather conditions, which destroy whole communities and threatens our very existence as states we are more than mindful of the need for urgent action.

Through the MTCC in the Caribbean, states have been mobilized to work with stakeholders to seek to increase awareness of the need for and the strategies/initiatives available to reduce harmful emissions and contribute to the global climate action thrust. The MTCC has made significant contributions to capacity building within the Caribbean region. Their work has assisted Jamaica and the region in gaining further insight into the technical, legal, and institutional framework requirements for the facilitation of green technology uptake and energy efficient operations.

Their capacity building initiatives have, provided opportunities for collaboration among public and private sector industry stakeholders; facilitated the exchange of knowledge, promoted maritime energy efficiency, and highlighted various approaches to achieving compliance with MARPOL Annex VI, including through the leveraging of existing legal and institutional mechanisms to achieve compliance. This is especially important given the challenges in the region with effectively implementing the MARPOL Convention, increasing technical knowledge, and the decarbonization of ports.

However, the job is not complete. We believe the MTCC will continue to be vital to Jamaica and the region's efforts to develop a blue economy, implement and regulate GHG emission reduction measures thus further strengthening their capacity to contribute toward achieving the IMO GHG Strategy and increase awareness in the region. Given the maritime climate action hurdles unique to the region, we therefore fully endorse initiatives for the continuation of the MTCC project in the Caribbean."

Statement by the delegation of Saint Kitts and Nevis

"Dear Chair,

Thank you for giving us the floor.

Due to time constraints this Delegation wants to be brief and stands with other delegations in expressing their appreciation and support to the work of the Global MTCC Network (GMN) and especially to the Caribbean MTCC.

The Caribbean Maritime Technology Cooperation Centre (MTCC Caribbean) has made major contributions to the region's capacity building. Their work has helped our country and region get a better understanding of the technical, legal, and institutional framework needs for green technology adoption and energy efficiency operations.

Given the Caribbean's particular marine climate action challenges, St. Kitts and Nevis fully support any actions aimed at ensuring the MTCC's continuity and support for the Caribbean.

Major challenges exist in efficiently integrating MARPOL into our legal and institutional frameworks, as well as significant technical knowledge gaps and slow technological adoption, not to mention issues that remain largely unaddressed, such as port decarbonization. There is still more work to be done, and MTCC being aware of the region's requirements will play a significant role in advancing the process.

We will continue to collaborate with the MTCC Caribbean which continues to advocate for low carbon maritime operations in the region.

Thank you."

Statement by the delegation of Argentina

"Señor Presidente,

La Argentina reconoce el trabajo hecho en la evaluación de impacto.

Según la estrategia inicial, el impacto sobre los estados debe ser evaluado y considerado antes (subrayo antes) de la adopción de una medida. En el MEPC 75, decidimos un procedimiento especial para no retrasar la medida.

En los hechos, la metodología fue mejor que la de la Circular 885. Los resultados son muy claros: los países en desarrollo sufrirán un mayor impacto económico, tanto en su comercio como en su PBI, que los desarrollados, y los distantes de sus mercados, serán más impactados. Aun dentro del rango de reducción evaluado (10 a 21,5%), cuanto más alto sea el porcentaje, mayor será el impacto. Al respecto, reconocemos el documento 7/61 de Brasil.

Algunos Miembros argumentan que no se han identificado impactos desproporcionadamente negativos, o que tal definición no ha sido acordada. Varios urgieron a abordar la crisis del clima según las metas del Acuerdo de París.

La Argentina coincide en la urgencia de tomar medidas, pero también con la ética, asimismo mencionada aquí.

La ética en el cambio climático se traduce en "equidad" y en "solidaridad". El Acuerdo de París establece metas dado que el cambio climático es un problema de toda la humanidad, pero también reconoce el derecho al desarrollo, y los principios de equidad y CBDR. El principio CBDR, además, es parte de la Estrategia Inicial.

No parece equitativo citar las metas del Acuerdo de París y a la vez negar los impactos que la medida tendrá, o excusarse en definiciones aun no acordadas. Y es decepcionante que algunos países desarrollados sugieran limitarse a un grupo de países en desarrollo.

Todos los países en desarrollo estamos decididos a contribuir solidariamente a la lucha contra un problema de la humanidad que no generamos. Pero la solidaridad demanda tener en cuenta nuestras circunstancias.

Numerosos países en desarrollo viven del comercio internacional de commodities, aumentos en los fletes o en los días de navegación naturalmente nos afectan. No reconocer los impactos económicos de esta medida, y no proveer mecanismos para abordarlos, menoscabarán nuestra capacidad para cumplir objetivos nacionales, como el de reducir la pobreza, pero también nuestra acción contra el cambio climático.

La Argentina apoya los cursos de acción contenidos en el documento 7/13, párrafo 11, y el documento 63, pero no puede apoyar el documento 62.

Señor Presidente, este es momento crucial, pero es sólo el primero. Hasta dónde, como Miembros de la OMI, estemos dispuestos a una acción equitativa y solidaria determinará cuán exitosos seamos ahora y en el mediano y largo plazo.

Muchas gracias."

Statement by the delegation of Belgium

"Thank you Chair and good day to all. Belgium welcomes and supports in principle the work on the Comprehensive Impact Assessment of the STM and we thank all that contributed to the work, including the drafting of the report.

With regard to the commenting papers, we agree, as mentioned in MEPC 76/7/64, that it is important to keep the impacts of the STM on States, especially SIDS and LDCs, under review.

In that sense, we can support the proposal in MEPC 76/7/62, which proposes to consider disproportionately negative impacts on States in the light of 3 years of implementation of the STM, offering the committee the necessary time to gain more insight and experience on any disproportionate negative impacts endured by the STM.

With regard to the development of a permanent mechanism, as proposed in para 15.2 of document MEPC 76/7/64, we believe that this is premature and we would support the interventions from France and Germany on how to further deal with the impact assessment.

In any case, we should ascertain that the overall climate ambition is not hampered, as was well explained by Tuvalu.

In the same reasoning, we cannot support the proposal in MEPC 76/7/63 to introduce general exemptions and waivers."

Statement by the delegation of the Cook Islands

First statement

"Thank you for all the work done by the Steering Committee on the comprehensive impact assessment, the results of which, sadly, do not seem to be being taken too seriously. The Terms of Reference given by your committee were fulfilled and only after the event does it seem that they are being undermined. We had a robust stakeholder assessment during that exercise and there is absolutely no question that we are going to be severely impacted by these short-term measures. There is no question that the negative impacts – an all are negative in our case -will directly affect the lives, society and social fabric for those still living on our islands. We have had the rhetoric; now we need action.

With regard to the waiver clause, we would firstly point out that within MARPOL Annex VI there is already a waiver clause, namely Regulation 19.4 which provides a waiver in respect of the EEDI. With regard to the CII, what was proposed to be exempted, after review of the comprehensive impact assessment, in a new Reg 19.7 was the enforcement mechanism in case of rating of D/E. In other words, the ships in question would still be required to meet the CII requirements as much as they can while serving us but would not be penalised in case of being rated D/E. In short the ships in question would still need to report fuel consumption and to be rated but would be exempted from the requirements for corrective actions, so that they would still be able to serve us in a timely fashion.

There is just one shipping company that serves our islands and we are at the very end of the South Pacific supply chain. And if the couple of ships that currently serve our islands are unable to meet the carbon intensity reduction targets what then? We have no idea whether those two vessels that serve our needs will be able to comply with whatever reduction target is agreed this week, and if they cannot comply, what happens then? No amount of technical cooperation will ensure that we continue to receive food and medicines we rely on and to

suggest that we should have to wait for 5 years for this committee to carry out a proper assessment of impacts would simply be far too late.

With regard to the reference to "disproportionate", the Initial Strategy is explicit: you are required to take into account the negative impacts prior to adoption. A negative impact that could be absorbed by some developed nations would cause serious impediment to others. As our stakeholder assessment has shown within the Steering Committee's report, we would likely suffer significant disproportionate impact

Thank you Chair"

Second statement

"Thank you Chair and thank you for your summation. You appear to have made no mention, however, of the issue of disproportionality, which was a key part of the discussion leading to your summation, if not the decisions made. What we need to know is whether the IMO is the only organisation that does not appear to understand what disproportionality is, unlike the UN itself, the OHCHR, UNHCR, the IPCC, UNEP, OECD - I could go on.

In our paper discussing further measures on impact assessments we cut and pasted from the West and Central Pacific Fisheries Commission agreement where it is agreed: "... ensure that any measure adopted does not result in transferring directly or indirectly a disproportionate burden of conservation action on developing countries, SIDS and LDCs, and thereafter, if identified, an exemption of specific obligations would be given". Delegates here from many states say that they do not understand what disproportionate impacts are and yet the states that are Party to the West and Central Pacific Fisheries Agreement, are all part and parcel of an agreement that compels and obliges them to do this. Why is it that those states can do it under that agreement, but cannot do it at as required by IMO's Initial GHG Strategy when reviewing our Stake Holder Assessment? I would like an explanation on that, please.

The results outlined in the Steering Committee's report were not a desk top exercise in our case. It was hands-on, specific the Cook Islands and its import needs and way of life. I would also like to say while technical cooperation is extremely important, no amount of technical cooperation will ensure that we continue to receive the essential foods and services that we rely on in a timely and cost-effective manner.

To now turn this aside leaves us in a precarious position. What you are now doing in telling us to wait five years to gauge the impact of the short-term measures on us is putting us into a situation that is insufferable, unjustified and will place an intolerable burden on an economy already ravaged by the pandemic; and will contribute to further undermining our recovery and put back our development for many years."

Statement by the delegation of Germany

"Thank you, Chair, for giving us the floor.

We would like to thank the Steering Committee and its Chair Harry Conway, the Secretariat as well as the World Maritime University, UNCTAD, DNV, and Starcrest for the work done under immense time pressure.

The reports present estimations of impacts, and although we have reservations about some of the methodologies used in the reports, which may have implications for the outcomes, we accept the report of the impact assessment.

The question before us today is how to deal with the outcome of the impact assessment. This delegation remains committed to assessing and addressing impacts of measures on States, as appropriate, in line with the Initial Strategy. The challenge is that the Steering Committee did not provide any proposals for definitions of what would be a so-called 'disproportionately' negative impact – which consequently makes a discussion on them so difficult. What qualifies an impact to be "disproportional"? There are neither criteria nor reasoning for the term. But we do not see in any way that the mere presence of impacts would necessarily result in a waiver of the measure.

On the contrary, document MEPC 76/7/62 (Solomon Islands) correctly points out that any measures to mitigate disproportionately negative impacts should not themselves introduce negative impacts. We support this submission and we explicitly support the conclusion, that the mitigation of negative impacts of measures should not negate the efficacy of the measure. For this reason, this delegation opposes document MEPC 76/7/63 (Antigua and Barbuda et al.) because we feel that it would factually undermine meeting the levels of ambition of the Initial Strategy.

With regards to document MEPC 76/7/64 (Argentina et al.), we are of the opinion that some elements towards the end of the submission may be further considered. But we are not entirely confident that they should be included in the Resolution text itself because that text needs to deal with the amendments. Instead, we think it may be more appropriate to include any respective text – as far as considered necessary by the Committee – as conclusions in the report of this meeting.

Having said this, Germany finds it important to keep consistency and that any wording does not divert from agreed language in both the Initial Strategy and in the Impact Assessment Procedure. We see little merit in developing a mechanism to address impacts as long as there is no consensus on the definition, namely the question which impacts are disproportionate, and as a consequence, no decision of this Committee if there are disproportionately negative impacts which need to be addressed. The Impact Assessment Procedure already specifies that impacts should be kept under review. Hence, we see no need to repeat this again. We would, however, support undertaking a lessons-learned exercise to improve the way in which impacts of mid-term measures will be assessed.

Thank you."

Statement by the delegation of India

"Indian delegation endorses comprehensive impact assessment submitted and appreciates the extensive work done by Steering committee and thanks all the co-sponsors for submission of their papers on this topic. However, we are of the view that there is still a lot more to be done by this Committee to have a more accurate assessment of the impact and also to have some fruitful follow-up measures on the issues raised in the report.

As identified within the 7 tasks, there is a clear indication of negative impacts on developing economies including SIDS and LDCs to various extents and that this impact is anticipated to be more severe with more stringent regulations. The report also seems to be in a dilemma between the Speed Reduction and Impact on inflation of commodities as the forced speed reduction would require additional vessels to compensate for the transport capacity loss. A 30% Speed reduction can result in an average 10% inflation which can be compounded by other seasonal factors. This certainly is a matter of serious concern, particularly for developing economies, and even raises doubts about the overall environment benefits of this strategy itself.

Another point of concern is the abatement costs for the ships ranging between 2% to 16% and in case of short sea up to 40% by 2030 to comply with the rules without speed reduction, indicating that the small-sized ships plying short-sea shipping routes would be more negatively affected and in some cases the increase in freight rates could be even 50% leading to modal and nodal shifts in such sectors from sea to other economically viable transport modes. It is for this fundamental reasoning that this delegation has always maintained the position that the environmental regulations beyond certain limits would be detrimental to a sector which is already the most environment-friendly.

We would also like to draw the attention of this Committee to the finding in the report that in 2020 alone, the COVID-19 pandemic resulted in an estimated 3.9% drop in global GDP and an effective loss of 255 million full-time jobs worldwide (UNCTAD, 2021). The developing and least developed countries, have been more severely affected by this downturn, compared to the developed economies, as the developing economies are less resilient to absorb the shock.

Mr. Chairman and distinguished delegates, the Covid-19 pandemic has placed an unprecedented crisis before the world community, with uncertainties still looming the global economy. Experts feel that it may take years for its recovery, if not decades. India strongly believes that Shipping as the carrier of world trade has a vital, proactive and compassionate role to play in this crisis and our first priority should be to revamp and rejuvenate the shattered world economy. In this attempt, it is the considered view of this delegation, that the Committee should not be hesitant to revisit our strategies and even realistically reassess our targets, because unprecedented crisis demands unprecedented corrective measures from a world leader. More so, when this worldwide total and partial shut downs going for almost a year now, would have automatically brought down the emissions level much lower than any regulations would have envisaged.

With regard to the Commenting paper MEPC 76/7/64, India shares the concerns expressed by the cosponsors of the submission Argentina, Brazil and others, particularly on the need to work for the development of a permanent mechanism to address the impact of IMO GHG measures on States, including to suggest feasible follow up corrective measures in this regard required time to time.

However, with regard to MEPC 76/7/62 and MEPC76/7/63, we do not think flag-wise exemption or waiver to the provisions of the Convention proposed in the submissions is feasible for the international shipping considering its international nature of the operation and particularly while dealing with a global issue with trans-boundary impacts. We urge the Committee to reiterate its commitment to provide mechanisms for facilitating information sharing, technology transfer, capacity-building and technical cooperation among member states, taking into account resolution MEPC.229(65) for Promotion of Technical Co-Operation and Transfer of Technology.

In conclusion the review is very important in the year 2026 to identify the effects of implementation of short-term measures on developing economies, SIDs, and LDCs, especially on the disproportionate negative impacts. India is of opinion that the review and the phased implementation would help and ensure that we do not tilt the delicate balance between decarbonisation and impact on developing economies."

Statement by the delegation of Indonesia

"Thank you Mr. Chair,

We would like to thank the Steering Committee, particularly to Mr. Harry Conway from Liberia and the Secretariat for the excellent work.

and

We would like to join Malaysia, and several member states to align ourselves with Argentina, and other co-sponsor of the document 76/7/64, particularly on paragraph 15 number 2.

We would also like to highlight that in this matter, there is a need to apply more of the common but differentiated principle... after all, our effort is the part of Paris Agreement and the efforts made by member states through the IMO must take into account of this principle.

In this case, Mr. Chair, the fact is, there are countries that have limited ability to adjust their shipping activities rather than imposing policy that tends to somewhat only providing challenge to the countries that have less ability to adjust their shipping activities... which will result not only to higher distribution cost but also higher price of goods and service in the end...and as this effort should be a common effort for common interest, therefore... we would like to strongly support the proposal of the establishment of a mechanism to help impacted countries to adjust and finally allowing them catching the expected level of effort. This way, Mr. Chair, the demand of ambition set on the Initial Strategy could be met with more positive cooperation.

Thank you."

Statement by the delegation of the Solomon Islands

"Thank you Chair,

I would like to thank the many delegations who have supported the Solomon Islands submission MEPC 76/7/62. Like them, we do not accept MEPC 76/7/63.

As far as the action points in 76/7/13 are concerned, we do not support point 4. Further, it is essential that points 5 and 6 are understood in the light of the following comments, which are also relevant to the document MEPC 76/7/64 by Argentina et al.

Chair, the impact assessment describes clearly its limitations and the fact that its different parts rest on different assumptions. 'Addressing' disproportionate impacts, requires identifying them first. And the impact assessment does not identify any disproportionate impacts, but merely states that there are impacts, and that they may differ.

The differences are illustrated by the intervention by the distinguished delegate of the Cook Islands. In our view, while many ships in Pacific domestic trade are indeed out-dated, most international shipping in the Pacific will be able to comply with the short-term measures, even at the higher ambition level that we would support. International shipping to our Islands is disproportionately expensive, not inefficient.

Thus, the impact assessment is not a basis for any concrete decision on specific mitigating actions. I suspect this is why so many supported our proposal for a 3-year review before considering mitigating actions.

In this context I would like to point out – as did my learned friend from Tuvalu – that the decision by MEPC 75 to approve the terms of reference for the impact assessment at the same meeting

as the draft amendments to MARPOL ANNEX VI, was not a decision to adopt the MARPOL amendments and mitigating actions together as a package. This was clearly the intention of some at that meeting, but it was not decided by the Committee.

I trust that you will confirm in your summing-up that the Committee has taken no such decision on a package approach.

We do not believe it would be useful to try to decide on a single mechanism for mitigating actions, so we cannot support the proposal in par 15.2 of the Argentina et al. paper. We do not think the other proposals in paragraphs 15.1 and 15.3 would be well-placed in the resolution. Not least because, their wording is not aligned with the wording of previous review decisions and with the text of the initial strategy.

The resolution for the adoption of the short-term measures should not be a vehicle for amending or reinterpreting the strategy."

Statement by the delegation of Tuvalu

"Thank you Mr Chair, Good evening to you and collegiate greetings to the rest of the distinguished delegates.

I simply would like to come back to the package issue advocated by the distinguished delegate of Argentina, who we do thank for the textual reference in MEPC75/18. I promise to be as brief as possible. Mr. Chair, may I direct you to the text itself of MEPC75 indicates that such an approach can be considered, but it does not say it has been approved, either specifically for a particular measure or for all GHG measures generally. MEPC75/18 talks about several and different "packages":

- .1 A package consisting of the "draft amendments to MARPOL Annex VI on reducing the carbon intensity of existing ships as set out in annex 1 to document MEPC 75/WP.3", and the "terms of reference for a comprehensive assessment of the possible impacts of the short-term measure on States". This is apparently considered as a decision by Argentina due to the term "with the understanding", but this is misrepresenting the meaning. It was considered as a package but it was not necessarily accepted as one.
- .2 A package is mentioned in 7.23 as advocated only by "many delegations". Does this mean the majority of those that "underlined that the draft amendments and the terms of reference for a comprehensive assessment of the possible impacts of the short-term measure on States should be approved as a package"? It has therefore NOT been approved as such, this was a request coming from only some.
- .3 In 7.35, another package is also advocated by "many delegations" consisting of the "draft amendments" and "the assessment of their impacts on States" - not the ToR but the assessment itself.
- .4 In that same paragraph 7.35, a different "several other delegations" stressed the importance of mitigation of any identified negative impact on the SIDS and LDCs, which shows the difference between mitigation and the impact assessment,

- .5 In 7.36 some unidentified "Delegations" thought that it would be important to "keep the possible impacts of the measure on States under review after adoption "

The decision part of the report in para 7.37 does not mention a package. The Committee approved the terms of reference and arrangements for conducting a comprehensive impact assessment of the short-term measure, set out in annex 6, and instructed the Secretariat to initiate the impact assessment in accordance with the approved terms of reference.

Incidentally, the term package can be found in other places in the MEPC75 report at 7.71 in relation to the IMRB proposal where it talks about a package of measures. In this case the report is using the term interchangeably with a "basket".

Clearly there is no commonly held definition of what is meant by the term "package approach" nor agreement to its use.

Tuvalu therefore ask that this is clarified by you or the secretariat so that we can continue to negotiate knowing the exact process that our work will follow.

Once again, holding the adoption of certain measure to the adoption of all measures, if this ever was the meaning of package, is a process that would need to be clearly approved by this house as the risk of extreme delays that would follow is probably not bearable by IMO in the current context.

Thank you Chair"

Statement by the delegation of United Arab Emirates

"UAE wishes to thank the Chair of the Steering Committee Mr Harry Conway from Liberia and we also extend our appreciation to all Member States and stakeholders contributed to this work. UAE supports the key outcomes of the Comprehensive Impact Assessment of the short-term measure and the action requested in Paragraph 11 of MEPC 76/7/13.

With regard to MEPC 76/7/63, this delegation agrees on the proposal for exemption based on the results of the comprehensive impact assessments showing negative impacts presented during this session. The proposal is also consistent with IMO initial strategy and in line with MEPC.1/Circ.885. We do understand that the document MEPC 76/7/62 (Solomon Islands) proposes that no general exemptions or waivers be adopted now, but that three years after entry into force of the short-term measure a review is performed. However, this delegation would seek clarification on how the Committee would address the impact before adopting of a measure?

With regard to MEPC 76/7/64. UAE is one of the co-sponsors and we therefore this delegation supports the document, in particular, to have part of actions requested in document MEPC 76/7/64 to be reflected in the draft MEPC resolution as set out in Annex I of MEPC 76/3."

Statement by the observer from Pacific Environment

"Thank you Chair. We would like to note that while the impact assessment represents a considerable amount of work in a short window of time, we have issues both with some of its conclusions and with how the process was conducted.

Civil society was not invited to participate in these discussions, and we are uncertain how the contractors collaborating with UNCTAD were picked to conduct these analyses.

Lacking the opportunity to engage earlier, we can only note that the contractors have solely analyzed the negative impacts from this measure. The same applies for the 21 case studies selected and the specific products more closely analyzed. Consequently the work contains a systemic negative bias, which appears to be due to the terms of reference set out for this process. In addition, the process of determining costs for the study is unclear. As an example, the study looked at a range of biofuel costs, then used a cost for biofuels that was higher than the range. This has the effect of over-estimating the negative economic consequences of a fuel switch.

If only negative impacts are considered, then a more ambitious measure that increases impacts automatically looks worse. Rather than offering a full picture of positive and negative impacts that both expand and deepen with increased stringency, we are left with only one half of the story.

This is especially odd as the prior impact assessments produced for this measure, ISWG-GHG 7/2/20 and ISWG-GHG 6/2/1, identify six areas of positive impacts, and per circular 885, the study should have built on this prior work. We urge member states to consider inclusion of positive impacts of measures in any future "lessons learned" process envisioned in 76/7/64.

Thank you!"

Statement by the observer from the Nautical Institute

"Chairman and esteemed delegates, The Nautical Institute and RINA jointly submitted paper MEPC 76/7/16. The content of this paper has been taken into account by the WG and in MEPC 76/WP4.

The Nautical Institute input to this process is the result of extensive consultation with our members through our Sea Going Correspondence Group; Seaways Magazine, and a joint webinar with RINA.

The Nautical Institute has a strong commitment to sustainable shipping.

The Nautical Institute wishes to thank all involved in the WG and CG process for taking our inputs on board. Our inputs focussed on safe operations including; precautionary override, clear authority to the Master and Officer of the Watch, ready access to reserve power from the bridge, risk of password access, respect for on board decisions, and reducing the impact on bureaucratic burden."

Statement by the observer from CLIA

"Thank you Chair,

CLIA would like to thank the Secretariat and the Chair Mr. Sveinung Oftedal for their efforts in leading the work in ISWG-GHG 8. This Intersessional meeting had an ambitious agenda with the approval of the supporting guidelines for the EEXI and CII measures occurring at MEPC 76.

CLIA submitted MEPC 76/7/34 for consideration by the Committee. This document addresses urgent issues with the CII calculation method for ship types which engage in extended periods of zero distance traveled, such as cruise passenger ships. More specifically, CLIA has found

that the current calculation method creates a perverse incentive for ships to travel a greater distance, and emit more GHG emissions, while improving the ship's performance with regard to carbon intensity.

CLIA believes it is very important to ensure that the implementation of short-term measures for each ship type contribute to all of the Levels of Ambition of the Initial IMO GHG Strategy. Ships should reduce absolute emissions while improving their CII performance. Evidence that carbon intensity and absolute emissions may not be linked should be taken seriously as implementation of a measure to improve carbon intensity should not come at the detriment of reducing absolute emissions.

MEPC 76/7/34 was not considered at ISWG-GHG 8 due to time constraints. CLIA requests that time be made available at this session during our discussion of the outcome of ISWG-GHG 8 so the time sensitive elements of our document can receive due consideration.

Thank you Chair.

If you need further information or details, please do not hesitate to reach out to me via email.

Thank you for your time."

Statement by the delegation of China

"China fully supports the adoption of G3 Guidelines submitted by the Working Group.

In the discussion, some delegations questioned the ambition of this set of reduction factors, or even argued they were lower than the "Business as Usual" (BAU) scenario. This misunderstanding was mainly caused by the misinterpretation of the CII reduction factor and the carbon intensity target of the Initial Strategy.

The CII reduction factor was set for individual ships, while the carbon intensity target in the Initial Strategy was for the overall international shipping. In reality, carbon intensity reduction in international shipping has been largely driven by the increasing ship size, but such economies of scale cannot be captured by CII mechanism. As shown in the 4th IMO GHG Study, Table 3 on page 24, the overall AER of international shipping in year 2018 was 22% lower than 2008, but the individual-based carbon intensity was just 9.3% lower. This indicates the fact that the CII mechanism will actually lead to a larger carbon intensity reduction in international shipping than the given CII reduction factors for individual ships.

In light of the above, we have the following views:

First, as specified in draft G3, the reduction factor as 11% in year 2026 is equivalent to 40% lower than year 2008. As the average ship size continues increasing, the overall carbon intensity of international shipping will have been higher than 40% by then.

Second, as shown in the 4th IMO GHG Study, again Table 3 on page 24, the CII reduction factor of individual ships from year 2012 to 2018 was 4.2%, with an annual reduction rate as 0.7%. In this regard, the annual reduction rate as 1% and 2% in the draft G3 are much higher than the BAU scenario.

To sum up, the draft G3 are based on the real carbon intensity performance of international shipping and are fully in line with levels of ambition set out in the Initial Strategy."

Statement by the delegation of the Cook Islands

"In the absence of a waiver clause linked to consideration of the impacts assessment already undertaken being agreed prior to EIF, We cannot consider and will not support any increase in the CII reduction levels proposed in the report of ISWG 8

Our stakeholder assessment already showed a wide range of significant negative impacts based on the CII ranges used in the comprehensive impact assessments under TOR determined by the Committee. These negative, and yes disproportionate impacts, could only be compounded further as the required updated further impact assessment would undoubtedly show.

Any increase in these reduction levels without a compensating waiver would place even more difficulties on what would already be an intolerable burden our ravaged and fragile economy that these amendments as currently drafted do not take into account and it would appear could not now do so before 2027 or 2028

To be clear, we support the reduction factors as proposed the G3 guidelines as shown in MEPC 76 WP 4 .and in the absence of a waiver could not reassess this position."

Statement by the delegation of India

"India supports adoption of 2021 Guidelines on operational carbon intensity reduction factors related to reference lines given in Para 100.6 of MEPC 76/WP.4.

We believe, the Reduction factor (Z%) for the CII relative to the 2019 reference line given in Table 1 of G3 Guidelines which was proposed by Chair of ISWG GHG 8 as a way forward is fair and pragmatic. The industry will be using AER as CII metrics for most ship types covering 85% of GHG emission. We are aware of limitations of AER in representing energy efficiency of individual ships. Between two sisterships, the ship doing more loaded distance will be shown as inferior. That means we shall be inferiorly rating that ship which is doing more efficient voyage planning and voyages.

The Energy Efficiency Technologies that are available now and being widely used can give limited improvement in propulsive efficiency of ships. Some may say there are technologies like wind assistance and air lubrication but ship owners have to think about technical feasibility and commercial viability for retrofit on existing ships. For example, each compressor for air lubrication requires around 200 KW, a ship with 6 compressors will require 1200 kW. Where will this power come from for an existing ship?

Putting higher reduction factors at this stage risks at least two things (1) increasing total GHG emissions because individual ships may be forced to do longer ballast voyages or carry less cargoes to keep their respective AER values down, and (2) safety risk associated with lower speed because to expect an existing ship to drastically reduce their AERs year by year the course left to the owners will be reduction of vessels speed.

The Chair's proposal to take decision on Phase 3 reduction rate during review before 2026 is very prudent since this will provide an opportunity to this Committee to understand AERs and other voluntary CII metrics data for which will be collected from 2023. The Committee will have data in hand to take mature and informed decision regarding Phase 3 reduction factors to ensure meeting or exceeding 2030 goals of IMO.

Thank you Chair."

Statement by the delegation of the Philippines

"Thank you Chair, and good day distinguished delegates.

We thank the Chair of the Intersessional Working Group on Reduction of GHG Emissions from Ships, Mr. Oftedal of Norway for his leadership and hard work, and all the participants for their cooperation resulting to the agreements reached relating to the technical guidelines supporting the EEXI and CII frameworks. We recall the long discussions, negotiation and the difficulties in coming up with the acceptable reduction factors for the required annual operational Carbon Intensity Index of ships, set out in Table 1, para 4.1 of Annex 4, in document MEPC 76/WP.4.

Mr. Chair, the Philippines takes this opportunity to re-affirm its commitment to the IMO initial strategy on the reduction of GHG emissions from ships and cognizant of the urgency and importance of adopting the short-term measures at this session, we strongly support the adoption of draft technical guidelines set out in the Annexes to document WP.4, including the reduction factors for the required annual CII in Annex4.

This delegation fully supports the phased approach, the annual rates for the 1st and 2nd phases and the strengthening of the rates for 2027- 2030 after the review as endorsed by ISWG-GHG 8. This may be ideal but in our view the most practical proposal. We believe this can meet the levels set out in the initial strategy as clearly explained by the distinguished delegate of China.

Despite knowing that these measures will be affecting the Philippine maritime industry and the country's economy, we cannot escape from the harsh reality that we have to do our part to achieve a delicate balance, after all, addressing climate change requires urgent action and addressing it now benefits us all including the future generations. Others may consider this as small steps, but for developing states like the Philippines which has limited resources, it is indeed a significant one.

We request that this statement be attached to the report of the Committee.

Thank you, Chair."

Statement by the delegation of the United Arab Emirates

"The United Arab Emirates wishes to express its thanks and appreciation to Mr. Oftedal (Norway) the Chair of the Intersessional Working Group on Reduction of GHG Emissions from Ships for the excellent work as a result we have the good outcome presented to this Committee.

As expressed by this delegation in various meetings of IMO that measures to reduce GHG emissions should be evidence-based as one of the guiding principle in the Initial IMO Strategy.

As agreed by the Working Group, UAE fully supports the outcomes of the Working Group to introduce a phase-in approach including the proposed reduction rates as follows:

1. Phase one (1% annually from 2020 – 2022);
2. Phase two (2% annually from 2023 – 2026); and
3. Phase three (undefined% annually from 2027 – 2030).

UAE believes that keeping the reduction rates undefined for Phase 3 is an appropriate approach at this stage for a number of reasons:

1. the selected reduction rates will achieve the levels of ambitions set out in the Initial Strategy, in particular the 2030 level of ambition of reducing carbon intensity of international shipping by at least 40% by 2030, compared to 2008;
2. It allows for gathering and analysing data as an evidence based approach to take further adjustment as appropriate; and
3. it falls within the scope of the levels of reduction assessed in the comprehensive impact assessment accompanying the draft amendments to MARPOL Annex VI on the short-term measure

Accordingly as mentioned by the Secretary-General in his opening remarks that the reduction factors will be further strengthened in the course of implementation and experience gained, taking into account the review of the short-term measure in the year 2026. Therefore, UAE continues to support the outcomes of the 8TH Intersessional Working Group."

Statement by the delegation of Venezuela

"Gracias Señor Presidente,

Permítame agradecer el esfuerzo realizado por el Señor Oftedal, Presidente del Grupo de Trabajo Interperíodo (ISWGGHG 8), para alcanzar una solución de compromiso, orientada al consenso en un tema complejo y del mayor interés para los Estados Miembros.

Venezuela se une a la República Popular China, la Federación de Rusia, la República Argentina y demás delegaciones que apoyan esta Propuesta de Compromiso, reflejada en el curso de acción 6, por considerarla realista y pragmática, ya que permite incrementar el rango de reducción, si ello es necesario, para cumplir con la Estrategia Inicial de la OMI; pero haciéndolo en la revisión prevista para el año 2025, cuando la data sobre la experiencia en el impacto de las medidas de corto plazo en los Estados en desarrollo se encuentre disponible.

Gracias Señor Presidente, solicito que este pronunciamiento conste en Acta."

Statement by the delegation of Portugal

"Dear Chair,

We are ready to support the adoption of the draft amendments to MARPOL Annex VI on carbon intensity of ships, as a stepping stone for a regulatory framework that needs to be further improved and made more ambitious.

Having said that, we would like to recall our disappointment with the decision of this Committee to leave the carbon intensity reduction rates for Phase 3 blank. This in our view does not guarantee the achievement of the 2030 target and introduces great uncertainty both for the business and the regulators.

We remain committed to future IMO work on reduction of GHG emissions from ships and believe that IMO should provide global solutions ensuring a level-playing field and the clarity for the industry. However, the discussions this week has yet again showed that the current IMO working arrangements reached their limit in dealing with the complex GHG issues in an effective and inclusive manner. We need to collectively find a solution that will allow us to deliver on effective mid-term measures in a timely manner."

Statement by the delegation of Belgium

First statement

"Thank you Chair and good day to all. Belgium welcomes and supports in principle the work on the Comprehensive Impact Assessment of the STM and we thank all that contributed to the work, including the drafting of the report.

With regard to the commenting papers, we agree, as mentioned in MEPC 76/7/64, that it is important to keep the impacts of the STM on States, especially SIDS and LDCs, under review.

In that sense, we can support the proposal in MEPC 76/7/62, which proposes to consider disproportionately negative impacts on States in the light of 3 years of implementation of the STM, offering the committee the necessary time to gain more insight and experience on any disproportionate negative impacts endured by the STM.

With regard to the development of a permanent mechanism, as proposed in para 15.2 of document MEPC 76/7/64, we believe that this is premature and we would support the interventions from France and Germany on how to further deal with the impact assessment.

In any case, we should ascertain that the overall climate ambition is not hampered, as was well explained by Tuvalu.

In the same reasoning, we cannot support the proposal in MEPC 76/7/63 to introduce general exemptions and waivers."

Second statement

"Thank you Chair and good day to all.

Belgium aligns itself with the intervention made by Portugal. We believe as well that the absolute minimum reduction rates needed to be in line with the 40% objective that we agreed upon in the initial strategy, is at least 22% by 2030.

We do acknowledge the very difficult nature of this discussion and we thank the Chair of the ISWG as well as all involved in making efforts trying to find a good compromise. However, we also need to stay true to the goals of the Initial GHG Strategy, not to mention the Paris Agreement temperature targets. In that sense we understand the interventions made by the USA and CAN.

Chair, in the interest of time, I will leave it at that, we have a lot of important work in front of us, as we will discuss the following days with regard to the mid and long-term measures and we are fully committed to continue our work together within the IMO.

Thank you Chair."

Statement by the delegation of Denmark

"Thank you Mr. Chair

First of all, we would like to thank the chair of the Intersessional Working Group, and not least all other Members States, for their hard work during the challenging discussions 2 weeks ago.

We acknowledge and appreciate the comprehensive efforts and trustful cooperation established in the Working Group, and we are cognizant of the difficulties in bridging divergent positions on this important issue.

That said, we align ourselves with the intervention made by Portugal, Germany, Belgium and others and **do not** agree to this outcome, highlighting the importance of being in line with the reduction targets in the strategy, especially the target of reducing carbon intensity by **at least** 40% in 2030.

At the same time, we want to proceed and move forward, and therefore we recognize that there is a majority supporting this outcome as the way forward.

We now have to continue our concerted efforts, working in the IMO spirit, to ensure that the IMO delivers on its promise and that international shipping makes its contribution to the reduction of greenhouse gas emissions from shipping.

Against this background, we now have an important, joint task before us when IMO initiates the review process in 2025.

Thank you Chair."

Statement by the delegation of Germany

"Thank you, Chair, for giving us the floor.

With regards to the Guidelines on the Operational Carbon Intensity Reduction Factors Relative to Reference Lines (G3), we had hoped that the Intersessional Working Group would have succeeded in agreeing on reduction factors that were in line with the short-term levels of ambition: reducing the carbon intensity by at least 40%, peaking emissions as soon as possible, and setting emissions on a pathway consistent with the Paris Agreement temperature goals. Because we need to consider all three levels of ambition, we are supportive of much higher numbers than at least 40% carbon intensity reductions in 2030, so e.g. the US proposal of 22 % by 2026. We came here with the aim of enabling shipping to make an appropriate contribution to the global effort to combat the climate crisis.

We came here ourselves to contribute to a meaningful implementation in line with the jointly agreed objectives of the Initial Strategy on reduction of GHG emissions from ships.

We acknowledge the efforts of all parties involved to find a common way forward. Unfortunately, we had to learn that we cannot take the next step united. This time it is not about where we necessarily want to go, but where we ought to be. The IMO Initial Strategy has clear minimum levels of ambition and science is clear that even more needs to be done.

Despite this, the current guidelines factually do not ensure that even the minimum levels of ambitions will be met. The carbon intensity reductions proposed by the Intersessional Working Group are in particular not sufficient to peak emissions as soon as possible, neither to set emissions on a pathway consistent with the Paris Agreement temperature goal. Hence, Germany cannot support of the proposed CII reduction rates for the G3 Guidelines.

However, we consider it essential that the Committee agrees on a workplan at this session and starts working on mid-term measures as soon as possible, in particular with a view that these now also need to contribute to achieving the 2030 levels of ambition, and setting shipping on a pathway consistent with the Paris Agreement temperature goal as soon as possible. And we have to accept majorities as they actually are.

Coming together is a beginning, working together is progress, and agreeing to each other is success. Germany would like to reiterate that we remain ready to work in the spirit of cooperation in the hope of more ambitious agreements in the future.

Thank you"

Statement by the delegation of the Netherlands

"We align with the statement of Portugal and EU countries that were before us

Although we very much prefer to finalize the package of the short-term measures at MEPC 76, we would find it difficult to agree with the proposed levels of reduction factors of the draft G3 guidelines as put forward in table 1 annex 4 by ISWG in their report.

There is not a lot to be gained by setting the standard at a mere 11% reduction by 2026 with a soft enforcement regime. Not having achieved the required reduction by 2026, will leave us with only 4 years to reach our goal of at least 40% in 2030 and on track of the 1.5 goal of the Paris agreement.

In light of this, we need higher reduction rates and at least 22% at the end of phase 3, and we can therefore not support the current proposal.

It is very important that the reduction factors will be set at a level for the world to witness that the shipping sector can deliver its share in the fight against climate change, and show that IMO is able to deliver on its own strategy."

Statement by the delegation of Sweden

"Thank you Mr Chair,

Sweden would like to associate itself with the statement made by Portugal. In addition, we would like to add that we are very concerned and disappointed that the Committee and the IMO has not been able to respond to what has already been agreed by the IMO in the initial strategy. The world is watching the IMO and the results of our deliberations are not encouraging. Sweden is disheartened and would have wanted to see a more ambitious outcome. Therefore, we can in principle support the proposal of the US, as we would also like to see more ambitious reduction rates. Sweden remains committed to the decarbonisation of shipping and of the Paris agreement, and the reduction rates we have in front of us are not enough. Therefore, we cannot support the adoption of G3. We kindly ask that this statement is annexed to the report. "

Statements by the delegation of Canada

First statement

"Canada supports the proposal for a phased approach to implementing the carbon intensity reduction rates. We can support setting numbers for the first two phases until 2026 at this time, with agreement on the rates from 2027 to 2030 to be set after the completion of the review.

However, as it stands now, Canada believes the reduction rates proposed in the report fall short of a carbon reduction pathway aligned with the Paris goals and we cannot support them.

The reduction rates agreed to this week should be in line with the goals of the Initial GHG Strategy. As such, in line with the position of the United States, Canada would like to state its preference for a carbon intensity reduction factor of 22% by 2026, which is very closely aligned with the impact assessment, with agreement on the rates for Phase 3 to be set after the completion of the review.

We are very hopeful that the Committee will come together and support a reduction rate that allows meaningful reductions from the short-term measure and put us on the right path to achieving the goals of the Initial IMO GHG Strategy and the Paris Agreement."

Second statement

"Canada cannot support this outcome, and we express our very deep disappointment that the reduction rates supported by the majority fall short of a carbon reduction pathway aligned with the Paris agreement. We believe there are many risks to this. But, we do accept that it has been agreed to.

Canada is, however, heartened by the acknowledgement by many delegations, including those who support this outcome, that it is indeed a compromise, that the short-term measure needs to move forward as quickly as possible, that we need to accelerate work on medium- and long-term measures, and that Phase 3 will need to be designed to meet the Strategy's goal of 40% by 2030.

Canada looks forward to working with other delegations in the spirit of these commitments that we have heard today."

Statement by the delegation of Jamaica

"Thank you Chair.

We want to commend the Chair of Working Group and the participants for the tremendous work done. We recognize that the report represent intensive discussions and compromises and we can support the report in general. However we have reservation relative to the CII reduction targets.

Chair, My country, Jamaica, has taken the firm position to support the levels of ambition adopted by the IMO in its *Initial IMO Strategy on Reduction of GHG Emissions from Ships*, as we recognize that shipping must play its role in contributing to the reduction of Carbon emissions and thus keep us on the 1.5 degree pathway.

To achieve the level of ambitions identified and in the present context, the 40% reduction targeted by 2030 in comparison with 2008, it is widely agreed that at least a 22% reduction is required between now and 2030.

Chair, while we can support the proposal for phased reduction, we are concerned that the ISWG report provides a proposal which is expected to produce only an 11% reduction by 2026, and fails to project for the remaining 4 years. This delegation is very uncomfortable with such a proposal. we believe it detracts from the transparency of the proposal in the Report, as well creates a high degree of uncertainty as to whether we will be on track to achieve the targets in the Initial Strategy.

The IMO has been allowed to regulate itself on the issues relating to climate change, and we believe has been doing a commendable job. We fear this status may be jeopardized if we do not ensure that credible targets are established and evaluated to ensure we are on track in

meeting our own objectives. We believe a proper evaluation as to our progress to achieve the level of ambition established for 2030 is not possible if some targets are missing. It is for this reason Chair that this delegation has a reservation in supporting .6 of the Group's recommendation.

Thank you Chair."

Statement by the delegation of the Marshall Islands

"Thank you Chair, and Good day to all.

At MEPC 68 in 2015, Tony de Brum asked the international shipping sector to confront the climate crisis as the defining challenge of our time. He reminded us that shipping emissions were expected to grow – and the Fourth IMO Greenhouse Gas Study confirms that emissions will increase by up to 50 percent by 2050 based on business as usual scenarios.

When we adopted the Initial GHG Strategy in 2018, the Marshall Islands made it clear that we, home to one of the largest registries in the world, would very publicly dissociate from an outcome that did not contain levels of ambition consistent with achieving the Paris Agreement temperature goals.

Since then, the IPCC 1.5° Report has confirmed that these ambitions are not enough. And we must strengthen them when we review the strategy as agreed later this year.

This week, we are considering the first concrete enactment of the strategy. It is clear that the short-term measures compromise text before us will not fulfil the vision and ambitions of the strategy. Aiming for an 11% reduction in carbon intensity by 2026 would leave the sector's emissions 751 mtCO₂e above where they need to be by 2030 to align with a 1.5C trajectory. And we cannot adopt measures that merely codify business-as-usual without losing credibility as the regulatory body for shipping.

The Marshall Islands is as always eager to find compromise solutions. But we cannot entertain proposals that do not adhere to what we have already agreed to in the Initial Strategy. Accepting this proposal would send a signal that the IMO does not hold itself accountable against the Paris Agreement and sets a dangerous precedent that policy design can be selective in which components of the Initial Strategy's level of ambition are used to inform their design and implementation.

With this being said, we are of the view that the MEPC must finalize the short-term measure this week so that the ISWG can begin to focus on the more pressing topics of carbon pricing and revising the Initial Strategy levels of ambition. If we wish to retain the credibility of the strategy as a whole, we must embark on defining mid-term measures that can increase the overall thrust of effort to keep in view the ambitions of the strategy.

Thank you, Chair."

Statement by the delegation of the Solomon Islands

"We regret the decision of the Committee to move forwards with a lower target than is required to live up to the levels of ambition set out in the agreed initial IMO strategy on reduction of GHG emissions from ships. These ambitions are already proving too low to keep us on the 1.5° pathway.

We ask the Committee to note that the level of ambition of the short term measure is not sufficient to ensure fulfilment of the ambitions agreed in the initial strategy, and that a significant gap remains that will have to be filled by other means. Since any delay would inevitably mean that more stringent means would become necessary later, we call upon the Committee to initiate discussion of mid-term measure immediately and task ISWG-GHG 9 to report to MEPC 77 with recommendations.

We recall the Secretary General's statement at the beginning of our session, emphasizing the importance of IMO to deliver on the implementation of the Initial GHG Strategy, which will ensure achieving the levels of ambition and providing a globally harmonized regulatory framework, in line with the Paris Agreement.

I would like to quote the UN secretary general António Guterres:

« When you're on the verge of the abyss, you need to make sure your next step is in the right direction. »

We are very concerned that a decision for a carbon intensity reduction factor without a specific recognition on its limitations, and the way to address them, would not be a step in the direction of the ambitions of the agreed Initial strategy on reduction of greenhouse gasses."

Statement by the observer from CESA

"As a technical adviser to the Organization this delegation will refrain from commenting on the level of ambition, but on technicalities and the editorial status of the CII Guidelines. CESA is concerned about the lack of clarity regarding the definition of transport work.

CESA recommends a supply-based approach to ensure consistency between all GHG instruments. Shipyards have to build and retrofit ships meeting EEDI and EEXI requirements in an optimal manner. Therefore, the technical capabilities of the vessel in the operational phase are governed by energy efficiency based on nominal capacity. Ships would have to be designed differently if they should be optimal from demand perspective and capacity utilization. In future the CII will be documented in accordance with the Data Collection System providing capacity information only. Consequently, also the estimation of reduction already achieved since 2008 should be performed in a consistent manner."

Statement by the observer from Pacific Environment

"Thank you Chair,

The news from my Arctic home has been exceptionally bad this year. We have learned that the Arctic is warming at three times the rate of the rest of the planet, and that sea ice is thinning at twice the rate previously estimated. My Arctic home is in desperate need of help if it is to remain an ecosystem of tremendous ecological, economic and cultural importance.

So far this week, none of the actions set forth by the IMO will provide any relief to the Arctic this decade, and without help this decade, the Arctic may be lost. The action that has potential to help the Arctic the most is an immediate reduction in black carbon emissions from shipping. Black carbon in the Arctic was to be discussed at this meeting, but now has been deferred to MEPC 77, more time lost, more damage done.

The recitals of both the Paris Agreement and decision 1/CP.21 ask of Parties, "when taking action to address climate change, to respect, promote, and consider their respective obligations to human rights, the right to health, the rights of Indigenous Peoples, local

communities, and so on. Please consider these words, and please do not delay action to protect my Arctic home, and the planet we all depend on and share any further.

Thank you Chair."

Statement by the delegation of Belgium

"Belgium agrees with the importance of R&D in ship design & technologies. Many initiatives are already ongoing and still much more is needed, as such we are pleased to see the positive signal from industry willing to invest in this.

What is even more important is the worldwide deployment of alternative fuels and corresponding investments in port and bunker-infrastructures. The IMRF is not addressing this important issue. A change of behaviour within the industry will be needed and the IMRF is not addressing this issue either. We have other submissions on the table that do address this and that we will discuss tomorrow and these proposals have many similarities with the IMRF, which makes it difficult to deal with these proposals separately.

It seems more efficient, also in terms of IMO resources, to deal with the various proposals in one go. Especially because we urgently need to prioritize and develop mid- and long-term measures."

Statement by the delegation of India

"India is not against IMRB, but fully recognises the urgent need for more aggressive R&D to avail clean and sustainable fuels for the maritime sector. Our delegation thankfully takes note of the of the various related papers in this meeting, endeavouring to address many of our concerns on the legal, administrative and enforcement mechanisms suggested for the creation and management of the proposed IMRF. We therefore appeal to this Committee to kindly take note of the clarifications and affirmations reflected in those submissions, particularly regarding the management and equitable distribution of fund, taking cognizance of the historical background of anthropogenic emission trajectory and member state commitments under UNFCCC to address the genuine concerns of the developing nations. Hence, we believe that the base for any further discussions on IMRB shall be the existing Resolution of this Committee MEPC.229 (65) for Promotion of Technical Co-Operation and Transfer of Technology, duly recognizing CBDR-RC.

Mr Chairman, no amount research activity is going to resolve the global issue of climate change unless the benefits of such activities are rightfully shared with those hold the key to emission control of the future world order. ie. the developing nations accounting for more than 2/3rd of world population. As has pointed out in our cosponsored paper MEPC 76/7/20, more than 70% of the research projects today are concentrated in a specific geographical sector of the world. Unless this forum demonstrates some bold efforts to mitigate this social, economic and technological imbalance among member states, IMRF cannot have an all-inclusive way forward.

Regarding the commenting papers, we agree with most of the contentions in 7/58 from Turkey, particularly on the need for this Organization to work along with other UN Bodies, taking advantage of the dedicated global funds for Climate change under UNFCC in line with Article 9, 10 and 11 of the Paris Agreement.

Regarding the detailed justification in MEPC 76/7/7 from ICS and others, particularly on the contention that there won't be any administrative burden on the member states as the fund collection can be smoothly undertaken through the existing Fuel oil Data Collection System of

the IMO, we would like to cite the attention of this Committee to Regulation 22A.11 which clearly mandates that the Organization shall maintain an anonymized database without possibility to identify a specific ship and the data shall be accessed for analysis and consideration purposes only. Hence the proposal to utilise DCS for collection of levy shall not be in line with understanding among the member states while adopting the DCS regulations that the data will not be used for any commercial purposes."

Statement by the delegation of the United Arab Emirates

"The United Arab Emirates would like to thank all submitters under this agenda item. UAE in supports to establish an International Maritime Research and Development Board (IMRB), as one of the candidate short-term measures which is categorized in the IMO initial strategy to coordinate and oversee R&D activities and efforts. However, we do not support the structure proposed in MEPC 76/7/7 because it does not comply with the structure and functioning of IMO.

UAE believes that the proposal lacks clear SMART strategy (Specific, Measurable, Achievable, Realistic or Relevant and Time-bound) towards the proposed R&D projects. Therefore, UAE agree with Turkey that this matter need to be evaluated.

As clearly indicated in document MEPC 76/7/20 which UAE is one of the co-sponsor that the proposal entails significant legal challenges. During MEPC 75, UAE raised a concern related to the legal aspect on this matter. Of course IMO can introduce such amendment in MARPOL Annex VI if Parties agreed to do so. However, the concern raised was not related to the amendment but rather towards the aim of the amendment. To be clear on the legal aspect which this delegation seek clarification, UAE would like to raise the following question: could IMO, through its Legal instrument, establish Non-Governmental Organization (NGO) and provides funds for the operation of such NGO?

At this stage Mr Chair, this delegation does not support the proposal in MEPC 76/7/7."

Statement by the delegation of Belgium

"We support the suggested work plan in document MEPC 76/7/10. If we are to make the transition to zero-emission shipping, clarity and certainty needs to be given to the sector, since this transition involves considerable investments, that need to be planned well in advance (this was mentioned as well in document MEPC 76/7/2). We therefore share the view of the cosponsors of document MEPC 76/7/15 that we urgently need to start the work on mid- and long-term measures at next ISWG GHG 9 and that at least one of the measures should incentivize a fuel transition well before 2030. As was raised in document MEPC 76/7/42, we need to prioritize those measures that will make the transition happen.

During yesterday's discussion, we heard some concerns with regard to the legal aspects, therefore we would like to refer to our document MEPC 76/7/11. The intent of this submission is to give Member States objective information and clarity on the legal possibilities for adoption of MLT measures at the IMO. Main conclusion is that nothing in the IMO Convention of 1948 is preventing member states from adopting MLTM.

With regard to the candidate measures, and I am referring to submissions MEPC 76/7/2, MEPC 76/7/15, MEPC 76/7/12, MEPC 76/7/42, we support to forward these proposals for further discussion at the next session.

We support the establishment of a Standing Technical Group on reduction of GHG emissions as proposed in document MEPC 76/7/9. If we are to make progress with the current workload and respect the timelines agreed in the programme of follow-up actions of the initial strategy, more intersessional work will indeed be needed.

Furthermore, and as mentioned in document MEPC 76/7/10, a revised GHG strategy is planned to be adopted by the Committee in spring 2023. This brings me to document MEPC 76/7/12 and I would like to echo the need to start the work on the revision of the strategy in 2021, as agreed in the Initial Strategy and its Programme of follow-up actions."

Statement by the delegation of Germany

"Thank you, Chair, for giving us the floor.

We were happy to see that there are many submissions that emphasize the necessity to start the transition towards renewable fuel in this decade. These submissions came from across country groups, industry interests and civil society. We welcome the recognition by Argentina et al. in MEPC 76/7/20 that "ultra-low or zero-emission" ships need to enter the fleet this decade. This gives us confidence that we can take our next step in greater unity.

Nevertheless, the consideration, development and agreement of measures will take time, also because the mid-term measures are likely to have larger impacts on States and we will need to pay more attention to assessing and addressing disproportionately negative impacts on States, as appropriate, and to ensure that no State is left behind.

Therefore, it is necessary to start work on the consideration of mid-term measures at the first opportunity, which is ISWG-GHG 9. In the view of this delegation, the Committee needs to progress effectively with the next package of measures and we think that a structured approach which ensures that Member States can continue to go forward together will support such a desire – that's why we are a co-sponsor of the work plan proposal in MEPC 76/7/10.

In addition, we propose that ISWG-GHG 9 considers the proposal of the Marshall Islands and Solomon Islands (MEPC 76/7/12) and invite other delegations to submit proposals with a similar ambition.

Concretely, Mr. Chair, this delegation:

- Supports the Work Plan proposed in MEPC 76/7/10 with the understanding that the measures need to be in force 'around the middle of this decade' in line with MEPC 76/7/15 so that phase 2 and 3 need to be condensed.
- Recommend to include the consideration of MEPC 76/7/12 (Marshalls and Solomon Islands) in the ToR of ISWG-GHG 9.
- Naturally supports MEPC 76/7/15, especially the proposal to have a dedicated work stream on the consideration of mid-term measures and a work stream on LCA, as well as in principle 76/7/2 and 76/7/42.
- Welcomes the support of ICS et al in MEPC 76/7/39 for starting the discussion on MBMs as soon as possible, although we think that the guiding principles of the Initial Strategy should be used.
- Supports the proposal for a standing Technical Group in MEPC 76/7/9 as we would like to highlight the importance to finally establish solid working arrangements for our future work on the reduction of GHG emissions from international shipping."

Statement by the delegation of India

"We thank all submitters of documents related to this topic.

India is a cosponsor of MEPC 76/7/10. We support use of this document as a basis for further development of Work Plan.

We support what was said by Argentina, Brazil, Chile, UAE and others with respect to Impact assessment and inclusion of Phase IV Follow up to keep the impact of measures under review as per MEPC.1/Circ.885.

We wish to highlight an important short-term measure which needs urgent attention of the Committee - development of robust lifecycle GHG/carbon intensity guidelines for all types of fuels. Unless this is developed the stakeholders like shipowners, engine makers, shipbuilders and Energy supply companies will find it difficult to take any decision on making a choice among low- and zero carbon fuels. It will also impact mid-term measures work. We are aware this issue will be discussed at ISWG GHG 9 and hopefully will be concluded soonest.

We cannot support Standing Technical Group on GHG related issues. We have serious constraints with allocation of resources and would support Working Group and CG being used for the Work arrangement.

Developing zero carbon fuels has quickly become shipping's big priority from an industry-wide perspective. But this process will not be driven by the shipping industry – this process implies a global energy transition where shipping will be one of multiple industries vying for scalable and cost-competitive zero-carbon fuel solutions. Investment in the land-based energy infrastructure that is required to decarbonize shipping holds the Key. In the light of this, we suggest that MEPC requests Member States, Observers to ensure participation of experts from all stakeholders e.g. low and zero carbon energy production, storage and distribution sectors, propulsion system based on renewable energy etc. during discussion on prioritized mid-term measures.

We cannot discuss MBM now. It can be discussed as a part of mid-term measures along with other identified measures like Innovative Emission Reduction Mechanism(s) given in Initial Strategy.

Thank you Chair".

Statement by the delegation of the Cook Islands

"Let no one be left behind

Well we have been left behind in what thus far has been a transparently unfair process ..

Alleviation of the significant negative impacts it has been shown we will face with the short term measure is clearly work still in progress and must now be urgently be addressed.

The priority of the ISWG or whatever mechanism you decide going forward is to determine through its TOR what DISPROPORTINATE is and this prior to EIF of the amendments we will vote on tomorrow. Without this we can have no confidence in the process going forward for determining and addressing medium /long term impacts.

Clearly the Committee will also instruct the ISWG to reflect on the lessons learnt initiative in the same time frame.

Whatever is decided in regard to funding of R & D or an MBM all monies raised through a levy must stay in sector.

As to the call for a punitive MBM by way of a levy; this appears to be calling for shipping, the facilitator of world trade and an essential element in delivering the SDG's to be used and milked as a cash cow. It is not the role nor should it be the function of this Organisation to raise funds to disburse to another agency to cover the shortfalls of parties failure to meet their financial commitments under another Conventions "Agreement "

As to the suggested levels of a carbon tonne levy , the \$100 tonne carbon suggested would mean a cost in excess of \$300 per tonne of fuel , that is over a 55% increase to be passed on through higher freight charges .With no recognition by the Committee or alleviation through a "waiver" of the burden of negative impacts that it has been shown in the SC Stakeholder Assessment that we will already face from the short term measure we simply could not absorb such increases . For these reasons the proposed measure is not supported."

Statement by the delegation of Indonesia

"Indonesia would like to support document MEPC 76/7/10 as the base documents... for the discussion of short and mid term measures, including the comment by Argentina and several delegates to include impact assessment.

For the *Proposal on the establishment of a universal mandatory greenhouse gas levy*, we are of the view that this mechanism needs further consideration on potential impact specially to developing states.

Noting that it is said in the document that the potential impact is short to medium term and it is said to be minor, I am afraid that is not the case for Indonesia that has over 14 millions GT of ships conducting international navigation.

Mr. Chair, it is our commitment to support the GHG emission reduction, particularly regarding the matter that is also include measure to help impacted countries, as discussed earlier... because it provides a balance, based on positive cooperation, between the measures and the impacts.

At the moment we are afraid we don't really understand how the levy taken from the shipping operation, while some, if not many of them are also developing states, to generate funding to help developing states...

In addition, the nature of this levy to be universal somehow contradicts with implementation of CBDR principle

Therefore, Mr. Chair, we cannot support the proposal at this stage.

We would request this comment to be reflected in the report.

Thank you, Mr. Chair."

Statement by the delegation of Vanuatu

"Thank you Chair

The initial IMO strategy on reduction of GHG Emissions from ship prescribes that the impacts on States of a measure should be assessed and taken into account as appropriate before

adoption of the measure. Particular attention should be paid to SIDS among others. It also prescribes that Disproportionately negative impacts should be assessed and addressed, as appropriate.

Now it is our understanding that since Disproportionate negative impacts have not been defined, the negative impacts evidenced in the current impact assessment on short term measure will not be taken into account before adoption of the MARPOL ANNEX VI amendments when to us any negative impact will be disproportionate considering the vulnerability of our country.

Chair and distinguished delegates, we can only hope that IMO Member States will give priority as to the urgent need to define what is a disproportionate negative impact before the entry into force of MARPOL ANNEX VI amendment that will be adopted shortly.

And why are we stressing on this point now??

Because this element is even more important when we are now considering MBM for the shipping sector with an entry level by 2025 of \$100 per tonne carbon dioxide equivalent on heavy fuel which would translate into a 300 USD cost increase per tonne of fuel since sadly one tonne of Marine heavy fuel is roughly 3 tonnes of CO2 per tonne of fuel consumed.

Fuel price would therefore increase from 500 to 800 USD and it is where we strongly believe that we urgently need to define what is a disproportionate negative impact on states before the entry into force of the MARPOL Annex VI amendments to give SIDS certainty that such disproportionate impact will be considered in the future.

Indeed, Fuel costs represent as much as 50-60% of total ship operating costs and such fuel price increase by roughly 60% by 2025 will have undoubtedly disproportionate negative impact on SIDS at least during an interim period until the MBM becomes mature and provoke the expected transition as long as the technology is indeed available.

Chair, Distinguished Delegates we all know that the maritime industry will NOT absorb the fuel cost increase of an MBM but will pass on the cost increase to end consumers i.e. the people of Vanuatu (but also all over our vulnerable region as well) which already have to cope with one of the highest freight costs in the world.

Will they be compensated? Absolutely not! And that is the problem which must be considered before adopting any MBM the funds of which will not go to the people of Vanuatu to absorb goods cost increase which are almost all coming by the Sea... since we rely up to 95% on international shipping.

Last but not least as a cosponsor of MEPC 76/7/10 we support the way forward suggested and the establishment of a Permanent Group."

ITEM 12

Statement by the observer from CSC

"Chair, CSC cannot allow the meeting to end without expressing its extreme concern at developments this week and we would like this statement added to the record of the meeting. The agreement on an "urgent" short-term measure to reduce shipping's carbon intensity that contains no enforcement mechanism and a level of ambition deliberately calibrated to be the same as business as usual is not a serious response to the climate crisis. The 1.5% annual improvement required by the measure is nowhere near the 7% annual improvement needed to keep warming within the Paris Agreement's 1.5C temperature goal, and will, we are sure, be met with concerned confusion by the outside world.

We are similarly concerned by this organisation's continued consideration of the IMRB proposal and its absurd 70 cents/tonne price on carbon. The proposal should have been discarded at this meeting, but instead you allow it to live on and take up valuable time that would be better used to discuss real measures aimed at urgently driving down ship climate pollution. We welcome of course the plan to further consider the RMI/Sols proposal for \$100/tonne levy at GHG9, but this proposal and other measures will need to be fast tracked if they are to play a meaningful part in bringing ship emissions down on a trajectory consistent with the PA's 1.5C temp goal.

Finally Mr Chair, the failure this week, after over ten years of deliberation, to even consider the issue of BC is a tragic abdication of this organisation's responsibility to the Arctic and the world. The Arctic is melting 3 times faster than the rest of the world and the burning of dirty ship fuel is accelerating this and ice melt. Consideration of this issue should be a priority urgent issue for the IMO.

Before I finish Chair we would also like to object to the way in which NGO interventions have been treated during this meeting. We understand the pressures that the meeting is under but to take our cards only at the end is to marginalise us in a way that will not help this organisation address the climate crisis or indeed the many other environmental challenges facing the shipping industry. We hope this is the last time this happens."

Statement by the observer from FOEI

"Chair,

FOEI, WWF, Pacific Environment and Greenpeace are concerned with the lack of agreement or even consideration of meaningful action to see international shipping's efforts contributing to reversing the climate crisis in the Arctic.

We are concerned about the "business as usual" approach, where the short term carbon intensity requirement merely reflects spontaneous efficiency improvements, and in the absence of any new regulation is nowhere near the 7% annual improvement required to bring ship emissions down in a manner consistent with the Paris Agreement's temperature goals.

Further, MEPC 76 failed to address important items on its agenda, most strikingly the reduction of black carbon emissions -a potent short-lived climate forcer - from ships, and measures to eliminate scrubber discharges impacting sensitive areas including the Arctic.

MEPC76 was the IMO's last chance to show that its actions on the climate impacts from shipping (CO2 and black carbon) have any relevance to meeting the goals of the Paris Agreement before the COP26 in Glasgow.

Some relatively simple changes to the way the virtual (and potentially, in person) meetings are conducted could save time, and make the process of IMO decision making more consistent and transparent, such as a simple polling mechanism.

Chair, Civil society organisations have felt particularly aggrieved throughout this meeting. We have followed your request and made every effort to shorten and limit our interventions, only to have them admitted after the discussion, or excluded altogether as there was no time available."