

ANNEX 10

**RESOLUTION MEPC.348(78)
(adopted on 10 June 2022)**

**2022 GUIDELINES FOR ADMINISTRATION VERIFICATION OF SHIP FUEL OIL
CONSUMPTION DATA AND OPERATIONAL CARBON INTENSITY**

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,

NOTING that the Committee adopted, by resolution MEPC.328(76), the *2021 Revised MARPOL Annex VI*, which will enter into force on 1 November 2022,

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

NOTING ALSO that regulation 27.7 of MARPOL Annex VI requires that ship fuel oil consumption data be verified according to procedures established by the Administration, taking into account guidelines developed by the Organization,

NOTING FURTHER that regulation 28.6 of MARPOL Annex VI specifies that the attained annual operational CII shall be documented and verified against the required annual operational CII to determine operational carbon intensity rating, 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,

NOTING that the Committee, at its seventy-first session, adopted, by resolution MEPC.292(71), the *2017 Guidelines for Administration verification of ship fuel oil consumption data*,

HAVING CONSIDERED, at its seventy-eighth session, draft *2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity*,

1 ADOPTS the *2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity*, 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 27 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, also taking into consideration that in accordance with regulations 25.3 and 28.11 of MARPOL Annex VI a review of the technical and operational measures to reduce carbon intensity of international shipping shall be completed by 1 January 2026;

5 REVOKES the *2017 Guidelines for Administration verification of ship fuel oil consumption data* adopted by resolution MEPC.292(71).

ANNEX

2022 GUIDELINES FOR ADMINISTRATION VERIFICATION OF SHIP FUEL OIL CONSUMPTION DATA AND OPERATIONAL CARBON INTENSITY

1 INTRODUCTION

1.1 Regulation 27 of MARPOL Annex VI establishes the IMO Ship Fuel Oil Consumption Database, to be administered by the Organization, to which each Administrations will submit relevant data for their registered ships of 5,000 gross tonnage (GT) and above. Regulation 27.7 specifies that "the data shall be verified according to procedures established by the Administration, taking into account guidelines developed by the Organization".

1.2 Regulation 28 of MARPOL Annex VI establishes the operational carbon intensity rating mechanism. Regulation 28.6 specifies that the attained annual operational CII shall be documented and verified against the required annual operational CII to determine operational carbon intensity rating A, B, C, D or E, either by the Administration or by any organization duly authorized by it, taking into account the guidelines developed by the Organization.

1.3 This document contains the Guidelines referred to in regulations 27.7 and 28.6 and is intended to assist Administrations in developing their own verification programme.

1.4 A verification procedure should ensure the reliability of the collected data and the correctness of the attained annual operational CII, while minimizing the costs and associated burdens to the ship and the Administration.

2 DEFINITIONS

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

3 RESPONSIBILITIES

3.1 The responsibilities of Administrations and ships are set out in MARPOL Annex VI. These Guidelines do not change those or create any new obligations.

3.2 Under the data collection system for fuel oil consumption and the operational carbon intensity rating of ships, as specified in MARPOL Annex VI, an Administration may authorize an organization¹ to receive the data from a ship, verify the data for compliance with the requirements, verify the attained annual operational CII against the required annual operational CII, determine the operational carbon intensity rating, issue the Statement of Compliance, and submit the data to the Organization. In every case, the Administration assumes full responsibility for all tasks conducted by the Administration or any organization duly authorized by it (hereinafter referred to as "the Administration").

4 VERIFICATION OF THE REPORTED DATA

4.1 To facilitate data verification, the Administration should indicate what additional documentation a ship should submit along with its annual data report. Specification of this

¹ Refer to the *Guidelines for the authorization of organizations acting on behalf of the Administration*, adopted by the Organization by resolution A.739(18), as amended by resolution MSC.208(81), and the *Specifications on the survey and certification functions of recognized organizations acting on behalf of the Administration*, adopted by the Organization by resolution A.789(19), as may be amended by the Organization.

documentation can be done on a ship basis, as part of the assessment of the Data Collection Plan,² or it may be done as a general policy statement or through such other policy instruments as the Administration deems appropriate. Additional documentation to facilitate data verification may include the following, as well as other documentation that the Administration deems relevant:

- .1 a copy of the verified ship's Data Collection Plan (SEEMP Part II);
- .2 summaries of bunker delivery notes (BDNs), in sufficient detail to show that all fuel oil consumed by the ship is accounted for (see sample form of BDN summary set out in appendix 1);
- .3 summaries of disaggregated data of fuel oil consumption, distance travelled and hours under way, in a format specified by the Administration (see sample form of data summary set out in appendix 2);
- .4 information to demonstrate that the ship followed the Data Collection Plan set out in its SEEMP, including information on data gaps and how they were filled as well as how the event that caused the data gap was resolved;
- .5 copies of documents containing information on the amount of fuel oil consumption, distance travelled and hours under way for the ship's voyages during the reporting period (e.g. the ship's official logbook, oil record book, BDNs, arrival/noon/departure reports, and from auto-log data files); and
- .6 supported by documentary evidence, copies of the fuel oil mass to CO₂ mass conversion factor provided by fuel supplier in case the type of fuel is not covered by the guidelines developed by the Organization.³

4.2 In addition to the documentation described in paragraph 4.1, the Administration may request a ship to submit such documentation needed to perform a comprehensive review of a ship's annual fuel oil consumption, distance travelled, and hours under way. The Administration may request that this documentation be submitted by all ships or a subset of the ships under its jurisdiction. This documentation may be used by the Administration to verify whether the ship followed the methodology specified in its Data Collection Plan, with a view to confirming:

- .1 consistency of reported data and calculated values, including with previous reporting periods (if applicable), through recalculating the annual reported values using the underlying data, etc.;
- .2 completeness of data (e.g. perform substantive testing based on reconciliation, recalculations, and document cross-check, for example with official logbook and/or arrival/noon/departure reports, auto-log report files; recalculate total quantities of fuel oil used, distance travelled and hours under way); and
- .3 reliability and accuracy of the data (e.g. test that the data quality procedures as described in the Data Collection Plan have been properly implemented, carry out site visits (typically to the company's offices rather than to the ship) to test the systems, processes and the control activities) through

² Refer to the *2022 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)*, adopted by resolution MEPC.346(78).

³ Refer 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 may be amended.

corroborating fuel oil consumption data with distance travelled and hours under way, comparing reported fuel oil consumption with that which is expected for the ship size, operational profile, and technical characteristics, and/or comparing reported fuel oil consumption total fuel bunkered, etc.

4.3 For a ship which has undergone a transfer addressed in regulations 27.4, 27.5 or 27.6 of MARPOL Annex VI, the losing Administration needs to verify the data before the transfer.

5 VERIFICATION OF THE ATTAINED ANNUAL OPERATIONAL CII AND DETERMINATION OF THE CII RATING

5.1 To facilitate the verification of the attained annual operational CII, the Administration should indicate what additional documentation a ship should submit along with its annual data report. Additional documentation to facilitate the verification may include the following, as well as other documentation that the Administration deems relevant:

- .1 a copy of the verified ship's Operational Carbon Intensity Plan (SEEMP part III);
- .2 documents (IEE certificate, Stability Booklet or International Tonnage Certificate) evidencing the capacity parameter of the ship in the metric relevant for the calculation of its operational carbon intensity (deadweight or gross tonnage);
- .3 aggregated data of fuel oil consumption and distance travelled covering the entire calendar year to calculate the attained annual operational CII (AER or cgDIST) (see sample form of data summary set out in appendix 2);
- .4 the aggregated values of the parameters and associated calculation methods to determine the annual metric value of the trial CII on voluntary basis, if any (see sample form of data summary set out in appendix 2 – Add.1);
- .5 supported by documentary evidence, the correction factors and voyage adjustments⁴ applied in the attained annual operational CII calculation, if any, during the reporting period (see sample form of data summary set out in appendix 2); and
- .6 statements of compliance for previous two calendar years where applicable.

5.2 The attained annual operational CII should be verified using the data over a 12-month period from 1 January to 31 December for the preceding calendar year, by the Administration. In cases where the calculation of the attained annual operational CII is not possible due to the unavailability of some data, such as where a new ship is delivered after 1 January in the preceding year, the attained annual operational CII should be verified using the available data covering the corresponding period of the preceding calendar year.

5.3 In case of a ship with multiple load line certificates or with a load line certificate containing multiple load lines, the highest deadweight value should be used to calculate and verify the required and attained annual operational CII.

⁴ Refer to the 2022 *Interim guidelines on correction factors and voyage adjustments for CII calculations* (G5), adopted by resolution MEPC.355(78).

5.4 For a ship which permanently changes its deadweight (DWT) and/or its gross tonnage (GT) during the year, which the SEEMP or a corrective action plan identifies as being undertaken to improve the ship's operational carbon intensity performance:

- .1 the required annual operational CII should always be calculated and verified using the original DWT or GT value before conversion; however, the attained CII which is used to assess compliance should be calculated and verified using the new DWT or GT value after conversion; and
- .2 for the year when the conversion is made, the attained annual operational CII should be calculated and verified for the entire calendar year on the average DWT or GT value weighted on distance travelled before and after conversion.

5.5 Except for those specified in 5.4, for a ship which is regarded by the Administration as a newly constructed ship as per regulation 5.4.3 of MARPOL Annex VI due to major conversion, including extensive changes of carrying capacity and/or ship type during the year, the required and attained annual operational CII should be calculated and verified as per a newly constructed ship for the period after conversion. For the year when the major conversion is made, the data for partial year before conversion should still be reported for verification but will not be included in the calculation and verification of the attained annual operational CII.

5.6 For a ship which has undergone a transfer addressed in regulations 27.4, 27.5 or 27.6 of MARPOL Annex VI, the losing Administration neither needs to verify the attained annual operational CII nor to determine the annual CII rating of the ship for partial year. The attained annual operational CII should be verified by the receiving Administration using the data over an entire calendar year. In such cases, the aggregated data necessary to calculate the attained annual operational CII before transfer, which should have already been verified by the losing Administration, can be directly used by the receiving Administration without further verification (see sample form set out in appendix 3 and appendix 3 – Add.1).

5.7 The administration should determine the operational carbon intensity rating for the ship, taking into account the guidelines developed by the Organization.⁵ The attained and required annual operational CII, as well as the rating boundaries, should be all given with three decimal places. If the attained annual operational CII happens to land on a rating boundary, the ship should be rated as the better of the two ratings.

5.8 The trial CII (e.g. EEPI, cbDIST, cIDIST or EEOI),⁶ if voluntarily calculated and reported, should be verified by the Administration following the same procedure as for the attained annual operational CII (AER or cgDIST). The Administration does not need to assign a rating to a ship based on trial CII.

6 ISSUE OF A STATEMENT OF COMPLIANCE

6.1 In accordance with regulation 6.6 of MARPOL Annex VI, upon receipt of reported data pursuant to regulation 27 of MARPOL Annex VI and attained annual operational CII pursuant to regulation 28 of MARPOL Annex VI and satisfactory completion of the verification, the Statement of Compliance should be issued by the Administration.

⁵ Refer to the *2022 Guidelines on the operational carbon intensity rating of ships (CII Rating Guidelines, G4)* adopted by resolution MEPC.354(78).

⁶ Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII Guidelines, G1)* adopted by resolution MEPC.352(78).

6.2 Notwithstanding paragraph 6.1, the Administration should consider whether a corrective action plan is required according to regulation 6.8 of MARPOL Annex VI. In the case of a corrective actions plan being required but not submitted together with the attained annual operational CII, the administration should inform the company in a timely manner that a revised SEEMP including a plan of corrective actions, must be submitted for verification no later than one month after reporting the attained annual operational CII. The Statement of Compliance should not be issued in such a case unless a corrective action plan is duly developed and reflected in the SEEMP and verified by the Administration, taking into account the guidelines developed by the Organization.⁷

6.3 Should any material discrepancy be identified by the Administration in the reported data and/or the calculation of required/attained annual operational CII, it should be communicated to the company on a timely basis for clarification or correction. A discrepancy is considered material if the discrepancy or aggregation of discrepancies could influence the reported total by more than $\pm 5\%$. The Statement of Compliance should not be issued in such a case unless the material discrepancy is clarified or corrected.

⁷ Refer to the *Guidelines for the verification and company audits by the Administration of part III of the Ship Energy Efficiency Management Plan (SEEMP)* adopted by resolution MEPC.347(78).

APPENDIX 1

SAMPLE OF THE BDN SUMMARIES

Date of Operations (dd/mm/yyyy)	Fuel Oil Type/Mass(MT)									Descriptions
	DO/GO	LFO	HFO	LPG(P)	LPG(B)	LNG	Methanol	Ethanol	Others(Cr)	
① BDN										
09/01/2023										
02/05/2023			150							
08/07/2023										
09/10/2023										
10/12/2023			300							
①Annual Supply Amount	0	0	450	0	0	0	0	0	0	
② Correction for the tank oil remainings										
01/01/2023			400							
31/12/2023			200							
②Correction for the tank oil remaining	0	0	200	0	0	0	0	0	0	The difference in the amount of the remaining tank oil at the beginning/end of the data collection period.
③ Other corrections										
30/03/2023										
15/09/2023										
31/12/2023										
③Annual other corrections	0	0	0	0	0	0	0	0	0	
Annual Fuel Consumption										
Annual Fuel Consumption (①+②+③)	0	0	650	0	0	0	0	0	0	

Explanatory remarks;
If bunker supply/correction data have been recorded in a Company's electronic reporting system,the data is acceptable to be submitted in the existing format instead of submitting the data by this format.

APPENDIX 2

SAMPLE OF THE COLLECTED DATA SUMMARIES

Date and time from (dd/mm/yyyy; hh:mm UTC)	* Date and time to (dd/mm/yyyy; hh:mm UTC)	Distance travelled (n.m)	Hours under way (hh:mm)	**exceptional conditions specified in regulation 3.1 of MARPOL Annex VI (Y/N)	**Sailing in ice condition (Y/N)	**STS Operation (Y/N)	Fuel consumption (metric tons)							
							total mass		**mass to be deducted from the total					
									consumed for production of electrical power(<i>FC_{electrical}</i>)		consumed by oil-fired boiler for cargo heating/discharge on tankers (<i>FC_{boiler}</i>)		consumed by standalone engine driven cargo pumps during discharge operations on tankers(<i>FC_{others}</i>)	
							***DO/GO	...	DO/GO	...	DO/GO	...	DO/GO	...
01/01/2023 00:00	01/01/2023 13:20	150	13:20	N	N	N								
01/01/2023 13:20	01/01/2023 24:00	60	10:40	N	Y	N								
02/01/2023 00:00	02/01/2023 24:00	288	24:00	N	N	Y								
03/01/2023 00:00	03/01/2023 24:00	260	24:00	N	N	Y								
.....														
.....														
31/12/2023 00:00	31/12/2023 24:00	290	24:00	N	N	N								
Annual total														

* In the case of daily underlying data, this column would be left blank.

** Refer to the 2022 *Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)*, adopted by resolution MEPC.355(78). Supporting documentation may be additionally submitted to facilitate the verification when necessary, such as Baplie files where the number of in-use reefer containers on board are recorded. Note that voyages in different sailing or operational conditions should be recorded in separate rows so that the correction factors and voyage adjustments can be duly calculated and verified.

*** Refer to fuel types 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 amended)

Explanatory remarks: If bunker supply/correction data have been recorded in a company's electronic reporting system, the data is acceptable to be submitted in the existing format instead of submitting the data by this format.

APPENDIX 2 – ADD.1

SAMPLE OF THE COLLECTED DATA SUMMARIES TO CALCULATE TRIAL CII ON A VOLUNTARY BASIS

The following aggregated data should be additionally included in the table in appendix 2, if one or more trial CII metrics have been applied on a voluntary basis:

Date from (dd/mm/yyyy)	*Date to (dd/mm/yyyy)	Laden distance travelled (n.m)	****Transport work (metric of transport work)
01/01/2023			
02/01/2023			
03/01/2023			
31/12/2023			
Annual total			

* In the case of daily underlying data, this column would be left blank.

**** As defined in section 3 of the *Guidelines for voluntary use of the ship energy efficiency operational indicator (EEOI)* circulated by MEPC.1/Circ.684.

Explanatory remarks: If bunker supply/correction data have been recorded in a Company's electronic reporting system, the data is acceptable to be submitted in the existing format instead of submitting the data by this format.

APPENDIX 3

SAMPLE OF THE AGGREGATED DATA BEFORE A TRANSFER OF FLAG/COMPANY ADDRESSED IN REGULATIONS 27.4, 27.5 OR 27.6 OF MARPOL ANNEX VI

Date of transfer (dd/mm/yyyy)	Type of transfer (flag/ company/ both)	Reporting period		Distance Travelled (n.m)		Hours under way (hh:mm)	Fuel consumption (metric tons)						
		Date from (dd/mm/yyyy)	Date to (dd/mm/yyyy)	Total distance travelled	*distance to be deducted from CII calculation		total mass		*mass to be deducted from the total		**mass consumed in STS operations		
							***DO/GO	...	DO/GO	...	DO/GO	...	
12/05/2023	Flag	01/01/2023	11/05/2023										
15/06/2023	Company	12/05/2023	14/06/2023										
02/11/2023	Both	15/06/2023	01/11/2023										
.....													

* Refer to the aggregated mass of fuel consumption to calculate FC_{voyage} , $FC_{electrical}$, FC_{boiler} and FC_{others} in the 2022 *Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)*, (resolution MEPC.355(78)).

** Refer to the aggregated mass of fuel consumption to calculate $AF_{Tanker, STS}$ in the 2022 *Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)*, (resolution MEPC.355(78)).

*** Refer to fuel types specified in 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 amended).

APPENDIX 3 – ADD.1

SAMPLE OF THE AGGREGATED DATA BEFORE A TRANSFER OF FLAG/COMPANY ADDRESSED IN REGULATIONS 27.4, 27.5 OR 27.6 OF MARPOL ANNEX VI TO CALCULATE TRIAL CII METRICS ON A VOLUNTARY BASIS

The following aggregated data may be additionally included in the table in appendix 3, if one or more trial CII metrics have been applied on a voluntary basis:

Date of transfer (dd/mm/yyyy)	Type of transfer (flag/ company/ both)	Reporting period		Laden distance travelled (n.m)	****Transport work (metric of transport work)
		Date from (dd/mm/yyyy)	Date to (dd/mm/yyyy)		
12/05/2023	Flag	01/01/2023	11/05/2023		
15/06/2023	Company	12/05/2023	14/06/2023		
02/11/2023	Both	15/06/2023	01/11/2023		
.....					

**** As defined in section 3 of *Guidelines for voluntary use of the ship energy efficiency operational indicator (EEOI) circulated by MEPC.1/Circ.684*.
