



TUVALU SHIP REGISTRY

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MARINE CIRCULAR

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FOR: Ship Owners, Ship Managers, Ship Operators, Ship Masters, Ship Officers, Classification Societies

SUBJECT: ENERGY EFFICIENCY ON SHIPS

DEFINITIONS:

The following abbreviations stand for:

- “DWT” – Deadweight Tonnage
- “EEDI” – Energy Efficiency Design Index
- “EEOI” – Energy Efficiency Operational Indicator
- “GT” – Gross Tonnage in accordance to ITC 69
- “IEEC” – International Energy Efficiency Certificate
- “ITC 69” – International Convention on the Tonnage Measurement of Ships, 1969
- “MARPOL 73/78” – International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978
- “MEPC” – IMO Marine Environment Protection Committee
- “RO” – Recognized Organization as defined by IMO Resolution A.789(19)
- “SEEMP” – Ship Energy Efficiency Management Plan
- “SMS” – Safety Management System as defined by the ISM Code

The term “Administration” shall mean the Tuvalu Ship Registry.

PURPOSE:

The purpose of this marine circular is to provide ship owners, operators and managers guidelines with regards to the new regulations on Energy Efficiency for ships found in MARPOL Annex VI.

REFERENCES:

- (a) MARPOL Annex VI
- (b) 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, adopted on 15 July 2011.
- (c) Resolution MEPC.245(66), 2014 Guidelines on the method of calculation of the attained EEDI for New Ships.
- (d) Resolution MEPC.263(68), Amendments to the 2014 Guidelines on the method of calculation of the attained EEDI for New Ships.
- (e) Resolution MEPC.282(70), 2016 Guidelines for the Development of SEEMP.
- (f) IMO Circular MEPC.1/Circ.684, Guidelines for Voluntary use of the Ship Energy Efficiency Operational Indicator (EEOI).
- (g) IMO Circular MEPC.1/Circ.855/Rev.1, 2014 Guidelines on Survey and Certification of the EEDI, as amended (Resolution MEPC.254(67), as amended by Resolution MEPC.261(68))
- (h) MEPC.1/Circ.795/Rev.2, Unified Interpretations to Marpol Annex VI, as amended

APPLICATION:

This circular applies to all vessels of 400 GT and above to which MARPOL Annex VI applies (vessels of any type whatsoever operating in the marine environment, including hydrofoil boats, air-cushion vehicles, submersibles, floating craft, and fixed or floating platforms). All regulations referred to within this circular are the regulations of MARPOL Annex VI, as amended by Resolution MEPC.203(62).

CONTENTS:

1. Introduction & Definitions

- 1.1. The MEPC at its 62nd session adopted amendments to MARPOL Annex VI, introducing a new Chapter 4. These amendments are intended to improve energy efficiency for ships through a set of technical performance standards, by making mandatory the Energy Efficiency Design Index (EEDI) for new ships, and the Ship Energy Efficiency Management Plan (SEEMP) for all ships. The text of the amendments are set forth under Resolution MEPC.203(62). These amendments entered into force on 1 January 2013.
- 1.2. For the purposes of Chapter 4, definitions for “New ship” and “Major Conversion” have been added to Regulation 2 as follows:
 - 1.2.1. “New ship” means a ship:
 - 1.2.1.1. for which the building contract is placed on or after 1 January 2013; or
 - 1.2.1.2. 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
 - 1.2.1.3. the delivery of which is on or after 1 July 2015.
 - 1.2.2. “Major Conversion” means a conversion of a ship:
 - 1.2.2.1. which substantially alters the dimensions, carrying capacity or engine power of the ship; or
 - 1.2.2.2. which changes the type of the ship; or
 - 1.2.2.3. the intent of which in the opinion of the Administration is substantially to prolong the life of the ship; or
 - 1.2.2.4. which otherwise so alters the ship that, if it were a new ship, it would become subject to relevant provisions of the present Convention not applicable to it as an existing ship; or
 - 1.2.2.5. which substantially alters the energy efficiency of the ship and includes any modifications that could cause the ship to exceed the applicable required EEDI as set out in Regulation 21.
- 1.3. The requirements of Regulations 20 and 21 presently do not apply to ships which have diesel-electric propulsion, turbine propulsion or hybrid propulsion systems.

2. Energy Efficiency Design Index (EEDI)

- 2.1. The purpose of the EEDI is to provide a basis for comparison of a ship’s fuel-efficiency, expressed as carbon dioxide (CO₂) produced per transport work performed, in order to stimulate the development of more efficient ships in general and to establish the minimum efficiency of new ships depending on ship type and size.

2.2. Attained EEDI (Regulation 20)

- 2.2.1. The attained EEDI is defined as the EEDI value achieved by an individual ship in accordance with Regulation 20 of Chapter 4.
- 2.2.2. The attained EEDI shall be calculated for each “new ship” or “existing ship”, which has undergone a major conversion so extensive that the ship is regarded as a newly constructed ship, which falls into one or more of the categories defined in Regulations 2.25 to 2.35 (Bulk carrier, Gas carrier, Tanker, Container ship, General cargo ship, Refrigerated cargo carrier, Combination carrier, Passenger ship, Ro-ro cargo ship (vehicle carrier), Ro-ro cargo ship or Ro-ro passenger ship).
- 2.2.3. The attained EEDI value shall be calculated specific to each ship, in accordance with the guidelines set forth under Resolution MEPC.245(66), as amended by MEPC.263(68) and shall be verified by a RO as part of the survey and certification requirements described in section 4 below.

2.3. Required EEDI (Regulation 21)

- 2.3.1. The required EEDI is defined as the maximum value of attained EEDI that is allowed by Regulation 21 of Chapter 4 for the specific ship type and size (deadweight).
- 2.3.2. The attained EEDI for each “new ship”, or “existing ship”, which has undergone a major conversion so extensive that the ship is regarded as a newly constructed ship, taking into account MEPC.1/Circ.795, amended, which falls into one of the categories defined in Regulations 2.25 to 2.31 (Bulk carrier, Gas carrier, Tanker, Container ship, General cargo ship, Refrigerated cargo carrier or Combination carrier), shall be less than or equal to the relevant required EEDI value for that ship.
- 2.3.3. The required EEDI value for the ship is determined by applying a reduction factor specified in Table 1 of Regulation 21 to the corresponding reference line value calculated in accordance with Regulation 21.3 for the specific ship type and deadweight. Regulation 21 is reproduced in the APPENDIX of this circular for easy reference.

2.4. EEDI Calculator

In order to help ship owners/operators gain a better understanding of the attained EEDI calculation methodology, as well as to evaluate changes in the attained EEDI when design parameters are altered, BIMCO has developed an EEDI Calculator available at the following link: www.bimco.org/en/Products/EEDI.aspx

3. Ship Energy Efficiency Management Plan (SEEMP)

- 3.1. As of 1 January 2013, all ships of 400 GT and above shall keep on board a **ship specific** SEEMP. The SEEMP may be a stand-alone document, or it may form part of the ship’s SMS.
- 3.2. There is no requirement for the SEEMP to be approved by the Administration. In accordance with Regulation 5.4.4, the survey for the issuance of the IEEC for existing ships shall take place at the first intermediate or renewal survey on or after 1 January 2013, whichever is first, at which time only a verification that the SEEMP is on board is required. In accordance with MEPC.1/Circ.795, as amended, the SEEMP is not required to be placed onboard an “existing ship” until such time as this survey is carried out.
- 3.3. When developing the contents of the SEEMP, the guidelines set forth under Resolution MEPC.282(70) should be taken into account. For e.g., while it is recommended to utilize EEOI (in accordance to IMO Circular MEPC.1/Circ.684) as a tool for monitoring the energy efficiency of a ship, other quantitative measures may be more appropriate for a specific ship type or trade, in which case other efficiency measurement tools can be utilized.

4. Survey and Certification

- 4.1. All ships of 400 GT and above shall be subject to the surveys as specified in Regulation 5.4, taking into account the guidelines set forth under MEPC.1/Circ.855/Rev.1 and relevant interpretations provided under MEPC.1/Circ.795/Rev.2.
- 4.2. An IEEC shall be issued after completion of the relevant surveys. Once issued, the IEEC shall remain valid for the life of the ship, except:
 - 4.2.1. when the ship is withdrawn from service, or
 - 4.2.2. when a new certificate is issued following a major conversion, or
 - 4.2.3. upon transfer of the ship to the flag of another State.

5. Applicability for Waiver (Regulation 19.4)

- 5.1. In accordance with Regulation 19.4, the Administration may waive the requirement for a ship from complying with the requirements of Regulations 20 and 21. Such waivers may only be considered for "new ships" up to four (4) years after the entry into force of these regulations, as stipulated in Regulation 19.5.
- 5.2. The Administration may consider any request for this waiver on a case-by-case basis, subject to application in writing by the ship owner/operator for each ship, demonstrating the basis for which the waiver is sought. If approved, authorization for the waiver shall be given by the Administration to the RO performing the survey and certification services for the ship, so the waiver may be appropriately recorded into the IEEC.
- 5.3. Consistent with international laws, any State may deny entry to ships that are not in compliance with Regulations 20 and 21, even if granted with such a waiver.
- 5.4. The Administration will not be able to anticipate which States may deny entry to ships that are granted the waiver. Therefore any ship owner/operator considering applying for the waiver should consider this uncertainty and any consequential impact or limitation on the trading capability for such a ship.
- 5.5. It should also be noted that as the waiver is only in relation to Regulations 20 and 21, the SEEMP required under Regulation 22 shall be kept onboard and the surveys required for issuance of the IEEC are still required, even for a ship to which a waiver has been granted.

Yours sincerely,

Deputy Registrar
Tuvalu Ship Registry

APPENDIX

Regulation 21

Required EEDI

1 For each:

- .1 new ship;
- .2 new ship which has undergone a major conversion; and
- .3 new or existing ship which has undergone a major conversion that is so extensive that the ship is regarded by the Administration as a newly constructed ship

which falls into one of the categories defined in regulation 2.25 to 2.31 and to which this chapter is applicable, the attained EEDI shall be as follows:

$$\text{Attained EEDI} \leq \text{Required EEDI} = (1-X/100) \times \text{Reference line value}$$

where X is the reduction factor specified in Table 1 for the required EEDI compared to the EEDI Reference line.

- 2 For each new and existing ship that has undergone a major conversion which is so extensive that the ship is regarded by the Administration as a newly constructed ship, the attained EEDI shall be calculated and meet the requirement of paragraph 21.1 with the reduction factor applicable corresponding to the ship type and size of the converted ship at the date of the contract of the conversion, or in the absence of a contract, the commencement date of the conversion.

Table 1 - Reduction factors (in percentage) for the EEDI relative to the EEDI Reference line

Ship Type	Size	Phase 0	Phase 1	Phase 2	Phase 0
		1 Jan 2013 - 31 Dec 2014	1 Jan 2015 - 31 Dec 2019	1 Jan 2020 - 31 Dec 2024	1 Jan 2025 and onwards
Bulk Carrier	20,000 DWT and above	0	10	20	30
	10,000 – 20,000 DWT	n/a	0-10*	0-20*	0-30*
Gas Carrier	10,000 DWT and above	0	10	20	30
	2,000 – 10,000 DWT	n/a	0-10*	0-20*	0-30*
Tanker	20,000 DWT and above	0	10	20	30
	4,000 – 20,000 DWT	n/a	0-10*	0-20*	0-30*
Container Ship	15,000 DWT and above	0	10	20	30
	10,000 – 15,000 DWT	n/a	0-10*	0-20*	0-30*
General Cargo Ship	15,000 DWT and above	0	10	20	30
	3,000 – 15,000 DWT	n/a	0-10*	0-20*	0-30*
Refrigerated Cargo Carrier	5,000 DWT and above	0	10	20	30
	3,000 – 5,000 DWT	n/a	0-10*	0-20*	0-30*
Combination Carrier	20,000 DWT and above	0	10	20	30
	4,000 – 20,000 DWT	n/a	0-10*	0-20*	0-30*

* Reduction factor to be linearly interpolated between the two values dependent upon vessel size. The lower value of the reduction factor is to be applied to the smaller ship size.

“n/a” - means that no required EEDI applies.

3 The Reference line values shall be calculated as follows:

$$\text{Reference line value} = a \times b - c$$

where **a**, **b** and **c** are the parameters given in Table 2.

Table 2 - Parameters for determination of reference values for the different ship types

Ship Type defined in Regulation 2	a	b	c
2.25 Bulk carrier	961.79	DWT of the ship	0.477
2.26 Gas carrier	1120.00	DWT of the ship	0.456
2.27 Tanker	1218.80	DWT of the ship	0.488
2.28 Container ship	174.22	DWT of the ship	0.201
2.29 General cargo ship	107.48	DWT of the ship	0.216
2.30 Refrigerated cargo carrier	227.01	DWT of the ship	0.244
2.31 Combination carrier	1219.00	DWT of the ship	0.488

- 4 If the design of a ship allows it to fall into more than one of the above ship type definitions, the required EEDI for the ship shall be the most stringent (the lowest) required EEDI.
- 5 For each ship to which this regulation applies, the installed propulsion power shall not be less than the propulsion power needed to maintain the manoeuvrability of the ship under adverse conditions as defined in the guidelines to be developed by the Organization.
- 6 At the beginning of Phase 1 and at the midpoint of Phase 2, the Organization shall review the status of technological developments and, if proven necessary, amend the time periods, the EEDI reference line parameters for relevant ship types and reduction rates set out in this regulation.