



STATUTORY INSTRUMENTS.

S.I. No. 48 of 2017



SEA POLLUTION (PREVENTION OF AIR POLLUTION FROM SHIPS)
(AMENDMENT) REGULATIONS 2017

SEA POLLUTION (PREVENTION OF AIR POLLUTION FROM SHIPS)
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I, SHANE ROSS, Minister for Transport, Tourism and Sport, in exercise of the powers conferred on me by sections 10, 14, 15 and 17 of the Sea Pollution Act 1991 (No. 27 of 1991) and the Maritime Transport, Safety and Security (Transfer of Departmental Administration and Ministerial Functions) Order 2005 (S.I. No. 842 of 2005) (as adapted by the Transport (Alteration of Name of Department and Title of Minister) Order 2011 (S.I. No. 141 of 2011)) and for the purpose of giving further effect to Annex VI to the MARPOL Convention, hereby make the following regulations:

1. These Regulations may be cited as the Sea Pollution (Prevention of Air Pollution from Ships) (Amendment) Regulations 2017.

2. The purpose of these Regulations includes giving effect to Resolution MEPC.251(66) adopted on 4 April 2014 by the Marine Environment Protection Committee of the Organization, the text of which, for ease of reference, is set out in the Schedule.

3. The Sea Pollution (Prevention of Air Pollution from Ships) Regulations 2010 (S.I. No. 313 of 2010 (as amended by the Sea Pollution (Prevention of Air Pollution from Ships) (Amendment) Regulations 2013 (S.I. No. 35 of 2013)) are amended—

(a) in Regulation 12—

(i) in paragraph (4), by substituting for subparagraph (b) the following:

“(b) For a major conversion involving the replacement of a marine diesel engine with a non-identical marine diesel engine, or the installation of an additional marine diesel engine, the standards in this Regulation at the time of the replacement or addition of the engine shall apply. In the case of replacement engines only, if it is not possible for such a replacement engine to meet the standards set forth in paragraph (7)(a)(i) (Tier III, as applicable), then that replacement engine shall meet the standards set forth in paragraph 6 (Tier II), taking into account the 2013 Guidelines as required by regulation 13.2.2 of MARPOL Annex VI in respect of non-identical replacement engines not required to meet the Tier III limit, adopted by the

*Notice of the making of this Statutory Instrument was published in
“Iris Oifigiúil” of 17th February, 2017.*

Marine Environment Protection Committee of the Organization by Resolution MEPC.230(65), as may be amended from time to time.”, and

- (ii) by substituting for subparagraphs (a) and (b) of paragraph (7) the following:

“(7) (a) Subject to section 11 of the Act, in an emission control area designated for Tier III NO_x control under paragraph 6 of regulation 13 of Annex VI, as set out in paragraph (8), the operation of a marine diesel engine that is installed on a ship:

- (i) is prohibited except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_x) from the engine is within the following limits, where n = rated engine speed (crankshaft revolutions per minute):

(I) 3.4 g/kWh when n is less than 130 rpm;

(II) $9 \cdot n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2,000 rpm;

(III) 2.0g/kWh when n is 2,000 rpm or more;

when—

(A) that ship is constructed on or after 1 January 2016 and is operating in the North American Emission Control Area or the United States Caribbean Sea Emission Control Area, or

(B) that ship is operating in an emission control area designated for Tier III NO_x control under paragraph 6 of regulation 13 of Annex VI, as set out in paragraph (8), other than an emission control area described in subparagraph (a)(ii), and is constructed on or after the date of adoption of such an emission control area, or a later date as may be specified in the amendment designating the NO_x Tier III emission control area, whichever is later.

- (b) The standards set out in subparagraph (a)(i) do not apply to—

- (i) a marine diesel engine installed on a ship with a length (L), as defined in regulation 1.19 of Annex I to the MARPOL Convention, of less than 24 metres when it has been specifically designed, and is used solely, for recreational purposes,
- (ii) a marine diesel engine installed on a ship with a combined nameplate diesel engine propulsion power of less than 750 kW if it is demonstrated, to the satisfaction of the Minister, that the ship cannot comply with the standards set out in subparagraph (a)(i) because of design or construction limitations of the ship, or
- (iii) a marine diesel engine installed on a ship constructed prior to 1 January 2021 of less than 500 gross tonnage, with a length (L), as defined in regulation 1.19 of Annex I to the MARPOL Convention, of 24 m or over when it has been specifically designed, and is used solely, for recreational purposes.”,

(b) in Regulation 17A—

- (i) by deleting the definitions for ‘combination carrier’ and ‘container ship’ and substituting the following:

“ ‘cargo ship having ice-breaking capability’, in relation to Part 3A, means a cargo ship which is designed to break level ice independently with a speed of at least 2 knots when the level ice thickness is 1.0 m or more having ice bending strength of at least 500 kPa;

‘combination carrier’ means a ship designed to load 100 percent deadweight with both liquid and dry cargo in bulk;

‘container ship’ means a ship designed exclusively for the carriage of containers in holds and on deck;

‘conventional propulsion’, in relation to Part 3A, means a method of propulsion where any main reciprocating internal combustion engines are the prime movers and coupled to any propulsion shafts either directly or through any gear boxes;

‘cruise passenger ship’, in relation to Part 3A, means a passenger ship not having a cargo deck, designed exclusively for commercial transportation of passengers in overnight accommodations on a sea voyage;”,

- (ii) by substituting for the definition of ‘gas carrier’ the following:

“ ‘gas carrier’, in relation to Part 3A, means a cargo ship, other than an LNG carrier, constructed or adapted and used for the carriage in bulk of any liquefied gas;”

- (iii) by inserting after the definition of ‘general cargo ship’ the following:

“ ‘LNG carrier’, in relation to Part 3A, means a cargo ship constructed or adapted and used for the carriage in bulk of liquefied natural gas (LNG);”

- (iv) by inserting after the definition of ‘new ship’ the following:

“ ‘non-conventional propulsion’, in relation to Part 3A, means a method of propulsion, other than conventional propulsion, including diesel-electric propulsion, turbine propulsion, and hybrid propulsion systems;” and

- (v) by inserting after the definition of “SEEMP” the following:

“ ‘ship delivered on or after 1 September 2019’ means a ship—

- (a) for which the building contract is placed on or after 1 September 2015,
- (b) 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 March 2016, or
- (c) the delivery of which is on or after 1 September 2019;”

- (c) in Regulation 17B—

- (i) by substituting for paragraph (2) the following:

“(2) This Part does not apply to:

- (a) ships registered in the State solely engaged in voyages within the territorial seas of the State, or
- (b) ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion.”;

- (ii) by substituting for paragraph (3) the following:

“(3) Regulations 17C and 17D do not apply to—

- (a) ships which have non-conventional propulsion, except that Regulations

17C and 17D shall apply to cruise passenger ships having non-conventional propulsion and LNG carriers having conventional or non-conventional propulsion, delivered on or after 1 September 2019, or

(b) cargo ships having ice-breaking capability.”,

(d) by substituting for paragraph (1) of Regulation 17C the following:

“*Attained EEDI.*

17C. (1) The attained EEDI shall be calculated for—

- (a) each new ship,
- (b) each new ship which has undergone a major conversion, or
- (c) each new or existing ship which has undergone a major conversion, that is so extensive that the ship is regarded by the Minister as a newly-constructed ship,

which falls into one or more of the following categories specified in regulation 2.25 to regulation 2.35, regulation 2.38 and regulation 2.39 of Annex VI:

- (i) bulk carrier;
- (ii) gas carrier;
- (iii) tanker;
- (iv) container ship;
- (v) general cargo ship;
- (vi) refrigerated cargo carrier;
- (vii) combination carrier;
- (viii) passenger ship;
- (ix) ro-ro cargo ship (vehicle carrier);
- (x) ro-ro cargo ship;
- (xi) ro-ro passenger ship;
- (xii) LNG carrier;
- (xiii) cruise passenger ship.”,

(e) in Regulation 17D—

(i) by substituting for paragraph (1) the following:

“*Required EEDI.*

17D. (1) For each—

- (a) new ship,
- (b) new ship which has undergone a major conversion, or
- (c) new or existing ship which has undergone a major conversion that is so extensive that the ship is regarded by the Minister as a newly-constructed ship,

which falls into one of the following categories specified in regulation 2.25 to regulation 2.31, regulation 2.33 to regulation 2.35, regulation 2.38 and regulation 2.39 of Annex VI:

- (i) bulk carrier;
- (ii) gas carrier;
- (iii) tanker;
- (iv) container ship;
- (v) general cargo ship;
- (vi) refrigerated cargo carrier;
- (vii) combination carrier;
- (viii) ro-ro cargo ship (vehicle carrier);
- (ix) ro-ro cargo ship;
- (x) ro-ro passenger ship;
- (xi) LNG carrier;
- (xii) cruise passenger ship,

and to which Part 3A 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.”,

(ii) in paragraph (2):

by inserting in Table 1 the following rows in respect of ro-ro cargo ships (vehicle carriers), LNG carriers, cruise passenger ships having non-conventional propulsion, ro-ro cargo ships and ro-ro passenger ships, and marks ** and *** and their explanations are added, as follows:

“

Ship Type	Size	Phase 0 1 Jan 2013 — 31 Dec 2014	Phase 1 1 Jan 2015 — 31 Dec 2019	Phase 2 1 Jan 2020 — 31 Dec 2024	Phase 3 1 Jan 2025 and onwards
LNG carrier***	10,000 DWT and above	n/a	10**	20	30
Ro-ro cargo ship (vehicle carrier)***	10,000 DWT and above	n/a	5**	15	30
Ro-ro cargo ship***	2,000 DWT and above	n/a	5**	20	30
	1,000 — 2,000 DWT	n/a	0-5*,**	0-20*	0-30*
Ro-ro passenger ship***	1,000 DWT and above	n/a	5**	20	30
	250 — 1,000 DWT	n/a	0-5*,**	0-20*	0-30*
Cruise passenger ship*** having non-conventional propulsion	85,000 GT and above	n/a	5**	20	30
	25,000 — 85,000 GT	n/a	0-5*,**	0-20*	0-30*

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

** Phase 1 commences for those ships on 1 September 2015.

*** Reduction factor applies to those ships delivered on or after 1 September 2019, as defined in paragraph 43 of regulation 2 of MARPOL Annex VI.

Note: n/a means that no required EEDI applies.

”

(iii) in paragraph (3), by inserting in Table 2 the following rows in respect of ro-ro cargo ships (vehicle carriers), LNG carriers, cruise passenger ships having non-conventional propulsion, ro-ro cargo ships and ro-ro passenger ships as follows:

“

Ship type defined in Regulation 2 of MARPOL Annex VI	a	b	c
2.33 Ro-ro cargo ship (vehicle carrier)	$(DWT/GT)^{-0.7} \bullet 780.36$ where $DWT/GT < 0.3$ 1812.63 where $DWT/GT \geq 0.3$	DWT of the ship	0.471
2.34 Ro-ro cargo ship	1405.15	DWT of the ship	0.498
2.35 Ro-ro passenger ship	752.16	DWT of the ship	0.381
2.38 LNG carrier	2253.7	DWT of the ship	0.474
2.39 Cruise passenger ship having non-conventional propulsion	170.84	GT of the ship	0.214

”

and

- (f) by substituting for the footnote in the Supplement to the Form of the IAPP Certificate of Annex VI, as set out in the Schedule, the following:

“* Completed only in respect of ships constructed on or after 1 January 2016 that are specially designed, and used solely, for recreational purposes and to which, in accordance with regulation 13.5.2.1 and regulation 13.5.2.3, the NO_x emission limit as given by regulation 13.5.1.1 does not apply.”.

SCHEDULE

Regulation 2

[contains 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, otherwise known as MARPOL Annex VI — *Regulations for the Prevention of Air Pollution from Ships* — arising from Resolution MEPC.251(66) adopted on 4 April 2014 by the Marine Environment Protection Committee of the International Maritime Organization (as further amended by the Report of the Marine Environment Protection Committee on its Sixty-Sixth Session Corrigendum (MEPC 66/21/Corr. 1) of 26 June 2014)]

“AMENDMENTS TO MARPOL ANNEX VI**Chapter 1 — General****Regulation 2 — Definitions**

1 Paragraph 26 is amended to read as follows:

“26 *Gas carrier* in relation to chapter 4 of this Annex means a cargo ship, other than an LNG carrier as defined in paragraph 38 of this regulation, constructed or adapted and used for the carriage in bulk of any liquefied gas.”

2 New paragraphs 38 to 43 are added after existing paragraph 37 as follows:

“38 *LNG carrier* in relation to chapter 4 of this Annex means a cargo ship constructed or adapted and used for the carriage in bulk of liquefied natural gas (LNG).

39 *Cruise passenger ship* in relation to chapter 4 of this Annex means a passenger ship not having a cargo deck, designed exclusively for commercial transportation of passengers in overnight accommodations on a sea voyage.

40 *Conventional propulsion* in relation to chapter 4 of this Annex means a method of propulsion where a main reciprocating internal combustion engine(s) is the prime mover and coupled to a propulsion shaft either directly or through a gear box.

41 *Non-conventional propulsion* in relation to chapter 4 of this Annex means a method of propulsion, other than conventional propulsion, including diesel-electric propulsion, turbine propulsion, and hybrid propulsion systems.

42 *Cargo ship having ice-breaking capability* in relation to chapter 4 of this Annex means a cargo ship which is designed to break level ice independently with a speed of at least 2 knots when the level ice thickness is 1.0 m or more having ice bending strength of at least 500 kPa.

43 A ship *delivered on or after* 1 September 2019 means a ship:

- .1 for which the building contract is placed on or after 1 September 2015; 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 March 2016; or
- .3 the delivery of which is on or after 1 September 2019.”

Chapter 2 — Survey, certification and means of control

Regulation 5 — Surveys

- 3 In the first sentence of paragraph 4.2, the words “a ship” are replaced with the words “a new ship”.

Chapter 3 — Requirements for control of emissions from ships

Regulation 13 — Nitrogen oxides (NO_x)

- 4 Paragraph 2.2 is amended to read as follows:

“2.2 For a major conversion involving the replacement of a marine diesel engine with a non-identical marine diesel engine, or the installation of an additional marine diesel engine, the standards in this regulation at the time of the replacement or addition of the engine shall apply. In the case of replacement engines only, if it is not possible for such a replacement engine to meet the standards set forth in paragraph 5.1.1 of this regulation (Tier III, as applicable), then that replacement engine shall meet the standards set forth in paragraph 4 of this regulation (Tier II), taking into account guidelines developed by the Organization*.

*Refer to the *2013 Guidelines as required by regulation 13.2.2 of MARPOL Annex VI in respect of non-identical replacement engines not required to meet the Tier III limit*, adopted by the MEPC by resolution MEPC.230(65).”

- 5 Paragraphs 5.1 and 5.2 are amended to read as follows:

“Tier III

5.1 Subject to regulation 3 of this Annex, in an emission control area designated for Tier III NO_x control under paragraph 6 of this regulation, the operation of a marine diesel engine that is installed on a ship:

- .1 is prohibited except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_x) from

the engine is within the following limits, where n = rated engine speed (crankshaft revolutions per minute):

- .1 3.4 g/kWh when n is less than 130 rpm;
- .2 $9 \cdot n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2,000 rpm;
- .3 2.0 g/kWh when n is 2,000 rpm or more;

when:

- .2 that ship is constructed on or after 1 January 2016 and is operating in the North American Emission Control Area or the United States Caribbean Sea Emission Control Area;

when:

- .3 that ship is operating in an emission control area designated for Tier III NO_x control under paragraph 6 of this regulation, other than an emission control area described in paragraph 5.1.2 of this regulation, and is constructed on or after the date of adoption of such an emission control area, or a later date as may be specified in the amendment designating the NO_x Tier III emission control area, whichever is later.

5.2 The standards set forth in paragraph 5.1.1 of this regulation shall not apply to:

- .1 a marine diesel engine installed on a ship with a length (L), as defined in regulation 1.19 of Annex I to the present Convention, of less than 24 metres when it has been specifically designed, and is used solely, for recreational purposes; or
- .2 a marine diesel engine installed on a ship with a combined nameplate diesel engine propulsion power of less than 750 kW if it is demonstrated, to the satisfaction of the Administration, that the ship cannot comply with the standards set forth in paragraph 5.1.1 of this regulation because of design or construction limitations of the ship; or
- .3 a marine diesel engine installed on a ship constructed prior to 1 January 2021 of less than 500 gross tonnage, with a length (L), as defined in regulation 1.19 of Annex I to the present Convention, of 24 m or over when it has been specifically designed, and is used solely, for recreational purposes.”

6 Paragraph 10 is deleted.

Chapter 4 — Regulations for energy efficiency of ships

Regulation 19 — Application

7 A new subparagraph 2.2 is added as follows:

“2 ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion.”

8 Paragraph 3 is amended to read as follows:

“3 Regulations 20 and 21 of this Annex shall not apply to ships which have non-conventional propulsion, except that regulations 20 and 21 shall apply to cruise passenger ships having non-conventional propulsion and LNG carriers having conventional or non-conventional propulsion, delivered on or after 1 September 2019, as defined in paragraph 43 of regulation 2. Regulations 20 and 21 shall not apply to cargo ships having ice-breaking capability.”

Regulation 20 — Attained Energy Efficiency Design Index (attained EEDI)

9 Paragraph 1 is replaced with the following:

“1 The attained EEDI shall be calculated for:

- .1 each new ship;
- .2 each new ship which has undergone a major conversion; and
- .3 each 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 or more of the categories in regulations 2.25 to 2.35, 2.38 and 2.39 of this Annex. The attained EEDI shall be specific to each ship and shall indicate the estimated performance of the ship in terms of energy efficiency, and be accompanied by the EEDI technical file that contains the information necessary for the calculation of the attained EEDI and that shows the process of calculation. The attained EEDI shall be verified, based on the EEDI technical file, either by the Administration or by any organization duly authorized by it*.

* Refer to the Code for Recognized Organizations (RO Code), adopted by the MEPC by resolution MEPC.237(65), as may be amended.”

Regulation 21 — Required EEDI

10 Paragraph 1 is replaced with the following:

“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 in regulations 2.25 to 2.31, 2.33 to 2.35, 2.38 and 2.39 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.”

11 New rows are added to table 1 in paragraph 2 for ro-ro cargo ships (vehicle carrier), LNG carrier, cruise passenger ship having non-conventional propulsion, ro-ro cargo ships and ro-ro passenger ships, and marks ** and *** and their explanations are added, as follows:

“

Ship Type	Size	Phase 0 1 Jan 2013 — 31 Dec 2014	Phase 1 1 Jan 2015 — 31 Dec 2019	Phase 2 1 Jan 2020 — 31 Dec 2024	Phase 3 1 Jan 2025 and onwards
LNG carrier***	10,000 DWT and above	n/a	10**	20	30
Ro-ro cargo ship (vehicle carrier)***	10,000 DWT and above	n/a	5**	15	30
Ro-ro cargo ship***	2,000 DWT and above	n/a	5**	20	30
	1,000 — 2,000 DWT	n/a	0-5*,**	0-20*	0-30*
Ro-ro passenger ship***	1,000 DWT and above	n/a	5**	20	30
	250 — 1,000 DWT	n/a	0-5*,**	0-20*	0-30*

Ship Type	Size	Phase 0 1 Jan 2013 — 31 Dec 2014	Phase 1 1 Jan 2015 — 31 Dec 2019	Phase 2 1 Jan 2020 — 31 Dec 2024	Phase 3 1 Jan 2025 and onwards
Cruise passenger ship*** having non-conventional propulsion	85,000 GT and above	n/a	5**	20	30
	25,000 — 85,000 GT	n/a	0.5*,**	0-20*	0-30*

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

** Phase 1 commences for those ships on 1 September 2015.

*** Reduction factor applies to those ships delivered on or after 1 September 2019, as defined in paragraph 43 of regulation 2.

Note: n/a means that no required EEDI applies.”

12 New rows are added to table 2 in paragraph 3 for ro-ro cargo ship (vehicle carrier), LNG carrier, cruise passenger ship having non-conventional propulsion, ro-ro cargo ships and ro-ro passenger ships as follows:

“

Ship type defined in regulation 2	a	b	c
2.33 Ro-ro cargo ship (vehicle carrier)	$(DWT/GT)^{-0.7} \cdot 780.36$ where $DWT/GT < 0.3$ 1812.63 where $DWT/GT \geq 0.3$	DWT of the ship	0.471
2.34 Ro-ro cargo ship	1405.15	DWT of the ship	0.498
2.35 Ro-ro passenger ship	752.16	DWT of the ship	0.381
2.38 LNG carrier	2253.7	DWT of the ship	0.474
2.39 Cruise passenger ship having non-conventional propulsion	170.84	GT of the ship	0.214

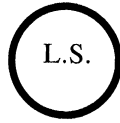
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Appendix I — Form of International Air Pollution Prevention (IAPP) Certificate (regulation 8)

13 The footnote in the Supplement to International Air Pollution Prevention Certificate (IAPP Certificate) is amended to read as follows:

“* Completed only in respect of ships constructed on or after 1 January 2016 that are specially designed, and used solely, for recreational purposes and to which, in accordance with regulation 13.5.2.1 and regulation 13.5.2.3, the NO_x emission limit as given by regulation 13.5.1.1 will not apply.”

”.



GIVEN under my Official Seal,
10 February 2017.

SHANE ROSS,
Minister for Transport, Tourism and Sport.

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation.)

These Regulations amend the Sea Pollution (Prevention of Air Pollution from Ships) Regulations 2010 (S.I. No. 313 of 2010) which give effect to the 2008 revision of Annex VI, the original version of which was added by the 1997 Protocol to the International Convention for the Prevention of Pollution from Ships (MARPOL), which is an instrument of the International Maritime Organization.

The purpose of these Regulations is to give effect to Resolution MEPC.251(66) adopted on 4 April 2014 by the Marine Environment Protection Committee of the International Maritime Organization.

Resolution MEPC.251(66) provides, *inter alia*, for the following amendments to MARPOL Annex VI:

- an amended method of application of emission control areas designated for NO_x Tier III control;
- an exemption from NO_x Tier III emission control for ships constructed before 1 January 2021 of less than 500 GT with a length of 24m or over, when such ships are specifically designed, and used solely, for recreational purposes;
- a provision which exempts from the application of Chapter 4, ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion;
- an amendment to the application of MARPOL Annex VI regulations 20 and 21 so that they shall not apply to ships which have non-conventional propulsion, except that regulations 20 and 21 shall apply to cruise passenger ships having non-conventional propulsion and LNG carriers having conventional or non-conventional propulsion, delivered on or after 1 September 2019, as defined in MARPOL Annex VI regulation 2.43. MARPOL Annex VI regulations 20 and 21 shall not apply to cargo ships having ice-breaking capability; and
- the scope of application of the required EEDI expanded to include further ship-types built on or after 1 September 2019, as defined in MARPOL Annex VI regulation 2, e.g., ro-ro passenger ships.

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