

Agenda Item 3 – Other aspects related to regulation 13 and NO_x Tier III standards

Malta, 7-8 October 2026

Regional Expert Meeting on the Possible Designation of the Mediterranean, as a whole, as a NO_x ECA



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Agenda Item 3 – Other aspects related to reg. 13 and NO_x Tier III standards

Content of this presentation

- **Importance of the ship date of construction, the 3-date criteria in reg. 13 and non retroactive application**
- **Review of special cases:** ships built prior to 1999 and the Approved Method; yachts and recreational boats; access to shipyards located within ECA
- **Principles of Exemptions, Equivalents and Alternative Design**
- **Relevant IMO Guidelines and other reference material**
- **Q&A; Conclusion**



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Application dates

Application dates

For the earlier NECAs – North American/US Caribbean, North Sea and Baltic Sea:

- the application date was based **ONLY** on the ship **CONSTRUCTION** date

- It created a gap between the **keel laying** and the **construction dates**, even if both dates have been defined.
- This type of application has left room for many ships to be built **using older TIER II standards** (...), hurting efforts to reduce NO_x emissions (*source: MEPC 81/11/2 - Belgium and the Netherlands*)



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Definitions (Annex VI, regulation 2)

.32 **Ships constructed** means ships the **keels of** which are laid or that are at a **similar stage** of construction.

A **similar stage of construction** means the stage at which:

- .1 construction identifiable with a specific ship begins; and
- .2 assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.

Application (regulation 13) - Tier III applicable for the operation of a marine diesel engine that is installed on a ship, when:

that ship is **constructed** on or after:

- .1 1 January 2016 and is operating in the **North American Emission Control Area** or the **United States Caribbean Sea Emission Control Area**;
- .2 1 January 2021 and is operating in the **Baltic Sea Emission Control Area** or the **North Sea Emission Control Area**;

Source: MARPOL Annex VI 2026 version / in IMO C/Letter No.5005

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Application dates

- A change was then introduced with Norway ECA, to specify a **keel-laying date AND a delivery date**.
- it introduces a **final delivery date**, with an ample period allowed for construction to take place, to be realized after **4 years** of the **latest keel-laying date possible**.

NB: This “drafting style” was already the usual practice for amendments to SOLAS.

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- .2 1 January 2021 and is operating in the **Baltic Sea Emission Control Area** or the **North Sea Emission Control Area**;
- .3 1 March 2026 and is operating in the **Norwegian Sea Emission Control Area**. For the Norwegian Sea Emission Control Area, **"ship constructed on or after 1 March 2026"** means a ship:
 - .1 for which the **building contract** is placed on or after 1 March 2026; 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 September 2026; or
 - .3 the **delivery** of which is on or after 1 March 2030.

Source: MARPOL Annex VI 2026 / as in IMO Circular Letter No.5005



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New ships vs All ship: Retroactivity explained

Retroactive vs Non-retroactive => ALL ships vs NEW ships – An IMO Core Principle

As a principle, new regulations or amendments related to **structural provisions or “heavy” equipment** apply **only to “new ships” constructed on or after** the entry-into-force date.

- The text explicitly specifies to **“ships constructed on or after [Date]”**
- Existing ships are permitted to continue operating under the provisions that were in place at the time their keel was laid: this is also called a “Grandfathering Clause”

But **retroactive application** may be required in specific cases, for ex. an urgent safety gap or environmental threat to be addressed across the global fleet

- Application is to **“ALL ships”**, and should be specified in the text

There are cases of **retroactive structural amendments**, usually after large maritime disasters, for ex:

- double-hull structure to retrofitted on existing tankers or bulk-carriers; changes to fixed fire fighting systems; ...

Application of NOx Tier III based on construction date

- By nature, and thanks to the wording explained in previous slides, **the application of Tier III NOx limit is intended only to NEW ships**
- When a new ECA is created, the requirement to have a Tier III engine is “non retroactive”: it does not apply to the existing fleet (except in case of conversions and transformations, as explained after).

Major conversion

Major conversion is defined to ensure that the appropriate NO_x standards apply in case of **major changes to the engine or its replacement after 1 January 2000**.

For a **major conversion** involving:

- **replacement** of a marine diesel engine with a **non-identical marine diesel engine**, or
- **installation** of an **additional** marine diesel engine
- the standards at the time of the replacement or addition of the engine shall apply

⇒ *In 2025, a shipowner installs an additional engine on a ship built in 2000*

⇒ *Engine must comply with the standards applicable in 2025*

⇒ *that's Tier III if the ship is operating in a NECA*

Major conversion

However...

In cases of **replacement** only, if the non-identical **replacement engine** can not meet Tier III

- Then the replacement engine may meet **Tier II** limits
- **subject to acceptance by the Administration**
- in line with the 2024 **IMO Guidelines** on non-identical replacement engines not required to meet the Tier III limit ([MEPC.386\(81\)](#)):
 - criteria to justify that **it is not feasible** to install a Tier III engine, for ex. more space required, extra weighted added, structural changes required, etc.

⇒ **In 2025, a shipowner replaces an engine on a ship built in 2000 operating in NECA**
⇒ **non-identical engine must comply with Tier III**
⇒ **Or Tier II if not feasible to replace with a Tier III engine**

Approved method

Approved methods for pre-2000 engines – regulation 13.7



When MARPOL Annex VI was originally adopted in 1997, it was agreed to:

- **apply retroactively the NO_x certification** to a specific range of **large engines** installed on ships constructed between **1990 and 2000**
- the “retroactive application scheme” affected only **main engines on existing ships**:
 - ❖ criteria set to focus on **larger engines** (power output > 5,000 kW and cylinder displacement > 90 l)
 - ❖ Refer to IMO Guidelines on Approved methods (MEPC.242(66) and 243(66))

Ships constructed between 1990 and 1999 were required to fit an “**approved method**” to enable the engine to meet **Tier I** limits.

It usually consisted in **modifying components** such as injectors/fuel nozzles, or optimized injection.

Approved method

Approved methods for pre-2000 engines – regulation 13.7

- The approved method is **certified** by the Administration.
- The Administration **notifies IMO** that one method was designed and approved for one engine type.
 - Example: the Danish Maritime Authority notified IMO that they had certified an approved method for **engine type MAN B&W S70MC**. IMO published this information in MEPC.1/Circ.738 (and on GISIS).
- **The Approved Method File must be retained with the engine.**



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International Maritime Organization
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United Kingdom

Amendments to the certification of the Approved Method circulated by MEPC.1/Circ.738/Add.2 under the revised MARPOL Annex VI

Dear Sirs;

In accordance with the revised MARPOL Annex VI, the Danish Maritime Authority hereby informs that Denmark has certified amendments to the Approved Method circulated by MEPC.1/Circ.738/Add.2.

The certification of the amended method for NOx reduction for engine type MAN B&W S70MC include AM-2r is attached for circulation in accordance with the revised MARPOL Annex VI, regulation 13.7.1.

The certification is based on the attached *Notice of compliance* Revised MARPOL 73/78, Annex VI Regulation 13 "Approved Method" for the Reduction of NOx Engine Type MAN B&W S70MC AM no. 13235-10HH issued at Hamburg, 2014-01.18/Rev.5.

The amendments to the existing approved method circulated by MEPC.1/Circ.738/Add.2 includes addition of the new AM 2r which is a "slim type" fuel nozzle (MD-C-S70 -2r Nozzle 3062713-7) with an identical spray-hole geometry as the existing AM-2 (MD-C-S70-2#1 3062364-9) The new nozzle has a smaller outside diameter dimension of the nozzle body for use in special cylinder covers.

Approved method

Approved methods for pre-2000 engines – regulation 13.7

It may be considered that this campaign of retroactive application has now ended. Today, ships built in the 1990's (**ships around 25-30 year-old**) have had ample time to retrofit approved methods developed by engine manufacturers. Some of those ships might even have ceased service.

But it is still an important aspect to understand because :

- **A large portion of existing ships may be fitted with an Approved Method**
- On ships constructed **1 January 1990 - 1 January 2000**, the IAPP Certificate shall reflect this

12	AM ⁶	Operational times,	☐	☐	
		installed			
		not commercially available at this survey			
13			☐	☐	
14		not applicable	☐	☐	

- Those aspects **are checked during PSC** or other events for the verification of compliance.

The background of the slide features a series of overlapping, wavy bands in various shades of blue and purple. The colors transition from a deep navy blue at the top to lighter, more muted purples and blues towards the bottom, creating a sense of movement and depth. The waves are smooth and fluid, resembling liquid or smoke captured in motion.

Exceptions, Equivalents and Alternative Design

Annex VI, Regulation 3 – Exceptions and Exemptions

A specific regulation to describe the different **circumstances** where emissions are **not** regulated by MARPOL Annex VI (exceptions):

- **Emergency at sea**: in **exceptional circumstances** such as those resulting from securing the **safety of the ship or saving life at sea**, or **from damage suffered** by the ship or its equipment (details of events shall be recorded in the ship logbooks and notification made to relevant parties, including the flag State).
- **Trial purposes**: Exemptions **given by Administrations** for ships conducting trials for the **development of ship emission reduction and control technologies** and engine design programmes.
- **Seabed mineral activities**: exemptions are applicable to emissions **directly arising from seabed mineral activities**; and specifically for hydrocarbons produced and used on a production site as fuel (exemption from reg. 18 on fuel oil quality)

Exceptions and Exemptions

Reg.3 also contains a specific exemption for **unmanned non-self-propelled (UNSP) barges**:

- the Administration may exempt UNSP barges from the **survey and certification requirements** set in regs. 5 and 6
- A specific International Air Pollution Prevention Exemption **Certificate for UNSP Barges** is issued



Image credit: sta_bki; @bki_sta, X

Annex VI, Regulation 4 – Equivalents

The use of “**Equivalents**” is allowed under most IMO instruments and covered by specific regulations and guidelines. Regulation 4 in Annex VI explains the **approval process for alternative equipment or compliance methods**:

- used to **achieve emissions reductions at least as effective as those required** under Annex VI
- subject to the **approval by the Administration**, and
- taking into account **relevant guidelines developed by IMO – if any**.

This is mostly relevant for **reg. 14 on SO_x**. Alternative methods to comply with the sulphur limits include **exhaust gas cleaning systems** or alternative engine technologies.

Information on equivalents approved by Administrations shall be communicated to IMO for circulation (done through **GISIS**).

The use of equivalents is recorded on the ship **IAPP Certificate**.

2.6 Equivalents (regulation 4)

The ship has been allowed to use the following fitting, material, appliance or apparatus to be fitted in a ship or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by this Annex:

System or equipment	Equivalent used	Approval reference

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Equivalents in the context of NO_x emissions

A shipowner/manufacturer wishing to install **alternative engine technology, appliance or design** (an “unusual” engine) has to use the mechanism described in Regulation 4 to prove compliance with Regulation 13 (and *de facto* with NTC 2008 for engines).

Equivalent or Alternative design is always subject to an **approval by Administration**.

The technical justification is usually prepared by the Class society.

- The procedure is often referred to as “**Alternative Design Approval – ADA**” by Class societies
- **No specific IMO Guidance** applicable specifically for **Reg. 13** and the NTC 2008.
- But reference can be made to the Guidance intended primarily for SOLAS:
 - *MSC.1/Circ. 1212/Rev.2 - Revised Guidelines On Alternative Design And Arrangements For SOLAS Chapters II-1*

Administration should have a procedure in place for the approval of equivalents.



Exemptions granted to special cases

Exemptions for special cases – “small” engines

With the adoption of the Tier III ECA regulations in 2014, MEPC approved 3 exemption criteria, intended for “smaller” ships and recreational crafts (yachts).

In regulation 13, paragraph 5.2.

- Ship with a **combined nameplate diesel engine propulsion power less than 750 kW**

If it can be **demonstrated**, to the satisfaction of the Administration, that the ship can not comply because of **design or construction limitations**.

- For ships fitted with smaller propulsion engines, with **design constraints** (for ex. service vessels), as smaller ships often **lack the structural space** required to install bulky abatement systems (SCR).

Administrations should have a procedure in place to grant those exemptions.

Based on clear engineering or construction limitations, as justified by Class society for ex.



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Exemptions for special cases – Yachts

➤ Ships specifically designed and used solely for recreational purposes

A **5-year delay** in the application of the Tier III limits was also agreed until 1 January 2021 for engines installed on **ships < 500 GT with a length > 24m designed and used solely for recreational purposes = yachts**.

In 2019, MEPC rejected a proposal seeking a further 5-year delay (i.e. 2026) on those exempted yachts. Ample time had been given to prepare the market for integration of Tier III engines on yachts constructed from 2021.

➤ 2 exemption cases in regulation 13.5.2 for pleasure yachts

- **Ship Length < 24 m** (no tonnage threshold)

or

- **Ship Length > 24 m + gross tonnage < 500**

+ constructed before 1/01/2021



Specifically designed and used solely for recreational purposes with a length (L) of less than 24 meters



Specifically designed and used solely for recreational purposes constructed prior to 1 January 2021 of less than 500GT and with a length (L) of 24 meters or over.

or

Exemptions for special cases – Yachts

➤ **Ships specifically designed** and used **solely** for **recreational purposes**

In other terms, the **Tier III in ECA** was brought into effect for new larger yachts ($L > 24$ m) from 1 January 2021.

Yachts or pleasure vessels used for commercial purposes should not benefit from this exemption.

A commercial yacht is legally registered to generate profit, through chartering or corporate events for example. In practice, the majority of yachts are on a recreational (private) register.

Problem: *there is no IMO definition of “recreational purposes” in MARPOL Annex VI... An Administration may decide to **treat charter yachts as recreational** for this purpose.*



Image Credit: WorldWide Yachts

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Exemptions for special cases – Shipyards

➤ Shipyards and repair facilities – reg. 13.5.4 and .5

Introduced also in 2014 to allow access to shipyards and repair facilities located within NOx ECAs. This exemption was necessary to **maintain access to facilities deemed essential** for the shipping industry, including when a zone is transitioning to Tier III limits.

- Imagine a new ship with a Tier II engine but constructed in a shipyard located inside a NECA. What happens when the ship conducts its sea trials and then leaves the shipyard?

➤ A temporarily exemption may be granted for ships fitted with non-Tier III compliant marine diesel engines, when those ships are built, converted, repaired and/or maintained in shipyards or repair facilities which happen to be located in a NECA.



Monaco Marine Shipyards, La Ciotat



Amico Shipyard Facilities, port of Genoa



Reference and documents

Guidelines, Codes and IMO documents relevant to MARPOL Annex VI

- MARPOL Annex VI regulations often require that procedures, equipment, construction and other provisions **follow guidelines or performance standards developed by IMO** (or equivalent national standards).
- Regulations may also refer to **recommendations, guidelines, guidance, including industry standards**, intended to assist Administrations and the industry in the implementation.
- Guidance, recommendations, unified interpretations or other text of **recommendatory status**, are often disseminated by means of MEPC circulars.

Ideal for your regulatory watch = the IMO public website:

[Index of MEPC Resolutions and Guidelines related to MARPOL Annex VI](#)

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Index Content of Resolutions and Guidelines

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- [Unified Interpretations to MARPOL Annex VI and the NOx Technical Code 2008](#)
- [Guidelines related to Air Pollution prevention from ships](#)
- [Guidelines and guidance on carbon intensity of international shipping](#)
- [IMO Life Cycle GHG Assessment \(LCA\) framework](#)
- [Resolution and circular related to the Promotion of technical co-operation and transfer of technology](#)
- [Black Carbon related documents](#)
- [Relevant Information](#)

Amendments to MARPOL Annex VI and the NOx Technical Code

RESOLUTION	TITLE	DATE OF ENTRY INTO FORCE
 MEPC.408(84)	Amendments to MARPOL Annex VI (Use of multiple engine operational profiles for a marine diesel engine, including clarifying engine test cycles)	1 September 2027
 MEPC.407(84)	Amendments to MARPOL Annex VI (Clarification of entries in data reporting required by regulations 27 and 28, designation of the North-East Atlantic as an Emission Control Area for Nitrogen Oxides, Sulphur Oxides and Particulate Matter, accessibility to the IMO Ship Fuel Oil Consumption Database, and review clause of the short-term GHG reduction measure)	1 September 2027
 MEPC.398(83)	Amendments to the NOx Technical Code 2008 (Certification of an engine subject to substantial modification or being certified to a Tier to which the engine was not certified at the time of its installation)	1 September 2026
 MEPC.397(83)	Amendments to the NOx Technical Code 2008 (Use of multiple engine operational profiles for a marine diesel engine, including clarifying engine test cycles)	1 March 2027

NO_x Bibliography

MARPOL Annex VI and the NO_x Technical Code 2008 + Unified Interpretations to MARPOL Annex VI and to NTC 2008	MARPOL Annex VI Paper edition (2023) 2022: MEPC.328(76) 2025: Circular Letter C/L 5005
Various Guidelines and Guidance, including • 2025 Guidelines on Selective Catalytic Reduction (SCR) Systems • 2024 Guidelines on non-Identical replacement engines not Required to meet the Tier III Limit • Guidance on the application of reg.13 of MARPOL Annex VI Tier III requirements to dual fuel and gas-fuelled engines • Guidance on the Content of the Engine Emission Test Plan • etc...	IMO Public website Annex VI resolutions
Compliance and Enforcement Guidelines for Port State Control under MARPOL Annex VI – PSC Guidelines Guidelines for Survey and Certification under MARPOL Annex VI – HSSC Guidelines	IMO Public website Assembly resolution



Conclusion

**Any question or
clarification,
please ask!**

**End of the session
Agenda Item 3 – Other
aspects related to regulation
13 and NOx Tier III standards**

**And tomorrow
Agenda Item 5 – Case study,
discussion**



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