



# TUVALU SHIP REGISTRY

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## MARINE CIRCULAR

**No. 32**

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**FOR:** Ship Owners, Ship Managers, and Ship Operators

**PURPOSE:** To inform Owners / Managers / Operators on the requirements of the revised MARPOL Annex VI and the NOx Technical Code.

**SUBJECT: REVISION OF MARPOL ANNEX VI AND THE NOx TECHNICAL CODE**

Emissions from vessels are significant and fast growing. Nitrogen Oxides (NOx) and Sulphur Oxides (SOx) contributes to severe environmental problems, causes harm to our ecosystems and damages materials that can contribute negative impact to human health.

MEPC 58 formally adopted the Revised MARPOL Annex VI and the NOx Technical Code 2008 which will enter force on 1 July 2010 through which below changes are as follows:

- Progressive Reduction in NOx
- Progressive Reduction in SOx and Particulate Matters
- Non-cargo Ozone-depleting Substances
- Progress concerning VOC emissions

### **PROGRESSIVE REDUCTION IN NOx - Regulation VI/13**

The existing regulations in Annex VI to MARPOL 73/78 set limits on NOx emissions from ship exhausts (Regulation 13).

As before, these regulations apply to diesel engines with a power output of more than or equal to 130 kW, that has been produced and installed on a ship on or after 1 January 2000 or have undergone a major conversion on or after 1 January 2000 with the exception of engines used for emergency purposes.

#### **Tier I**

Tier I applies to marine diesel engine installed on a ship constructed **on or after 1 January 2000** and will apply to engines installed on board ships constructed until **31 December 2010**. The emission requirements are set **at the same level** as current requirements (the NOx emission limits are related to engine rated crankshaft speed):

Engine Speed (n) rpm	NOx Emission Limit g/kWh
Less than 130	17.0
130 – 1999	$45 \times n^{-0.2}$ (i.e 720 rp, -12.1)
2000 and above	9.8



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## Tier II

Tier II applies to marine diesel engine installed on a ship constructed **on or after 1 January 2011** or to engines subjected to a major modification on/after **1 January 2011**.

Engine Speed (n) rpm	NOx Emission Limit g/kWh
Less than 130	14.40
130 – 1999	$44 \cdot n^{(-0.23)}$
2000 and above	7.7

Approximately a 15% reduction level will be achieved comparing to the current legislation and tier I.

## Tier III

Tier III applies to marine diesel engine installed on a ship constructed **on or after 1 January 2016**, or to engines subjected to a major modification on/after **1 January 2016** when the ships will be sailing in controlled emission areas.

Engine Speed (n) rpm	NOx Emission Limit g/kWh
Less than 130	3.4
130 – 1999	$9 \cdot n^{(-0.2)}$
2000 and above	2.0

Tier 3 is aiming the 80% reduction comparing to the current legislation and tier I.

Recreational crafts of a length less than 24 m and ships fitted with a total propulsive of less than 750 kW are exempted from complying with Tier 3.

## EXISTING DIESEL ENGINES

Marine diesel engines with a power output of more than 5000 kW and a per cylinder displacement at or above 90 litres installed on a ship constructed **on or after 1 January 1990** and **prior to 1 January 2000**, subject to some specific limitations, will be required to meet the emission standards of the current Annex VI (see Tier 1).



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## **PROGRESSIVE REDUCTION IN SO<sub>x</sub> AND PARTICULATE MATTERS - Regulation VI/14**

The sulphur content of any fuel oil used on board ship within a **SO<sub>x</sub> Emission Control Area** shall not exceed:

- a) 1.50% m/m prior 1 July 2010
- b) 1.00% m/m on or after 1 July 2010
- c) 0.10% m/m on or after 1 January 2015.

The sulphur content of any fuel oil used on board ship outside a SECA shall not exceed:

- a) 4.50% m/m prior to 1 January 2012
- b) 3.50% m/m on or after 1 January 2012
- c) 0.50% m/m on or after 1 January 2020, subject to review in 2018 to determine the availability of low S content fuel oil.

## **NON-CARGO OZONE DEPLETING SUBSTANCES (ODS) - Regulation VI/13**

Vessels fitted with rechargeable systems using ODS must have and maintain an Ozone Depleting Substance Record Book which is considered a part of an existing log-book.

## **VOLATILE ORGANIC COMPOUNDS (VOC) - Regulation VI/15**

A VOC Management Plan must be on board a Crude Oil Carrier to which is to be approved by the Administration.

We urge that Owners / Managers / Operators to be ready to embrace the above requirements after 1 July 2010.

Yours sincerely,

Deputy Registrar  
Tuvalu Ship Registry