



## POLLUTION PREVENTION AND RESPONSE

### Comments on the draft amendments to the NO<sub>x</sub> Technical Code 2008

#### Submitted by IACS

#### SUMMARY

*Executive summary:* This document provides comments to paragraph 2.15 of document MEPC 84/10 and annex 1 to document PPR 13/WP.5 to promote unified implementation of the draft amendments to the NO<sub>x</sub> Technical Code 2008 concerning certification of engines that operate on non-carbon-containing fuel or mixtures of carbon-containing and non-carbon-containing fuels.

*Strategic direction, if applicable:* 7

*Output:* 7.17

*Action to be taken:* Paragraph 8

*Related documents:* MEPC 84/10; PPR 13/18, PPR 13/18/Add.1, PPR 13/WP.1/Rev.1 and PPR 13/WP.5

#### Introduction

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.6) and comments on paragraph 2.15 of document MEPC 84/10 (Secretariat) reporting on the thirteenth session of the Sub-Committee on Pollution Prevention and Response (PPR 13) and annex 1 to document PPR 13/WP.5 (to be made available in due course as annex 4 to document PPR 13/18/Add.1) containing draft amendments to the NO<sub>x</sub> Technical Code 2008 (NTC 2008) concerning certification of engines that operate on non-carbon-containing fuel or mixtures of carbon-containing and non carbon-containing fuels.

#### Background

2 PPR 13 agreed to the draft amendments to the NO<sub>x</sub> Technical Code 2008 (NTC 2008) set out in annex 1 to document PPR 13/WP.5, with a view to approval by MEPC 84 and subsequent circulation with a view to adoption.

3 This document proposes editorial amendments to enhance clarity of the draft amendments to the NTC 2008 and to eliminate potential ambiguities.

## Discussion and proposals

### Table 3 – Symbols and subscripts for terms and variables

4 There appears to be an inconsistency between the use of the term "instantaneous" and the associated symbols " $M_e$ " and " $\rho_e$ ". If an instantaneous value is intended, the subscript "i" should be applied, i.e. " $\rho_{e,i}$ ".

5 Relative humidity of the intake air is already defined as " $R_a$ " in table 3 of the NTC 2008 on Symbols and subscripts for terms and variables, and " $R_a$ " is used consistently in the corresponding formulas. IACS notes that the symbol " $RH_a$ " does not appear to be used in any formulas.

6 IACS suggests therefore that clarification be provided on whether the term "instantaneous" is intended and that consistency be established between the text and the symbols. It should further be considered whether the term " $RH_a$ " is needed.

### Appendix VI – Calculation of exhaust gas mass flow (carbon, hydrogen and oxygen balance methods)

7 IACS suggests that the flowchart in paragraph 7.1 be updated with a question mark in the top-centre box, and that decision points (Yes/No branches) be shown as diamonds, rather than rectangles, as follows:

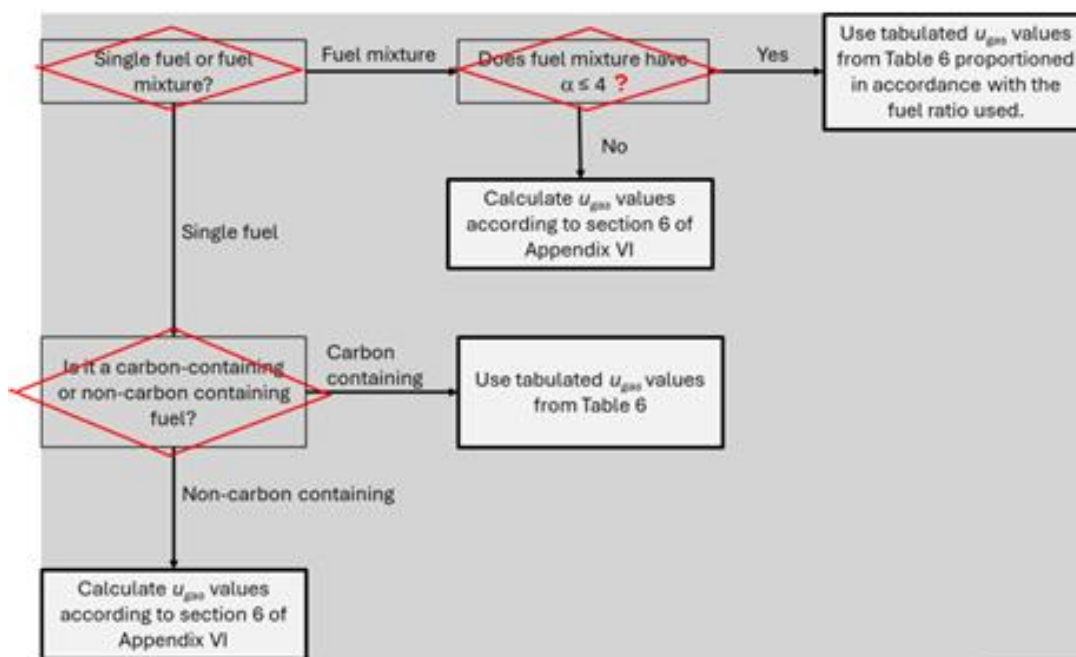


Figure 1 – Flowchart for determination of  $u_{gas}$  for fuels and fuel mixtures

### Action requested of the Committee

8 The Committee is invited to consider the foregoing, in particular the comments and proposals in paragraphs 4 to 7, and take action as appropriate.