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Proposal to define a normal cubic metre

Transmitted by the Government of the United Kingdom*

Summary

Executive summary: To facilitate correct interpretation of the exemptions related to the

carriage of gases, it is appropriate to define the unit Nm3 used in

the table of ADR 1.1.3.2, energy content of fuels.

Action to be taken: To include a definition of a normal cubic metre either in a footnote to the

table in 1.1.3.2 or by inserting a new paragraph into 1.1.2, Units of

Measurement.

Introduction

- 1. The table in NOTE 1 of 1.1.3.2 states the energy content of gases in MJ/Nm³. The unit Nm³, a normal cubic metre, is associated with reference conditions of temperature and pressure which are not defined in 1.1.3.2 or elsewhere in ADR.
- 2. The United Kingdom has not identified the use of Nm3 in ADR outside of 1.1.3.2.

^{*} In accordance with the programme of work of the Inland Transport Committee for 2018-2019, (ECE/TRANS/WP.15/237, annex V, (9.1)).

3. In this paper the United Kingdom provides two options for amendments. The United Kingdom has a preference for Option 1: defining Nm³ in a footnote to the table would be more convenient for the user and Nm³ is not used in ADR outside of 1.1.3.2.

Proposal - Option 1

- 4. Create the following footnote (a) to the table in NOTE 1 of ADR 1.1.3.2:
- "(a) 1 Nm³ refers to a 'normal cubic metre': the amount of a gas occupying 1 m³ under temperature and pressure conditions of 0 °C and 1.01325 bar (1 atmosphere)."

A superscript (a) next to the two mentions of Nm³ may be used to reference the footnote.

Proposal - Option 2

- 5. Create the following footnote (a) to the table in NOTE 1 of ADR 1.1.3.2:
 - "(a) 1 Nm3 refers to a normal cubic metre."

A superscript (a) next to the two mentions of Nm3 may be used to reference the footnote.

- 6. Create the following new paragraph under 1.2.2 Units of Measurement:
 - "1.2.2.5

Where ADR specifies a normal cubic metre, this refers to the amount of a gas occupying 1 m³ under temperature and pressure conditions of 0 °C and 1.01325 bar (1 atmosphere)."

Justification

7. Defining Nm³ in 1.1.3.2 will help to ensure accurate interpretation of the text. It is noted that different regions and organisations may choose to use different temperature and pressure conditions when defining what conditions are 'normal' and 'standard'. Therefore, it would be helpful to include a definition of the Nm³ reference conditions in ADR.

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