DEVELOPMENT OF DRAFT LIFECYCLE GHG AND CARBON INTENSITY GUIDELINES FOR MARITIME FUELS (DRAFT LCA GUIDELINES)

Updated draft Lifecycle GHG and Carbon Intensity Guidelines for marine fuels

ISWG-GHG 11/2/3

Submitted by Australia, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the European Commission and ICS

European Commission

LCA Guidelines at ISWG GHG 11

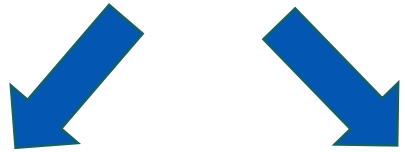
- **The developments proposed build on the results of ISWG-GHG 9 set out in document MEPC77/WP.6;**

- **LCA Guidelines are a technical tool that IS NOT linked to any Market Based Measure;**

- **The proposed LCA Guidelines provides for two consistent and compatible approaches that can be used as appropriate in future regulatory developments.**

LCA Guidelines at ISWG GHG 11 – PROPOSAL 1

Estimation of fuel lifecycle GHG emissions (CO_2, CH_4 and N_2O)



Well-to-Wake (WtW) methodology on a full lifecycle analytical assessment, which enables the evaluation of fuel pathways and can be used for reporting all relevant greenhouse gas (GHG) emissions, as per IPCC guidelines.

Tank-to-Wake (TtW) methodology in line with the IPCC Guidelines for National Greenhouse Gas Inventories, which enables accounting of GHG emissions while avoiding double counting across sectors.

LCA Guidelines at ISWG GHG 11 – PROPOSAL 1

Well-to-Wake (WtW)

$$\boldsymbol{GHGe}\left[gCO_{2eq}\right] = (\boldsymbol{WtT}\ (fuel\ [\text{and}\ electricity]) + \boldsymbol{TtW}(\ combustion, incl.\ fugitive\ emissions))$$

where the *WtT* addendum contains emissions inter alia emissions credits for biogenic and non-biogenic captured carbon

Tank-to-Wake (TtW)

$$\boldsymbol{GHGe}\left[gCO_{2eq}\right] = \boldsymbol{TtW}(\ combustion, incl.\ fugitive\ emissions))$$

completed with a Fuel Life Cycle Label and a factor (0 or 1 – S_f factor) depending on the carbon content of the fuel

LCA Guidelines at ISWG GHG 11 – PROPOSAL 2

- Consider the establishment of a scientific fuel expert panel to keep the certification schemes, and emission and slip factors under review. The panel should also consider the default values and certification schemes for new marine fuels.

- Invitation to MEPC 78 to consider the establishment of a Correspondence Group (CG) to continue the detailed work on the draft Guidelines.

LCA Guidelines at ISWG GHG 11 – PROPOSAL 3

Areas to be further developed are:

.1 sustainability criteria and the definition of the Fuel Lifecycle Label (FLL);

.2 establishment of a set of relevant priority fuels, their pathways and default emission factors;

.3 how to best address the electricity GHG footprint in fuels production and processes, including consideration of national and regional variations; and

.4 criteria and instructions for verification and certification schemes.

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.1 sustainability criteria and the definition of the Fuel Lifecycle Label (FLL);

- The submission contains preliminary considerations on sustainability criteria to be further developed.
- Sustainability criteria should not pre-empt the application of future measures
- The Fuel Lifecycle Label should be able to order the fuels respect to their upstream emissions as the analytic approach would do.

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.2 establishment of a set of relevant priority fuels, their pathways and default emission factors;

- Identification of most relevant actual and prospective fuels should be agreed; which fossils, which biogenic, which RFNBOs should we focus first;
- Default emissions factors for these fuels should be discussed and agreed in the Fuel Experts Panels, if established;
- Default factors presented in the Tables are non-agreed examples for testing purposed only.

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.3 how to best address the electricity GHG footprint in fuels production and processes, including consideration of national and regional variations; and

- At large a methodology to deal with RFNBOs (e-fuels) has to be devised for both WtW and TtW streams;
- Geographical scope to cater for regional variations maybe needed;

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.4 criteria and instructions for verification and certification schemes.

- Certification is relevant for both WtT and TtW:
  - For the WtT, certification of the actual values for each fuel pathway will be needed (see ICAO approved certification schemes);
  - For the TtW, certification is needed for the emissions factors in relation to the fuel / energy consumer combination;
- Criteria for recognition of certification schemes, for the assessment of new fuels pathways, establishment of the FLL.

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Some other issues to further explore:

- Fossil fuels → default *versus* actual values
  - ISWG-GHG 11/2/6 (Secretariat) containing results of a study comparing 4 LCA methodologies:
    - GREET, RED, JEC and CORSIA

- Identification of TtW emissions factors for CH_4 and N_2O

Conclusions

- The submission provides for a skeleton to build on consistent and solid methodology for the LCA Guidelines;
- If agreed a CG could continue to shape the Guidelines on the basis of the work that will be carried out at ISWG-GHG 11;
- A standing panel of Fuel Experts could complete and keep under review technical elements of the Guidelines on the basis of ToRs that will need to be agreed.

Thank you

DG MOVE – WATERBORNE Directorate – Unit D.2 Maritime Safety

European Commission