23rd April 2025 – Meeting with Mr Seitz and colleagues from DC

Draft standard for measurement and calculation of air pollutants emissions and greenhouse gases of inland vessels

Towards an international labelling system

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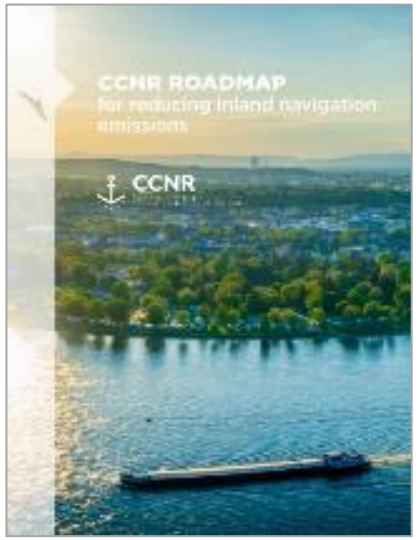
Policy objectives and activities



- Mannheim declaration (2018)
  => **largely eliminating GHG and other pollutants by 2050**

- CCNR and EU share the same **long-term vision** of inland navigation by 2050

- Emission reduction roadmap (2021)
  => measure V1 “Development of an environmental and climate protection label”

- CESNI work program (since 2023) – task PT4
  => To draft a standard relating to a **methodology for measuring and calculating** emissions from inland navigation vessels as well as **defining emission classes**

  => CCNR has committed to come up with a proposal covering GHG and air pollutant emissions

  => **Implementation of standard is not mandatory** (but international standard would avoid fragmented local/national methods)

Possible usages of the label according to CCNR
(for both GHG and air pollutants)

a) identify low emissions cargo and passenger vessels
(new builds and existing vessels)

b) provide incentives or restrict the navigation / mooring of certain vessels in certain areas, such as ports or dense urban areas

c) facilitate the reporting and monitoring of fleet emissions in comparison with the Mannheim Declaration's targets

d) manage the allocation of public subsidies, in particular to achieve climate objectives for inland navigation

e) demonstrate the advantages of inland navigation in terms of reducing emissions in logistic chains

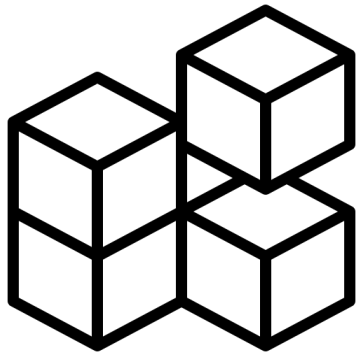
Different modules for different usages

1. An **air pollutant** module (g/kWh) => harmonised method to measure air pollutants

2. A **greenhouse gas** intensity module (intensity in gGHG/MJ) => decarbonisation efforts

3. An **energy efficiency** module (gGHG/tkm) => orientate investment and subsidies rather for newbuilds

4. A **modal shift** module (gGHG/tkm) => orientate clients' choice



According to ongoing work within CCNR, a label could incorporate:

⇒ the **air pollutant** and the **GHG intensity** modules to enable the sector to demonstrate its emission reduction efforts in a **cost-efficient** manner.

⇒ **Energy efficiency** in a second step

Why a CESNI standard?

- provide a **recognised, reliable and reproducible methodology** (comparability of measurement results from one measurement body to another)

- make sure that **initiatives at local level** are based on harmonized European standard (CCNR, EU and wider)
  (i.e. ports or cities taking policy measures based on the level of air pollutant emissions).

1/ Draft standard on air pollutants – content

- **air pollutants =** carbon monoxide (CO), all hydrocarbons (HC) and nitrous oxides (NOx), as well as particulate pollutants (PM / PN), as referred to in Regulation (EU) 2016/1628.

To be distinguished from GHG (CO2 etc.)

- **target =** in service engines in inland vessels (e.g. CCNR I engine equipped with after treatment system) but also new engines (no measurement required for new Stage V)

All types of vessels (including pushers, passenger vessels…)

- **onboard measurements**
  => **representative value in g/kWh** of the emissions from engines (aggregated at vessel level)

=> allow comparison with results obtained for other comparable vessels

1/ Draft standard on air pollutants – content

- based on experience NL and PROMINENT + expertise from TNO (NL), BAW (DE) and CERTAM (FR)

- relies on existing standard reference methods for sensors

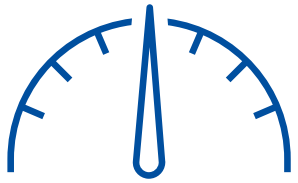
- relies on a **simplified method** which assumes carbon balance and uses the **brake specific fuel consumption (BSFC)** to convert the exhaust gas concentrations into mass emissions per kWh of engine work

- reporting format

- preliminary emission classes (using well known levels - CCNR I, CCNRII-EU IIIa, Stage V)
  => only new engines considered as compliant with NRMM (Stage V)
  => measurements can show that existing engines with after treatment reach similar values as NRMM compliant engines but cannot be used to show engine compliance with NRMM

1/ Draft standard on air pollutants – limits and uncertainties

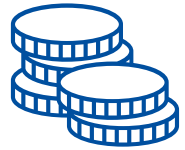
- adaptation to take into account the **constraints for measurements** which do not exist in a laboratory (e.g. gas dispersion in the exhaust pipe)



- hardly possible to exactly match the **measurement points set in the test cycles** (E3, E2, C1, D2) used for the type-approval certification **in laboratory**
  => total deviation shall not exceed 10%

- uncertainties considered when checking compliance with emission limits
  => **conformity factor** (+/- 50% by comparison with the test carried out under laboratory conditions)

- **cost of measurement preliminary estimated at 6000 euros on average**.
  => this is a limit if no proper incentives or restrictions are in place.
  => commitment NL, FR, DE, to test this protocol and evaluate the associated costs



1/ Draft standard on air pollutants – state of play

- draft standard **submitted to CESNI beginning 2025** (document CESNI (25) 1)

- presentation to MS, international organisations and recognized associations in March/April

- **<u>ongoing collection of written comments</u>**
  - **EMH –** underlined the unique position of sailing ships, which primarily use sails for propulsion and operate without emissions most of the time
  - **EUROMOT –** difference measures in lab / in real-world conditions, frequency of measurements, expert opinion from JRC
  - **NL –** clear preference for standalone standard
  - **GERC –** clarification on the scope of application
  - …

- review in CESNI/PT to incorporate the remarks and finalization of emission classes

2) GHG intensity module – content

- **Ongoing preparatory work within CCNR ! (not yet in CESNI (25) 1)**
- Principle of adapting **Fuel EU maritime methodology** to inland vessels
- Formula to calculate GHG emissions **suitable for inland navigation vessels**
- Based on:
  - ⇒ quantity of fuel bunkered / electricity used
  - ⇒ default emission factors for the well-to-tank (WTT) and tank-to-wake (TTW) elements : **to be adapted to IWT**
- Absolute GHG emissions expressed in tonnes should also be collected, to reflect the size and sailing profiles of the vessels.

2) GHG intensity module – state of play

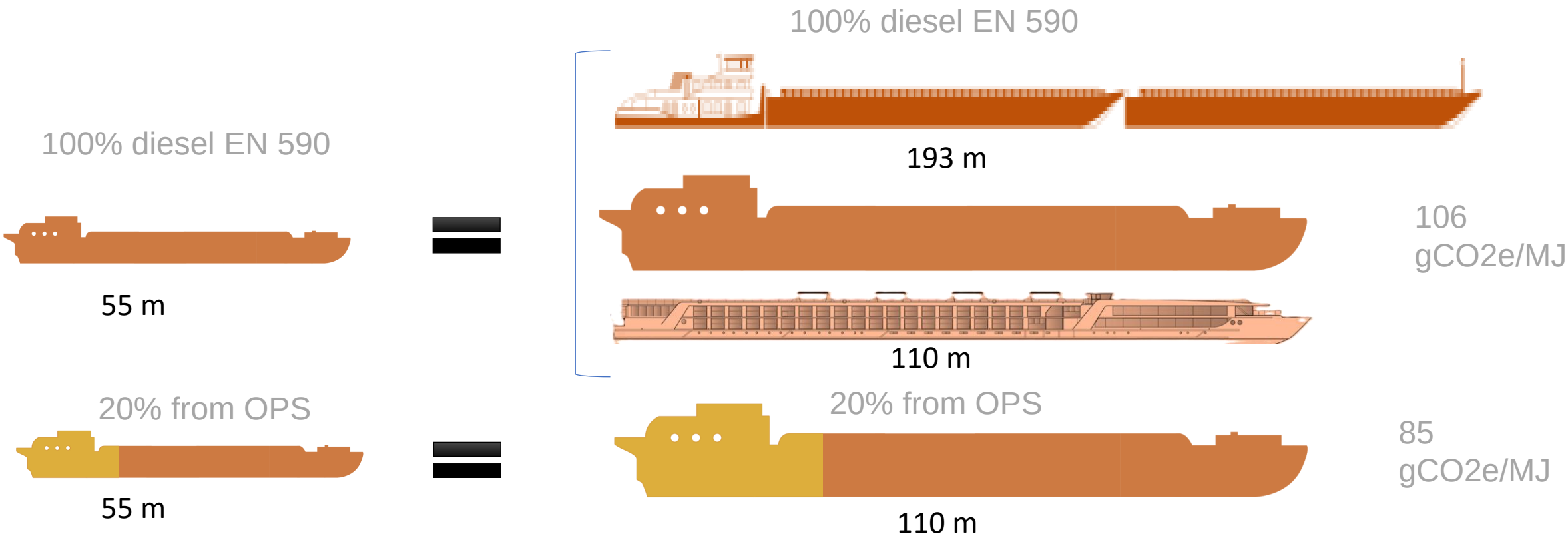
- **need to adapt the emission factors –** cooperation expected with projet CLEVER
- need to assess the available data sources for fuel consumption (e.g. CDNI provided that legal barriers are addressed) to reduce the administrative burden
- need to define emission classes
- draft standard to be **submitted to CESNI before end of 2025**
- within CESNI, examination and revision of the draft standard with MS, international organisations and recognized associations
- possibly combining air pollutants and GHG in one standard

2) GHG intensity module – added value

- Propose a **robust methodology** to calculate GHG emissions for the existing fleet
- For the majority of the existing fleet, greening will rely on the use of low-carbon fuels/energy.
- This module would allow to:
  - ⇒ for IWT sector, **easily demonstrate its efforts to decarbonize**
  - ⇒ monitor changes in fuel used by the vessel, ie **share of low carbon fuels / electricity**
  - ⇒ stimulate use of low carbon fuels/energy sources, in conjunction with i**nternational/national incentives or restrictions**
  - ⇒ demonstrate a vessel's **compatibility with the EU taxonomy** (which is notably used in national funding programs)
- In a **cost-effective way** (ie data collection / verification)
- Data calculated could be used to implement other methodologies, such as **CountEmissionsEU**

2) GHG intensity module – limitations

- **Limitation:** most of the fleet will have the same GHG emissions level because they currently use the same fuel (non-road diesel EN 590).



3) Tentative timeline

<table>
<tr><td></td><td colspan="5">2025</td><td colspan="6">2026</td><td>2027</td></tr>
<tr><td></td><td>June</td><td></td><td>September</td><td></td><td>December</td><td></td><td>March</td><td></td><td>June</td><td></td><td>September</td><td></td><td>December</td><td>…</td></tr>
<tr><td rowspan="2">Air pollutants</td><td colspan="5">Review of draft standard to incorporate the remarks
(CESNI/PT)</td><td colspan="3"></td><td colspan="4" rowspan="3">Adoption of CESNI standard
(combining air pollutants and GHG in one standard)</td><td colspan="2" rowspan="3">Implementation in national or international initiatives</td></tr>
<tr><td colspan="2"></td><td colspan="3">Test in practice with the draft standard
(NL, DE and FR)</td><td colspan="3">Incorporate lessons learned from the tests
(CESNI/PT)</td></tr>
<tr><td>GHG</td><td colspan="4"></td><td colspan="2">Submission of draft GHG standard, incl. examples with real data
(CCNR)</td><td colspan="3">Review of draft standard to incorporate the remarks and finalization of emission classes
(CESNI/PT)</td></tr>
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4) Discussion items with DC

- Remarks in CESNI relevant from DC Member states
  - DE and AT: support of CESNI label
  - RO: specificity of Danube fleet must be considered for both air pollutant and GHG standards

- CCNR to include calculation examples based on Danubian vessels to show applicability at EU scale.
  a) Can DC give us typical example and data of Danubian vessel sailing profile which could be included?
  b) GHG standard based on quantity of fuel bunkered. To perform plausibility checks average fuel consumption per sailing profile is required. Would DC have such average fuel consumption depending on the most relevant vessel's sailing profile on the Danube?

- If needed, availability of CCNR to present the state of play during a DC meeting?

THANK YOU FOR YOUR ATTENTION!