

“Technical & green
legal framework;
developments in
barging”

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0 1. Introduction



October 2018 - Declaration of Mannheim

35% reduction GHG and air pollution compared with 2015 by 2035,
>90% reduction greenhouse gases and other pollutants by 2050

December 2019 – EU GREEN DEAL

50-55% reduction GHG by 2030 compared to 1990 levels
90% reduction in transport emissions by 2050

https://www.ccr-zkr.org/files/documents/dmannheim/Mannheimer_Erklaerung_nl.pdf

https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_nl



EU Strategy on Sustainable & Smart Mobility
published on December 9th, 2020 (practical guidance, tangible
objectives)

8) Transport by inland waterways and short sea shipping will increase by 25% by 2030 and by 50% by 2050 (compared to 2015)

9) By 2030, rail and waterborne-based intermodal transport will be able to compete on equal footing with road-only transport in the EU

10) All external costs of transport within the EU will be covered by the transport users at the latest by 2050.



Navigation And Inland Waterway Action and Development in Europe (NAIADES) III Action Plan

2021-2027

What does the initiative aim to achieve and how?

(A) moving more transport by inland waterways

(B) a gradual shift towards zero emission inland vessels



02. EU Regulation

EU 2016/1628 Non Road Mobile Machinery
Regulation for new engines (STAGE V)



NRMM Regulation for STAGE V engines since 2020 (NO_x – reduction)

The current Regulation focuses on reducing air pollutant emissions for inland waterway marine engines is the European Non Road Mobile Machinery (NRMM) Regulation.

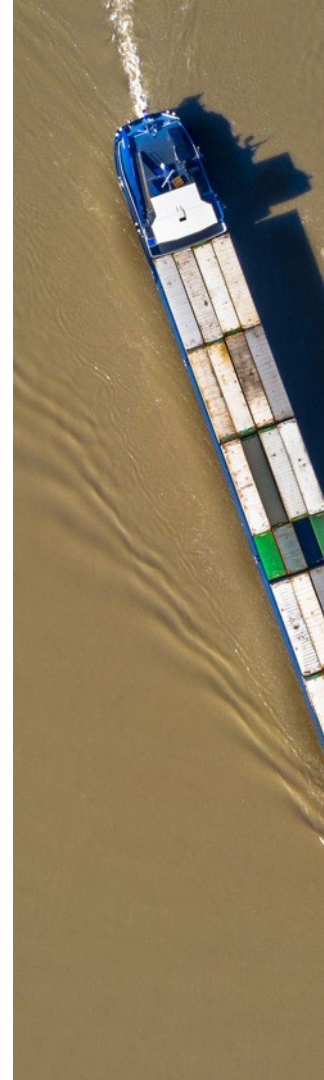
The Regulation is applicable for all new engines. For example newly build vessel or for re-engining an existing vessel.

Since 2022 the transition period for all vessel classes ended, meaning today the minimum requirement on board for (re)engining a vessel is an engine which meets the NRMM Regulation emission standards.

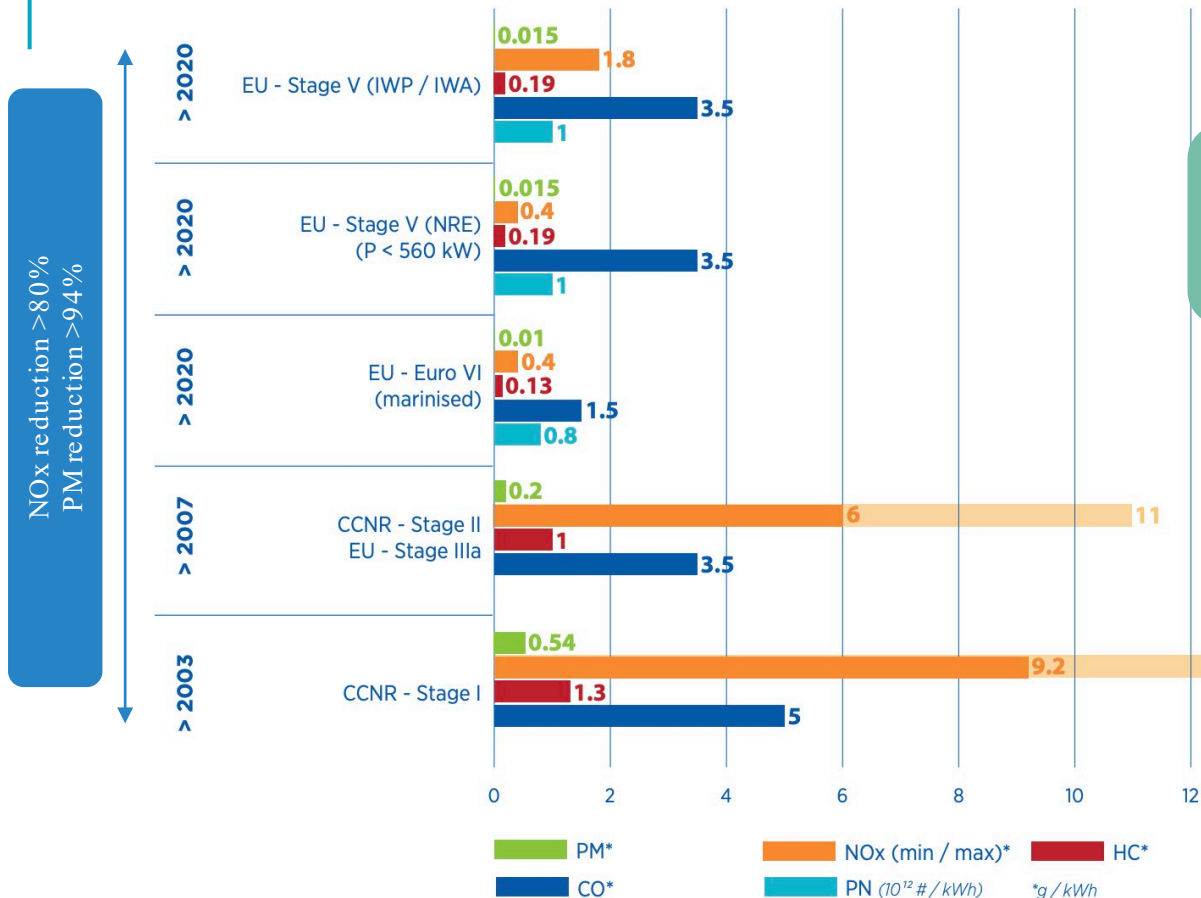
STAGE V engines:

- Marinised EURO VI engine
- STAGE V - IWP engine
- STAGE V – IW A engine
- STAGE V – NRE engine

<https://listes.cesni.eu/2060-en.html>



EMISSION LIMITS FOR IWT ENGINES (Power > 300 kW)

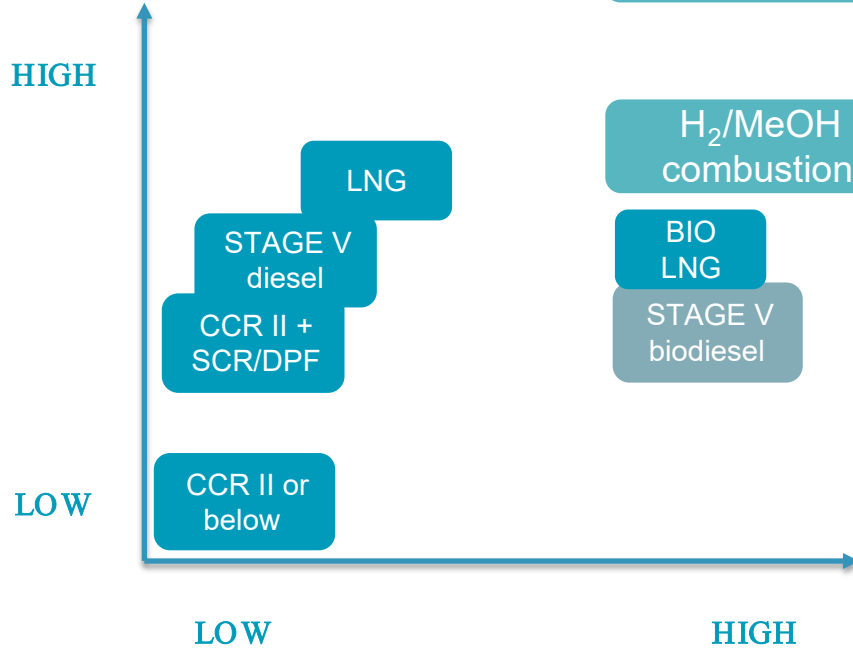


For the time being there are no EU restrictions for reducing greenhouse gas emissions in IWT.

The main focus of the Non Road Mobile Machinery is a significant reduction on air polluting emissions.

DISCLAIMER- THIS IS A ROUGH ESTIMATION FOR VISUALISATION PURPOSES!

Air pollution reduction (NOx, PM, ...)



Greenhouse Gas impact (CO2, CH4, ...)

Technical Readiness Level (TRL)

- TRL 9
- TRL 8
- TRL 7
- TRL 6
- TRL 5



03. CESNI/P T

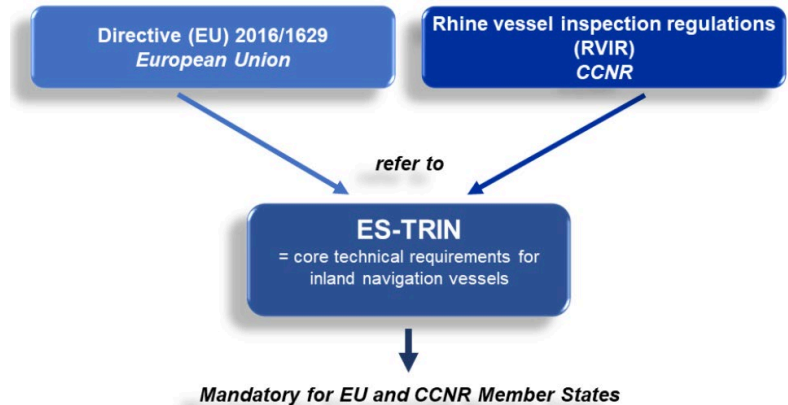
Technical specifications for vessels



CESNI/PT

Since 2015, the CESNI Committee regularly updates and publishes the European Standard laying down Technical Requirements for Inland Navigation vessels (ES-TRIN). This standard lays down the uniform technical requirements necessary to ensure the safety of inland navigation vessels.

References to ES-TRIN are now included in the legal frameworks of the EU and the CCNR (respectively directive (EU) 2016/1629 and Rhine vessel inspection regulations). The Danube Commission also decided in 2017 to recommend the standard in its international instruments.



CESNI/PT Greening topics are covered in temporary working groups

→ CESNI/PT/FC
Temporary Working group for alternative fuels (FC).

→ CESNI/PT/Elec
Temporary Working group on electronic equipment and systems on board of vessels (Elec).

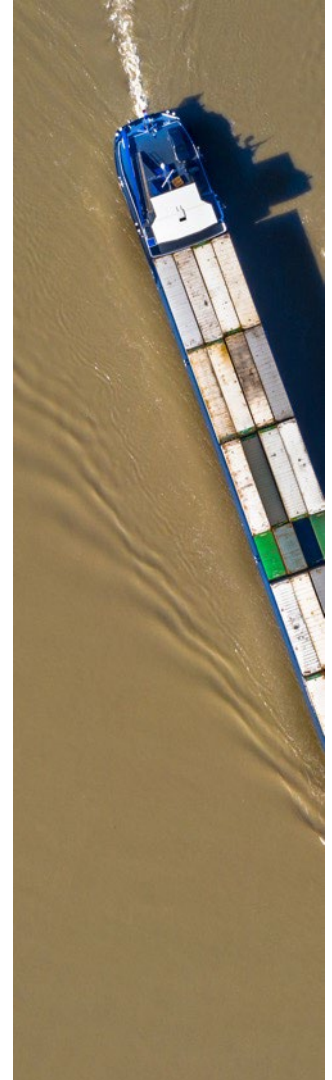


CESNI/PT/FC temporary working group

It has been tasked with preparing draft technical requirements for the use of alternative fuels aboard inland navigation vessels, including:

- the bunkering
- storage
- distribution
- processing

of suitable primary fuels.



CESNI/PT/FC temporary working group

The mission does not include developing requirements for vessel operation or crew training.

It shall follow the priorities set out in the work programme:

- 1) storage of methanol
- 2) storage of hydrogen (liquified and gaseous)
- 3) methanol in internal combustion engines
- 4) storage and use of compressed natural gas
- 5) other alternative fuels.



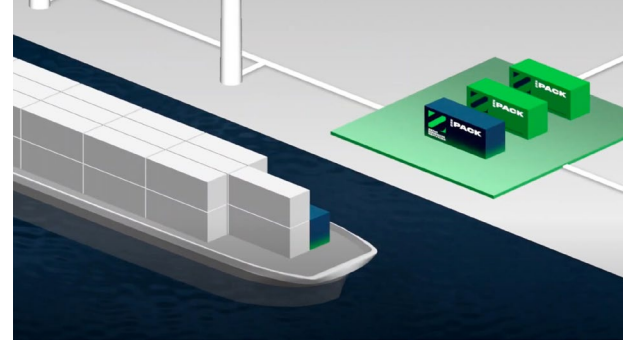
- Publications [here](#)
- Draft review process finished
- Draft review started
- Draft review process finished
- To be covered in nearby future
- On hold
- No others defined atm



CESNI meeting
 Meeting of the working group CESNI/PT (technical requirements for vessels)
 Meeting of the temporary working group CESNI/PT/FC (alternative fuels)

CESNI/PT/Elec temporary working group

Its principal missions shall be to finalise the draft technical requirements for electronic equipment and systems (Chapter 12 of ES-TRIN) and to assess the impact of these technical requirements.



Conclusion and challenges

- Different initiatives of alternatives are present;
 - Those are under consideration of CESNI/PT;
 - Challenges for owners ;
 - No strong legal requirement on short term;
 - Not clear which development is a « *no regret long term investment* » (barges' life cycle of >30 Y+)
 - Any development will be higher in costs than regular proven technique of diesel engines.
- Most customers not willing to pay extra for a 'green barge'
- Challenge (chicken-egg) of infrastructure



03. ADN

Transport of dangerous goods agreement;
To be seen on top of CESNI-safety standards for 'all barges'
Extra requirements in correlation to transport of DG;
Extensive studies before approval within CCNR
Tank barging potential for developments (funding, knowledge)

