

Some Guidance on EFs for H₂ use in transport emission projections

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H₂ can be used on-board vehicles/vessels

- In Fuel Cells for the production of electricity -> **produces only steam**
- In engines where it can be combusted neat or as a pilot fuel together with a main fuel (mainly in marine applications)
- H₂ combustion produces NO_x that needs to be compliant with applicable emission standards, via emission control
 - Cars & LCVs: Similar to Euro 7 (Euro 6) petrol
 - HDVs: Similar to Euro 7 (Euro VI) Diesel
 - Vessels: Similar to Tier III/Tier II depending on application

H₂ combustion and other pollutants

- H₂ combustion may lead to large PN emissions – similar to CNG – due to lube oil additives. This needs to be confirmed.
- SCR emission control can be materialized with H₂. If materialized with NH₃, then NH₃ slip and N₂O emissions may be produced.
- If H₂ is used a pilot fuel, then emissions from the main fuel will be dominant