Project H2Haul – WP1

H_2 Fuel cell HD trucks and ZE logistics

Online workshop on
Safe Storage of Compressed Gas Hydrogen
in road transport applications
and related infrastructure

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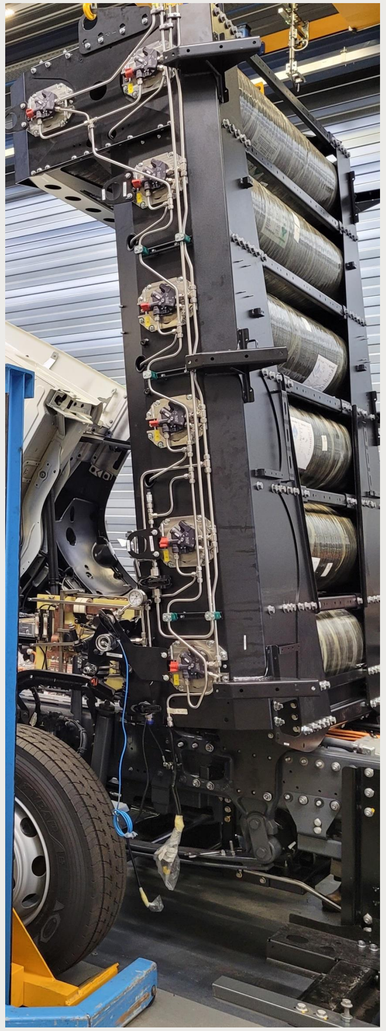
Project H2Haul WP 1 Fuel cell truck development and construction

Workshop on Safe Storage of Hydrogen

Project Brief

- Tank set for Hydrogen propelled trucks,
- Tank set consist of frame with 7 Type IV Vessels.
- Vessel designed for Normal Working Pressure of 350 bar.
- Vessel volume 237 Liter @ 350bar, hydrogen mass 5.8 kg.
- Set volume 1659 Liter @ 350bar, hydrogen mass 40.6 kg.

- Consortium : H2Haul project Work package 1, VDL experience: Range extender, H2Share, Interreg 2.0, Phileas.
- Safety responsible, VDL in corporation with Plastic Omnium Clean Energy Systems; Third party TÜV Rheinland.
- Description of Work, tank frame design for certifying, P&ID safe design.
- Pressure and Temperature measurement and direct transmitting to HRS.
- Transport (and stationary) applications.



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Workshop on Safe Storage of Hydrogen

Regulations, Codes and Standards

- Relevant RCS identified/applied
  - SAE J2600 Compressed Hydrogen Surface Vehicle Fueling Connection Devices
  - SAE J2601 Fueling Protocols for Light Duty Gaseous Hydrogen Surface Vehicles
  - SAE J2601_2 Fueling Protocol for Gaseous Hydrogen Powered Heavy Duty Vehicles
  - SAE J2799 Hydrogen Surface Vehicle to Station Communications Hardware and Software
  - EC79/2009 Type-approval of hydrogen-powered motor vehicles, date of end of validity: 05-07-2022
  - (ECE R134)

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Identification of Safety Vulnerabilities ISV / Risk Assessments (one group should focus on ISV the other on RA)

- Risk analysis, done by VDL (vehicle level) and Plastic Omnium (tank set level).
- Involved for assessment as third party : TÜV Rheinland.
- Homologation preparation according to European legislation, End user for H2Haul is Colruyt group in Belgium.

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Workshop on Safe Storage of Hydrogen

Prevention and mitigation

- Following the present regulations and standards.
- Examples in this project: Blow off valves, Thermal pressure relieve valves, maintenance valve, valve position sensor, natural ventilation open blue air.

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Workshop on Safe Storage of Hydrogen

Safety issues observed so far

- None, so far.
- Possibly present also related lessons learnt

- To early in the project.

FUEL CELLS AND HYDROGEN
JOINT UNDERTAKING

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