

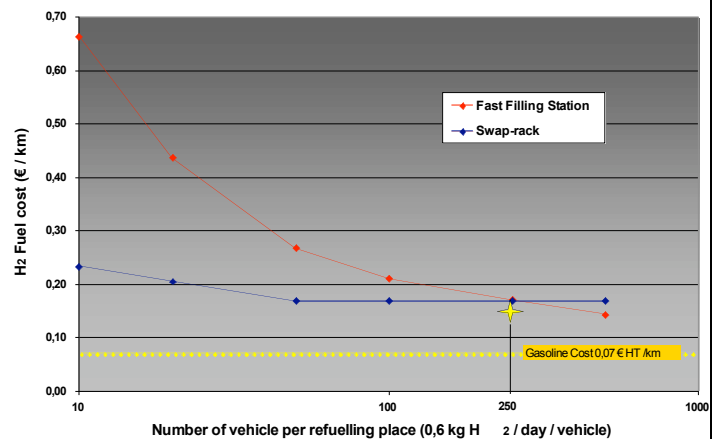
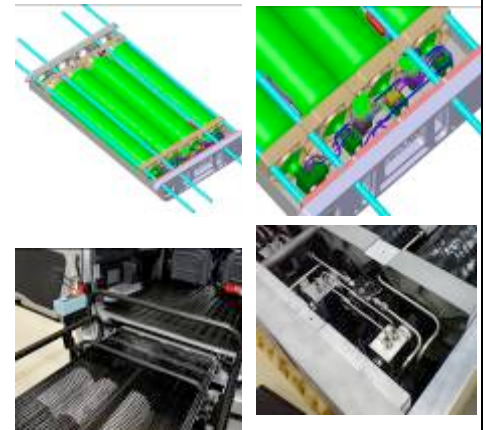
700 bar Hydrogen Storage System as Removable Rack

Objectives

- ❖ Design and realise a complete 700 bar hydrogen storage system based on the concept of a removable rack (called swap-rack) and using cylinders developed within StorHy.
- ❖ Feasibility study to assess the economic value of this concept.

Achievements

- ❖ 700 bar swap-rack using four FABER cylinders developed within StorHy
- ❖ Capacity: 2.7 kg of H₂
- ❖ Overall external volume: 215 l
- ❖ Total weight: 120 kg
- ❖ A complete safety study has been performed: a new in-tank component is used, which integrates an excess flow valve to shut off H₂ flow in case of any rupture in the H₂ line.
- ❖ Thank to an in-tank regulator, the length of the high pressure lines can be reduced.
- ❖ The feasibility study shows that the swap-rack concept could be economically efficient during the first development stage of H₂ vehicles with captive fleets, but could not be applied to standard customers.
- ❖ This is in line with PSA's roadmap that envisages first developments of fuel cell vehicles in large urban areas, with small fleets of delivery vehicles.
- ❖ However, with the current development of H₂ stations in the main industrial countries, there should be H₂ stations available to supply any H₂ vehicles fleets during the next decades. This promotes fixed on-board storage solutions.



Future Perspectives

- ❖ Regarding automotive applications, knowledge acquired on the swap-rack can be directly used on fixed on-board hydrogen storage. After this swap-rack development that equips the current PSA Fuel Cell vehicle, PSA is also working on fixed on-board H₂ storage systems.
- ❖ The swap-rack concept remains a very smart solution for smaller applications like motorbikes, scooters etc. Air Liquide is developing smaller removable refills for other projects.

Partners		
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Website	www.storhy.net
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