

DAIMLER

Current Status GLC F-CELL and H2Mobility

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SIX COMPANIES AND FIVE ASSOCIATED PARTNERS FROM THE AUTOMOBILE, GAS AND OIL SECTORS JOINED FORCES TO FOUND H₂ MOBILITY. THEIR COMMON GOAL? TO PUT IN PLACE THE INFRASTRUCTURE TO GUARANTEE NATIONWIDE HYDROGEN-POWERED MOBILITY IN GERMANY.

H2-Mobility

Build up a H2-infrastructre network until 2023 in Germany

Shareholder

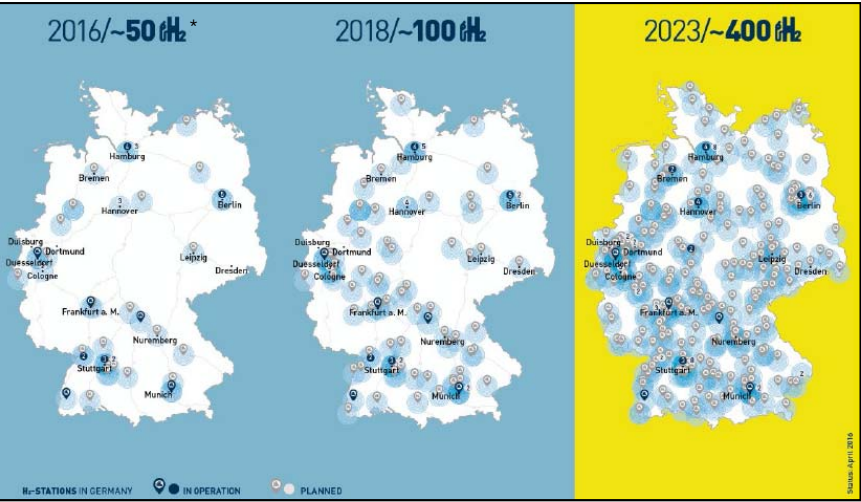


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Putting Hydrogen on the map



By 2018/19 as many as 100 Hydrogen stations across Germany should provide the world's densest network



H2-Mobility Signing Ceremony in Berlin
13th October 2015

Associated Partner

TOYOTA

HONDA



* By 04/2017 there are 33 HRS are completed, 22 HRS are under construction

HRS Performance Specification

At its refuelling stations H₂ MOBILITY uses the most modern and efficient technologies currently available on the market. For successful hydrogen mobility a high degree of standardisation and reliability are essential, as is keeping capital expenditure and operating costs as low as possible.

In 2015 the first HRS were ordered from the manufacturers Air Liquide, Linde and H2Logic.

700 bar hydrogen refuelling station standardisation //

In order to ensure uniform standards and to facilitate procurement, H₂ MOBILITY has drawn up a functional description of standardised HRS. It gives an overview of the required performance in terms of quantity and quality and lays out the regulations to adopt. It distinguishes between four different sizes of hydrogen refuelling stations: very small, small, medium and large. The general performance specifications of the different refuelling station sizes are given in Table 1.

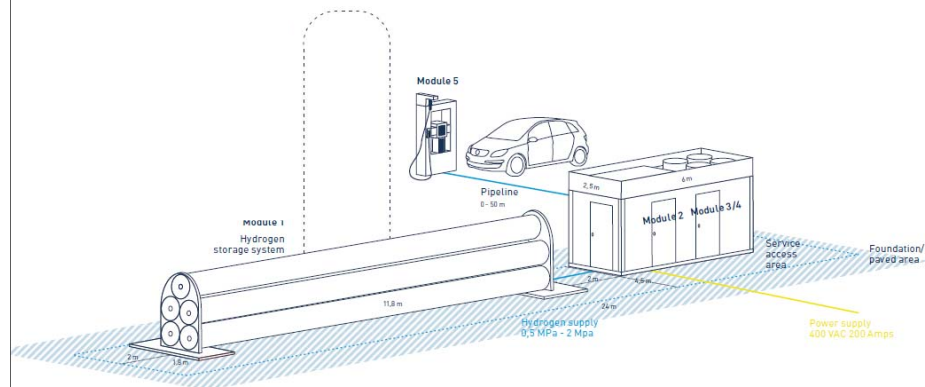
	VERY SMALL HRS	SMALL HRS	MEDIUM HRS	LARGE HRS
Number of refuelling positions	1	1	2	4
Number of vehicles that can be refuelled per hour per position	2,5	6	6	10
Number of vehicles that can be refuelled back to back per refuelling position	0	1	1	10
Max. waiting time to refuel consecutive cars (in min.)	20	5	5	n/a
Number of consecutive hours to meet the performance specifications	--	3	3	24/7
Average number of vehicles refuelled per day	10	30	60	125
Maximum number of vehicles refuelled per day	20	38	75	180
Maximum hydrogen hourly throughput (in kg)	18	33,6	67,2	224
Average hydrogen throughput per day (in kg)	56	168	336	700
Maximum hydrogen throughput per day (in kg)	80	212	420	1000
Number of vehicles served per station (approx.)	100	400	800	1600

Example of a small hydrogen refueling station layout

Filling process // Filling process: The filling process to adopt is laid out in the international standard SAE J2601-2014. Vehicle tanks with a capacity of 1-7kg of hydrogen at a pressure of 700 bar have been taken as the design baseline.

Modular design // The hydrogen refuelling stations are described in terms of functional modules:

- Module 1** On-site hydrogen storage system
- Module 2** Hydrogen compression system
- Module 3** High pressure buffer storage
- Module 4** Hydrogen pre-cooling unit
- Module 5** Dispensing system



Starting 2017: Mercedes-Benz GLC F-CELL

With plug-in technology



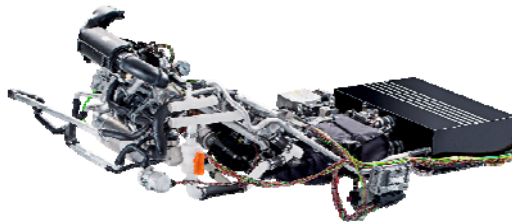
DAIMLER: Next Generation Fuel-Cell System

Huge technological progress

2010: Underfloor package



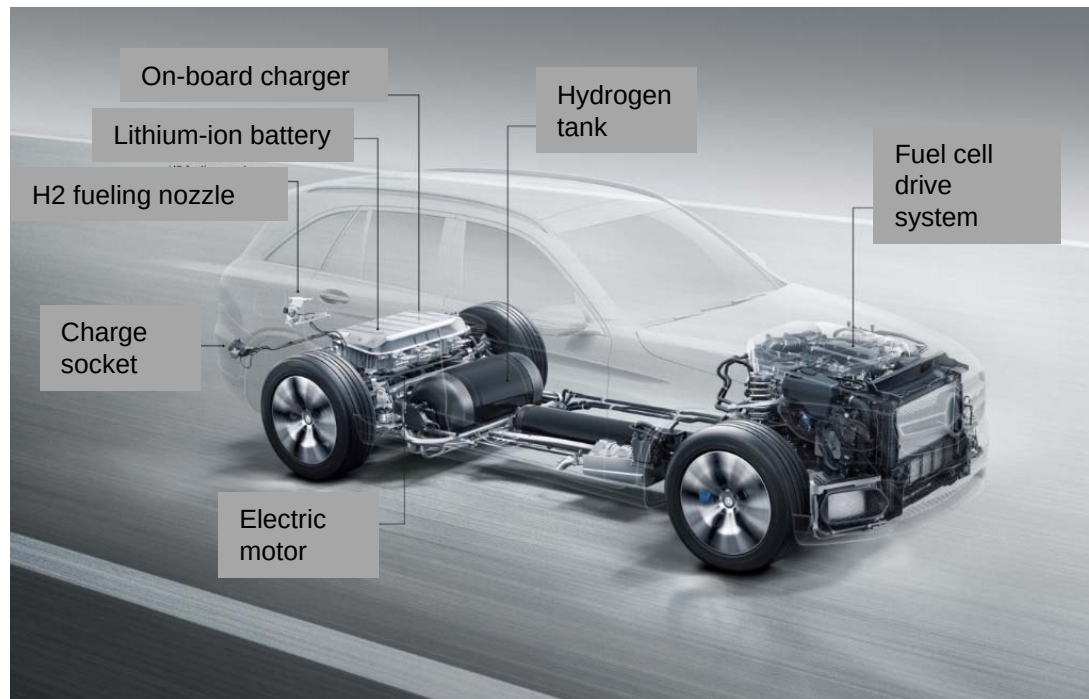
2017: Compartment package



- ➔ **30%** reduction fuel cell engine size
- ➔ **90%** reduction of Platinum
- ➔ **30%** higher electric range in future vehicles
- ➔ **40%** higher system performance

DAIMLER: Next Generation Fuel-Cell System

GLC F-CELL Facts



- Approx. 500 km combined electric range NEDC
- < 50 km ranges in battery-electric mode alone
- 700 bar hydrogen refueling in approx. 3 min
- Battery with an energy content of approx. 9 kWh
- 2 carbon fibres coated tanks with ~4 kg capacity

Thank You for Your Attention!

