



KEY BARRIERS TO STATION PERFORMANCE IN GERMANY - IMPLICATIONS FOR NEXT-GENERATION STATIONS

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H2 MOBILITY is a JV by 6 industry leaders



DAIMLER



HONDA
The Power of Dreams



TOYOTA

VOLKSWAGEN
AKTIENGESELLSCHAFT



supported by 6 OEMS

H2 MOBILITY Deutschland GmbH & Co. KG

Business Development

Customer acquisition
OEM collaboration
CVP development
H2.LIVE

Network Delivery

Network Planning
Building of HRS
Standards
CVP implementation

Network Operations

Operations of HRS
HRS Optimization
Data & analysis
H2 Supply

Communication

Public relations
Social media
Marketing
Events

Finance & Corp. Services

Controlling, Acc.
Funding
IT Services
Legal

THE GOAL IS TO BUILD A COUNTRY WIDE NETWORK OF H2 STATIONS AND PRIORITIZE REGIONS WITH SHORT TERM DEMAND

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Focus on 7 regions and 9 highways

- identified target areas for nationwide network

Demand based prioritization

- we tender some stations to regional consortia
- the location with the highest demand commitment gets a station first

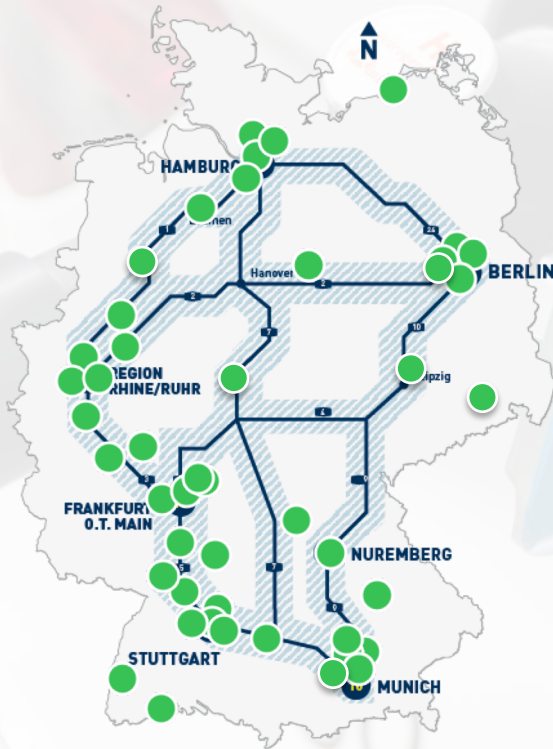


TODAY THERE ARE 50 STATIONS IN OPERATION AND 41 IN IMPLEMENTATION

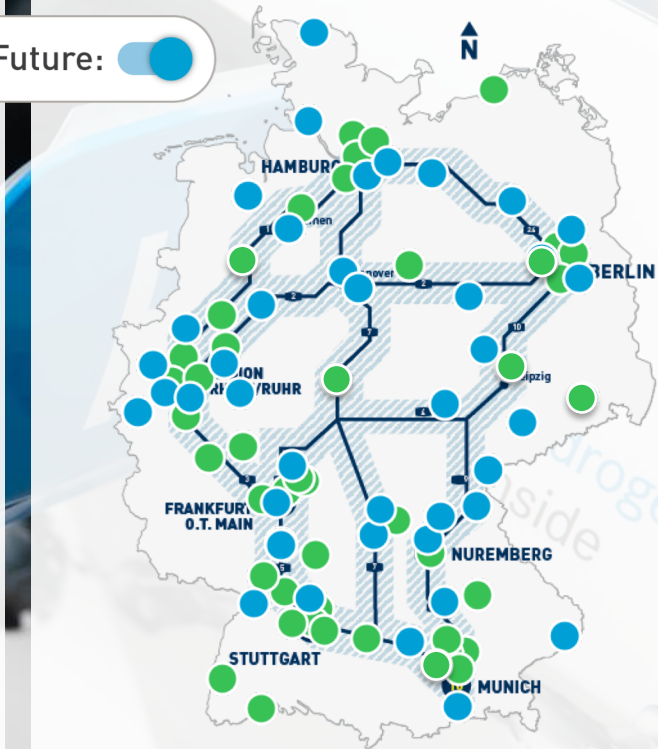


H2.LIVE

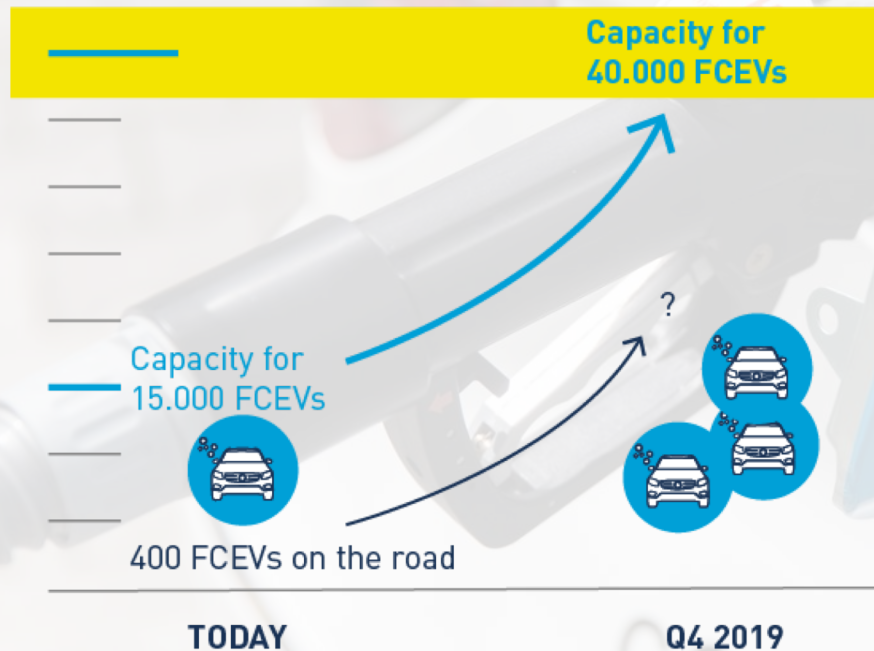
The app for emission-free driving



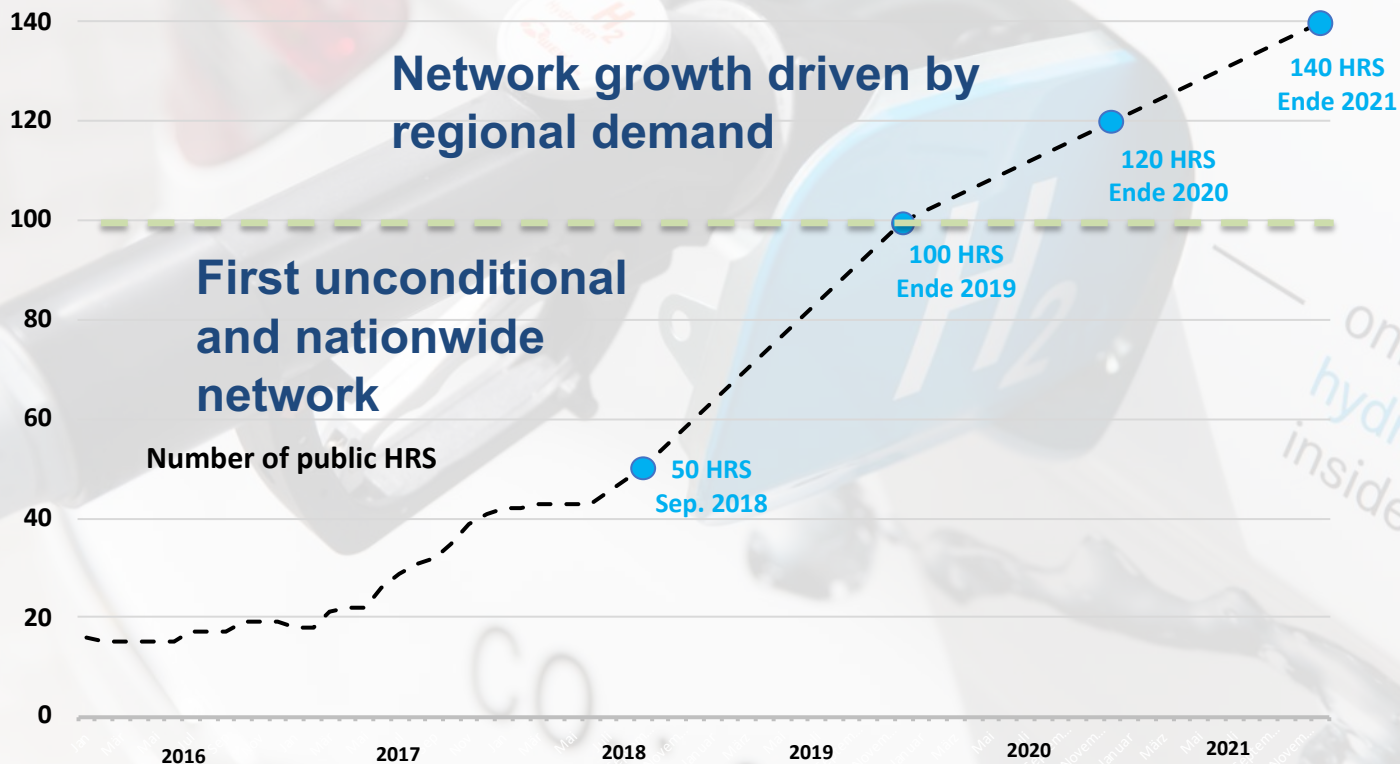
Future:



WE ARE PREPARED FOR FURTHER GROWTH!

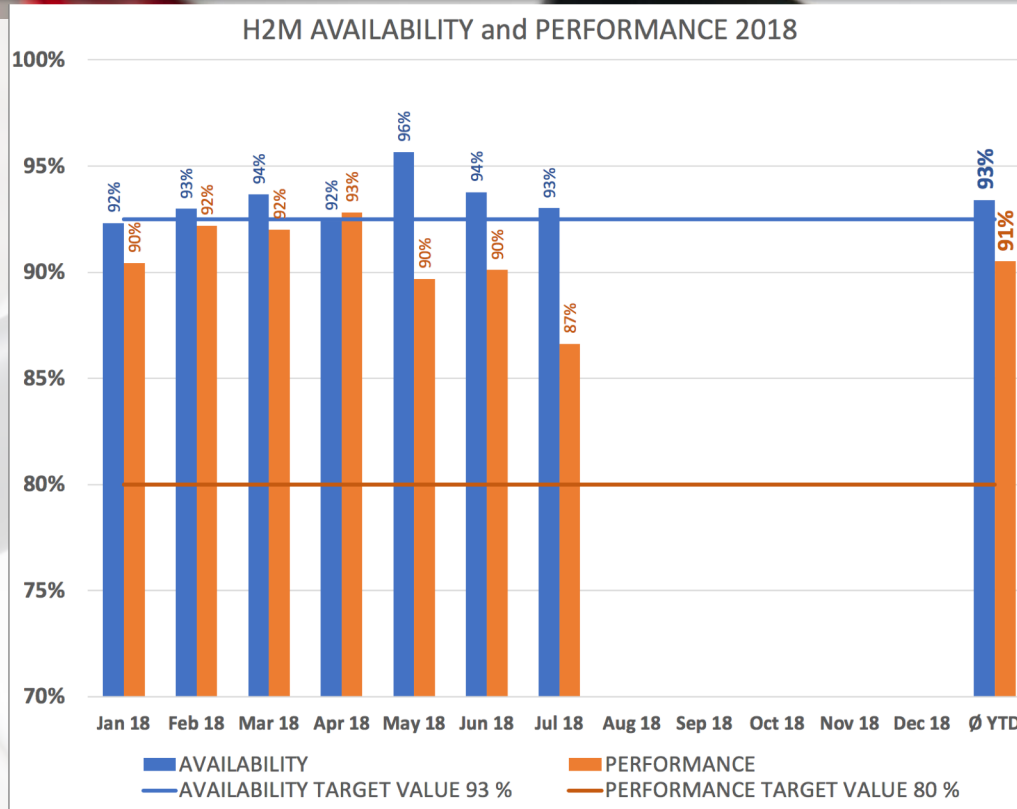


only
hydrogen
inside

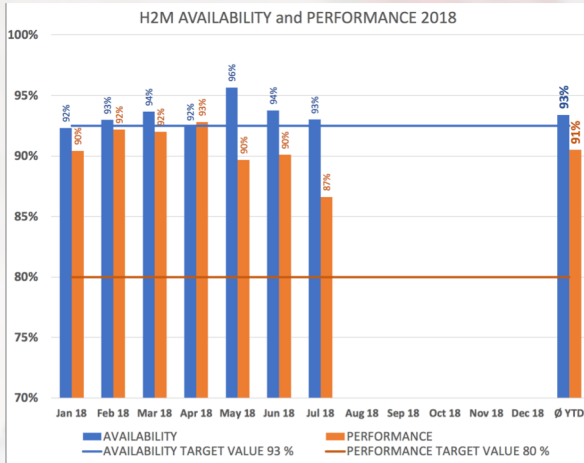


only hydrogen inside

AVAILABILITY AND PERFORMANCE



only hydrogen inside



ROOT CAUSES FOR ISSUES

Compressor	20%	Motor failure (power) Leakages valve failures pressure too high or low
Dispenser/Nozzle/Card Reader	20%	PC failure IR communication
Pneumatics	10%	Pressure Leakages
Cooling Units (ULCF, Precooling, compr. cool.)	10%	Leakages Temperature too high or low
various reasons	40%	SAE Protocol barriers H2 Supply Unit leakages sensor failures (H2, fire, heat, CO2, N) monitoring system electrical failure PLC internet connection oil supply

CHALLENGE: PREPARE THE INFRASTRUCTURE FOR FLEETS



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Clever Shuttle

Clever and climate friendly:
45 Mirai in Hamburg,
Munich, Stuttgart, Berlin

5 kg @ 700 bar



Faun

First garbage collection
truck on the road in 2018.

(2x8,4 kg @ 700 bar)



StreetScooter

Deutsche Post will build
500 FCEV transport
vehicles with 500+ km
range in the next 2 years.

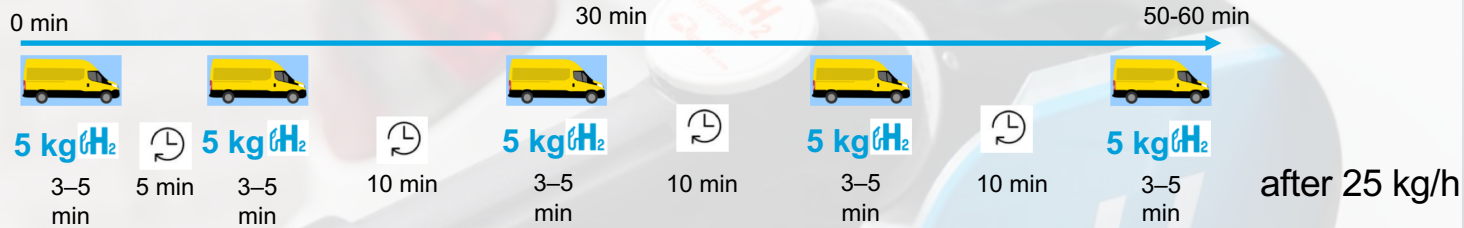
6 kg @ 700 bar



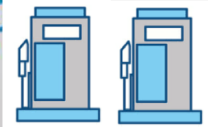
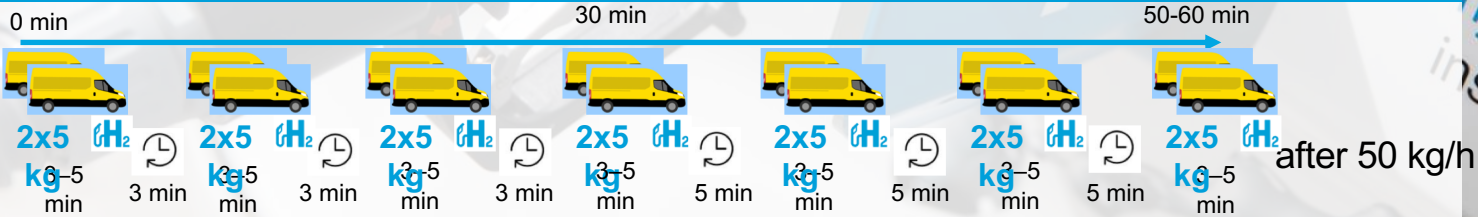
CAPACITY OF CURRENT AND PLANNED STATIONS



current standard configuration for 70 MPa



biggest planned configuration for 70 Mpa (2 compressors, 2 dispenser)



Technical concepts for a station with

- multi dispenser solution
- high Back-to-back-Peak-Performance for large 70 MPa tanksystems
- high availability with short maintenance interval
- redundant design or ability to replace components quickly
- footprint reduction
- suitable H₂-supply concept
- modular design for expandability

Thank you.

