

BMW GROUP „GREEN PLANT” LEIPZIG.

USE OF HYDROGEN FOR DECARBONIZATION.

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**BMW
GROUP**



OVERVIEW PLANT LAYOUT. EXPANSION OF PRODUCTION CAPACITY TO 350.000 UNITS.



Size: 229 ha | BMW Workforce: 5.300 | Workforce on site: > 8.000 | Capacity: 350.000 u / a | Investment: > 3 Bn. EUR

HYDROGEN IN INTRALOGISTICS.

Flexibility

- 3 shift compatibility.
- No change of energy unit.
- Flexible infrastructure.

Efficiency

- Fast refuelling.
- Efficient use of space.
- Less vehicles necessary.

Sustainability

- CO₂ free.
- High energy density H₂.
- Reduced power purchase.



Flexibility

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- Efficiency**

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Sustainability

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- ## Sustainability
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HYDROGEN IN INTRALOGISTICS. STATUS QUO LEIPZIG.



118 Vehicles

- Geb. 32 11 FFZ
- Geb. 52 37 FFZ
- Geb. 50 33 FFZ
- Geb. 80 37 FFZ



4 Dispensers

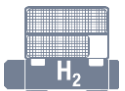
- Geb. 32 TKB LI / MP08
- Geb. 52 TMO LI
- Geb. 50 TMO
- Geb. 80 VZ-Süd



50 kg H₂ per day

- Certified Green H₂.
- 2 km H₂-pipes (400 bar)
- 1. Indoor Filling Station in Germany.
- Largest FFZ-Fleet in Germany .

OUTLOOK HYDROGEN IN AGV (AUTOMATED GUIDED VEHICLE).



Flexibility

- Replacement battery.
- Reduction of charging stations.
- Increase of transport volume.



Fuelbot FTF

- 5th dispenser VZ-Ost.
- Automated filling.
- Filling time < 2 min.



Sustainability

- CO₂ free.
- High energy density.
- Optimized power purchase.

WE MAKE THE PAINT SHOP READY FOR HYDROGEN.



Development of two substance burners

- Fuel Flexibility.
- Enabling Technology.



Piloting in 2022

- Obeying Emission limits.
- Testing of safety concept.



Ready for H₂

- Scalability.
- Green H₂ - CO₂-free.

WE MAKE PRODUCTION SUSTAINABLE.

Production

-80% CO₂ until 2030
per vehicle. versus 2019

-0,3 t CO₂
pro Fzg. vs. 2019



Energy Efficiency

- Technological Steps.
- Data Analytics.
- Mindset.



Green Electricity

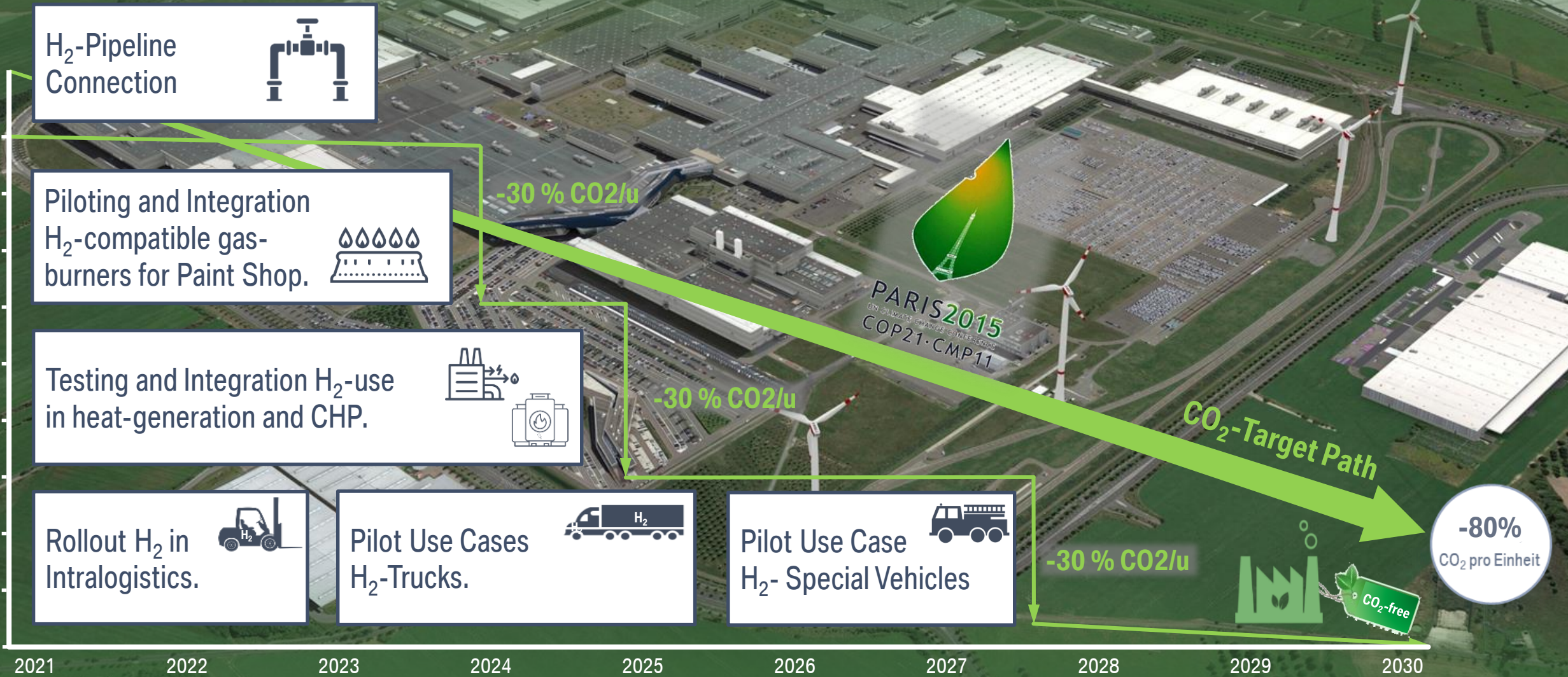
- Expansion on-site production.
- External sourcing.



Green Heat

- Biogas.
- Hydrogen.
- Geothermal.

PATH TO DECARBONISATION PLANT LEIPZIG.



CO₂ FREE SUPPLY CHAIN FOR PLANT LEIPZIG.

- 300 trucks to supply plant Leipzig daily
- Trucks emission est. 30.000 t CO₂/p.a.
- Carbon content in Diesel produce CO₂
- CO₂ Free => only possible with H₂



- Option 1: Direct H₂ Combustion
- Reasonable bridge technology with TRL10
- NO_x – and noise emission as Diesel trucks
- BMW participation in H₂-HyCET with Volvo



- Option 2: Fuel Cell Trucks
- Emission free (NO_x, Noise etc.)
- Technical readiness still open
- BMW participation in H₂-Haul with Iveco



44 t



800 km



< 15
Min.



FAHRFREUDE AUS LEIPZIG

www.bmw-werk-leipzig.de