Asociación Española del Hidrógeno

The role of hydrogen in (e)mobility

Javier Brey
Chairman

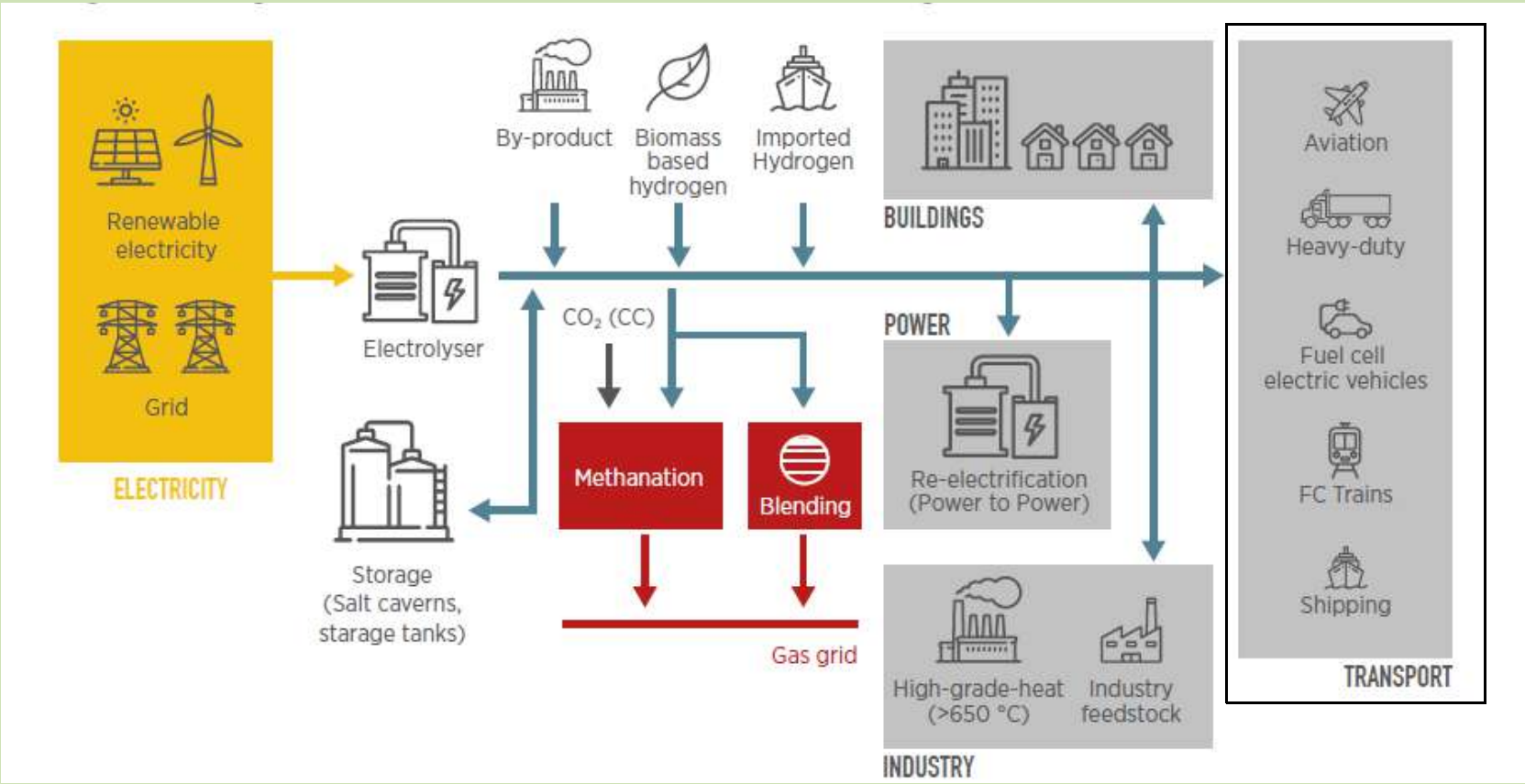
www.aeh2.org
info@aeh2.org
@AeH2_ENG
@JavierBrey

COP25 CHILE MADRID 2019

Madrid. December, 10th

AeH2 ASOCIACIÓN ESPAÑOLA DEL HIDRÓGENO

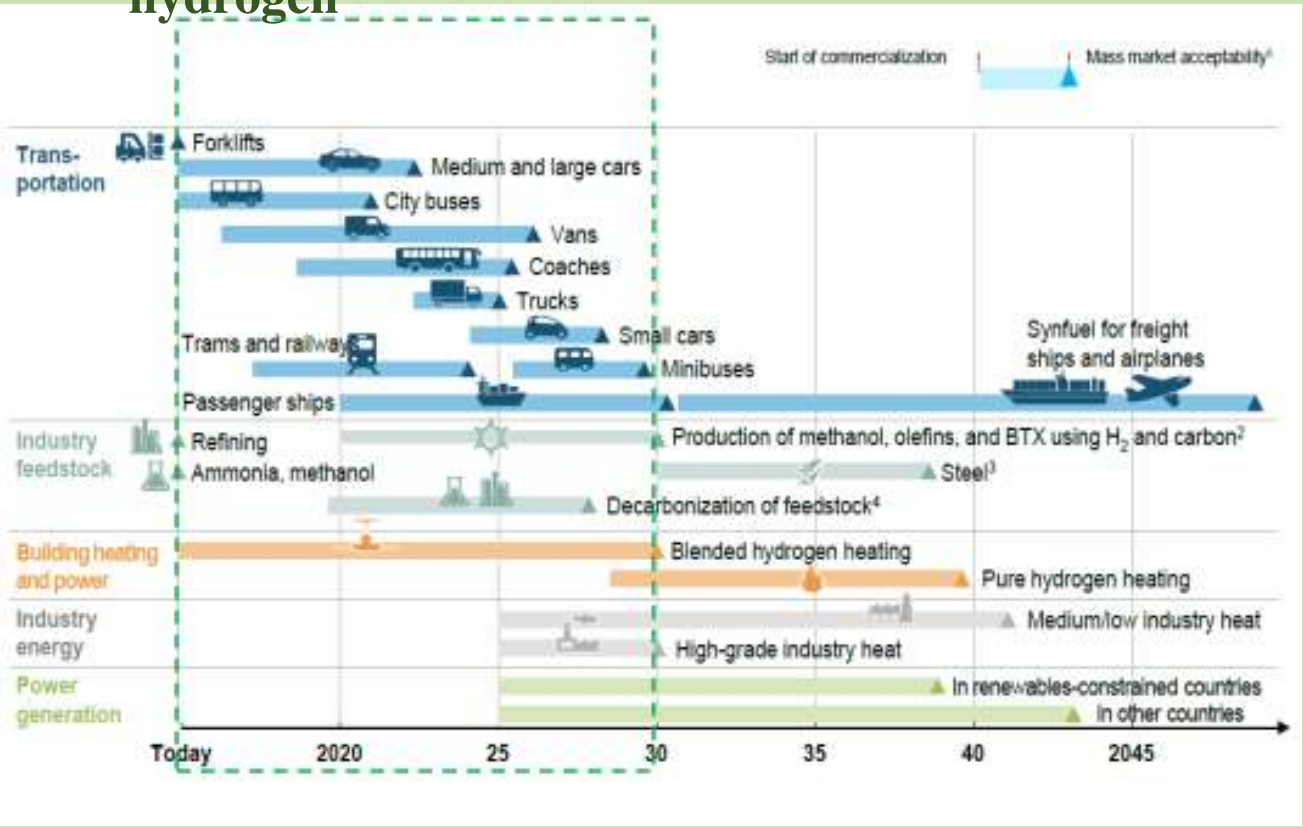
Why hydrogen?



Source: Hydrogen from renewable power. Technology outlook for the energy transition - IRENA, 2018

Drivers for hydrogen mobility

The mobility sector will benefit from the early emergence of hydrogen



Drivers for hydrogen mobility

- Increasingly strict legislation of emissions.
- Key advantages of hydrogen in mobility: long ranges, quick refuelling, lower vehicle weight.
- Few zero emission alternatives other than hydrogen, in particular for heavy-duty vehicles.

Source: Dr. Alexander Unterschütz. The 2nd Hydrogen Energy Ministerial Meeting, Tokyo, September 25th, 2019

Hydrogen Mobility: Suitable for very diverse vehicle types

FCEV : Toyota Mirai & Hyundai Nexo. EHEC 2018. Málaga. March, 2018.

Taxi fleet in Paris

Forklifts. Plug Power

Garbage truck

Hydrogen Train. Alstom Coradia iLint

FCE bus

Delivey van (Unique Electric Solutions)

Hydrogen trucks. Nikola Motor, Hyundai

Hydrogen Mobility: Hydrogen Refueling Stations (HRS)

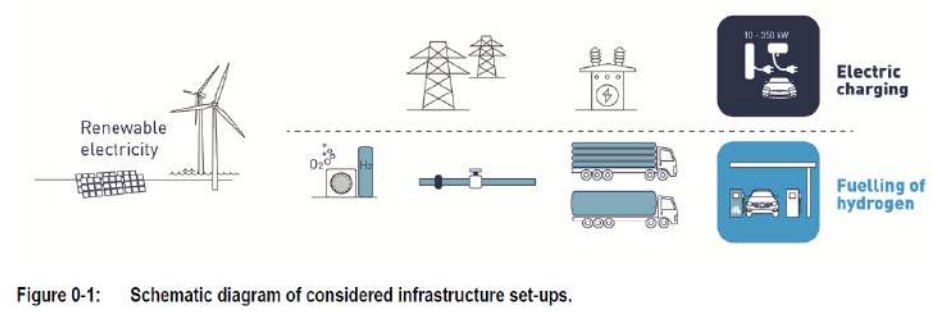


Figure 0-1: Schematic diagram of considered infrastructure set-ups.

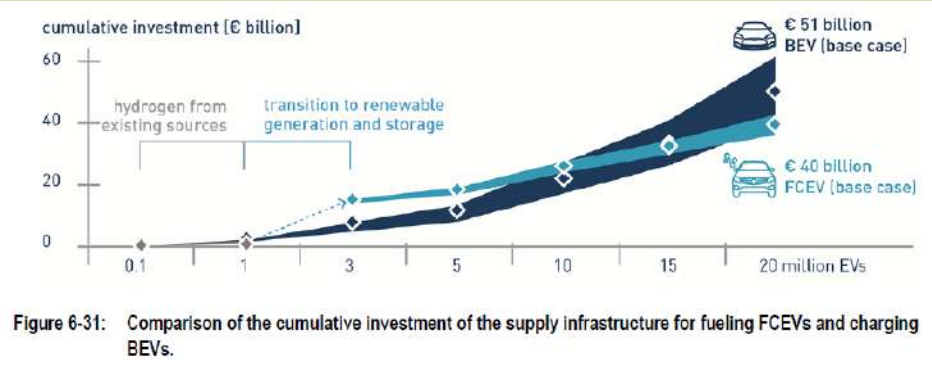
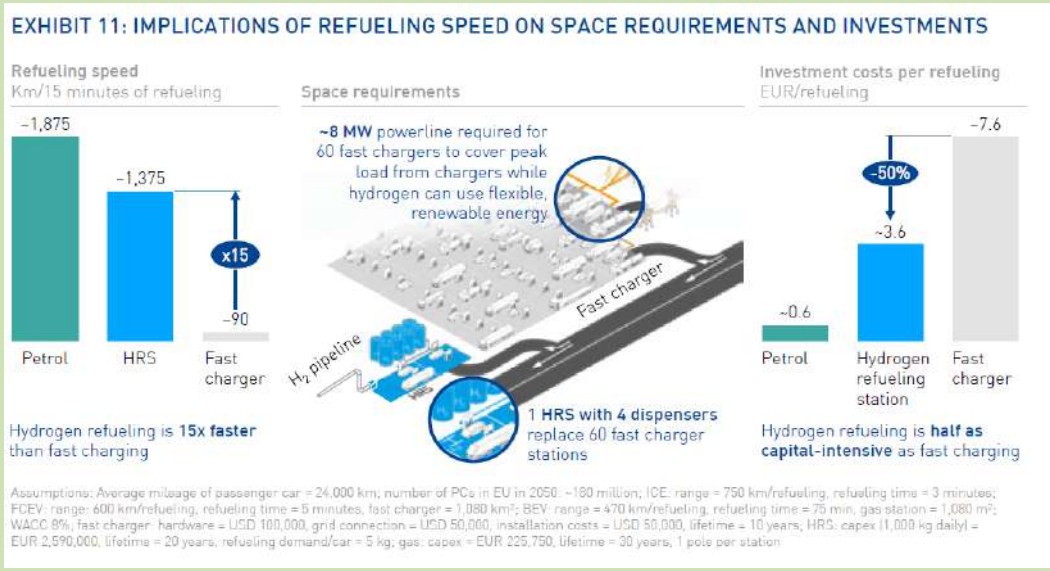


Figure 6-31: Comparison of the cumulative investment of the supply infrastructure for fueling FCEVs and charging BEVs.

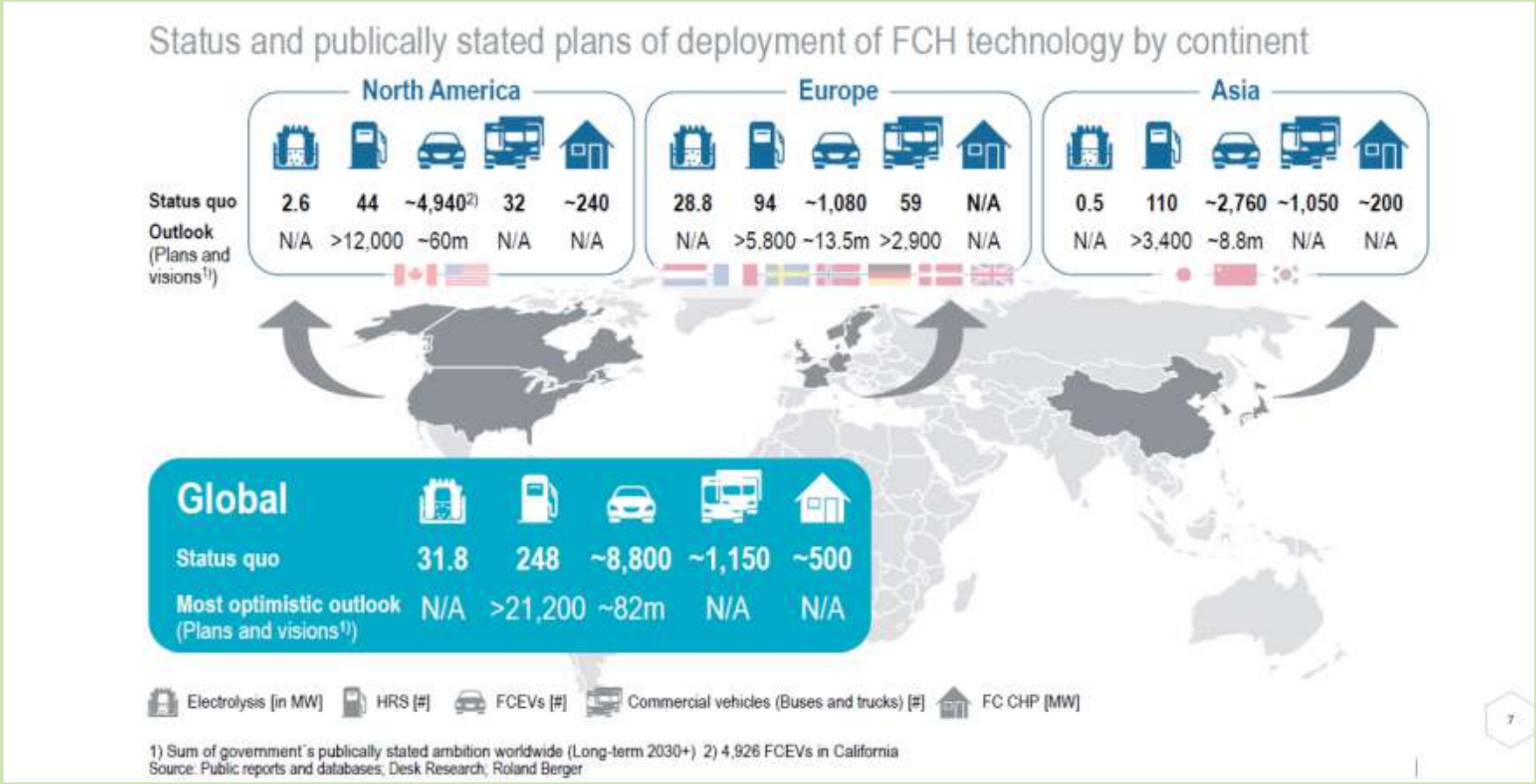
Source: Comparative Analysis of Infrastructures: Hydrogen Fueling and Electric Charging of Vehicles (Forschungszentrum Jülich Gmb)



Source: Hydrogen Roadmap Europe. FCHJU. January 2019.

- HRS = 15 X faster than fast charging
- Savings in space requirements and capital investment, compared to fast charging

Status of hydrogen deployment



Source: Hydrogen Council. The 2nd Hydrogen Energy Ministerial Meeting, Tokyo, September 25th, 2019

Why hydrogen?

Spanish PNIEC (National Energy and Climate Plan - NECP): +69 GW renewable power & -15 GW conventional power, by 2030

Spanish PNIEC (National Energy and Climate Plan - NECP): 5 Million EV in the country, by 2030 (today: 33 K)

7-8 TWh/year will need to be seasonally stored: That could be easily stored adding a 5% of hydrogen (in volume) in the Spanish natural gas network…

… or feeding 14 M hydrogen powered vehicles (60% of the automotive fleet)

Asociación Española del Hidrógeno

Thank you very much

Javier Brey
Chairman
presidente@aeh2.org

Madrid. December, 10th

www.aeh2.org
info@aeh2.org
@AeH2_ENG
@JavierBrey

AeH2
ASOCIACIÓN ESPAÑOLA DEL HIDRÓGENO