Powering the future with hydrogen and fuel cells

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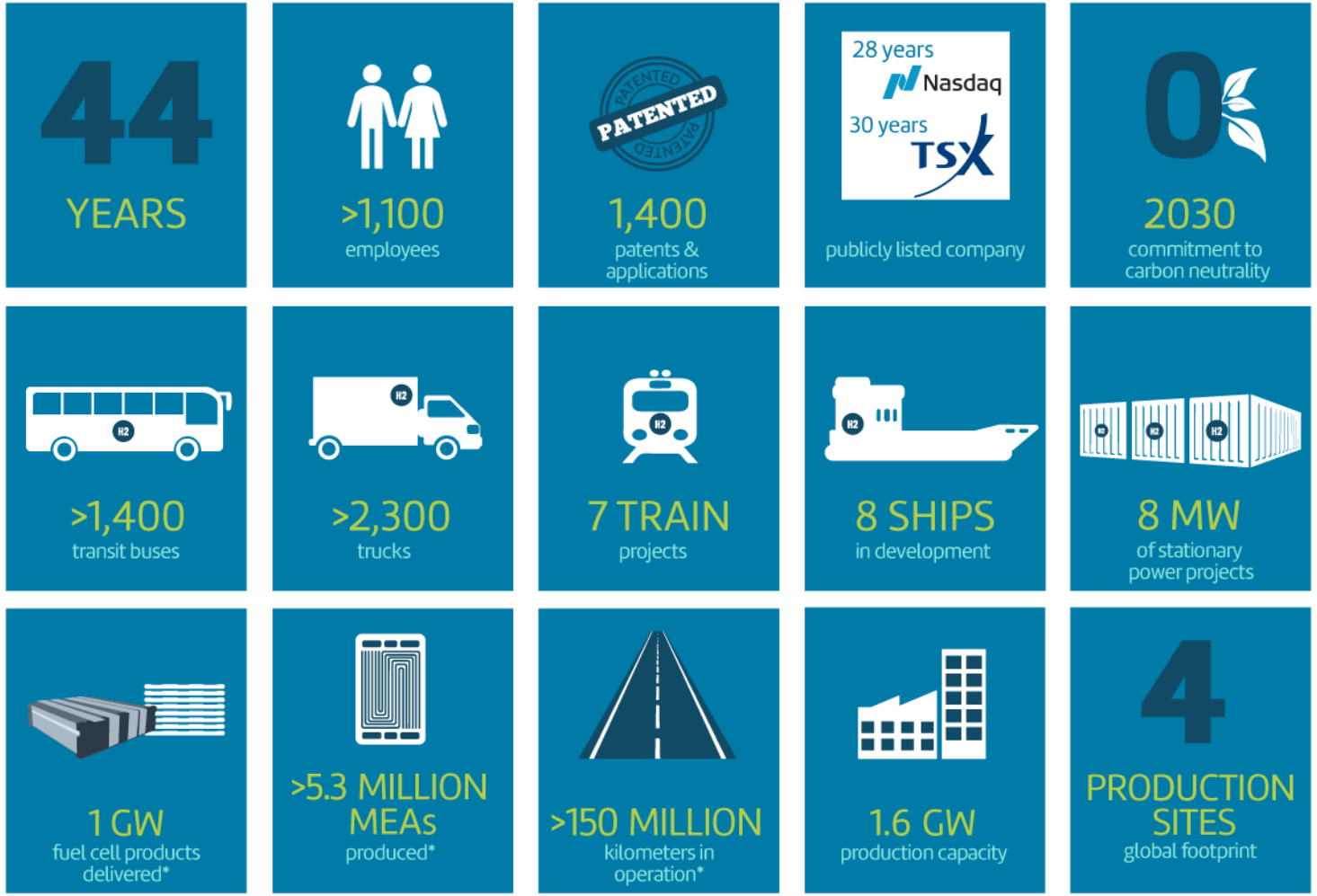
Kristina Fløche Juelsgaard
Director of Market Development

Ballard by the numbers



*compiled from 2015

Our global presence

We are present in:
Europe - China - North America

We have global industrial partners to deliver world-leading fuel cell solutions

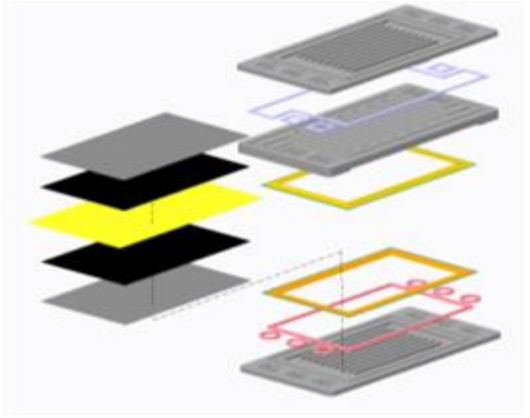
- Office
- Sales or service presence
- Fuel cell stack & module assembly
- Bipolar plate production
- Membrane electrode assembly production

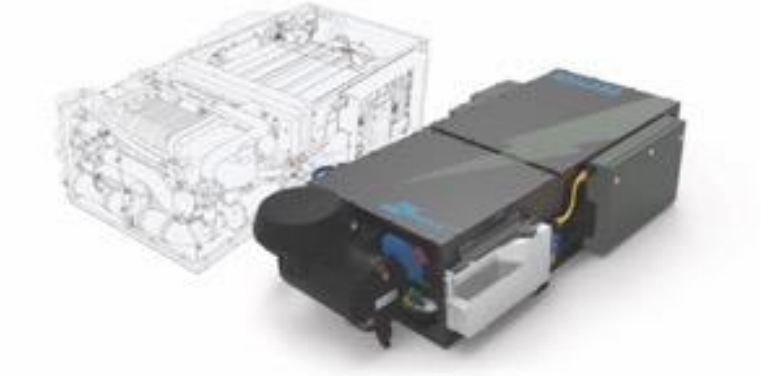
We are a vertically integrated manufacturer

throughout the fuel cell value chain

Ballard designs, builds and tests proprietary core technology components to produce optimized fuel cell products for each application

- Unit cell components (MEAs, plates…)
- Fuel cell stacks
- Balance of plant component integration
- Fuel cell module & system





Hydrogen is key enabler of Green Transition

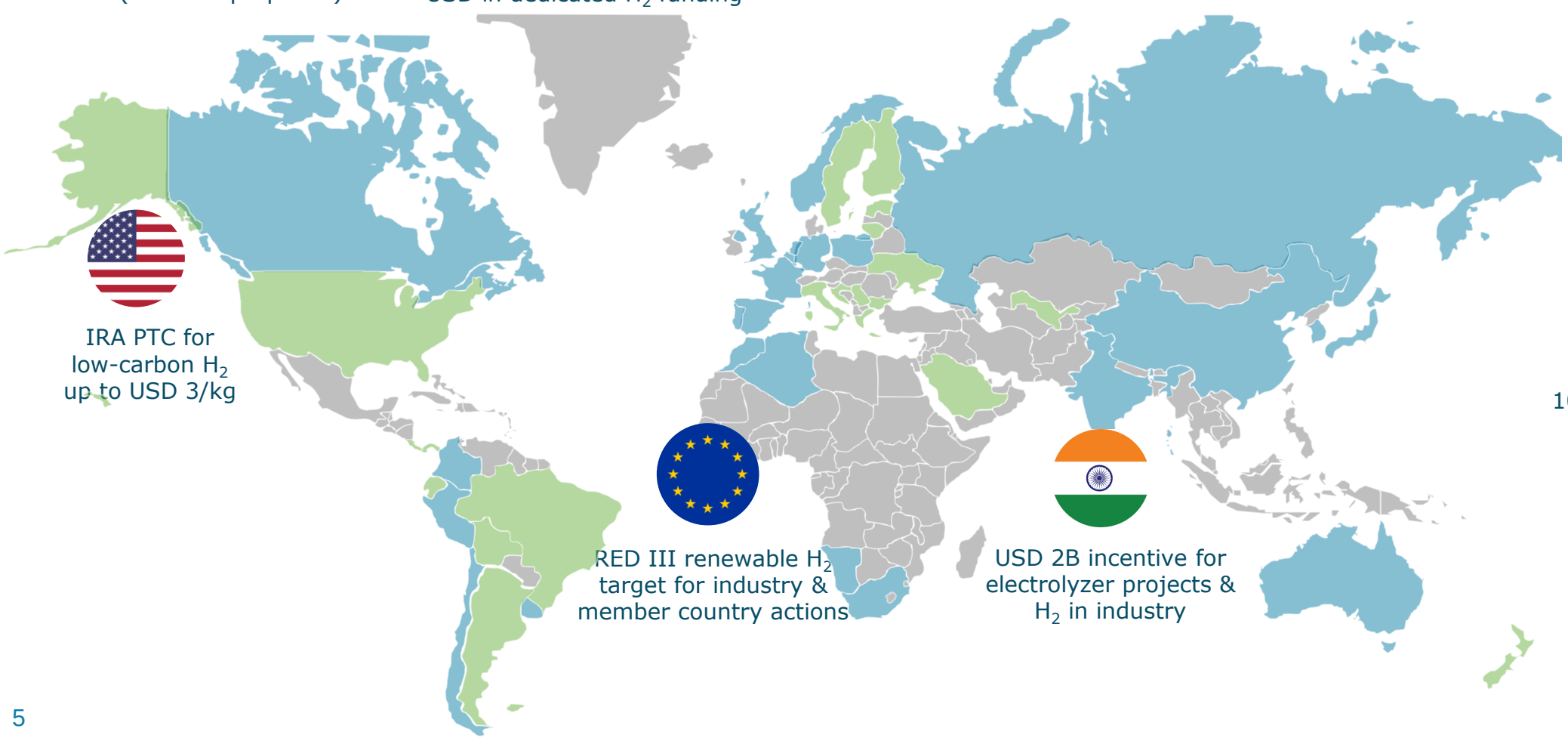
Adopted national H_2 strategy

Announced national H_2 strategy

30 countries with national strategies (23 more proposed)

100-200 B USD in dedicated H_2 funding

>160 GW deployment by 2030 in policy targets



IRA PTC for low-carbon H_2 up to USD 3/kg

RED III renewable H_2 target for industry & member country actions

USD 2B incentive for electrolyzer projects & H_2 in industry

USD 15B Green Innovation Fund with H_2 CfDs

H_2 alliance goal of 100GW installed by 2030

USD 1.5B to support H_2 export

Hydrogen Buses powered by Ballard

- Over 1,400+ buses deployed are powered by Ballard
- Over 30 million kilometers in service
- Standardized Hydrogen Fuelling Stations with compressed gas hydrogen as fuel
- > 30,000 hours fuel cell stack life demonstrated
- Larger bus fleets (30-50 buses) in service in Germany, Netherlands, France, UK

Hydrogen Trucks powered by Ballard

- +2200 delivery trucks in service in China and US
- German Hydrogen Trucks from Quantron, are available today (26t & 44t)
- Long range, fast fuelling, high efficiency, low noise
- Standard Hydrogen Refuelling Station with compressed hydrogen gas as fuel
- Same fuel cell technology as hydrogen bus, allows for standardisation

Hydrogen Trains powered by Ballard

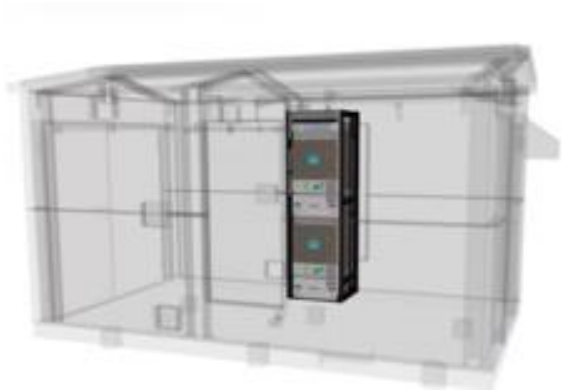
- Light rail systems in China since 2020
- Siemens Mireo Plus H for regional passenger trains, pilot test in Bavaria in 2023, commercial service in 2024
- Freight locomotive retrofit in Canada – CP Rail pilot test in Alberta in 2022, commercial service in 2023 for 3 locomotives
- ~1000 km range, fast fuelling, high efficiency, low noise
- Standard hydrogen infrastructure for compressed hydrogen gas

Hydrogen Ships powered by Ballard

- Passenger ferry MF Hydra in Norway in commercial operation in 2023
- Barge push boat, ELEKTRA in Germany in demonstration since 2022
- Inland river container vessel, ZULU06, in France in commercial operation in Q3 2023
- Inland river container vessel, FPS Waal, in Netherlands in commercial operation in Q3 2023
- Cruise Ships auxillary power (MW) for zero emission port stays in testing in 2023

Stationary hydrogen power provided by Ballard

- 400+ fuel cell backup power sites installed at critical infrastructure sites in Europe
- 1MW fuel cell distributed generation system at SARA plant in Martinique
- 3MW fuel cell distributed system with of 130 MWh of energy stored, CEOG project in French Guiana
- 100kW remote island power supply in Rye, Norway and Canary Islands based on local hydrogen production from P2X

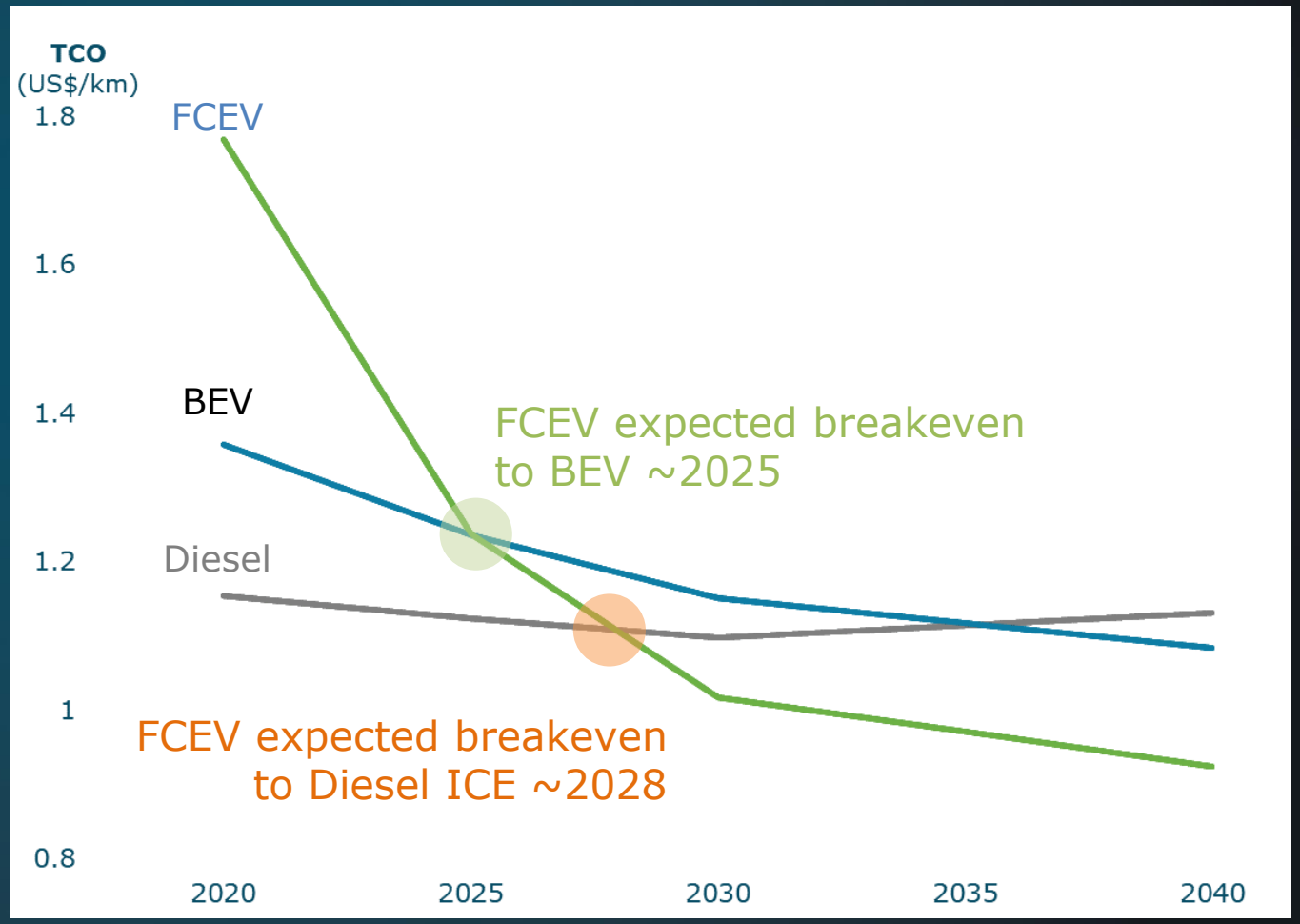


Total Cost of Ownership
- Rapidly decreasing cost curve driving TCO parity

Example: Hydrogen HD Trucks

- Estimated to reach breakeven parity of heavy-duty truck FCEV & BEV by ~2025 & Diesel ICE by ~2028[1]
- Key steps to accelerate FCEV TCO reduction:
  - Decrease capital costs through scaling up
  - Increase durability
  - Reduce fuel costs (~60% FCEV TCO for MDT/HDTs)
- Low-carbon hydrogen cost reduction expected to account for up to 90% of total TCO reduction from 2020 to 2030

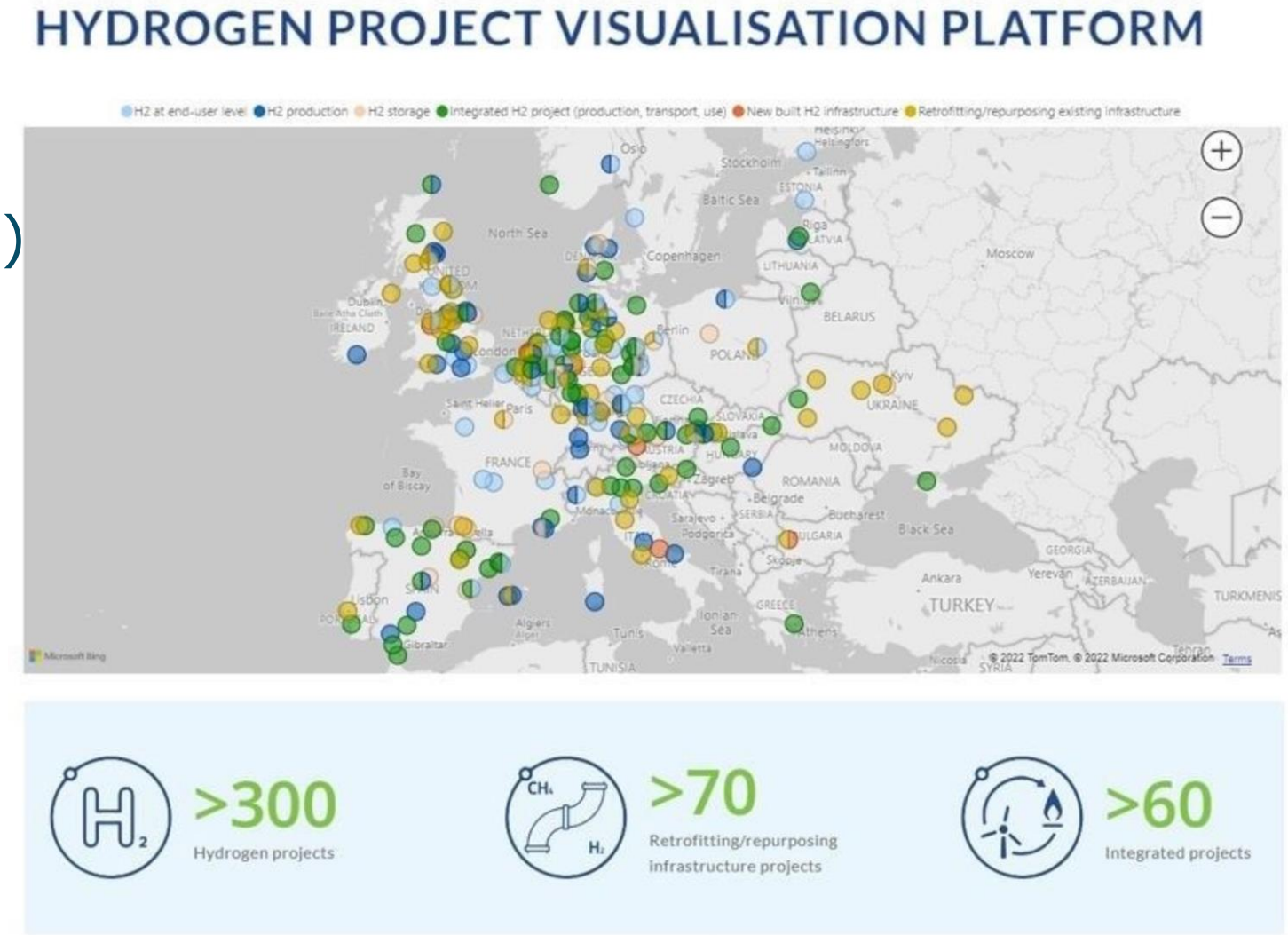
HDT FCEV Expected to be Most Competitive TCO Before 2030



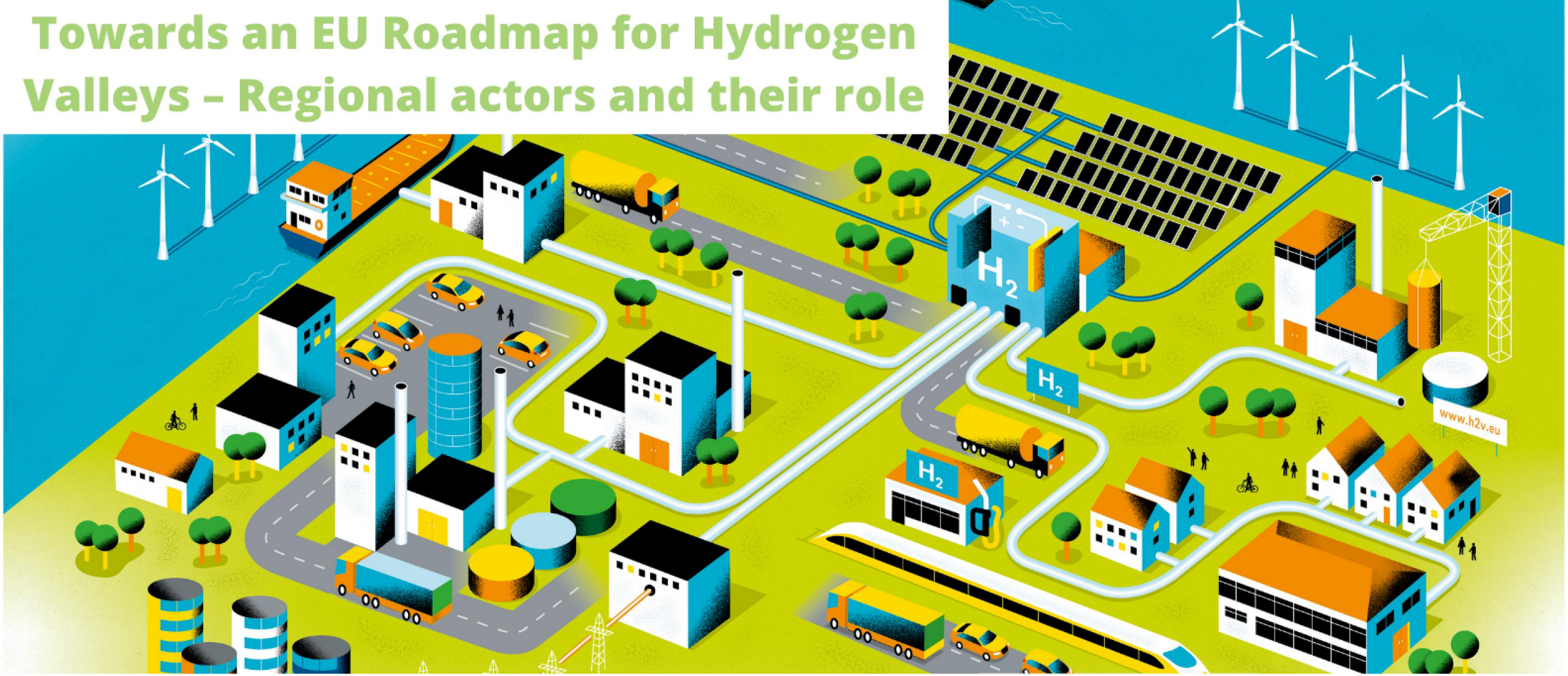
*40t long-haul HDT, 800km fuel range, 10 year lifespan, 150k km/year, renewable hydrogen, Europe

Hydrogen availability in Europe is increasing with P2X

- Hydrogen Production (P2X)
- Hydrogen Valleys
- Hydrogen Pipelines
- Hydrogen Users



Towards an EU Roadmap for Hydrogen Valleys – Regional actors and their role



Clean Hydrogen Partnership

STRONG NORTHERN NETHERLANDS
POWERED BY SNN

EUROPEAN HYDROGEN VALLEYS PARTNERSHIP

European Hydrogen Backbone Infrastructure Vision

Objective:

- Connecting the dots in EU
- Secure Available Hydrogen
- Secure Affordable Hydrogen
- Phase out fossil fuels and fuel dependencies

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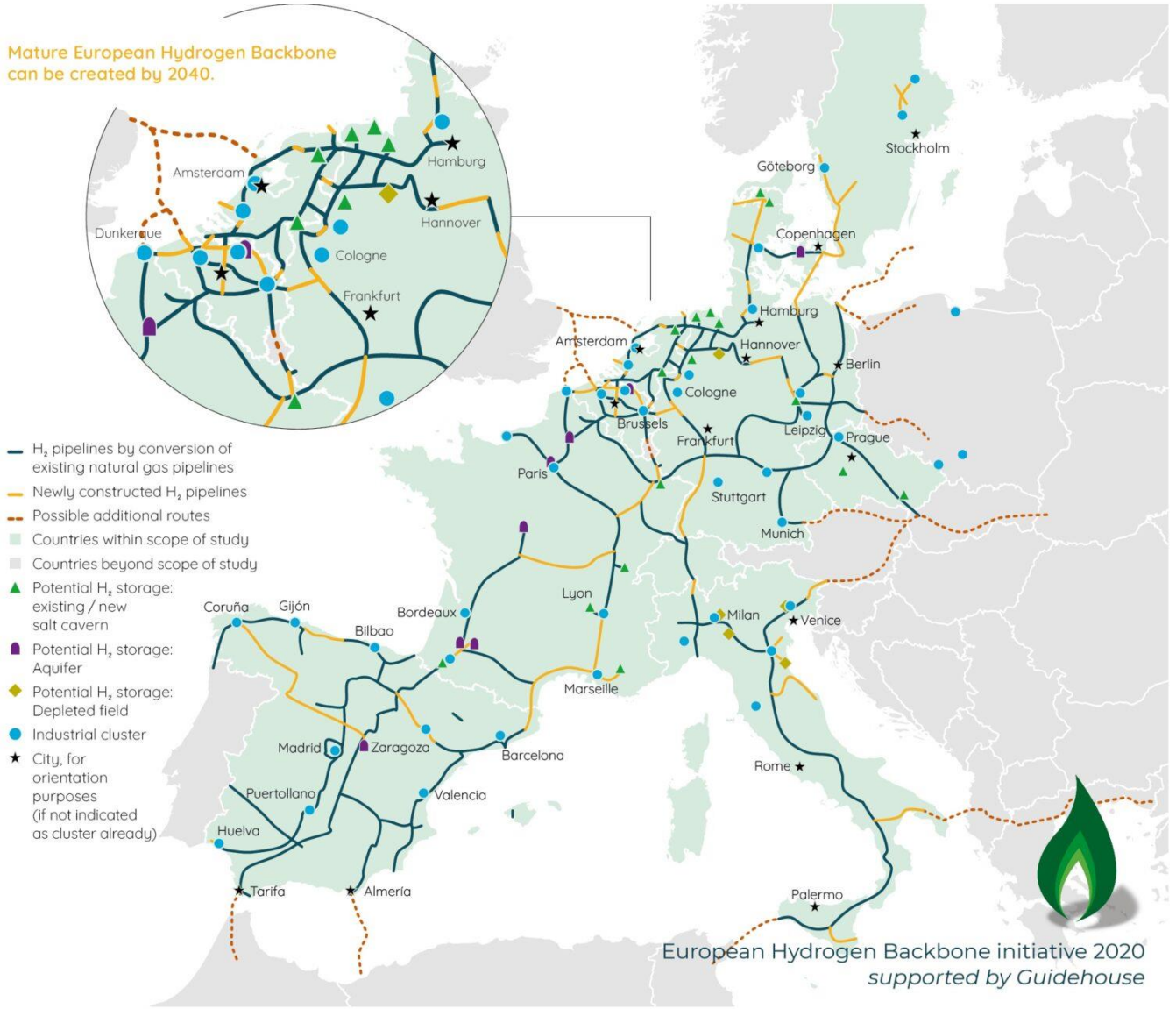

Here for life™

Thank you

Kristina Fløche Juelsgaard

kfj@ballardeurope.com

+45 51580749

ballard.com