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ZEG Power

ENERGISKIFTET – Ren hydrogenproduksjon

CLARION HOTEL AIR – SOLA
8. - 9. MARS 2023

Zero Emission Gas

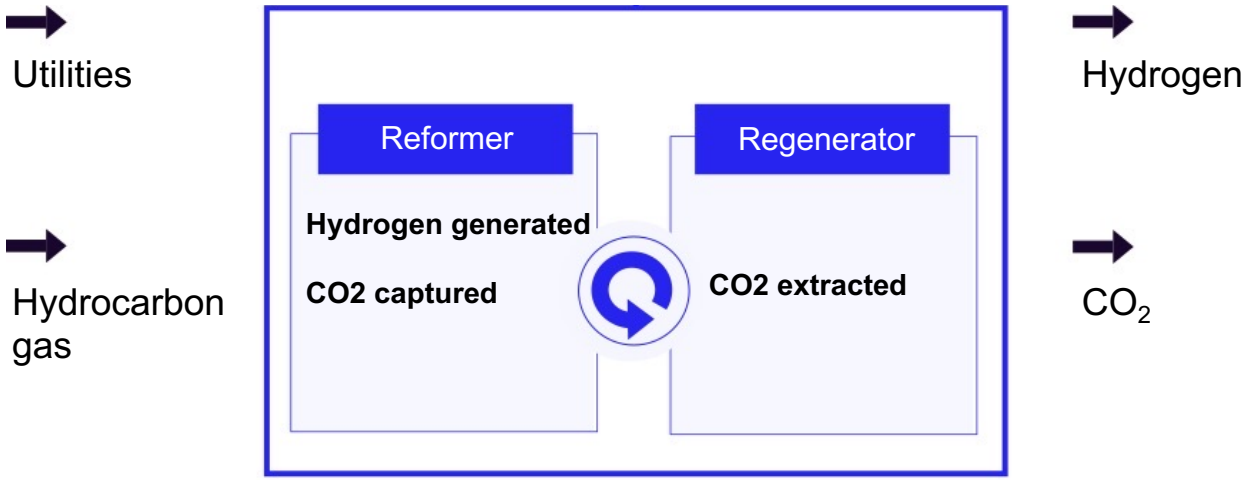
ZEG delivers solutions for clean hydrogen production using the novel ZEG ICC™ Technology

ZEG offers a very competitive route to clean hydrogen

- Increased H2 yield
- Word-class CO_2 capture
- Leading on Levelized Cost of hydrogen
- Scalable and low physical footprint
- Protected (IPR)

The ZEG ICC™ technology

High yield hydrogen - integrated CO_2 capture



Uniqueness of the ZEG ICC™ Technology:

- - Captures the CO_2 inside the reformer where the CO_2 concentration is the highest
- - Enables high CO_2 capture rate, increased hydrogen yield, and high thermal efficiency

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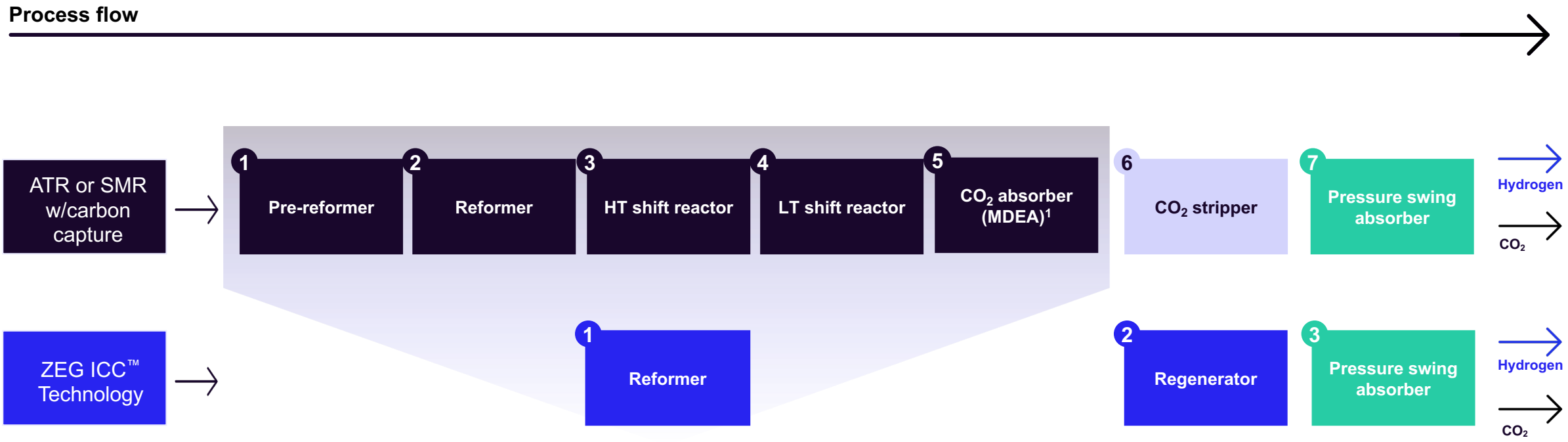
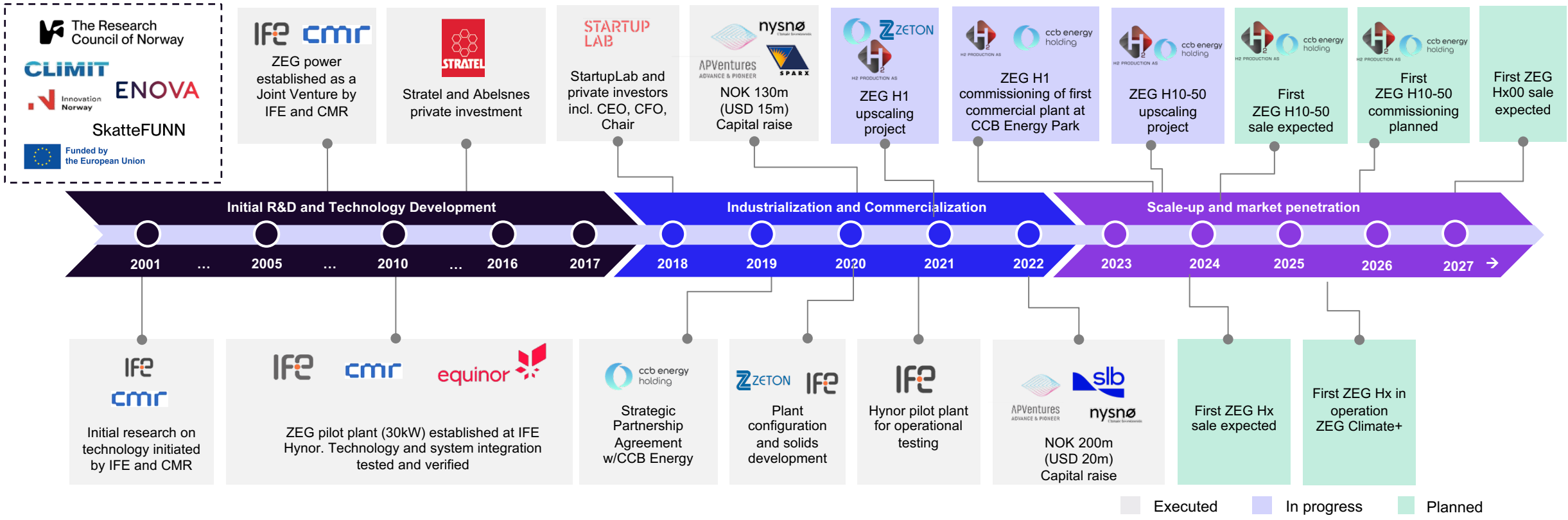
ZEG ICC™ Technology vs. conventional blue hydrogen

Eliminates four process steps compared with SMR or ATR with amine-based carbon capture



Deep-tech developed over 20+ years by top experts in the field

Supported by national grants - from early R&D to ZEG H1 FoAK project delivery

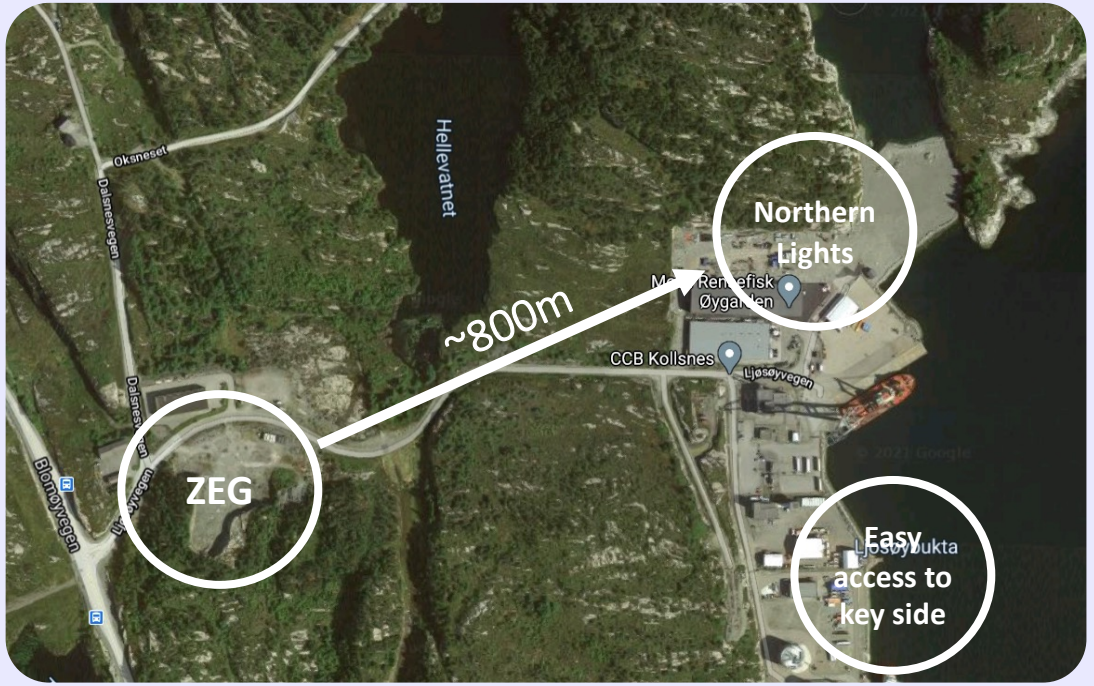


Backed by owners who are global frontrunners in financing the energy transition

ZEG's first commercial delivery – ZEG H1

ZEG H1 Plant, CCB Energy Park, Kollsnes

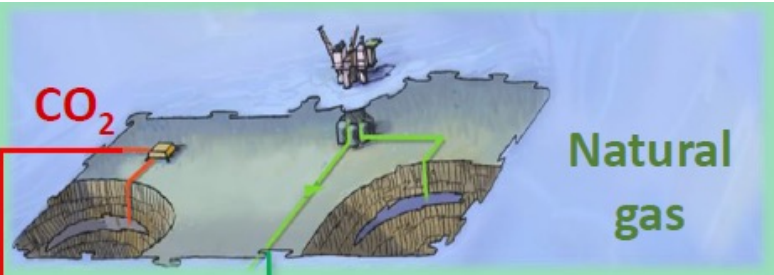
Northern Lights CO_2 storage



The Energy Park

Developing value chain for a sustainable future

ccb energy holding



Hydrogen production

Ammonia production

With integrated CO_2 capture

Hydrogen and ammonia

And other hydrogen energy carrier

CO_2-capture

Directly from air

Waste heat

Biogas

Users

Biogas

Power plant

Industry

Product processing

CO_2 utility products

Algea production

Protein feed

Greenhouse

CCU

H_2, NH_3 and CO_2 for various industries

Biowaste

CO_2 products

Breeding

Aquaculture

National deliveries of CO_2 and CO_2 products

CO_2 reception facility

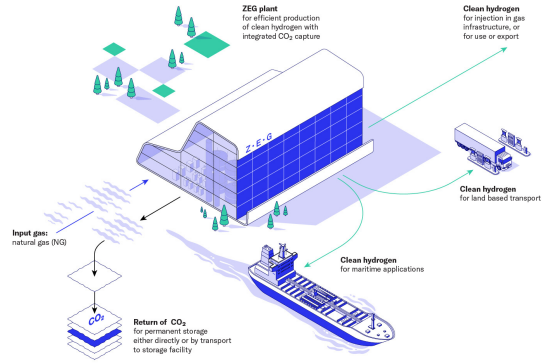
CO_2 transported for permanent storage through pipelines

CCS

Finalizing assembly with Zeton in The Nederlands

The plant will be shipped to CCB Energy Park at Kollsnes for installation Summer 2023

On a clear path scaling up …

1	2	3
Small-scale **ZEG H1 – H5 platform**	**Medium-scale** **ZEG H10 – H50 platform**	**Large-scale** **ZEG H100 – H1000 platform**
		
Capacity	1-5 metric tonnes hydrogen/day	10-50 metric tonnes hydrogen/day	100-1000 metric tonnes hydrogen/day
Footprint	2-300 m^2 (2-3,000 sqft)	4-600 m^2 (4-6,000 sqft)	TBD
First order	2021 (Project in execution)	est. 2024	est. 2026

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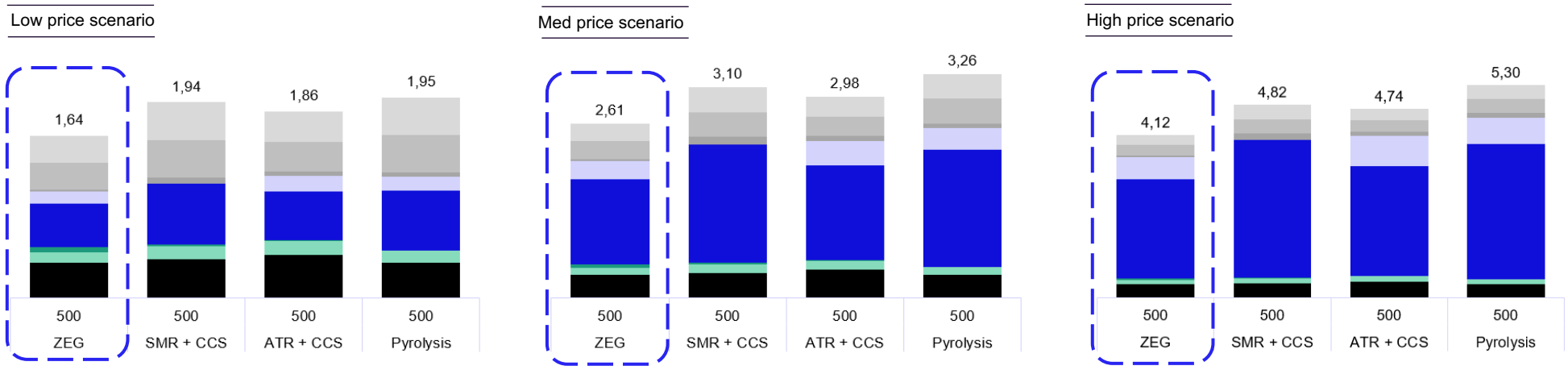
Leading LCOH towards competition

LCOH ($/kg H2)

- ZEG provides clean hydrogen with the lowest LCOH
  - independent of energy price and CO2 emission tax scenarios
- For lower capacities, ZEG relative competitiveness further improves
- Leading LCOH also holds for PPA dedicated contracts for electrolysis

Price scenario	Low	Med	High
Natural gas ($/MWh)	10	30	60
Electricity (grid) ($/MWh)	30	70	150
Carbon Price ($/t CO_2	50	100	150



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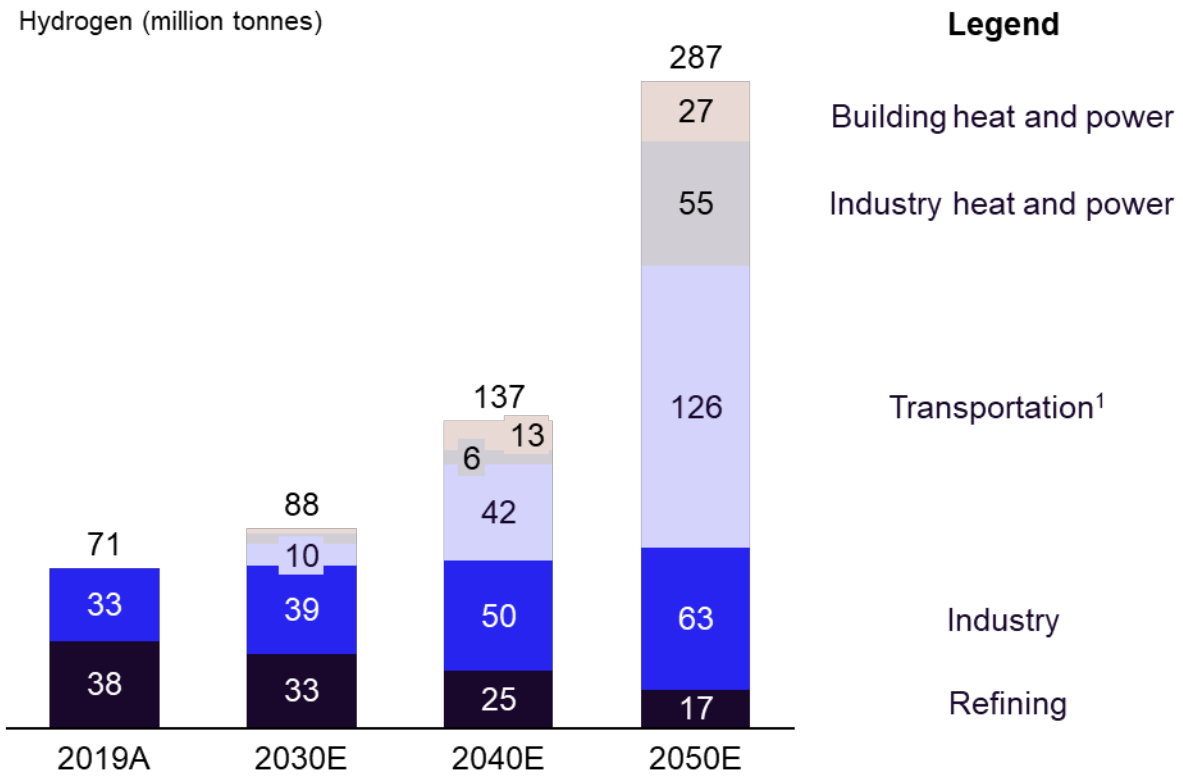
Source: DNV study Feb 2023 + data from scientific publications and DNV assessments
Assumption: Carbon transport and storage costs are fixed at 50 $/tonne for all scenarios.

ZEG provides solutions across hydrogen growth markets

Global hydrogen demand by application



1 DE-CARBONIZING HARD TO ABATE INDUSTRY

ZEG Industrial Solution

Clean hydrogen for industrial applications

2 DE-CARBONIZING TRANSPORT SECTOR

ZEG Clean Fuel Solution

Clean fuel for maritime and land transport

3 ENABLING CARBON REMOVAL

ZEG Climate+ Solution

Climate-positive hydrogen for distributed use

4 DE-CARBONIZING HEAT & POWER PRODUCTION

ZEG Power Solution

Clean electricity for industry & buildings

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Source: IEA 2020

1) Transport expected to account for 44% of hydrogen demand in 2050, including hydrogen used in fuel cell electric vehicles, synthetic fuel and ammonia for ship fuel

Now let’s make the change