



H Y 2 G E N

AG





“AT THE BEGINNING THERE WAS HYDROGEN.”

– *Hoimar von Ditfurth*



# EXECUTIVE SUMMARY

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## WORLDWIDE PRODUCTION OF GREEN HYDROGEN

- Hy2gen AG, the upcoming largest producer of carbon free green hydrogen worldwide.
- For this, we use renewable electricity together with Electrolysis to receive green hydrogen at highest quality.
- First operative project will be in Suldal, Norway.



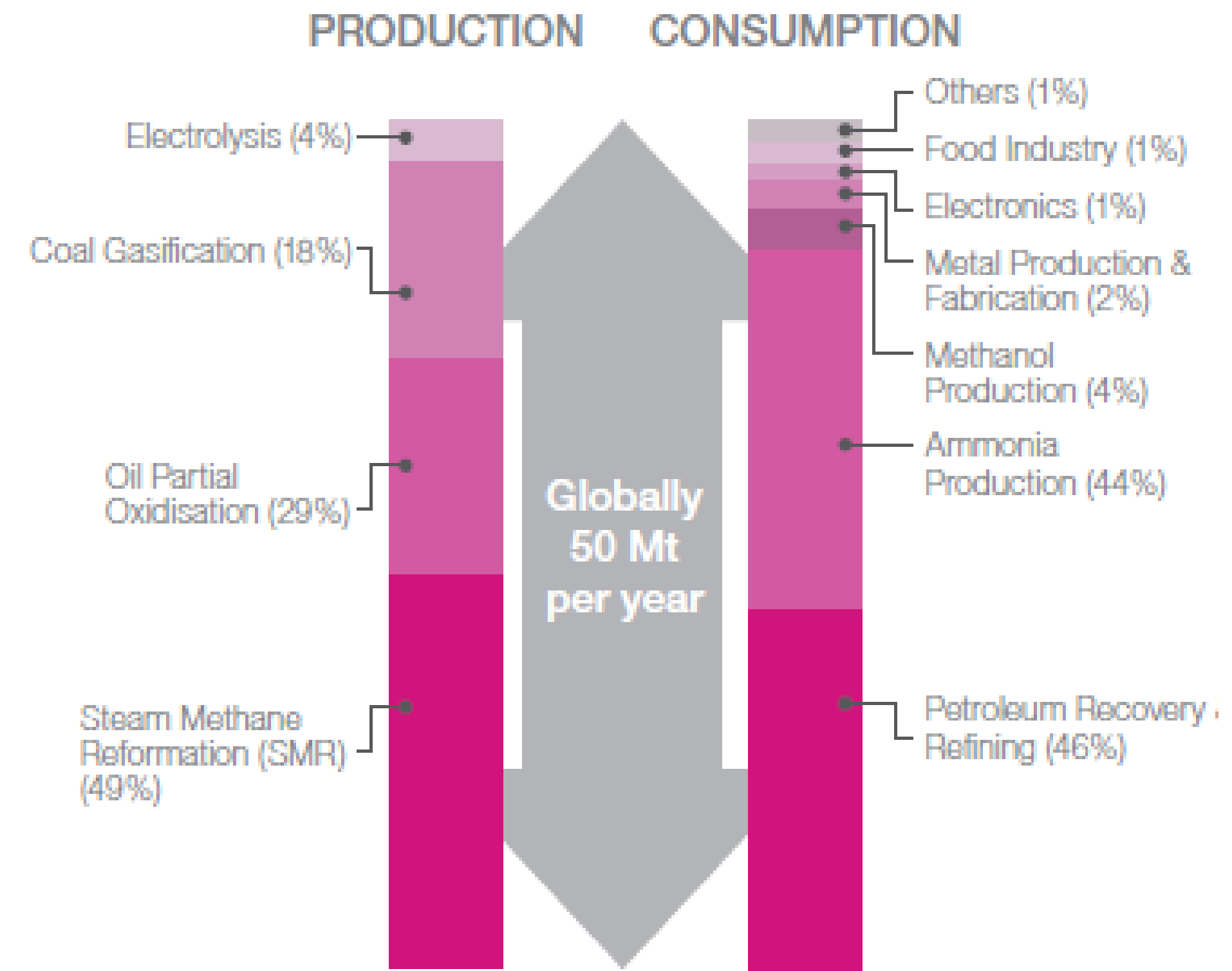
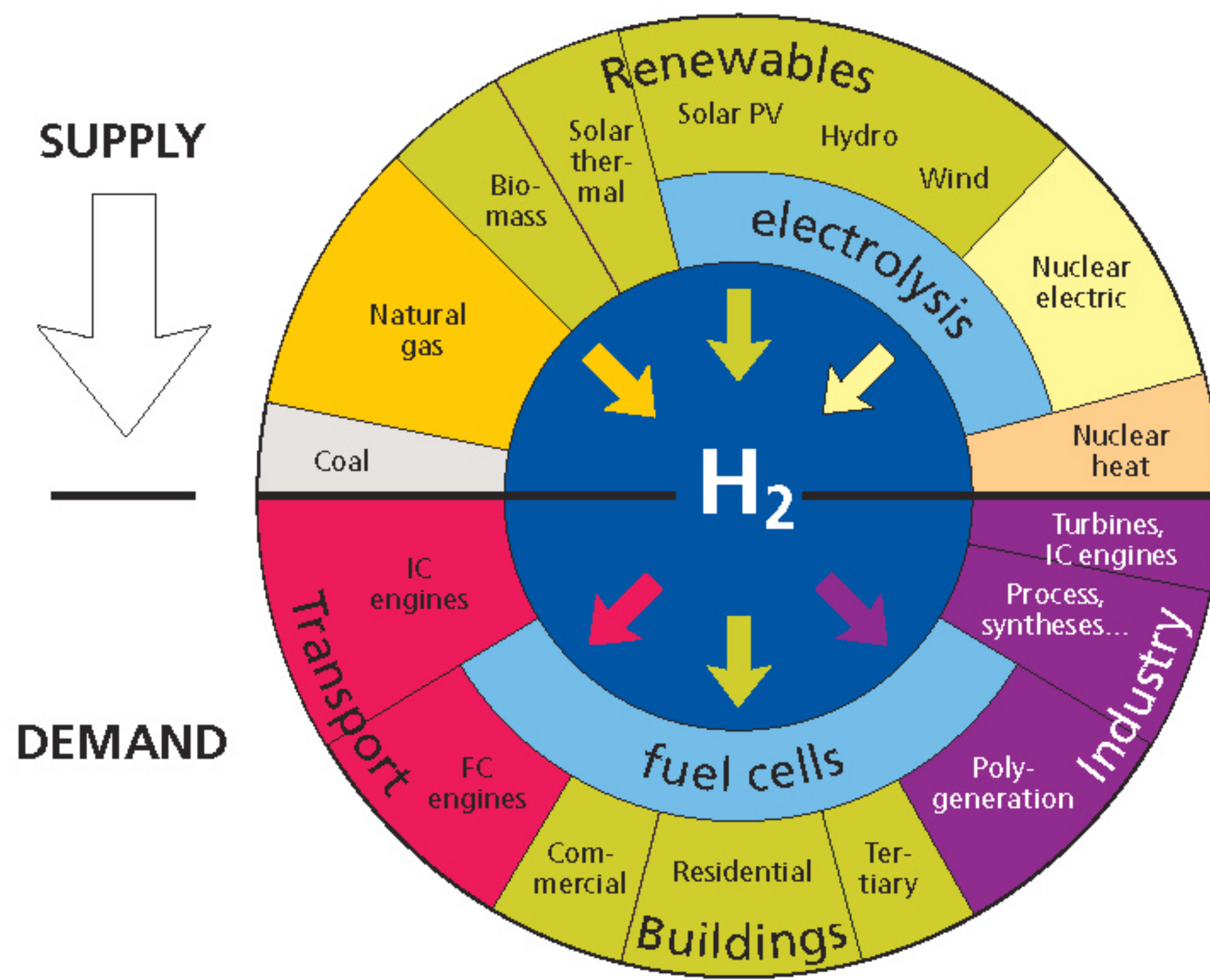
Green Hydrogen & Market

Green hydrogen is carbon free, market is growing fast.





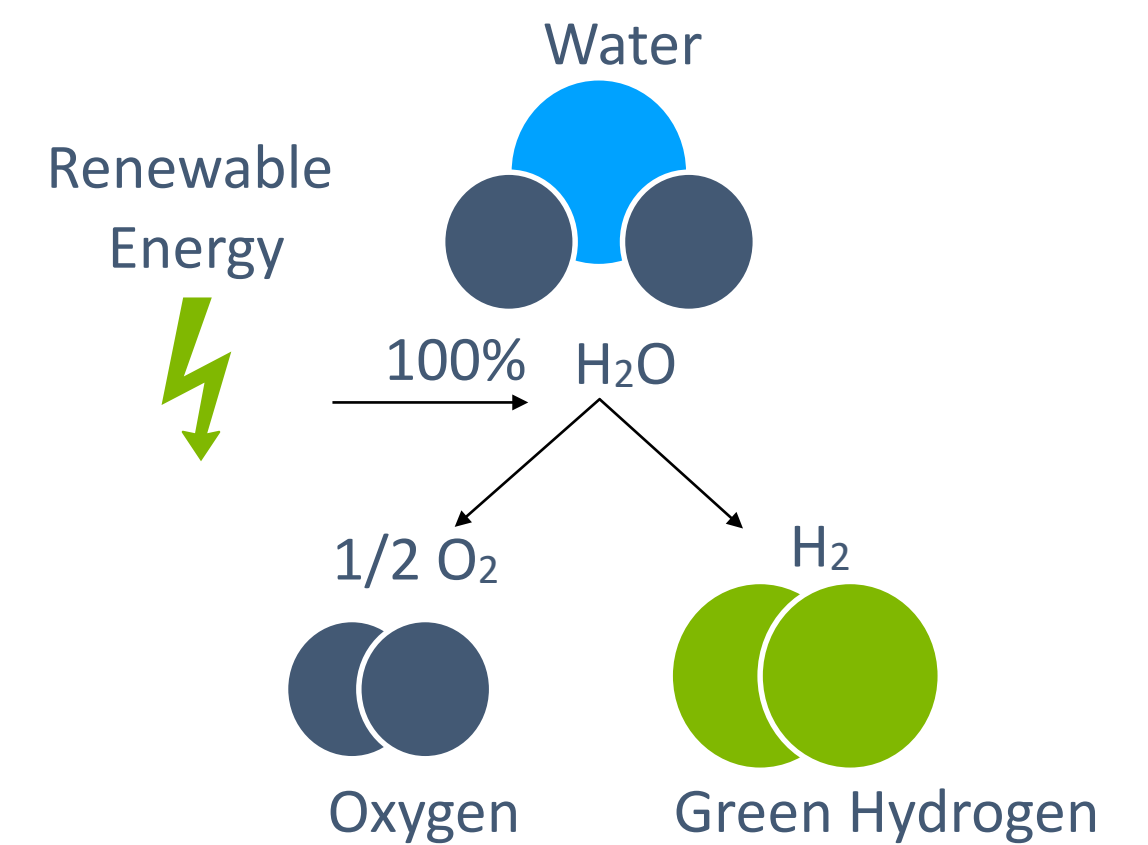
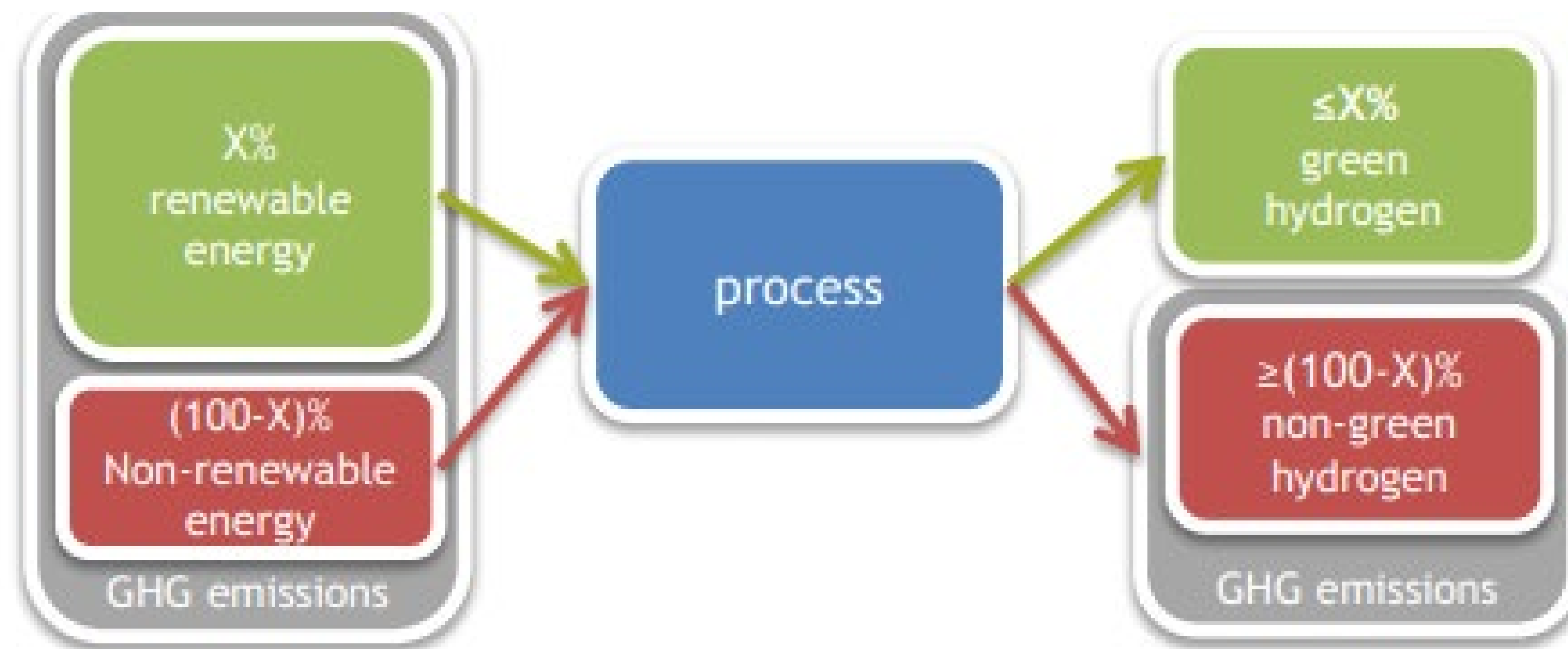
# PRODUCTION OF HYDROGEN



Source: US DoE Hydrogen Production Expert Panel



# GREEN HYDROGEN DEFINITION





# HYDROGEN

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## WHAT MAKES THE DIFFERENCE?

### Carbon Free Green Hydrogen


- CO<sub>2</sub> free production using 100% renewable energy.
- Generated via electrolysis using 100% renewable electricity.
- Meeting all industry standards.
- Flexibility of production sizes, from small/local to centralised industrial facilities.
- A commodity in the near future.

### (Washed) Green Hydrogen

- Using CO<sub>2</sub> Emission Certificates to wash Grey Hydrogen , e.g. pressing CO<sub>2</sub> into caverns.
- Negative CO<sub>2</sub> footprint due to fossil resources (same as „grey hydrogen“).
- Produced mostly via thermic conversion (gas, oil, coal), or „grey“ electricity.
- A commodity in the near future.

### Grey Hydrogen

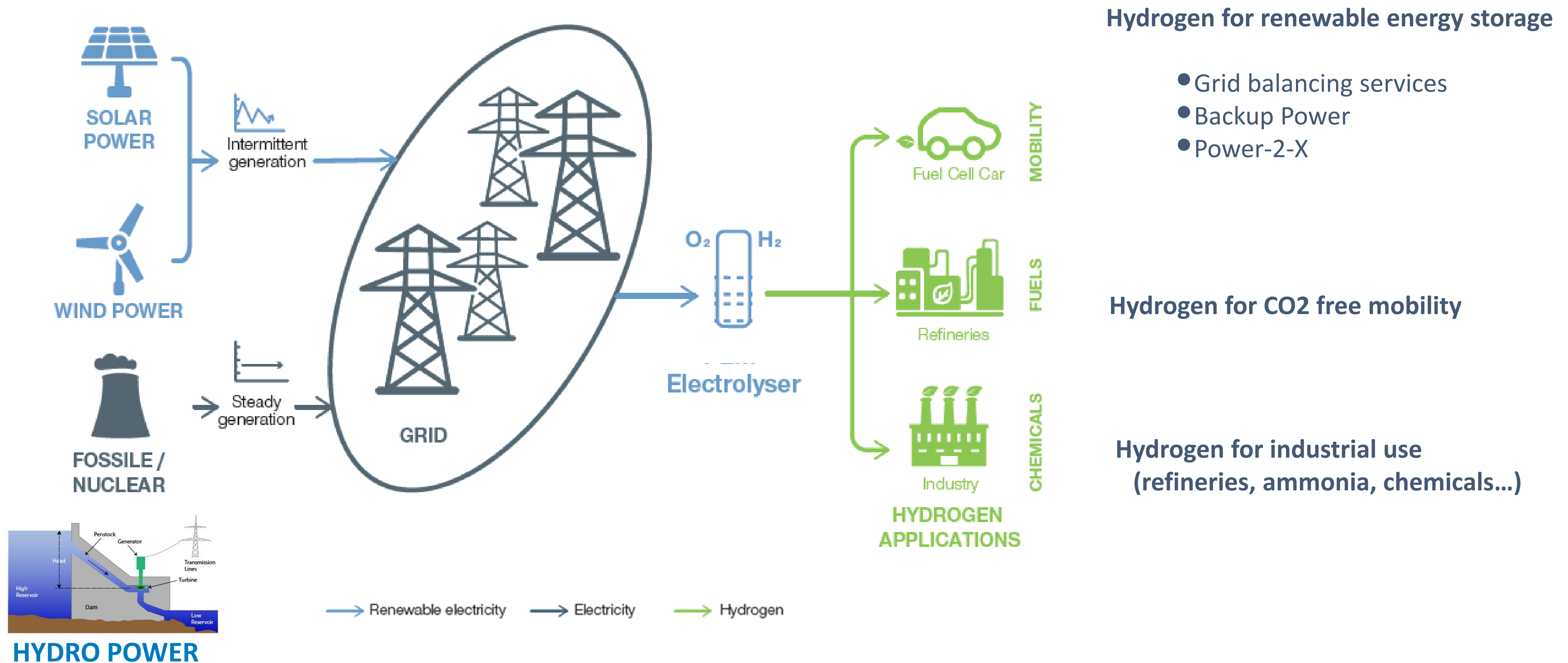
- Negative CO<sub>2</sub> footprint due to fossil resources.
- Produced mostly via thermic conversion (gas, oil, coal), or „grey“ electricity.
- Big industrial production facilities needed.
- Production usually built close to industrial client, not for trading.



Carbon free green hydrogen is the next generation commodity and essential for international climate targets.

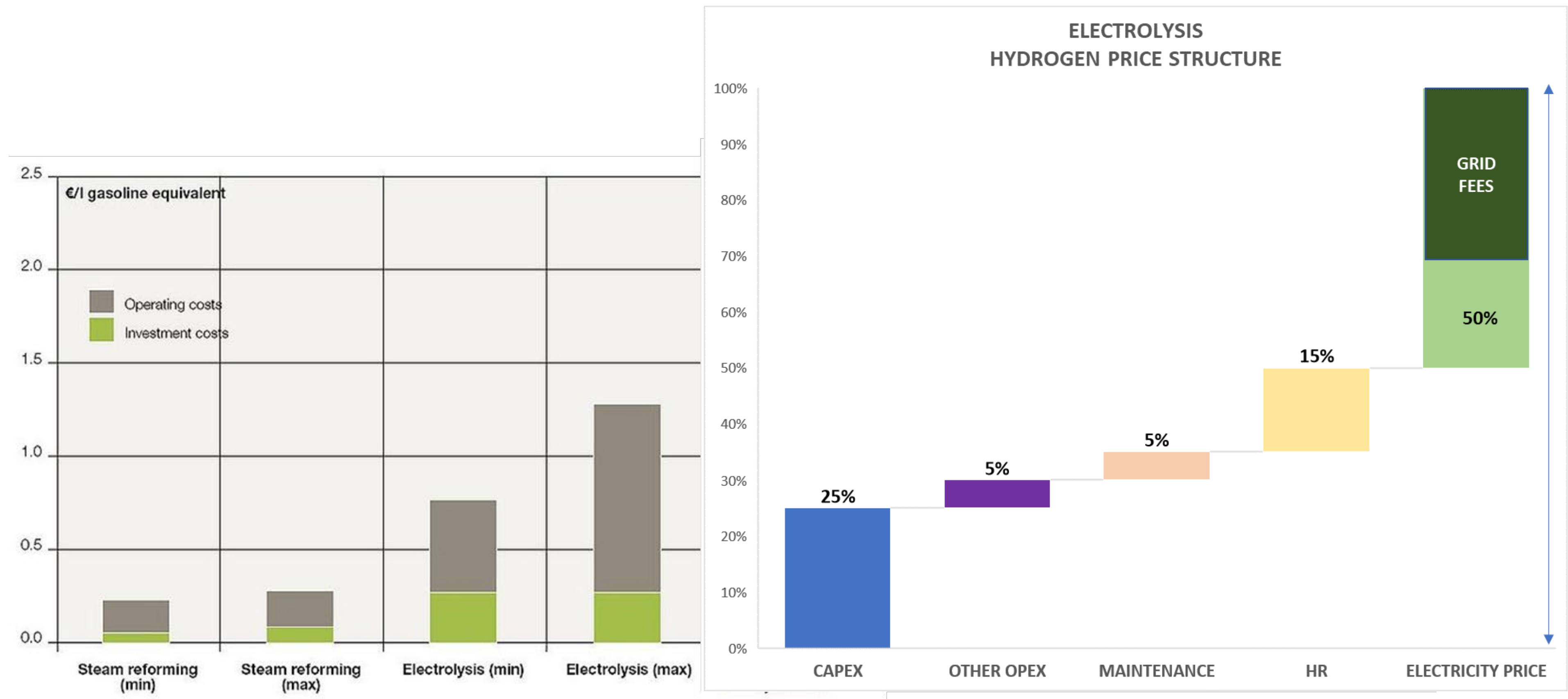


# USE OF GREEN HYDROGEN





# GREEN H2 COMPETITIVENESS







# HYDROGEN MOBILITY MARKET

**Airplanes**  
*applications*



**Material handling**  
*100 kg/day per site*

**Trains**

*150 kg/day per train*



**Individual cars**  
*0,5-1 kg/day per car*

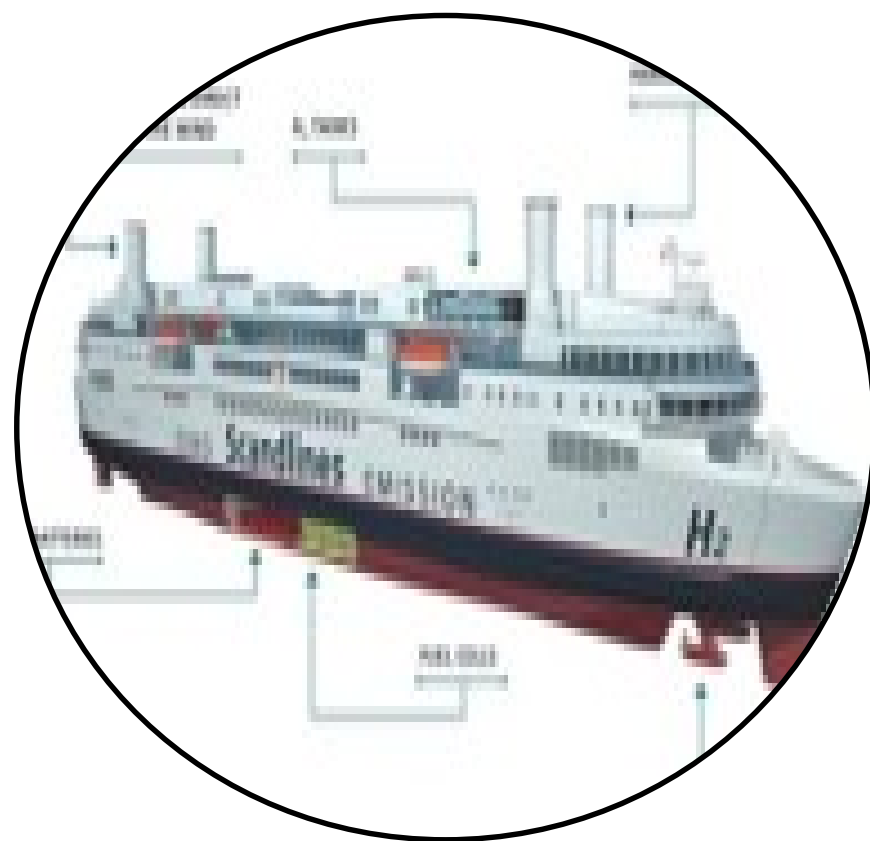


**Trucks**  
*100 kg/day per truck*



**Buses**  
*20 kg/day per bus*

**Cruise ships**  
*10 T/day*



**Ferries**  
*1 T/day*

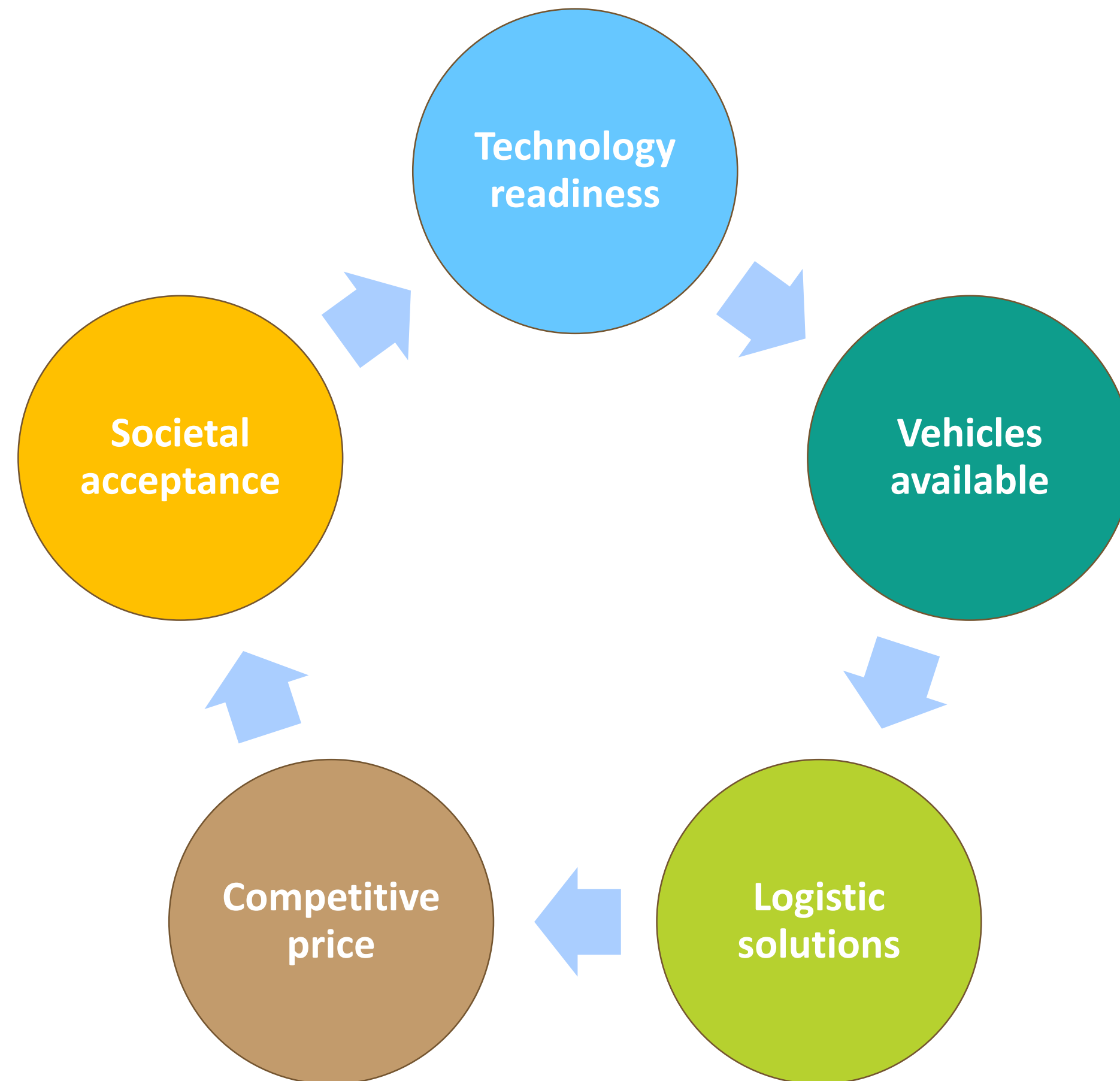


**Bicycles & scooters**

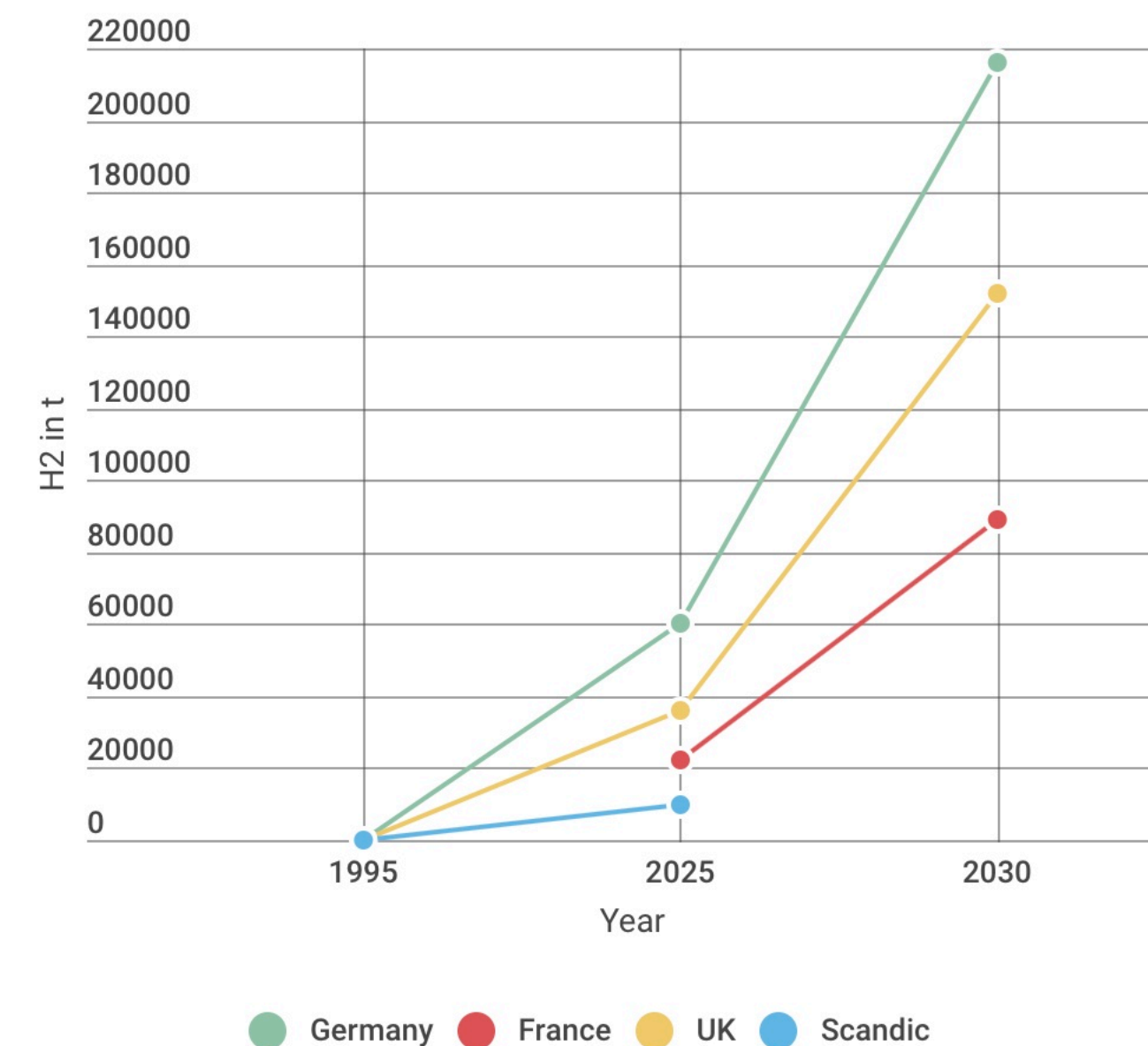




# EVERYTHING IS IN PLACE

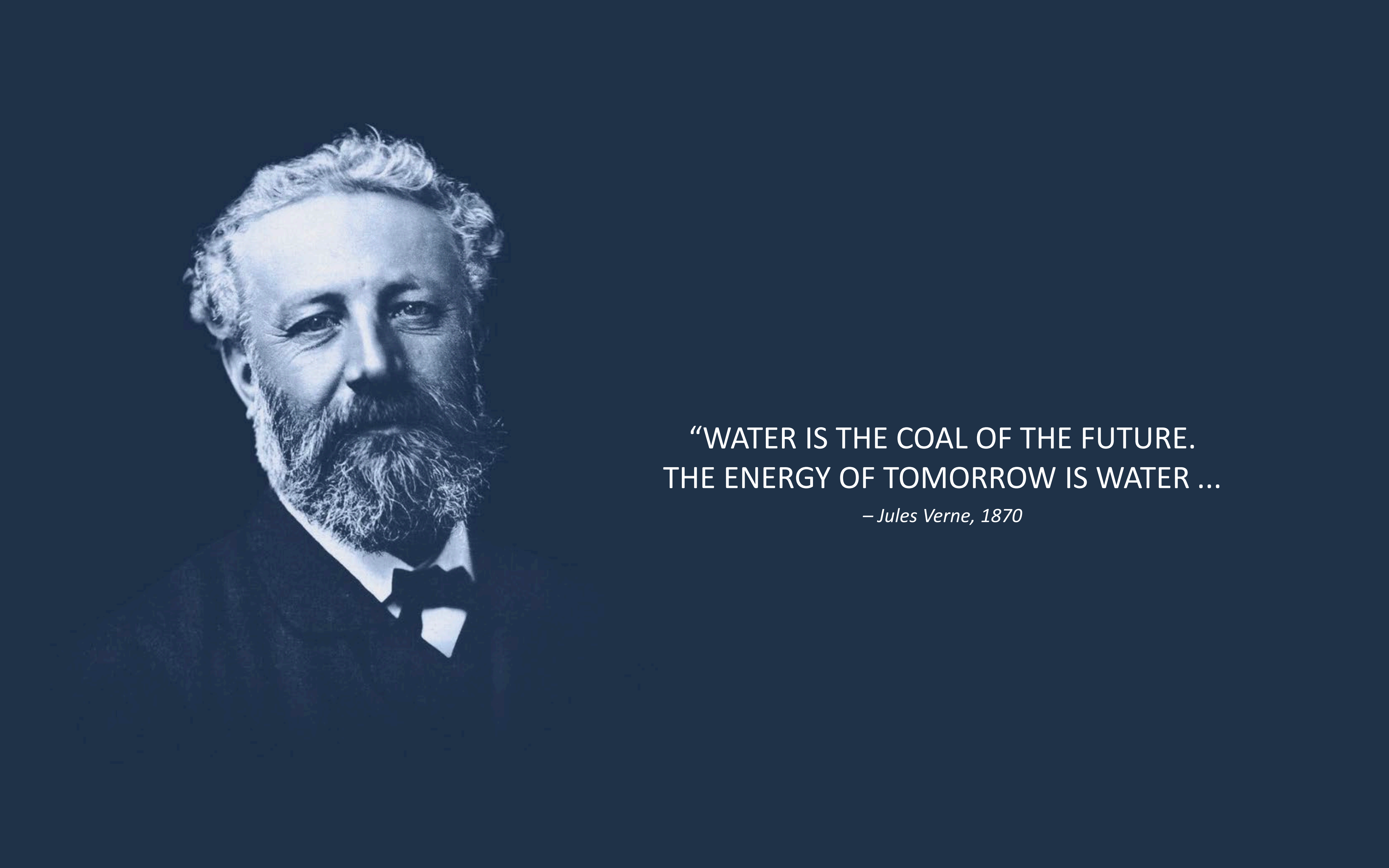


H2 Demand by Fuel Cell Cars in Europe<sup>1</sup>



<sup>1</sup> Market Outlook for Green Hydrogen“ by CertifHy, April 23rd, 2015





“WATER IS THE COAL OF THE FUTURE.  
THE ENERGY OF TOMORROW IS WATER ...

*– Jules Verne, 1870*





# HY2GEN AG

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## THE COMPANY DRIVING THE GREEN HYDROGEN MARKET

- Founded in 2017, Hy2gen AG will become worldwide largest producer of green hydrogen.
- Hy2gen AG combines recognized technology experts, business developing, logistics and financing specialists for a high-professional growth set-up.
- We develop and operate local subsidiaries all over the world (Norway, France, Georgia, South Asia).
- By focusing on most suitable framework consisting of energy price, market demand, logistics and political environment Hy2gen AG delivers stable green hydrogen supply at competitive pricing.
- We are the first company producing green hydrogen in MW dimensions without any grants or subsidies.
- We will drive the development of technology & efficient production by selecting “best in class” suppliers.





# TRACK RECORD: NORSK H2

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## FIRST PROJECT IN NORWAY OPERATIONAL IN Q1 2020

- A total capacity of 70 MW green hydrogen production will be build at Suldal, Norway.
- Planned output is 9.900 t green hydrogen p.a..
- Development of production capacity is geared to grow alongside market demand.
- Facility of first 10 MW will be operational in 2020.





# NORSK H2 - LOCATION

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## SULDAL







# NORSK H2 - LOCATION

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## WATER POWER FOR CARBON FREE GREEN HYDROGEN

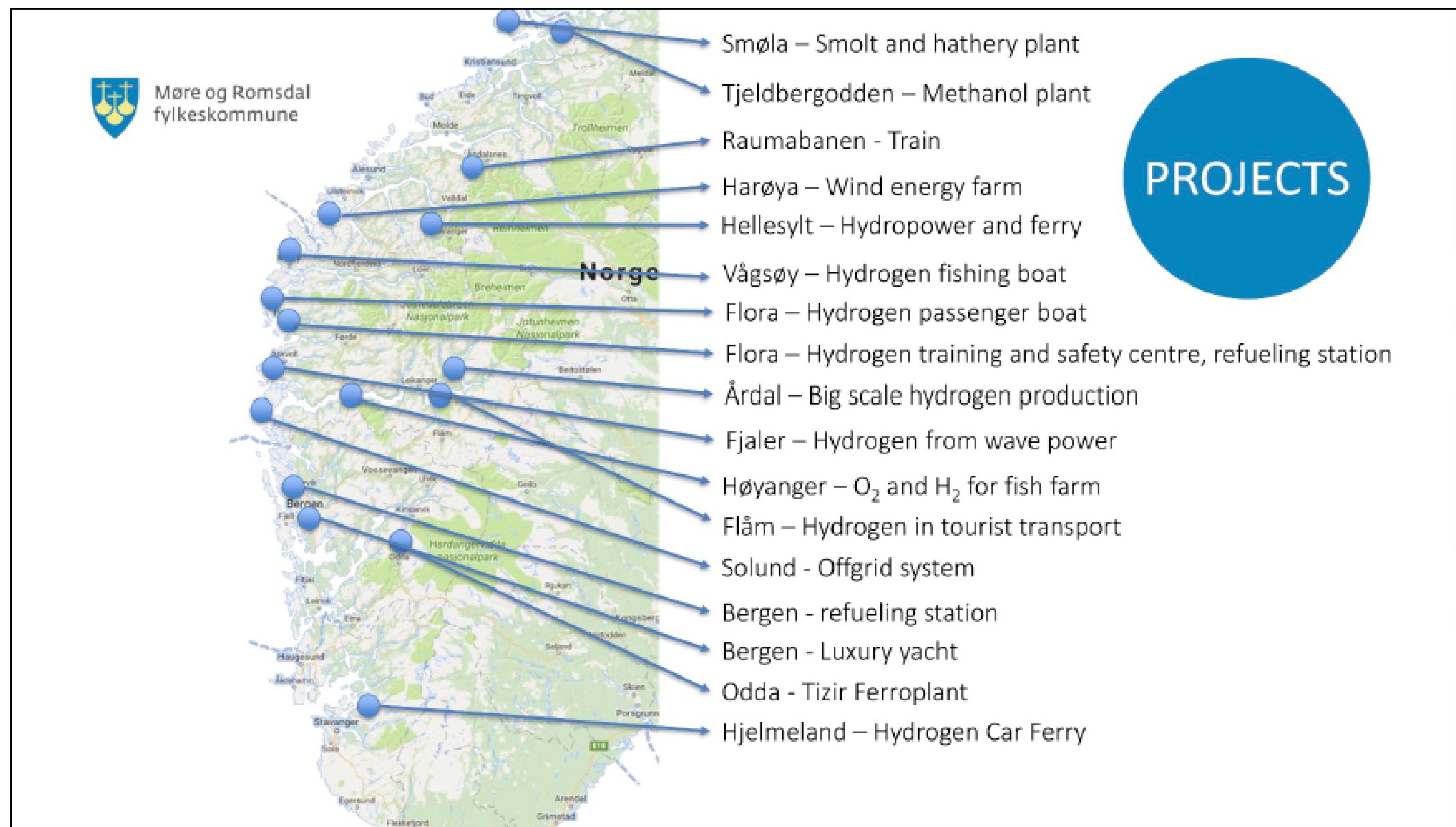
Suldal is a part of the the Ryfylke region in South Norway. This region is one of the most important energy centers for the Norwegian economy. The expansion of hydroelectric power stations in this region has been pushed since the 1910s and today, Suldal is one of Norway's largest energy producers. The amount of total production in Norway is 8%. The support of the local community in Suldal was an important factor in the realisation of the green hydrogen concept of Norsk H2. The Suldal hydroelectric power station supplies sustainable green electricity, which is produced according to the strict Norwegian environmental regulations.





# MARKET IN NORWAY

## WEST NORWAY IS VERY ACTIVE IN HYDROGEN

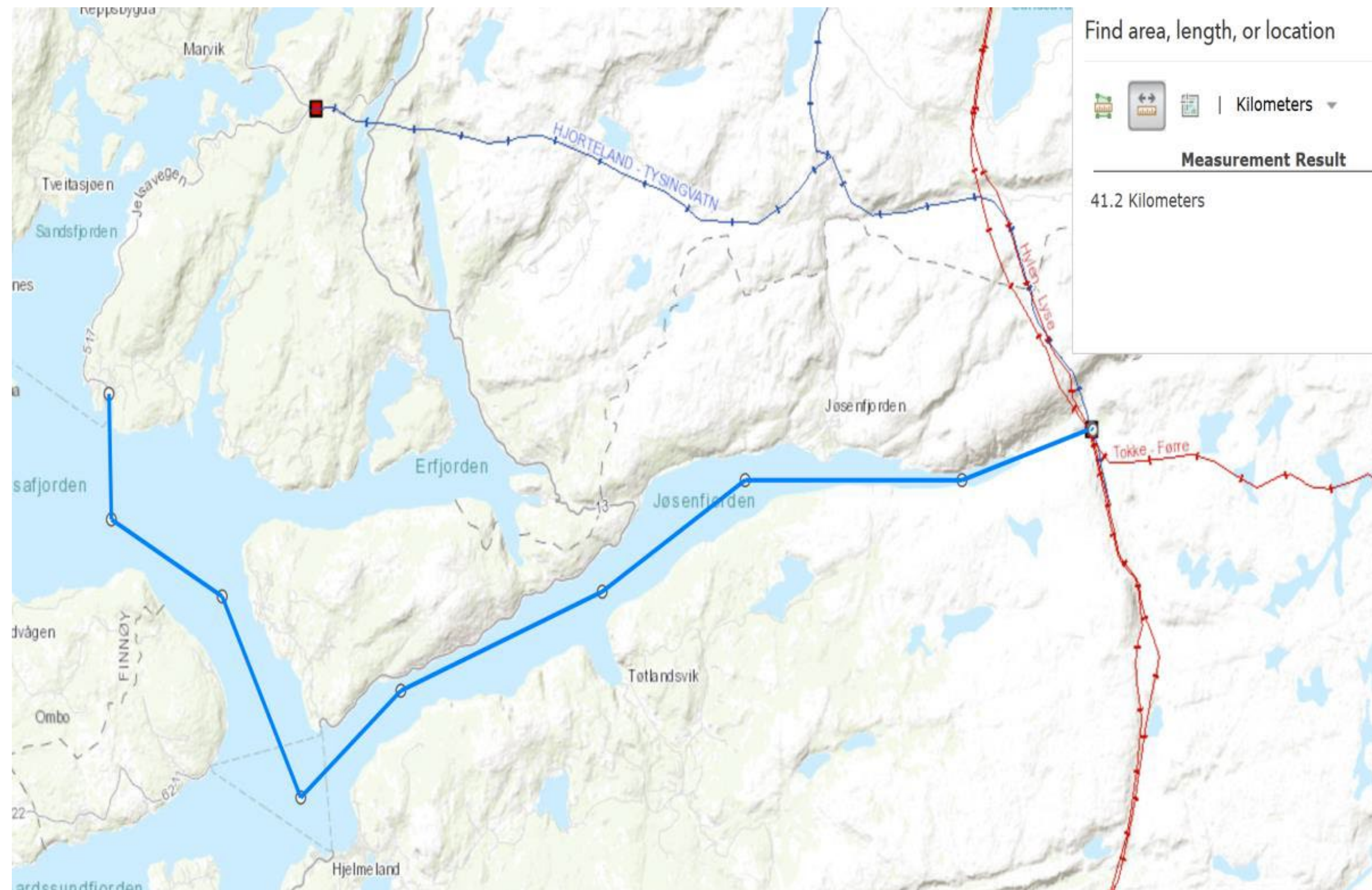


Source:  
Presentation „Hydrogen on the West Coast of  
Norway“ by Møre and Romsdal County Council at  
EU in June 2017





# NORSK H2 – POWER SUPPLY



PPA Contract

Dedicated power line to avoid grid fees

Helps balancing the local grid

132kV

Sea cable





# NORSK H2 - LOCATION

## THE SITE

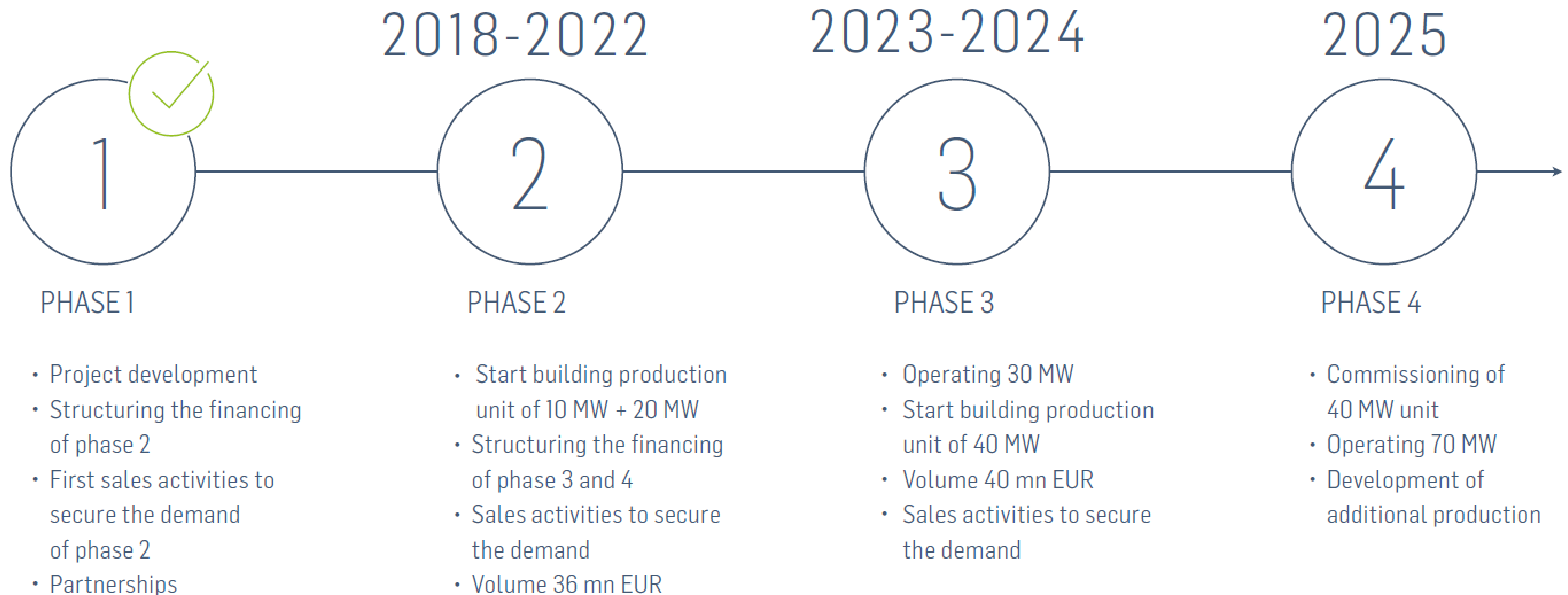






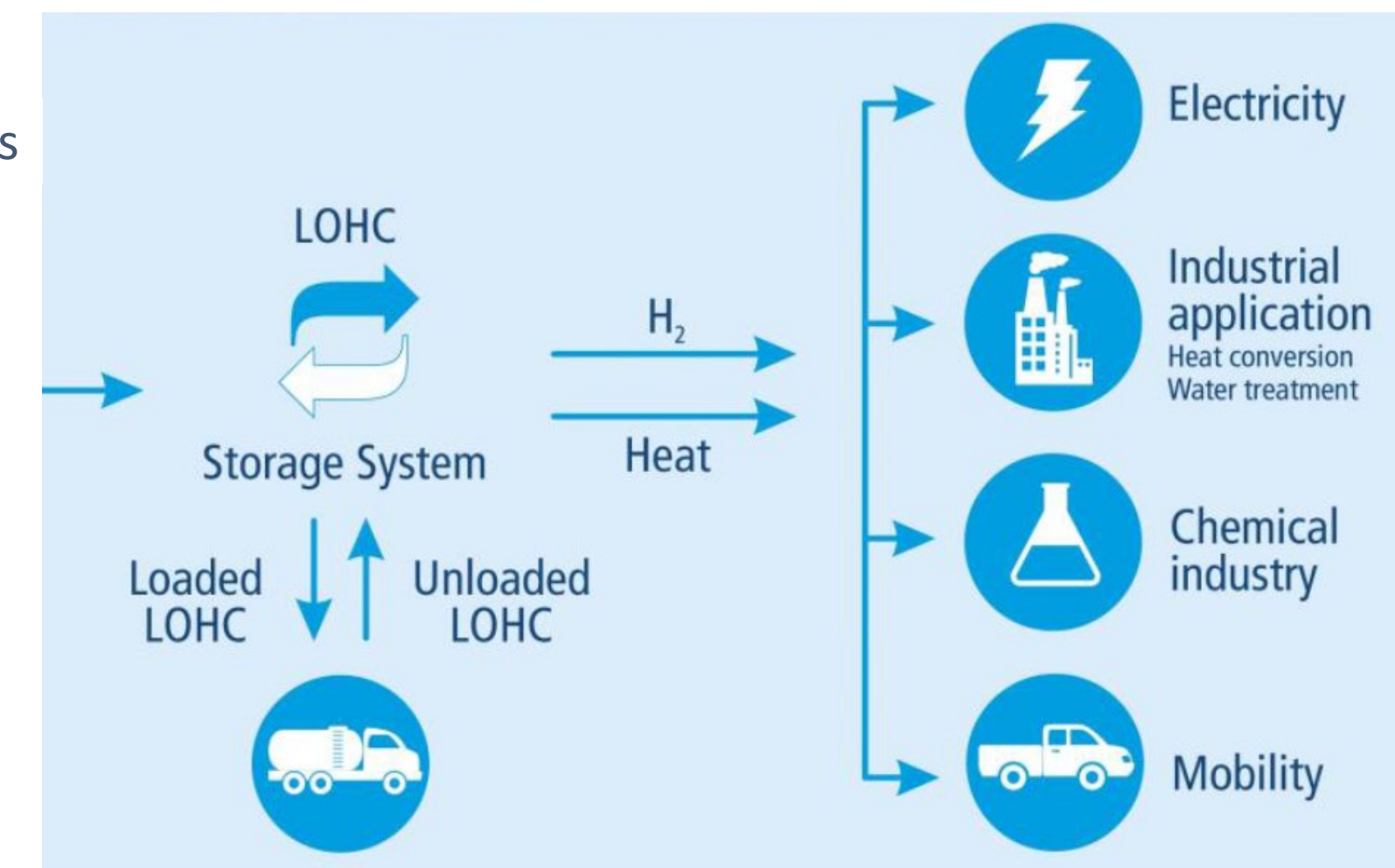
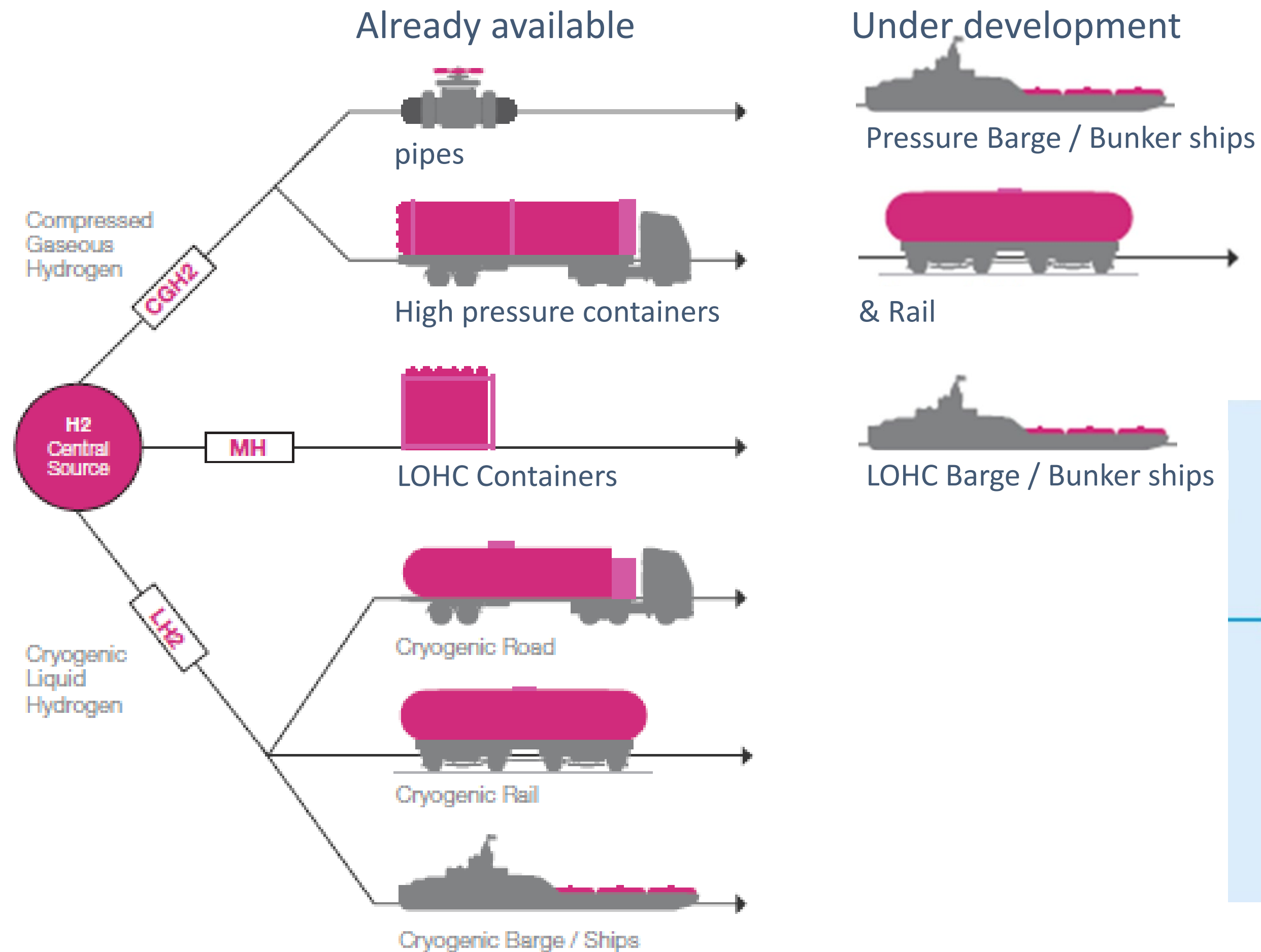
# TIMING- NORSK H2

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# LOGISTIC SOLUTIONS







# DISTRIBUTION PARTNERS

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## PRESSURE PIPE & TANK, LIQUID OR LOHC - DISTRIBUTION IS KEY

We address all applicable transportation schemes for local and global distribution:

- Pressurised hydrogen for direct trailer filling or Containers for local distribution (industrial & motive clients).
- Pipeline delivery for industrial use
- Transformation in liquids (chemical / physical) for longer distance or high volumes transportation.
- Liquid hydrogen for maritime solutions.

Together with partners we establish a local and global distribution network.

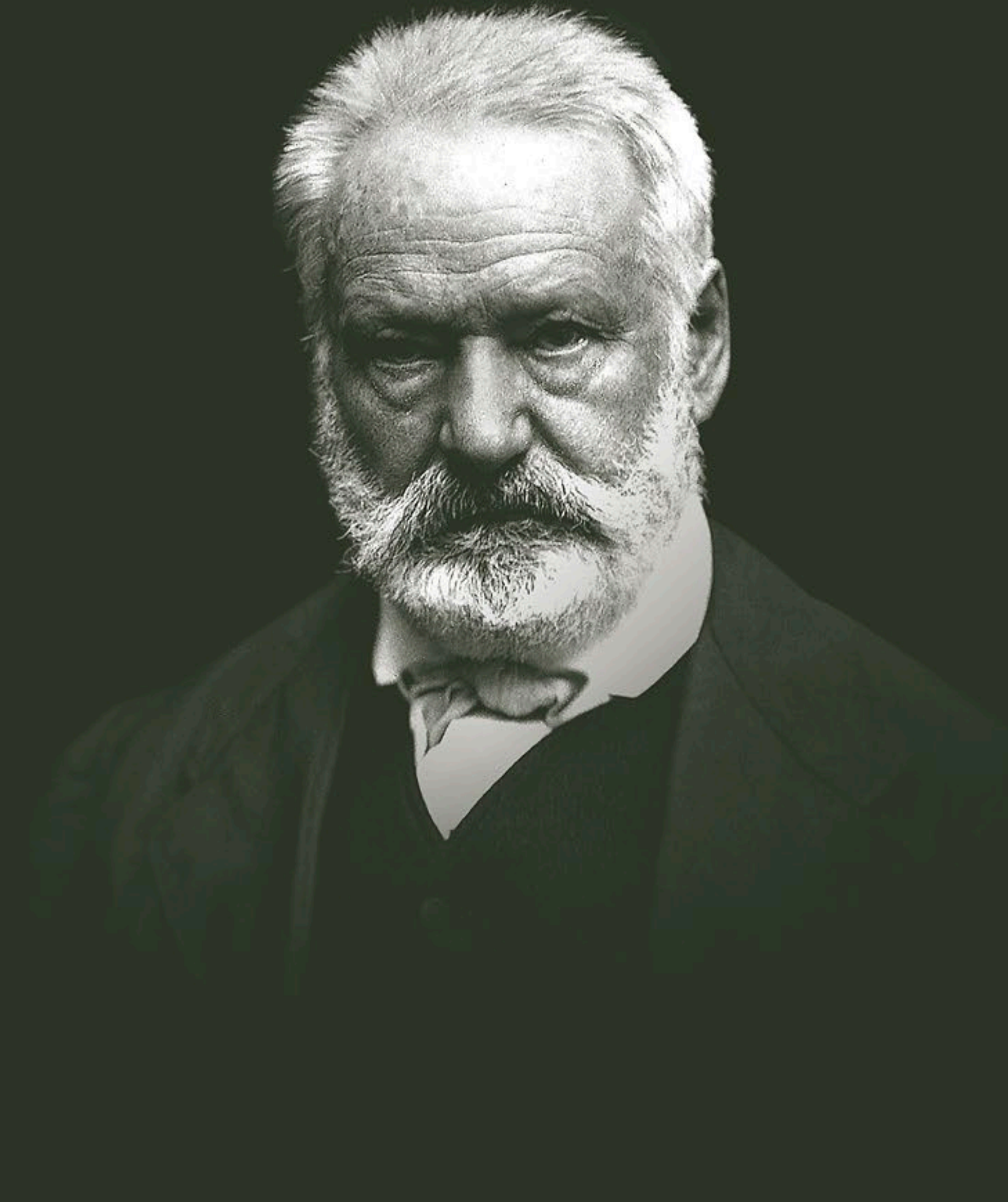
Cooperations enable us to react fast and flexible to meet market developments. However, the biggest challenge is to keep pace with rapid growing demand.

Availability & cost of renewable electricity are the value drivers for green hydrogen production via electrolysis. Therefore site selection is key. As First Mover we can access best application cases with most beneficial energy prices.

**HY2GEN AG just founded its canadian subsidiary  
CANADIAN H2 Inc.**

**“NOTHING IN THE WORLD IS AS POWERFUL  
AS AN IDEA WHOSE TIME HAS COME.”**

*— Viktor Hugo*







# CONTACT

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