

Panel 1 – Is the EU gas market ready for hydrogen?

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Hydrogen's new era, used as an Energy vector

Beginnings



BATTERY

- Hydrogen
- Water pumping
- Air compression



Hydrogen Energy Usage

- 1 Replacement actual Hydrogen
- 2 Mobility
- 3 Industrial (*replacement fossil fuels*)
- 4 Decarbonization of natural gas

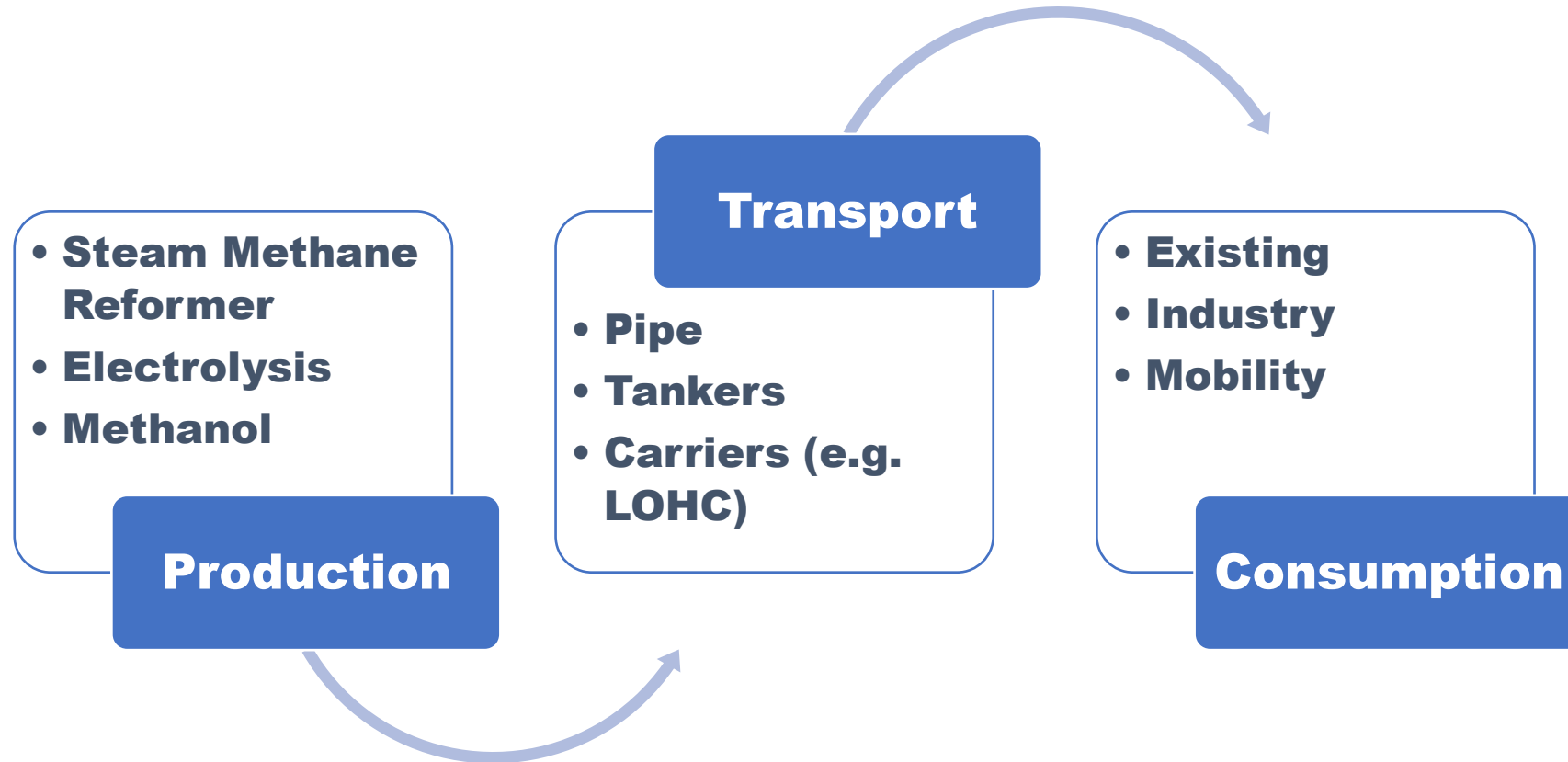
Grey
Black

Green
Blue

*Current applications:
Metallurgy (treatment)
Chemistry*

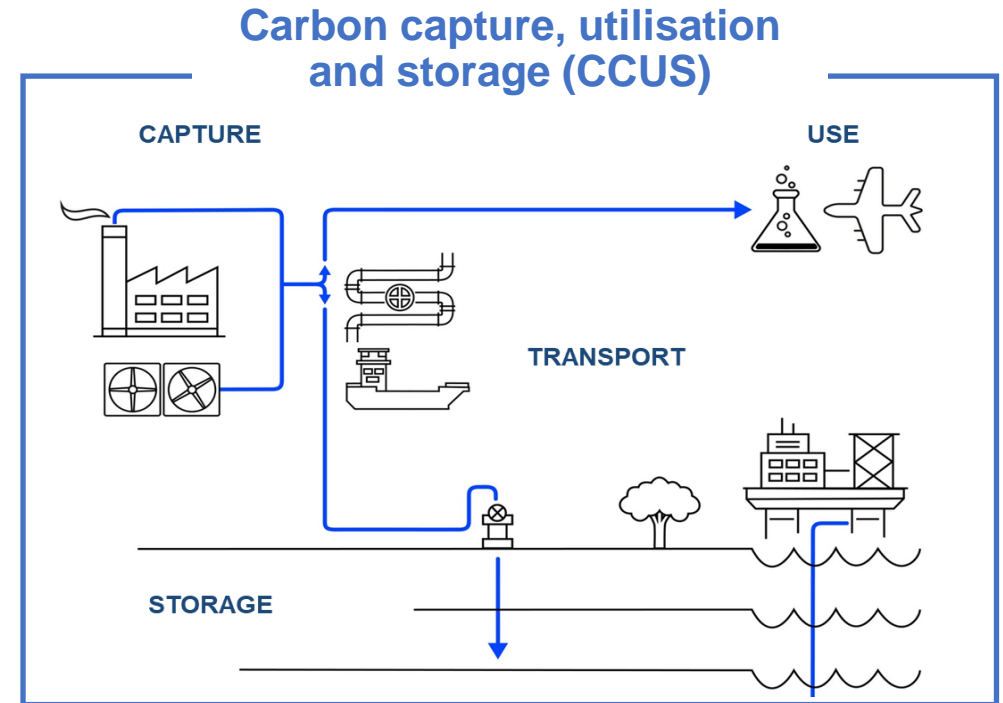
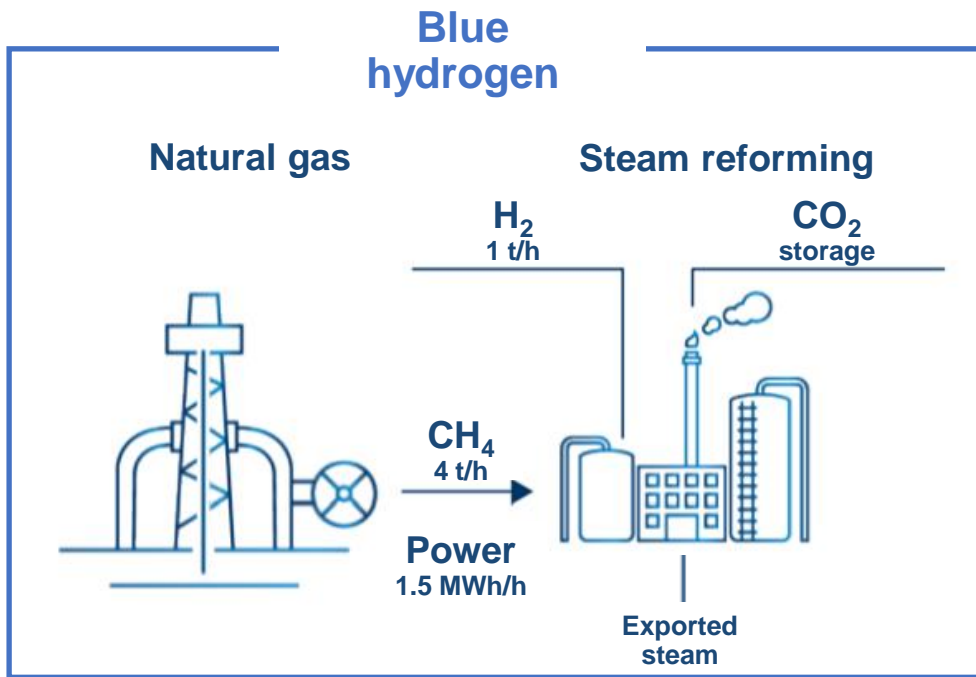
Industry:
Metalurgica
Ceramics
Chemistry (eMethanol)
Textile

Focus Areas – Hydrogen Economy

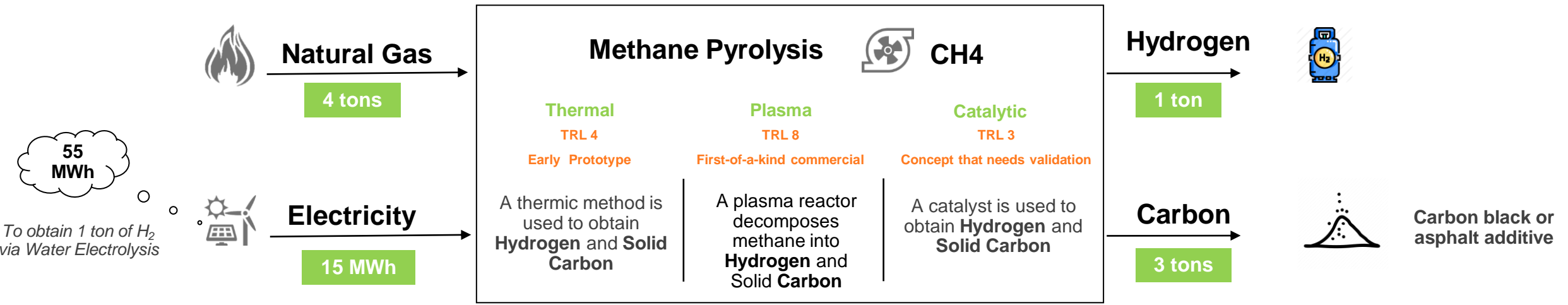


For Romania, Blue hydrogen is a must to cover the total demand of hydrogen, giving the high amount of green power needed to produce 1t of Green hydrogen

Romania has plenty of options for CO₂ storage



Pyrolysis is projected to be one of the cheapest forms of hydrogen production, considering the CO2 allowance price



55 MWh
To obtain 1 ton of H₂ via Water Electrolysis

IN **OUT**

- Methane Pyrolysis is **emission free**
- Can be manufactured using 100% Renewable Electricity
- Competitively priced
- Cleanest Hydrogen Available Today

- Technology may still need to be optimized for hydrogen production
- Relies on electricity – needs renewables for the full hydrogen system to achieve zero GHG
- Scale and costs still need to be proven for several new variations of the technology

- Green power supply for turquoise hydrogen could be a challenge
- Carbon evaluation to be further assessed

Main messages



- **Blue hydrogen** is essential in Romania's **energy transition**, in combination with green hydrogen
- **Romania**, having the potential to become the **1st natural gas producer in EU**, with the **Black Sea** resources, **will support the hydrogen economy**
- Similar **regulatory treatment** for blue hydrogen as for green hydrogen
- Romania has many **options for carbon capture and storage** and should smartly capitalize them
- Romania can become the **Blue Hydrogen Valley of Europe**