

Production of hydrogen and the use of hydrogen in industry, transport sector and as power reserves replacing fossil fuels

Ionuț Ciubotaru

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OMV Petrom SA



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- ▶ **Romania:** main market
- ▶ **Regional presence in**
 - ▶ Bulgaria, Serbia & Moldova with filling stations OMV & Petrom
 - ▶ Georgia & Bulgaria with exploration activities
- ▶ ~40% of Romania's fuels & gas national demand and up to 10% of Romania's power demand
- ▶ **Clean CCS:** 4.3 bn EUR in 2021
- ▶ **Shareholder structure**
 - ▶ OMV: 51%
 - ▶ Romanian State: 21%
 - ▶ Natural and Legal Persons: 28%

OMV Petrom Strategy 2030

Transforming for a lower carbon future

Strong capital discipline & dividend policy

Transition to low and zero carbon

Energy transition leader for Romania and SEE

Optimize traditional business

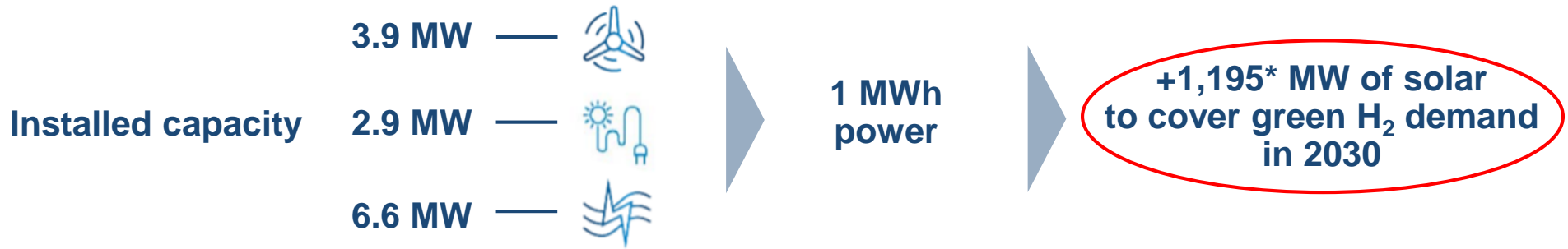
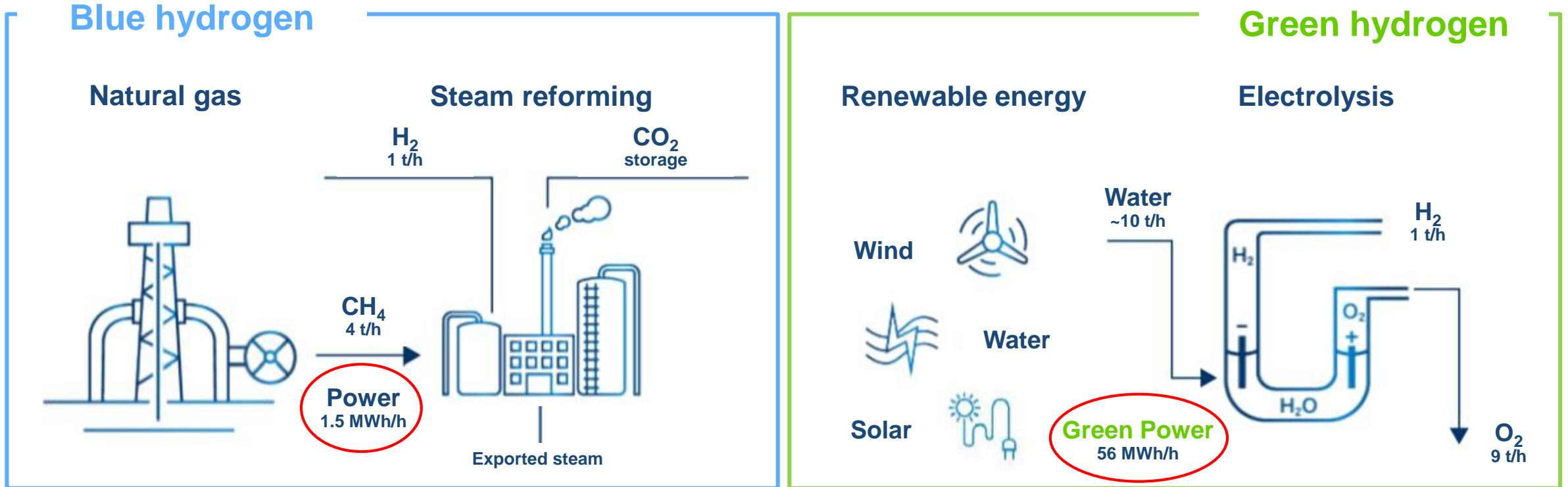
Grow regional gas

Innovation & Digitalization

People & Communities

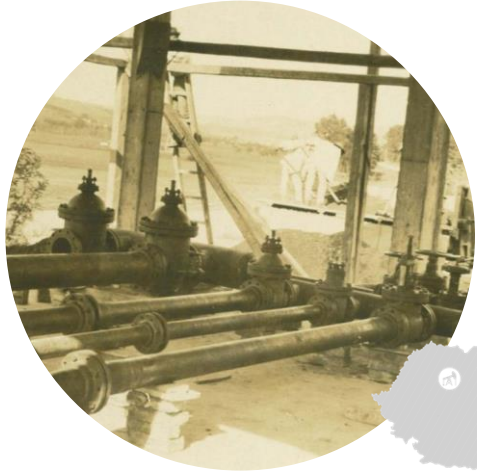
Responsible operations

For Romania, blue hydrogen is a must to cover the total demand of H₂, giving the high amount of green power needed to produce 1 t of green hydrogen



*Internal estimation

Security of supply is essential, and Romania has the resources for blue hydrogen production and capabilities, building on legacy and the Black Sea gas



- The Romanian gas industry covers over **110 years of historic activity**
- Within the region, Romania has the **largest share of domestic gas in consumption**
- **Improved gas interconnection** with neighboring countries
- **3rd gas producer in the EU* in 2020**

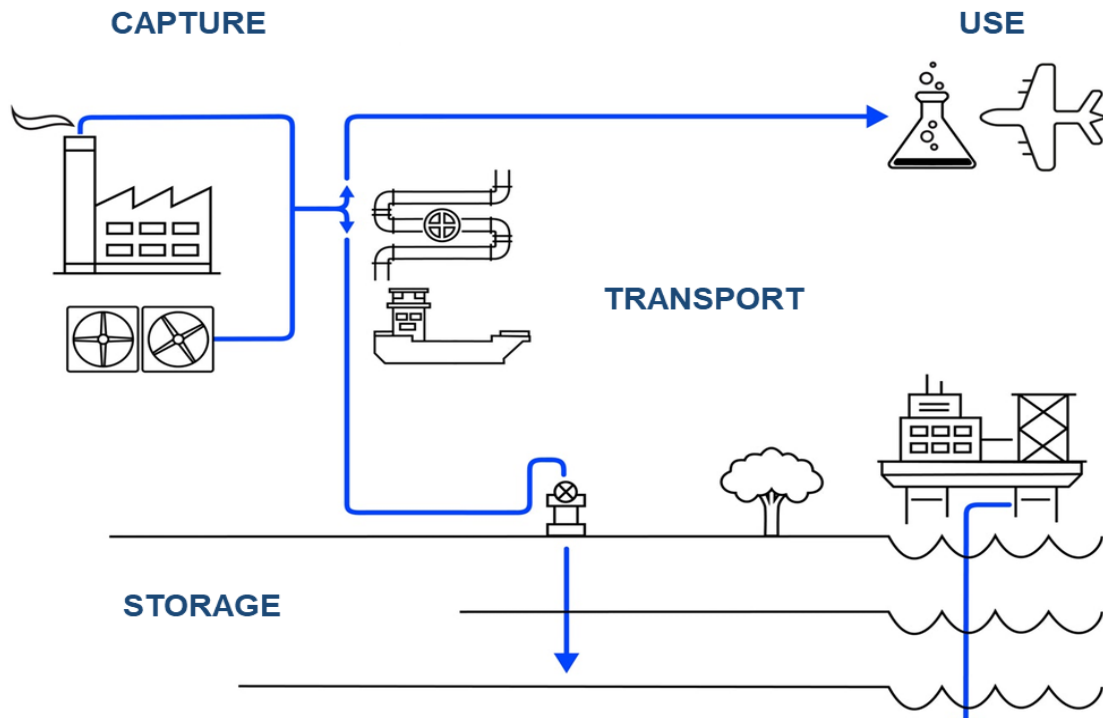
- **The Black Sea gas** offer a huge opportunity for Romania:
 - to strengthen the **energy security**
 - to enable the **energy transition**, including the **hydrogen economy**
 - to bring additional budget revenues and to create jobs
- Black Sea gas can turn Romania into **EU's largest gas producer**



*Including United Kingdom, based on BP Statistical Review 2021

Romania has plenty of options for CO2 storage, considering the range of depleted oil and gas reservoirs, but also saline formations

Carbon capture, utilisation and storage (CCUS)




CO2 usage:

- Input of feedstock to create:
 - products
 - services

CO2 storage:

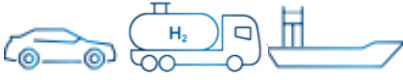
- depleted oil and gas reservoirs
 - onshore
 - offshore
- saline formations

Hydrogen is one of the solutions for hard-to-decarbonise industries, as well as a way to decarbonise natural gas




Industry

- Refinery
- Aluminum
- Steel
- Glass
- Cement
- etc.



Mobility

- Long-haul heavy-duty road transport
- Maritime transport
- Rail-road transport



Power

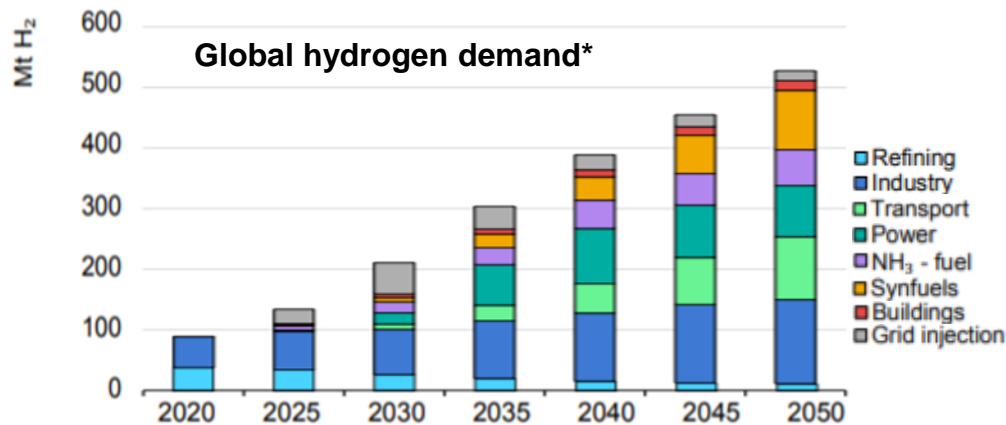
- Stationary fuel cells
- Energy storage
- H₂ blended with natural gas



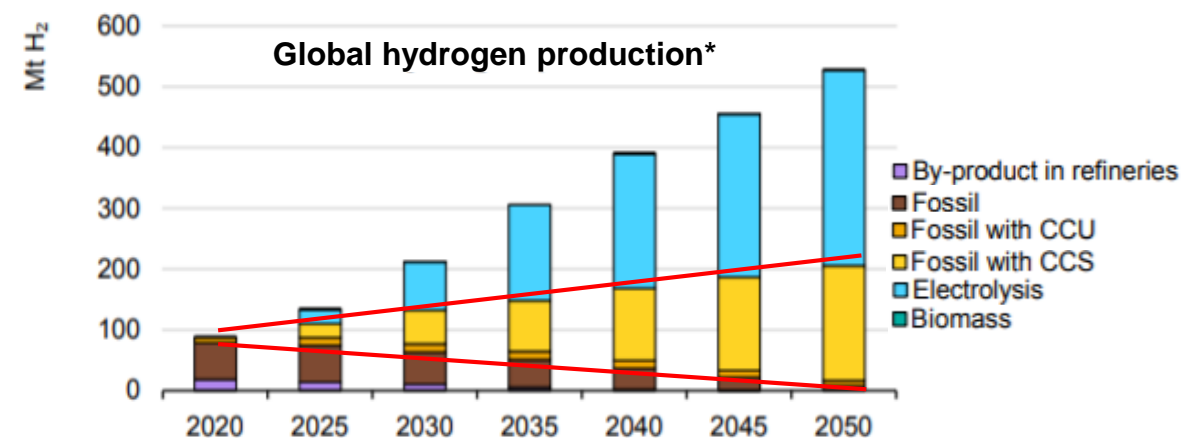
Buildings

- H₂ blended with natural gas for heating of buildings

At global level, government pledges suggest greater hydrogen use, not nearly enough to the level needed to achieve net zero emissions by 2050



Decarbonising hydrogen production will require rapid electrolysis and CCUS roll-out



*Source: "Global Hydrogen Review 2021", IEA, Net zero Emissions scenarios



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