

# HYDROGEN STRATEGY OF THE CZECH REPUBLIC

**Petr Mervart**

Plenipotentiary of the Minister of Industry  
and Trade for Hydrogen Technologies

September 1<sup>st</sup>, 2022

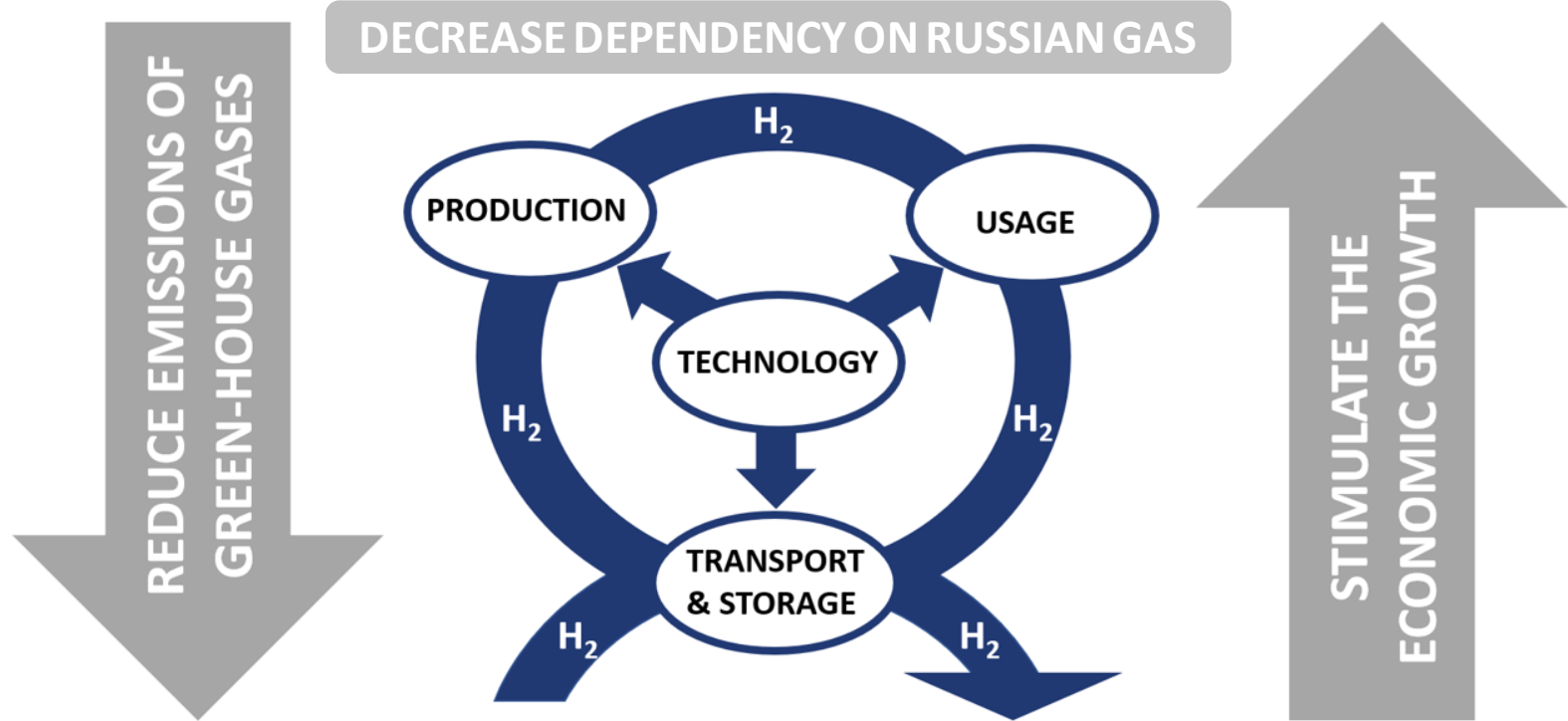


MINISTERSTVO  
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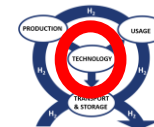
Ministry of Industry and Trade



# FOUR PILLARS OF HYDROGEN STRATEGY



# HYDROGEN TECHNOLOGY



Trucks

Buses










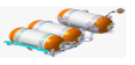
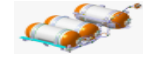
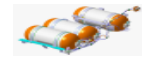
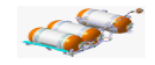
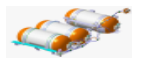







Cars

Filling stations

Production

Transporters



Electromotors						
Fuel Cells						
Baterie						
Hydrogen Tanks						
Electrolysers, pyrolysers						
Pumps, fittings, compressors						

# HYDROGEN TECHNOLOGY

## Automotive

- IVECO, Škoda Transportation, SOR
- Tatra
- ZEBRA Group
- DEVINN
- CZ LOKO, Zimatech
- České loděnice

## Hydrogen Refueling Stations

- Linde, AirProducts, APT, Tatsuno, Bonett, Adast, Alternative Energy Systems

## Electrolysers

- LEANCAT
- 3JCP

## Fuel Cells

- Bosch, Hyundai, EATON

## Hydrogen vessels

- Cylinders Holding
- Chart Ferox
- Východočeské plynárenské strojírný
- Strojón

## Medical applications

- LEANCAT

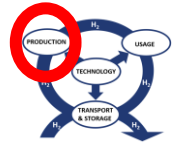
## Measurement and testing

- LEANCAT, BRK Technologies

## Pyrolysis and plasmatic split

- Millenium Technologies, BRK Technologies, Alternative Energy Systems, ENRESS

# HYDROGEN PRODUCTION



**RENEWABLES**



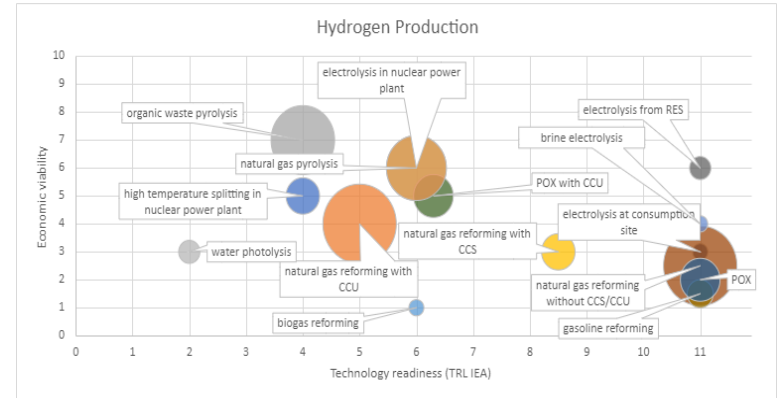
**NUCLEAR POWERPLANTS**



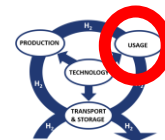
**WASTE PYROLYSIS**



**NATURAL GAS WITH CCU**



# HYDROGEN USAGE



**MOBILITY**



**INDUSTRY - GREY HYDROGEN  
REPLACEMENT**



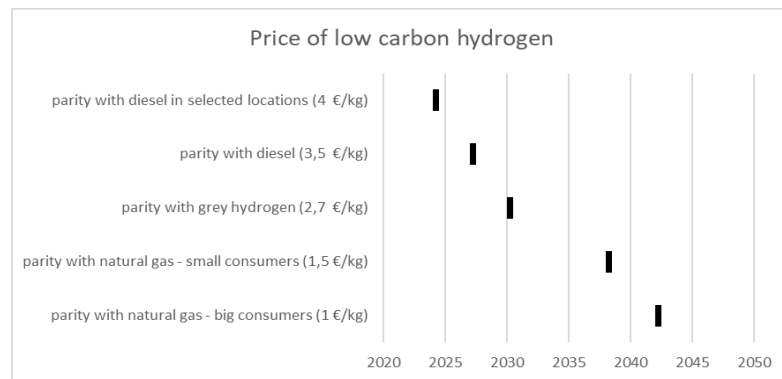
**INDUSTRY - NATURAL GAS  
REPLACEMENT**



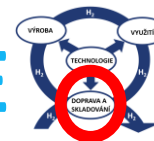
**INDUSTRY - COAL  
REPLACEMENT**



**ENERGY STORAGE**



# HYDROGEN TRANSPORT AND STORAGE



## Pipelines



Historic European Hydrogen Backbone can be created by 2040

- H<sub>2</sub> pipelines by conversion of existing natural gas pipelines (repurposed)
- Newly constructed H<sub>2</sub> pipelines
- Export/Import H<sub>2</sub> pipelines (repurposed)
- Subsea H<sub>2</sub> pipelines (repurposed or new)
- Countries within scope of study
- Countries beyond scope of study
- ▲ Potential H<sub>2</sub> storage: Salt cavern
- Potential H<sub>2</sub> storage: Aquifer
- Potential H<sub>2</sub> storage: Depleted field
- Energy island for offshore H<sub>2</sub> production
- City for demonstration purposes



- Central European Hydrogen Corridor
- North Afrika Hydrogen Pipeline

## Barges



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Transport of hydrogen and ammonia

# INTEGRATED PROJECTS

## Personal transport



## Logistic centers



## Waste processing





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Ministry of Industry and Trade  
Czech Republic

## The Czech Republic's Hydrogen Strategy

[https://www.mpo.cz/assets/cz/prumysl/strategicke-projekty/2021/9/Hydrogen-Strategy\\_CZ\\_2021-09-09.pdf](https://www.mpo.cz/assets/cz/prumysl/strategicke-projekty/2021/9/Hydrogen-Strategy_CZ_2021-09-09.pdf)



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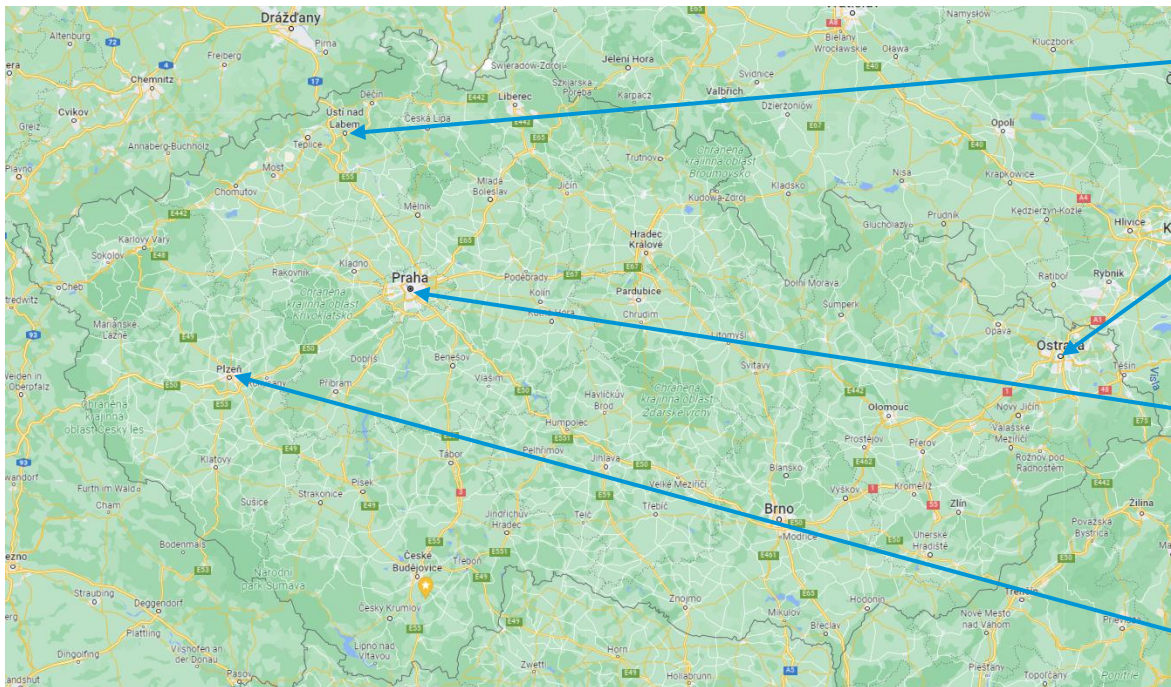
# HYTEP

- Independent association
- Currently with over 60 members
- Members ranging from business to research and development entities

<https://www.hytep.cz/en/>



# UNIVERSITIES & HYDROGEN



UNIVERZITA J. E. PURKYNĚ V ÚSTÍ NAD LABEM



VSB TECHNICAL  
UNIVERSITY  
OF OSTRAVA



UNIVERSITY OF  
CHEMISTRY AND TECHNOLOGY  
PRAGUE



CTU  
CZECH TECHNICAL  
UNIVERSITY  
IN PRAGUE



CHARLES UNIVERSITY



UNIVERSITY  
OF WEST  
BOHEMIA

# MAIN CHALLENGES

- Price of low-carbon hydrogen
- Transition from research to implementation
- Import of hydrogen from abroad