

CZECH HYDROGEN STRATEGY

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Plenipotentiary of the Minister of Industry
and Trade for Hydrogen Technologies

6. Podnikatelské fórum Ústeckého kraje

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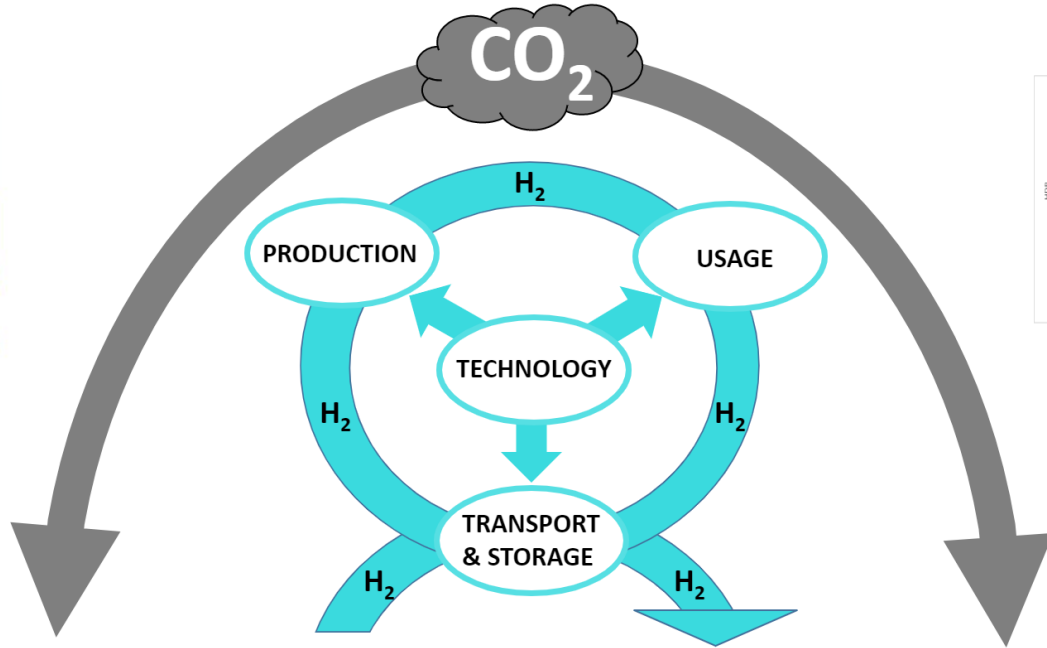
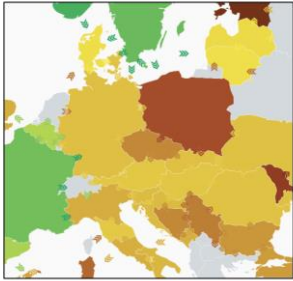


MINISTERSTVO
PRŮMYSLU A OBCHODU

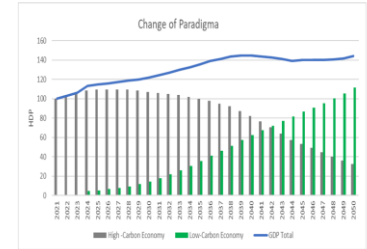


FOUR PILLARS OF HYDROGEN STRATEGY

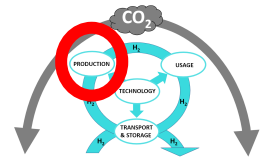
Goal 1: Reduce emissions of greenhouse gases



Goal 2: Stimulate the economic growth



HYDROGEN PRODUCTION



RENEVABLES



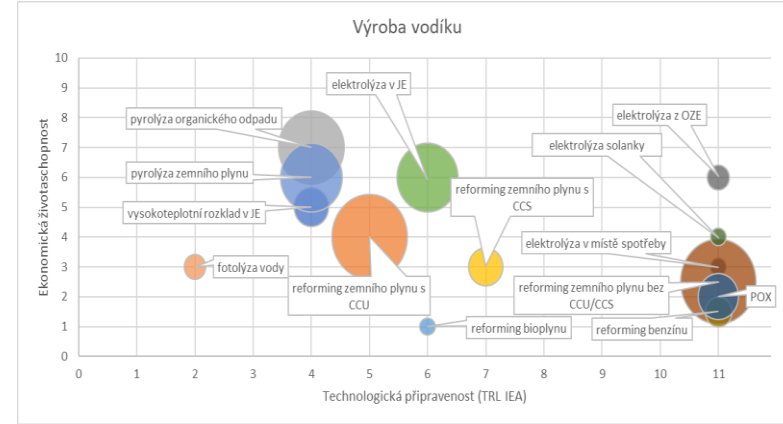
NUCLEAR POWERPLANTS



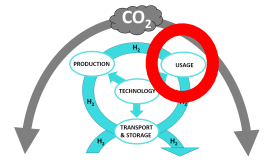
NATURAL GAS WITH CCU



WASTE PYROLYSIS



HYDROGEN USAGE



MOBILITY



INDUSTRY - GREY HYDROGEN
REPLACEMENT



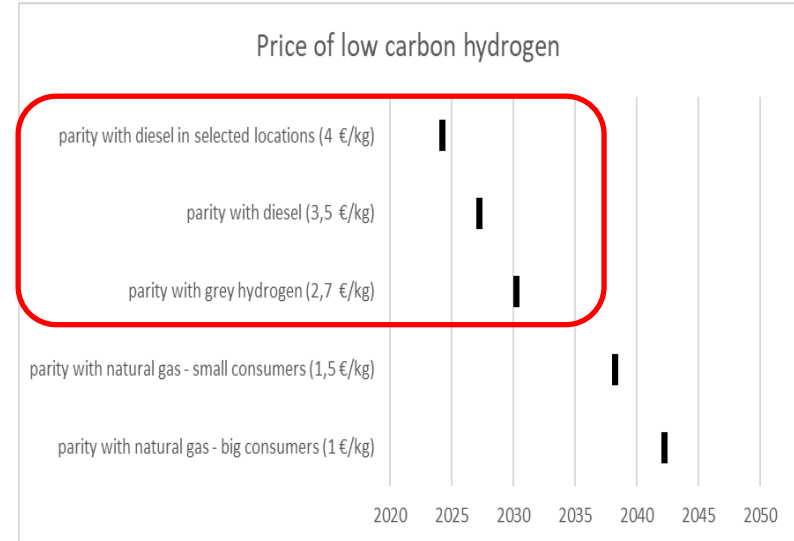
INDUSTRY - NATURAL GAS
REPLACEMENT



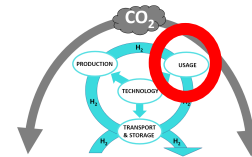
INDUSTRY - COAL
REPLACEMENT



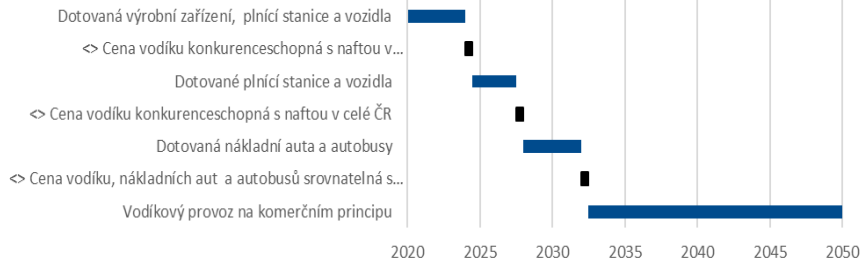
ENERGY STORAGE



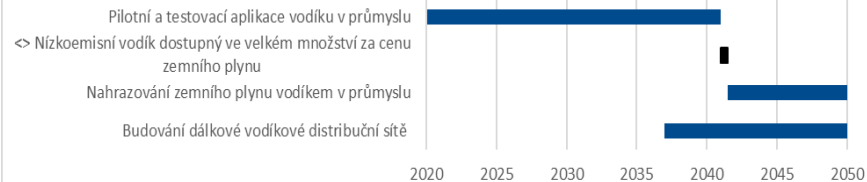
TIMELINES



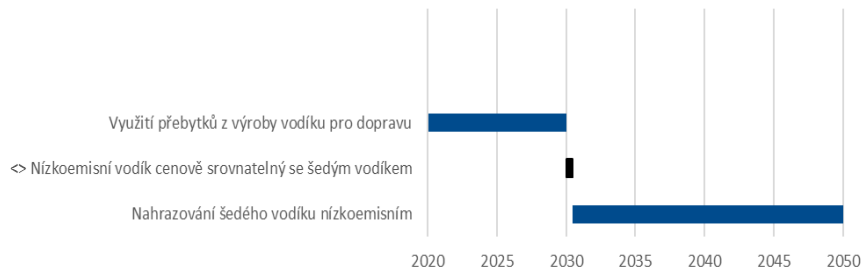
Zavádění vodíku v dopravě



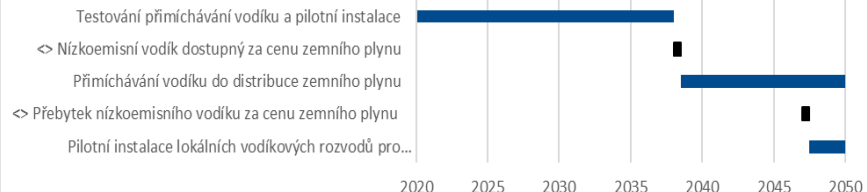
Zavádění vodíku do průmyslu



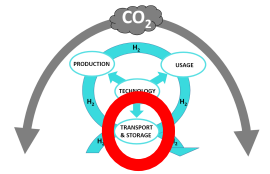
Zavádění vodíku do chemického průmyslu



Zavádění vodíku do domácností

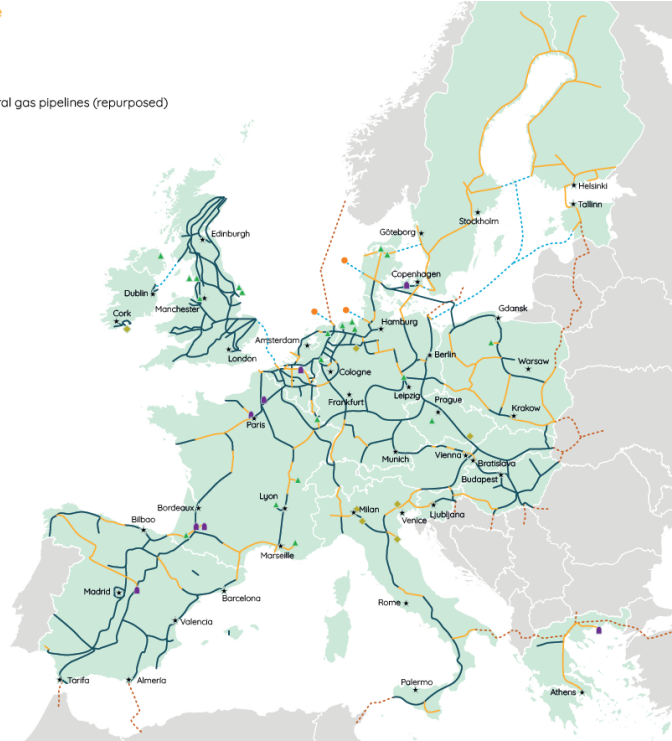


HYDROGEN TRANSPORT AND STORAGE

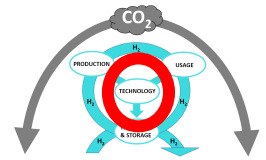


Mature European Hydrogen Backbone can be created by 2040










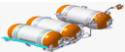
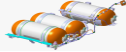
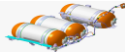
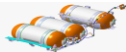
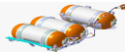






- H₂ pipelines by conversion of existing natural gas pipelines (repurposed)
- Newly constructed H₂ pipelines
- Export/import H₂ pipelines (repurposed)
- Subsea H₂ pipelines (repurposed or new)
- Countries within scope of study
- Countries beyond scope of study
- ▲ Potential H₂ storage: Salt cavern
- Potential H₂ storage: Aquifer
- ◆ Potential H₂ storage: Depleted field
- Energy island for offshore H₂ production
- ★ City, for orientation purposes



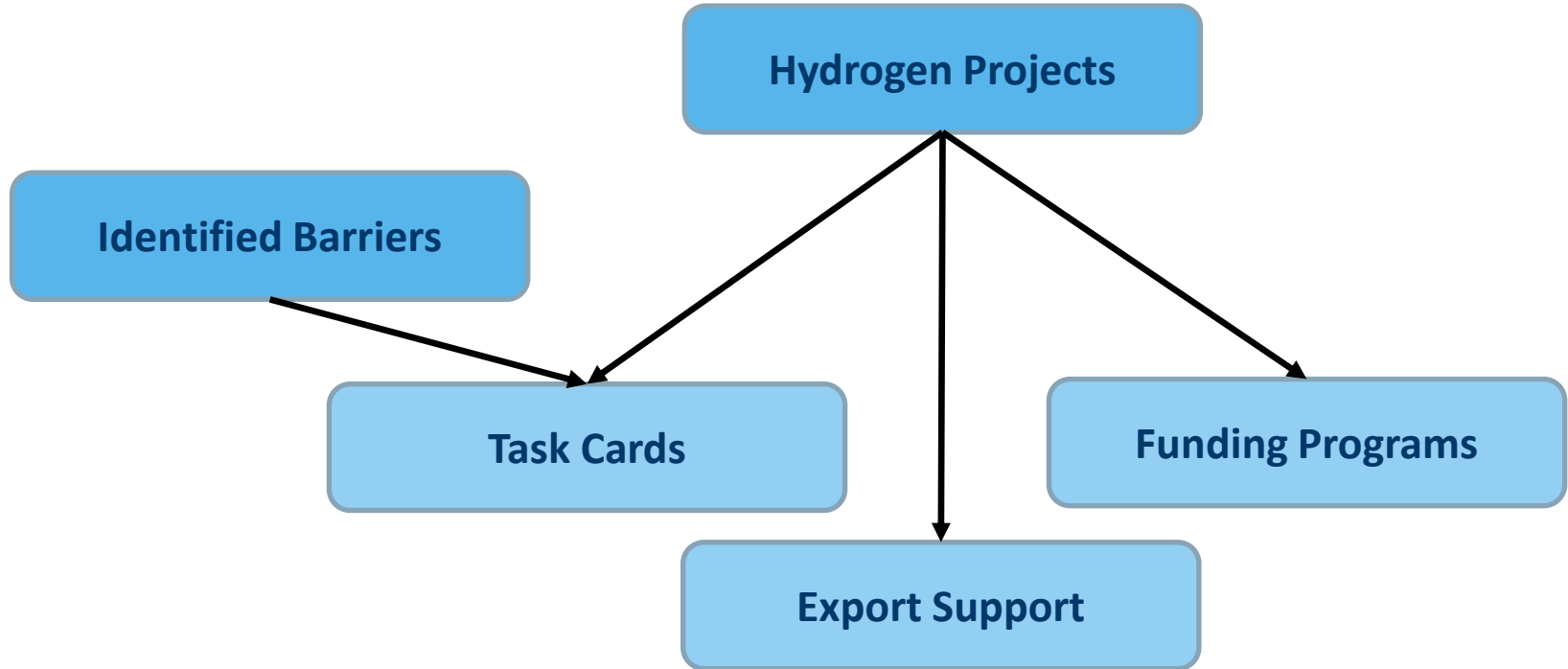
HYDROGEN TECHNOLOGY



	Trucks	Buses	Cars	Filling stations	Production	Transporters
						

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

NEXT STEPS



HYDROGEN PROJECTS

- Our aim is to regularly talk with companies which are active in hydrogen technologies.
- We are interested in any projects from futuristic ideas up to projects just ready for implementation.
- We are going to ask following questions:
 - What is stopping you to realize the project?
 - Why do you think that you are the best candidate to realize the project?
 - How the particular project can contribute to strategic goals of the Czech Hydrogen Strategy?

TASK CARDS

General barriers and problems which were identified during the discussion on particular projects:

- Coordination between the Czech Hydrogen Strategy and other strategic documents
- Certification for low-carbon hydrogen
- Quality measurement for the hydrogen used in fuel cells
- Issues related to operation of hydrogen filling stations
- Methodology for firemen and emergency in case of hydrogen related accidents
- ...

EXPORT SUPPORT

Ministry of Industry and Trade has a portfolio of business diplomacy tools to support the export of hydrogen technologies produced in the Czech Republic. We need to know about producers which can have hydrogen products and components which can be exported.

Cross-border cooperation with Saxony.

FUNDING PROGRAMS

	Hydrogen production	Transport and storage	Hydrogen usage		
			Mobility	Industry	Households
Operation	Hydrogen production	Hydrogen sale and transport	Transport of people & goods	Industry, steel, energy	Production of heat
Equipment production	Equipment for hydrogen production	Filling stations and transporters	Buses, trucks, cars, boat, planes, manipulators	Boilers, furnaces, reactors, turbines	Boilers
Component production	Electrolysers	Transporters, pipelines, stations	Fuel cells, drives, batteries	Burners, turbines	Boilers, burners
	Tanks, compressors, pumps, fittings, control systems, safety, measurement and monitoring				
	Special materials, tanks, tubing, systems				
R&D	Electrolysers	Tubing and tanks	Fuel cells, drives, batteries	Boilers, furnaces, reactors, turbines	Boilers, burners
Strategies	Plans, strategies, studies, roadmaps				

Doprava 2020+

Théta

Trend

Prostředí pro život

Delta 2

Modernizační fond

Inovační fond

Fond spravedlivé transformace

The Country for the Future

IPCEI

OP TAK

IROP

OP Doprava

CONCLUSION

Ústí region is one of the very first regions where the hydrogen technologies will be introduced:

- Close cooperation with Saxony
- Hydrogen production
 - PV + renewable energy + energy from nuclear plants
- Mobility – transport hubs
 - Hydrogen filling station
 - Bus transport
 - Railway transport
- Usage in chemical industry
- Technology
 - Handling Machinery
 - Components

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Ministry of Industry and Trade



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