



Prerequisites for implementation of H₂ technologies

The example of European Hydrogen Backbone

Karin Stehlík

Jednání Výboru pro udržitelnou energetiku a dopravu
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EUROPEAN UNION
European Regional Development Fund
Operational Programme Enterprise
and Innovations for Competitiveness

Content

HYTEP – Czech Hydrogen Technology Platform

European Hydrogen Backbone

Czech H₂ stakeholder groups

Prerequisites for H₂ implementation in CZ

Outlook for CZ

Czech Hydrogen Technology Platform



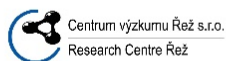
Since 2007

Independent and non-profit organisation

Members from industry and research

Mission of Introduction of H₂ economy

Contact point for H₂ technologies in & for CZ

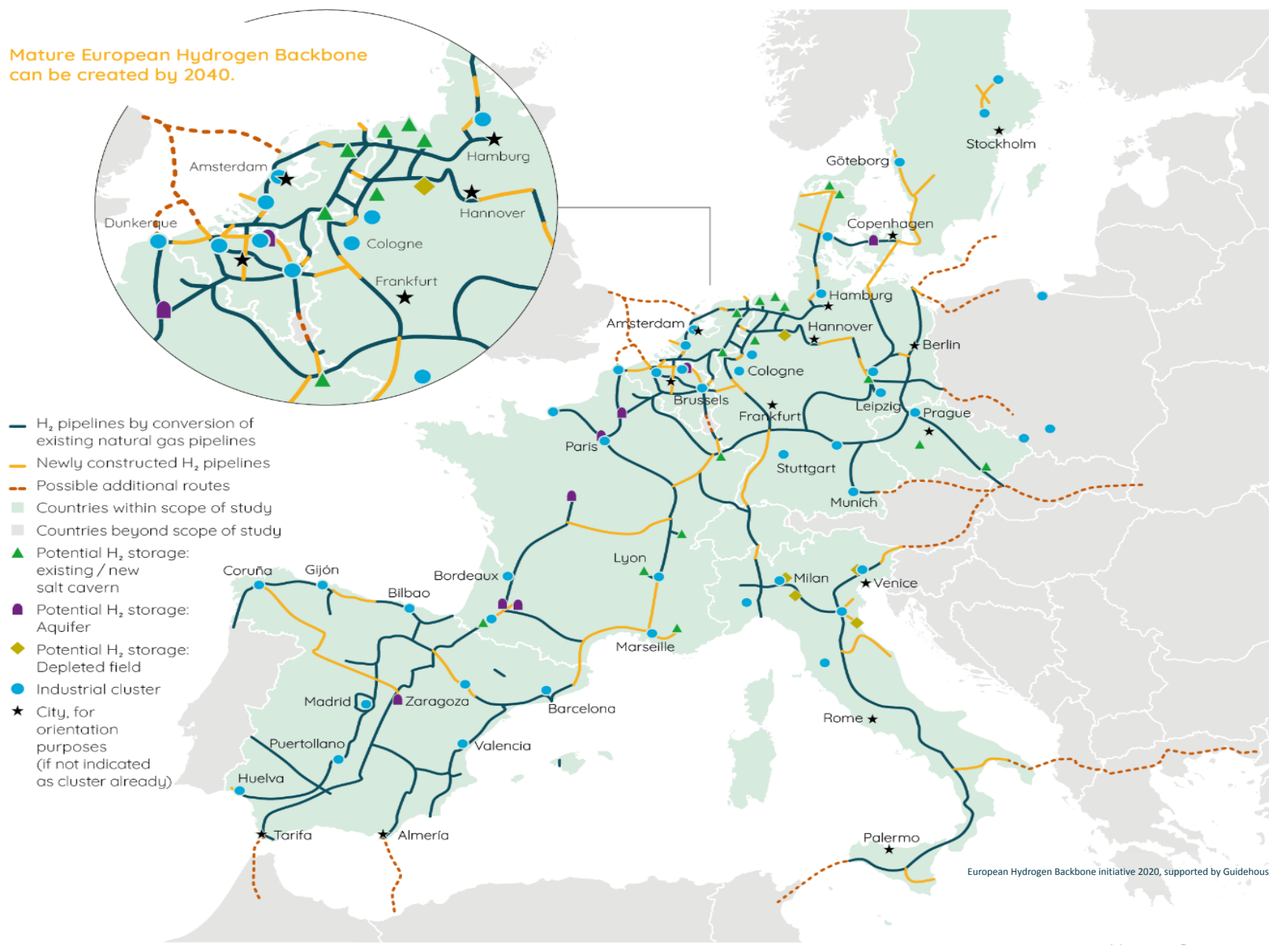


European Hydrogen Backbone

- Presented in July 2020 as a reaction to EU's European Hydrogen Strategy to show the importance of gas infrastructure in the H₂ value chain
- A study on “A proposal for a **dedicated hydrogen transport infrastructure**, connecting supply and demand from north to south and west to east.”
- 11 gas TSOs* from 9 EU countries, coordinated by Guidehouse
- An **open initiative**
- Starting with an emerging 6,000 km pipeline network connecting H₂ valleys by 2030; then stretching into all directions with a length of about **23,000 km by 2040**, with expected further expansion up to 2050

European Hydrogen Backbone in 2040

Mature European Hydrogen Backbone
can be created by 2040.



European Hydrogen Backbone

- Capacity of EHB
 - Hydrogen has 1/3 of the energy of a cubic meter of natural gas
 - Hydrogen volume flow can be higher than for natural gas
 - maximum energy capacity of a hydrogen pipeline is up to 80% of the energy capacity it has when transporting natural gas.
- Operation cost €0.09-0.17 per kilo of hydrogen per 1000 km
- Total investment costs of the envisaged 2040 European Hydrogen Backbone
 - 22,900 km backbone will consist of 75% retrofitted
 - Estimated €27 to €64 billion
 - Covering the full capital cost of building and retrofitting
 - New H₂ pipeline cca 110-150% of NG infrastructure

European Hydrogen Backbone 2021

Webinar

European Hydrogen Backbone 2021

How a dedicated hydrogen infrastructure can be created

Tuesday 13th of April – 12:00 to 1.30pm

[Register here](#)

After registering, you will receive a confirmation email containing information about joining the webinar.

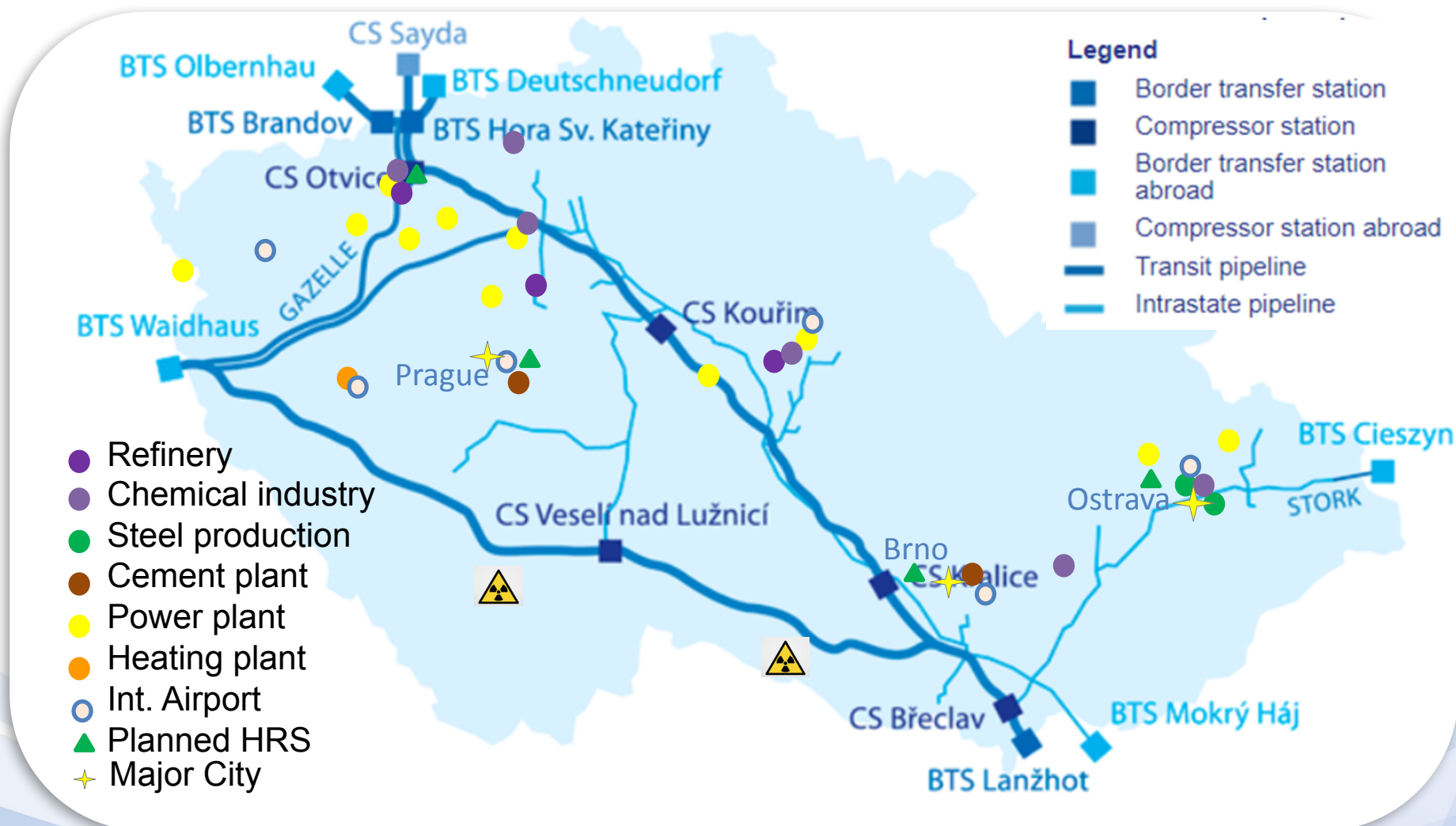
An initiative by:

Enagás, Energinet, Fluxys, Gasunie, GRTgaz, NET4GAS, OGE, ONTRAS, Teréga, Snam, Nordion, GNI, National Grid, Creos, Gasgrid, Elering, TAG, GCA, FGSZ, Plinovodi, Eustream, DESFA, GAZ-SYSTEM

Supported by:

Guidehouse

Czech H₂ stakeholder groups



Prerequisites for H₂ implementation in CZ

DECARBONISATION

Objectives & pathways

FINANCING

State support for complex H₂ valley pilot projects & flagship projects

LEGISLATIVE & REGULATORY FRAMEWORK

Adjustment necessary in a European effort

HYDROGEN MARKET

Market tools, develop H₂ supply & demand scenarios, stakeholder integration

EXTERNAL COMPETITION

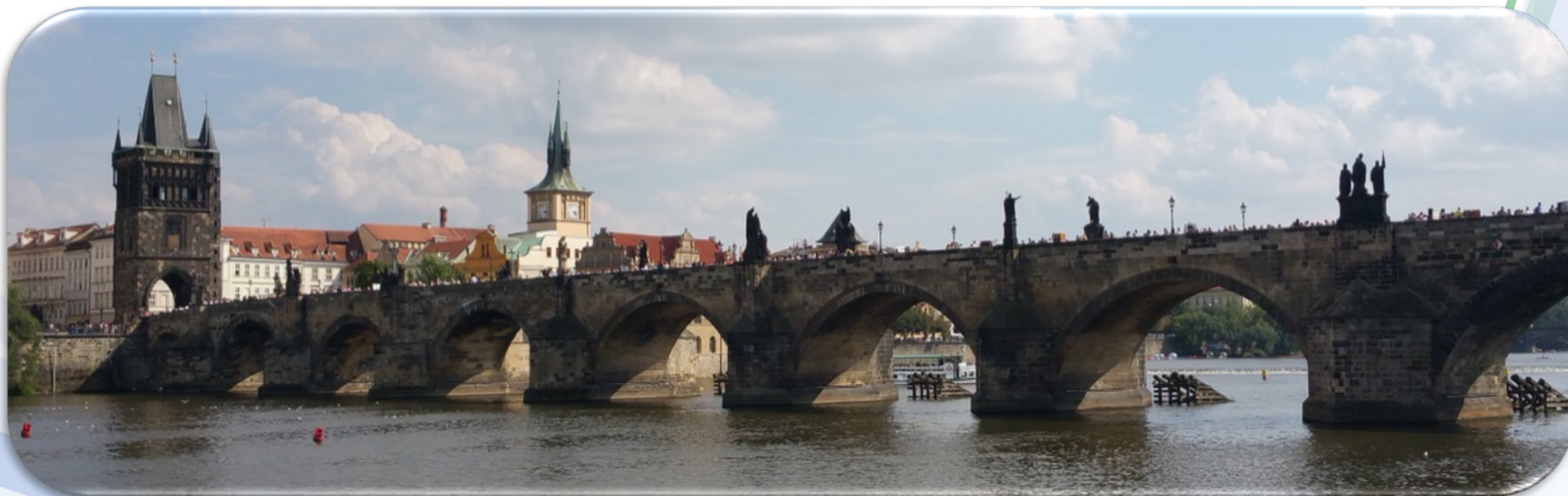
Preparation for European and global competition

Conclusions

Global trend towards H₂ economy seems to be irreversible

Take H₂ technologies as an opportunity

HYTEP offers bridging – across regions, disciplines & sectors



TH₂ank you for your interest!



karin.stehlik@hytep.cz