



SuperP2G final workshop

31st of March 2023

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Technical University of Denmark



SuperP2G - Synergies Utilising renewable Power REgionally by means of Power-To-Gas

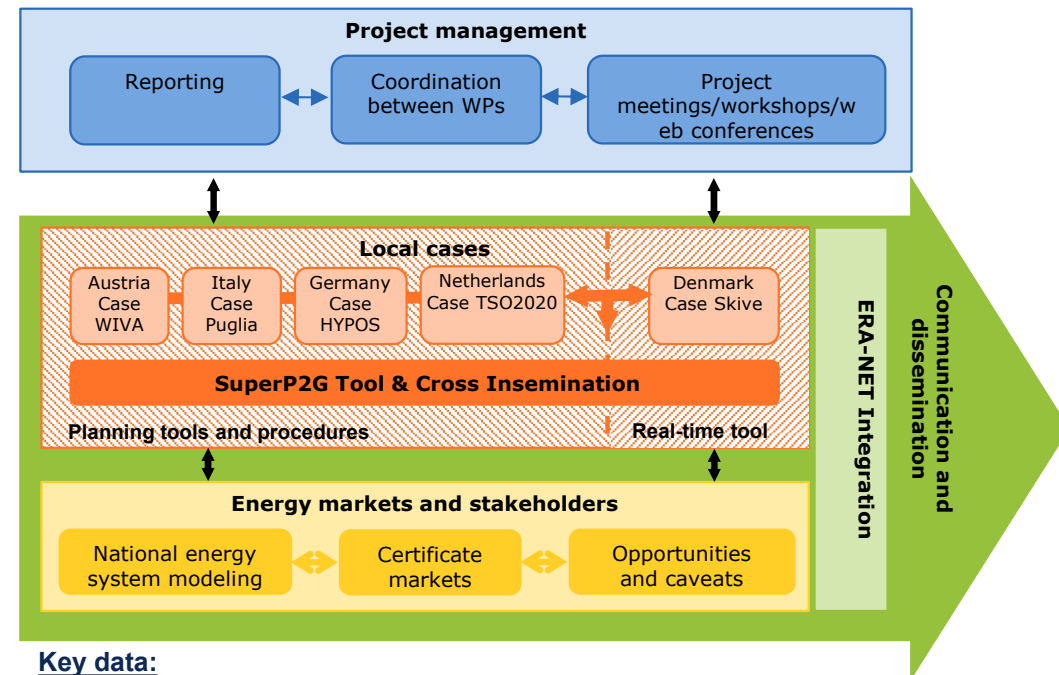


The Project at a glance

- SuperP2G interconnects leading P2G initiatives in five countries, ensuring joint learning.
- Each national project focuses on different challenges, where researchers team up with local need-owners to co-create solutions.
- SuperP2G focuses on improving existing evaluation tools including open access, as well as develop a new open tool.
- This is supplemented with analysis of regulation and markets, as well as stakeholder involvement.

www.superp2g.eu

<https://superp2g.external.dbi-gruppe.de/>

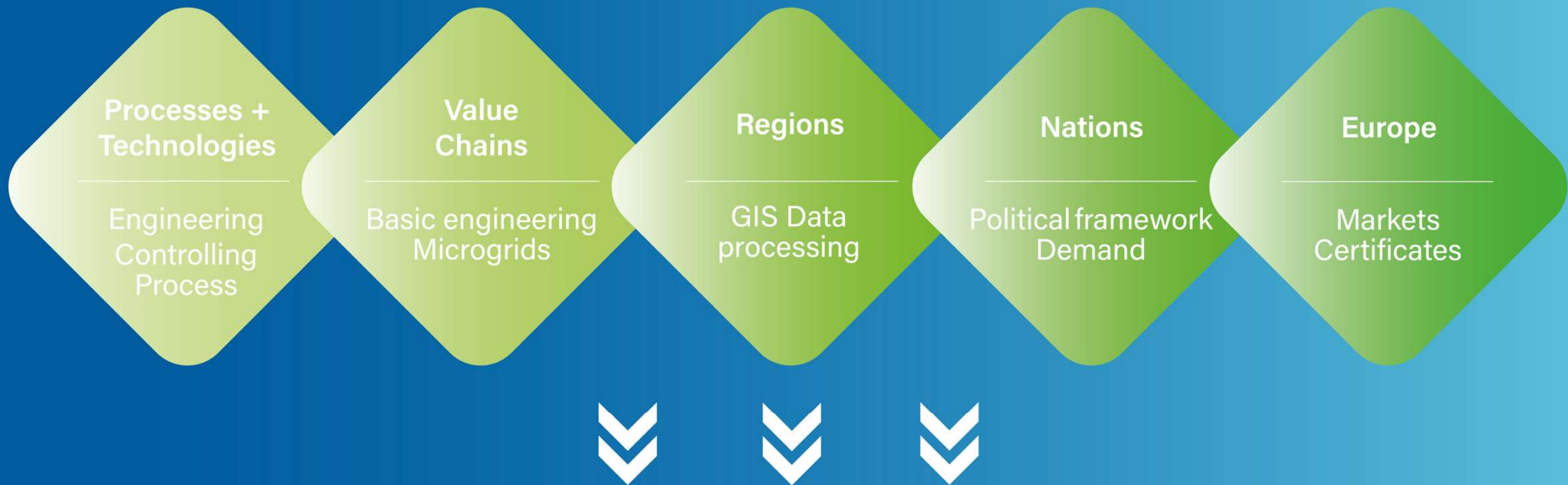


Key data:

- 01.11.2019 to 31.03.2023

Research partners:

- **Denmark:** DTU ME, DTU Elektro, GreenLab Skive
- **Germany:** DBI-GTI, DVGW-EBI
- **Netherlands:** RUG-FEB
- **Austria:** JKU Linz
- **Italy:** CNR, Uni Bologna
- **Europe:** ERIG



Establishing a common ground for Power-to-Gas calculations in Europe.

Agenda

Title	Presenter	Time
Welcome address	Marie Münster, Dogan Keles	10.00 - 10.10
PtX model overview	Lissy Langer	10.10 - 10.20
GreenLab Skive - Status and plans	Eoghan Rattigan	10.20 - 10.30
Capturing the technical details of PtX hubs	Shi You, Yi Zheng	10.30 - 11.00
Impact of renewable fuel premiums on PtX hub operation EnerHub2X model	Lissy Langer	11.00 - 11.15
Break		15 min
PtX hub investments under the Delegated Act SpineOpt model	Lissy Langer	11.30 - 11.45
European hydrogen analysis North vs. South Balmorel model	Rasmus Bramstoft	11.45 - 12.00
Upcoming PtX projects	DTU	12.00 - 12.10
Discussion	All	12.10 - 12.30
Lunch		12.30 - 13.30

Conclusions

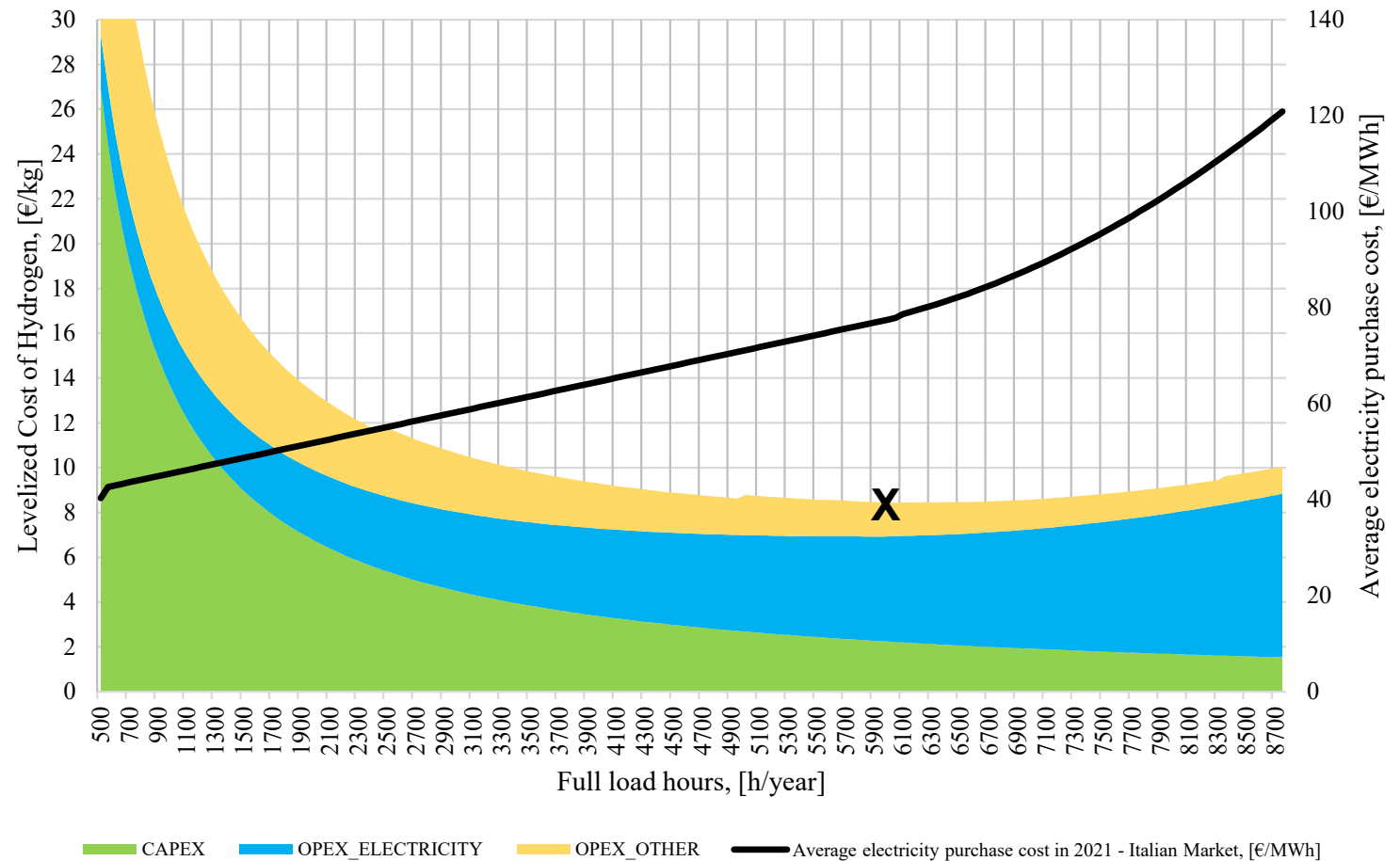


The competition between electrolytic and blue H₂ in Europe is impacted by a range of parameters:

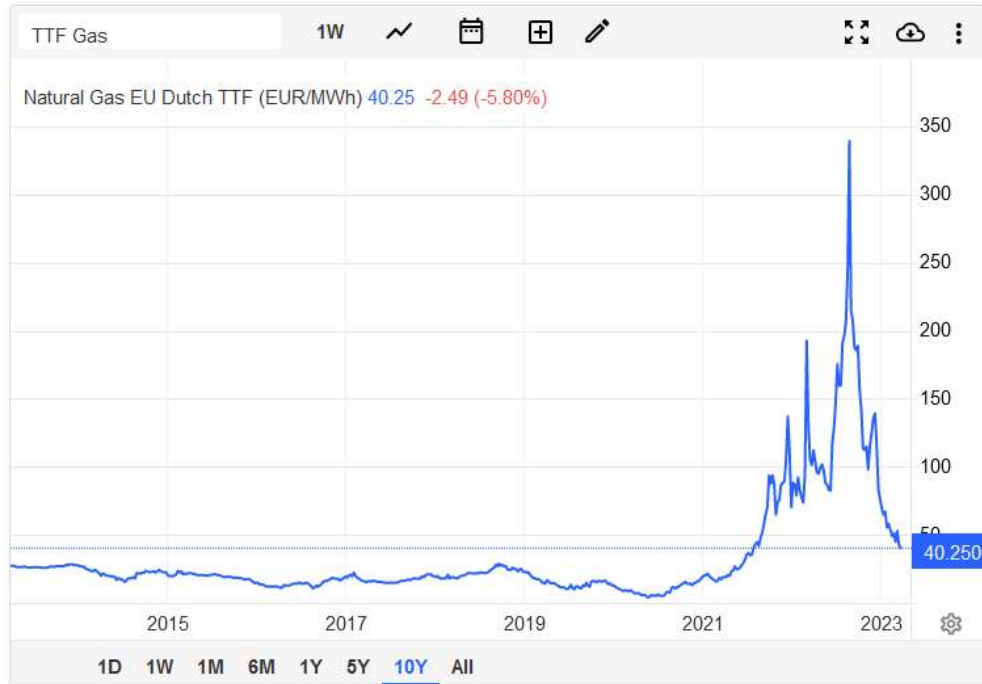
- Hydrogen demand levels
- Electricity prices and availability of green electricity
- Electrolyser flexibility, costs and learning curves
- Natural gas prices and CO₂ quota costs
- Hydrogen import availability and prices
- Availability of hydrogen infrastructure (grids and storage assets)

Electricity prices, Italy 2021

PEM electrolyser (55% eff)
Lowest cost is 8.4 EUR/kg
(6000 FLH)



Natural gas and carbon permit prices



www.tradingeconomics.com

Blue H₂ costs in 2022 would be around 7-8 EUR/kg (90% CO₂ capture)

Recommendations



To ensure a level playing field, coordination is required at EU level in a number of areas:

- **Certification of green hydrogen and a uniform CO2 price**
- **Ensuring a level playing field across energy markets and sectors**
- **Enabling policies to enhance European security of supply**
- **Fast ramping of renewable electricity generation**
- **Coordinated planning of hydrogen, methane and electricity infrastructures**



Thank you!

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About ERA-Net Smart Energy Systems | www.eranet-smartenergysystems.eu

The transnational joint programming platform (JPP) ERA-Net SES unites 30 funding partners from European and associated countries. It functions as a network of owners and managers of national and regional public funding programs in the field of research, technical development and demonstration. It provides a sustainable and service-oriented joint programming platform to finance transnational RDD projects, developing technologies and solutions in thematic areas like smart power grids, integrated regional and local energy systems, heating and cooling networks, digital energy and smart services, etc.



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an der Johannes Kepler Universität Linz



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SuperP2G Project Team



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