

Partners in the project

Technical University of Denmark



Commissariat à l'Énergie Atomique et aux énergies alternatives



European Institute for Energy Research



École polytechnique fédérale de Lausanne



Catalonia Institute for Energy Research



HTceramix



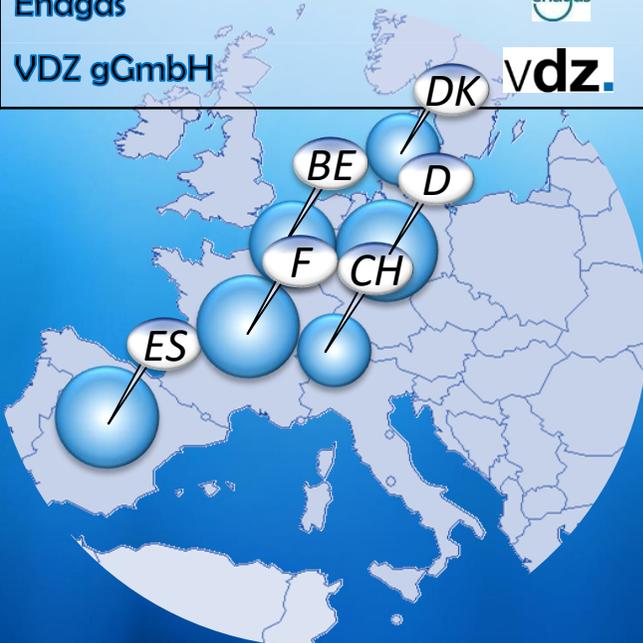
LABORELEC/ENGIE



Enagás



VDZ gGmbH



FUEL CELLS AND HYDROGEN
JOINT UNDERTAKING

Contact:
Project Coordinator
Prof. Dr. Anke Hagen

Technical University of Denmark
Department of Energy Conversion and Storage
Frederiksborgvej 399, DK-4000 Roskilde,
Denmark
Phone: +45 46775884
Email: anke@dtu.dk



Efficient Co-Electrolyser for Efficient Renewable Energy Storage – Eco

Meet us here:

Internet: <http://www.eco-soec-project.eu>

Research Gate



Twitter @Eco_SOEC



Youtube



Linked'in



A Project sponsored by the European Commission

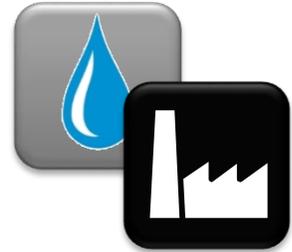


HORIZON 2020

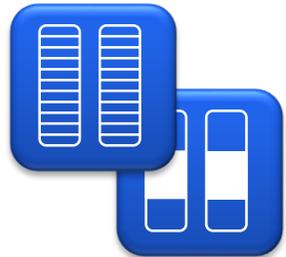
The Project Concept



Electricity from renewable sources such as wind and solar



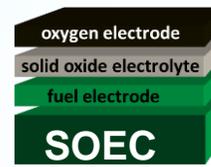
Steam and CO₂ from industrial sources or biomass



Co-electrolysis SOEC coupled with external or internal methanation



Storage and distribution of methane in the existing infrastructure



- Throughout Europe, more and more electricity production from renewable sources is established. However, the production from sources such as wind or solar does not fit the consumer needs and excess is produced at certain times. Efficient concepts are needed to store this excess electricity and to make it available at other times, at different locations or in other technologies
- Methane (or synthetic natural gas) is an attractive storage medium for large scale. Europe has already an existing, extended natural gas network and storage tanks for natural gas.

- Solid oxide electrolysis (SOEC) is a promising technology that can make the link between excess electricity production and options for storage in the natural gas network
- SOEC split water and CO₂ using electricity with efficiencies close to 100 %. The formed gas, called synthesis gas (H₂+CO) can be converted into synthetic natural gas or other hydrocarbons through catalytic processes

The project looks at

- Improving the SOEC that split water and CO₂ regarding performance and lifetime.
- How the SOEC can work together with the electricity input produced from renewable sources and the CO₂ that can be obtained from cement industry or biogas.
- How the gas produced in the SOEC can be converted to a storage medium and stored in the existing infrastructure.