

POWER-TO-X,
GREEN FUELS AND
CARBON CAPTURE,
UTILISATION & STORAGE (CCUS)

FROM DEMONSTRATION TO
INDUSTRIALISATION



COWI

ASNÆSVÆRKET – CCS, DENMARK

- › 2020
- › Client: Ørsted

Services:

- › Analysis of the possibilities for CO₂ storage in the Havnso formation, onshore and offshore
- › CO₂ compression
- › CO₂ dehydration
- › Injection considerations
- › Analysis of CO₂ terminal for embarkation and disembarkation of CO₂ consisting of storage tanks, CO₂ liquefaction plant and conditioning plant



GREEN FUELS FOR DENMARK

- › 2020 – 2030
- › Client: Green Fuels for Denmark Partnership

Services:

- › Knowledge partner on electrolysis and fuel production facilities
- › Technical Deep Dives and Work Packages for funding applications
- › Front End Engineering Design, developing an industrial-scale production facility for sustainable road, maritime and aviation fuels

[Read more](#)

GREENCEM, DENMARK

- › 2020 – 2021
- › Client: Aalborg Portland

Services:

- › Knowledge partner on CO₂ capture technology and energy integration to develop a fully integrated CO₂ capture solution for cement production
- › Concept Study for CO₂ capture plant
- › Process and energy integration with existing kilns

[Read more](#)





◀ GIGASTACK, UK

- › 2020
- › Client: Ørsted

Services:

- › Verified process design on green hydrogen production directly coupled to an oil refinery
- › Verified design basis, piping and instrumentation diagrams and layout drawings

[Read more](#)

KLEMETSRUD WASTE TO ENERGY – CCS, NORWAY ▶

- › 2017 – 2019
- › Client: Fortum Oslo Varme

Services:

- › Concept and FEED study for full scale CO₂ capture and liquefaction plants at the Klemetsrud waste to energy facility
- › Project management, planning and regulatory affairs
- › CO₂ transport to terminal and CO₂ export terminal
- › Civil works

[Read more](#)



◀ CINFRACAP, SWEDEN

- › 2020 – 2021
- › Client: Cinfracap Consortium

Services:

- › Main consultant, concept study produced
- › Production of liquid CO₂ and optimal logistics and infrastructure for industrial scale CCS
- › Transport of CO₂ to Port of Göteborg, intermediate storage and shipping of liquid CO₂

[Read more](#)

FLAGSHIP ONE, SWEDEN

- › 2019 –
- › Client: Liquid Wind Consortium

Services:

- › Main technical consultant for the establishment of an e-methanol plant
- › Project management and responsibility for Balance of Plant
- › Concept study and basis design

[Read more](#)



H2RES, DENMARK

- › 2020 – 2021
- › Client: Ørsted

Services:

- › Sole consultant, concept and project description for electrolysis plant, including budget estimate
- › Detailed planning of electrolysis plant, tender specifications and participation in negotiations
- › Employer's requirement, flowsheets for electrolysis plant
- › Process consultancy

[Read more](#)

TRIANGLE ENERGY ALLIANCE – PTX ANALYSIS, DENMARK

- › 2020
- › Client: TVIS

Services:

- › General analysis of material and energy balance for an interaction between CO₂ capture and electrolysis
- › Possibility of oxy-firing
- › Waste heat estimate
- › CAPEX and OPEX estimates



WE BRIDGE THE TECHNICAL GAP
TO COMMERCIAL READINESS FOR
HYDROTHERMAL LIQUEFACTION
DERIVED FUELS.

H₂



SERVICES

- › Knowledge partner on electrolysis, fuel production and CCUS facilities
- › Technical Deep Dives and Work Packages for funding applications
- › Concept, Front End Engineering Design



FOUNDATION

- › Expertise in development, funding, planning and complex design
- › Understanding of key Power-to-X aspects, CCUS and green fuel projects



VALUE CONNECTOR

- › Strategic partnerships and alliances
- › New business models and commercial risk-taking
- › Stakeholder management
- › Sector coupling towards other areas: transportation, buildings and industry



A STRONG PARTNER

WHO WE ARE:

COWI is a multi-disciplinary consultant within economics, environmental science and engineering. COWI offers a wide range of services for infrastructure projects worldwide. COWI is headquartered in Lyngby, Denmark and employs around 6,700 employees worldwide with offices in more than 25 countries.

We have a role in key projects involving massive electrical, pipeline and infrastructure developments, such as:

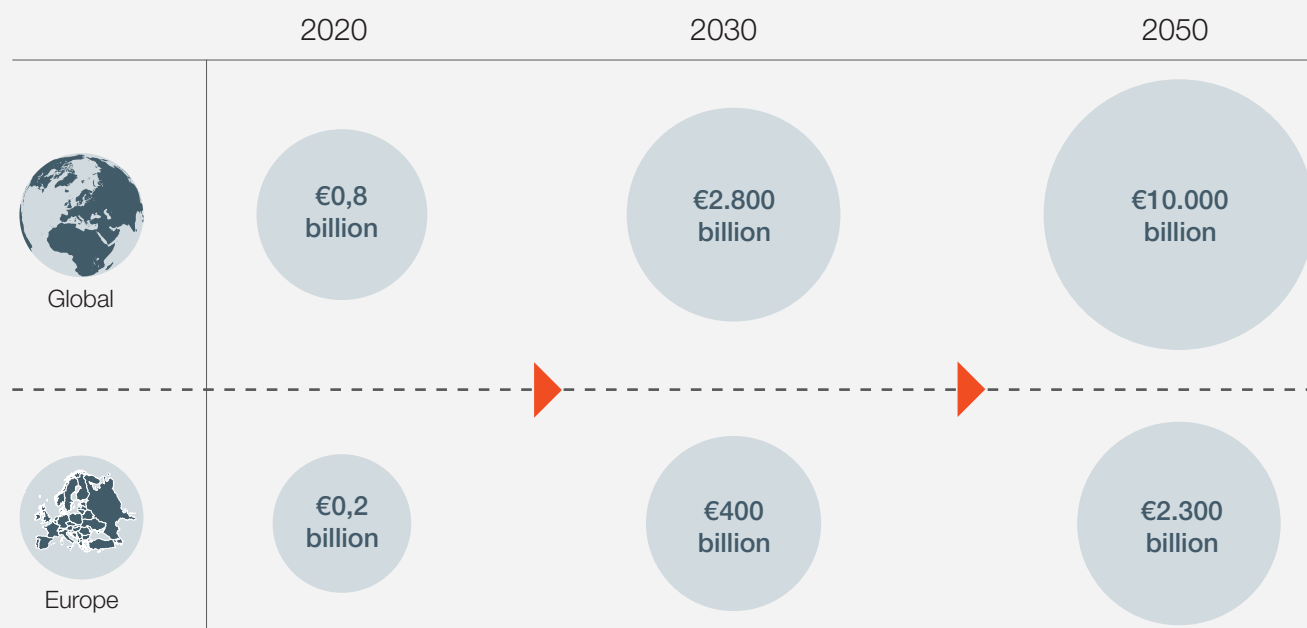
DENMARK: GreenCem Aalborg Portland, Green Hydrogen Hub, Vindø, HyBalance, Green Fuels for Denmark, BornholmEnergy Island, H2RES, Esbjerg, Triange Energy Alliance, Hysynergy, Greenlab Skive

NORWAY: Greensight, Klemetsrud

SWEDEN: Liquid Wind, Cinfracap, Örnköldsvik Flagship one

UNITED KINGDOM: Gigastack

TOTAL ADDRESSABLE MARKET FOR GREEN HYDROGEN – GLOBALLY AND IN EUROPE



See our energy solutions [HERE](#)

POWERING YOUR 360° SOLUTIONS

COWI is a leading consulting group that creates value for customers, people and society through our unique 360° approach. Based on our world-class competencies within engineering, economics and environmental science, we tackle challenges from many vantage points to create coherent solutions for our customers – and thereby sustainable and coherent societies in the world.

