TRACTEBEL ENGIE

Green Hydrogen

Carbon-neutral solution

We are scaling up...

For us, green molecules are key enablers to decarbonize industry and transport and massive energy carriers to trade renewable energy.

We have been providing for several years green hydrogen solutions to industries, utilities and project developers to help them in the execution of their carbon-neutral projects: from renewable energy through green hydrogen to the final use of green molecules. Whether it be as green hydrogen for energy storage, mobility, industry, gaseous or liquefied transport, whether it be as an e-molecule as ammonia, e-methane, or e-methanol, e-kerosene or LOHC.

We have already commissioned small-scale industrial green hydrogen solutions and we now actively work on large utility projects.

Our approach

Optimization of energy solutions in function of regional renewables resources, electrical grid characteristics, energy/ molecule demand profile on client side and best available technologies (batteries, gas storage, heat storage, hydrogen, ...).

Full engineering support from project inception, feasibility, tendering to realization based on multi-disciplinary teams with specific green H_2 and e-molecule expertise.

Client benefits

- Optimum Levelized Cost of Hydrogen / e-molecule
- Independent assessment with experience with all electrolyser manufacturers and process licensors
- Support from experts with first-hand experience on all project phases and blocks up to Gigawatt scale

Our added value

- In-depth knowledge in H_2 and energy in general
- Holistic approach in close collaboration with client
- State-of-the-art software for optimizing energy vectors, zero carbon solutions and creating digital twins
- Proven experience with projects reaching FID and commercial operation
- Recognized high voltage expertise ensuring stability of GW-scale grids
- Special focus on H&S in design

Combining best available emerging technologies with proven energy solutions

We valorize our worldwide in-house experience in renewable, gas, power&heat, water and urban to reduce the risks in emerging industrial green hydrogen projects.

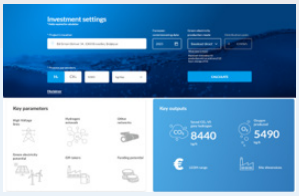
Our imaginative experts actively contribute to boost game-changing green molecule solutions.

Digital tools to support H2 projects development

Hy-Invest

Inception

Identify the most promising H2 projects



Prosumer

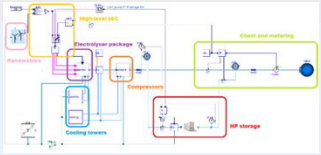
Prefeasibility - Feasibility

Strategic modeling for value chain optimization

Hy-ESS

FEED - Execution

Digital twin for dynamic plant modelization



SOME REFERENCES

INDUSTRY

The Netherlands - HyNetherlands, Owner's Engineer for the development and realization of a green H_2 production

South Africa - Mining Operations Decarbonization, EPCM mission for a proof of concept of the H_2 supply chain of one retrofitted truck before scaling up the whole fleet of 40 trucks

Germany - Owner's Design Engineer for a green H_2 production on a former coal power plant site

PIPELINE

Saudi Arabia - NEOM, Technical advisor for developing a 1000km hydrogen pipeline network for world's largest hydrogen plant

CHEMICALS

Australia - Yuri Green Ammonia, Owner's engineer for the development of a continuous green H_2 supply via on-site electrolysis

France - Masshylia Green H_2 Site for Biorefinery, Technical advisor for continuous green H_2 supply via on-site electrolysis

GREEN AMMONIA

Egypt - Technical advisor for green NH_3 and Methanol demo project before upscaling to 4GW

Chile - Technical advisor for fully integrated 2GW green NH_3 export project

OFFSHORE

United Kingdom - ERM Dolhpyn Floating Offshore Hydrogen, Integrator engineer for the demonstrator of a large scale decentralized offshore floating H_2 production

World - Fixed Offshore Hydrogen, R&D for sizeable large scale centralized offshore fixed H_2 production with offshore underground storage

CARBON CAPTURE AND UTILIZATION

France - Kerauzen, Technical advisor for e-kerosene for aviation based on green H_2 and captured CO_2 from industrial plant

Belgium - Colombus, Basic Engineering and Smart FEED for carbon neutral methane based on green H_2 and captured CO_2 from lime production

energy@tractebel.engie.com