Fact Sheet

Hydrogen: Our Way to a Climate-Neutral Future

At STEAG Energy Services (SES), we are convinced that hydrogen is playing a significant role in unleashing the full potential of renewable energies and accelerating the energy revolution as a result. To the benefit of our clients we deliver high quality concepts for the conversion of electricity into hydrogen as an alternative energy carrier or for further processing into basic chemicals.

Climate-neutral and cost-efficient

SES is committed to provide its clients with the optimal concept for the production, storage, transport and utilization of hydrogen. In order to offer a climate-neutral and cost-efficient solution, we leverage our experience in other fields of technology such as battery systems or electric boilers to your advantage.

Hydrogen and Power-to-X (PtX) solutions contribute to decarbonizing the industrial and transportion sectors and enable sector coupling - all within the framework of a sustainable energy revolution.

The starting point of PtX technology is the electrolytic production of hydrogen by using electricity from renewable energies. Through further process steps, including the integration of captured CO_2, this hydrogen can be converted into products such as methanol, kerosene or methane.

Our wide range of experience is your advantage

- Completion of a 90 MW large-scale battery system for primary reserve power
- Preliminary planning and permit application for the real-world laboratory „HydroHub“ at the Fenne site (17.7 MW PEM electrolysis)
- PtX platform Herne: Alcohol production utilizing electricity and CO_2; syngas production by co-electrolysis and plasma reactor
- Planning of a power-to-methanol plant at the Lauta and Lünen sites
- Development of an electrolysis concept and specifications at „H2 Herten“
- Study completed „Use of Compression Heat Pumps in Industrial Power Generation and (District) Heat Supply“

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Engineering

STEAG's core competencies

- Decades of experience in planning, operation, maintenance and optimization of power generation plants
- Conceptual design and support of R&D projects for CO_2 sequestration, storage/batteries, hydrogen electrolysis ranging from application for licensing to integration into existing plants
- Project development of PtX applications and industrial usage
- Technical and economic evaluation of various PtX technologies along the entire value chain
- Use of hydrogen as electricity storage (generation, storage and reconversion)

Our PtX services

- Development of technical and commercial concepts
- Preparation and conducting feasibility studies
- Identification, selection and application of suitable funding instruments
- Preparation of preliminary planning steps
- Support with licensing planning and approval processes
- Integration of various energy sources
- Preparation of technical specifications
- Drafting requests for proposals for EPC or lot-by-lot tenders and evaluation of tenders
- Conducting negotiations with suppliers
- Processing of interfaces and site integration
- Quality management and process optimization
- Comprehensive owner's engineering services

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