INP Reference

Hydrogen / H2 electrolysis plants

LOCATION: Germany

SYSTEM/TECHNOLOGY: Electrolysis

SERVICES: Production monitoring, Commissioning, Quality assurance, Documentation, Pre-project planning and tendering, Basic-engineering and pre-engineering, Detail engineering

INDUSTRY BRANCH/TYPE OF PLANT: Green Energy, Power Generation

PROJECT SIZE: >EUR 500,000

ACTIVITY PERIOD: 2022 and ongoing

POINTS OF CONTACT

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Tasks

The storage of volatile renewable energy is key to the success of the energy transition in Germany and to increasing the CO2-free share of electricity generation. The production and storage of hydrogen play a decisive role in this.

Project description

Some types of electrolyzers are well-known and proven plant components, especially in the chemical industry. The further development of electrolyzers has so far only been pursued in research plants or is being applied in pilot projects. However, to ensure the success of the energy transition, the performance of electrolyzers must be adapted and standardized for large-scale applications in energy generation/storage. In addition, the first large-scale electrolysis plants are now being planned and are in operation.

INP Services

- Optimization of the process technology of H2 electrolysers
- Standardization of components
- Creation of P&I flow diagrams
- Selection and standardization of automation
- Standardization of the interfaces
- Design of the electrical high-voltage connection
- Specification of the DC power supply (rectifier, transformer, MV filter, switch and cooling system)
- Modularization of electrical components
- Collaboration in HAZOP and participation in the documentation for functional safety
- I&C planning incl. functional safety
- Hardware and software engineering for electrolyzer and balance of plant (BoP)
- Participation in the commissioning of the electrolyzer and BoP
- Safety-related I&C testing and acceptance

INP Reference