DISPATCH MODEL FOR INTEGRATED HIGH-PRESSURE ALKALINE ELECTROLYSIS PLANTS

PEACE

Dispatch model for integrating high-pressure alkaline electrolysis into industrial processes, supporting the assessment of operating scenarios based on renewable electricity availability and downstream process requirements

Description

- Supports the integration of high-pressure alkaline electrolysis (HP-AEL) into industrial chemical plants.
- Combines renewable energy profiles with the performance characteristics of the PEACE HP-AEL concept.
- Identifies feasible operating scenarios and integration pathways with downstream processes that can benefit from increased hydrogen pressure.
- Provides a basis for assessing large-scale implementation options and developing business and financial cases.

Maturity of the Result

TRL 4-5: Model validated against realistic industrial scenarios within the HyCC project portfolio

Result Availability

Dispatch Model is protected as a HyCC trade secret; access by third parties may be considered subject to future opportunities and agreement with the IP owner.

Owner

The Hydrogen Chemistry Company (HyCC)

HyCC

Impact

01 Support the identification of commercially viable implementation scenarios for high-pressure alkaline electrolysis.

02 Enable more efficient integration of pressurised hydrogen production with downstream industrial processes, reducing the need for additional hydrogen compression.

03 Support the optimisation of electrolyser operation under variable renewable energy supply, contributing to greater flexibility and efficient use of renewable electricity

04 Provide key technical and operational inputs for business-case development, techno-economic assessment and financial modelling.

05 Strengthen decision-making for the planning, design and scale-up of future large-scale hydrogen production projects

Target Users

- Industrial hydrogen producers: Identify cost-effective HP-AEL operating strategies and deployment scenarios.
- Chemical companies and process operators: Assess opportunities for direct integration of pressurised hydrogen production with industrial processes.
- Electrolyser manufacturers: Understand industrial operating requirements and opportunities for HP-AEL system optimisation.
- Hydrogen system developers and integrators: Design and evaluate flexible electrolyser–process integration concepts under variable renewable energy supply.
- Business and project developers: Strengthen techno-economic assessments, business cases and investment decisions for large-scale hydrogen projects.

Collaboration opportunities

- Potential application to future projects
- Potential licensing to third parties

More information

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- PEACE PROJECT: https://www.h2peace.eu/

Clean Hydrogen Partnership

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