FinH₂ – Finnish runway to hydrogen business

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Research and industry working together

• FinH₂ project generates novel, sector-coupled electrolyzer solutions that will lead to new investments and increased business in the international markets for Finnish companies.
• FinH₂ is a cooperative project between VTT, LUT, Aalto University, Business Finland and 18 stakeholders from various industries. The project is an important part of ABB’s Green Electrification 2035 Veturi ecosystem.

Optimized sector coupling

• Commercial electrolyzer technology is designed for areas where the cost of electricity is high and waste heat cannot be effectively utilized. FinH₂ develops a cost-efficient concept for Combined Hydrogen and Heat production.
• Integrating hydrogen production with heat, oxygen, and grid support markets will increase revenue and make electrolyzer plants more profitable as well as accelerate market penetration.
• FinH₂ develops an optimization tool for operation scheduling and investment planning of a PEM electrolyzer to improve its business and emission reduction potential.

Electrolyzer development

• PEM electrolyzer system – optimized for sector-coupling – is designed, built and demonstrated. The target is to lower the cost and develop an iridium-free catalyst.
• Advanced alkaline electrolyzer research targets towards cost reduction and increased temperature level by research actions on cell, stack and plant level.

Networked hydrogen activities

• A networked research infrastructure is created by combining infrastructures of companies and research partners. Finland’s role in the European hydrogen network and future projects is enhanced.
• A clear picture of Finnish hydrogen value chains is formed, and research needs for electrolyzer applications are underlined. Altogether, FinH₂ enables companies to start and accelerate their hydrogen related businesses.

FinH₂ supports the development of world-leading hydrogen ecosystems by

• building new competences that enable companies to develop their product and service portfolio into competitive and value creating offering
• providing critical up-to-date knowledge and hands-on experience from the whole hydrogen value chain
• creating a networked R&D platform with concrete piloting opportunities

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In FinH₂, PEM electrolysis is studied at VTT (left) and alkaline electrolysis at Lappeenranta University of Technology (right. © Teemu Leinonen, LUT).