European Institute
for Energy Research
by EDF and KIT

SOEC KA

High Temperature Electrolyser System at Total H2 Refuelling Station Karlsruhe

Key Facts

Funding Agency
BWPLUS Baden-Württemberg Programm Lebensgrundlage Umwelt und ihre Sicherung

Project Call
Initial installation and testing of a novel solar hydrogen high-temperature electrolysis plant (SOEC) for the production and storage of renewable hydrogen at a solar hydrogen station in Karlsruhe.

Duration
2016 – 2018

Coordinator
European Institute for Energy Research (EIFER)

Partners
- Sunfire GmbH
- TOTAL Germany GmbH

Project Objectives

Initial installation and testing of a novel solar hydrogen high-temperature electrolysis plant (SOEC) for the production and storage of renewable hydrogen at a solar hydrogen station of Total Germany GmbH in Karlsruhe. The plant is designed to ensure an electrical connected load of 10 kW and a hydrogen (H2) production of about 0.22 kg/h. It will be powered by renewable energy. With the operation and the monitoring of the electrolyser under real conditions over min. 5000 h, new knowledge about the system can be acquired.

Technical objectives:

- Field monitoring
- Flexibility assessment based on test protocols developed in EIFER's labs
- Measure performance and degradation in real operative conditions

EIFER's Contribution

- System monitoring
- Authorization procedures – assess the legal frame
- Assess the local value of electrolysis inside customers applications

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The TOTAL refuelling station on Karlsruhe's Südtangente ring road was commissioned on in September 2017.

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