



# Hydrogen Europe: European Hydrogen & Fuel cell Project Database

## Project RESelyser

Hydrogen from RES: pressurised alkaline electrolyser with high efficiency and wide operating range

The project RESelyser develops high pressure, highly efficient, low cost alkaline water electrolyzers that can be integrated with renewable energy power sources (RES) using an advanced membrane concept, highly efficient electrodes and a new cell concept. A new concept with a three electrolyte loop system will be developed demonstrating even higher performance than conventional two electrolyte loop systems. This three electrolyte loop system will use a new separator membrane with internal electrolyte circulation and an adapted cell to improve mass transfer, especially gas evacuation. Intermittent and varying load operation connected to an RES will be addressed by improved electrode stability and a cell concept for increasing the gas purity of hydrogen and oxygen especially at low power as well as by a system concept. Electrolysers up to 10 kW with 2 Nm<sup>3</sup>/h hydrogen production will be realized in the project. The primary pressure of the electrolyser will be up to 50 bar (without the use of a compressor) to reduce the power loss for hydrogen compression to a minimum. All components of the system will be analyzed for their costs and developed to reduce the system price such that hydrogen can be produced at system costs of 3000 € per (Nm<sup>3</sup>/h) plant capacity. An extrapolation to a primary electrolyser pressure of 100-150 bar is considered.

## Project Information

**Type of project :** Research

**Timing :** 01/11/2011 > 30/04/2015

**Project website:** <http://www.reselyser.eu/>

**Project Budget :** 2.888.957 €

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## Funding

European Union through FCH JU: **Grant agreement 278732 - CORDIS link**

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## Project partners

**Coordinator :**

[DLR - German Aerospace Center](#)

**Partners :**

[Hydrogenics Europe](#)

[DVGW - German Technical and Scientific Association for Gas and Water](#)

[VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V.](#)

## Sub project(s)

### Sub project 1

**Country:** Germany

**Address:**

Linder Hoehe 51147 KOELN

**Sub project categories**

Research

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Project Id: 1077

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