



# Hydrogen Europe: European Hydrogen & Fuel cell Project Database

## Project EURECA

Efficient use of resources in energy converting applications

EURECA develops the next generation of  $\mu$ -CHP systems based on advanced PEM stack technology. The idea is to overcome the disadvantages of complex gas purification, gas humidification and the low temperature gradient for the heat exchangers in a heating system. EURECA will develop a new stack generation based on PEM technology with operating temperatures of 90°C to 120°C. This results in a less complicated and therefore in a more robust  $\mu$ -CHP system with reduced costs. The development of a new stack generation includes various parallel working tasks. EURECA will optimize materials to operate in that temperature range – including membrane and bipolar plate materials. Also the catalyst will be improved with a lower platinum loading – design target < 0.2g/kW. The stack design and the flow field of the bipolar plates will be optimized for the operating conditions. All development steps will be supported by state-of-the-art modeling. As the final step the developed stack will be integrated in an adapted  $\mu$ -CHP system to achieve proof-of-concept in the target application. Important part of the project is the validation of the design targets. The  $\mu$ -CHP system – including the reformer – is expected to operate at an electrical efficiency of 40%. Lifetime tests with defined test procedures on single cells and short stacks will indicate a stack lifetime of approx. 12.000 h. In all development processes the partners have agreed to a design-to-cost approach. This includes the producibility in series production processes. A cost assessment will indicate the cost savings by the less complicated system. The consortium is well balanced along the supply chain. Component suppliers and system designers are backed by research institutions. High quality of the development process is of top priority to all partners. Therefore the consortium will agree at the beginning of EURECA on specific quality and management procedures - including contingency planning measurements.

## Project Information

**Type of project :** Research

**Timing :** 01/07/2012 > 31/08/2015

**Project website:** <http://www.project-eureca.com>

**Project Budget :** 6.299.714 €

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## Funding

European Union through FCH JU: Grant agreement 303024 - [CORDIS link](#)

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## Project partners

**Coordinator :**

[DLR Institute of Networked Energy Systems](#)

**Partners :**

[CEA - Commissariat à l'énergie atomique et aux énergies alternatives](#)

[FORTH/ICEHT - Foundation for Research and Technology - Hellas/ Institute of Chemical Engineering Sciences](#)

[EURECA](#)

[Fraunhofer ICT-IMM Fraunhofer Institute for Chemical Technology ICT, Branch IMM](#)

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## Sub project(s)

### Sub project 1

**Country:** Germany

**Address:**

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**Sub project categories**

Research

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Project Id: 961

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