



# Hydrogen Europe: European Hydrogen & Fuel cell Project Database

## Project IDEALHY

### Integrated Design for Efficient Advanced Liquefaction of Hydrogen

Hydrogen is an important energy carrier as a viable future clean transport fuel. H<sub>2</sub>-fuelled vehicles are affordable, infrastructure investments are manageable and H<sub>2</sub> and electric mobility are required to meet future CO<sub>2</sub> emission targets. Plans are made to implement H<sub>2</sub>-refuelling infrastructure in Germany followed by roll-out over Europe by 2015. Logistically, liquid H<sub>2</sub> appears the only viable option to supply the larger stations in the medium term. Without developing a liquefaction capacity, there is a serious risk to H<sub>2</sub>-infrastructure development and implementation. However, at present liquefaction of H<sub>2</sub> is expensive, energy intensive and relatively small scale. Reduction of liquefaction costs via technology development and increased competition is crucial. IDEALHY is an enabling project for viable, economic liquefaction capacity in Europe, to accelerate rational infrastructure investment, and enable the rapid spread of H<sub>2</sub>-refuelling stations across Europe. The IDEALHY project researches, develops and scales-up data and designs into an optimised design for a generic liquefaction process at a scale of 30-50 te/day, representing a very substantial upscale over proposed and existing LH<sub>2</sub>-plants. The project also develops a detailed strategic plan for a prospective large-scale demonstration of efficient H<sub>2</sub>-liquefaction with options for location. The focus is to improve substantially efficiency and reduce capital costs of liquefaction through innovations, including linking LH<sub>2</sub> production with LNG terminal operations to make use of available cryogenic temperatures for pre-cooling. Supporting economic and lifecycle assessment of the resulting gains in energy efficiency will be made, together with a whole chain assessment based on near term market requirements. IDEALHY will be undertaken by a partnership comprising world leaders in H<sub>2</sub> distribution and liquefaction technologies, research institutes, academic partners and pioneering SME suppliers to the liquefaction industry.

## Project Information

**Type of project :** Research

**Timing :** 01/11/2011 > 31/10/2013

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

**Project Budget :** 2.117.530 €

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## Funding

European Union through FCH JU: [Grant agreement 278177 - CORDIS link](#)

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## Project partners

**Coordinator :**

**SHELL GLOBAL SOLUTIONS INTERNATIONAL B.V.**

**Partners :**

**Linde Kryotechnik AG**

**SINTEF ENERGI AS**

**LOUGHBOROUGH UNIVERSITY**

**TECHNISCHE UNIVERSITAET DRESDEN**

**NORTH ENERGY ASSOCIATES LIMITED**

**WEKA AG**

**PLANET PLANUNGSGRUPPE ENERGIE UND TECHNIK GBR**

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**Sub project(s)**

**Sub project 1**

**Country:** Netherlands

**Address:** Carel van Bylandtlaan 23 2596 HP The Hague

**Sub project categories**

Research

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Project Id: 1019

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