



# Hydrogen Europe: European Hydrogen & Fuel cell Project Database

## Project NEPTUNE

Next Generation PEM Electrolyser under New Extremes

Water electrolysis supplied by renewable energy is the foremost technology for producing “green” hydrogen for fuel cell vehicles. The ability to follow rapidly an intermittent load makes this an ideal solution for grid balancing. To achieve large-scale application of PEM electrolyzers, a significant reduction of capital costs is required together with a large increase of production rate and output pressure of hydrogen, while assuring high efficiency and safe operation. To address these challenges, a step-change in PEM electrolysis technology is necessary. The NEPTUNE project develops a set of breakthrough solutions at materials, stack and system levels to increase hydrogen pressure to 100 bar and current density to 4 A cm<sup>-2</sup> for the base load, while keeping the nominal energy consumption

## Project Information

**Type of project :** Research

**Timing :** 01/02/2018 > 31/01/2021

**Project Budget :** 1.926.221 €

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## Funding

European Union through FCH JU: [Grant agreement 779540 - CORDIS link](#)

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## Project partners

**Coordinator :**

ITM POWER (TRADING) LIMITED

**Partners :**

[CNR - Consiglio Nazionale delle Ricerche](#)

[ENGIE](#)

[EWII Fuel Cells A/S \(previously IRD\)](#)

[PRETEXO](#)

[SOLVAY SPECIALTY POLYMERS ITALY SPA](#)

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## Sub project(s)

10/30/2018

NEPTUNE | Hydrogen

Project Id: 1246

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