



Hydrogen Europe: European Hydrogen & Fuel cell Project Database

Project DEMCOPEM-2MW

Demonstration of a combined heat and power 2 MWe PEM fuel cell generator and integration into an existing chlorine production plant

The project DEMCOPEM-2MW is to design, construct and demonstrate an economical combined heat and power PEM fuel cell power plant (2 MW electrical power and 1.5 MW heat) and integration into a chlor-alkali (CA) production plant. A chlor-alkali production plant produces chlorine and caustic soda (lye) and high purity hydrogen. The hydrogen contains almost 45% of the energy that is consumed in the plant. In many cases this hydrogen is vented. The project will demonstrate the PEM Power Plant technology for converting the hydrogen into electricity, heat and water for use in the chlor-alkali production process, lowering its electricity consumption by 20%. The partners have relevant experience in long life high efficient PEM power plant systems in hazardous environments like a chlor-alkali plant. The PEM power plant will be fully integrated into the chlorine production unit and will also be remotely controlled. The water produced by the oxidation of hydrogen is also used. To reduce the (maintenance) cost of the integrated plant special emphasis is put on the longevity of the fuel cells (especially membranes, electrodes and catalyst) and to lower the manufacturing costs. The design is optimized for minimal energy loss. Extensive diagnostics and data acquisition are incorporated to monitor the performance. The demonstration will take place in China as this is the ideal starting point for the market introduction. High electricity prices (up to 2 times higher than in Europe), 50% of the chlor-alkali world production and rationing of electricity all contribute to the business case. A successful demonstration will pave the way for the roll out of the technology, staged cost efficiencies and further self-sustained market and technology developments.

Project Information

Type of project : Demonstration

Timing : 01/01/2015 > 31/12/2018

Project website: <http://www.demcopem-2mw.eu>

Project Budget : 10.524.200 €

Funding

European Union through FCH JU: **Grant agreement 621256 - [CORDIS link](#)**

Project partners

Coordinator :

[Akzo Nobel Industrial Chemicals BV](#)

Partners :

[Nedstack fuel cell technology B.V.](#)

[MTSA Technopower B.V](#)

[Johnson Matthey Fuel Cells Limited](#)

POLITECNICO DI MILANO

Sub project(s)

Sub project 1

Country: Netherlands

Address:

STATIONSSTRAAT 77 3811 MH AMERSFOORT

Sub project categories

Demonstration

Project Id: 941

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