

EUROPEAN COMMISSION

SEVENTH FRAMEWORK PROGRAMME
FUEL CELLS AND HYDROGEN JOINT UNDERTAKING (FCH JU)
THEME SP1-JTI-FCH.2013.3.5

Field demonstration of large scale stationary power and CHP fuel cell system

GA No. 621256



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

Deliverable No.	DEMCOPEM-2MW D6.7	
Deliverable Title	Protocols for advanced stack voltage monitoring	
Dissemination level	Confidential	
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Issue date	27-9-17	

Publishable summary

Cell to cell voltage measurement is a state-of-the-art method of monitoring the performance of a PEM fuel cell stack. An overview of the operating conditions of the cells in a stack is a crucial element of the stack control strategy, vital to maintain a high efficiency of the stack throughout its operation lifetime. The main drawbacks of the currently used single cell voltage monitoring system are high cost of the electronic circuit board, sensitivity to electromagnetic disturbances and resulting data distortion, and the huge size and required processing effort of the generated log data. Therefore, the historical cell voltage data collected throughout the operation of DEMCOPEM-2MW power plant is investigated and several cases of cell voltage related events are used to verify a possibility to simplify the current cell voltage monitoring method and reduce or eliminate its disadvantages.

Acknowledgment

This project is co-funded by the 7th FP (Seventh Framework Programme) – Fuel Cells and Hydrogen Joint Undertaking

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The FP7 project has been made possible by a financial contribution by the European Commission under Framework Programme 7. The Publication as provided reflects only the author's view.

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