



Delfzijl Joint development of green Water Electrolysis at Large-Scale

Fuel Cells and Hydrogen Joint Undertaking (FCH JU)
Grant Agreement No. 826089

Deliverable 9.8: Public Event at the Start of the Project



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Acknowledgments

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INTRODUCTION

The Djewels project officially commenced on the 1st of January 2020. At the time it was decided together with the FCH JU that a physical public event as such would not be necessary and perhaps somewhat beyond the point. We therefore agreed that the consortium partners would instead send out press releases to announce the project and its start. These press releases are included in the Annex of this document. This thereby constitutes Deliverable 9.8.

ANNEX – PRESS RELEASES

Media release

Nouryon-led consortium wins EU backing for pioneering green hydrogen project

Home > News and events > News Overview > 2020 > Nouryon-led consortium wins EU backing for pioneering green hydrogen project

22 Jan 2020 - News

A consortium comprising Nouryon, Gasunie and four other partners will receive an €11-million European grant towards their proposed green hydrogen project in Delfzijl, the Netherlands. The project is a front-runner among several hydrogen initiatives aimed at cutting carbon emissions and will be a significant milestone in the transition to a more sustainable, circular economy, the companies say.

The funding is granted by the Fuel Cells and Hydrogen Joint Undertaking (FCH-JU), a partnership of the European Commission and industry that supports the development of innovative hydrogen technologies. The 20-megawatt (MW) electrolyzer, to be owned and operated by Nouryon and Gasunie, would be the first of its kind to be implemented in Europe on this scale.

The other four partners involved are: McPhy, which will provide its innovative alkaline electrolysis technology to convert renewable electricity into 3,000 tons of green hydrogen per year; BioMCN, which will combine the hydrogen with CO₂ from other processes to produce renewable methanol, reducing CO₂ emissions by up to 27,000 tons per year; DeNora, a producer of electrodes, a key component of the electrolysis technology; and sustainable energy consultant Hincio.

The project is also supported by an additional €5 million in subsidies from *Waddenfonds*, a fund that invests in projects in the northern Netherlands.

Knut Schwalenberg, President Industrial Chemicals at Nouryon, said: "This project will be a stepping-stone for the circular economy. With the support of the EU and the region and backed by an experienced technology supplier and customer agreements, we are ready to move to the next phase of implementing Europe's first large-scale hydrogen plant in support of a more sustainable future."

Bart Biebuyck, Executive Director FCH-JU, added: "The FCH JU supports the development of high-performance electrolyzers by European industry that can operate dynamically on renewable energy, helping to balance the electricity grid. Scaling up in this field is key for sustainable industry, transport and buildings and this project is a firm step in moving towards electrolysis of hundreds of megawatts or even gigawatts."

Nouryon and Gasunie plan to take a final investment decision for the plant in 2020. In parallel, the two companies are studying options to increase the plant's electrolyzer capacity from 20 MW to 60 MW to make green hydrogen to produce sustainable jet fuel in a project with another group of partners.

Ulco Vermeulen, member of the Executive Board and Director Participations & Business Development at Gasunie, said: "Scaling up is the keyword here. From our 1 MW electrolysis project Hystock, via this 20 MW electrolysis installation in Delfzijl, towards gigawatts in 2030. Gas infrastructure will play a facilitating role in the energy transition as we will be transporting energy carriers, such as hydrogen, increasingly through our pipelines."

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22 Jan 2020

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More news

NorthH₂ welcomes new international partners RWE and Equinor

7 Dec 2020

Following the launch of the NorthH₂ project on 27 February 2020, Gasunie, Groningen Seaports and Shell Nederland welcome two new partners, RWE and Equinor to...

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Industrial hydrogen: a 20 MW project in the Netherlands



McPhy to equip the largest zero-carbon hydrogen site in Europe

- The first zero-carbon hydrogen plant on this scale to be implemented in Europe, with a production capacity of 3,000 tons per year (20 MW)
- A project initiated by Nouryon and Gasunie, two leading industrial groups, to be installed in Breda, the Netherlands
- Reducing CO₂ emissions by up to 27,000 tons per year, pointing towards the decarbonisation of the industry sector

La Hese Breda (France, January 22, 2020) – 08:00 am CET – McPhy (Bourse Park Compartment C, McPhy: EHX01001205), a specialist in hydrogen production and distribution equipment, today announces it has been selected to equip the largest electrolysis plant for zero-carbon hydrogen production, the first of its kind on this scale in Europe.

Laurent Carma, Chief Executive Officer of McPhy, states: "We are proud of the trust we received from Nouryon and Gasunie, two major industrial groups. The size and scope of this project, as well as the deep integration into our customers' processes, represent a major step change for McPhy and more generally for the hydrogen market. Now is the time to scale-up and industrialise clean hydrogen production technologies to lower their costs and boost the use of clean, secure and cost-competitive hydrogen ecosystems."

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Marcel Geljns, Energy Director at Nouryon Industrial Chemicals, adds: "Green hydrogen is a cornerstone of building a sustainable, circular economy. Nouryon is already a leader in electrolysis in Europe and with the technology from McPhy we are one step closer to competitive large-scale production of green hydrogen for a more sustainable future."

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The first large-scale zero-carbon hydrogen project to be implemented in Europe

The 20 MW hydrogen production platform will be designed, manufactured and integrated by McPhy with its innovative electrolysis technology "Augmented McPhy" and **convert green electricity by electrolysis into 3,000 tons of clean hydrogen per year**. This will be used to produce bio-methanol and will **contribute to reducing CO₂ emissions by up to 27,000 tons per year**.

This project, initiated by Nouryon, a leading specialty chemical company and Gasunie, a gas infrastructure company, is a **front-runner among hydrogen initiatives with the objective of reducing carbon emissions**.

The project's value chain breaks down as follows:

- Conversion of electricity from renewable sources into zero-carbon hydrogen (by the 20 MW electrolysis platform developed by McPhy)
- Transport of hydrogen from the point of production to the point of consumption
- Production of clean methanol

The proposed clean hydrogen project will be **funded by an €7m EU grant from the Fuel Cells and Hydrogen Joint Undertaking (FCU JI) as well as an additional €5m in subsidies from Waddenshuis**, a fund that invests in projects in the Netherlands.

McPhy, a technological breakthrough allowing hydrogen to transition to an industrial scale

Following a technological review conducted by Nouryon, the innovative electrolysis technology "Augmented McPhy" by McPhy has been selected to be the cornerstone of this key project.

This reflects our constant innovation policy as well as our experience in large-scale platforms electrolysis.

"This reflects our constant innovation policy as well as our experience in large-scale platforms electrolysis. Our electrolysis platform produce zero-carbon hydrogen with best-in-class performances. This project confirms the relevance of our technological positioning and our transition to an industrial scale, in order to better meet the future needs of the industry as well as the mobility and energy sectors," concludes Laurent Carma.

The "Augmented McPhy" technology consists of a unique combination of McPhy's low high-pressure alkaline electrolysis and a package of advanced electrodes, specifically designed for large-scale platforms (up to 200 MW).

It is currently the most mature and robust technology available on the market, recognised among the market leaders and one of the most promising in terms of future development. McPhy will be involved in the pre-engineering phase and subsequently in the detailed engineering, production and commissioning of the electrolysis platform.

3D simulation of the 20 MW electrolysis platform equipped with McPhy technology Augmented McPhy

Consortium members & funders

Upcoming financial communication
2019 annual meeting: Sunday January 28, 2020, after market.

Download the release (PDF)

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About McPhy

In the framework of the energy transition, and as a leading supplier of hydrogen production, storage and distribution equipment, McPhy contributes to the development of clean hydrogen throughout the world. Thanks to its wide range of products and services dedicated to the hydrogen energy, zero-emission mobility and industrial hydrogen markets, McPhy provides turnkey solutions to its clients. These solutions are tailored to our client applications: renewable energy storage and valorisation, fuel cell and refuelling, zero-emission for industrial sites.

As a designer, manufacturer and integrator of hydrogen equipment since 2008, McPhy has three development, engineering and production units based in Europe (France, Italy, Germany). The company's international subsidiaries ensure a global sales coverage. McPhy's technical hydrogen solutions. McPhy is based on 1950 Boulevard Paris (Segment C, 53M code 05501-62329-53468-MCPhy). www.mcphy.com

Media relations

News/Co
Nicolas Mengesha
T: +33 (0)1 44 71 84 98
nmeng@mcph.com

Investor relations

Invest/Co
Sébastien Carlier / Emmanuel Kuylen
T: +33 (0)1 44 71 20 40
scarlier@mcph.com

About Nouryon

We are a global specialty chemicals leader. Markets worldwide rely on our essential chemistry in the manufacture of everyday products such as paper, plastics, building materials, food, pharmaceuticals, and personal care items. Building on our nearly 400-year history, the dedication of our 92,000 employees, and our shared commitment to business growth, strong financial performance, safety, sustainability, and innovation, we have established a world-class business and built strong partnerships with our customers. We operate in over 80 countries around the world and our portfolio of industry leading brands includes Oxo, Dicalcium, Tegosec, and Dens.

About Gasunie

Gasunie is a European gas infrastructure company. Gasunie's network is one of the largest high-pressure pipeline networks in Europe, comprising over 11,000 kilometers of pipelines in the Netherlands and within Europe. Gasunie works to help accelerate the transition to a CO₂-neutral energy supply and believes that gas-related innovations, like research in the field of renewable green gases such as hydrogen and green gas, can make an important contribution. Both existing and new gas infrastructure play a key role here.

About the Fuel Cells and Hydrogen Joint Undertaking (FCU JI)

The Fuel Cells and Hydrogen Joint Undertaking (FCU JI) is a unique partnership between the European Commission and the industry to fund and support the development of hydrogen technologies including research, technological development and demonstration (RD&D) activities in fuel cell and electrolysis energy technologies in Europe. We aim to accelerate the market introduction of these technologies, reducing their potential as an instrument in achieving a carbon clean energy system.

The three members of the FCU JI are the European Commission, fuel cell and hydrogen initiatives represented by Hydrogen Europe and the research community represented by Hydrogen Europe Research.

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January 22 2020 o NEWS

De Nora to supply electrodes to the largest GREEN HYDROGEN plant in Europe

Milan—January 22, 2020 —The project initiated by **Nouryon** and Gasunie will realize in Delfzijl, the Netherland, the largest **ZERO – CARBON HYDROGEN PLANT** in Europe, with a production capacity of 3,000 ton/year (20 MW). GREEN HYDROGEN will be deployed for the decarbonization of the industry sector reducing by 27,000 ton/year CO2 emission.



Hydrogen production is based on **McPhy** innovative alkaline water electrolysis technology "Augmented McLyzer", specifically designed for large scale installations and equipped with De Nora special electrodes.

De Nora "electrode package" installed in McPhy electrolyzer allows generation of hydrogen with the lowest TCO – Total Cost of Ownership – through a substantial reduction of the overall plant footprint (maximizing the operating current density) and the optimization of the total power consumption (increasing efficiency and operating pressure), while, at the same time, having a low cost of the electrolyzer.

Luca Buonerba, De Nora's Chief Marketing & Business Development Officer states: "*This is the first installation of our latest generation of advanced electrode package for water electrolysis.*

We are happy that our continuous efforts to achieve better performances are shortening the roadmap towards a sustainable solution for the decarbonization and the energy transitions.

Our large footprint is already set up to serve all water electrolysis manufacturer with advanced solution in the quantities projected by all the latest studies.

I'm excited that this project is finally starting and what we anticipated is becoming a reality: The Energy Transition is happening NOW!



Industrie De Nora S.p.A.

Via Leonardo Bistolfi, 35
20134 Milan Italy

Ph. +39 02 21291
info.idn@denora.com

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Hinicio is a key partner within "Djewels": pioneering the European renewable eFuels market created by RED2



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January 23, 2020 Carlos Lopez Uncategorized

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