

 Press release

## McPhy has participated in the laying of the first stone of “Jupiter 1000”, France’s first Power-to-Gas demonstrator, to help power networks support the energy transition

- A decisive project in the deployment of the Power-to-Gas process in France, one of McPhy’s key markets;
- Ramping up of McPhy: 13.5 MWe of electrolysis in Power-to-Gas, with a potential for 17,000 km of clean mobility / day; first key references on the new carbon-free hydrogen market for industry.

*La Motte-Fanjas (France), December 19, 2017 – McPhy (Euronext Paris Compartment C: MCPHY, FR0011742329) specialist in hydrogen production, storage and distribution equipment, has participated in the laying of the first stone of the “Jupiter 1000” demonstrator, France’s first Power-to-Gas demonstrator connected to the natural gas transportation network, in Fos-sur-Mer.*

*“Our pioneering solutions at the forefront of innovation meet the colossal energy storage needs resulting from the energy transition.”*

Pascal Mauberger, Chairman and Chief Executive Officer of McPhy, says “We are very pleased to be able to provide our expertise in the field of electrolysis to the Jupiter 1000 project, a unique project in France involving all of the Power-to-Gas value chain’s players and enabling the wide-scale deployment of this innovative technology.

Key components of the demonstrator, our PEM<sup>1</sup> and alkaline electrolyzers will enable surplus green electricity to be recycled in the form of hydrogen. For the first time, these two technologies will be compared on an industrial scale and under the same usage conditions, which represents a real breakthrough for our industry. Lastly, this project clearly illustrates McPhy’s ramping up this year. Indeed, we have deployed numerous projects on our key mobility, Power-to-Gas and industry markets. Our pioneering solutions at the forefront of innovation meet the colossal energy storage needs

resulting from the threat of climate change and the necessary transition to carbon-free energy.”

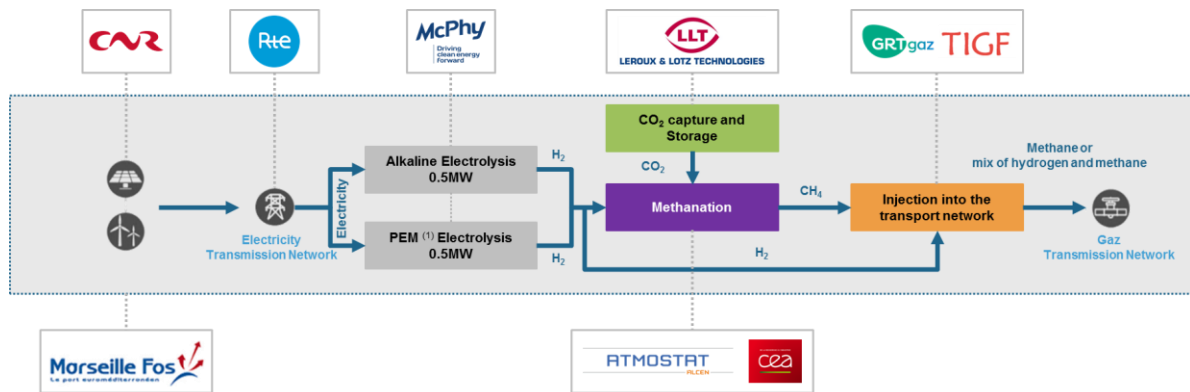
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1 Proton Exchange Membrane

## Power-to-Gas: decompartmentalize electricity and gas networks to make the energy transition a success.

The first Power-to-Gas project connected to the French gas transportation network, baptized “Jupiter 1000”, is being built in Fos-sur-Mer. This 1 MW demonstrator will enable the transition from the concept phase to an industrial tool. The purpose of this unique French project is to test the technical and economic viability of Power-to-Gas, by detecting and dealing with any technical, economic or regulatory difficulties, in order to reduce long-term investment and operating costs, and allow the deployment of a new wide-scale renewable gas production segment.

Coordinated by GRTgaz, this project involves a group of French partners with complementary areas of expertise: McPhy for the electrolysis phase, Atmosstat and the CEA (French atomic energy commission) for the methanation reactor, Leroux & Lotz for the CO<sub>2</sub> capture technology, the CEA for the R&D, CNR for the supplying of surplus renewables and ensuring the future remote steering of the facility, RTE for the processing of electrical data and GRTgaz and TIGF to manage the injection into gas networks.



Note: (1) : Proton Exchange Membrane

CH<sub>4</sub> = Methane      CO<sub>2</sub> = carbon dioxide      H<sub>2</sub> = hydrogen

## Ramping up of McPhy: deployment of innovative solutions at the heart of the global development of clean hydrogen as a key element of the transition to carbon-free energy

- **Clean mobility: acknowledged expertise acclaimed by prestigious partners, deployment of stations offering the potential for 17,000 km per day of clean mobility.**
  - *January 2017:* McPhy and its partners win the \$1 million H<sub>2</sub> Refuel H-Prize organized by the U.S. Department of Energy to encourage the development of a competitive small-scale hydrogen station that can become an integral part of the hydrogen refueling infrastructure network and the democratization of fuel cell electric vehicles;
  - *March 2017:* McPhy is granted the exclusive European distribution rights for SimpleFuel™, the compact all-in-one refueling station covering hydrogen generation, compression, storage and distribution for mobility;
  - *April 2017:* inauguration of FaHyence, the first hydrogen station connected to an electrolyzer able to produce hydrogen on-site and on-demand from renewable energies for sustainable mobility;



- *July 2017*: 1<sup>st</sup> contract on the UK hydrogen refueling station market for McPhy, which will provide a refueling solution for Riversimple, a Welsh company that is reinventing clean mobility by launching an all-inclusive service for using its hydrogen fuel cell concept cars that reduces environmental and health impacts;
  - *August 2017*: delivery of a McFilling 20-350 station in Singapore for ENGIE's REIDS project;
  - *December 2017*: inauguration of the Rouen hydrogen station, within the framework of the Eashymob European hydrogen mobility project led by the Normandy Region, the 1<sup>st</sup> McPhy station installed in a town center.
- **Power-to-Gas: the ability to provide a response to the major issues that are energy storage and network regulation on a market in its deployment phase; 13.5 MW of high-power electrolysis already or currently being installed**
  - *January 2017*: On the booming renewable energy storage market, McPhy wins a major contract to supply German green energy firm EnergieDienst with a clean hydrogen production solution on the site of its Wyhlen hydroelectric plant and help it monetize production;
  - *June 2017*: McPhy delivers, to its client Jiantou Yanshan (Guyuan) Wind Energy, a subsidiary of the state-owned manufacturer for Hebei province, 4 MW of hydrogen production equipment, thus strengthening its positioning on multi-MW international projects. This major reference confirms McPhy's ability to execute large-scale projects for converting renewable energy into hydrogen destined to be injected into the network or used as a commodity;
  - *September 2017*: McPhy wins a €1.3 million international contract to equip the highly-innovative methanation facility operated by Austrian group RAG. The rapid response to variations in the electric power of the solution provided by McPhy allows it to position its equipment as the perfect tool for managing grid stability in the face of growing levels of energy from renewable sources and for participating in primary and secondary reserve;
  - *December 2017*: Laying of the first stone of the "Jupiter 1000" demonstrator, France's first Power-to-Gas demonstrator connected to the natural gas transportation network, in Fos-sur-Mer. McPhy is contributing its expertise in electrolysis technology to this project.
- **Industry: highly-competitive technology enabling industrialists to combine economic performance and environmental efficiency**
  - *July 2017*: Following the CPI Zaoquan thermal power plant in China's Ningxia region, McPhy will equip a power plant in Lebanon for a Power Plant Cooling application. By winning this latest contract for Thyssenkrupp TKUCE, McPhy reaffirms the efficiency of its range of MCLyzer generators for the competitively-priced on-site production of the hydrogen required for cooling circuits to operate in thermal power plants.
  - *December 2017*: McPhy delivers, to Linde, the hydrogen production equipment for the *Pôle Utilité Services PUS* operated by ENGIE Cofély, which supplies Minatec's semiconductor fabs in Grenoble.



## Outlook:

2017 saw a real acceleration in the global development of clean hydrogen. McPhy offers technologies at the forefront of innovation that are ready to be deployed and have already been chosen by prestigious partners on a global level.

We are therefore confident in our ability to seize these opportunities that should lead to further buoyant growth in our activity in 2018.

### 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 deployment 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 surplus storage and valorization, fuel cell car refueling, raw material 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 of McPhy's innovative hydrogen solutions.

McPhy is listed on NYSE Euronext Paris (Segment C, ISIN code: FR0011742329; ticker: MCPHY).

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