

McPhy's Solid Hydrogen Solution Chosen for Wind/Solar Energy Storage in Nottingham University's "Creative Energy Homes" Project

Grenoble, September 5th, 2011 – McPhy Energy, a leader in solid hydrogen storage technology, has announced that Nottingham University has chosen the company's solution for mid-term storage of renewable energy in a residential micro-grid under its "Creative Energy Homes" (CEH) project. The ongoing CEH project aims to stimulate sustainable design ideas and promote new ways of providing affordable, environmentally sustainable housing that are innovative in their design. McPhy Energy has a safe, innovative and environmentally friendly solution for storing energy as solid hydrogen. The McPhy solution will be used for storage of surplus solar and wind energy under a new phase of the CEH project, which targets greater energy-autonomy for the homes via a dedicated micro-grid.

Nottingham University's Creative Energy Homes represent a unique research facility. The homes built under the program incorporate a range of low carbon technologies including renewable micro generation from solar, wind and ground source heat pumps. The houses have operated individually using only the renewable energy generated at that property. However, a practical, multi-home storage solution for surplus energy is needed to cover peak periods, especially after sundown and during periods of little or no wind.

To respond to this challenge, this new phase of the CEH project is building a microgrid that will provide an energy management system across several houses. The project will investigate the optimum performance for storing surplus energy as solid hydrogen in McPhy Energy's MCP-N-4, a magnesium hydride (MgH₂)-based storage tank, within the microgrid. The hydrogen will then be used to feed the fuel cells on an as-needed basis.

"Having a combination of energy stores will provide a more robust system, with McPhy Energy's solid hydrogen tanks used primarily for mid-term energy storage, and using batteries for short term energy requirements," explains Gavin Walker, Professor of Sustainable Energy at the University of Nottingham, "Determining the best way of using both hydrogen and fuel cells within a microgrid is an important question that still needs to be addressed."

"McPhy Energy is very pleased that our solid hydrogen storage systems have been chosen for this innovative project," says Pascal Mauberger, CEO of McPhy Energy. "This marks our first foray into the dynamic UK renewable energy market. While we are involved in many industrial-scale projects, we believe Nottingham University's Creative Energy Homes is the first in the world to investigate the use of solid hydrogen as a mid-term solution for energy autonomy on a residential micro-grid scale."

While hydrogen has long been considered an excellent energy source, it has traditionally required high-pressure storage, which presents security concerns. Storing hydrogen in its solid state using environmentally friendly, low-cost, readily available and fully-recyclable magnesium hydrides involves a unique technology implemented by McPhy Energy. McPhy's solid hydrogen storage tanks are safe, energy neutral, cheap, easily transportable and quickly chargeable and dischargeable. No other current means of hydrogen storage can list all of these advantages, making it a particularly attractive solution for renewable energy.

About McPhy Energy

McPhy Energy was created in 2008, with the mission to industrialize and commercialize an innovative solid hydrogen storage technology using magnesium hydrides, which offers unique advantages compared to other hydrogen storage solutions. The technology addresses the merchant hydrogen and renewable energy markets. McPhy owns exclusive rights on a portfolio of unique patents, which results from over 8 years of research at the CNRS and CEA, in partnership with Joseph Fourier University. A member of the TENERDIS cluster, McPhy Energy is involved as a partner or a subcontractor in several research projects. For further information, see <http://www.mcphy.com>

About Nottingham University & the Creative Energy Homes project

The University of Nottingham is ranked in the UK's Top 10 and the World's Top 70 universities. It provides innovative and top quality teaching, undertakes world-changing research, and attracts talented staff and students from 150 nations. Twice since 2003 its research and teaching academics have won Nobel Prizes. The University's Creative Energy Homes initiative is building sustainable homes on the campus to allow the testing of different aspects of modern methods of construction, including sustainable and renewable energy technologies. For more information see <http://www.energy.nottingham.ac.uk>