

Europe's largest Single-Stack-Electrolyser for regulating the electricity grid and producing green hydrogen for the food retailer

Kick-off meeting of the Demo4Grid project at the Green Energy Center Europe in Innsbruck from the 12th March to 14th March 2017

The EU looks towards 27% of renewable energy consumption in 2030. The penetration of intermittent renewable electricity based on solar and wind energy increases the need to match supply and demand for power. Electrolysis is a means to convert excess electricity into hydrogen that can be stored and re-electrified at a later time, or used for other energy consuming or industrial processes. As a flexible load the, alkaline water electrolysis can also offer grid balancing services provided that it is of sufficient capacity and responsiveness to participate in the power industry's balancing markets.

Thus, DIAD (Diadikasia Business Consultants S.A., coordinator of the project, Greece), IHT (Industrie Haute Technologie S.A., Switzerland), FHA (Fundación Hidrógeno Aragón, Spain), INYCOM (Instrumentación y Componentes S.A., Spain), MPREIS (MPREIS Warenvertriebs GmbH, Austria) and FEN-SYSTEMS (FEN Sustain Systems GmbH, Austria) are partners in an international consortium of the European Union-funded project: "Demo4Grid" (Demonstration for Grid Services) called up by the FCH 2 JU (Fuel Cell and Hydrogen Joint Undertaking 2).

The project will support the electricity grids by generating merchant hydrogen for mobility and heating application. The final goal is to provide grid balancing services to the transmission system operator APG (primary and secondary balancing services), to participate in TIWAG's intra-day and spot markets to generate cost-competitive hydrogen as well as to use surplus hydro-power energy from a station currently near to the electrolysis plant.

The electrolysis plant is installed in Völs near Innsbruck. As of 2019, the energy plant will be built and operated in the facilities of MPREIS. IHT will build an alkaline pressure electrolyser with a maximum power consumption of 4 MW for the project and will operate it together with INYCOM, which develops a remote control centre for advanced maintenance and smart operation. In parallel, MPREIS, end user, will supervise operation and integration in their facilities, DIAD and FEN will lead exploitation and commercialization activities to explore replication of the project, FHA will be in charge of dissemination and communication of results and DIAD will coordinate and manage DEMO4GRID, being the link with the European Commission.

The resulting hydrogen is thermally utilized in the MPREIS production plants and replaces fossil natural gas for the heating of the ovens.

In addition to valorization of hydrogen for heating applications at MPREIS facilities, this project also provides the basis for the introduction of fuel cell electric vehicles (FCEV) based mobility in the short to medium term in Innsbruck by making use of the 4 MW alkaline electrolyser production. "With this facility, we are able to use our own resources, our green Tyrolean electricity to make the public bus traffic in the greater Innsbruck area noise and emission-free. In addition, the added value remains in the country and we must import less fossil fuels. Bolzano is a step ahead of us, where hydrogen-powered buses have already established themselves. The completed pilot operation has confirmed the everyday life of the new vehicles," notes Dr. Ernst Fleischhacker, CEO of FEN-SYSTEMS and initiator of the project.

"There are currently no fuel cell trucks on the scale of our logistics needs. We believe that these vehicles will be available on the market in a few years. With this project, we are now able to reduce the CO2 footprint of our company by the equivalent of more than 2 million liters of diesel per year," says Mag. Ewald Perwög, project manager at MPREIS.



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Annex

Kick-Off Dissemination Meeting of the Demo4Grid project at the Green Energy Center Europe in Innsbruck on the 14th March 2017 with participants of the European Union (FCH JU), Consortium Partners DIAD (Diadikasia Business Consultants S.A.) - Greece, IHT (Industrie Haute Technologie S.A.) - Switzerland und FHA (Fundación Hidrógeno Aragón) and INYCOM (Instrumentación y Componentes S.A.) – Spain, MPREIS (MPREIS Warenvertriebs GmbH), FEN-SYSTEMS (FEN Sustain Systems GmbH) – Austria/Tyrol and Members of the Green Energy Center Europe, of the Tyrolean Power Supplier TIWAG and the Deputy Governors of the Federal Region of Tyrol.



From left to right: Ewald Perwög (MPREIS), Emmanuel Stamatakis (DIAD), George Sidiras (DIAD), Richard Neumann (SWARCO), Pablo Marcuello (IHT), Konstantinos Tsiakataras (DIAD), Thomas Gasser (TIWAG), Athanasios Batsilas (FCH JU – EU), Franco Nodari (IHT), Guillermo Matute (INYCOM), LH Stv. Josef Geisler (FEDERAL REGION OF TYROL), Ernst Öfner (ÖFRA), Jesús Simón (FHA), Marcos Rubio (INYCOM), Nikolaos Lymperopoulos (FCH JU – EU), Friedrich Koidl (MPREIS), LH Stv.in Ingrid Felipe (FEDERAL REGION OF TYROL), Guillermo Figueruelo (FHA), Ernst Fleischhacker (FEN-SYSTEMS), Nicola Zandonà (IHT) und Nikolaus Fleischhacker (FEN-SYSTEMS)