

## **Abengoa takes part in the Grasshopper project: a new generation of Fuel Cell Power Plant**

- Grasshopper Will develop a new concept of flexible and cost-effective MW-size Fuel Cell Power Plant
- Funded by the Fuel Cells and Hydrogen 2 Joint Undertaking under the European Union's Horizon 2020 research and innovation programme

March 2, 2018 – Abengoa (MCE: ABG/P:SM), the international company that applies innovative technology solutions for sustainability in the infrastructures, energy and water sectors, takes part in the european Grasshopper (GRid ASsiSting modular HydrOgen Pem PowER plant) project, leading the design, construction and testing of a pilot plant, for subsequent scaling to MW.

The objective of this new project is the creation of the next generation fuel cell power plants (FCPP) suitable for a flexible operation for grid support. The power plant will use green hydrogen and convert it into electricity and heat without emissions. With the variations in demand and consumption of energy from renewable sources such as sun and wind, a stable energy supply will rely more and more on flexible operation power plants.

The consortium consists, apart from Abengoa, INEA-Informatizacija Energetika Avtomatizacija, Johnson Matthey Fuel Cells Limited (JMFC), Nedstack fuel cell technology B.V., Politecnico di Milano (Polimi) and Zentrum für Brennstoffzellen Technik GmbH (ZBT).

The development of a fuel cell system, with significant innovations in the membranes and other components, will be done through modelling, experiments and industrial experience by JMFC, ZBT and Nedstack. Polimi will provide support in the decision-making process through modelling activities and optimization. Implementation of the smart grid functionality into the FCPP control and grid integration will be done by INEA.

The demonstration unit will be installed in Delfzijl, where Akzo Nobel and Nedstack have been testing the fuel cell technology for over 10 years now, connecting to the hydrogen by-product stream of the modern chlorine production facility.

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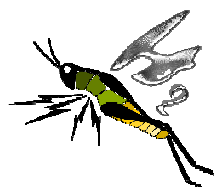
The kick-off meeting of the Grasshopper project took place at the beginning of January 2018 at the Akzo Nobel facilities, in Delfzijl, with the participation of the consortium partners, the members of the Advisory Board and the Project and Financial officers from the Fuel Cells and Hydrogen Joint Undertaking (FCH JU), unique public private partnership supporting research, technological development and demonstration (RTD) activities in fuel cell and hydrogen energy technologies in Europe. The demonstration phase and the end of the project will take place in Akzo Nobel facilities.

The Advisory Board, consisting of members from Akzo Nobel Industrial Chemicals B.V, Tennet TSO B.V, SWW Wunsiedel and members of GOFLEX consortium, will be consulted during the project phase.

Coordinated by INEA, the project Grasshopper will have a duration of 36 months a total budget of 4.4 M €.

This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No779430. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme, Hydrogen Europe and Hydrogen Europe research.

More information [here](#).



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