

**ZERO-HYTECHPARK PROJECT LIFE08**  
**ENV/E/000136**  
**Hydrogen Technologies and Renewable Energies**

**Budget:** Total 1.408.110€ (50 % EU Co-financing)

**Duration:** 01/01/2010 - 31/12/2013

**Objective:** to implement the capacity of full-sustainability in Technology Parks with an optimal management of energy by means of a green-hydrogen system based on renewable energies.

**Actions:** designing and installing a complete energy accumulation system at the Aragon Hydrogen Foundation building at Walqa Technology Park. The system will store and then re-use hydrogen produced from water electrolysis, thus reducing CO2 emissions and providing economic benefits thanks to improved energy self-sufficiency. The results will be applied to other building in the Park.

**Expected results:** the use of hydrogen will reduce the CO2 emissions. It is expected to get a building with zero emissions. The project will also disseminate this technology between the general public and science and industrial sectors.

**ACTIONS:**

**Stationary applications:** to implement a back-up power system and a cogeneration system based on hydrogen technologies through the integration of fuel cells.

1) Cogeneration system: integration of a fuel cell to provide electricity to the building of the Foundation and heat for use in heating and hot water. Thus, current propane consume, and consequently CO2 associated emissions, can be reduced.

2) Back – up system: integration of a fuel cell to provide a back-up power system in case of mains failures. This is a very interesting application in Technology Parks.

**Mobile Applications:** Development and testing of two applications of sustainable mobility.

1) Two fuel cells of different power level will be integrated in commercial electric vehicles. **Vehicles homologation.**

2) A fleet of 20 electric bikes with a 250W power fuel cell be available at the Foundation facilities to be used by Technological Park staff. **Monitoring of the fleet to carry out the exploitation of results.**

**Extension of the renewable infrastructure:** complete renewable energy infrastructure in the building of the Foundation through thermal solar and photovoltaic solar energy to cover the heat consumption of the Foundation.

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