A consortium of 8 companies launches “Regenera” to progress with efficient renewable energy storage

- **The consortium comprises DAM, ENGIE, Sorigué, Hidroquimia, Tyris AI, H2B2, AIGUASOL and Exolum**

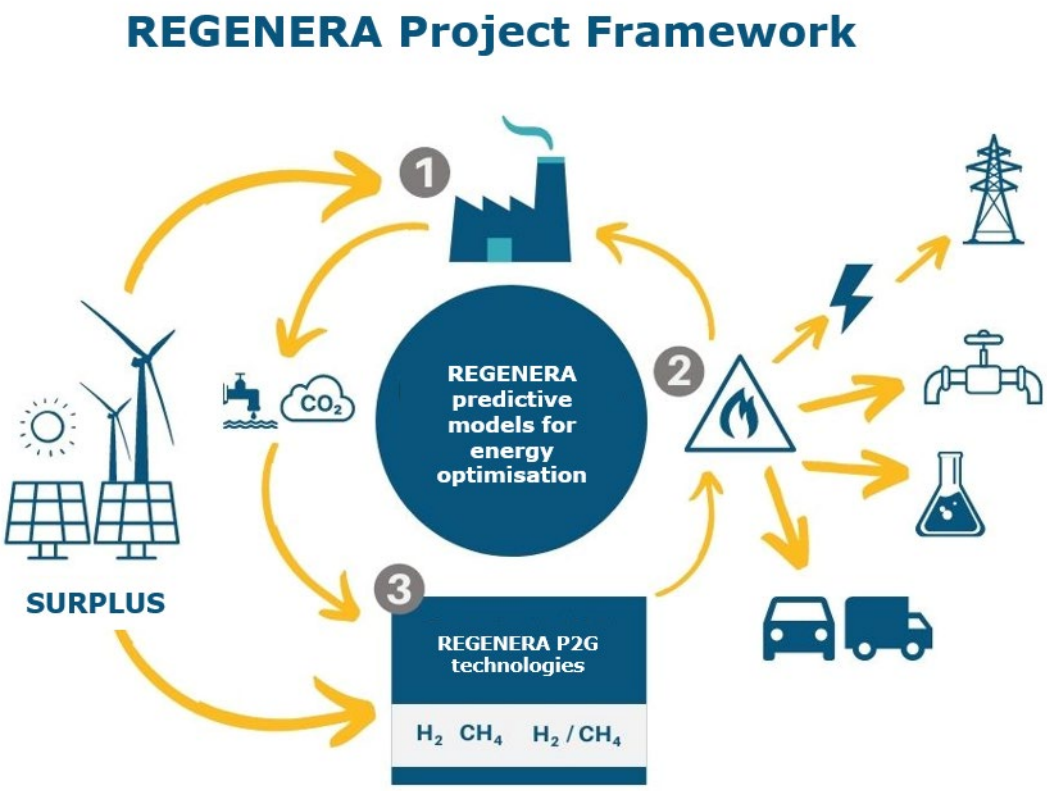
- **The project will have a duration of 40 months and is integrated within the State RDI Programme “Science and Innovation Missions” of the Centre for the Development of Industrial Technology (CDTI)**

The **REGENERA** project, developed by a consortium of eight companies, namely the *DAM Group, ENGIE, Sorigué, Hidroquimia, Tyris AI, H2B2, AIGUASOL and Exolum*, aims to develop innovative technologies to store renewable energy surplus in an efficient and cost-effective manner and use it in industrial processes for the production of green fuel, hydrogen, methane and hythane. These can be used for heat and power generation, as precursors of other chemicals or in transportation to promote sustainable mobility. All the above using AI models to optimise the use of energy sources.

The research project, which will extend over 40 months, is based on the expectation that energy from renewable sources will increase from 25% to 86% by 2050.

“The main characteristic of renewable energies (wind, solar) is that they depend on nature. Therefore, their production is subject to variations, both daily and monthly, which makes it necessary to ensure supply security not only with fossil fuels but with energy storage systems which are key to the development and optimisation of this sustainable energy,” explain the companies participating in the project.

In this context, the integration of storage systems to balance generation and demand, in both the short and the long term, is essential in order to accelerate the decarbonisation of the energy system and meet the targets set by the European Commission in the Green Deal and comply with the Paris Agreement.



"The aim of REGENERA is to assist in the transformation of the Spanish energy system by reducing dependency on fossil fuels, improving the integration and management of renewable energies. It is possible to reduce CO_2 emissions and achieve greater energy independence and, therefore, a less dependent, more competitive and climatically neutral economy by 2050," assure the members of the project.

Reducing costs and increasing the competitiveness of renewable fuels

During its implementation, the REGENERA project will conduct research into two innovative strategies that will make it possible to increase sustainability in future via two main factors: reducing storage costs and increasing the economic competitiveness of renewable fuel production.

"The first strategy involves three types of electricity storage technologies with the capacity to store large amounts of energy in the long term and via the production of renewable fuels (H_2, CH_4 and Hythane). The second is a smart system for energy optimisation/management based on machine learning models implemented in industrial processes. This enables, on the one hand, adaptation of the energy demand of industries to the production of renewable energies and, on the other hand, the recovery of some of their waste products (water and/or CO_2) for the production of renewable fuels from renewable energy surpluses," affirm the project partners.

Exolum participates in the project by carrying out research into technologies for the storage and distribution of hydrogen from renewable sources in carrier liquids. This form of hydrogen logistics represents a major opportunity since it would use existing infrastructures to tackle the logistics of this new energy vector. This is one of the basic principles of the circular economy.

The REGENERA project, *"Research into hybrid storage technologies and predictive models to transform industries into decentralised hubs of renewable energy management"*, is financed by funds from the recovery plan for Europe *'NextGenerationEU'* and forms part of the State RDI Programme "Science and Innovation Missions" of the Centre for the Development of Industrial Technology (CDTI).

This multisector consortium includes 6 excellent research centres with experience and capacity in the management of disruptive projects that seek to scale the results of this project to new international programmes, namely the Leitat Technological Centre, the Institute of Chemical Technology (ITQ), the Energy Technology Institute (ITE), the Institute of Telecommunications and Multimedia Applications (iTEAM), the Catalonia Institute for Energy Research (IREC) and the IMDEA Water Institute.

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