Renewable hydrogen production

Hysencia Project

La Sotonera, Huesca, Aragón

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(Updated version with visible changes)

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1. INTRODUCTION

The current energy context is characterized by power based on fossil fuels and by increasing energy demand due to demographic and economic growth. This has all led to increased greenhouse gas emissions and, therefore, to a major acceleration of climate change. In recent years, the need to consume clean and renewable energy has emerged as a solution to reduce emissions of polluting gases and mitigate the effects of climate change.

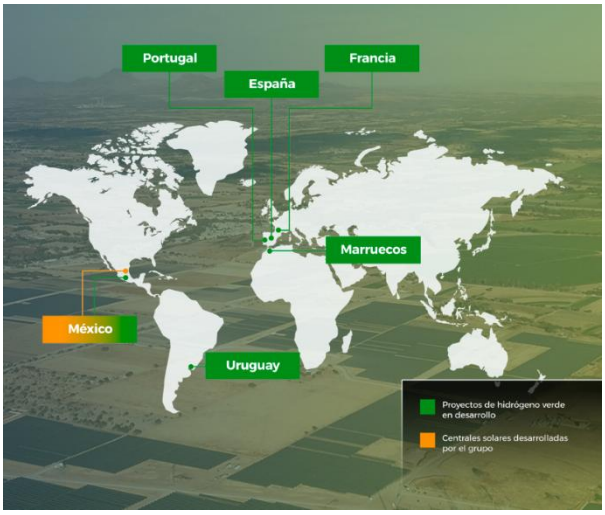
Renewable hydrogen is currently considered an important alternative to lead this energy transition. This is how **DH2 Energy** was born: with the aim of producing highly competitive renewable hydrogen on a large scale, which contributes to the decarbonisation of both the industrial sector and transport and mobility.

DH2 Energy develops, finances, builds and operates photovoltaic and electrolysis plants for the production of renewable hydrogen and is currently one of the largest developers in the sector on the Iberian Peninsula.

DH2 Energy was created in 2021 by Olivier Crambade and Philippe Esposito, founders of Dhamma Energy, a company that has been developing and producing photovoltaic energy since 2008 and a pioneer in the renewable hydrogen sector since 2018. Dhamma Energy has developed around 1 GWp of photovoltaic energy and its businesses in France and Spain were acquired in 2021 by the energy group Eni.

DH2 Energy's renewable hydrogen project portfolio stands at more than 15 GW of electrolysis capacity at different stages of development around the world.

The head office of **DH2 Energy** is located in Madrid, Spain, and its main markets are Spain, Portugal, France, Mexico and Uruguay. The company has a team of more than 45 people.



The scope of **DH2 Energy** covers the entire value chain of hydrogen production, from the early stages of project development to the operation and maintenance of plants with the aim of marketing production:

Development:

- ✓ Technical and economic feasibility studies, basic engineering studies
- ✓ Obtaining permits and authorizations (environmental, local, construction, etc.)
- ✓ Business development

Financing:

- ✓ Financial analysis (cash flows)
- ✓ Financial packaging, capital structuring, long-term debt closing

Construction supervision:

- ✓ EPC (Engineering, Procurement and Construction) contracting
- ✓ Supervision and management of plant construction

Operation and maintenance:

- ✓ Plant monitoring

- ✓ Asset management (technical, financial and administrative)

H2 sales:

- ✓ Negotiation and closing of HPA (Hydrogen Purchase Agreements)

2. Description of the Hysencia Project

The **Hysencia Project** consists of the commissioning of a renewable hydrogen production plant in Plasencia del Monte, Huesca, Aragon.

It is designed with an electrolysis power equal to 35 MW directly connected to a 49 MWp photovoltaic solar plant for self-consumption and with a 10 MW grid connection, allowing a maximum production of 2,200 tonH2/year.

This project is one of the 6 successful bidders in the European Hydrogen Bank auction out of more than 130 projects submitted in the European Union. This grant supports the economic plan and technical proposal of the project, helping to make it viable.

The project has an Environmental Impact Statement (EIS), an Integrated Environmental Authorisation and the connection of 10 MW to the Esquedas substation by Endesa. Construction is expected to begin in mid-2025 and commissioning in early 2027, as indicated in the following schedule:

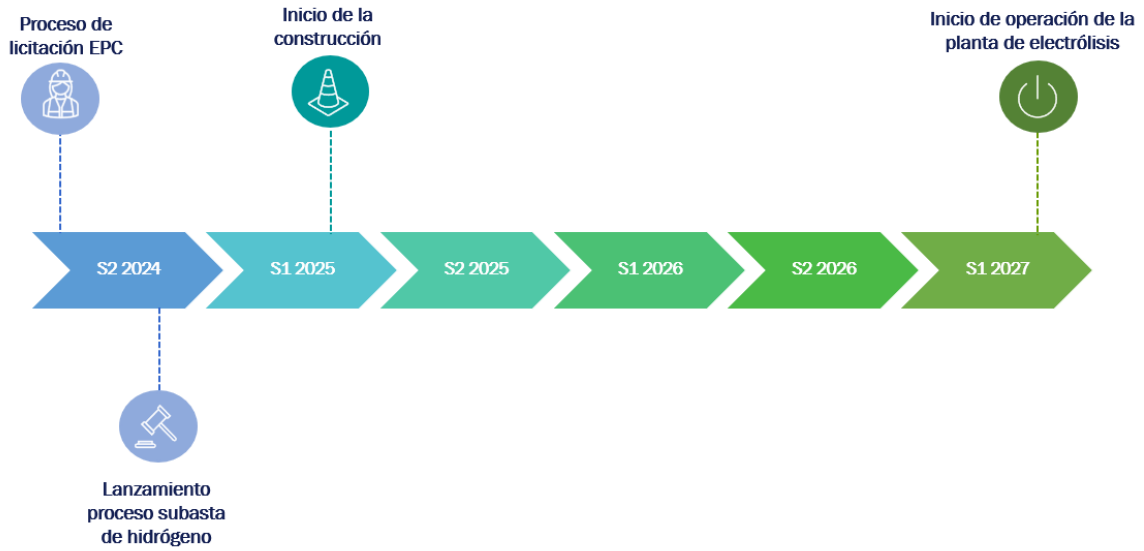


Illustration 1 Hysencia Project time line

This project has the full support of the Government of Aragon, as well as other public and private organisations with a strong presence in the territory, such as the Hydrogen Foundation of Aragon.

The main objective of the project is to decarbonise industry, heat and electricity production, and rail and road transportation in the region. For this to happen, H2 has to be competitive with fossil fuels.

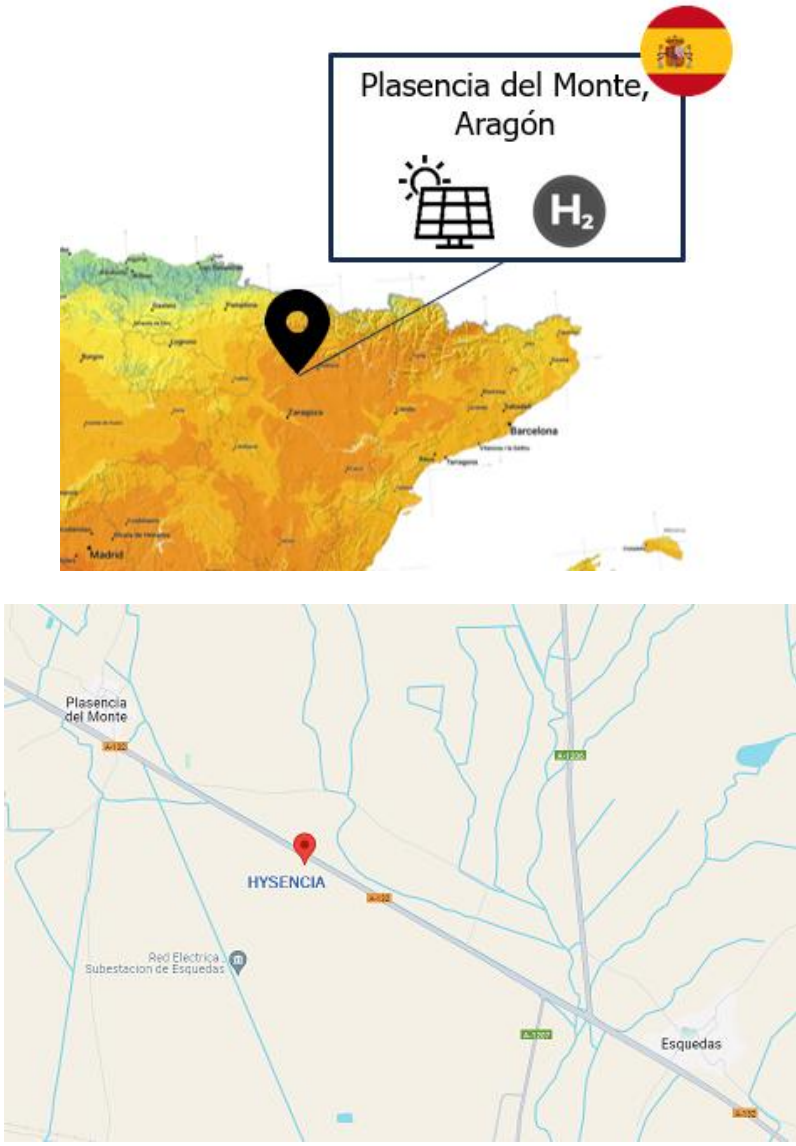


Illustration 2 Location of the Hysencia Project. Plasencia del Monte, Huesca

The project is designed as a photovoltaic solar plant in self-consumption mode to feed the electrolysis plant. All the power generated by the photovoltaic solar plant is used to produce hydrogen and the solar energy generated is not fed to the electrical grid. The main auxiliary equipment is connected to the photovoltaic solar plant, so it has minimal grid consumption. The hydrogen produced is compressed and fed by road to the consumption points.

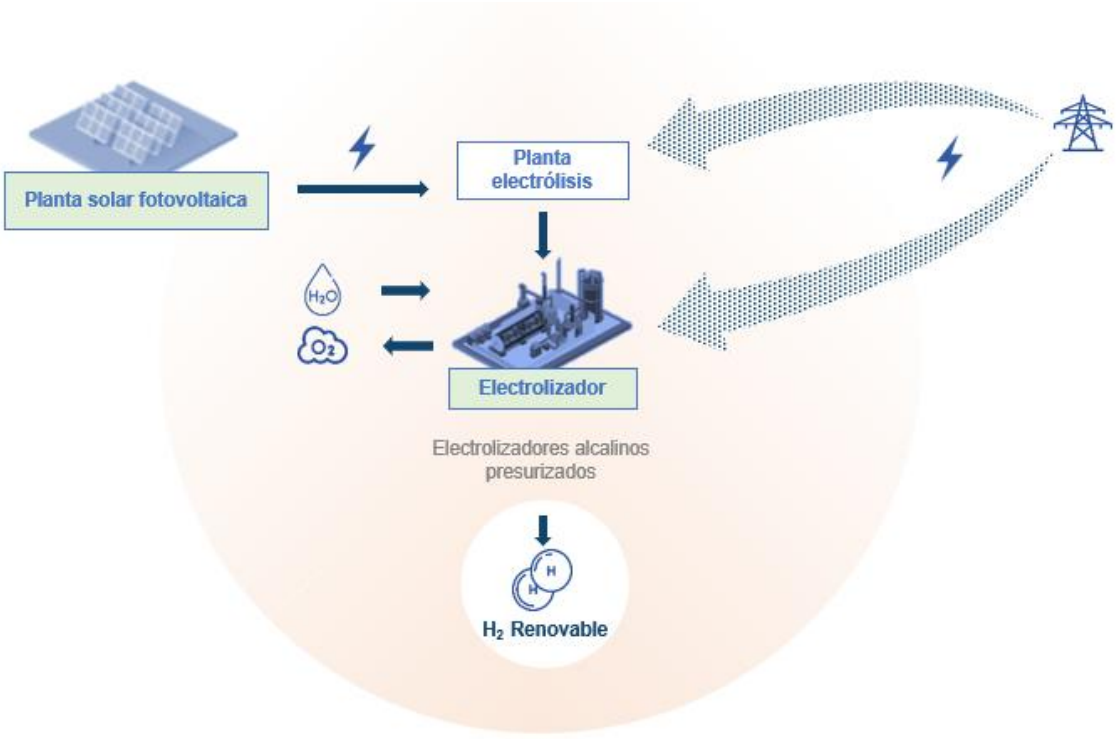


Illustration 3 Conceptual design of the project

3. Production profile

DH2 Energy is making available to companies interested in submitting a bid for the purchase of renewable hydrogen a maximum total volume of 2,200 tonnes of renewable hydrogen, 100% RFNBO per year, which will be produced starting the first half of 2027.

Total production of the DH2 Energy plant in the summer months will be around 6.5 tonH2/day.

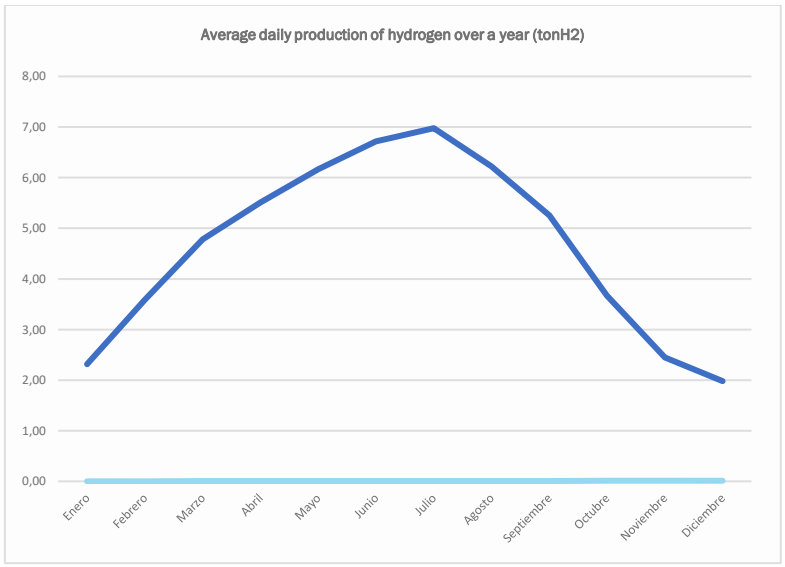


Illustration 4 Average daily production profile (annual)