Technologies for the detection and use of natural hydrogen sources – WH2YTE

PROJECT DESCRIPTION – ZL-2025/00622

Within the framework of the WH2YTE project, several companies from the industrial, energy and technology sectors are collaborating in the development of innovative solutions aimed at the detection, characterisation and use of natural hydrogen sources.

The project's main objective is to research and validate advanced technologies that make it possible to identify, extract and process natural hydrogen present underground, thereby contributing to the development of new sustainable energy sources and to the decarbonisation of industry.

The activities carried out range from analysing the state of the art in natural hydrogen exploration to the design and implementation of technological solutions integrating advanced artificial intelligence tools, innovative materials, and extraction and purification systems. These include the development of methodologies for deposit detection through geological analysis and remote sensing, the simulation of hydrogen generation processes under controlled conditions, and the research of materials capable of operating in extreme environments.

The project also includes the validation of these solutions in representative environments, facilitating their future application at industrial scale and assessing their technical, economic and environmental viability. In this way, the aim is to demonstrate the potential of natural hydrogen as a complement to other hydrogen sources, supporting its integration into the energy system.

The participating entities work in a coordinated manner on the development of experimental models, laboratory tests and techno-economic analyses, with the aim of consolidating innovative solutions that promote the use of natural hydrogen as a key energy vector.

In this context, TEAM Ingeniería leads the project, coordinating the research and development activities and contributing its expertise in geological and energy analysis, while the remaining partners contribute from their respective fields—materials, industrial processes, artificial intelligence and separation

technologies—to ensure the comprehensive development and validation of the proposed solutions.

CONSORTIUM

Participants:

- Lead partner: TEAM INGENIERÍA
- Partner 2: TUBACEX TUBOS INOXIDABLE S.A.U
- Partner 3: H2SITE
- Partner 4: INTELLIALERT TECHNOLOGIES
- Partner 5: AMPO

Basque Network of Science, Technology and Innovation (RVCTI) agents:

- TUBACEX INNOVACIÓN, S.L.
- FUNDACION TECNALIA RESEARCH & INNOVATION
- TEKNIKER

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- **TTI budget:** €265,132.86
- **Duration**: 2025–2027

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Cofinanciado por la Union Europea

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