

The H2Excellence Project - Fuel Cells and Green Hydrogen Centers of Vocational Excellence towards affordable, secure, and sustainable energy for Europe

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1. Introduction

The demand for green hydrogen (H₂) and related technologies is expected to increase in the coming years mainly framed by drivers such as climate change and energy security of supply amid the European and global energy crises. The European Green Deal and the REpowerEU Plan called for H₂ as a key pillar to reach climate neutrality by 2050^[1] and for the intensification of hydrogen delivery targets^[2], bringing large-scale adoption of hydrogen production and applications in various sectors, and stressing the need for a skilled workforce in the emergent hydrogen markets.

To that end, the Erasmus+ European H2Excellence transnational project^[3] has gathered 24 partners across the EU, to establish a Platform of Vocational Excellence in the field of fuel cells and green hydrogen technologies, with an educational and training offer that will tackle identified skill gaps and implement life-long learning opportunities.

2. Objectives

The project started in 2023 and aims to become a benchmark in training and knowledge transfer through the creation of a set of national Centers of Vocational Excellence (CoVEs) dedicated to fuel cells and green hydrogen technologies, establishing a collaborative transnational network to bridge the industry's skill gaps in the field.

The project working structure is shown in Fig. 1.

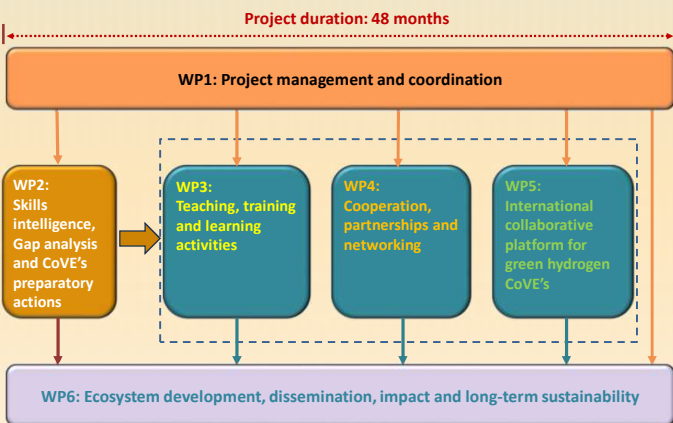


Fig. 1 - Project development structure and workplan

3. LNEG's activities and expected impacts of the Project

LNEG is participating actively in this project, developing applications and interactive remote lab experiments to support "e-learning by doing" modules in the field of green hydrogen production infrastructures and technologies. It will participate in the coordination, in cooperation with the other R&D partners, of the development of reskilling programs in specific areas of interest, especially for SMEs, as well as in dissemination actions for the discussion of their priorities in education and vocational training and needs of research.



Fig. 2 - Project's main expected results.

4. Final Remarks

The Erasmus+ European H2Excellence Project's strategic and specific objectives concern the development of custom advanced training and tools for students, young engineers, and staff of companies related to the green hydrogen industry.

The running project aims to align the industry's manpower skills with the market needs, fostering the key role of clean hydrogen as a building block in the energy transition and the challenges of decarbonization.

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References

- European Commission. (2019). *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions- The European Green Deal*. European Commission. <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52019DC0640>
- European Commission. (2024). *Implementing the Repower EU Action Plan*. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022SC0230>
- H2Excellence - *Green skills for the future workforce in fuel cells and green hydrogen sector*. (2024). <https://h2excellence.eu/>

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