



INNOVATION FUND

Deployment of net-zero and innovative technologies

T-HYNET: TARRAGONA NETWORK HYDROGEN

The Innovation Fund is 100% funded by the EU Emissions Trading System

| Project Factsheet

The T-HYNET project's main objective is to deploy a first-of-a-kind European large scale, 150 megawatt (MW) capacity, alkaline electrolyser at "REPSOL Petróleo" site in the Tarragona's industrial area. The plant is planned to operate continuously and is expected to produce 2.7 tonnes of renewable hydrogen per hour. The plant will generate renewable hydrogen and oxygen to be used by local off-takers. It is planned that this project will achieve a99.99% relative GHG emissions when compared with the reference scenario.

The T-Hynet project will integrate four key innovative elements: (i) A 150MW electrolyser producing hydrogen from renewable sources. This will represent a breakthrough in alkaline technology in terms of larger stacks and modules, as well as higher operating pressure and efficiency; (ii) Digital tools directed to electrolyser performance optimisation and monitoring; (iii) Oxygen

COORDINATOR

REPSOL INDUSTRIAL TRANSFORMATION SL

LOCATION

Spain

CATEGORY

Energy intensive industries (EII)

SECTOR

Hydrogen

AMOUNT OF INNOVATION FUND GRANT

EUR 62,491,697

EXPECTED GHG EMISSIONS AVOIDANCE

1,378,161 tonnes CO2 equivalent

STARTING DATE

01 April, 2023

ENTRY INTO OPERATION DATE

31 October, 2027

FINANCIAL CLOSE DATE

30 September, 2025

integration leading to its complete reuse for local industrial applications; and (iv) Increased water use efficiency (minimizing water discharge and maximizing water recovery). It is expected that the project will have absolute greenhouse gas emissions avoidance of almost 1.4 million tonnes of CO₂ equivalent over the first ten years of operation.

The project will contribute to the European Hydrogen Strategy, supporting the deployment of domestic hydrogen production in the European Union. It will also contribute to the objectives of the REPowerEU strategy, particularly by helping reduce fossil fuel consumption in industry and transport. The project will include technological developments in the electrolysis plant and digital tools to ensure a smart management of the electrolyser. This will reduce the cost of renewable hydrogen production, increasing the competitiveness of the product and boosting its use and implementation in the entire value chain.

| Participants

REPSOL INDUSTRIAL TRANSFORMATION SL

Spain

TARRAGONA HYDROGEN NETWORK S.L.

Spain

The deployment of the electrolyser will enhance renewable hydrogen industrial production, presenting a cleaner, cost-effective alternative to fossil fuels for local off-takers. The location of the project is also highly relevant for supporting the uptake of a hydrogen ecosystem in the challenging industrialisation roadmap for Spain and Europe.

The project is expected to have a positive socio-economic impact in the region. The economic benefits will impact technology providers, manufacturers of hydrogen production plants and their components; commercial industries in areas of maintenance and operation, mobility end users, and research centres, etc. It is expected to create more than 900 direct jobs and more than 1 100 indirect and induced jobs during the construction stages. By engaging with local stakeholders and off-takers, the project will develop a synergistic industrial network that will create a baseline for a deep decarbonisation transformation. This will kick-start an ambitious scalability plan to be implemented in Tarragona and beyond.