

| Project Factsheet

The EnergHys project plans to produce clean hydrogen with a 300 megawatt (MW) electrolyser, located in the Vlissingen area, the Netherlands. This electrolyser system, powered by renewable energy from offshore wind farms, can produce up to 22 000 tonnes of renewable hydrogen annually. The overall objective of EnergHys is to become a world leading clean hydrogen hub, aiming to unlock wider environmental and economic benefits for hard-to-abate industrial customers and the mobility sector. The project will lead to a relative greenhouse gas (GHG) emissions avoidance of 99.86% compared to the reference scenario.

The main innovation behind EnergHys lies in the mix of two electrolyser technologies that will be used to reach 300 MW in 2029. This value represents 10% of the Dutch goal of at least 3 gigawatts (GW) of electrolysis capacity by 2030. The mix of two electrolyser technologies allows a

COORDINATOR

TOTALENERGIES RENEWABLES NEDERLANDB.V.

LOCATION

Netherlands

CATEGORY

Energy intensive industries (EII)

SECTOR

Hydrogen

AMOUNT OF INNOVATION FUND GRANT

EUR 75,000,000

EXPECTED GHG EMISSIONS AVOIDANCE

1,547,709 tonnes CO2 equivalent

STARTING DATE

01 January, 2024

ENTRY INTO OPERATION DATE

31 December 2028

FINANCIAL CLOSE DATE

31 December, 2025

better management of renewable intermittency. Furthermore, EnergHys goes beyond the state of the art in terms of by-product valorisation (oxygen and heat). It also includes a commitment to reduce its environmental impact by minimising the water intake of the project, favouring the circularity of the materials used and by developing refurbishment and stack recycling with module suppliers.

Another innovation is the Energy Management System which includes additional functionalities to increase the energy efficiency of the whole system and will contribute to developing key knowledge about real-time data tools for a greener economy. One example of increased energy efficiency is the valorisation of residual heat of EnergHys (~220 GWh per year) to heat nearby greenhouses with an area of 62 hectares (ha) – comparable with approximately 90 football fields. The project is expected to avoid 2 million tonnes of CO2 equivalent of GHG emissions over the first ten years of operation.

EnergHys, coordinated by TotalEnergies Renewables Nederland B.V., contributes to the ambitious European objective of climate neutrality by 2050 by kickstarting a complete hydrogen value

chain in the Vlissingen area near the industrial harbour facilities and the future hydrogen (H2) backbone. In addition, the replicable modular design will allow scale up and cost optimisation which will contribute to the deployment of domestic renewable hydrogen production in line with the European Hydrogen Strategy.

With the realisation of the 300 MW electrolyser in Vlissingen area, world-class engineering studies will be needed in the development phase. During construction phase, labour-intensive operations with the highest industry standards will be carried out. In the operations phase high skilled people will be needed, it is estimated that 22 direct jobs and 140 indirect jobs will be created for the management, maintenance and technical operation of the industrial assets. The lessons that will be learnt through the EnergHys project will positively impact all sectors of the value chain, from offshore wind to H2 mobility activities, by providing them with practical data and knowledge. Furthermore, the project will accelerate the maturity curve and consequently help to lower costs and to move towards a circular economy. The project also has the potential to be scalable to 600 MW, with further replicability potential at the European level.

| Participants

TOTALENERGIES RENEWABLES NEDERLANDB.V.

TOTALENERGIES HOLDINGS NEDERLAND BV

TOTAL RAFFINAGE FRANCE

TOTALENERGIES GAS MOBILITY BV

Netherlands

Netherlands

France

Netherlands