

INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

H2BE: H2BE: the first 1GW low-carbon H2 production facility to enable and accelerate industrial decarbonisation, critical H2/CO2 infrastructure realisation and H2 market development in Northern Europe.

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

| Project Factsheet

The project aims to establish a novel low-carbon hydrogen production facility along the Ghent-Terneuzen canal in Belgium. Low-carbon hydrogen (emitting less than 1.5 kg CO₂ per kilogram of hydrogen) could replace fossil-based hydrogen and natural gas used in energy-intensive and hard-to-abate industries, thereby facilitating targeted decarbonisation initiatives in steel, chemical and heat/power companies. The facility could supply over 210 000 tonnes of hydrogen annually by 2030, supporting Northwest Europe's emergent hydrogen value chain. The project will achieve a relative greenhouse gas (GHG) emission avoidance of 94% over its first ten years of operation compared to the reference scenario.

In terms of scale, the project will be the first of its kind in Europe to incorporate and combine proven state-of-the-art technologies for low-carbon hydrogen production. H2BE will demonstrate an energy-optimised, scalable and flexible design system for 1 gigawatt (GW) auto-thermal reforming

COORDINATOR

ELECTRABEL

LOCATION

Belgium

CATEGORY

Energy intensive industries (EII)

SECTOR

Hydrogen

AMOUNT OF INNOVATION FUND GRANT

EUR 159,000,000

EXPECTED GHG EMISSIONS AVOIDANCE

12,806,608 tonnes CO₂ equivalent

STARTING DATE

01 February, 2025

FINANCIAL CLOSE DATE

30 April, 2026

ENTRY INTO OPERATION DATE

31 December, 2029

CALL NAME

InnovFund-2023-NZT

** Calculated vs. the 2021-2025 ETS benchmark of 6.84 tCO₂e/tH₂, not taking into account additional carbon abatement due to substitution effects in the H₂ end use application, i.e. conservative estimate.*

(ATR) hydrogen plants. The integrated point-source carbon capture system will catch over 95 % of the carbon during production. The captured carbon will then be transported to be safely and permanently stored under the seabed on the Norwegian continental shelf. The project has a GHG emission avoidance potential of 12.8 million tonnes of CO₂e over its first ten years of operation compared to the reference scenario.

The project aligns with Europe's objectives to become climate-neutral by 2050 and reduce net GHG emissions by at least 55% by 2030. It contributes to the European Green Deal and its initiatives, notably the Net-Zero Industry Act and the REPowerEU Plan, by scaling up the domestic production of low carbon hydrogen to decarbonise hard-to-abate industries and deploying CO₂ capture and storage capacity in Europe. It could also contribute to Europe's strategic

autonomy by anchoring Belgium as a hydrogen and CO₂ transport hub in the energy ecosystem. H2BE will accelerate the kickstart of the European hydrogen market by providing large volumes of low carbon hydrogen and serve as a key building block to deploy crucial hydrogen and CO₂ infrastructure in Belgium.

H2BE can contribute to Belgium's reindustrialisation by securing its industrial competitiveness and generating growth. The project could create up to 7 500 new jobs in the country, including approximately 220 employees in the H2BE plant. The future-proof design can be replicated on large industrial areas in other countries, such as the Netherlands, France, and Germany, with similar characteristics to H2BE (high hydrogen demand, proximity to North Sea, developing hydrogen infrastructure) further advancing the hydrogen economy.

| Participants

ELECTRABEL

Belgium

EQUINOR ASA

Norway

Additional information on the [EU Funding & Tenders Portal](#).