



INNOVATION FUND

Deployment of net-zero and innovative technologies

VOZARTEK: Initiating the Production of Green Hydrogen for Transport and Other Applications in the Czech Republic

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

| Project Factsheet

The aim of the project is to initiate the green hydrogen market in the Moravian-Silesian Region, Czech Republic. The hydrogen will be produced in 2 megawatt (MW) electrolyser powered by solar photovoltaic (PV) cells and a biomass combined heat and power (CHP) system, located in the town of Frýdek-Místek in the east of Czech Republic. After the construction stage that is part of this project, the commercial operation will begin in 2026 with an expected output volume of up to 270 tonnes of green hydrogen per year. The hydrogen will firstly be supplied to bus, train, and truck operators with the further possibility to use this hydrogen in non-transport applications, notably injection into the natural gas grid or in metallurgy. The project has the potential to reduce greenhouse (GHG) emissions by 98% compared to the reference scenario over the monitoring period of 10 years.

COORDINATOR

VEOLIA ENERGIE CR, AS

LOCATION

Czechia

CATEGORY

Energy intensive industries (EII)

SECTOR

Hydrogen

AMOUNT OF INNOVATION FUND GRANT

EUR 4,470,000

EXPECTED GHG EMISSIONS AVOIDANCE

34,179 tonnes CO2 equivalent

STARTING DATE

01 June, 2023

ENTRY INTO OPERATION DATE

31 December, 2025

FINANCIAL CLOSE DATE

31 December, 2024

The project's innovation lies in the "market initiation" ambition, and "operation optimisation" of the plant. For the latter, the combination of PV (prevalent in summer) and biomass co-generation (prevalent in winter) makes the production of hydrogen available all-year-round. The key objective is to provide a reliable supply and guaranteed volume of green hydrogen at an affordable price in order to kick-start the market. This will encourage the demand side to invest in green hydrogen applications and generally inspire new stakeholders to grow the hydrogen market.

The green hydrogen will be produced in a 2 MW proton exchange membrane (PEM) electrolyser, installed within the existing CHP plant. The selected size is adequate for the purpose of the project to help the local market startup and the annual hydrogen output from the initial electrolyser will be sufficient to replace diesel in transport applications to the scale of about 30 buses or 5 local trains. However, it has a potential to be expanded at the current site and also to be replicated elsewhere in

the region and beyond.

The project's objective is to demonstrate that green hydrogen is one of the most promising ways forward to transform the economy of the coal region – with a rapid scale up from the theoretical (at present) to the commercial (in only 3 years). The Moravia-Silesian region is one of the key EU regions that is transforming from coal-based heavy industry. The VOZARTEK project will help to initiate the renewable hydrogen value chain within the region to support this transition. The location at the existing CHP plant will further increase the energy efficiency through the use of residual heat from the hydrogen production within the existing district heating system.

The VOZARTEK project aims to have a positive impact on the development of the Moravia-Silesian region by helping to initiate a regional renewable hydrogen value chain. The project will also contribute to the development and scale-up of innovative technologies in the region.

| Participants

VEOLIA ENERGIE CR, AS

Czechia