European Commission

INNOVATION FUND

Driving clean innovative technologies towards the market

H_2 Valcamonica: Green hydrogen for the decarbonisation of Valcamonica valley

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

Project summary

The H2 Valcamonica project will produce and store green hydrogen through the implementation of an electrolyser, with the final goal to cover the local demand from both mobility (including rail transport) and energy intensive industries (EIIs). The electrolyser will be powered by renewable energy, mainly generated in a local waste-to-energy plant, avoiding almost 100% of greenhouse gas (GHG) emissions from a conventional technology.

COORDINATOR
A2A S.p.A.

LOCATION
Brescia, Italy

SECTOR
Hydrogen

AMOUNT OF INNOVATION FUND GRANT
EUR 4 430 421

RELEVANT COSTS
EUR 7 384 036

STARTING DATE
01 January 2022

PLANNED DATE OF ENTRY INTO OPERATION
01 January 2025

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A step towards the first Italian green hydrogen valley

This project will be an important step towards the ambitious goal of creating the first Italian green hydrogen valley. The main innovative element is the creation of the first regionally-integrated supply chain for the production, storage, distribution and commercialisation of green hydrogen for both mobility and EIIs. The technologies involved are an electrolyser for hydrogen production, a storage and compression system (to store the hydrogen at the production site), and a storage system functional to the distribution point (to allow refuelling of trains at the station).

The energy needed to produce hydrogen will be supplied by renewable energy produced by a waste-to-energy power plant and using various hydroelectric plants in the valley. The site will produce a forecasted 830 tonnes per year of hydrogen, based on 43 870 MWh of electricity and 16 600 m3 of water.

Decarbonizing the railway transport in hard-to-abate conditions

The project aims to implement low-carbon technologies and processes to replace traditional fossil fuels in both the transport and industrial sectors. The project contributes to the fight against climate change by avoiding GHG emissions through hydrogen produced based on renewable energy instead of fossil fuels; storing hydrogen to decouple energy production and consumption and decarbonising the railway transport by replacing fossil fuels. The project will avoid 42 295 tCO_2e net absolute emissions during the first 10 years of operation, representing almost 100% of GHG emitted by a conventional technology.

Scale-up at site level and to different sectors

The project aims at scaling-up both at the project site and at other sites and within other end-use sectors. The project technology could, for example, scale-up from 6 to 20 MW, and the same technology could be transferred to other industrial districts. The area of Valcamonica and its surroundings offer promising H2-application opportunities such as, for example, intermodal logistic areas, TEN-T corridors, steel and cement production among others.

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