



INNOVATION FUND

Deployment of net-zero and innovative technologies

GreenH2CY: Green Hydrogen Project for Transport in Cyprus

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

| Project Factsheet

The GreenH2CY project will produce hydrogen from renewable energy for the transport sector, to re-fuel trucks and replace diesel vehicles. The project will include a refueling station and hydrogen storage facilities, which will allow the electrolyser that produces the hydrogen to be used flexibly and to be run during off-peak hours in the electricity market. The relative GHG emissions avoidance from the operation of the project over a ten year period will be 100% compared to the reference scenario.

The GreenH2CY project is the first-of-its-kind in Cyprus and will serve as an important step towards establishing the hydrogen economy in the country. Cyprus is an isolated electricity network and lacks the necessary storage facilities or interconnections with other networks to store renewable electricity, notably at times of low demand and high production. Currently, this excess electricity is curtailed and discarded. Flexible hydrogen

COORDINATOR

KETONIS HOLDINGS LTD

LOCATION

Cyprus

CATEGORY

Refineries

SECTOR

Energy Intensive Industries (EEI)

AMOUNT OF INNOVATION FUND GRANT

EUR 4,499,877

EXPECTED GHG EMISSIONS AVOIDANCE

21,677 tonnes CO₂ equivalent

STARTING DATE

01 June, 2023

ENTRY INTO OPERATION DATE

01 September, 2025

FINANCIAL CLOSE DATE

31 August, 2024

production during those hours using an electrolyser which runs off the excess renewable electricity, combined with a hydrogen storage facility can provide an innovative solution to energy storage and distribution to address this challenge. The project will avoid 21 677 tonnes CO2 equivalent of greenhouse gas emissions during its first ten years of operation, attributed to the replacement of diesel fuel.

The GreenH2CY project includes the installation and operation of a 2 megawatt (MW) Proton Exchange Membrane (PEM) electrolyser, a hydrogen storage facility and a re-fuelling station, in the same location. The hydrogen production unit is expected to produce approximately 150 tonnes of hydrogen fuel per year, which is equivalent to 627 tonnes of diesel fuel per year. The water used in the electrolyser will be supplied from tertiary treatment of wastewater from the Water Development Department of Larnaca, supporting a circular economy.

In view of achieving the EU's climate neutrality objectives and moving away from the use of fossil

fuels, the transport sector requires mid to long-term decarbonisation solutions. The green hydrogen fuel produced by the GreenH2CY project will be used in the mobility sector, specifically for light and heavy trucks of a large bakery chain. However, its use could be extended to any other vehicles engineered to use hydrogen fuel in order to replace fossil-fuels based vehicles.

Due to an abundance of renewable energy, there is significant potential to produce green hydrogen in large quantities to use in both the mobility/transport sector (e.g. coaches, buses, saloon cars) and in the maritime sector (ports and marinas). The pilot project will create crucial understanding and experience in the generation, distribution and use of green hydrogen, thus contributing to the acceptance of hydrogen as a reliable and sustainable form of alternative fuel in Cyprus. Thanks to this learning, the project aims to scale-up production both at the project site and at other sites already identified.

| Beneficiaries

KETONIS HOLDINGS LTD

Cyprus

MCK. FUTURE FUELS LTD

Cyprus

A. ZORPAS KAI YIOI LIMITED

Cyprus

EVERGY LTD

Cyprus