CO2 to CH4 Life

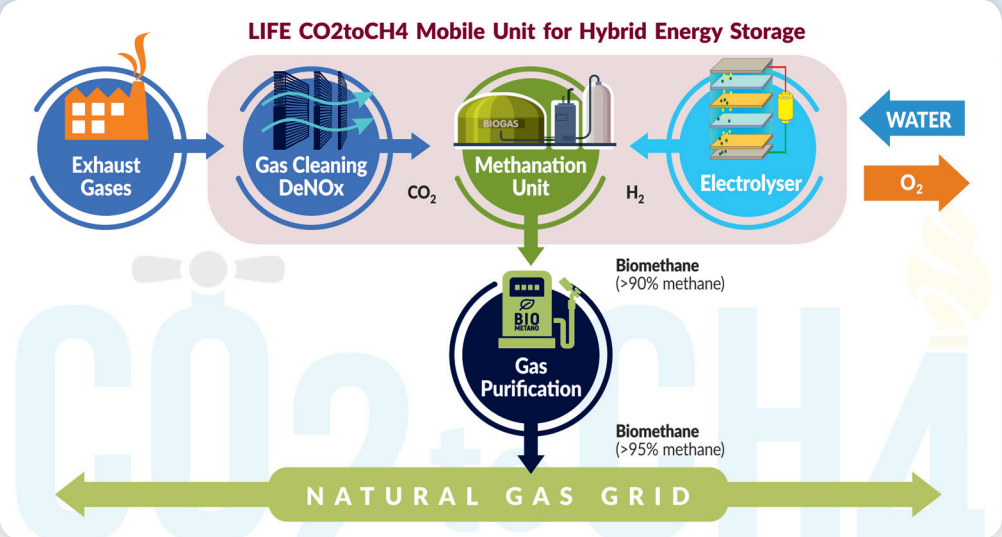
With the contribution of the LIFE Programme
of the European Union
LIFE20 CCM/GR/001642

DEMONSTRATION OF A MOBILE UNIT

FOR HYDRID ENERGY STORAGE BASED ON CO_2 CAPTURE AND RENEWABLE ENERGY SOURCES

DURATION: 48 MONTHS
OCTOBER 2021-SEPTEMBER 2025

The LIFE project CO2toCH4 aims to develop and demonstrate an innovative, integrated, and sustainable industrial process for simultaneous energy storage and CO_2 capture and utilization (CCU). The ultimate goal of the project is to construct, test and operate (TRL8) a smart mobile unit for hybrid energy storage able to be installed in remote energy systems that commonly have low capacity (e.g. remote areas or islands that are not connected to the central energy grid).



The technology innovation relies on the fact that the RES (Renewable Energy Sources) to be used for water electrolysis and subsequently, the produced H_2 will be biologically converted into methane (as a non-fossil biofuel) together with CO_2 from exhaust gasses.

PROJECT BENEFICIARIES

PPC Renewables

ARISTOTLE UNIVERSITY OF THESSALONIKI

ELGO - DIMITRA
HELLENIC AGRICULTURAL ORGANIZATION - DIMITRA

NEVIS
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PROJECT CLIMATE MITIGATION MAIN TARGETS

- **Tackle** the issue of precisely balancing the supply with the electricity grid by using an integrated system that uses impure CO_2 sources, and harnesses microbial consortia for producing biomethane.
- **Achieve** substantial reduction of CO_2 emissions with only one mobile unit for hybrid energy storage using impure CO_2 sources as input material.
- **Use** renewable energy sources for producing electricity without worrying about destabilising the grid since energy is stored in a stable form.
- **Overcome** the barrier of the inefficient and expensive storage of excess electricity by using a mobile unit for hybrid energy storage based on CO_2 capture and renewable energy sources.
- **Confront** the issue of remote areas and islands concerning the high risk of a power outage by using a competitive procedure for storing energy in a mobile unit.