



HydroG(re)EnergyY-Env

New technology to produce hydrogen from Renewable Energy Sources based on AI with optimized costs for environmental applications

” *Let's admit that hydrogen can be the fuel of the future* ”

HydroG(re)EnergyY-Env approaches a novel technology which consist in demonstration and validation in OITBs of an economically competitive digitalized solution for the process chain of hydrogen production from RES (when this type of energy is produced in excess). A low energy capacity hydrogen production demonstrator will be made using an electrolyzer with an AI-controlled “smart” system integrated, which will be scaled up at medium and high production capacity, ensuring its replicability due to the modular equipment’s. Solutions for eco-friendly use of hydrogen will be developed both for the reduction of the pollution in protected wetlands areas and CO2 emissions for the domestic and industrial users of methane. The project will be an in-depth engagement of stakeholders,

Project Duration

01.05.2022 - 30.04.2024

Project Budget

Total Budget: € 1.034.755-
Funding: € 1.034.755

Project Coordinator

National Institute for Research and Development in Environmental Protection (INCDPM Bucharest) (ROMANIA)

Project Partners

- WING Computer GROUP SRL (ROMANIA)
- National University of Science and Technology POLITEHNICA Bucharest, (ROMANIA)
- NABLADOT SL (SPAIN)
- University of Life Sciences and Technologies (LATVIA)
- Elektronikas un datorzinatnu instituts - EDI (LATVIA)
- Technische Universitat Clausthal – TUC (GERMANY)

<https://www.incdpm.org/hydro-energy-env>

ERA-Net Smart Energy Systems



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ERA-Net Smart Energy Systems Joint Call 2020 (MICall20)

This project has been awarded funding within the ERA-Net SES Joint Call 2020 for transnational research, development and demonstration projects. 22 Mio EUR of funding have been granted to 21 projects active in 17 regions and countries.

Main Objectives

The main objective is to achieve and validate in Open Innovation Test Beds (OITBs) of the efficiency of a hydrogen production technology obtained from RES integrated in a diversified AI control system and to provide solutions for hydrogen eco-friendly use in the energy and naval sector, offering business models for the naval sector and environmental protection, useful to the future society.

Main Results

- Demonstrator of hydrogen production – integrated in Smart Energy System for low energy capacity;
- Smart Energy System models (medium & high energy capacity)
- AI and avatar based control system for the hydrogen electrolyser of low energy capacity;
- Numerical models for hydrogen/ammonia injection in the natural gas network
- Business Models for Small & Medium Enterprises;
- Tools suit to size the business decision software
- Eco-friendly solution for hydrogen use
- Better practices for the hydrogen injection in the natural gas transport network and CO2 reduction emissions;
- Policy Brief with innovative solutions into RES for stakeholders.

**Joint Programming for Flourishing Innovation –
from Local and Regional Trials
towards a Transnational Knowledge
Community**

www.eranet-smartenergysystems.eu



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