CRAVE-H2
CRETE AEGEAN H₂ VALLEY
Crete Island, Greece
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EUNICE

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Project Overview

Project dates: 01/06/2023 - 31/05/2028

Total project budget: 11,201,812.00 €

10 % executed by Nov. 30th, 2023.

CHP contribution: 7,994,812.00 €
Other financial contribution: 3,207,000.00 €

Call year: 2022
Call topic:
HORIZON-JTI-CLEANH2-2022-06-02
Hydrogen Valleys (small scale)

CRAVE H₂
Partners and location of the Crete Aegean H2 Valley
Crave-H2 objective:
develop the green hydrogen value chain in the island of Crete for decarbonizing the:
  a) transportation sector; and
  b) electricity grid.

Eunice (GR)
  - Green energy supplier
  - Energy Management System
De Nora (IT)
  - 3MW alkaline electrolysers
Green Hydrogen End Uses

Eunice (GR)
- Compression - Storage
- HRS - H₂ Refueling Station

Ballard Europe (DK)
- 400 kW PEM FC manufacturer

HEDNO (GR)
- PEM FC connection to the grid

Union Coaches - SOLMAR (GR)
- end user - H₂ powered buses
Future Applications
for green H2 as a fuel, will be explored mainly in:

a) maritime sector and
b) power production, at refurbished thermal power plants.
## Project implementation and progress

<table>
<thead>
<tr>
<th>Achievements to date (10%)</th>
<th>Actions planned till M24</th>
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<th>Actions planned till M48</th>
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<tbody>
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<td>31/05/2025 40% progress</td>
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Project Objectives in Relation to the Work Programme

CRAVE-H2 results are expected to contribute mainly to the following objectives of the Clean Hydrogen JU SRIA for H2 Valleys:

- Improved security and resilience of the energy system, e.g. via hydrogen production using locally available renewable energy sources
  - Crete has a great difference in electricity demand and production, and H2 storage and use will come to better close the gap between RES production and power demand.

- Market creation: demonstration of new market for hydrogen
  - CRAVE-H2 is the first project that investigates interconnecting H2 storage into an aggregator operation, in conjunction with strategic connectivity of an important energy node in Crete.
Risks & Challenges

Lack of legal framework for licensing and permitting

✓ The installations of the electrolysers and the fuel cells; and
✓ The connection of the fuel cell to the grid.
Communication and dissemination

**Project’s Kick-off Meeting Press Conference in Athens (June 2023)**
- More than 50 references in national and international press

**Communicate CRAVE-H₂ in Events**
- 1ˢᵗ Hydrogen and Green Gases Forum in Athens, Greece, June 2023
- Workshop on “Hydrogen Technologies and alternative fuels”, 87ᵗʰ Thessaloniki International Fair, Sept. 2023
Develop the Green Hydrogen value in the island of Crete for decarbonizing a) the transportation sector; and b) the electricity grid.

Zero Emissions Network, enabled with a high-performing 33/100 kW rSOC (reversible Solid Oxide Cell) power balancing plant, suitable for electricity and gas grids.

Create Renewable Energy Valley 'Living Labs' (REV-Labs) in the island of Crete, for green hydrogen production and applications.

Expected interactions with projects funded under EU Programmes

GA #101112169—Horizon-JTI-CleanH2-2022-2
GA #101101418—Horizon-JTI-CleanH2-2022-2
GA #101136139, HORIZON-CL5-2023-D3-01-01
TILOS aims to demonstrate the optimal integration of local scale energy storage in a fully-operated, smart island microgrid that will also communicate with a main electricity grid. Submarine 600 MW DC transmission cable connecting Egypt to the island of Crete, with the aim to produce green hydrogen. Installation of 582 MW wind parks on remote and uninhabited Greek islets of the Aegean Sea. Demonstrate the technical and financial feasibility of FC-based H₂ energy storage solutions, in 3 demos (isolated micro-grids or off-grid remote areas). Expected interactions with projects funded under EU Programmes

Greece - Africa Power (GAP) Interconnector

Aegean Project

Tilos Smart Island

Ref.: https://eunice-group.com/projects/aigaio-project/
Recommendations looking ahead

Clean Hydrogen Partnership can support the Green Hydrogen Value Chain developers, by assisting for:

2. Setting national and European and National targets for electrolyser, green hydrogen production and hydrogen uses.
3. Creating an encouraging investment climate in the hydrogen sector, with the initiative of local communities.
Thank You

Crete Aegean H2 Valley

Atherinolakos, Crete, Greece

http://crave-h2.eu/