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[www.h2-heat.eu](http://www.h2-heat.eu)

## Horizon Europe Project

05

The project is led by PLOCAN and involves a collaboration of eleven partners (including Esteyco, 2G, CMC, the Government of the Canary Islands, and the SCS), but also welcomes international companies such as Neodyne and IcorSA from Ireland, Stargate from Estonia, SPLP from Ukraine, and EMEC from Great Britain.

The grant agreement with the European Commission, through the Horizon Europe programme, signed by the Canary Islands Ocean Platform (PLOCAN) as project leader, will receive funding of 10,655,475 euros out of a total budget of 13,062,375 euros, for a period of 5 years.

**HORIZON-IA HORIZON Innovation Actions**  
**HORIZON-CL5-2022-D3-02-03**

Sustainable, secure, competitive energy supply  
**Project number:** 101118318  
**Project name:** H2Heat  
**Project starting date:** 1 September 2023  
**Project ending date:** 31 August 2028

The H2Heat project is financed by European Union through the GRANT AGREEMENT no. 101118318 - Horizon Europe call HORIZON-CL5-2022-D3-02-03 called "Innovative renewable energy carrier production for heating from renewable energies", concluded with the European Climate, Infrastructure and Environment Executive Agency (CINEA) under the powers delegated by the European Commission.

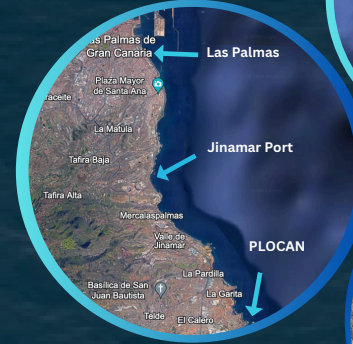


Funded by the European Union

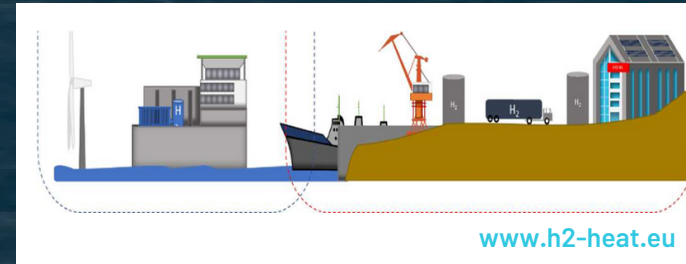
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## H2Heat Project Location

06



The hospital that H2Heat will be supplying with power and heating.



[www.h2-heat.eu](http://www.h2-heat.eu)

## Converting Hydrogen into the Heating and Hot water systems

The **H2HEAT** project, which started in September 2023, **revolutionised the way energy was generated and utilised** by converting hydrogen into the commercial building's heating and hot water systems at one of the hospitals in Gran Canaria.





## H2Heat Project

# 01

Harnessing the Power of Hydrogen: **Transforming a Sustainable Future through Innovative Heating and Hot Water Solutions by Converting Hydrogen into Energy**

The overall aim of the H2Heat project is to demonstrate the full value chain for green hydrogen (H2) production and its use in commercial building heating supply. The Canary Island Health Service (SCS) has signed a collaboration agreement with coordinator PLOCAN in order to promote the generation of renewable energy (RE), the production of green H2, and its application to decarbonise the hospital facilities of the SCS on the Canary Islands.



## Developing replicable business models for wide-scale commercial usage of Hydrogen

Focused on innovative technology, H2Heat provides efficient and eco-friendly alternatives.

The comprehensive and complementary mixture of expertise and know-how provided by the 11 consortium partners will ensure an efficient realisation of the technical objectives of the project, reduce total cost of ownership (TCO) of H2 fuel for consumers, and develop replicable business models for wide-scale commercial usage of H2 as a direct heating alternative across the Canary Islands. H2Heat will contribute to enabling the Canary Islands to become part of the H2 valley economy through locally produced H2 from renewable energy (RE) for heating.

## Reducing CO2 emissions by over 50%

# 02

### Zero Net Emissions 2030 Health Strategy

This initiative is taking place at the Complejo Hospitalario Universitario Insular Materno Infantil, where the Canary Islands Health Service (SCS) is actively involved. As part of their Zero Net Emissions 2030 Health Strategy, the SCS has joined forces with PLOCAN to create a unique system that generates green hydrogen for use within the hospital.

Beyond its environmental impact, the H2HEAT project is committed to establishing a complete manufacturing and supply chain, creating replicable models for hydrogen commercialization, and boosting the local economy.

### Renewable Offshore Wind Energy

To achieve their goals, H2HEAT will utilize renewable offshore wind energy through the ELICAN project, a five-megawatt facility developed by Esteyco and supported by EU funding. The hydrogen production plant will employ a state-of-the-art one-megawatt electrolyser, replacing conventional fuel sources at the hospital complex.

This process will combine advanced technology burners with a heat pump to maximize the utilization of renewable energy sources. With this innovative approach, the project aims to provide more than fifty percent of the hospital's required heat using green energy. This may harness offshore energy generation, particularly through the production of green hydrogen, to decarbonize SCS facilities.

## Key Project Phases

# 03

### Planning and Preparation

The H2Heat project embarks on comprehensive project preparation, collecting essential data such as resource assessment, Environmental Impact Assessment (EIA), techno-economic evaluation, and consenting procedures. This groundwork is vital for ensuring the successful implementation of the green hydrogen production and utilisation system, laying the foundation for subsequent phases.

PLOCAN has set aside part of its site near Las Palmas Gran Canaria for the H2HEAT H2 facility. Resource surveys will include access to historic records of wind, solar, and barhometric surveys. Examining the lack of correlation between the energy supplies, use of the latest models for forecasting wind and solar. The data will allow simulation of current and future energy demand.

### Definition and acquisition

In this phase, detailed designs for cutting-edge technologies, including the electrolyser, H2-CHP/heat pump, and control system, are outlined. and integration plans for the H2-CHP/heat pump into hospital heating systems. Procurement initiates for project equipment, and the H2/O2 facility is prepared. The focal point is a sophisticated system governing H2 production from variable renewable sources. Dynamic System Monitoring tailors responses to hospital load requirements, addressing supply/demand gaps. Supervisory Control and Data Acquisition provides an overview, vital for the demonstration phase. The Simulation Suite offers scenario planning and future-proofing for diverse renewable sources. Stargate advances designs for their 1MW electrolyser system.

# 04

### Build and installation

Build and installation is about constructing and innovating all technologies and equipment, especially focusing on software development for the Control System. A comprehensive test strategy and plan will detail test protocols, processes, KPIs, and acceptance criteria. Technology partners must pass Factory Acceptance Testing (FAT) to progress to Phase 4. The H2 storage facility will be prepared, the electrolyser and H2-CHP innovations completed, and all equipment delivered and installed.

### Commission, demonstration and test phase

The five-year project timeline allows for demonstration, testing, monitoring, and optimization cycles. The project plan allocates time for two trials, with an optimization cycle in between. In case of unforeseen events, this phase can be adjusted for a singular main demonstration with optimization. Full Site Acceptance Testing (SAT) will use predefined target KPIs set independently by the Test team. Once all the technologies, integration, control system and infrastructure pass SAT, the project will commence project wide demonstration trials and test.

### Exploitation

The Exploitation plan of H2HEAT is centred on becoming the model for Green H2 heating to be rolled out to each of the other hospitals on the Canaries resulting in huge commercialisation of the projects results and outputs.