A strategic hydrogen connection for Europe

PCI 9.1.2. Portugal-Spain Hydrogen Interconnector

Co-financed by the European Union

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Project information brochure

November 2025

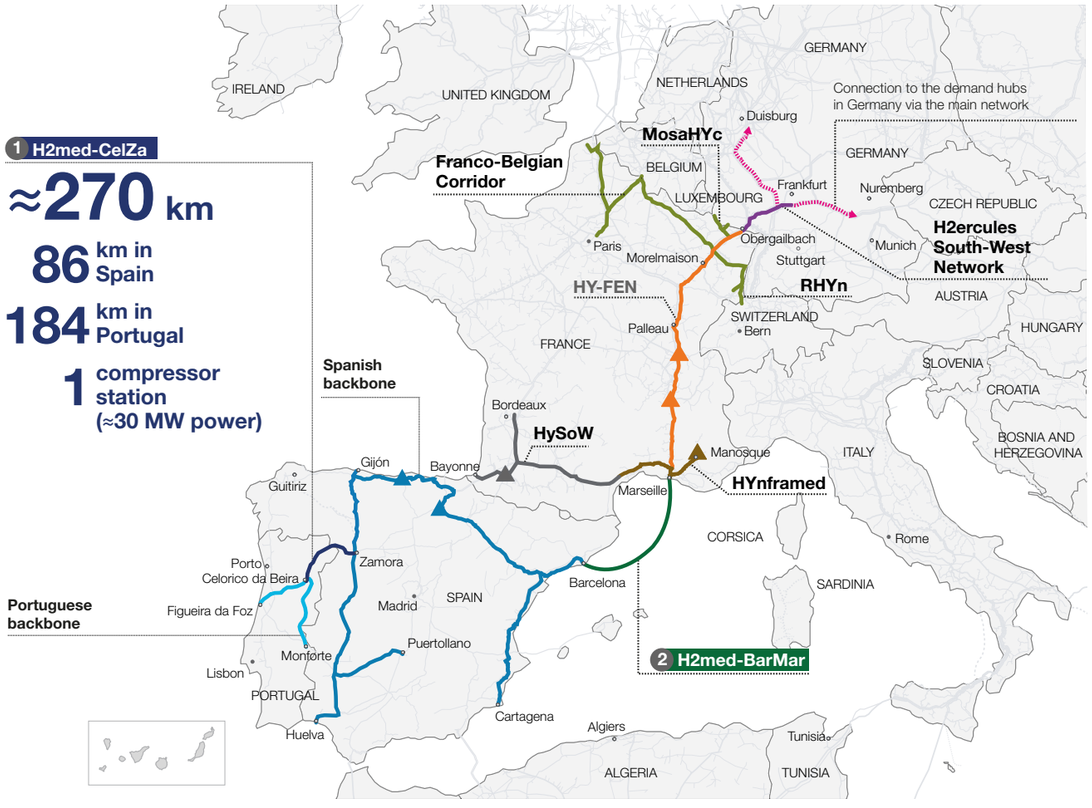
h2medproject.com

www.infraestructurasdehidrogeno.es

An essential project for Europe

PCI Project 9.1.2. The "Portugal-Spain Hydrogen Interconnector", known as CelZa, together with BarMar, the interconnection between Spain and France (PCI Project 9.1.4.), comprise H2med, the first renewable hydrogen corridor in the European Union.

The aim of this project is to construct a hydrogen transmission branch between the towns of Celorico da Beira (Portugal) and Coreses (Zamora, Spain), and it envisages a compressor station located in the municipality of Coreses.



An opportunity for Spain and Portugal

A more sustainable energy future
A hydrogen network is key to decarbonising industry and heavy transport

Industrial and technological development
Creation of a hydrogen industry and generation of an innovative business fabric

Growth and competitiveness
≈€350 M of investment

Job creation and revitalisation of regions
1,700 new jobs during the construction of H2med (CelZa and BarMar) and 300 in operation and maintenance

The Spanish hydrogen economy will generate more than €32 billion in GDP and maintain some 81,000 jobs each year during its development*

In Portugal, the National Strategy for hydrogen estimates that this vector could constitute an investment amounting to as much as €9 billion and lead to the creation of up to 12,000 new jobs by 2030**

* Source: "Socio-economic impact of the development of the hydrogen economy in Spain", a report issued by PWC for Enagás (2023)
** Source: https://www.iea.org/policies/12436-hydrogen-strategy.

EU-funded PCI project

This infrastructure between Portugal and Spain and the interconnection between Spain and France (BarMar) comprise the H2med project, which is set to connect hydrogen production on the Iberian peninsula with the consumption hubs in north-west Europe. H2med and the inland hydrogen infrastructures of Spain and Portugal were designated as **Projects of Common Interest (PCIs)** by the European Commission in the first call for hydrogen projects in April 2024. In January 2025, the Climate, Infrastructure and Environment Executive Agency (CINEA) awarded **100% of the Connecting Europe Facility (CEF) Energy funds** requested for CelZa.

7.2M€

European investment for **CelZa's basic and detailed engineering phases**

Project timeline

Enagás — REN

December 2023
Designation of Enagás as interim Hydrogen Transmission Network Operator (HTNO)

January 2024
Ratification in the Spanish Parliament of the designation of Enagás as interim HTNO

April 2024
Inclusion on the definitive list of the project's PCIs: PCI 9.1.2. Portugal-Spain Hydrogen Interconnector (H2med-CelZa)

July 2024
Authorisation by the Council of Ministers to Enagás for the development of the PCIs

November 2024
Submission of candidatures 2nd list PCIs

January 2025
Awarding of CEF funding for the project's study phases: PCI 9.1.2. Portugal-Spain Hydrogen Interconnector (H2med-CelZa)

Q2 2025
Awarding of engineering works

Q3 2025
Procurement of engineering works and environmental studies

November 2025
Launch and roll-out of the Public Participation Concept (PPCP) in Spain

June 2025
Designation of REN as interim Hydrogen Transmission Network Operator (HTNO)

2025-2026
Development of engineering, environmental studies and permits

2026
Application for CEF funds for construction

Q4 2026
Public consultation on Environmental Impact Assessment

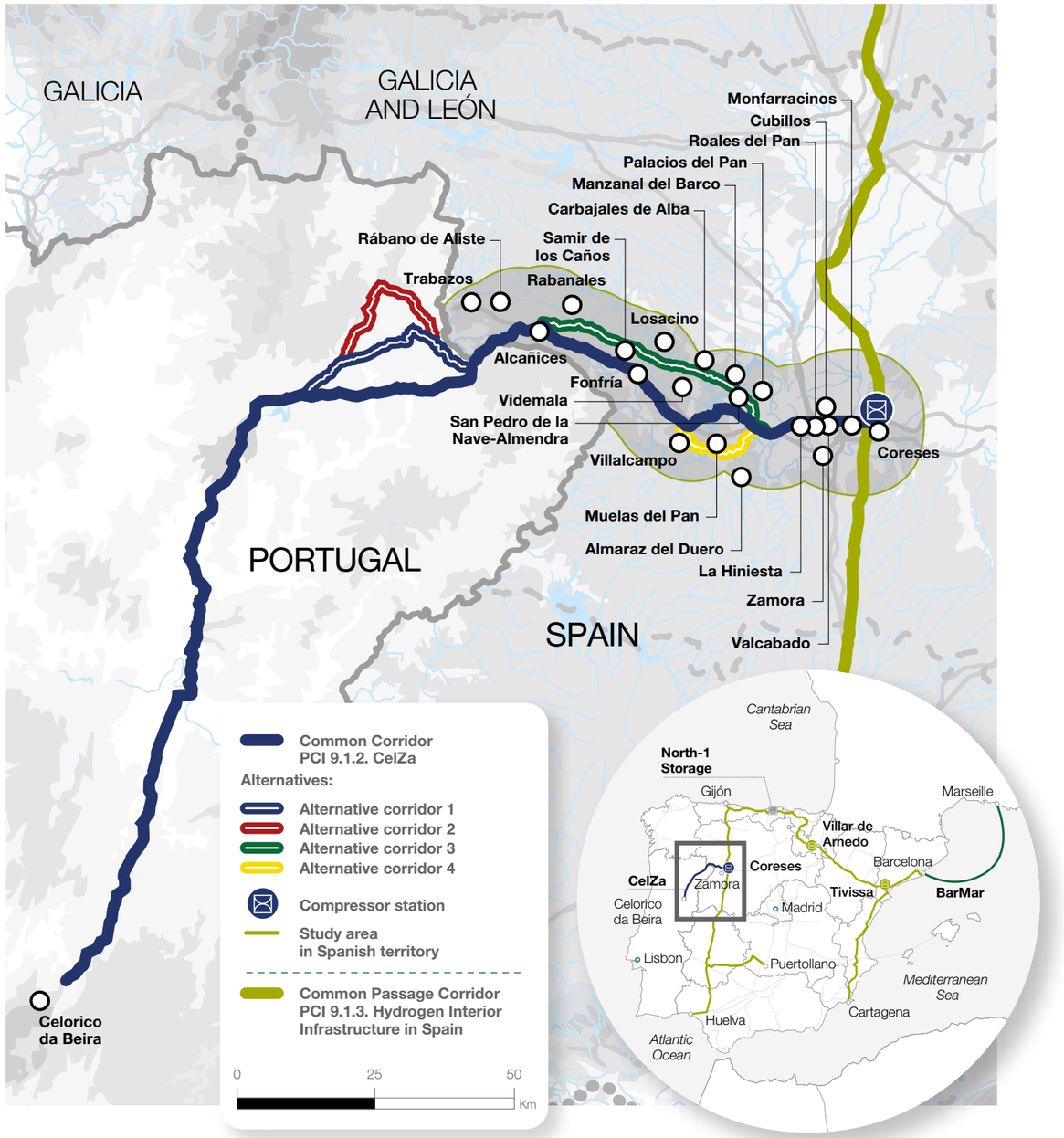
2027
FID (Final Investment Decision)

2027-2028
Purchase of equipment and materials

2028
Start of construction

Early 2030s
Start-up

Main infrastructures



Enagás, interim manager of the Spanish hydrogen transmission network

The company is the operator of the natural gas transmission networks (TSO) in Spain and Technical Manager of the Gas System. It has also been designated by the Spanish Government as interim manager of the future hydrogen network in the country (HTNO, Hydrogen Transmission Network Operator). In July 2024, the Council of Ministers authorised Enagás Infraestructuras de Hidrógeno (a subsidiary incorporated in 2022) to develop the European PCIs, including H2med-CelZa, the interconnection between Portugal and Spain.

REN, interim operator of hydrogen infrastructure in Portugal

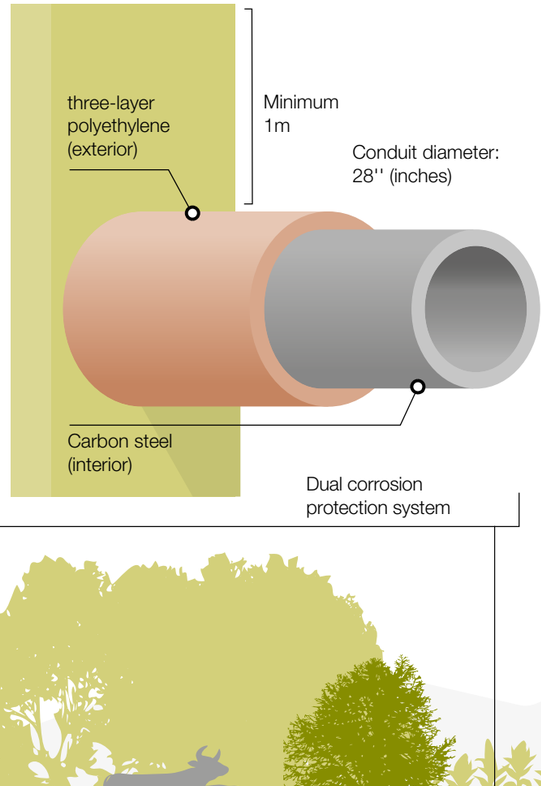
REN-Gasodutos, S.A. is the REN Group company responsible for the planning and operation of high-pressure natural gas transmission infrastructures and the Global Technical Management of the National Gas System. This company is a subsidiary of REN Gás, S.A., an entity that was recently designated by the Portuguese Government as interim operator of the hydrogen infrastructure in Portugal (HTNO, Hydrogen Transmission Network Operator), and it will be responsible for planning, developing and operating the future hydrogen system.

Hydrogen pipeline

The design of this underground pipeline will be based on the international standards for this type of infrastructure and the present-day legislation applicable to the industrial sector, and it will be in accordance with the regulations and complementary technical instructions that are currently in force.

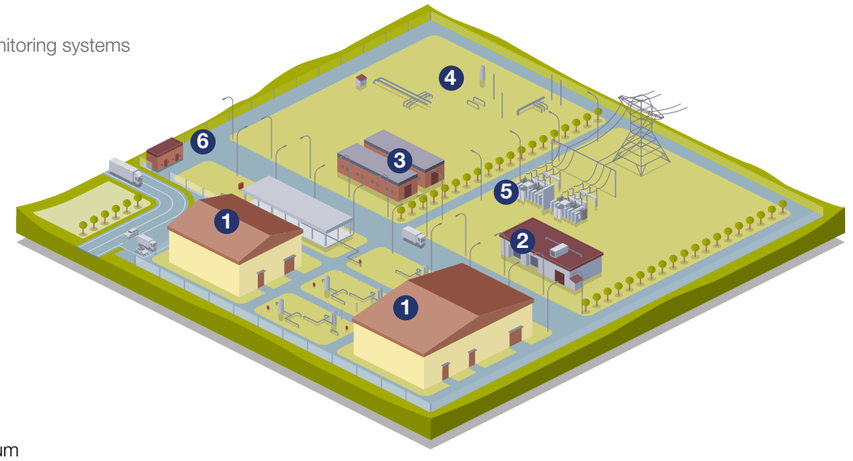
In addition, there will be security and monitoring systems in place to guarantee its safe operation.

The preliminary studies for the project envisage around 11 newly-constructed valve positions in Spain and Portugal, which will be located 30 km from each other at most. They shall be equipped with remote actuation and control systems, as well as permanent monitoring to ensure safe operation.



Compressor station

It is a facility that increases the pressure of the hydrogen so that it can be transmitted through the pipeline.



1. Compressor room
2. Electrical and control building
3. Regulating and/or measuring station*
4. Position of valves and scraper traps**
5. Transformation area
6. Entry control

* Facilities for the entrance/exit of the hydrogen into/from the transmission system

** Connection facilities to the transmission pipelines

A transparent participatory process

In compliance with the provisions of the TEN-E Regulation of the European Union (EU Regulation 2022/869), the project developer in each region is obliged to implement a public participation plan to provide information and involve the citizens and stakeholders in the decision-making with regard to a PCI in the field of energy.

The Portuguese section of PCI 9.1.2 “Portugal-Spain Hydrogen Interconnector” is being developed by REN Gasodutos. This section has undergone a public consultation, carried out within the framework of the strategic environmental assessment of the Investment Plan for gas in Portugal, at a stage prior to the start of the licensing process, having met the requirements set out in the above-mentioned Regulation. The information on the consultation process is available on the REN’s website (**www.ren.pt/media/cwvnacs0/da-aae-pdirg-2024-2033.pdf**).

In Spain, Enagás began the formal process for securing the authorisations applicable to this PCI, in accordance with Regulation (EU) 2022/869 and the Manual of the Procedure for the Authorisation of Energy PCIs, published by the Ministry for Ecological Transition and the Demographic Challenge in October 2023.

Objectives

Improve the project's acceptance by taking into account environmental sensitivity and social legitimacy from an early stage

Involve the community and encourage their active participation in the process

Identify and mitigate impacts in advance and ensuring the most appropriate actions are taken to address them

Resolving doubts and explaining the project

Be transparent in disclosing information about the future hydrogen network to all stakeholders

European Commission Transparency Platform

Procedural manual

What does it consist of?

The deployment of this public participation process in Spain can be viewed at **www.infraestructurasdehidrogeno.es.**

Enagás will report in detail on this process in the participatory meetings that shall be held throughout the country with the project stakeholders: local councils, associations and citizens.

These are some of the main informative and participative initiatives that Enagás will carry out:

Website

Information leaflet and non-technical summary

Seminars with experts

Participatory meetings with citizens and the administration

Dissemination through information points (fixed and mobile)

Commitment to environmental and social sustainability

Green hydrogen is a 100% renewable vector essential for combating climate change and making advancements in the energy transition.

The H2med-CelZa project will have a very low environmental impact, thanks to the implementation of preventive and corrective measures throughout all its phases.

The surface facilities will be designed under strict criteria of efficiency, ensuring maximum safety and availability while minimising their impact on the surface.

Protected natural areas and areas of environmental or cultural heritage interest will not be affected.

Construction phase

Temporary impacts arising from implementation that shall be mitigated by appropriate measures.

Commissioning

Minimal impacts during the execution of the tests necessary to start up the installations.

Operation phase

Reduced impact from the emission-free operation of compressor station and other ancillary facilities, which shall be mitigated by regulatory measures.

Dismantling

Temporary impacts arising from land reclamation and environmental restoration.

With a view to maximising the positive effects of the project and improving environmental prevention, **a suite of preventive and corrective measures** has been implemented in the different phases of the project's design, construction and operation phases.

Preventive measures

Synergistic design
Use of existing infrastructure corridors to avoid affecting natural and protected areas and watercourses.

Sustainable construction
Correct maintenance of machinery, equipment and actions that minimise the impact and favour the conservation of soil, water, fauna and flora.

Corrective measures

Land reclamation
Land restitution, topsoil replacement and waste management.

Restoration of flora and fauna
Carrying out activities aimed at restoring and recovering the affected vegetation and local fauna.

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