

ADVANCES IN HYDROGEN INFRASTRUCTURES IN SPAIN

A EUROPE- BOUND VISION

Arturo Gonzalo, Chief Executive Officer, Enagás

- 1 2025: Green hydrogen, an energy vector that is forging ahead at an unprecedented speed**
- 2 H2med, the most mature transnational corridor in Europe**
- 3 Advances in the Spanish Hydrogen Backbone**
- 4 2026: the next milestones in hydrogen in Europe and Spain**
- 5 Conclusions**



**2025: Green hydrogen,
an energy vector that is
forging ahead at an
unprecedented speed**

GREEN HYDROGEN IS A REALITY IN INVESTMENT DECISIONS

WORLDWIDE

\$110 billion
Investment committed
to low-carbon hydrogen
projects **worldwide***

500+ projects
with **final investment
decisions** made*

IN EUROPE

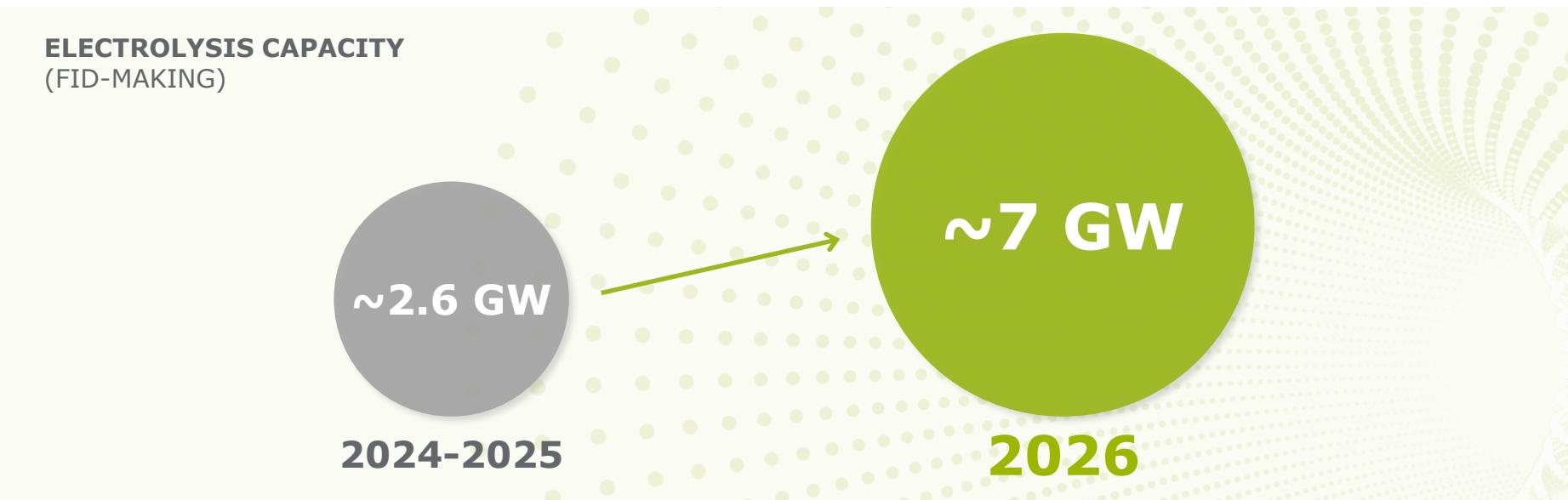
\$12 billion
Investment
committed in 2025*

2.7 GW
Projected operational
electrolysis capacity in the
EU in 2026 → **x7** vs 2025

Europe: the
world leader in
committed
investments in
2025

Source: ACER hydrogen monitoring report (Dec 2025)

FINAL INVESTMENT DECISIONS IN H₂ PRODUCTION PROJECTS ANNOUNCED IN EUROPE



MILESTONES IN SPAIN AND EUROPE

JANUARY

- Presentation of the European Commission's **Competitiveness Compass**
- **CEF funds** for hydrogen projects

J

F

M

A

M

J

J

A

S

O

N

D

FEBRUARY

Presentation of the European Commission's **Clean Industrial Deal**

JUNE

Resolution on funding for Hydrogen Valleys by MITECO [Spain's Ministry for the Ecological Transition and Demographic Challenge]

Milestones in Spain

MAY

Result of the 2nd **European Hydrogen Bank auction**

AUGUST

Franco-German Council of Ministers. H2med / Southwestern Corridor - recognised as a Flagship Project

SEPTEMBER

Announcement by the President of the European Commission on **Energy Highways**

DECEMBER

- Adoption of the **2nd PCI/PMI list**: Spanish backbone and H2med renew their status
- Publication of the **EU Grids Package** and designation of the H2med Corridor as an **Energy Highway**
- **Transposition of the RED III Directive** begun in 13 member states
- Launch of the **3rd European Hydrogen Bank auction** with a budget of €1.3 billion

JULY

- **Proposal to increase the CEF-E budget to €30 billion**
- Passing of the **Delegated Act on low-carbon fuels**
- **Commencement in Spain of the transposition of RED III Directive** in the transportation sector

NOVEMBER

First round of the **Hydrogen Mechanism** launched by the European Commission to connect buyers and producers

Spain's contribution to the European mechanism of auctions as a service (AaaS) of the European Hydrogen Bank

SOME MILESTONES IN MEMBER STATES IN 2025

FRANCE

- Update of the **Hydrogen Strategy**
- NaTran and Teréga launch a **consultation process on future prospects of the CH₄, H₂ and CO₂ markets**

PORTUGAL

- Publication of the Legislative Decree that amends the organisation and operation of the National Gas System, defining **competencies in H₂ (ERSE as H₂ regulator)**
- **REN Gás S.A** is appointed **HTNO** on a transitional basis

NETHERLANDS

- **Hynetwork** sends the Ministry of Climate Policy and Green Growth its new proposal of the **H₂ network deployment plan**
- The **regulator** publishes a **report on setting the H₂ transport toll**
- Publication in the Official Journal of the ministerial **announcement on conditions of access to the future H₂ network and toll in 2026**



GERMANY

- BNetzA approves the **H₂ central grid toll** (€25/kWh/h/yr)
- Presentation of the **Hydrogen Accelerator Bill**
- Publication of the **WaKANDA** (capacity and **WasABi**(balance) regulation of the H₂ network

ITALY

- The Council of Ministers approves the bill that appoints Autorità di Regolazione per Energia Reti e Ambiente (**ARERA**) as **hydrogen regulator**

GREECE

- Publication of the law for the organisation of the **H₂ production** market

BELGIUM

- The regulator launches a **consultation on the hydrogen terminals regulatory framework**

DENMARK

- Energinet defines the process for **early connections** to the Danish backbone (DHB1)
- The regulator approves the **H₂ network capacity model**
- Energinet defines the process for connections to the **DHB1 from 2032**
- The regulator publishes informative documents on **H₂ regulation and its remuneration**

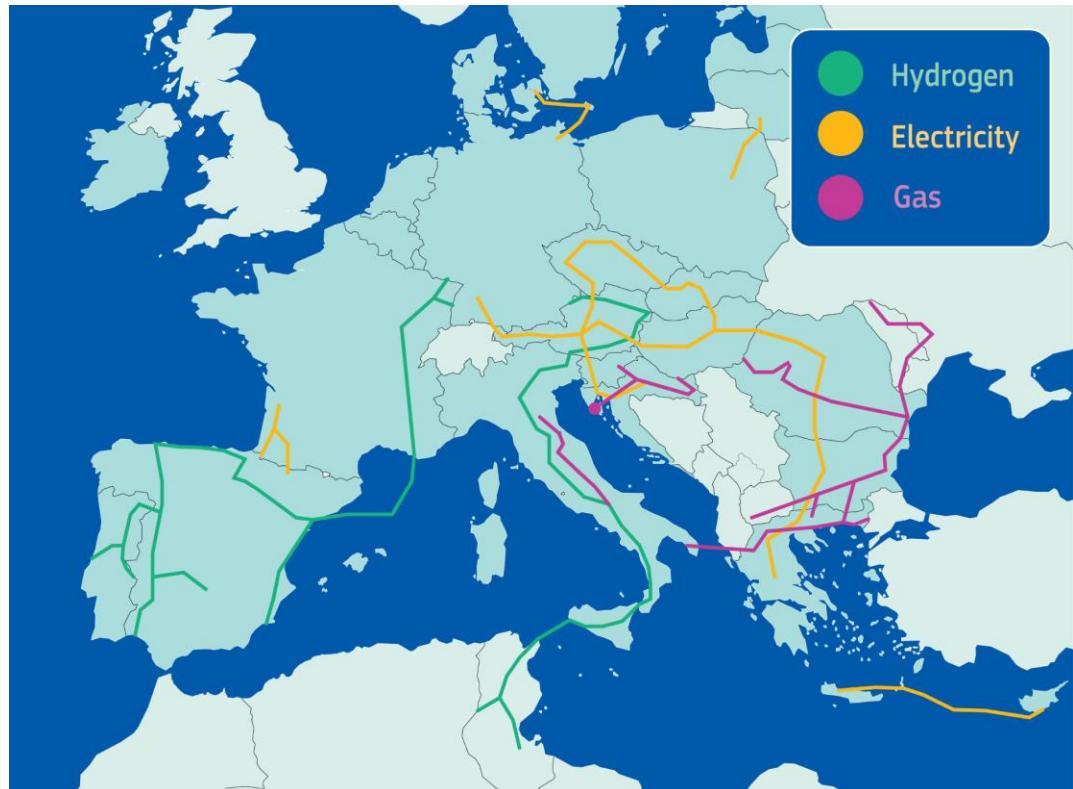
H2MED: A EUROPEAN HYDROGEN HIGHWAY

Energy Highways and EU Grids Package

The Spanish hydrogen backbone and H2med are among the eight priority **Energy Highways** for the EU, within the South-East Hydrogen Corridor.

Fast track: these projects will see real and tangible progress in the short term, with fast-tracked official administrative processing.

Europe speeds up the development of renewable H2 infrastructures and makes it easier to obtain permits, simplifying red tape and boosting interconnections among countries



Source: European Commission

2

**H2med: the most
mature transnational
corridor in Europe**

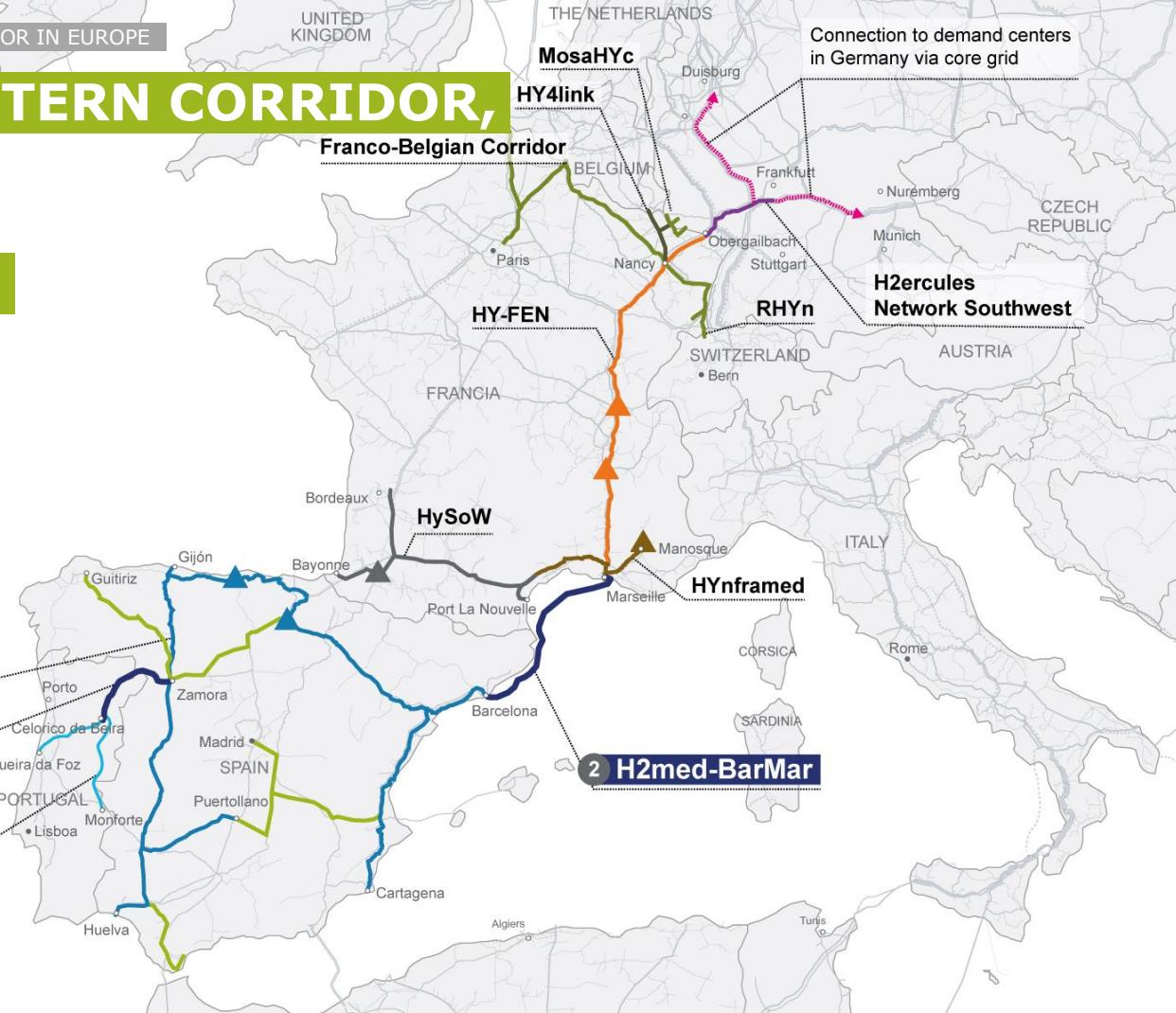
H2MED/SOUTHWESTERN CORRIDOR, THE BACKBONE OF THE EUROPEAN HYDROGEN SYSTEM



Spanish
Hydrogen Backbone

1 H2med-CelZa

Portuguese
Hydrogen Backbone



H2MED MAKES FASTER PROGRESS IN 2025



JANUARY

Granting of the CEF funds requested for assessments and engineering

MAY

European Commission VP Teresa Ribera visits the Barcelona plan, the exit point of BarMar

AUGUST

“Flagship project” according to the Franco-German Council of Ministers

NOVEMBER

- **Geophysical studies** of BarMar completed
- **Technical feasibility** of BarMar and COD confirmed
- Development of CelZa's Public Participation Conceptual Plan (PCPP) in Spain

2025

J**F****M****A****M****J****J****A****S****O****N****D**

FEBRUARY

Presentation of the **results** of the H2med **Call for Interest**

JUNE

- Incorporation of **BarMar SPV**
- Signing of **Grant Agreements with CINEA**
- European Commission VP Teresa Ribera receives the CEOs of H2Med

SEPTEMBER

H2med Alliance event in Berlin

DECEMBER

H2med, Energy Highway priorities for the EU

H2MED MAKES FASTER PROGRESS IN 2025



H2MED MAKES FASTER PROGRESS IN 2025



BarMar IN FIGURES

400 km
of offshore pipeline

2 Mt/a
transport capacity

2032
Planned start-up

Official administrative process



JANUARY
The Initial Project Document (DIP) is submitted to the Ministry for the Ecological Transition and Demographic Challenge



JUNE
Approval of the PCPP in Spain by the Ministry for the Ecological Transition and Demographic Challenge



JULY
Submission of the "Referral file" to the *Commission nationale du débat public (CNDP)* to start the citizen participation procedure in France

2025

J

F

M

A

M

J

J

A

S

O

N

D

Technical progress



JULY
Engineering phase contracted pre-FEED II for conceptual engineering of the compression station and pipeline

JUNE

- Formation of the BarMar company:

EIH-Enagás	50%
Natran	33.3%
Teréga	16.7%
- Appointment of the CEO: Francisco de la Flor



NOVEMBER
Geophysical study of the route completed. Technical feasibility confirmed

ENGINEERING



Official administrative process



DECEMBER 2024

The Initial Project Document (DIP) is submitted to the Ministry for the Ecological Transition and Demographic Challenge



NOVEMBER-DECEMBER

Public Participation Conceptual Plan in Spain is completed



DECEMBER

The scope document for the environmental assessment scope document is sent by the Environmental Assessment Sub-Directorate-General

CelZa IN FIGURES

≈ 270 km

of pipelines

0.75 Mt/a

of capacity

2025

Technical progress



APRIL

Award of the basic engineering contract in the Spanish section



OCTOBER

- Basic pipeline engineering in Spain is completed**
- The Coreses compression station is making progress with the defining of placements, electrical studies and key technical analysis
- The Environmental Impact Assessment of the Portuguese section has been commissioned**



NOVEMBER

Award of the basic engineering contract of the Spanish section

ENGINEERING

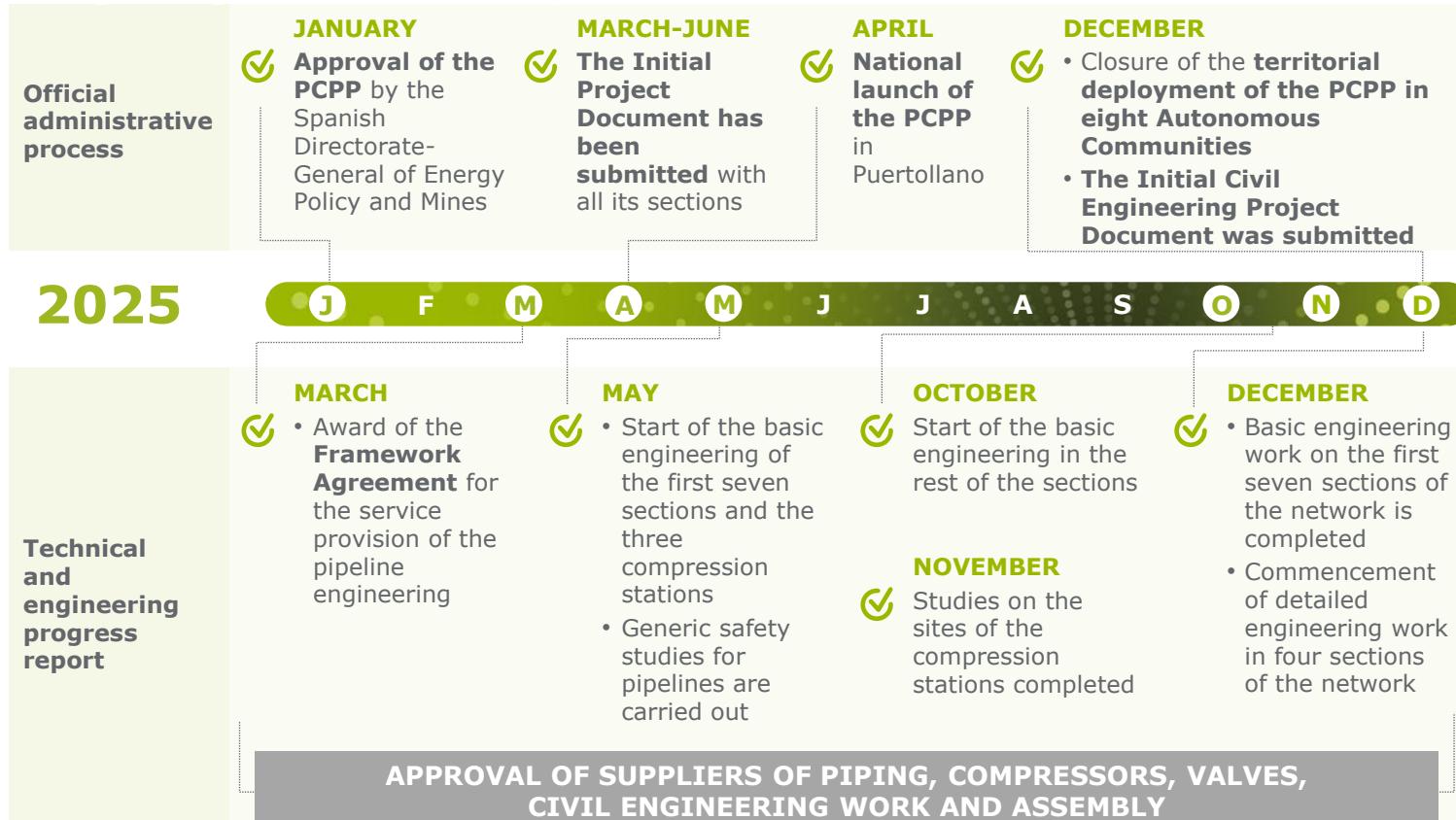
3

Advances in the Spanish Hydrogen Backbone

SPANISH HYDROGEN BACKBONE 2030



PROGRESS IN THE SPANISH HYDROGEN



6 SPANISH
ENGINEERING

 **BOSLAN**
Part of Accenture

IDOM

 **ayesa**

 **heymo
ingenieria**

intecsa.

 **TECNICAS REUNIDAS**

PROGRESS IN UNDERGROUND STORAGE

NORTH 1 IN 2025



ENGINEERING



CONCEPTUAL PLAN OF PUBLIC PARTICIPATION SPANISH BACKBONE

13
ACs

25
provinces

+550
municipalities

2,600
km of pipelines

15
sections

5
axes

Aims of the public participation process

Inform with transparency
Resolve queries and explain
Involve the community
Identify and mitigate impacts
Improve the project's acceptance

Main informative and participatory measures

Participatory meetings
Fixed and mobile
information points
Technical seminars with experts
Informative **materials**

Enagás is developing the **Conceptual Public Participation Plan (PCPP) of the Spanish Hydrogen Backbone** (PCI 9.1.3. Internal Hydrogen Infrastructure in Spain), approved by the Ministry for Ecological Transition and the Demographic Challenge, as per the procedure set out in the EU Regulation 2022/869

www.infraestructurasdehidrogeno.es

CONCEPTUAL PLAN OF PUBLIC PARTICIPATION SPANISH BACKBONE

EXTREMADURA



CASTILE-LA MANCHA



ASTURIAS



CANTABRIA



ANDALUSIA



BASQUE COUNTRY



NAVARRE



CONCEPTUAL PLAN OF PUBLIC PARTICIPATION SPANISH BACKBONE



PROGRESS IN 2025

8
ACs
in 2025**294**
municipalities
now involved**243,833**
homes
mailshot**130**
seminars
conducted**294**
Information
points**≈10.000**
leaflets
distributed

Institutional support at the highest level and
strong support from the industry and the
local fabric in all Autonomous Communities

PROPOSED ADDITIONAL SECTIONS TO COMPLETE THE BACKBONE

Submitted to TYNDP* 2026 (24/10/2025)

Goal: submission to the call of the
3rd PCI list in 2026

1 Coruña-Zamora 2 Huelva-Algeciras	3 Castile and Leon (Zamora-Haro) 4 Castile- La Mancha** and connection with Madrid
---	---

 Spanish hydrogen infrastructure included in the European Commission's first list of PCIs, (08/04/2024)
 Proposed additional sections to complete the backbone
 H2med (included in the European Commission's 1st PCI list)



*TYNDP: Ten-Year Network Development Plan

** Partially included in TYNDP 2024

TECHNOLOGY AND KNOW-HOW FOR THE DEPLOYMENT OF GREEN HYDROGEN

In 2025

2 KNOWLEDGE REPORTS



Sea transport

91 PARTNERS



2nd
HYDROGEN
TECHNICAL
DAY



3
TECHNICAL
WORKSHOPS



Observatorio
Tecnológico
del Hidrógeno

A key
initiative
in Europe

4

**2026: the next
milestones in hydrogen
in Europe and Spain**

MILESTONES ENVISAGED IN 2026



MILESTONES IN EUROPE AND IN SPAIN

- Closure of the **3rd auction of the EU Hydrogen Bank**
Results of the auction in Q2
- **Publication of the 2nd PCI/PMI list**
- **Candidature for the 3rd PCI/PMI list**
- **European networks package.** Negotiation in the Parliament and Council throughout the year
- **Transposition of the RED III and H₂ Directive in the Member States**
- **H2med: ministerial meeting of the High Level South-east Europe Group.**
- **Bill for the Transposition of the H2 Directive and Low- Carbon Gases Act,** which will lay the foundations of the hydrogen regulatory framework
- **Addition of new sections to the TYNDP**

H2MED- BARMAR

- Completion of the **conceptual engineering of the compression station**
- Deployment of the **public participation plan in Spain and France**
- Completion of the **pipeline environmental assessments**
- **Start of the Front End Engineering and Design (FEED)** phase of the underwater pipeline, including the extended engineering of the compression station
- Drafting of the **Term sheet for capacity contracts** for conditions of access and allocation of capacity of BarMar

H2MED-CELZA

- **Completion of detailed engineering:** Spanish section
- **Completion of the Environmental Impact Assessment (EIA):** Spanish section
- Performance of **environmental impact assessments:** Portuguese section



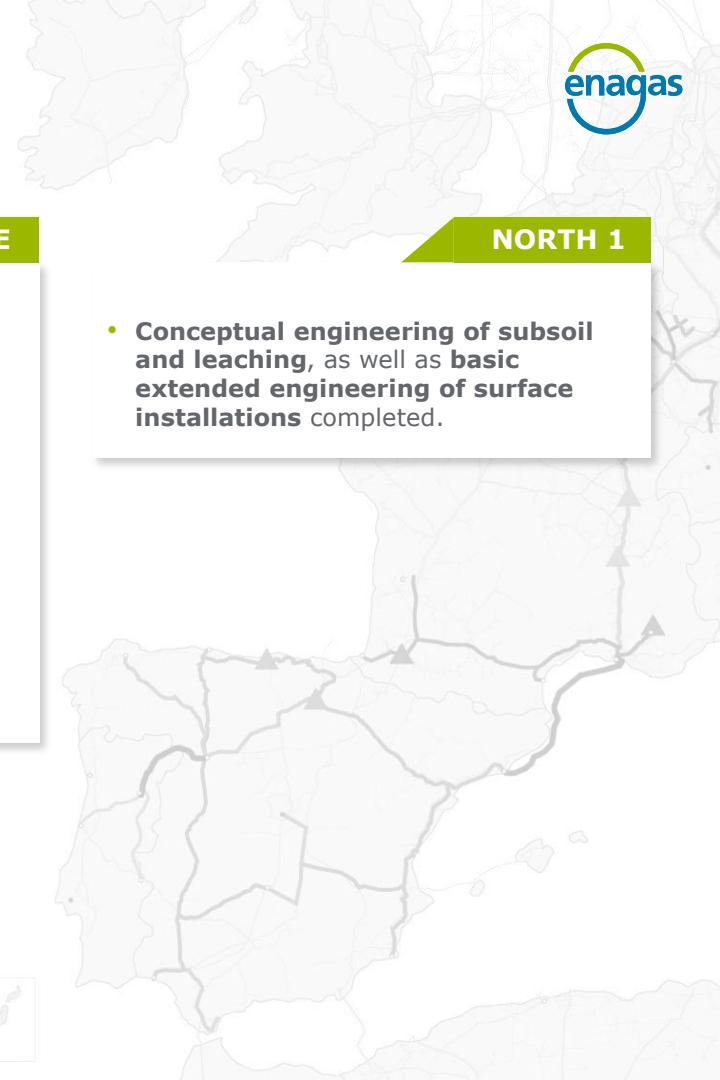
MILESTONES ENVISAGED IN 2026

BACKBONE

- **Conceptual public participation plan completed**, once it has been deployed in the thirteen Autonomous Communities
- **Progress in official administrative processing as per regulation TEN-E** of all phases that make up the backbone project.
- **Performance of detailed engineering for pipelines** and digitisation model at an advanced stage.
- **Submission of first environmental impact assessments.**
- **Basic extended engineering in the three compression stations** completed, including selection of manufacturers.
- Submission of **Investment Request** to regulatory bodies
- **Identification of priority sections** supported by trailblazing projects

NORTH 1

- **Conceptual engineering of subsoil and leaching**, as well as **basic extended engineering of surface installations** completed.



5

Conclusions

CONCLUSIONS

The climate emergency and the EU's commitment to strategic autonomy demand that the green hydrogen agenda be deployed faster.

Renewable hydrogen is now in the FIDs and in the strategic plans of the industry worldwide.

2026 is the year when the investment cycle in hydrogen will be deployed as a key vector for decarbonising Europe, with intense **growth in installed capacity and investment decisions**.

Infrastructure projects are moving forward throughout Europe, with the backing of the European Commission, member States and the TSOs/HTNO, as an indispensable requirement for creating the hydrogen market.

In particular, the **Spanish backbone and H2med are forging ahead** in terms of their administrative, engineering and commercial development, confirming the technical feasibility and the commissioning dates.

Europe is stepping up to the plate to deal with the challenges and it advances when we work together. Hydrogen is a team effort, more essential and urgent than ever. **Together with the Spanish and European value chain, Enagás will continue to fulfil the calendar as planned to make it a reality.**



Thank you