HY-FEN by natran



SUMMARY OF THE PRELIMINARY PUBLIC CONSULTATION FILE

Preliminary public consultation from
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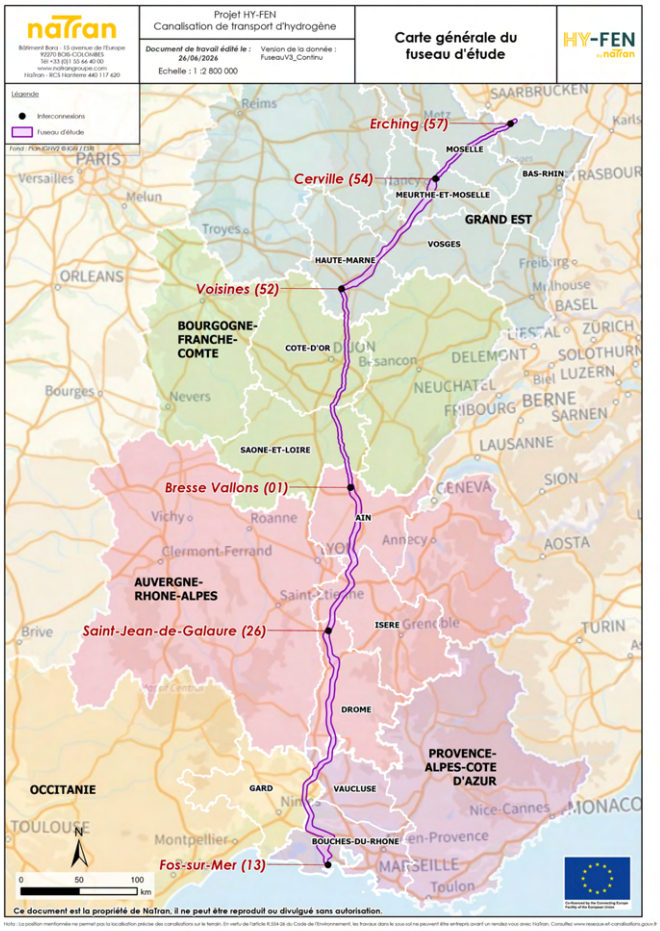
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WHAT IS THE HY-FEN PROJECT?

HY-FEN is a renewable and low-carbon hydrogen transport infrastructure project led by NaTran (formerly GRT gaz).

It involves the creation of an underground pipeline **linking Fos-sur-Mer industrial and port area in the Bouches-du-Rhône department** to Erching on the German border in the Moselle department, crossing 5 French regions. This infrastructure would form a **major hydrogen transport route at both French and European level**, between major production areas, in particular on the Iberian Peninsula, and areas of industrial consumption, in France and Northern Europe. The project is part of a broader effort to decarbonise industry and to structure a future large-scale hydrogen transport network.



KEY FIGURES

LENGTH APPROXIMATELY:
820 KM

COMMISSIONING:
2032

TYPE OF INFRASTRUCTURE
Buried steel pipeline

REGIONS CROSSED
5 (Provence-Alpes-Côte d'Azur, Occitanie, Auvergne-Rhône-Alpes, Bourgogne-Franche-Comté, Grand Est)

ESTIMATED CAPACITY:
2 million tonnes/year

DEPARTMENTS CROSSED:
13

WHO IS LEADING THE HY-FEN PROJECT?

The project owner is NaTran, Europe's second-largest operator of gas transmission infrastructure by pipeline.

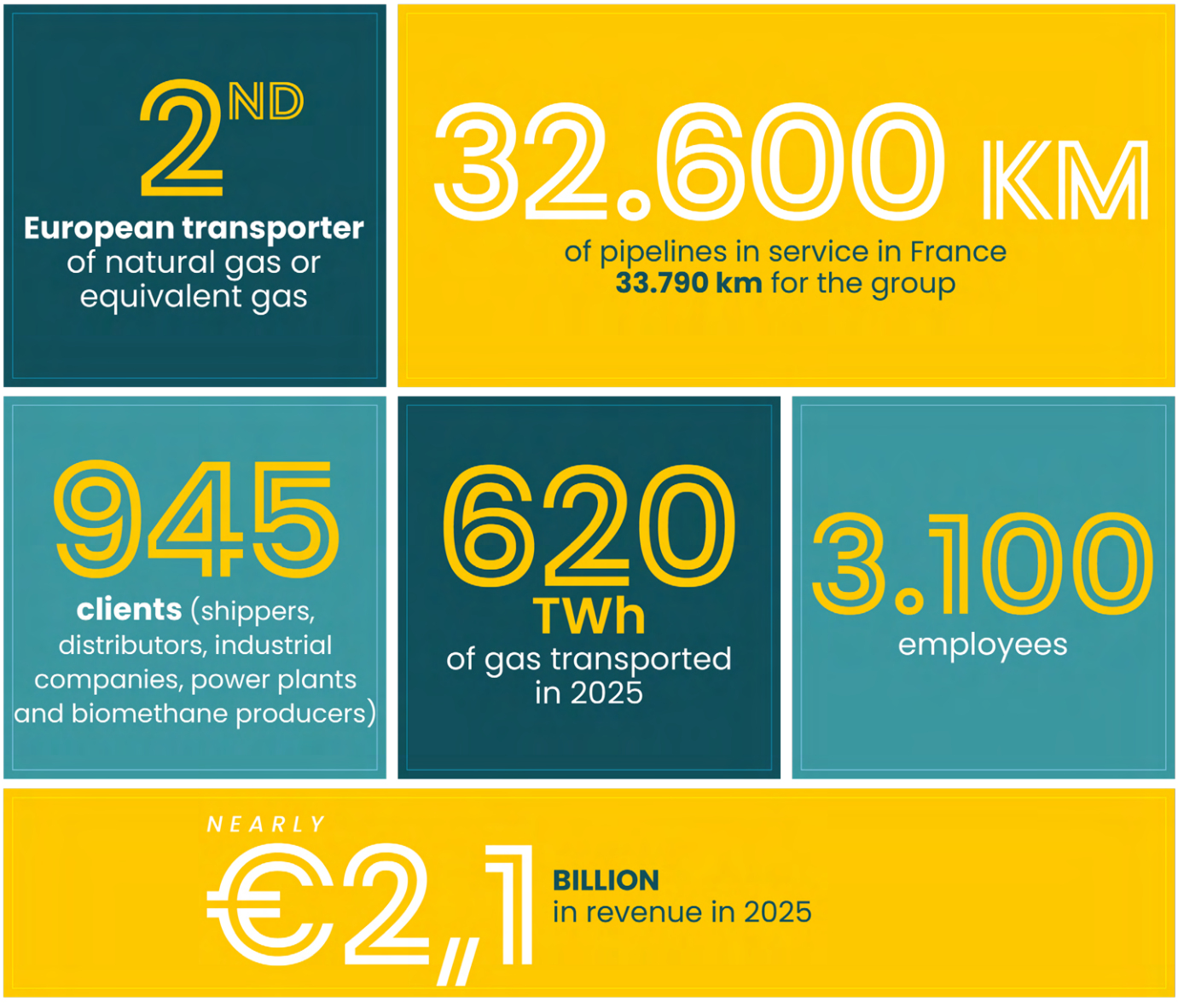
NaTran has recognised expertise in the design, operation and maintenance of energy transport infrastructure.

As the operator of the gas transmission network, NaTran carries out public service missions to ensure secure delivery for its customers.

NaTran is committed to achieving a French gas mix that is 100% carbon-neutral by 2050. To achieve this, the company is investing in innovative solutions to:

- Connect as much renewable gas as possible to its network;
- Develop hydrogen and CO2 networks;
- Support these new sectors and thus contribute to achieving carbon neutrality.

NATRAN IN FIGURES



1. WHY THIS PROJECT?

[ZOOM]

WHY THIS PROJECT?

The HY-FEN project addresses a decisive question for the energy and industrial future of France and Europe: how can the large-scale transport of low-carbon hydrogen be made possible from areas where it can be produced competitively to territories where demand will be strong?

1.1 A project that is part of the European energy transition

In the context of the energy transition, renewable and low-carbon hydrogen is expected to play an increasing role, alongside electricity and renewable gases, to reduce greenhouse gas emissions and achieve carbon neutrality by 2050, as targeted by the European Union.

It is one of the pillars of the future French and European energy mix, and in particular a strategic solution for sectors that are difficult to decarbonize and electrify, such as industry (e.g. steelmaking, chemicals and refining), intensive transport, and certain energy storage uses..

HYDROGEN IS...

A molecule: hydrogen is used in several industrial processes as chemical reaction input.

An energy carrier: it can transport and store energy. Used as a carrier, hydrogen **does not emit CO2** when combusted, unlike hydrocarbons.

HYDROGEN IS NOT...

A primary energy source:

unlike wind, sun, uranium or oil, it **is not an immediately available resource**. The molecule must be obtained through various processes.

[ZOOM]

WHY HYDROGEN?

Unlike fossil fuels, its combustion emits neither CO2 nor air pollutants.

Several key issues are associated with the development of hydrogen in France and Europe:

- **Energy sovereignty:** reducing dependence on fossil fuels (Russian gas, oil).
- **Industrial competitiveness:** enabling European industries to decarbonise without losing competitiveness, thereby helping to preserve local jobs.
- **Structural imbalance between production and consumption areas:** low-carbon hydrogen needs are not evenly distributed across Europe. The Iberian Peninsula has strong potential for renewable hydrogen production (wind, solar), while Northern Europe, and Germany in particular, has high industrial demand.

The European Union has therefore set ambitious targets for scaling up its renewable hydrogen production, complemented by significant import volumes by 2030:

- 10 million tonnes of renewable hydrogen produced in Europe by 2030 and 10 million tonnes imported;
- 20 to 25% of European energy demand met by hydrogen by 2050.

At the same time, the European Union has laid the foundations for a future European hydrogen market and highlights the need for **integrated, transparent and coordinated infrastructure planning**. In other words, the transition to a hydrogen economy cannot rely on isolated projects. It requires the establishment of a genuine network capable of ensuring the circulation of flows at Fretnch and European level.

« To make the scale-up of low-carbon hydrogen in Europe a reality, production alone is not enough: it must also be possible to transport it reliably, safely and in an economically sustainable way between production, consumption and storage sites. This is precisely the purpose of the HY-FEN project, which aims to form a national hydrogen transport backbone crossing France from the South to the North-East, in connection with major European projects. »

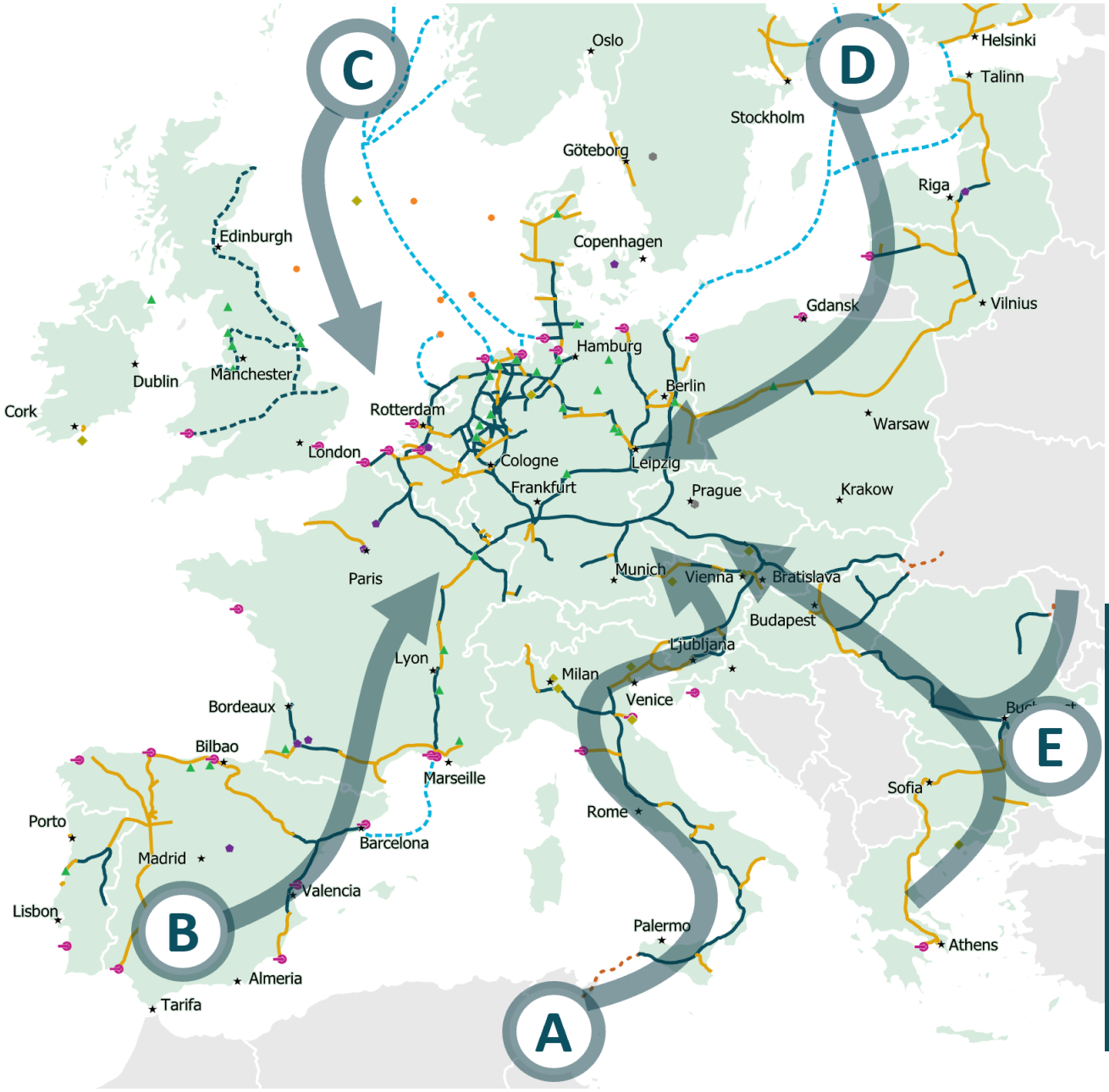


1.2 HY-FEN as an essential link in the hydrogen transport network planned in Europe

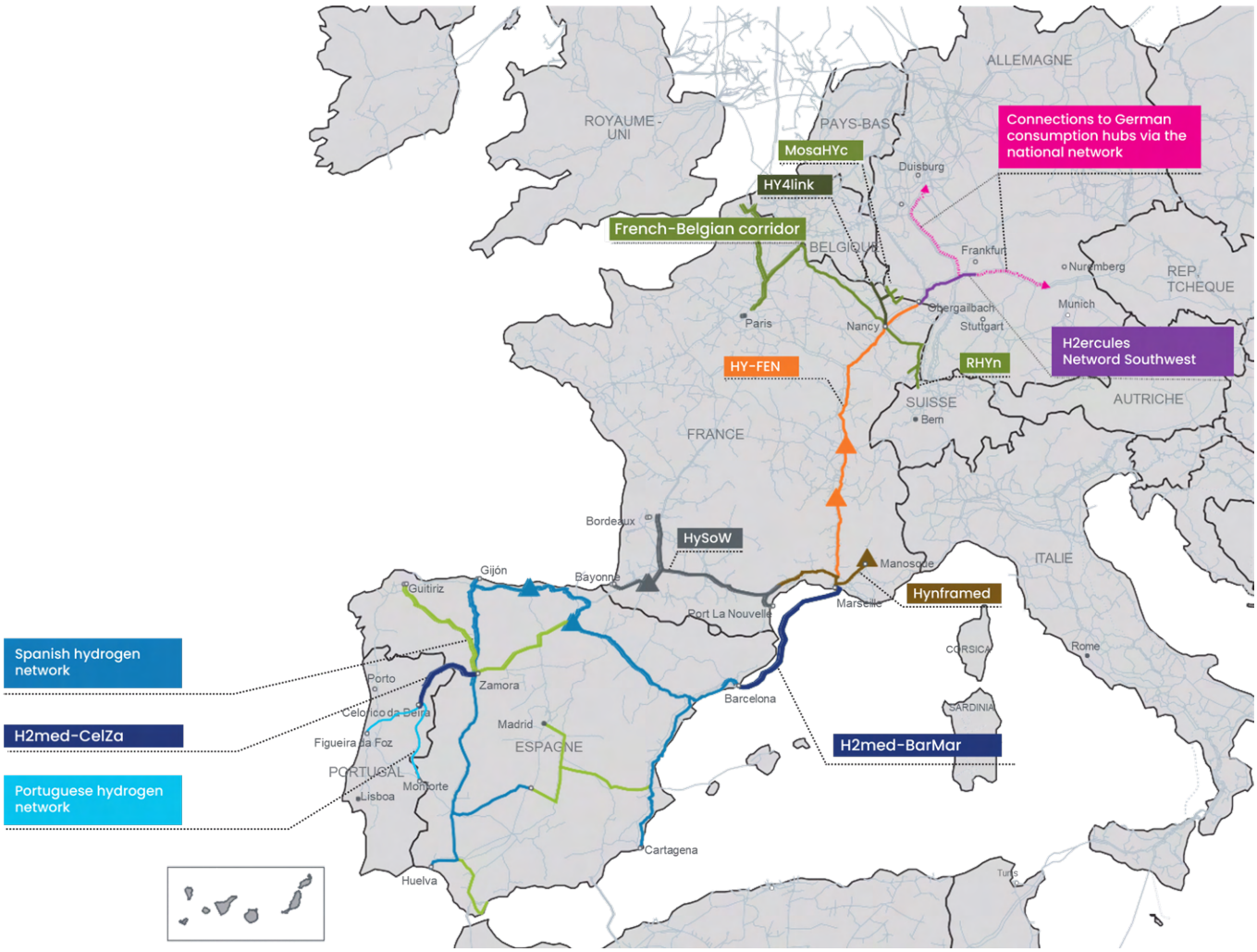
The HY-FEN project is a structuring initiative and a link in an interconnected European corridor that would enable hydrogen to be **transported from the Iberian Peninsula to France and Germany**, via a route crossing France from the South to the North-East, thereby helping to secure the supply of low-carbon hydrogen for industrial users along this route.

The project is part of the European Hydrogen Backbone, a cross-border network of more than 32,000 km planned by 2030, intended to:

- Connect 28 European countries via 5 main hydrogen transport corridors;
- Pool infrastructure (69% of the network planned by 2040 would consist of repurposed gas pipelines);
- Secure low-carbon hydrogen supply by diversifying sources of supply and incorporating storage solutions.



HY-FEN fits more specifically into the **H2med** corridor **(corridor B)**, which aims to connect the Iberian Peninsula to north-western Europe. This corridor notably includes the CelZa onshore connection between Portugal and Spain, as well as the BarMar subsea connection between Barcelona and Fos-sur-Mer (Bouches-du-Rhône). Within this overall system, HY-FEN would play a decisive role: **ensuring land continuity in France**, from Fos-sur-Mer to the North-East, and then onwards to Germany, in connection with the German H2ercules Southwest network.



Carte Mapping of planned hydrogen transport networks in Europe
(source : Natran and https://h2medproject.com/fr/le-projet-h2med/)

- **Corridor A – North Africa and Southern Europe:** would connect Tunisia, and potentially Algeria, to Italy and then onwards to Germany and Central Europe.
- **Corridor B – South-West Europe and North Africa:** would transport low-carbon hydrogen from Portugal and Spain, possibly connected to Morocco and Algeria, to supply Western Europe via France.
- **Corridor C – North Sea:** would rely mainly on the strong low-carbon hydrogen production potential linked to North Sea energy resources, especially offshore wind, to meet demand in the Netherlands, Belgium and Germany.
- **Corridor D – Nordic and Baltic regions:** would rely on the renewable potential of the Nordic and Baltic regions, including the Baltic Sea and offshore wind, to supply the Nordic and Baltic countries, Poland and Germany.
- **Corridor E – Eastern and South-Eastern Europe:** would connect regions with strong supply potential such as Romania and Greece and transport hydrogen to consumers in Central Europe and Germany.

1.3 HY-FEN as the structuring backbone of the French hydrogen network

France is in a pivotal position:

- **A producer country** thanks to its low-carbon electricity mix.
- **A consumer country** with heavy industry to decarbonize (Fos-sur-Mer, Dunkirk, Le Havre, Chemical Valley).
- **A transit country** between the Iberian Peninsula and Germany.

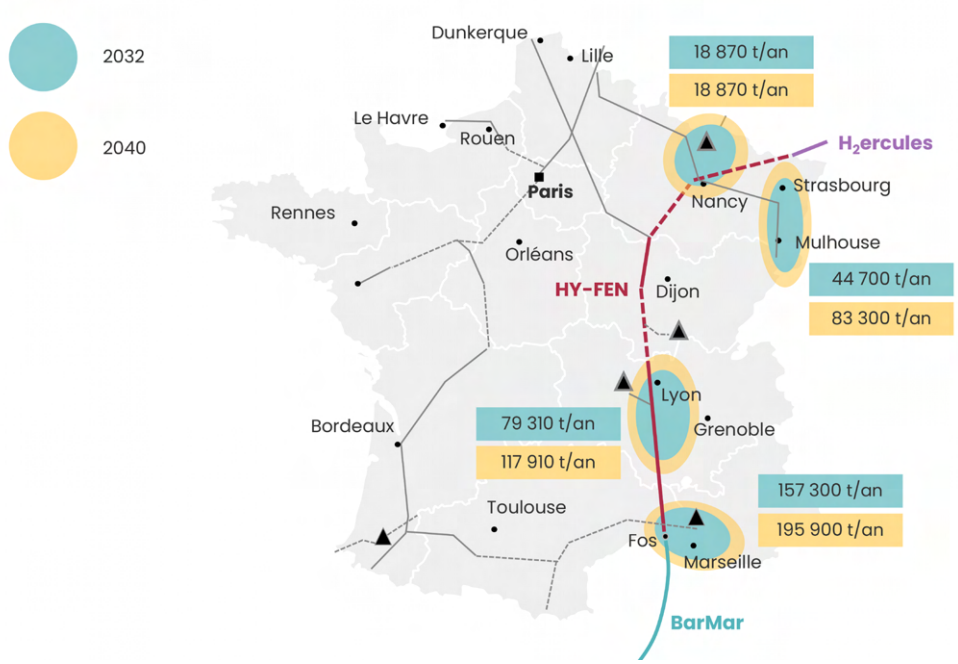
HY-FEN would be the **first national hydrogen backbone in France**. While hydrogen transport by pipeline already exists in the country in the form of a private, point-to-point dedicated network, **the proposal for a network guaranteeing third-party** access, with an **operator balancing multiple production, consumption and storage points**, is new.

> « This infrastructure would be open to producers, consumers and storage operators, according to a model inspired by gas networks: transparent, non-discriminatory access, balancing between entry and exit points, operational safety and flexibility of supply. »

HY-FEN is therefore designed to respond not only to a European transit logic, but also, **in the longer term, to serve French territories** by connecting production areas, industrial basins, future storage facilities and interconnections with neighbouring networks. The results of the call for expressions of interest conducted at the end of 2024 as part of the H2med[1] initiative confirm the dynamism of the territories concerned. In France, they show both significant consumption prospects and high production potential along the pipeline route.

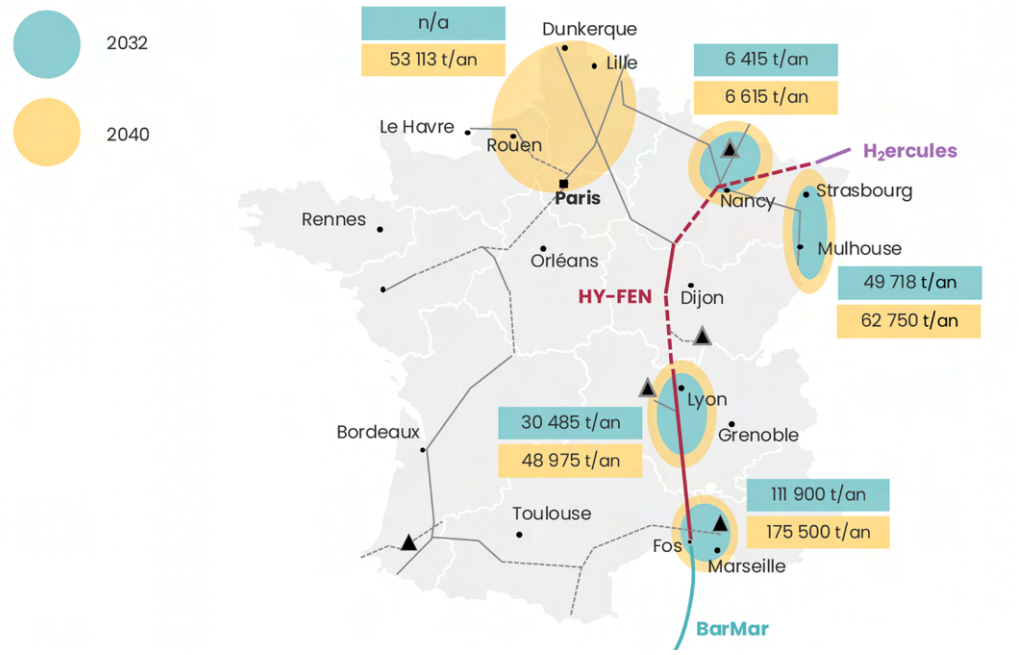
Designed as an open and scalable infrastructure, new production, storage or consumption sites could be connected to the HY-FEN project in the future.

Hydrogen production identified under the H2Med EOI



1 For more information on H2Med: https://h2medproject.com/fr/le-projet-h2med/

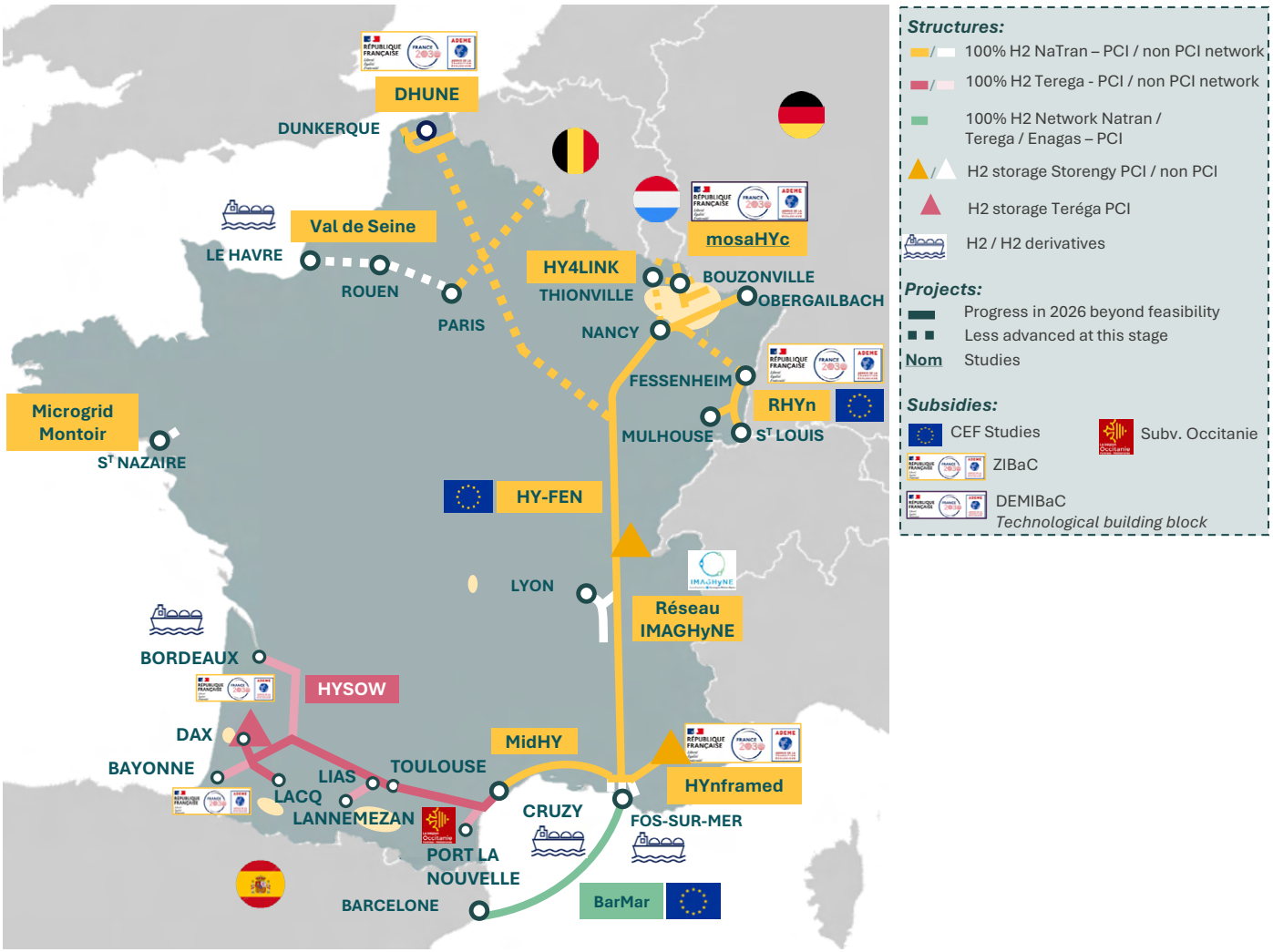
Hydrogen consumption identified under the H2Med EOI



Focus on the regional hydrogen network and hub projects that HY-FEN could eventually connect to in France

Project	Project owner	Location	Description
HYnframed	NaTran	Fos-sur-Mer - Manosque	Local hydrogen transport network of around 180 km
HySoW	Teréga	Atlantic coast - Mediterranean Sea	600 km backbone of hydrogen storage and transport infrastructure
MidHy	NaTran	Occitanie (from HySoW) Provence-Alpes-Côte d'Azur (to HY-FEN)	Connection of around 200 km between HySoW and HY-FEN
IMAGHyNE	Auvergne-Rhône-Alpes Region	Auvergne-Rhône-Alpes	Regional hydrogen valley
MosaHYc	NaTran, Creos Deutschland, Encevo	Moselle - Saar (Germany) and Luxembourg border	Network
RHYn	NaTran	Mulhouse industrial basin (Alsace) - German border	Cross-border hydrogen transport network of around 100 km
Hy4link	NaTran, Fluxys, Creos Deutschland	Cross-border Greater Region including Wallonia (Belgium), Luxembourg, Lorraine (France) and Saarland (Germany)	Regional hub aiming to inter-connect hydrogen networks between France, Luxembourg, Belgium and Germany

Projected hydrogen transmission network in France by 2035



2. WHAT WOULD THE PROJECT STRUCTURES BE

2.1 The hydrogen transport pipeline

Material	Steel
Diameter	914 mm (DN900) to 1,219 mm (DN1200) depending on the sections
Length	Approximately 820 km (including potentially 90 km from conversion of an existing gas pipeline)
Pressure	67 bar for new sections, around 40 bar for converted sections
Burial depth	Minimum 1 metre below ground level
Easement strip	40 metres during works, 20 metres in operation

The project favours a mixed approach combining the conversion of existing networks where technically possible, and the laying of new pipelines particularly where the existing network is essential to maintaining natural gas supply or where no infrastructure exists on the target route. At this stage, one of the existing natural gas transmission pipelines located within the project perimeter could be converted for hydrogen transport.



Examples of NaTran pipelines, before burial

[ZOOM]

WHY STEEL?

Steel is the best suited material for hydrogen transport:

- High mechanical strength;
- Compatibility with hydrogen (resistance to embrittlement);
- Durability (several decades).

STAGES OF PIPELINE CONSTRUCTION



1 BEFORE WORKS

Site survey according to official agricultural protocols.



2 CONSTRUCTION SITE SET-UP

Creation of a temporary working strip.



3 PIPE PREPARATION

Transport, alignment, adaptation to the terrain.



4 PIPE ASSEMBLY

Pipe welding and safety checks.



5 COATING PROTECTION



6 PIPELINE INSTALLATION

Opening of the trench, lowering in, backfilling.



7 REINSTATEMENT

Backfilling and restoration of fences, ditches and embankments.



8 AFTER WORK

Final site inspection and assessment of any potential damage.

2.2 Facilities associated with the network

Several types of facilities would be deployed along the pipeline as part of the management, safety and operation of the planned hydrogen network.

Sectioning stations:

- **Function:** allow interruption of the hydrogen flow to carry out maintenance operations or in the event of an incident.
- **Number and location:** around 50 stations, at regular intervals every 10 to 20 km.
- **Land take:** around 2,500 m² per station (fenced site).
- **Equipment:** shut-off valves, depressurisation valves.

Interconnection stations:

- **Function:** contribute to the operational efficiency of the network and allow connection to future local networks, storage facilities or cross-border extensions.
- **Number and location:** 6 stations, in Fos-sur-Mer (Bouches-du-Rhône), Saint-Jean-de-Galaure (Drôme), Bresse Vallons (Ain), Voisines (Haute-Marne), Cerville (Meurthe-et-Moselle) and Erching (Moselle).
- **Land take:** around 15,000 m² per station (fenced site).
- **Equipment:** regulation, metering and safety devices; possibility of inserting pistons to carry out inspection or maintenance operations.



STAGES OF STATION INSTALLATION WORKS



1 SITE PREPARATION

Organisation of the site and of the intervention area.



2 EARTHWORK PREPARATION

Earthworks to accommodate station equipment.



3 CIVIL ENGINEERING WORKS

Construction of the structure supporting the equipment.



4 EQUIPMENT INSTALLATION

Installation of equipment on the completed foundations.



5 CONNECTION & TESTING

Connection of the station to the existing pipeline and safety checks.



6 SECURING THE SITE

Installation of a permanent fence and of signage if required.

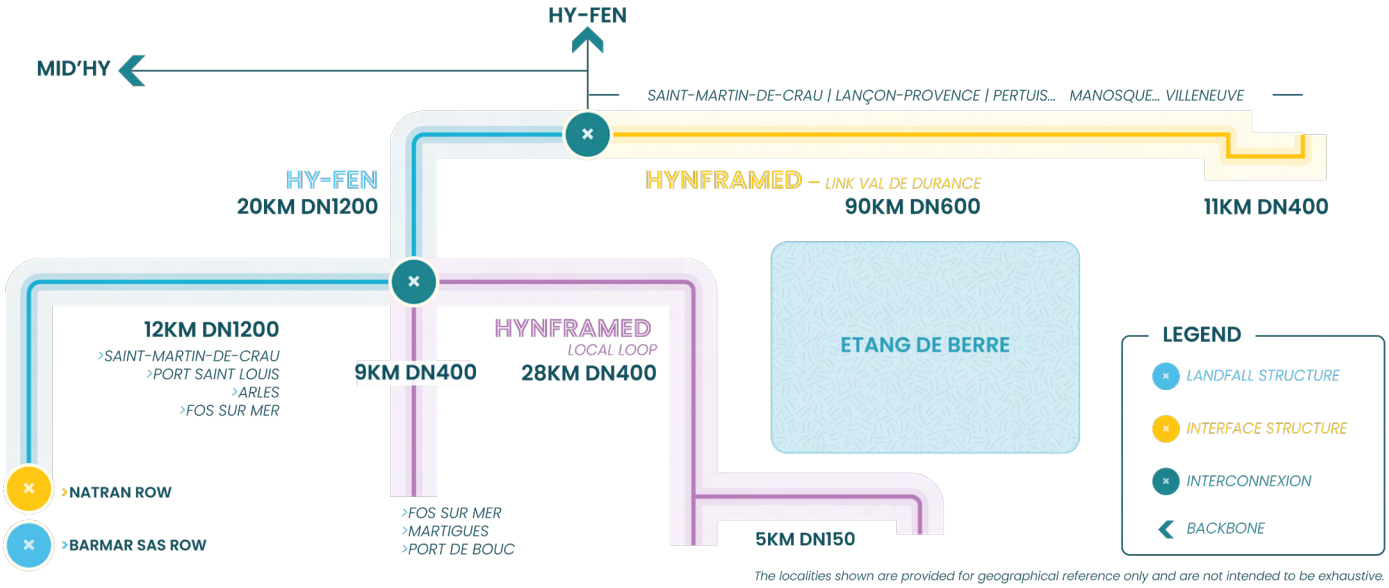
2.3 The interface facility at Fos-sur-Mer

At its starting point in Fos-sur-Mer, HY-FEN would form part of a wider set of complementary hydrogen transport infrastructure.

It would on the one hand be interconnected to the landfall facility of the BarMar project, intended to transport hydrogen from the Iberian Peninsula to southern France. On the other hand, it could interface with the HYnframed project, a local network developed by NaTran aiming to connect, at the scale of the Fos basin and up to Manosque, producers, industrial consumers and future hydrogen storage capacities.

An interface facility is therefore needed to ensure continuity between the various hydrogen infrastructures in the area.

- **Location**: south of the central mineral ore jetty in Fos-sur-Mer
- **Land take**: around 2 hectares

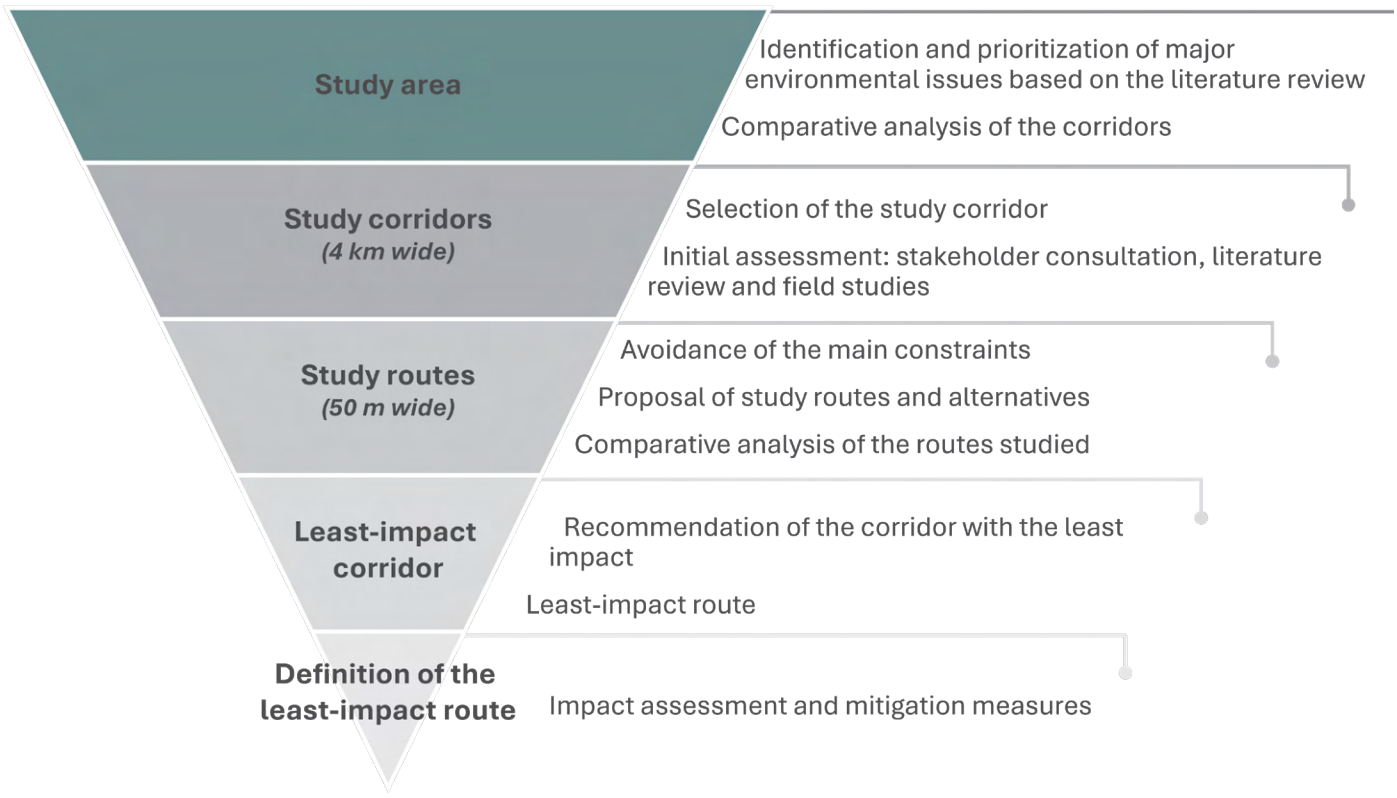


3. THE PROJECT IN ITS TERRITORIES

3.1 A gradually defined perimeter

At this stage, the project is not defined by a precise route, but by an overall study corridor around 820 km long and 4 to 6 km wide, within which a lower-impact corridor and then a preferred route will subsequently be sought.

This corridor was defined using a progressive "funnel" method, based on the analysis of human, environmental, physical, landscape and heritage constraints.



« The corridor presented for consultation is not the project's final route: it is a study framework intended to guide the next choices. Consultation with the public and territorial stakeholders, as well as future studies, will make it possible to refine the project's territorial integration and to identify its potential impacts as comprehensively as possible, in order to specify the route and define the measures to avoid, reduce and, if necessary, compensate for these impacts. »

3.2 A project rooted in diverse territories

« The project study corridor crosses a wide variety of areas, combining industrial-port zones, agricultural plains, river valleys, forest massifs, rural sectors and remarkable natural areas. These territories, with their different profiles, share the fact that they are all concerned to varying degrees by the issues of energy transition and industrial decarbonization. »

3.2.1 From Fos-sur-Mer to the agricultural plains of the South-East

The project begins in the Fos-sur-Mer industrial and port area, one of Europe's main industrial and logistics hubs. This territory concentrates industrial, port and logistics activities, and appears as a strategic area for the development of low-carbon hydrogen. HY-FEN would be linked there with other structuring projects, such as BarMar and HYnframed.

North of Fos-sur-Mer, the corridor then crosses sectors where remarkable natural environments and high-value agricultural land coexist. The areas concerned notably include:

- the **Camargue** and its wetlands;
- the **Crau plain** and the **Coussouls de Crau**, recognised for their biodiversity;
- the **Alpilles Regional Natural Park**;
- the **agricultural plain of the Comtat**;
- the **Rhône catchment** with ecologically significant watercourses such as the Lez;
- **lowland crops and vineyard slopes in the Gard area**.

3.2.2 Industrial and agricultural valleys in Auvergne-Rhône-Alpes

In Auvergne-Rhône-Alpes, the study corridor extends from the hills of Drôme, crossing in particular the Ramières National Nature Reserve, then running along the eastern edge of the Chambaran plateau in Isère.

It notably crosses the Galaure, the Bièvre, the **Rhône** and the **Ain** rivers, and goes through wooded areas such as **Bonnevaux** Forest. This territory is also characterized by diversified agriculture, with field crops, livestock farming and hedged landscapes.

The project is also located near major economic and industrial hubs, notably the Chemical Valley and the eastern part of the Lyon metropolitan area. The region has committed to the development of a low-carbon hydrogen sector, in connection with projects such as **IMAGHyNE** and the **DECLYC** initiative.

3.2.3 The Saône valley, between rural activities and ecological issues

In Bourgogne-Franche-Comté, the corridor follows a territory structured by the Saône valley, which is at once a logistics, agricultural and ecological axis.

The region has a dual rural and industrial vocation, and the corridor crosses areas made up of field crops, livestock farming, wetlands, river valleys and forest sectors.

The main identified issues notably concern:

- the **wet meadows** of the Seille and Saône valleys;
- **Natura 2000** areas linked to the valleys and the Cîteaux forest;
- the **wetlands of Bresse**;
- the headwaters of the **Langres** plateau area.

The region is also involved in structuring a hydrogen sector, with initiatives such as **ENRgHy** and specialised training or research projects.

3.2.4 A cross-border link to Germany

In Grand Est region, HY-FEN is the final link enabling interconnection with Germany. The corridor crosses large rural areas with low population density, but also several sensitive natural and landscape areas, including:

- the **Forest National Park**;
- the agricultural and natural area between the municipalities of Val de Meuse (Haute-Marne) and Vaudoncourt;
- the **Madon** valley;
- the listed sites of **Sion-Vaudémont**;
- the **Moselle** and **Meurthe valleys**;
- forested areas on the outskirts of the Lorraine Regional Natural Park..

The hydrogen sector in the area is highly dynamic, as shown by the progressive structuring of ecosystems and the emergence of a large number of projects in hydrogen production (CarlHYng, Emil'Hy), pipeline transport (RHYn, MosaHYc), and storage (Stor'Hy).

3.3 Taking agricultural issues into account

The project takes agricultural issues into account at a very early stage, with a view to anticipation, minimizing impacts and supporting the affected agricultural holdings.

This approach is part of the National Agricultural Protocol concluded between NaTran, FNSEA (National Federation of Farmers' Unions) and APCA (Permanent Assembly of the Chambers of Agriculture), which notably governs route selection, land reinstatement and compensation for landowners and farmers. Local adaptations may also be provided depending on the territories crossed.

- **Before works:** studies make it possible to establish a diagnosis of agricultural issues within the project perimeter, to assess the project's effects on agricultural activity and to integrate these elements into its design, by informing the search for a lower-impact route and applying a logic of avoiding, reducing and compensating impacts.
- **During construction:** the objective is to limit temporary impacts on agricultural activity. The issues relate in particular to the temporary occupation of plots, the maintenance of access and traffic flows, soil protection, consideration of agricultural machinery, and the adaptation of works to cropping periods.. Any damage is assessed and compensated in accordance with the applicable rules.
- **After works:** the objective is to restore the land under conditions compatible with its agricultural use. This involves restoring soils, rebuilding and reinstating existing features and, where necessary, agronomic monitoring.

[ZOOM]

WHAT ROLE FOR CHAMBERS OF AGRICULTURE AND PROFESSIONAL REPRESENTATIVES?

The Chambers of Agriculture and representatives of the agricultural profession are involved throughout the project: upstream to help identify agricultural issues and seek the lowest-impact route, during works to support discussions with farmers and flag points requiring attention, and after construction to help monitor land reinstatement. Their role is therefore technical, territorial and operational. Their involvement does not replace the individual expression of farmers or agricultural organisations regarding the project, but is intended to provide a working and expertise framework that allows better consideration of the agricultural realities of the territory.

3.4 Assessing environmental impacts

Consideration of the project's environmental issues is part of an environmental impact assessment that began at the end of 2025 and is expected to continue until mid-2028. The design and implementation of the project are part of an approach of environmental restraint.

« **What is an environmental impact assessment?** This study consists of establishing and presenting the baseline environmental conditions, the effects of the project on the environment, and the associated measures in application of the Avoid-Reduce-Compensate (A-R-C) method set out in the Environmental Code. »



Stages	Key actions	Timeline
1. Understanding the existing situation	› Documentary and cartographic analyses; targeted field investigations; discussions with experts and stakeholders concerned (ecologists, environmental associations, Chambers of Agriculture, elected representatives, institutional and technical partners)	End of 2025 - Spring 2027
2. Characterising the issues	› Characterisation of the project's effects on biodiversity, water and aquatic environments; agriculture; archaeology; infrastructure, land and uses	End of 2025 - Spring 2027
3. Avoiding	› Search for an appropriate route avoiding impacts on sensitive areas as far as possible; early integration of issues in upstream studies to limit impacts as much as possible from the definition of the study area and overall study corridor	From the outset (ongoing)
4. Reducing	› After consolidation of the baseline situation, definition of measures aimed at limiting identified impacts as much as possible	From spring 2027
5. Compensating	› Definition of compensatory measures for residual impacts	By the end of 2027

Issues related to natural environments have started to be taken into account through an initial analysis based on existing knowledge, which is being refined through field surveys.

For the human environment and landscape, most impacts would mainly be temporary and linked to the construction phase. These may include:

- limited-duration noise disturbance;
- a localized increase in traffic;
- dust near the works;
- a temporary visual impact linked to the working strip and machinery.

During operation, a few localised permanent effects have been identified:

- a landscape impact of varying intensity from the above-ground installations associated with the pipeline (fenced areas where valves and pipework are visible);
- an impact on environments in the event of crossing woodland or forests, requiring the permanent removal of trees over 2.70 m in height across the width of the permanent easement strip (20 metres).
- impacts on other uses, such as fishing, hunting, hiking trails or river tourism, would mainly be temporary and would be subject to appropriate measures during works.

3.5 The project's economic benefits

At this stage, direct economic benefits would mainly be concentrated during the construction phase. In the short term, the project does not involve the creation of permanent on-site jobs, as operation of the pipeline would be ensured by existing teams.

However, the construction works could generate local economic benefits, notably:

- local subcontracting;
- local procurement of goods and services;
- accommodation and catering needs.

NaTran estimates that on average around **200 people** could be mobilised on the construction site, with peaks of up to **500 people** depending on the phases of work (operators, technicians, supervisors, safety personnel, logistics staff and works management staff).

Beyond the construction phase, the project would be part of a gradual skills transition dynamic, with NaTran planning to redeploy part of the staff currently involved in operating natural gas (CH^2) transport infrastructure, who would receive specific support through dedicated training.

In the longer term, depending on developments in the hydrogen market and the expansion of the network, targeted recruitment could be considered. These initiatives would contribute to structuring a French hydrogen industrial sector and anchoring the project's economic and social benefits in the territories.

2 These facilities are presented in the following section of this document, "What would the project works be?"


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4. WHAT ARE THE SAFETY ISSUES RELATED TO THE PROJECT?

[ZOOM]

WHAT ARE THE SAFETY ISSUES RELATED TO THE PROJECT?

Safety is a priority for the HY-FEN project, both in its design and operating phases, through monitoring and maintenance of the infrastructure. It is based on a complete and regularly updated analysis of identified risks, combined with strict rules, technical solutions suited to the specific nature of hydrogen, monitoring systems and long-term consideration of the territory.

4.1 Safety governed by regulations

The project is subject to a regulatory hazard study that analyses accident scenarios, their possible effects and the associated control measures. This study is regularly revised throughout the life of the infrastructure. The most severe reference scenario leads to study distances that may reach around 700 m on either side of the pipeline. This is a regulatory planning tool for land-use planning, not the project's footprint or an entirely non-buildable area.

4.2 Technological Risks Identified and Kept Under Control

Risk	Main issue	Main control measures
Hydrogen leak	› Hydrogen is a colourless, odourless gas that may escape through very small openings; it can also embrittle certain unsuitable materials.	Use of hydrogen-compatible steels for new pipelines; checks on the condition of existing pipelines in case of conversion; leak-tightness tests; leak detection systems; automatic hydrogen shut-off system backed up by manual valves; buried pipeline to limit potential impacts in the event of a leak and protect the infrastructure from external aggression.
Fire or explosion	› In the event of an accidental release into the atmosphere, a hydrogen cloud forms and may ignite on contact with an ignition source, with possible thermal effects and a pressure wave.	Installation of technical equipment: detection systems, emergency shut-off valves, etc.; training of teams.

Third-party works nearby	› Construction works carried out near pipelines are one of the main causes of accidents on this type of infrastructure.	Mandatory prior declaration of works; marking the presence of hydrogen pipelines with above-ground markers and beacons and warning mesh in the ground; aerial and ground surveillance programme for infrastructure; integrity monitoring of infrastructure; public utility easements around infrastructure; periodic review of the hazard study to verify that risks to nearby populations remain under control.
Domino effect between pipelines	› When several pipelines are installed close to one another, an accident on one of them may, in certain configurations, trigger a chain reaction.	Compliance with minimum distances between infrastructures. For HY-FEN, a regulatory minimum spacing of 10 metres with parallel pipelines is planned; specific analyses in cases of particular proximity; application of the recommendations of the GESIP (Study Group for Safety in the Petroleum and Chemical Industries) .
Proximity to nuclear installations	› The route must be compatible with sensitive industrial installations, particularly nuclear ones.	Consideration of regulatory perimeters and effect zones from the design stage in order to avoid any cross-risk and guarantee compatibility of the project with safety requirements.

4.3 Consideration of climate and natural hazards

The hazard study will examine natural risks such as floods, landslides and earthquakes, and will define specific measures to be adopted where necessary, including:

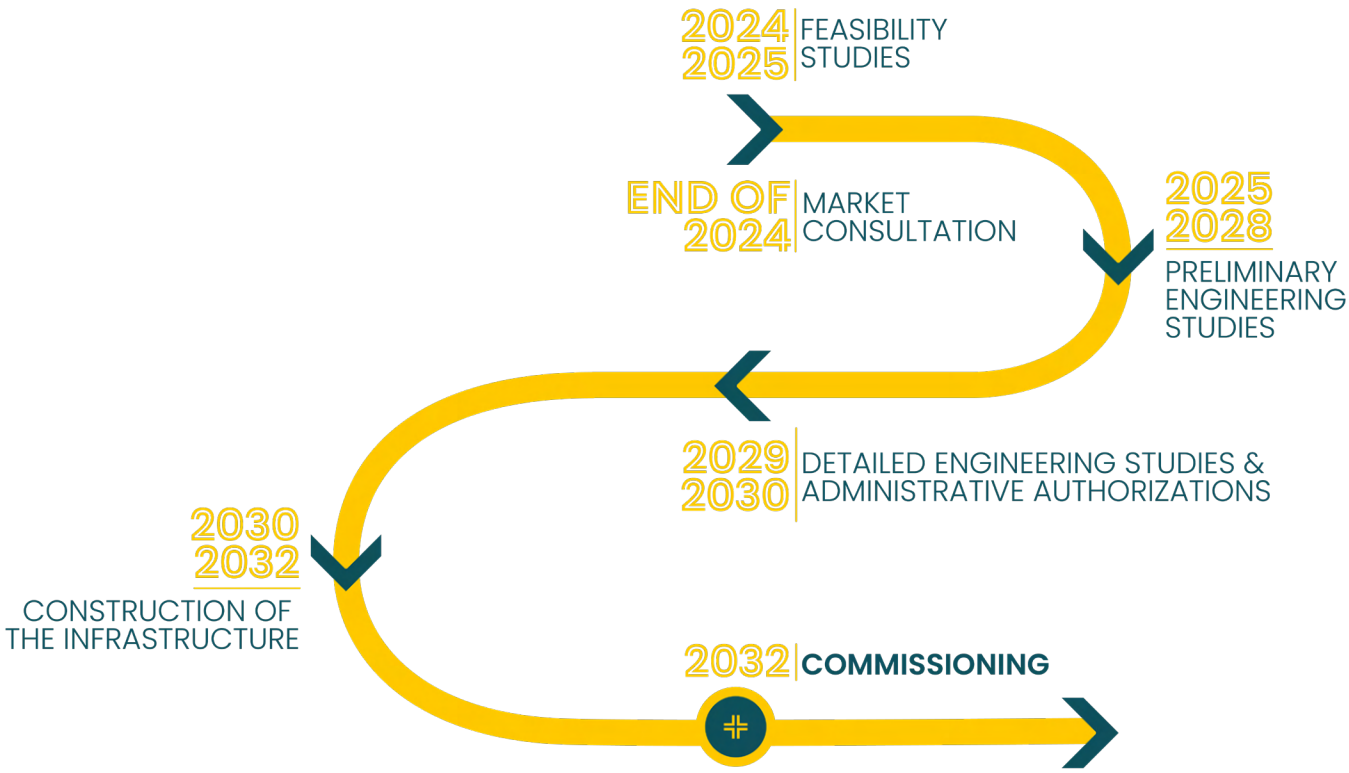
- strengthening infrastructure;
- adapting facilities to avoid high-risk areas;
- installing monitoring devices (sensors, alert systems) to quickly detect any phenomenon likely to affect infrastructure;
- developing risk management plans.

These measures are defined in consultation with the competent authorities and aim to limit the effects of natural hazards on infrastructure and ensure the safety of the project and its operation. They are updated regularly.

Beyond the analysis of current natural risks, the project also incorporates a forward-looking approach to climate resilience, considering the possible evolution of certain hazards in the context of climate change, particularly the intensification or increased frequency of extreme events (heatwaves, forest fires, intense rainfall events or floods).

5. WHAT IS THE PROJECT'S PROVISIONAL TIMELINE?

THE PROJECT'S MAIN MILESTONES



Public participation in the project development process. The project is subject to public consultation, initiated through this stage of public information and participation and intended to continue until the public inquiry.

6. HOW MUCH WOULD THE PROJECT COST AND HOW WOULD IT BE FINANCED?

The total cost of the project is currently estimated at €4.5 billion.

The HY-FEN project has been **awarded PCI** (Project of Common Interest) status by the European Commission. As such, the project is **co-financed by the European Union.**

The project's operating business model would be based on the future use of the infrastructure by stakeholders wishing to transport hydrogen.

[ZOOM]

WHAT WOULD THE INVESTMENT DECISION BE BASED ON?

The timetable currently provides that NaTran would decide whether or not to allocate the financial, human and material resources required to carry out the project during 2029. NaTran would make this final decision on the basis of a set of conditions, including:

- progress on technical, environmental and regulatory studies;
- the maturity of production, consumption and storage projects likely to use the infrastructure;
- the formalisation of sufficient contractual commitments from future users;
- the definition of an economic and governance framework compatible with the European rules applicable to energy infrastructure.

7. HOW TO GET INFORMATION AND TAKE PART IN THE CONSULTATION PROCESS ?

[ZOOM]

HOW TO GET INFORMATION AND TAKE PART IN THE CONSULTATION PROCESS ?

On 23 July 2025, the National Commission for Public Debate (CNDP) decided to organise a preliminary public consultation on the HY-FEN project. Open to all, this stage enables everyone to get informed, ask questions, make suggestions and debate: why this project? How will it be carried out? What are its effects?

Four guarantors have been appointed to ensure the fairness and proper conduct of the preliminary consultation: Mr Mathias BOURRISSOUX, Mr Eric TAUFFLIEB, Ms Valérie TROMMETTER and Ms Lucie VAN DER MEULEN.

The preliminary consultation is organised from Monday 28 September to Sunday 20 December 2026.

Get informed and have your say

- **On the consultation website:**
  https://concertation.projet-hyfen.com/
- By reading the consultation file and its summary, available in particular on the website
- By taking part in consultation meetings



HY-FEN

by naTran

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CONSULTATION GUARANTEED BY

National Commission for Public Debate