



Communauté de Travail des Pyrénées
Comunidad de Trabajo de los Pirineos
Comunautat de Trabalh dels Pirenèus
Comunitat de Treball dels Pirineus
Pirinioetako Lan Elkartea

The Working Community of the Pyrenees (CTP)

EUROPEAN HYDROGEN WEEK 2023

1. Introduction by the Basque Presidency

2. The CTP Territory: a Hydrogen Valley

- 6 Hydrogen Strategies
- A Snapshot of H2 projects in the CTP territories
- Distribution: 4 structuring H2 connections

3. An Action Plan to Accelerate the CTP Hydrogen Ambitions

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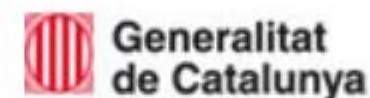
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History, Territory, Mission & Organization

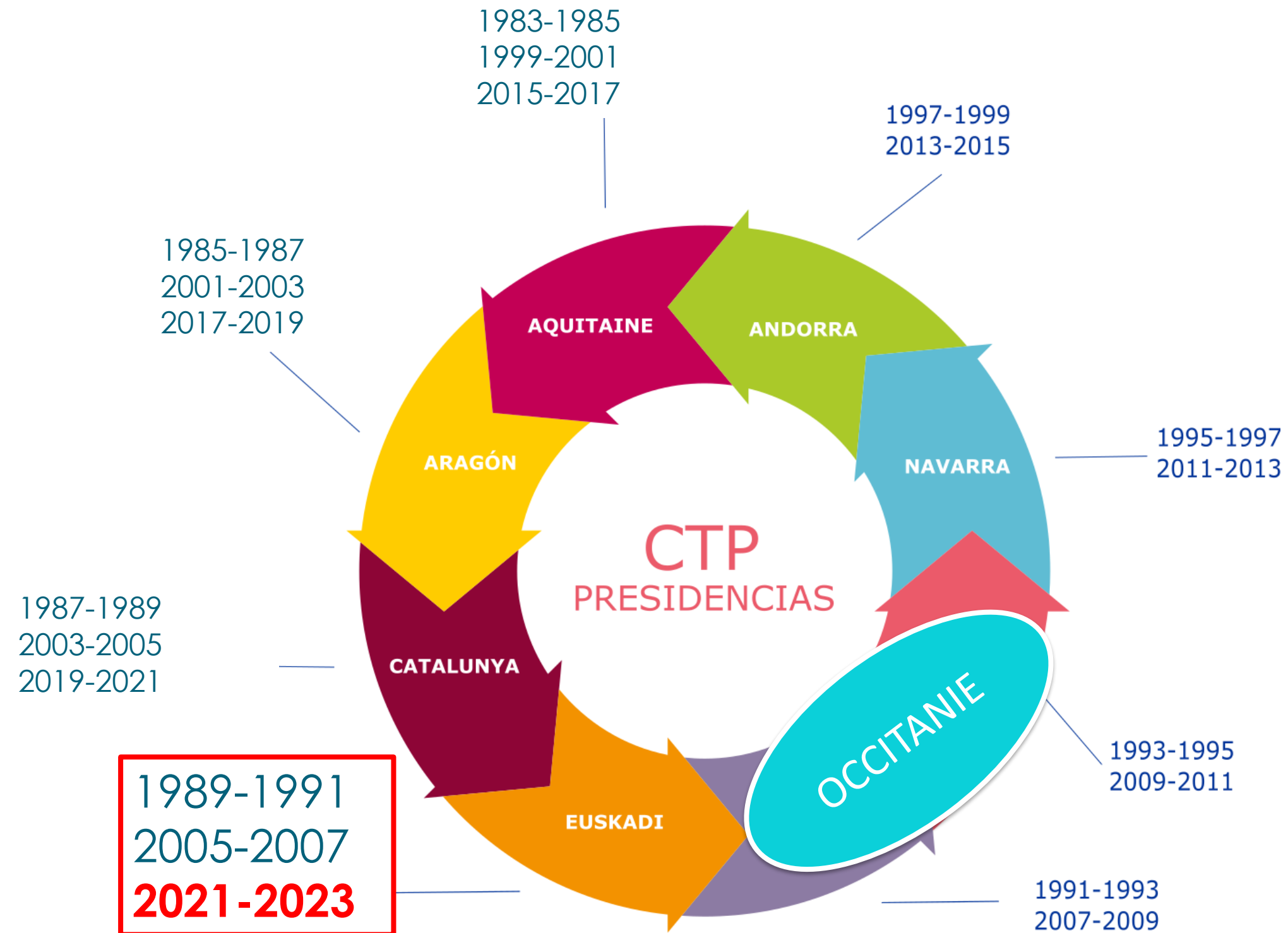
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CTP'S Presidency

Presidency

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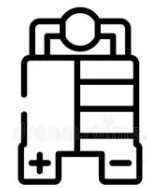
6 Hydrogen Strategies



- Within the CTP territory, 6 Regions are implementing a Hydrogen Strategy, tackling the whole Hydrogen Value Chain ;

- The economic, geographic and infrastructural diversity of the CTP members offer a great set of opportunities for hydrogen deployment:

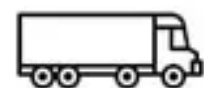
Cumulative targets of the CTP territories by 2030:



Production
2.5 GW



Distribution
120 HRS

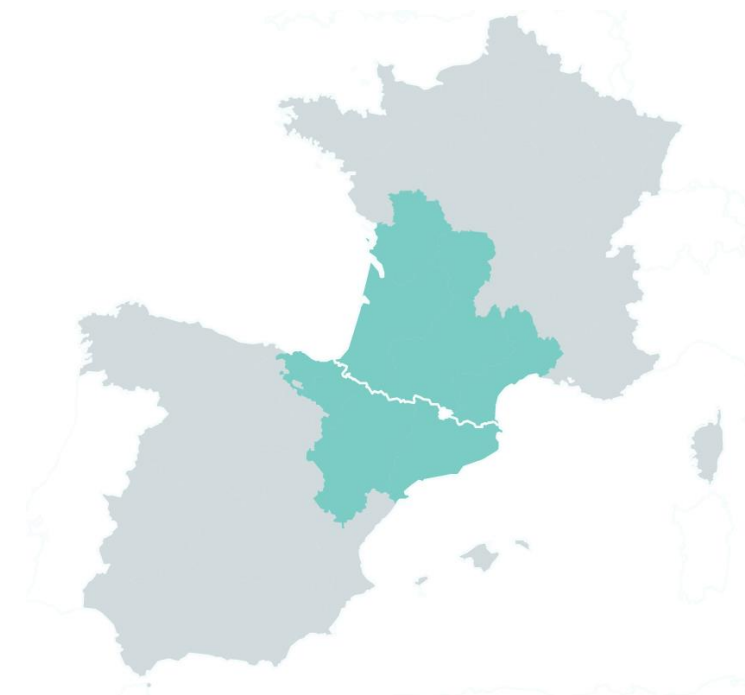


Utilization



+ 3 400

Light and heavy vehicles



Industrial hubs: Basque Country, Catalunya (potential of 70 000 t of H2 yearly consumption), Lacq (NAQ) etc.



Large ports on both the Atlantic and Mediterranean : Barcelona (CAT), Bordeaux (NAQ), Port-la-Nouvelle (OC) etc.



Airports, with a set of H2 projects implemented: Alguaire (CAT), Teruel and Zaragoza (AR), Toulouse (OC) etc.



Hydrogen Train projects in Aragon, Basque Country, Navarre, Occitanie.

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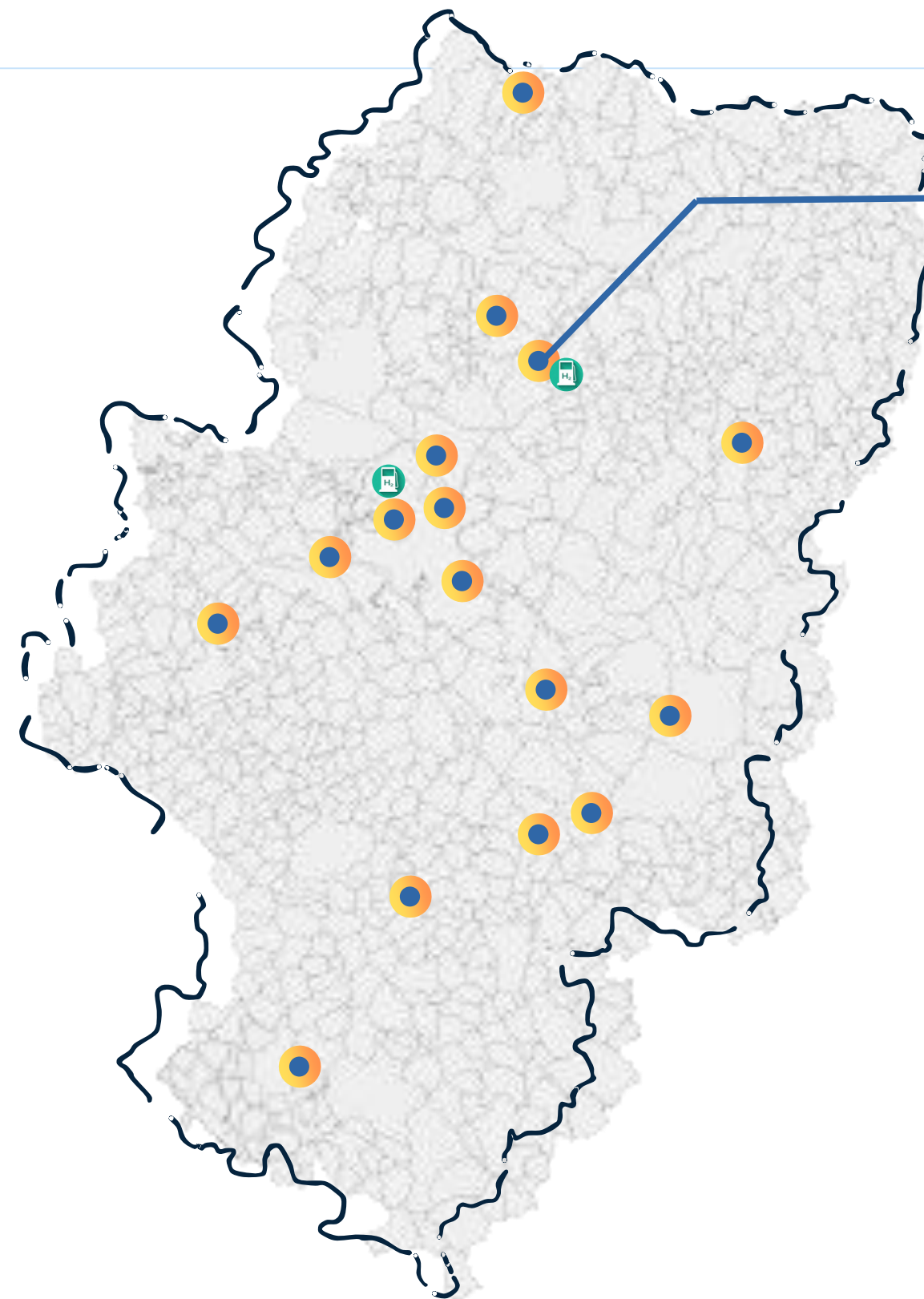
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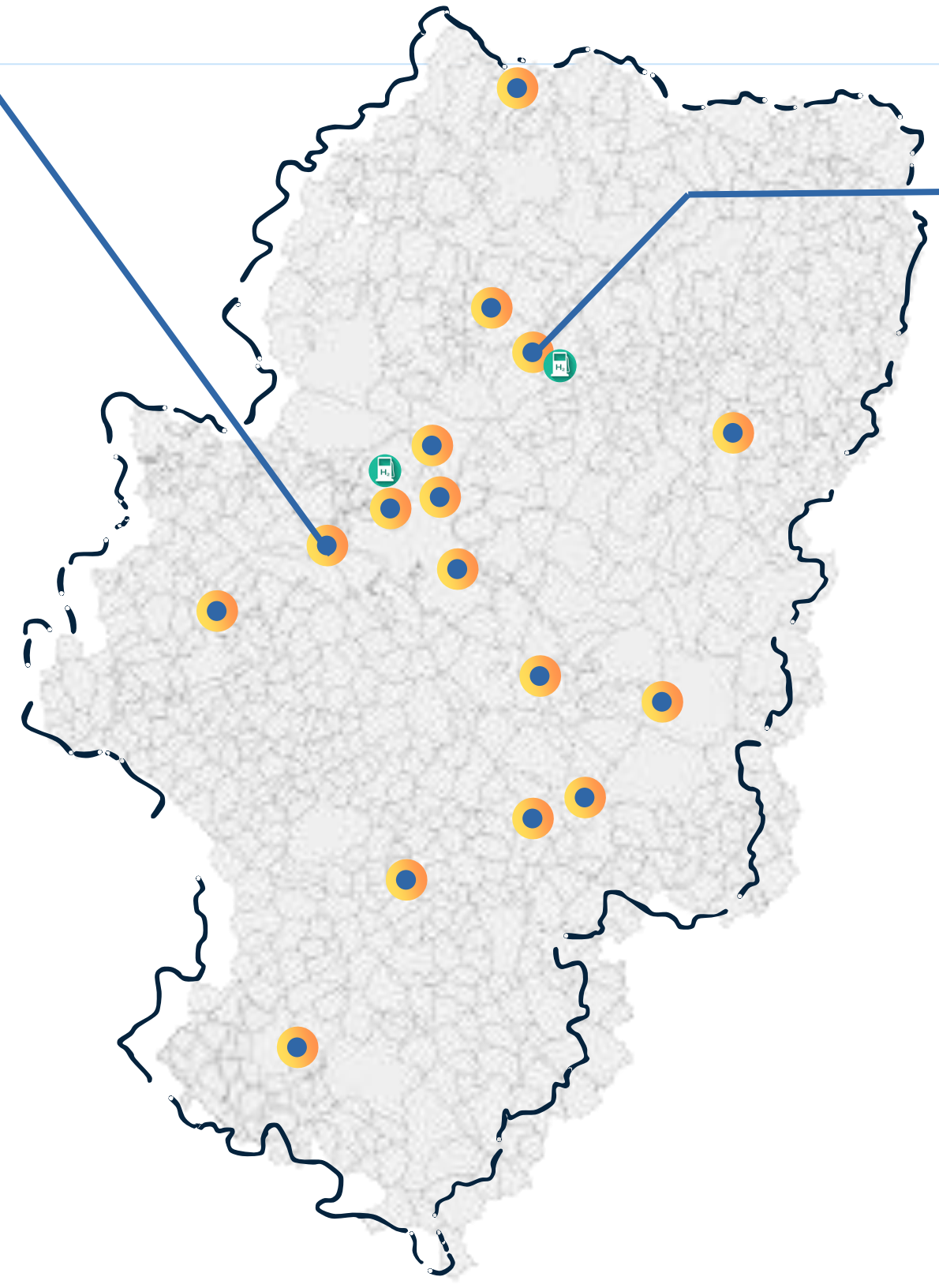
- 20 years in H2 experience
- +200 R&D&i projects
- 33 projects in FCH + Clean Hydrogen JU
- Unique H2 ready testing infrastructure
- HRS in operation



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HYDROGEN VALUE CHAIN OEMs



- 20 years in H2 experience
- +200 R&D&i projects
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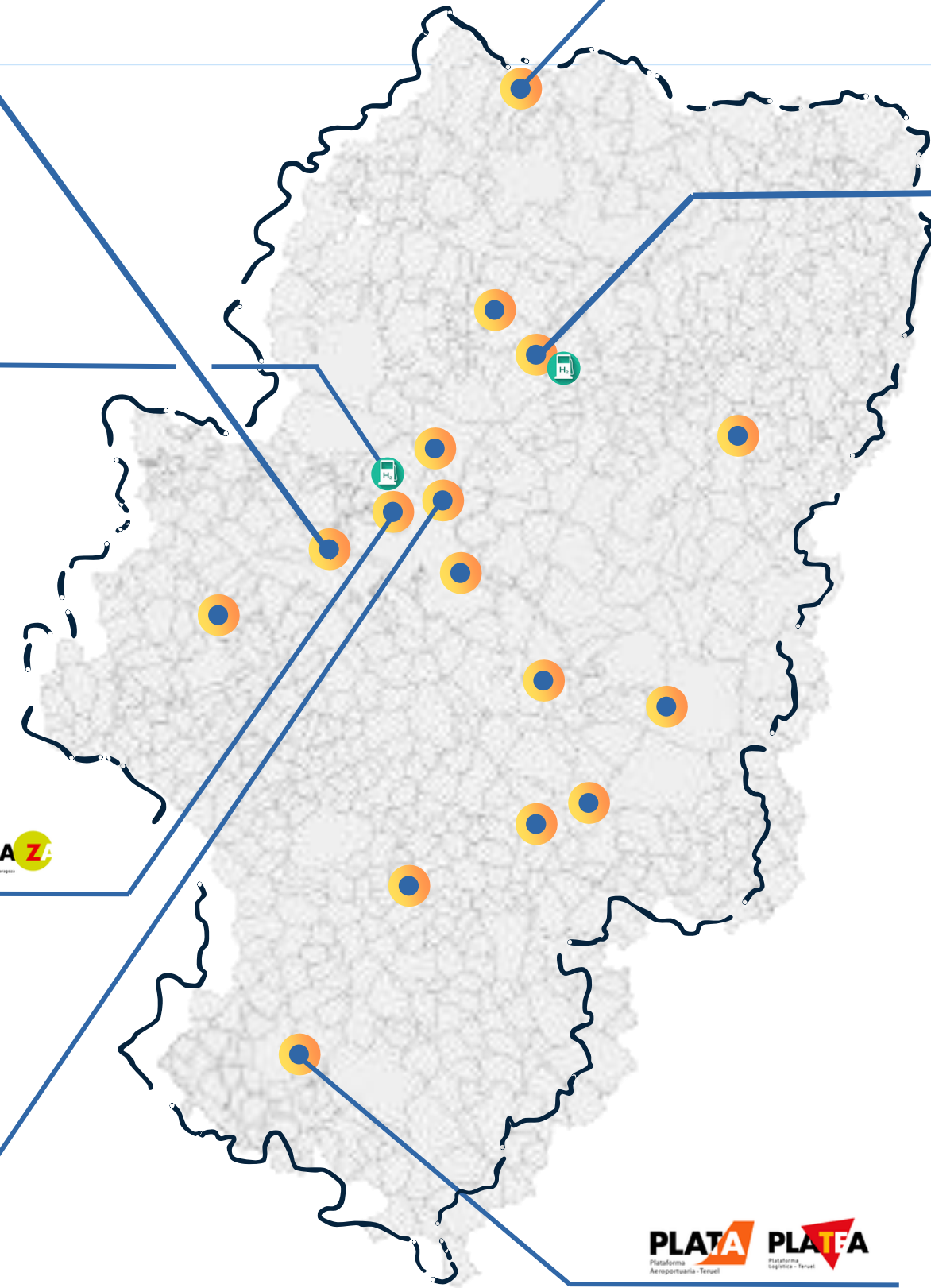




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HYDROGEN VALUE CHAIN OEMs

FUSION-FUEL™
H2JORGE 1.55 MW

FCH2RAIL



HYSENCIA 36 MW



- 20 years in H2 experience
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HRS EL CISNE



H2PILLAR 30 MW



AIHyCem 5 MW



LA ZAIDA 20 MW

WALIA ENERGY SL

CASPE 50 MW



PLAZA LOGISTIC HUB
ZARAGOZA AIRPORT



NUDO MUDEJAR 15 MW



CATALINA PROJECT 500 MW/2 GW



ENDESA & IQE 7.2 MW



CAECIUS 25 MW



HYDRONGEN BUS LINE
ZARAGOZA CITY
CENTER - AIRPORT



TERUEL AIRPORT





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HYDROGEN VALUE CHAIN OEMs

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HRS EL CISNE



NATURAL H2 MONZON



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AIHyCem 5 MW



LA ZAIDA 20 MW

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PLAZA LOGISTIC HUB
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enagas renovable



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BASQUE COUNTRY: Basque Hydrogen Corridor

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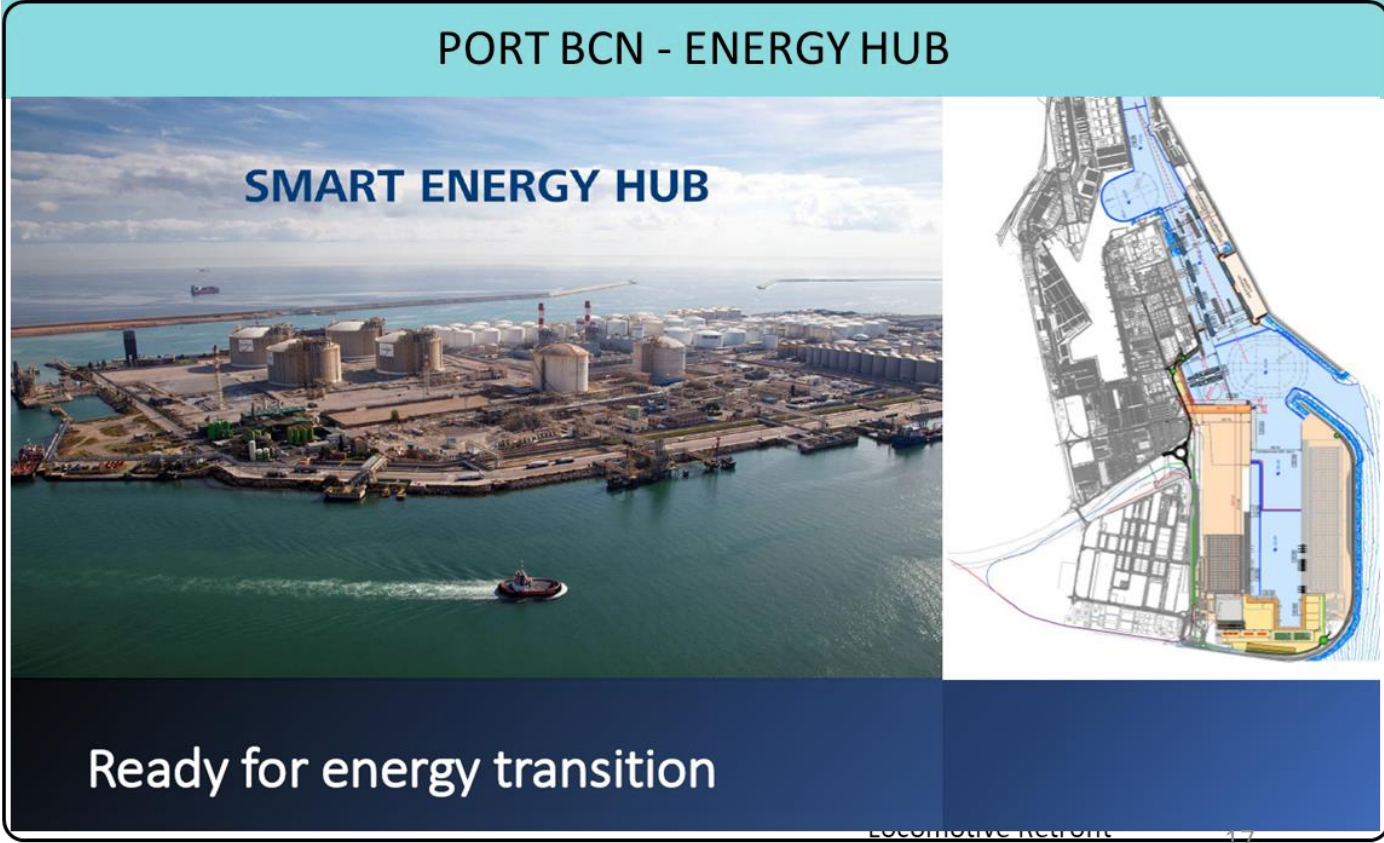
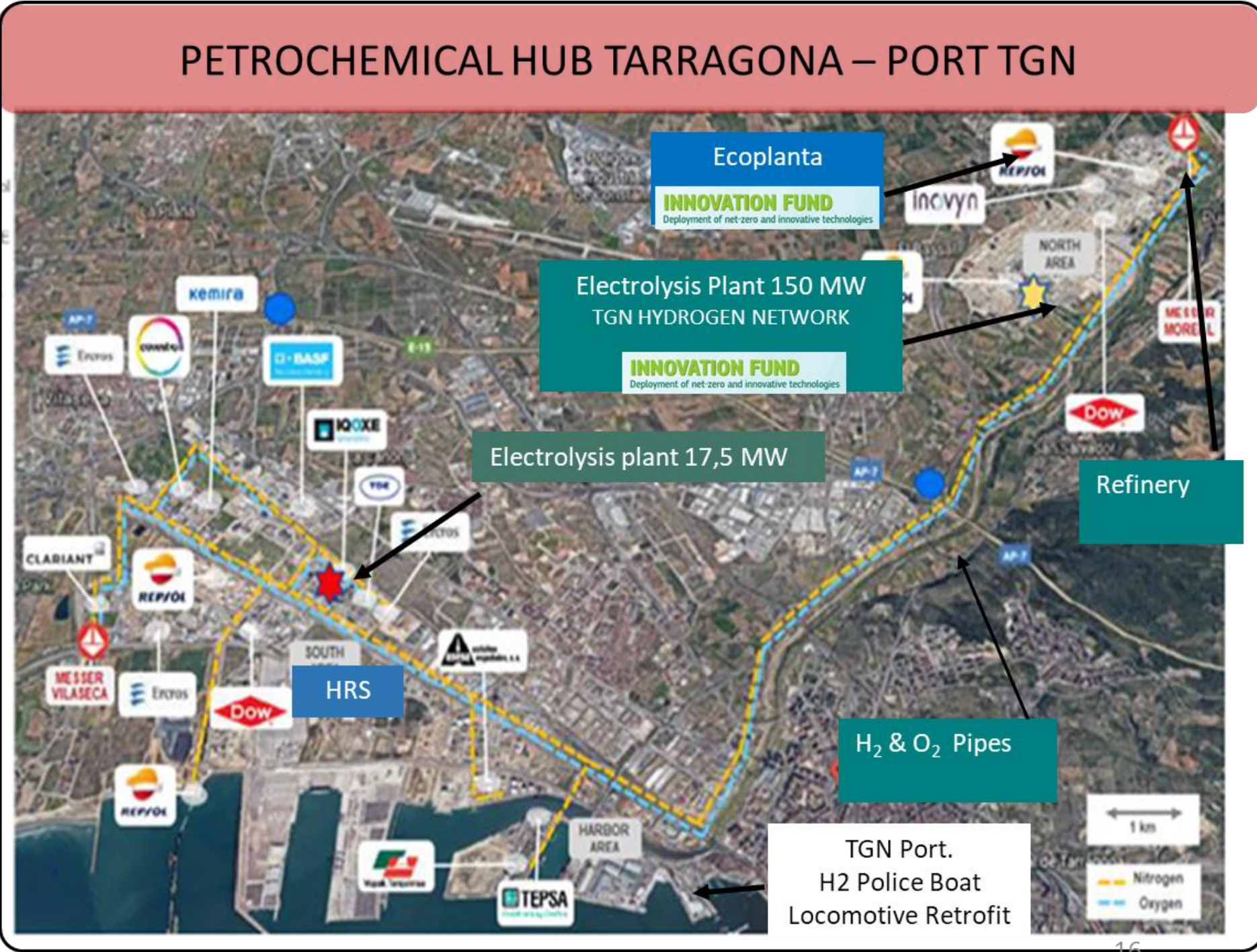
All this happened in **2023**, but not only...

- 70 entities**
- 50 initiatives**
- PRODUCTION**
- DISTRIBUTION & STORAGE**
- INDUSTRY DECARBONIZATION**
- MOBILITY USE**

- Commissioning of a 2,5MW electrolyser
- 100% hydrogen distribution network
- World's first 100% green hydrogen ladle preheater for ArcelorMittal Sestao
- Irizar i6S Efficient Hydrogen long-distance bus prototype
- FCH2RAIL: First hydrogen train tests on the Spanish railway network

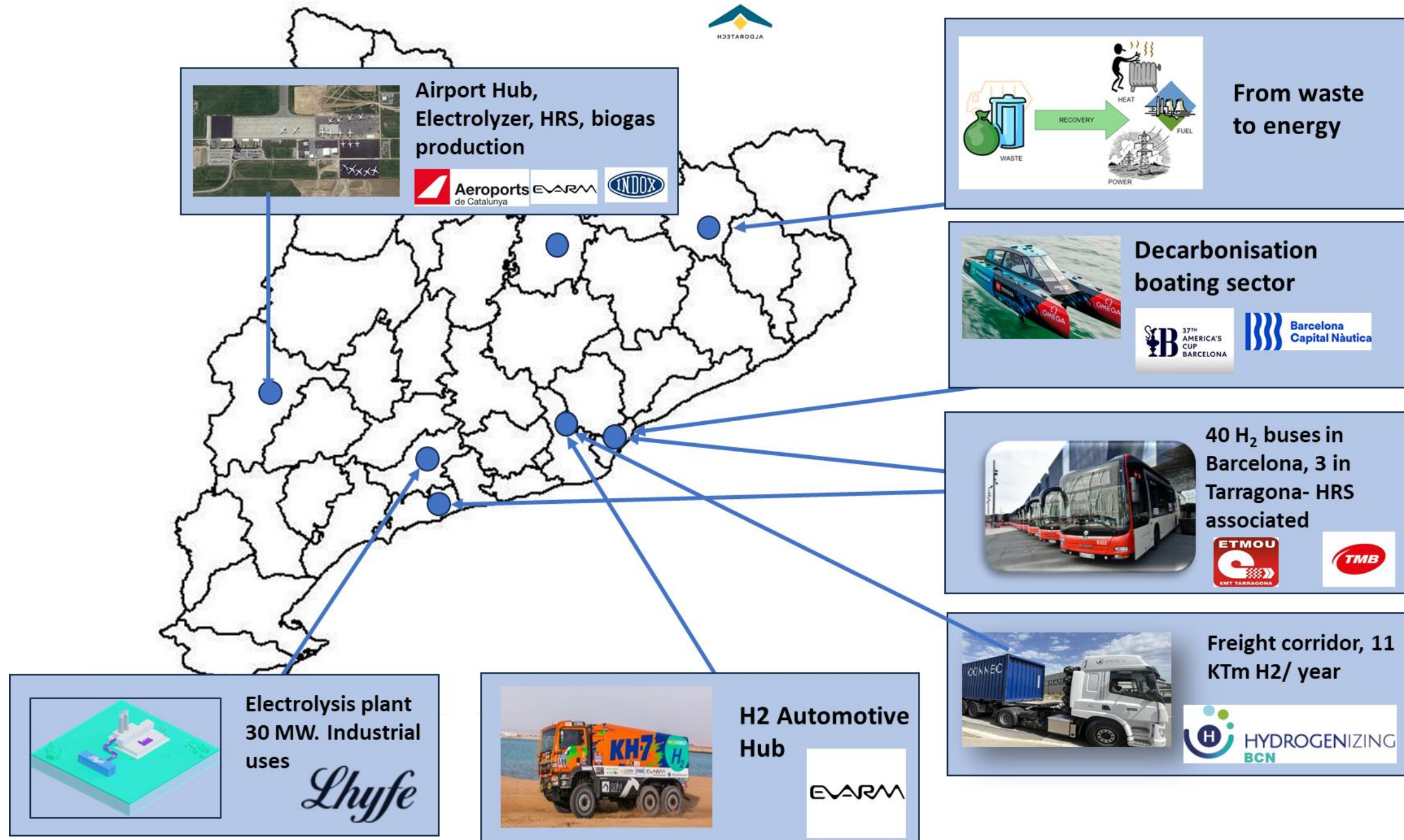


CATALUNYA: Strategic node



CATALUNYA: Covering all the value chain


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NOUVELLE-AQUITAINE : 2030

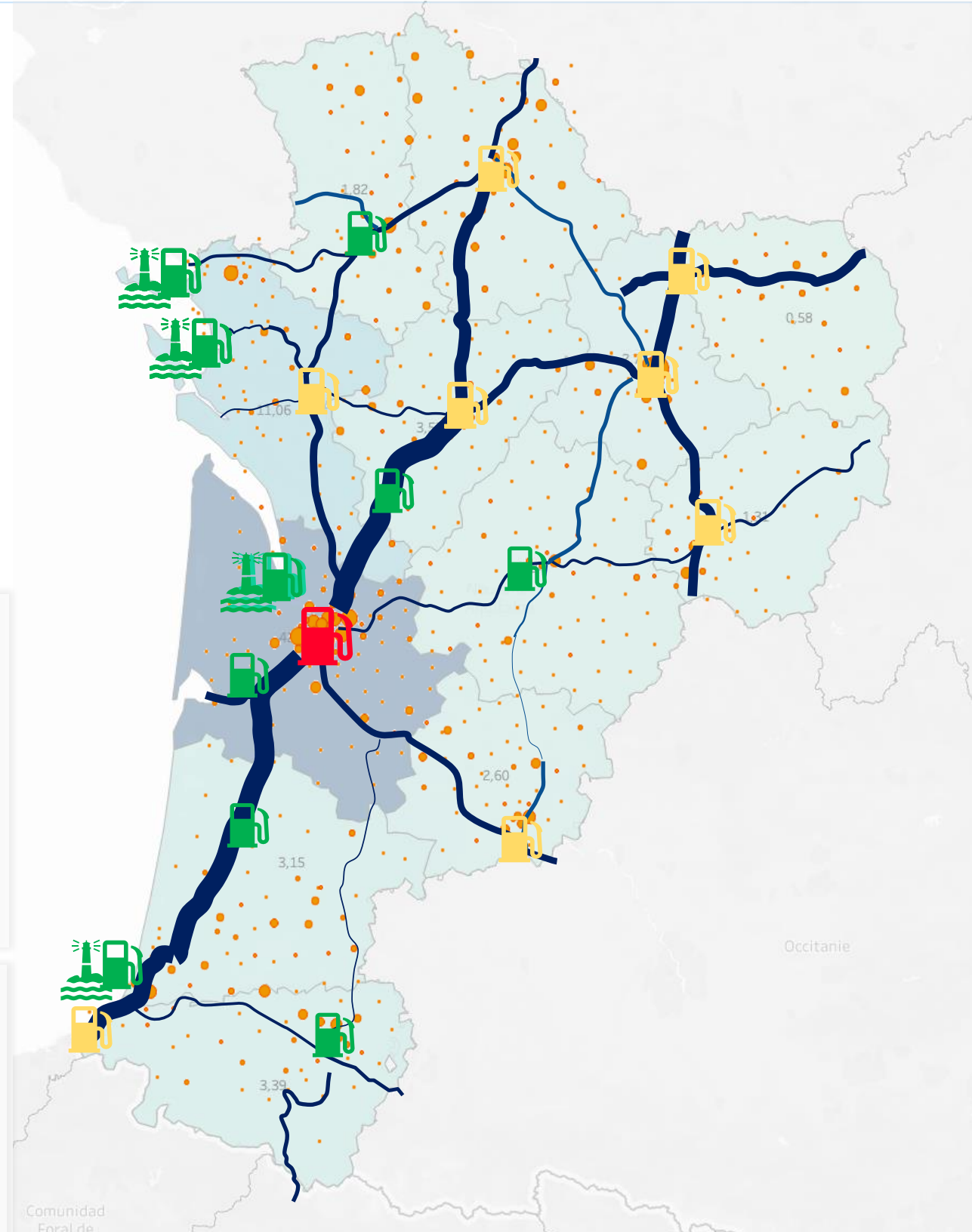
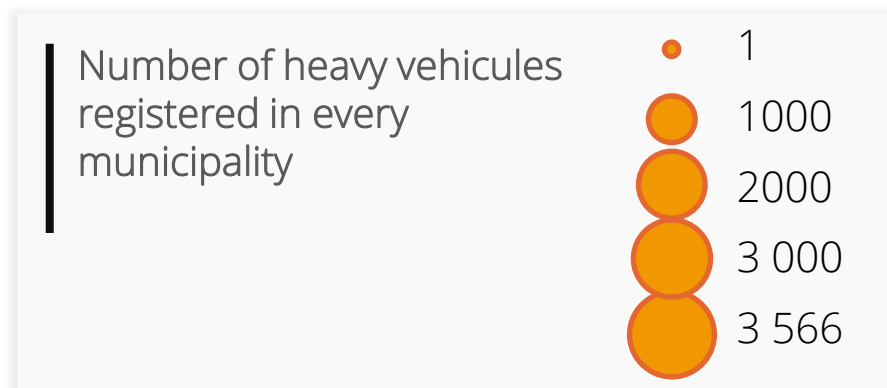
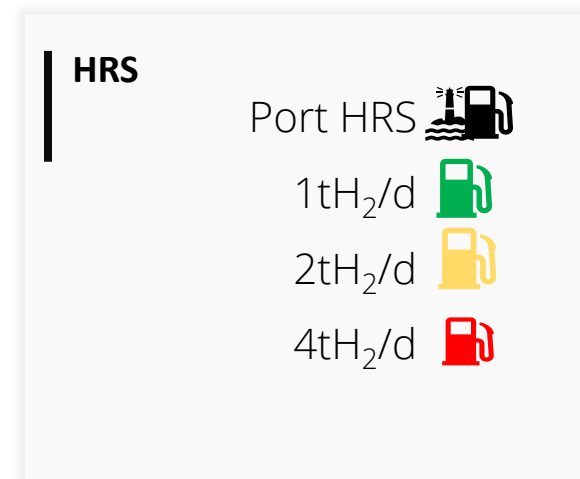
Forecasting

Forecasting of Nouvelle-Aquitaine's hydrogen refueling infrastructure in 2030

Case 1 : Hydrogen Heavy mobility forecasting

Electrolysis estimated size as a reference (other technologies not excluded) : 76 MW
Refueling capacity estimated at 31tH₂/day (~2200 heavy road vehicle)

→ **19 HRS** minimum to tackle the needs



NOUVELLE-AQUITAINE : 2030

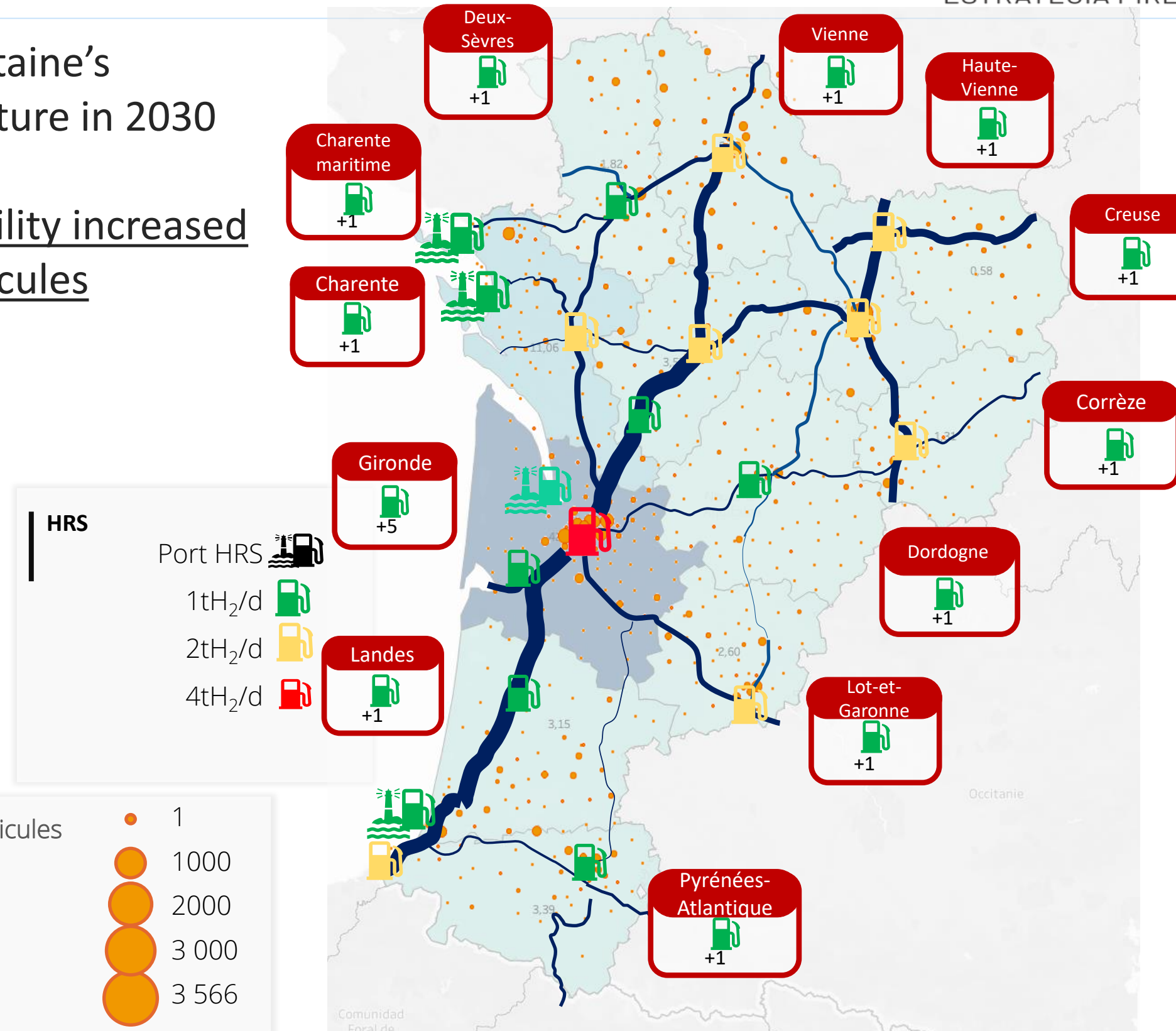
Forecasting

Forecasting of Nouvelle-Aquitaine's hydrogen refueling infrastructure in 2030

Case 2 : Hydrogen Heavy mobility increased with utility and personal vehicles

Electrolysis estimated size as a reference (other technologies not excluded) : 118 MW
Refueling capacity estimated at 47tH₂/day

→ **35 HRS** minimum to tackle the needs



NAVARRA: Green H2 CAT Tudela Initiative



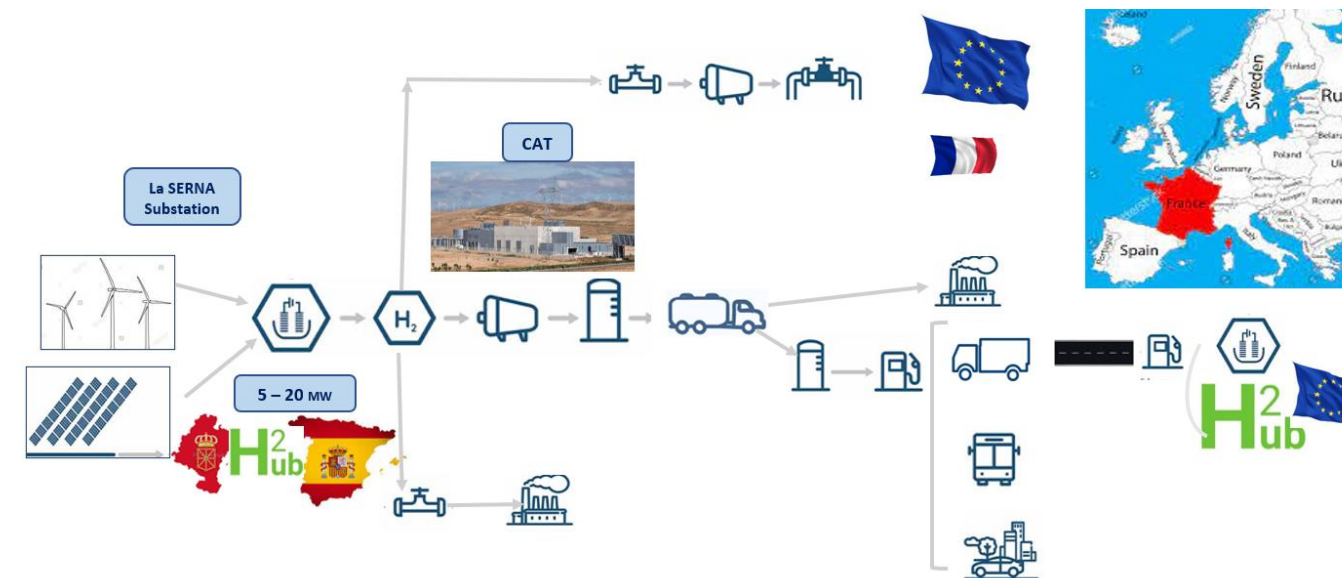
H2 HUBs & Growth Innovation & Knowledge VC



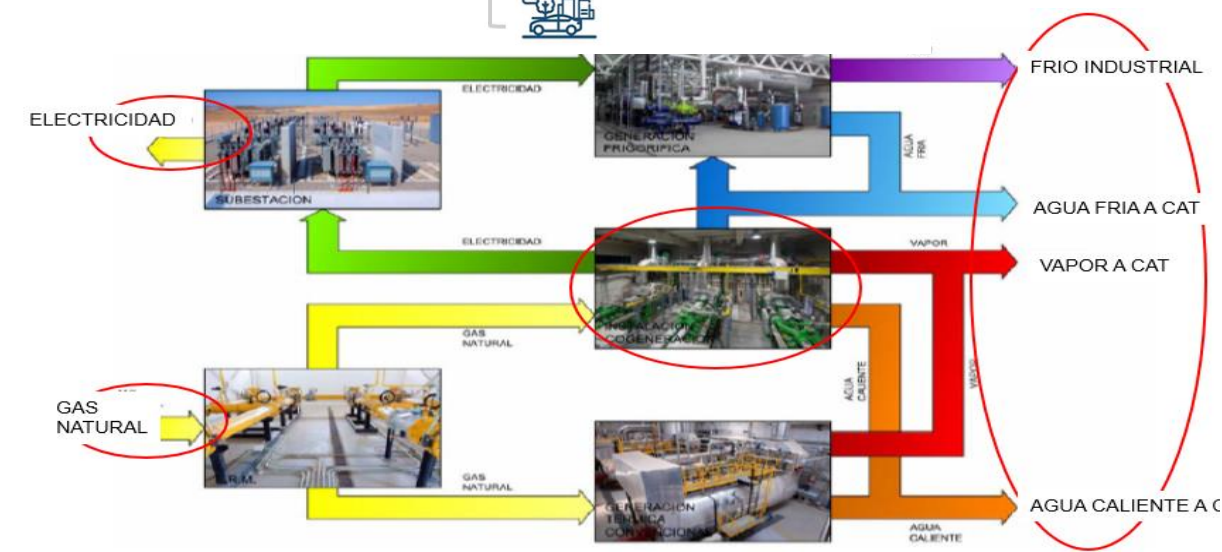
- 2 big industries
- 4 Midcaps
- 8 SMEs
- 1 Heavy transport
- 1 Association of Municipalities
- Government of Navarra support



INDUSTRIAL SIMBIOSIS Centralized supply of energy to companies



Renewable energy 1.000 MW (2Km) La Serna (substation)



NAVARRA : Nordex Electrolyzers



- The new Barasoain plant will design, manufacture and market electrolyzers to produce green hydrogen (5MW-10MW).
- Nordex and the Government of Navarra will invest 30 million euros on the project that will also create 150 direct jobs and a cumulative investment of more than €70 million over the next 8 years.

- 11.6 million euros have been obtained from the 'Important Project of Common European Interest (IPCEI)', approved by the European Commission.
- Nordex Electrolyzers is expected to become an industrial tractor to develop the emerging green hydrogen market in Navarre.



OCCITANIE : The CorridorH2 Occitanie

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Corridor H2 in Occitanie : first regional cluster launched

INVESTMENT

110 M€ in total for project implementation **by the end of 2023**

PRODUCTION

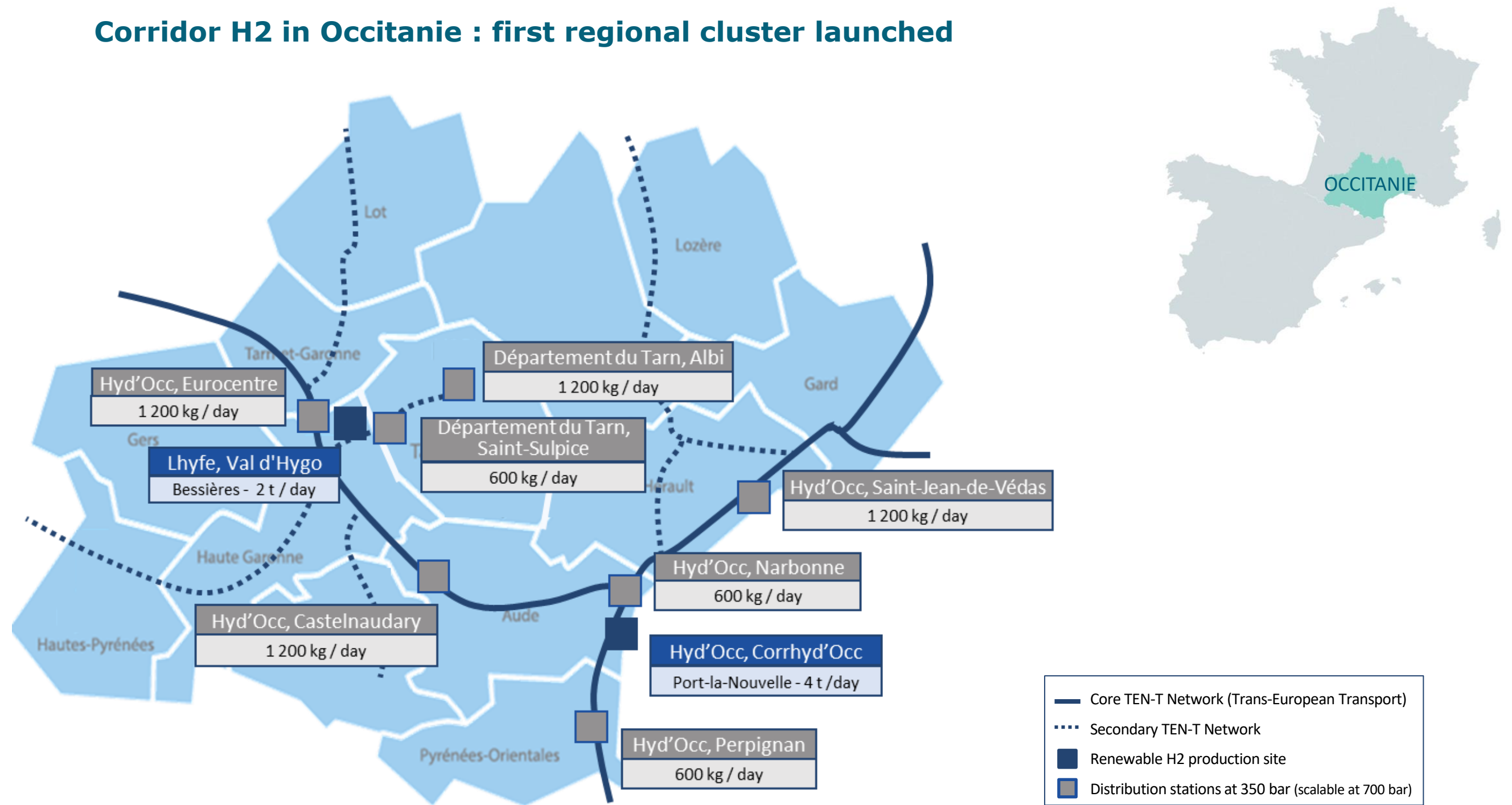
2 renewable hydrogen production sites, cumulative production capacity of 6 t/day

HRS

7 hydrogen refuelling station, of 600 to 1200 kg/day each

END-USES

- 40 trucks
- 62 refrigerated units for trucks
- 15 regional inter-urban buses



— Core TEN-T Network (Trans-European Transport)
 Secondary TEN-T Network
 ■ Renewable H2 production site
 ■ Distribution stations at 350 bar (scalable at 700 bar)

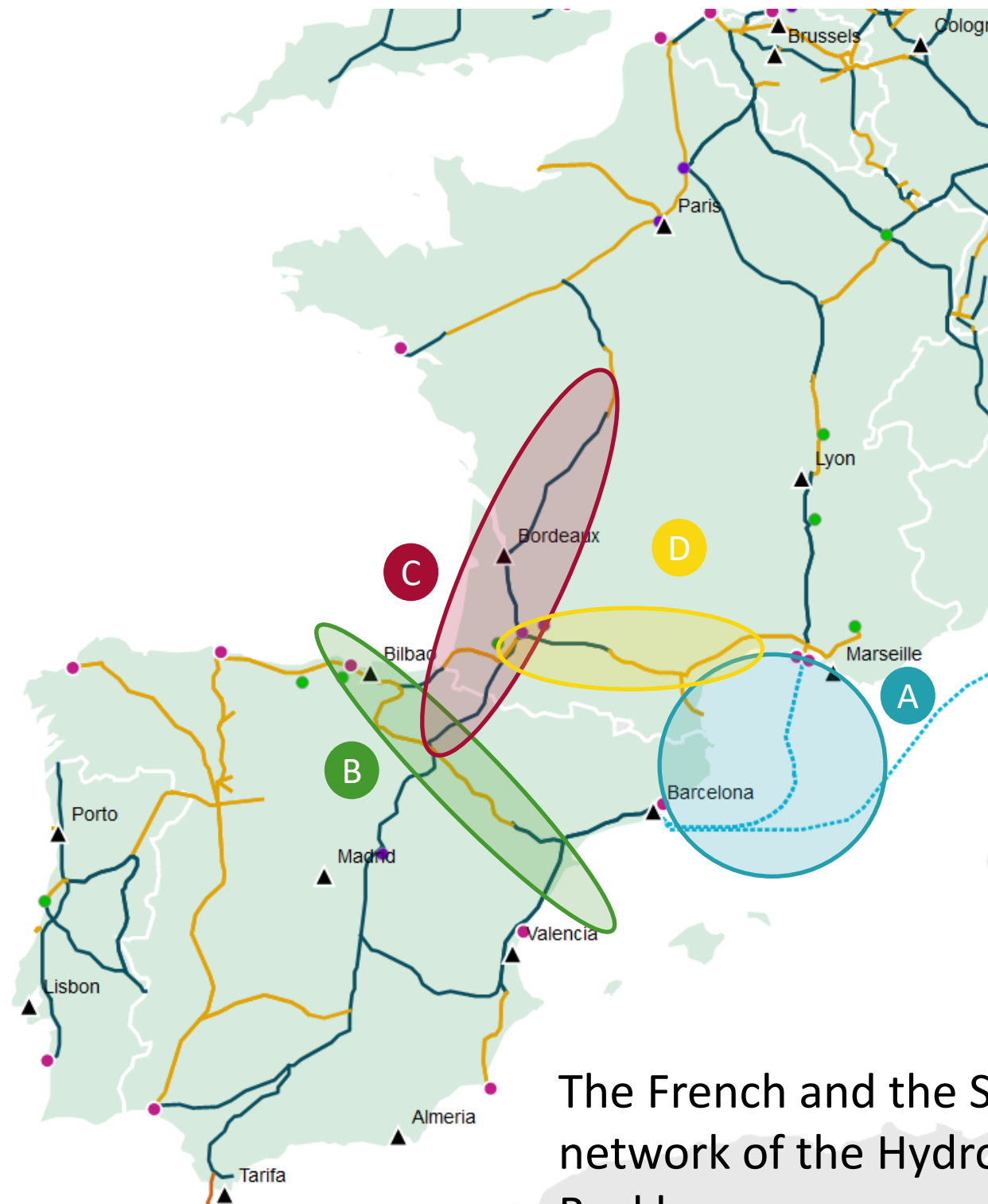
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Distribution: 4 structuring H2 connections



The French and the Spanish network of the Hydrogen Backbone

The CTP territory will be meshed by a set of hydrogen connections within the European Hydrogen Backbone framework as of 2030 that will enable:

- Security of Hydrogen supply for local needs – mobility, industry;
- Outlet for local H2 productions ;
- Additional decarbonization opportunities, both in terms of volume and sectors addressed ;

The 4 connections crossing the CTP territory are:

- A H2Med-BarMar
- B The Ebro Corridor
- C The Atlantic Corridor
- D HySoW

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PHYRENE: generating a H2 ecosystem at the CTP level



Objectives of the Action Plan:

- support a coherent development and the consolidation of the renewable hydrogen value chain on a cross-border scale ;
- favor the identification and exploitation of business, research and institutional synergies that ensure the energy transition of the territory ;
- position the CTP territory as a Hydrogen Valley on a European scale

➡ first step to lay the strategic and operational foundations for the construction of a cross-border strategy.

A snapshot of the Action Plan's content:

- ➡ 4.1 Analysis of H2Med Hub opportunities and identification of synergies
- ➡ 4.2 Deployment proposal for a network of hydroelectric power plants on the territory
- ➡ 4.3 Diagnosis of training needs in the H2 sector across the Pyrenees border
- ➡ 4.4. Study of the decarbonization potential of heavy goods vehicle traffic

Esterrik asko

Gracias

Mercès

Merci

Gràcies



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