H2med
Call for Interest

Results Presentation Webinar – February 10th 2025

Speakers

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Agenda

1 **Introduction – H2med corridor & Call for Interest**

2 **CFI results**

- Participation
- Volumes for each country
- Flows along the corridor

3 **Conclusions & Next steps of H2med corridor project**

This webinar is recorded.
To ensure a smooth session, your microphones and cameras are disabled.
Please note that there will be no Q&A during this webinar.

H2med corridor

In a nutshell

5 partners connecting **4 national hydrogen backbones** in Europe

3 international connections
CelZa, BarMar and Medelsheim

~ 5,500 km of pipelines out of which **35% repurposed**

2 MTPA (million tonnes per annum) of **transmission capacity**

10% of expected H_2 consumption in Europe by early **2030s**

H2med corridor has the potential to secure a significant part of Europe's energy future, with numerous benefits at stake

Energy & Environment

Transport 10% of expected hydrogen consumption in Europe in early 2030s and accelerate Europe's decarbonization roadmap

Supply Europe with carbon-free hydrogen produced at competitive costs

Ensure the flexibility of the energy network through access to hydrogen underground storage capacities

Socio-Economic

Contribute to European and national objectives for the deployment of the hydrogen sector

Enable the development of hydrogen valleys and an intra-European industry with high added value

Facilitate the creation of ecosystems of decarbonization

H2med consortium organized a non-binding Call for Interest to gather future hydrogen market needs

From **7th November 2024** to **10th January 2025**

For **producers**, **consumers** and **traders** of hydrogen in Portugal, Spain, France and Germany

On a dedicated **platform online**, through a **confidential questionnaire**

To contextualize hyd**rogen supply and demand** and obtain direct market information to **qualify the needs from now to 2050**

To **confirm the needs of hydrogen infrastructure** from actors across the value chain, and their **interest in H2med**

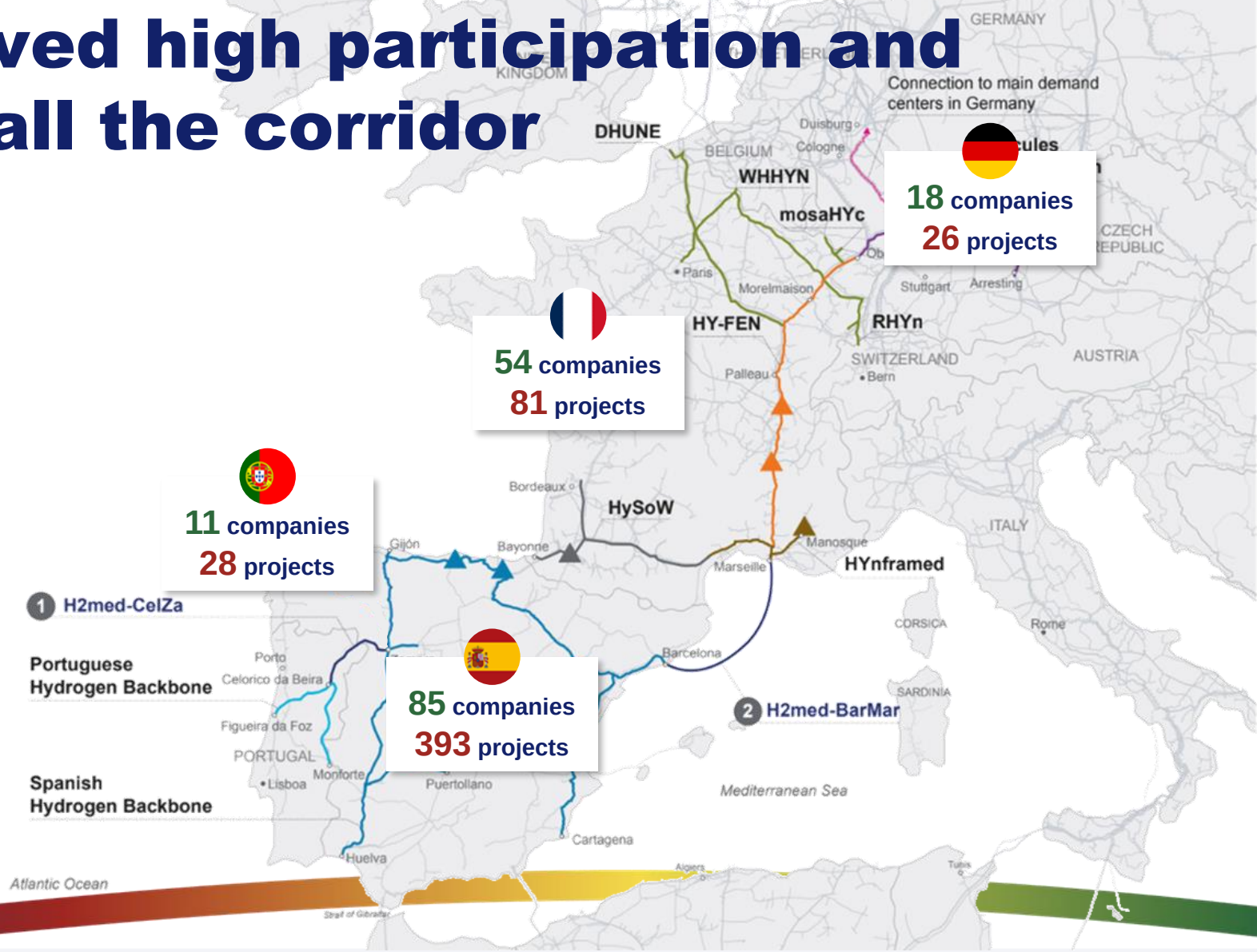
To **boost the development** of the needed hydrogen network, and **dynamize the market by connecting supply and demand**, to achieve Europe's goals

H2med CFI received high participation and support through all the corridor

168 companies*

528 projects*

Open, transparent and non-discriminatory process



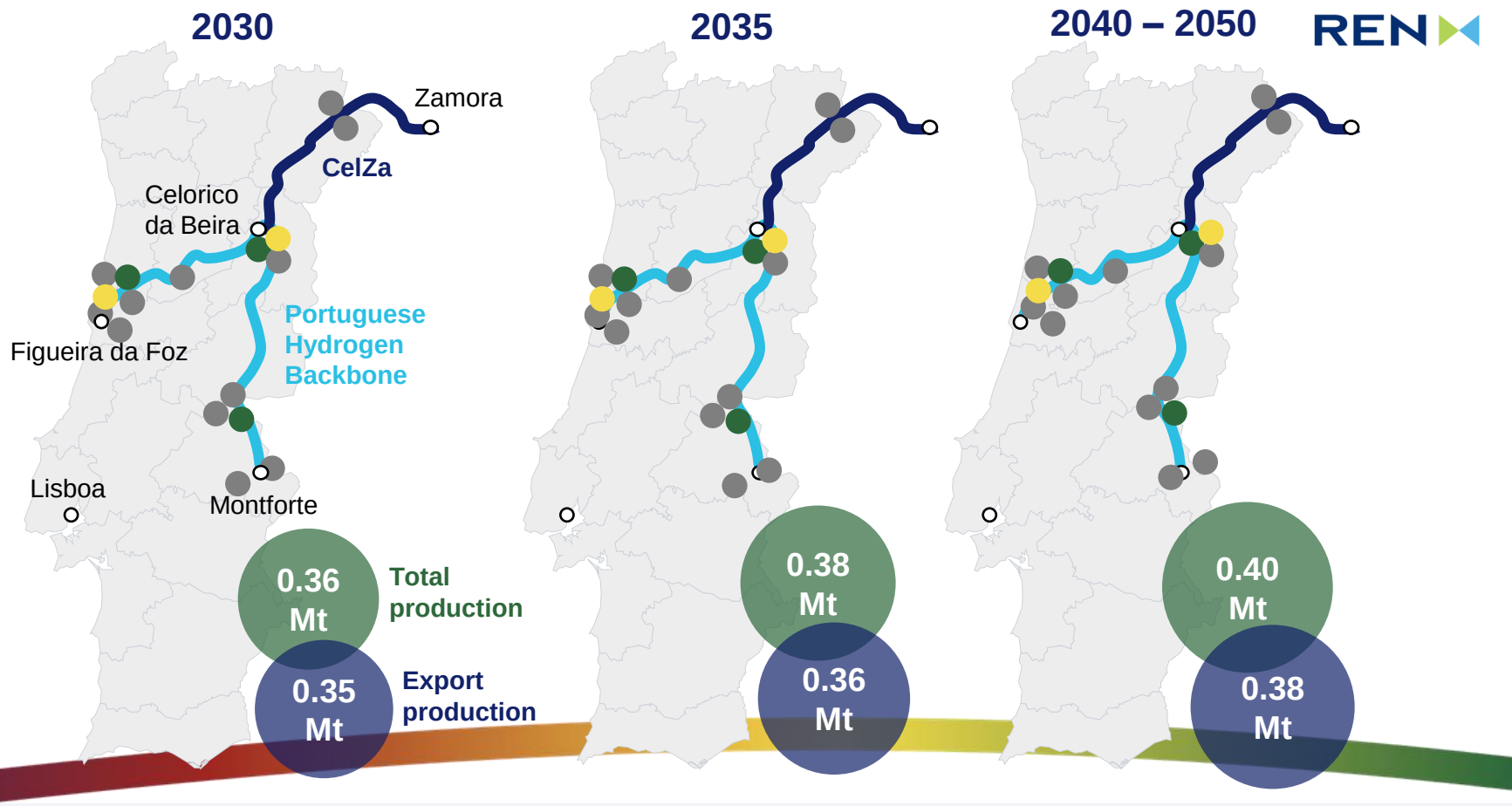
*All registrations accounted

Portugal is almost exclusively exporting to Spain through CelZa interconnection

Higher potential identified, more production expected

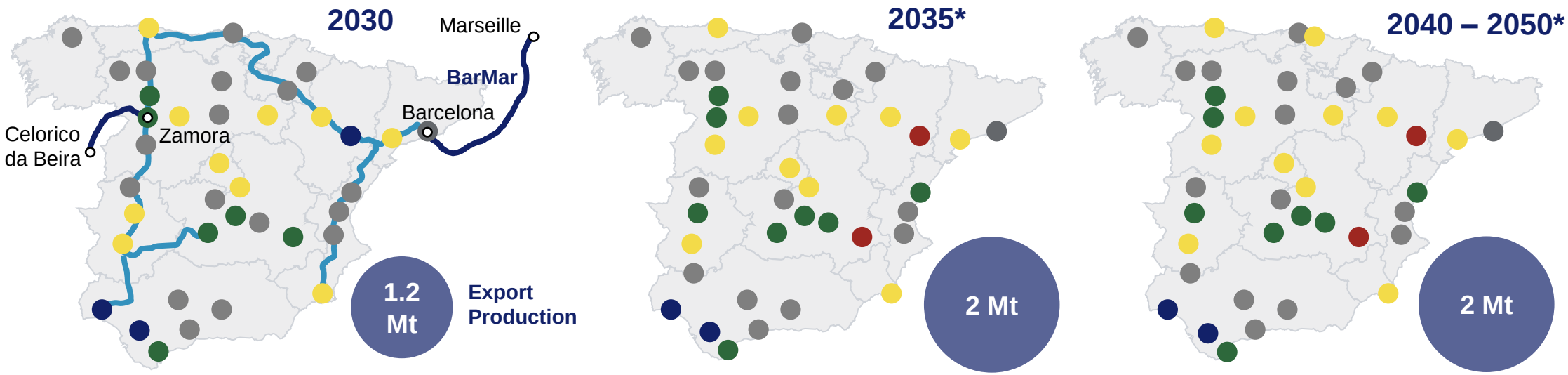
Most of production projects are willing to export towards Germany

Methanol and e-SAF projects are the main drivers of consumption



Spain's export production potential ranges between 1.2 and 2 Mtpa by the early 2030s

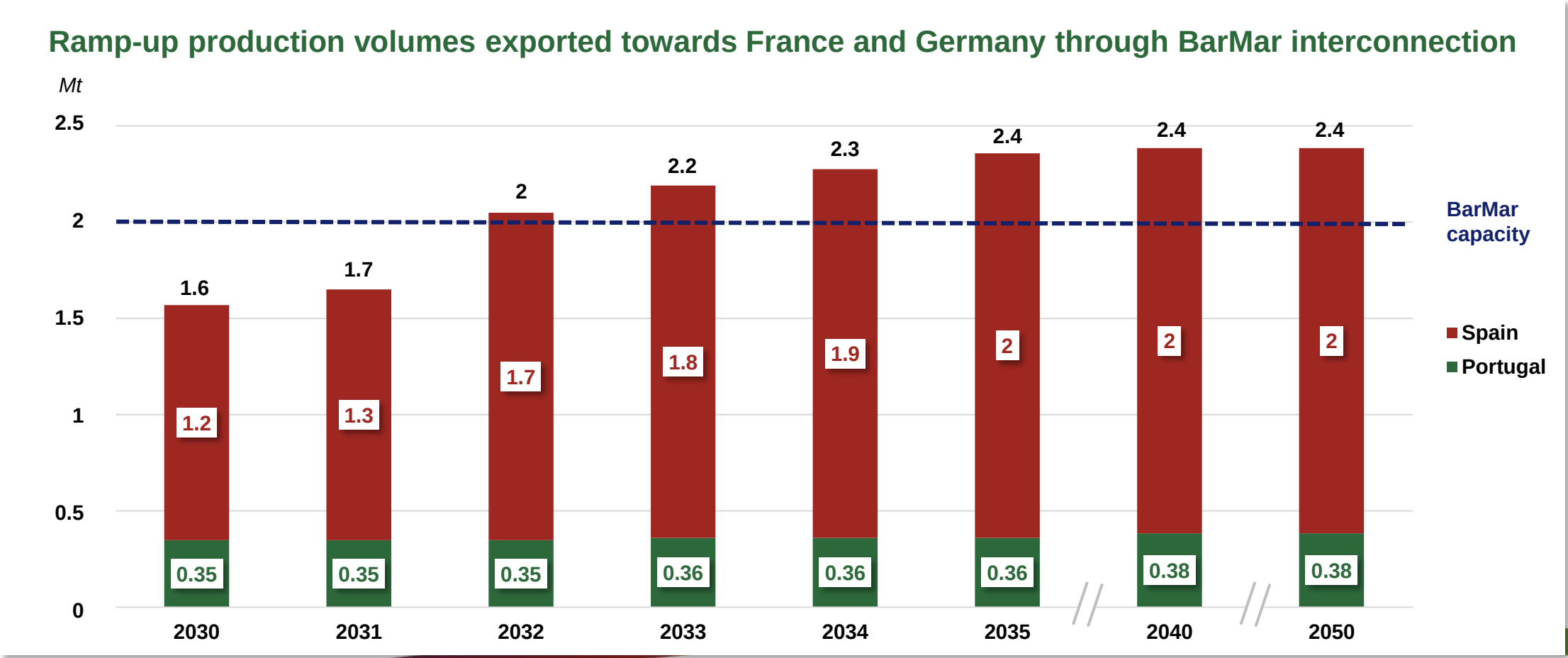
Substantial export production potential registered in Spain, in line with the results from the Call for Interest Enagás conducted in 2023



***Infrastructure included out to 2030 corresponds to PCI 9.1.3 – Spanish Hydrogen Backbone.** Based on Royal Decree-Law 8/2023, in April 2024, Enagás, as provisional HTNO, sent a proposal for hydrogen backbone infrastructure in Spain with a ten-year horizon (2024-2033). This network, and further expansions, is subject to the Government's Binding Planning and prior CBA.

Additionally, this call to the market has revealed an interest of the Northern African countries to transit their hydrogen production into Europe as from 2040.

As a result, the results for the interconnection exceed its capacity of 2 Mt from 2032 onwards

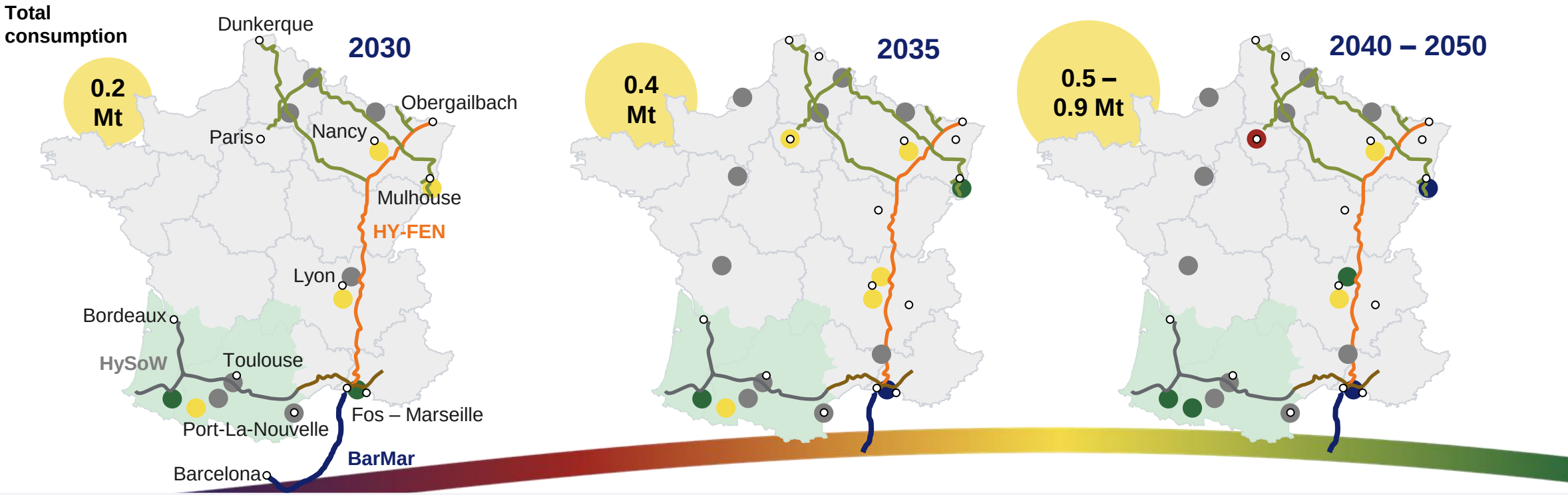


Industrial and aviation consumption needs in France are confirmed and rising over the time

Consumption volume (t/year)
- ≥ 200,000
- 100,000 ≤ - < 200,000
- 50,000 ≤ - < 100,000
- 20,000 ≤ - < 50,000
- < 20,000

Aviation sector share of consumption raises to 50% in 2050

Main other consumers are industrials, especially in (petro)chemicals but also e-fuels production

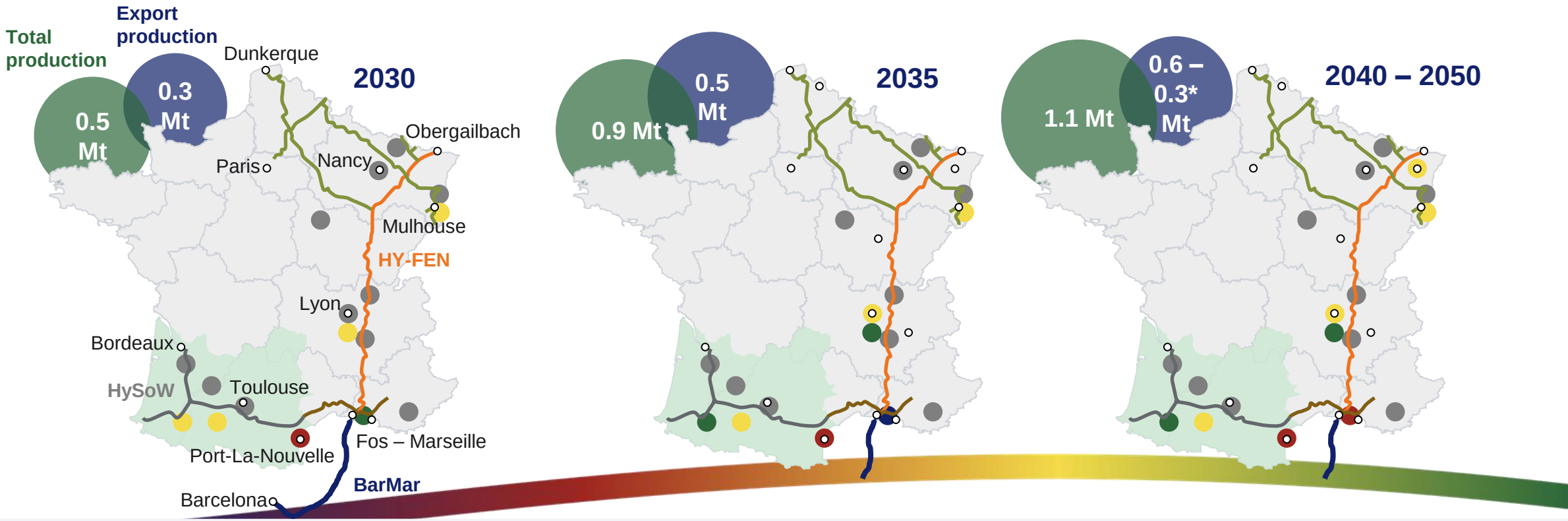


French production and imports are sufficient to cover national consumption

~ 50% of production is carried out by ammonia imports and cracking

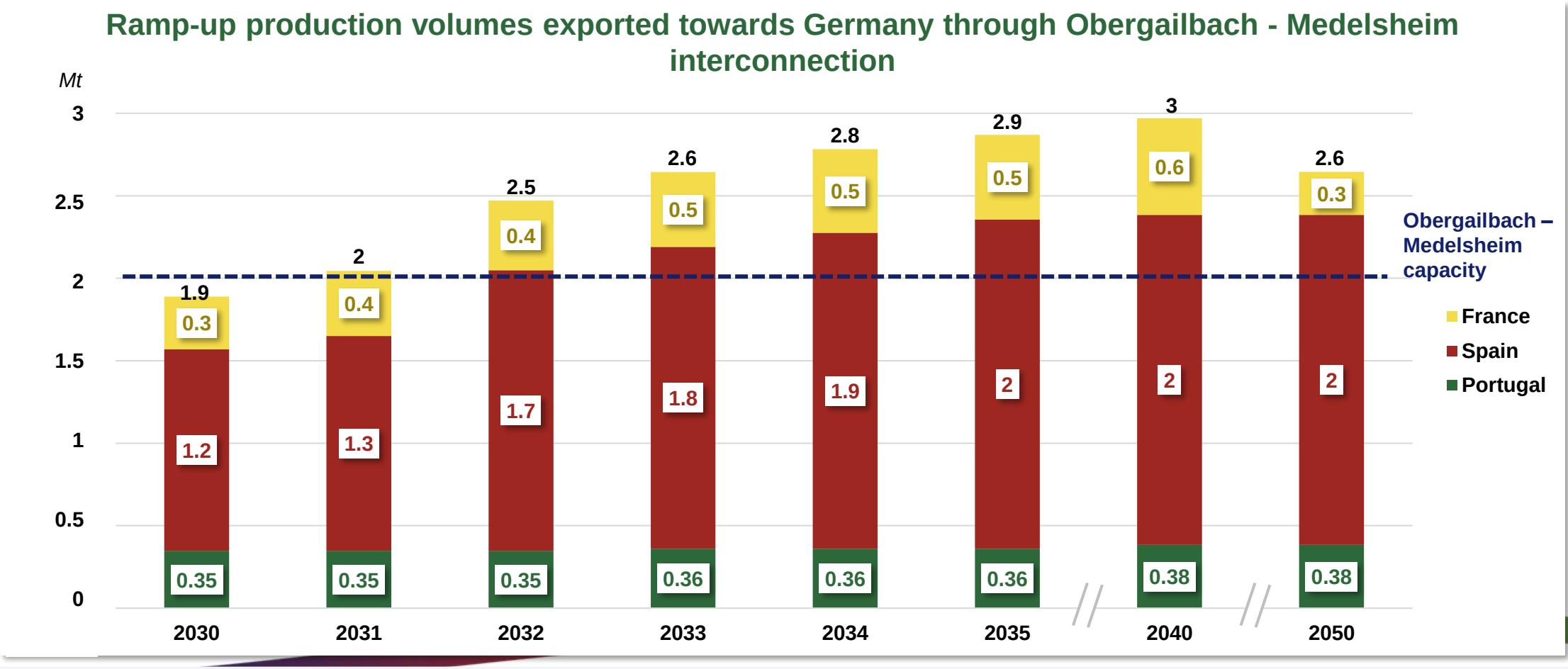
~ 50% of producers are renewables and green H_2 specialists

Production volume (t/year)
- ≥ 200,000
- 100,000 ≤ - < 200,000
- 50,000 ≤ - < 100,000
- 20,000 ≤ - < 50,000
- < 20,000



**The decrease of exports in 2050 is due to a higher increase of consumption than production between 2040 and 2050. Also, the displayed export production for 2050 is not equal to the difference between the displayed total production and consumption, because of numbers rounding*

With France adding export volumes equivalent to Portugal's, Obergailbach – Medelsheim transit volumes could reach up to 3 Mt, offering strong supply to Germany



Results show a partial picture of a large demand to come – with peak loads expected, confirming the necessity of Medelsheim interconnection

CFI Consumption volume (t/year)

- ≥ 200,000
- 100,000 ≤ - < 200,000
- 50,000 ≤ - < 100,000
- 20,000 ≤ - < 50,000
- < 20,000

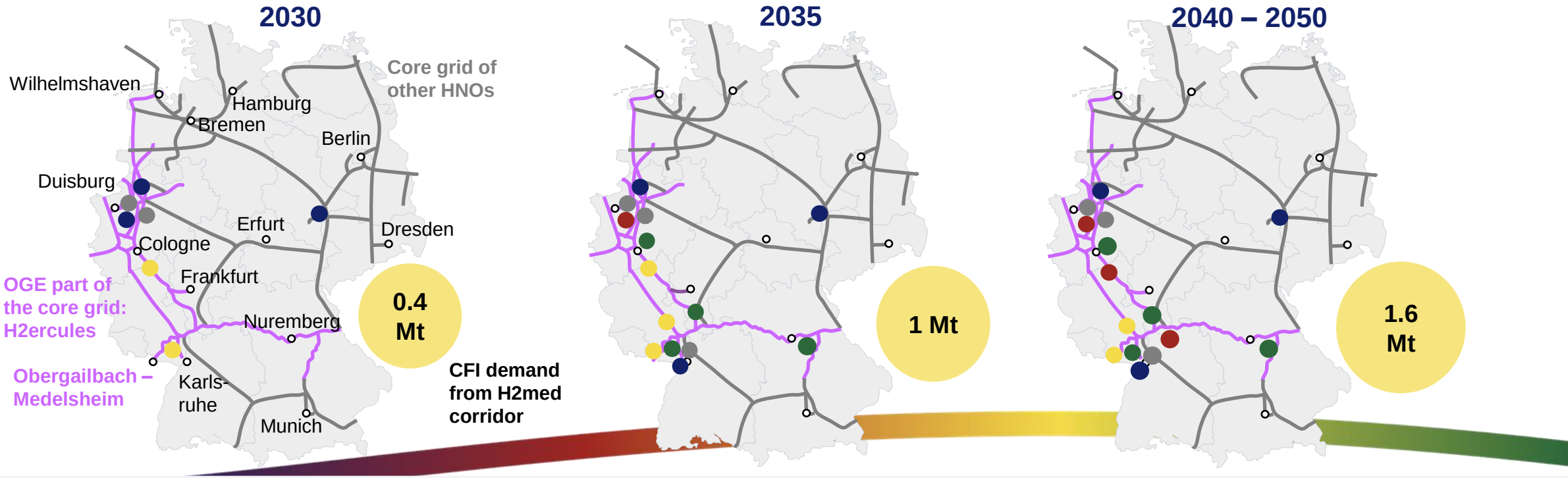
Regional feedback from OGE customer base intending to supply *via* H2med

Total H_2 demand expected for the whole country: 3-4 Mt in 2030 and 17-21 Mt in 2040

According to the German Minstry for Economic and Climate Affairs expectation based on studies and market intelligence

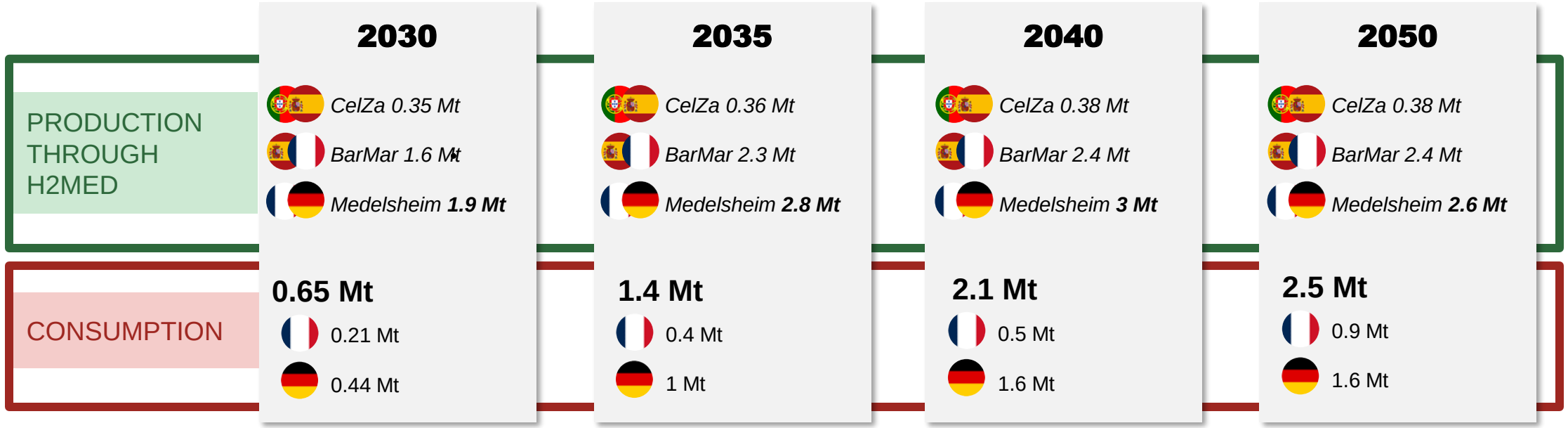
Consumers are mainly power plants and industrials: steel, (petro-)chemicals…

OGE



Key figures summary

Potential net volumes – production transported at each interconnection, and total consumption including trading volumes



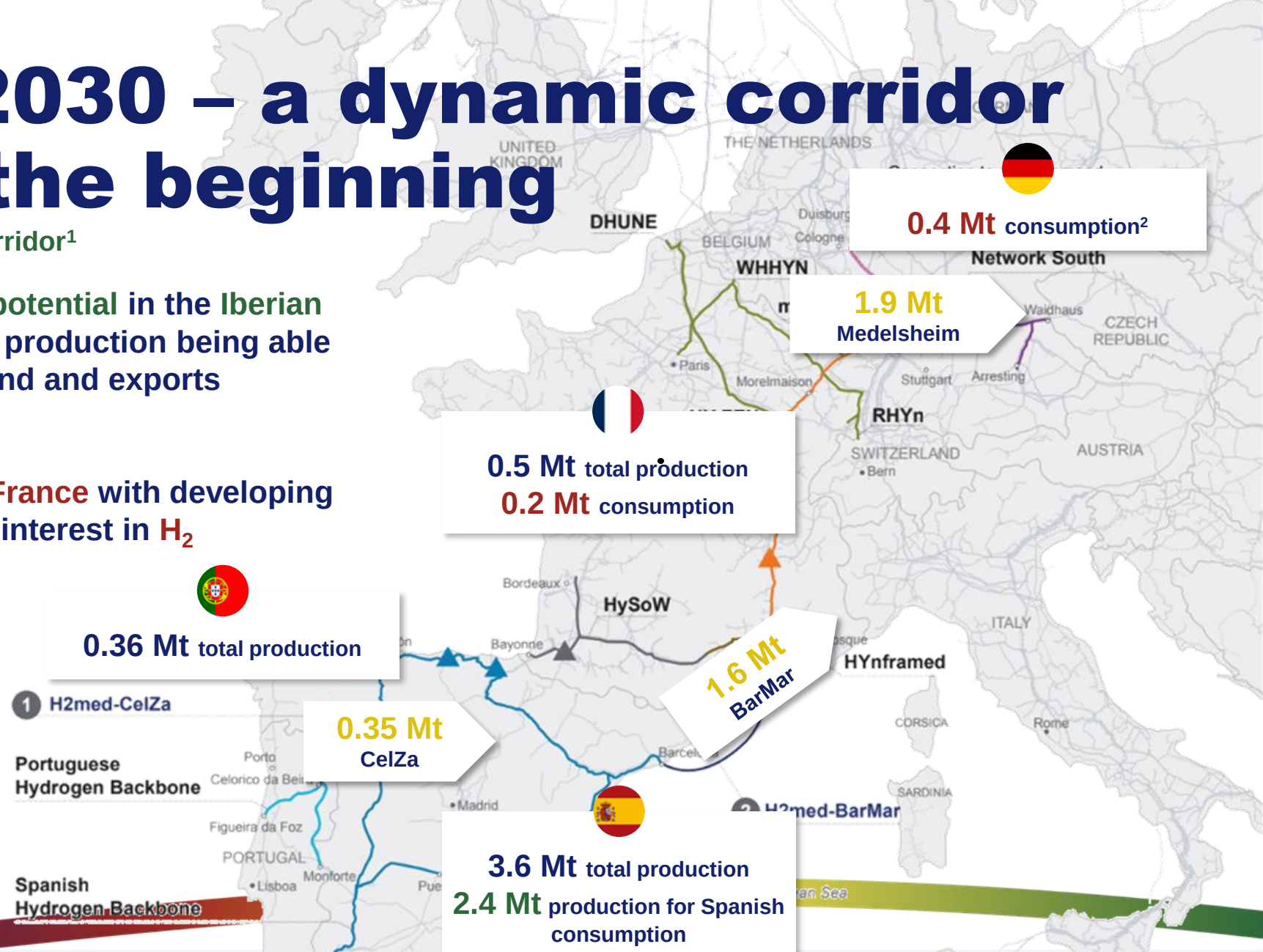
H2med in 2030 – a dynamic corridor right from the beginning

Net volumes and flows along the corridor[1]

Substantial production potential in the Iberian peninsula, with Spanish production being able to supply national demand and exports through BarMar

Encouraging results in France with developing local production and an interest in H_2 consumption

The targetted technical capacity at Medelsheim is almost reached by the supply potential



[1] Infrastructure shown corresponds to PCI projects out to 2030
[2] H2med corridor only, OGE customer base

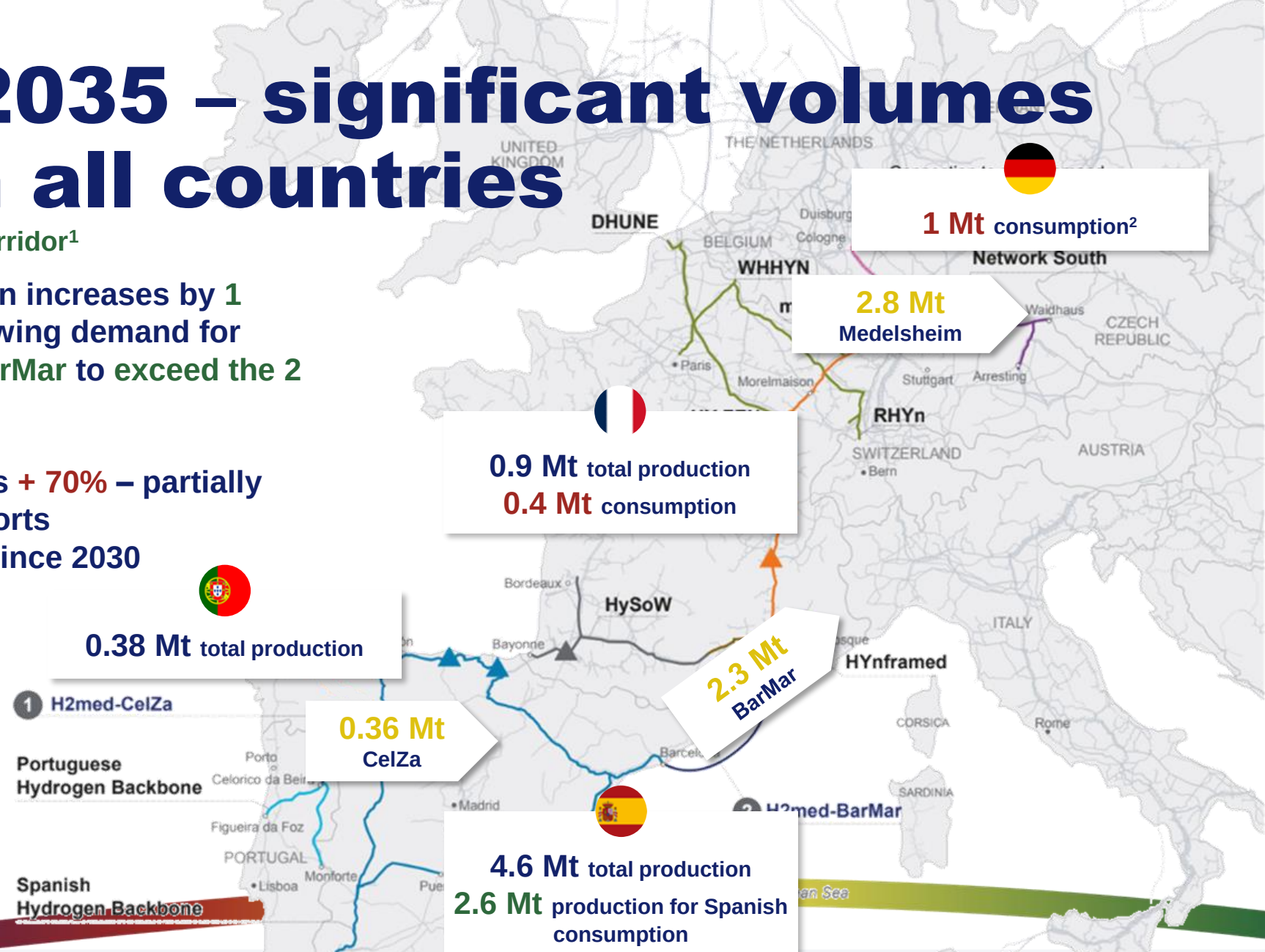
H2med in 2035 – significant volumes increase in all countries

Net volumes and flows along the corridor[1]

Total production in Spain increases by 1 Mt/year since 2030, allowing demand for transport capacity at BarMar to exceed the 2 Mt/year target

French production gains + 70% – partially thanks to ammonia imports
Consumption doubled since 2030

Medelsheim exports increase by 1 Mt since 2030, and West German consumption reaches 1 Mt



[1] *Infrastructure shown corresponds to PCI projects out to 2030*
[2] *H2med corridor only, OGE customer base*

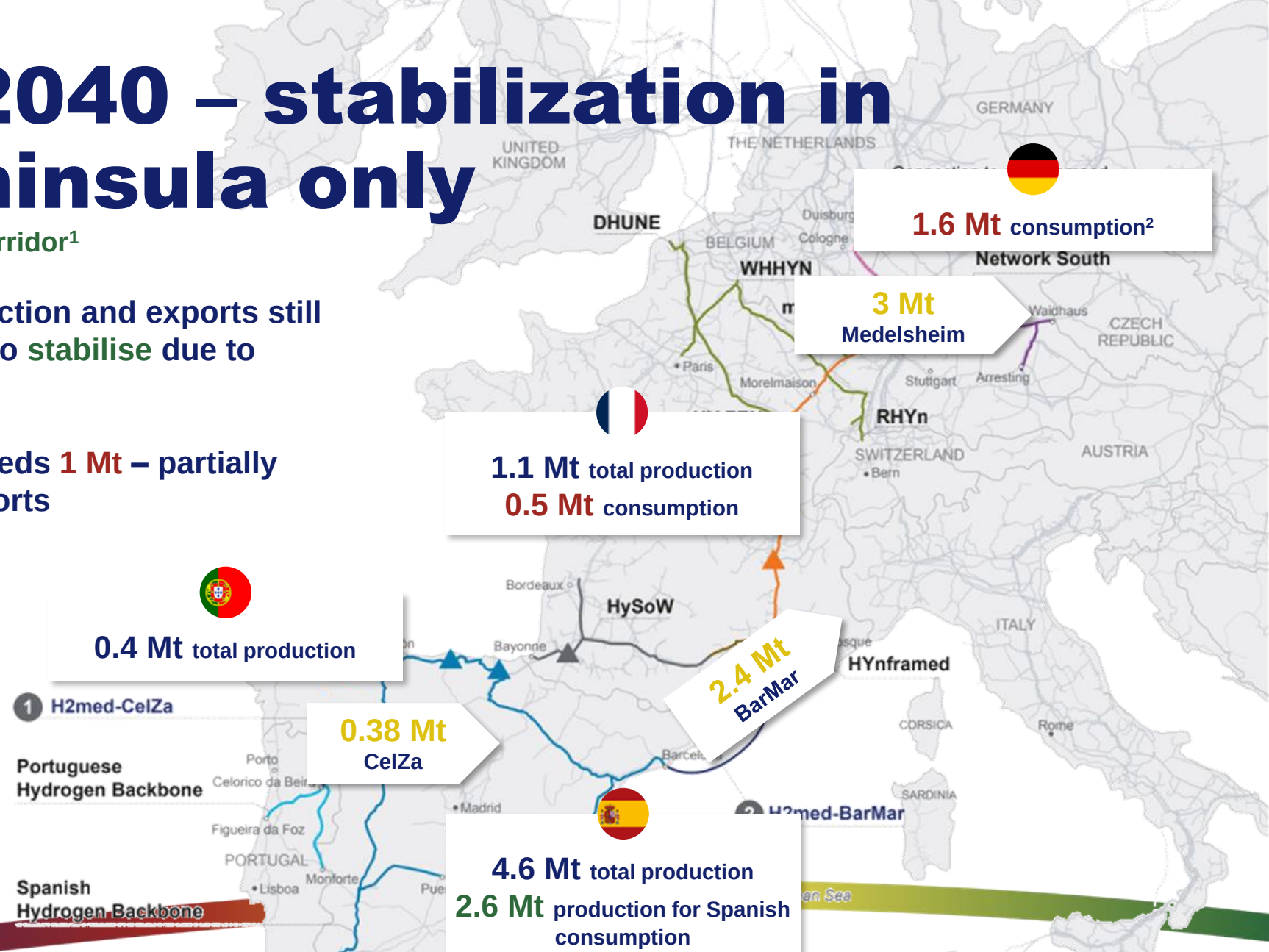
H2med in 2040 – stabilization in Iberian peninsula only

Net volumes and flows along the corridor[1]

Iberian peninsula production and exports still increasing but starting to stabilise due to further time horizon

French production exceeds 1 Mt – partially thanks to ammonia imports

West German consumption is soaring with a 60% increase in 5 years



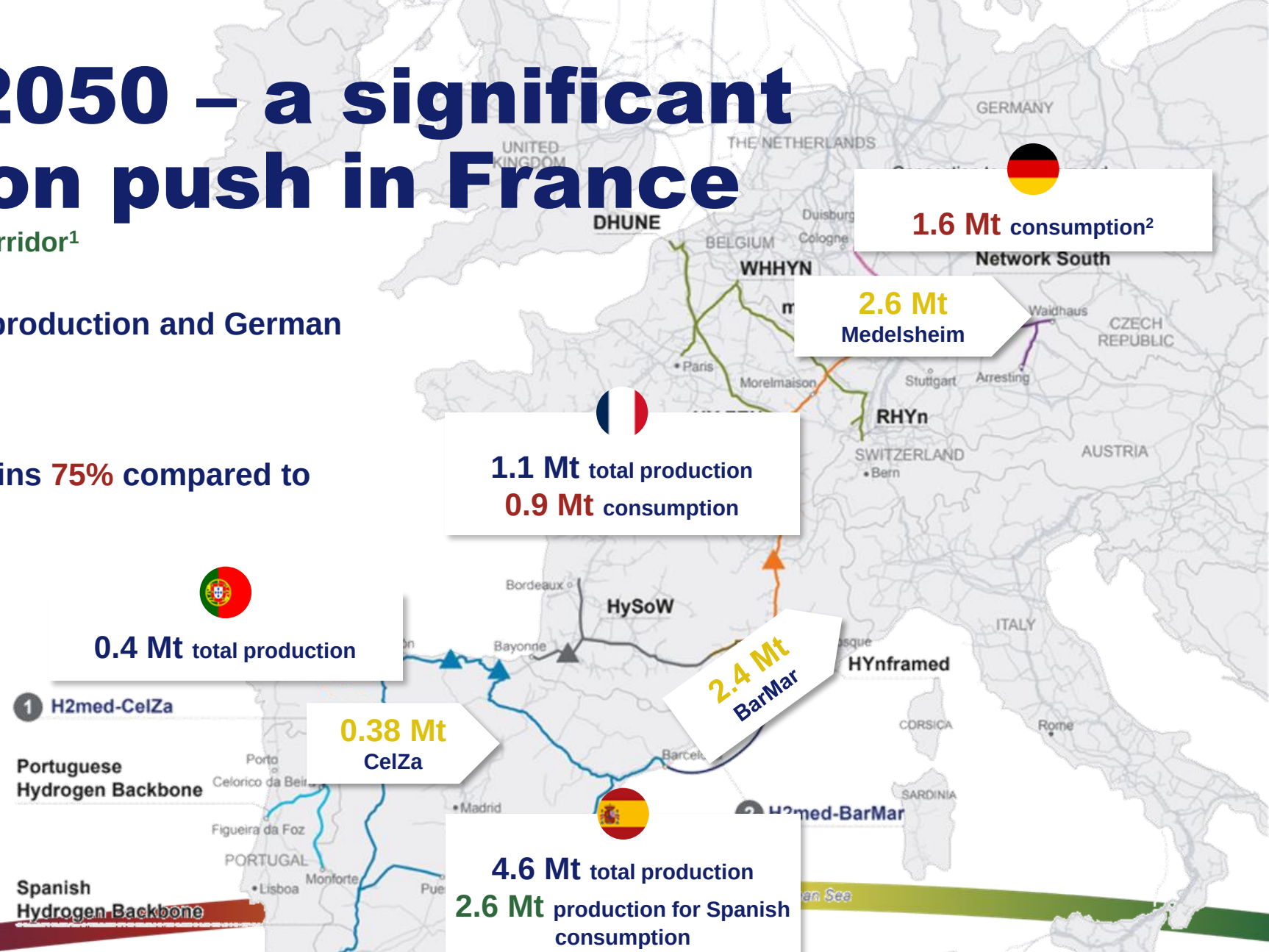
[1] Infrastructure shown corresponds to PCI projects out to 2030
[2] H2med corridor only, OGE customer base

H2med in 2050 – a significant consumption push in France

Net volumes and flows along the corridor[1]

Stabilisation of Iberian production and German consumption

French consumption gains 75% compared to 2040



[1] Infrastructure shown corresponds to PCI projects out to 2030
[2] H2med corridor only, OGE customer base

H2med CFI showed great interest and potential by a multitude of players, a sign of a market under construction

H2med CFI is a success
High participation level and high volumes reported

Production volumes show great potential and are still expected to increase
Covering up to 20% of total domestic REPower EU objectives by 2030

Iberian peninsula reports a strong export potential
2 Mt already in 2032 to fill the corridor – consolidating previous Spanish market consultation results

Interest received from North Africa countries
as of 2040 onwards to back up European hydrogen demand

Significant French volumes with a national market and exports
Projects of production including national production and ammonia imports

High consumption reported in Western Germany
Reaches 1.6 Mt, close to maximum capacity of Medelsheim interconnection by 2040

The H2med corridor largely contributes to meeting the forecasted German demand
Reaching up to 17-21 Mt/y by 2040 according to German Ministry of Economics and Climate Affairs

The Match-making platform supports further market development
More than 500 projects – good basis to feed the crossborder commercial connections dynamic

Let’s keep working all together make H2med corridor a reality

Alliance created in December 2024 to be extended for all interested parties in 2025

Save the date: event to come before Summer 2025

Still challenges to overcome

Contracting

Funding

Derisking

Keep the Match-making platform active

Register projects, observe market evolutions, make contacts for future collaborations

Contracting: moving towards a binding CFI

Long-term booking agreements will be needed to make H2med corridor happen – discussions to come about commitment processes

Funding: dialogue with authorities to support H2med corridor

Public support is necessary for a successful outcome of the project

Derisking: need for a clear regulatory framework

Move towards GHP transposition and regulation structuring

Definitions

CelZa: Portugal to Spain
Portuguese production volumes declared to cross the border between Portugal and Spain

BarMar – Spain to France
- Portuguese and Spanish production volumes declared to cross the border between Spain and France
- Portuguese and Spanish production without precision to stay in Spain or cross BarMar

French national production
- Teréga and NaTran perimeters
- All production technologies: volumes also include ammonia imports for cracking

Medelsheim: France to Germany
- BarMar volumes
- French production retrieved of the consumption declared by French consumers – national French demand is satisfied, and the surplus is considered to be exported

German national consumption
- Consumption declared during the CFI, to source from H2med corridor only
- Trading volumes – from all countries but declared to trade in Germany specifically, thus for German consumers

North Africa production
Potential production volumes coming from North Africa through Spain and France to Germany are not included in these figures – *please refer to slide 9 for more information*

Join us!

Match-making platform: www.h2-digital.com/h2med/join

H2med project website: https://h2medproject.com/

Any question?

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