



Producing Low-Carbon Hydrogen

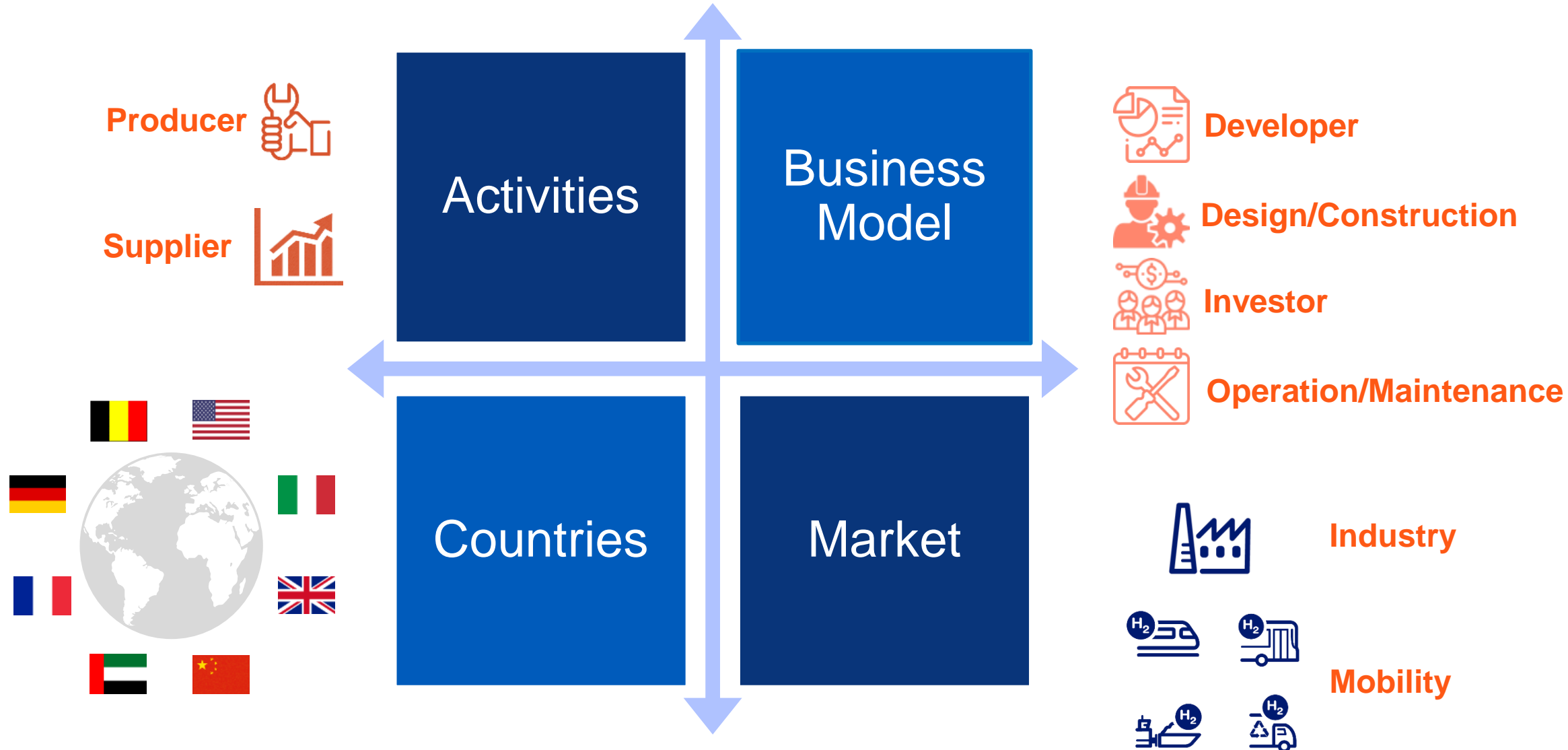
Jean-Maurice Gimet
Operation & Maintenance Manager
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22/02/2021

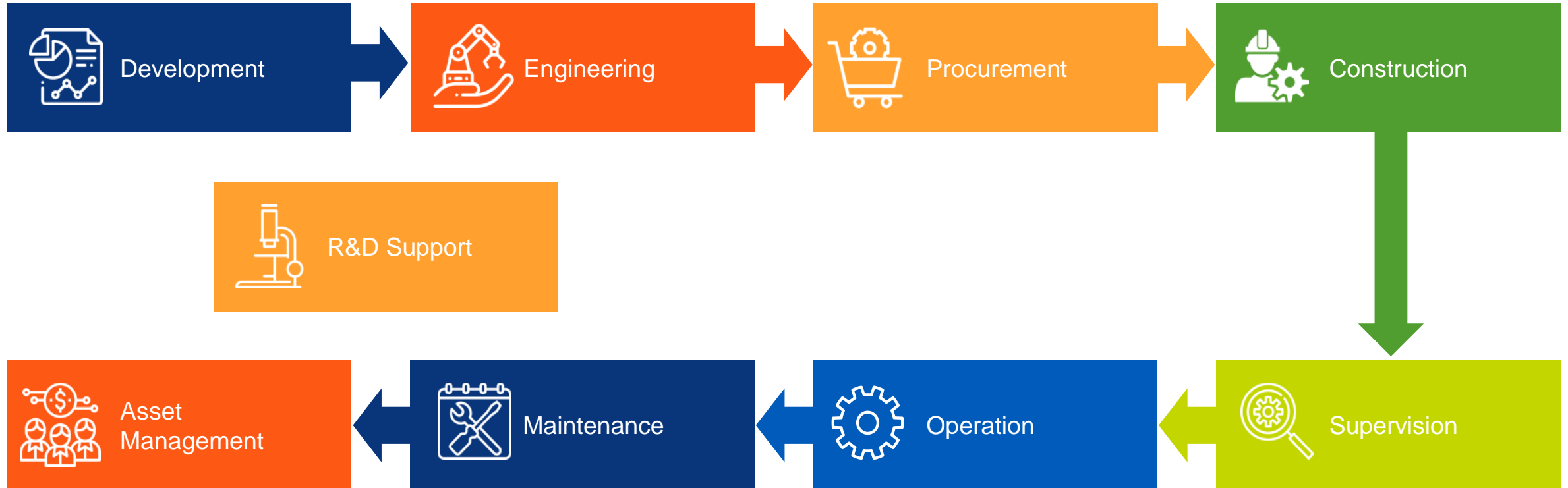
Our Position



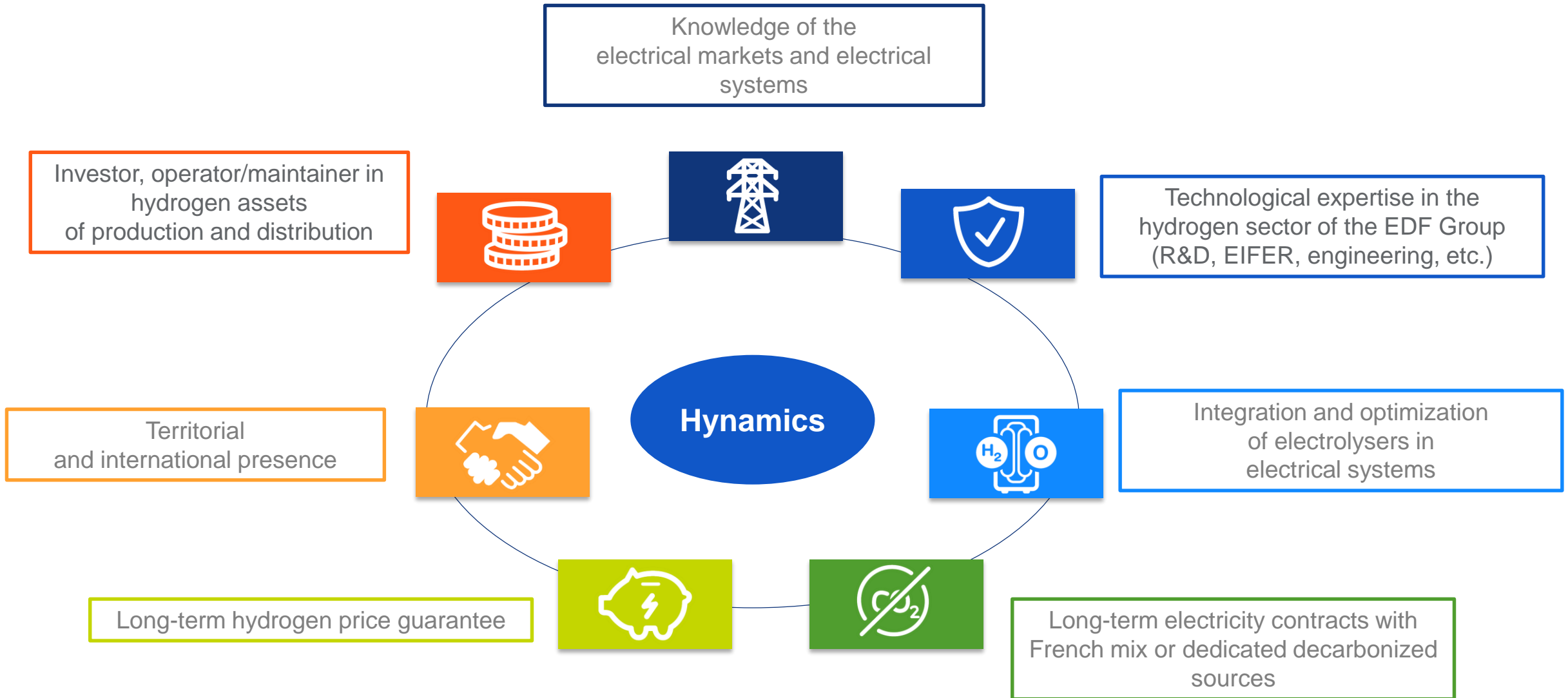
Hynamics, a Leader in Low-Carbon and Renewable Hydrogen



Hynamics: An Integrated Player, Present Along the Entire Value Chain



Competitive Advantages of the EDF Group



Our Industrial Projects



Making Synthetic Kerosene: Reallabor

On 3 August 2020, the Federal Ministry for Economic Affairs and Energy approved the financing of €30M for the 1st Reallabor hydrogen project, **Westküste100**, including €15M for the 30 MW electrolyser.



Reallabor's Westküste100 Project

Creating a local 100% renewable industrial hydrogen ecosystem in Schleswig Holstein.

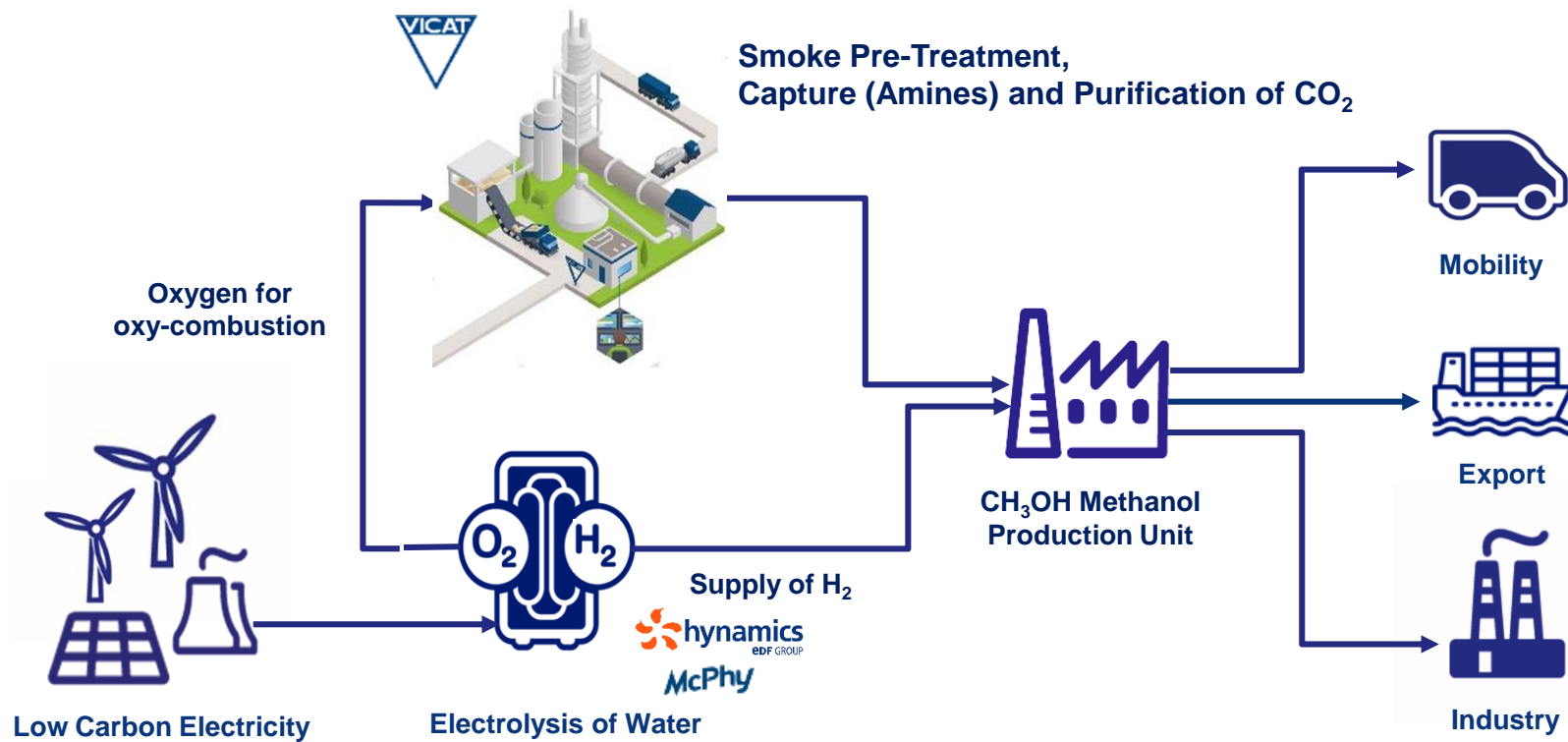
By 2025, a **30 MW** electrolyser will be installed on the Heide Refinery site (Klesch Group) to **decarbonise the refinery's chemical processes and massively produce methanol and kerosene**, partly distributed by pipe. The use of oxygen in the cement manufacturing process (HolcimLafarge) as well as the synthesis of methanol from the CO₂ emitted by the Lägerdorf cement plant and green hydrogen will be investigated. **Ultimately, the aim is to install 700 MW.**

Consortium

Heide GmbH, Entwicklungsagentur Region Heide, EDF Deutschland GmbH (**Hynamics GmbH after transfer of the shares**), Ørsted Gruppe, thyssenkrupp Industrial Solutions, Open Grid Europe GmbH, Stadtwerke Heide GmbH, Holcim GmbH and Fachhochschule Westküste.

Making Methanol With CO₂: Vicat

HyNoVi, a strategic project for massive decarbonation of industry, creation of a leading French and European hydrogen sector and relocation of production of a strategic resource for the chemical, pharmaceutical and energy fields.



- 330 MW electrolysis
- 207,000 t/year decarbonated methanol, i.e. nearly 30% of methanol consumption in France
- 1.14 Mt/year CO₂ avoided

Perspectives and Development Levers

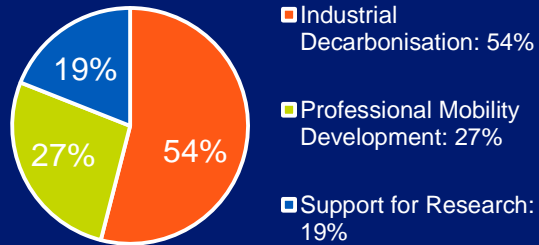


Recovery or Investment Plans : Towards the Creation of a New Sector



By 2023

> **3.4 Bn €** invested



By 2030

> **7.2 Bn €** invested
> **6.5 GW** produced
> **6 Mt of CO₂** avoided
> **50 000 to 150 000**
direct and indirect jobs



By 2030

> **10 Bn €** invested
> **3 to 5 GW** produced
> **20%** produced with low-carbon electricity

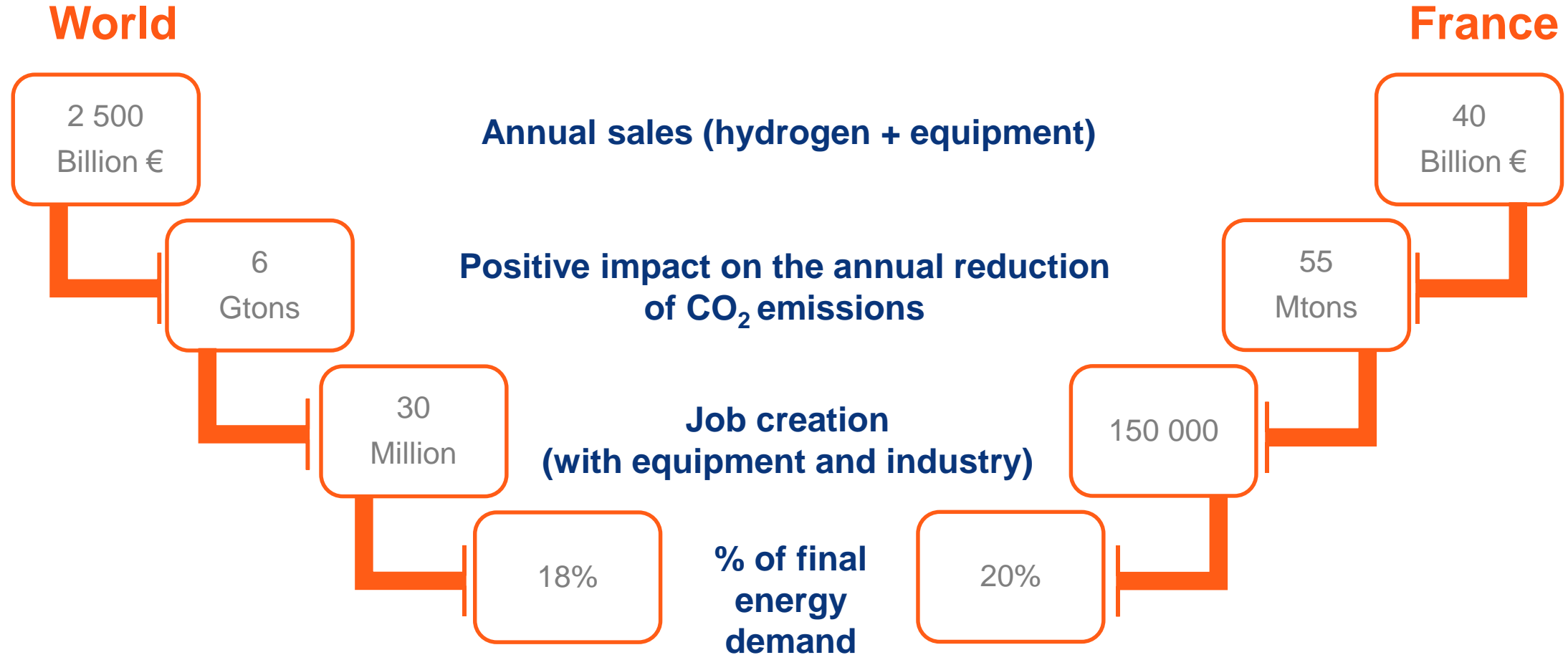


By 2030

> More than **100 Bn €** invested
> **2 x 40 GW** produced

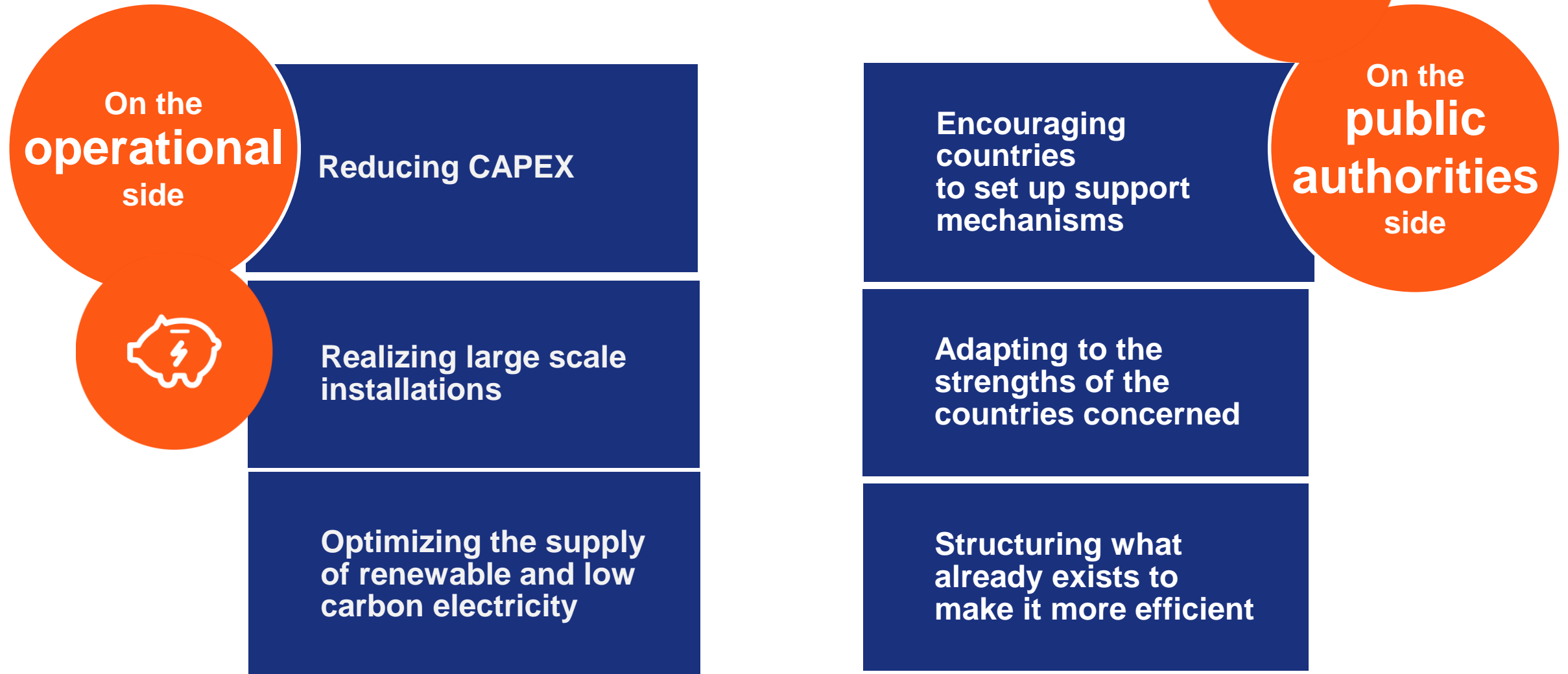


Hydrogen in 2050: A High-Potential Market



Source: McKinsey - Hydrogen Council Report

The Development Levers of the Sector



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Thank You