

HYDROGEN MOBILITY

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AGENDA

STATE OF THE UNION

HYDROGEN MOBILITY

GLOBAL HYDROGEN MOBILITY ALLIANCE

TOYOTA STRATEGY

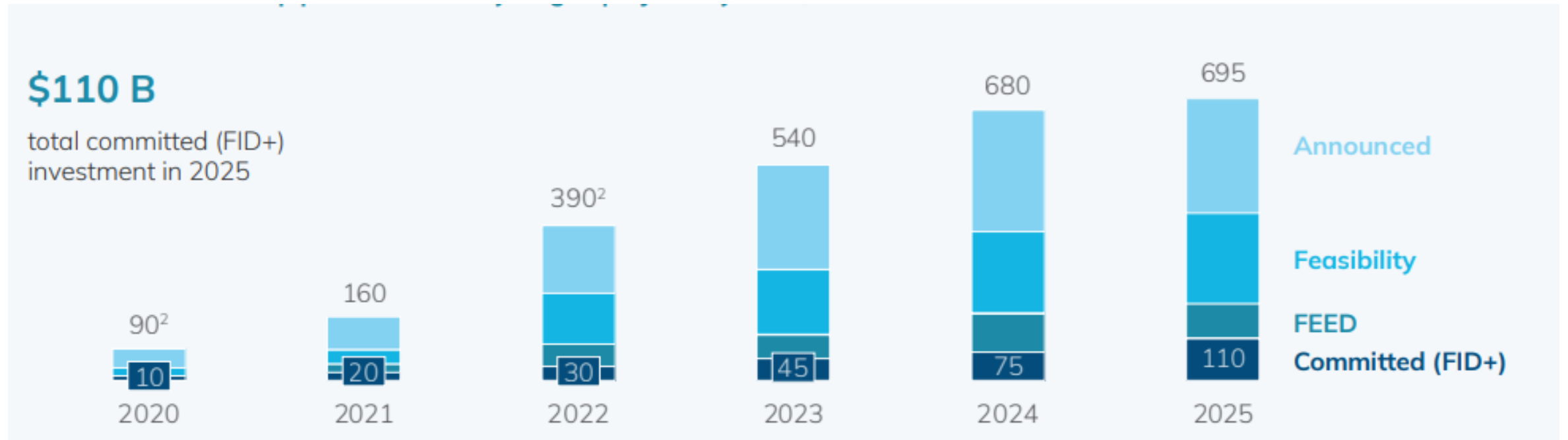
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STATE OF THE UNION

TOYOTA

110 B \$ COMMITTED

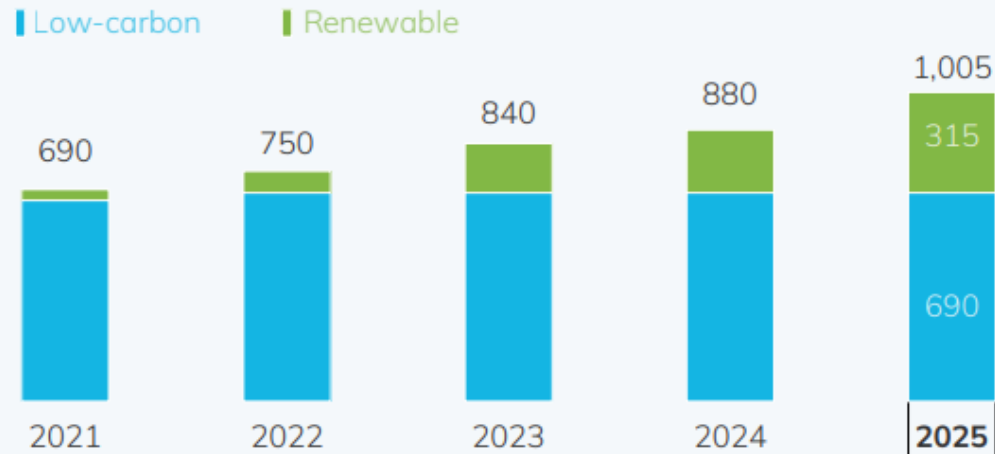
INVESTMENT PIPELINE KEEPS GROWING



CLEAN H2 CAPACITY INCREASED 8x IN 5 YEARS

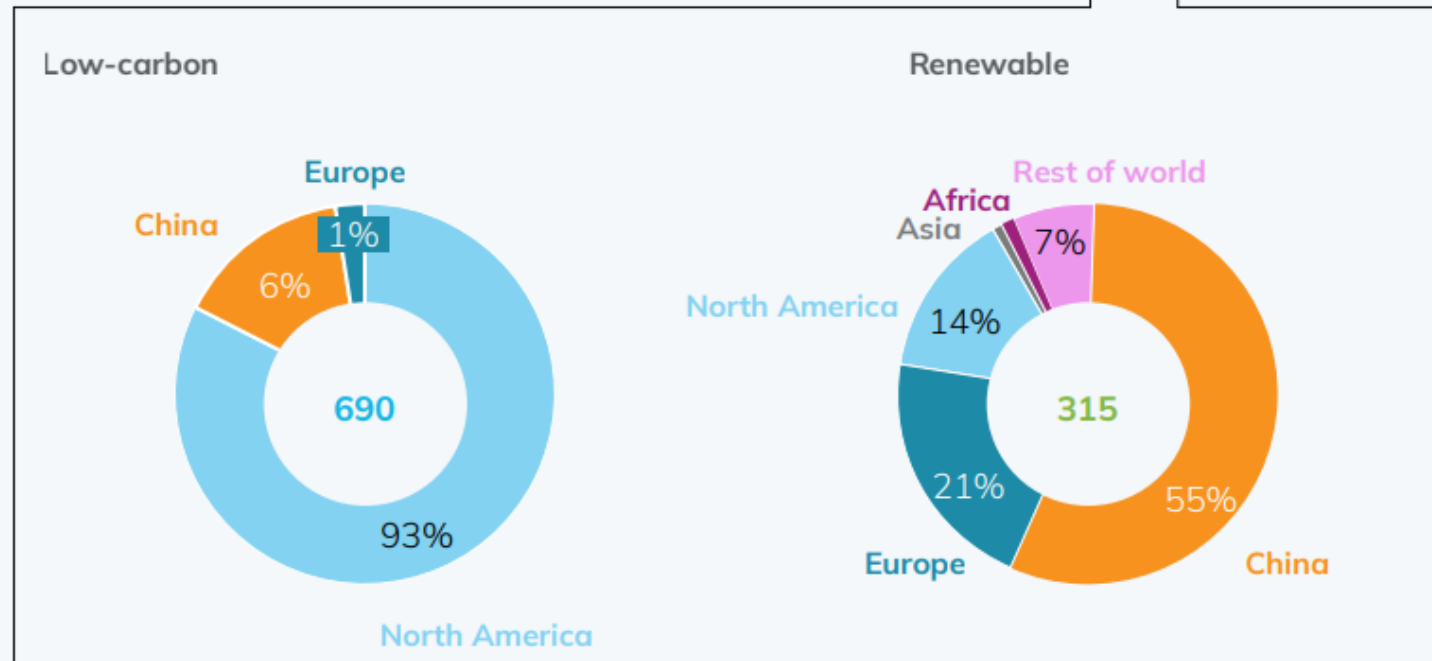
8x

Growth in operational renewable capacity in the last five years, including 65% increase since last year

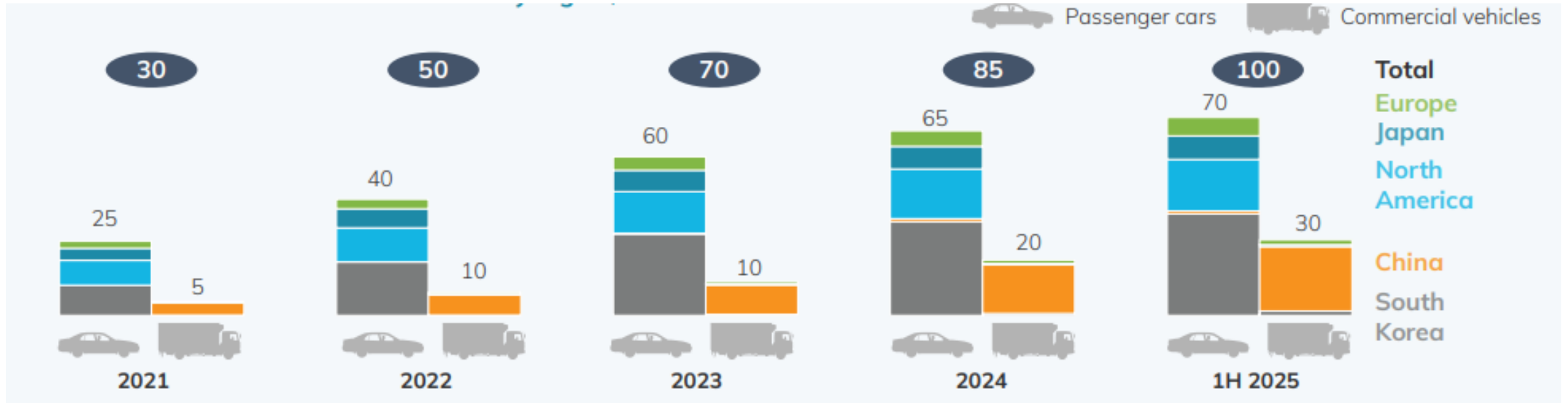


56%

Chinese share of operational renewable capacity today



CUMULATIVE FCEV SALES BY REGION SLOWLY BUT STEADILY INCREASING



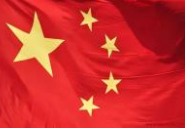
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H2 AT TOKYO MOBILITY SHOW 2025



HYDROGEN MOBILITY DEVELOPMENT IN CHINA



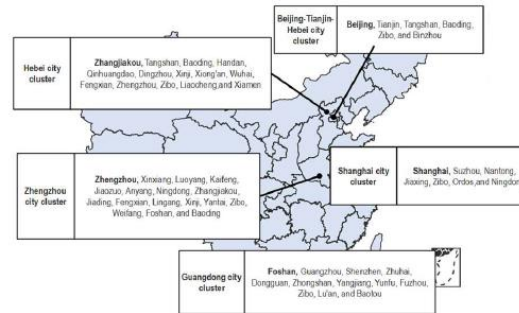
>600 hydrogen stations



Hydrogen price of below 5EUR at the pump



>15.000 FCEV in 5 large eco-systems



Large fleet of HDV



>4.000 HDV sales in 2024

Connect to green hydrogen production



(> 125.000 t per year in 2024
~50% globally

GLOBAL HYDROGEN MOBILITY ALLIANCE

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INDUSTRY CEO'S SUPPORT H2 AND CALL FOR ACTION

Global Hydrogen Mobility Alliance

July 27th, 2021

M. Ursula von der Leyen
President of the European Commission
European Commission
Rue de la Loi / Avenue Louise 200
1049 Luxembourg
Belgium

A Call to Action: Accelerate Hydrogen Mobility for Europe's Sustainable, Competitive and Resilient Industrial Future

Dear President von der Leyen,

Europe stands at a crossroads for industrial competitiveness, as well as energy and resource resilience. The energy and automotive sectors are central to Europe's strength and the choices we make today will determine its ability to ensure a sustainable, affordable, and safe future for European citizens. At stake is not only Europe's climate ambition but also its strategic sovereignty, its position as a global leader in clean technology manufacturing and the worldwide competitiveness of its industries.

This challenge demands bold, long-term choices, and hydrogen is an essential part of the solution. As CEOs of leading international companies in the energy, automotive and other sectors, we believe that better and more decarbonisation can deliver important segments of the global economy; however, Europe's strategic goals can only be achieved with hydrogen solutions playing a critical complementary role.

Hydrogen mobility: a strategic imperative for Europe

The use of hydrogen in road transport is vital for three key reasons:

First, deployment of hydrogen vehicles – both fuel cell electric vehicles (FCEV) and hydrogen-powered internal combustion engines (ICE2) – alongside battery electric vehicles (BEV) is necessary to achieving **resilient and cost-effective decarbonisation that safeguards Europe's strategic sovereignty**. As electrification encounters scale-up challenges – illustrated for example by recent restrictions imposed in some states, a diversified approach will help address infrastructure capacity and system integration concerns with uniform independence from the grid. Diversification will also diversify supply chains and raw materials' sources that otherwise create significant strategic exposure. In contrast, Europe already has sufficient supply and recycling of the Platinum Group Metals (PGM) required for FCEVs. Finally, while avoiding inherent risk that comes with betting on any single technology, this approach will help Europe achieve its goals more cost-effectively. Compared with a BEV-only scenario, a combined FCEV and BEV solution could save Europe €300-500 billion in infrastructure investments through 2050.¹

Secondly, hydrogen mobility is essential to sustaining **high-value industrial activity and skilled jobs in Europe**. Succeeding in the global economic transformation hinges on Europe's ability to leverage its well-established automotive and technology experience and transform it into a new leadership opportunity. Hydrogen technologies can be produced here in Europe, leveraging Europe's strengths in

¹ Especially with regards to roads, trucks, and ships. Hydrogen Council Transport Study, 2021.
EU Clean Hydrogen Joint Undertaking, 2020.



CEO'S LETTER

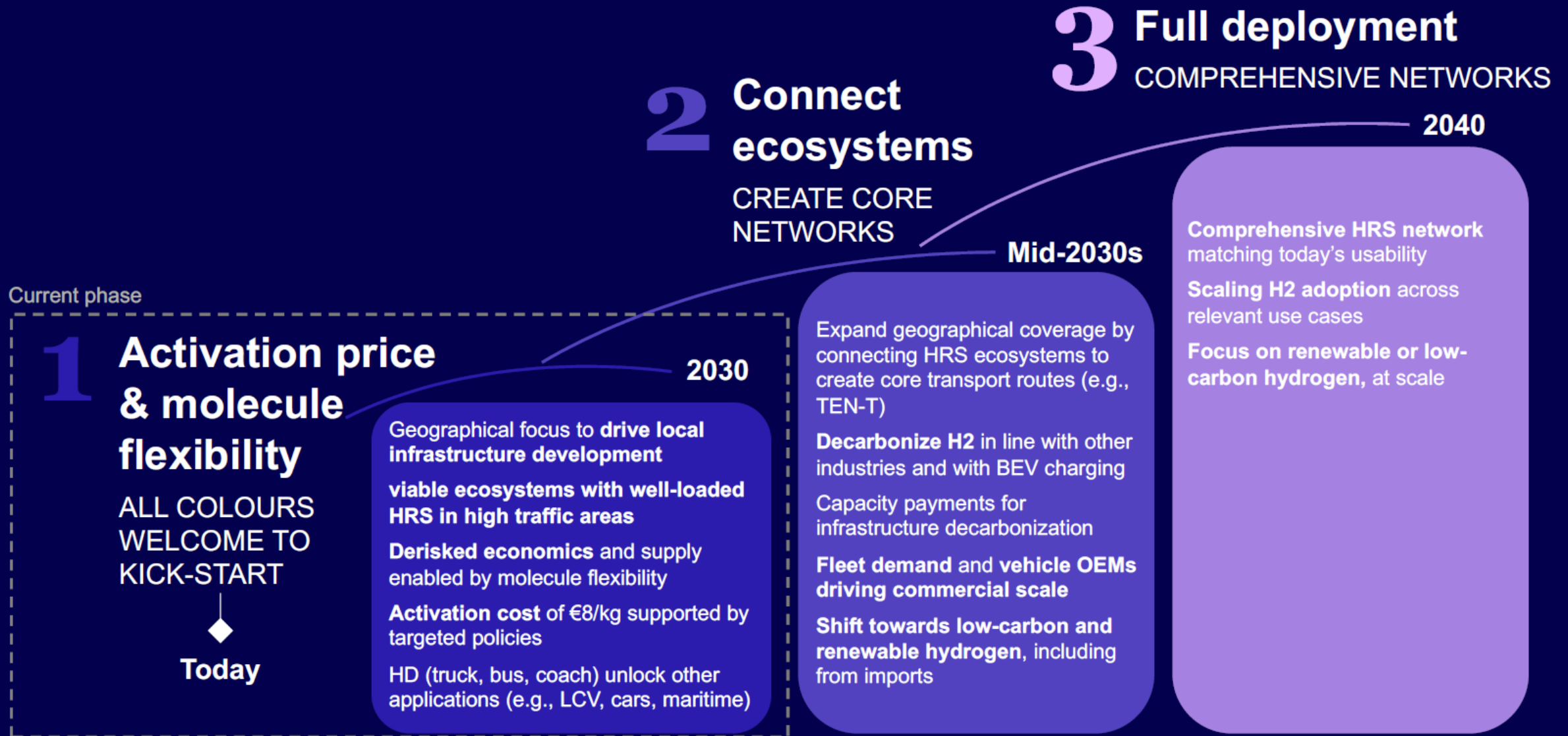
Why

- 1) FCEV are complementing BEV
- 2) Hydrogen create up to 500.000 jobs
- 3) Hydrogen is a tool for energetic and material independency

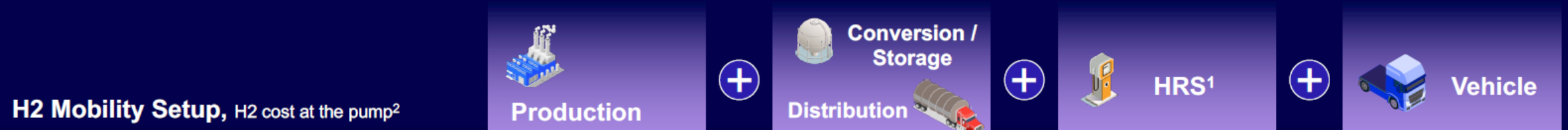
Why now?

- China is accelerating
- Europe is still competitive

This is the time to prove hydrogen mobility works – leveraging current molecule flexibility to unlock economics and future network scaling



If the specific tipping points of scale and demand certainty are met, hydrogen in road transport can already be competitive today



| Step | Description | H2 Cost (€/kg) | Production Capacity | Storage Capacity | Station Capacity | Vehicle Fleet |
|---|---|---|------------------------|------------------|------------------|-----------------|
| Step 0: Today | Local sources | 15-25 | 300 kg | 250-500 kg / day | 10-20% | ~100 units/y |
| Step 1: Activation price & molecule flexibility | 5-10 ecosystems of 10 HRS with 100-300 trucks around existing H2 sources | 8-12 | 950+ kg | 1,000+ kg / day | 50-60% | 100-500 units/y |
| Step 2: Connect ecosystems | Linked ecosystems of 100-200 HRS with 5k-10k trucks and decarbonizing H2 sources | 7-9 | Shift to LH2: 4,000 kg | 2,000+ kg / day | 60-70% | ~5,000 units/y |
| Step 3: Full deployment | Comprehensive network of 1,000+ HRS with 100k+ trucks using low-carbon / renewable H2 sources | 6-8 <i>further improvements may be possible in long-term</i> | 4,000 kg Pipelines | 4,000+ kg / day | 60-80% | 10,000+ units/y |

1. Hydrogen Refueling Stations
 2. Without incentives or credits
 Source: Hydrogen Council clean team (2024)

TOYOTA STRATEGY

MULTI-PATH FOR ENERGY AND MOBILITY

OFFERING A VARIETY OF VEHICLES



RENEWABLE
ENERGY



PLANT
CAPTURED CO₂



INDUSTRIALLY
CAPTURED CO₂



CRUDE OIL
NATURAL GAS



WATER



ELECTRICITY



CARBON NEUTRAL FUEL

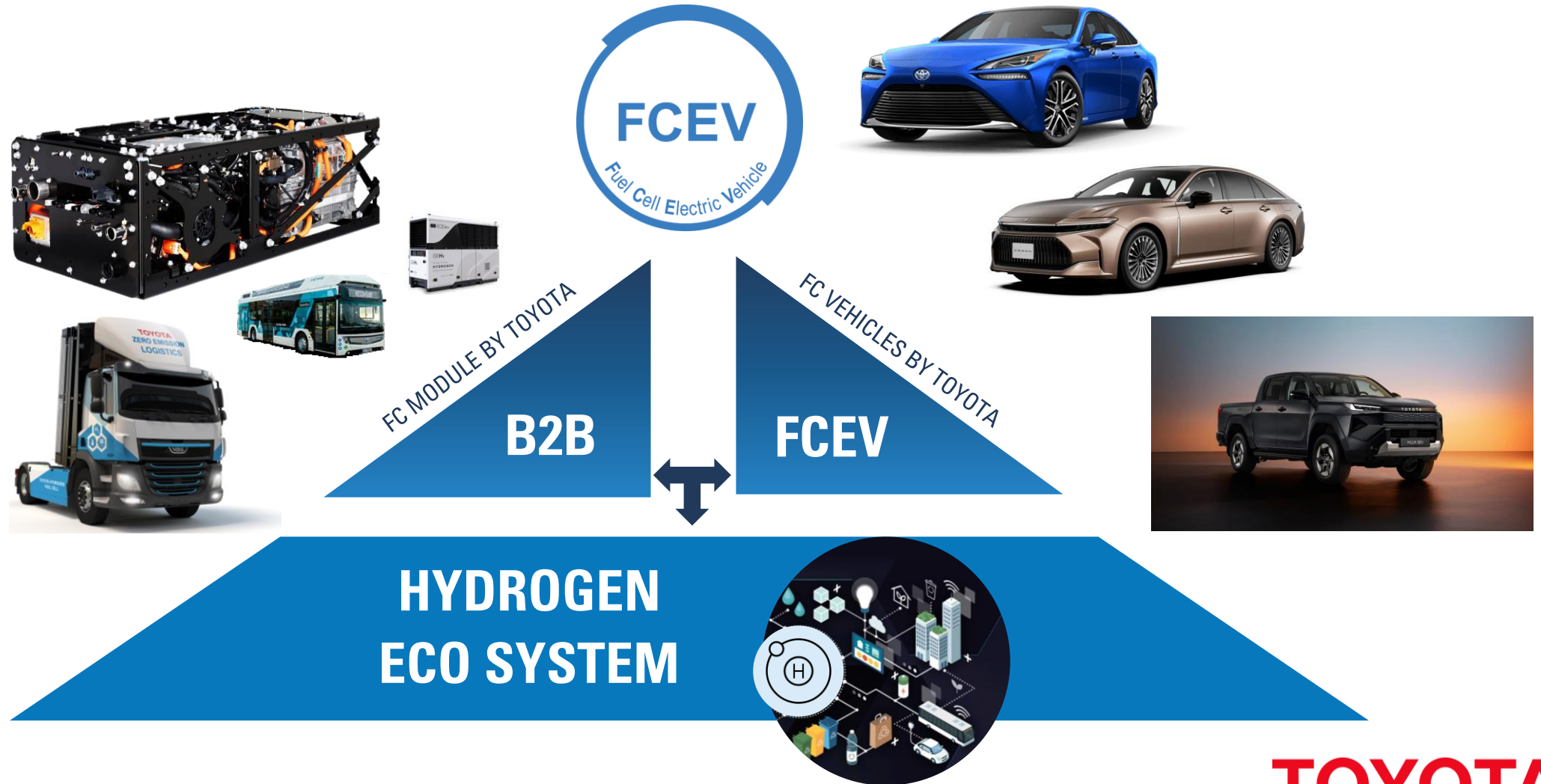


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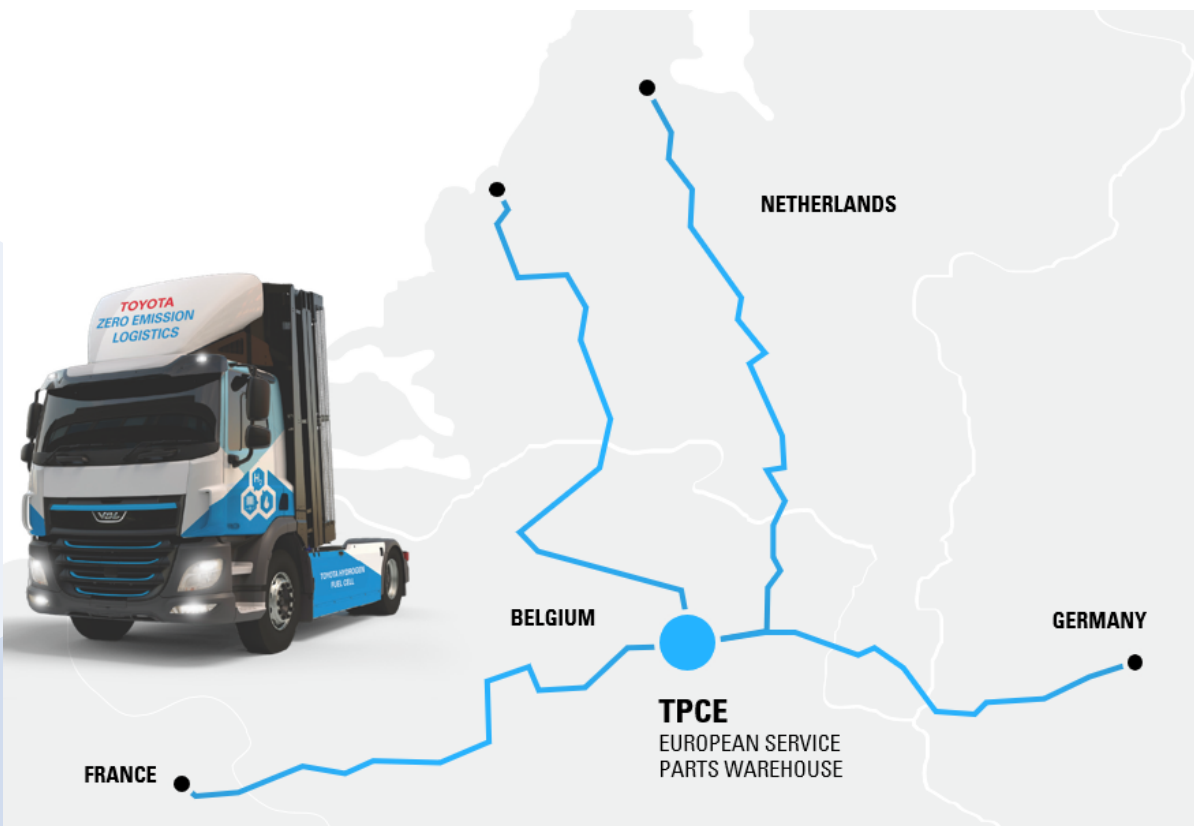
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HOW TOYOTA SUPPORT HYDROGEN DEVELOPMENT ?



TOYOTA IS WALKING THE TALK ON FC TRUCKS

WE ARE REPLACING DIESEL TRUCK WITH NO COMPROMISE ON OPERATIONS



> **80,000 km** driven by 4 trucks since May 2025

4 logistics partners covering routes across **4 countries**

Based on **real life data** the range is > **400 km**

9 Hydrogen refueling stations used across various routes to test the network

> **80,000 kg CO₂ emissions** avoided compared with diesel

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THE FUTURE IS SOMETHING
WE ALL CREATE TOGETHER

NOW