



ENEOS' hydrogen business strategy ～Paving the path for hydrogen society～

October 2025

Hydrogen Business Department

ENEOS Group Business Overview by Segment

Petroleum products and others

Foundation and materials



- Refining and sales of petroleum products
ENEOS brand services
Nationwide deployment of stations

Domestic fuel oil*¹
Sales Share
About 50%



- Development, manufacturing, and sales of lubricant products
- Manufacture and sales of petrochemical products

16 countries overseas
23 locations

Low carbon



- Supply of biofuels

At the Wakayama Plant, from FY2028 onwards
Aiming to produce 400,000 KL of SAF per year

Decarbonization



- For the implementation of next-generation decarbonization technologies **such as hydrogen and synthetic fuels**, the value chain in collaboration with the government and other companies
Promote early development and implementation

High Performance Materials



▲ Fuel-efficient tire material

- Manufacture and sale of high-performance materials such as **elastomers**

Contributing to Reducing Environmental Impact
A product range boasting world-class technology

Oil & Natural Gas E&P

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▲ Landon Oilfield

- Oil and natural gas development, production and sales

Crude oil and natural gas equity production

100,000 barrels/day

Crude oil equivalent (FY2024 results)

CCS²/CCUS³



▲ Petra Nova CCUS Project

- Promotion of CCS/CCUS business

Early implementation of CCS/CCUS

Promoting initiatives in **Japan and overseas**

Electricity



▲ Goi Thermal Power Plant

- Electricity business with a consistent supply system from power generation to retail
VPP business, city gas business, and overseas business

Power Generation Capacity **2.2 million kW**

(As of the end of March 2025)

Renewable Energy



▲ Uruma Mega Solar

- Development, generation, and sales of renewable energy

Power Capacity
(In Operation + Under Construction) **1.37 million kW**

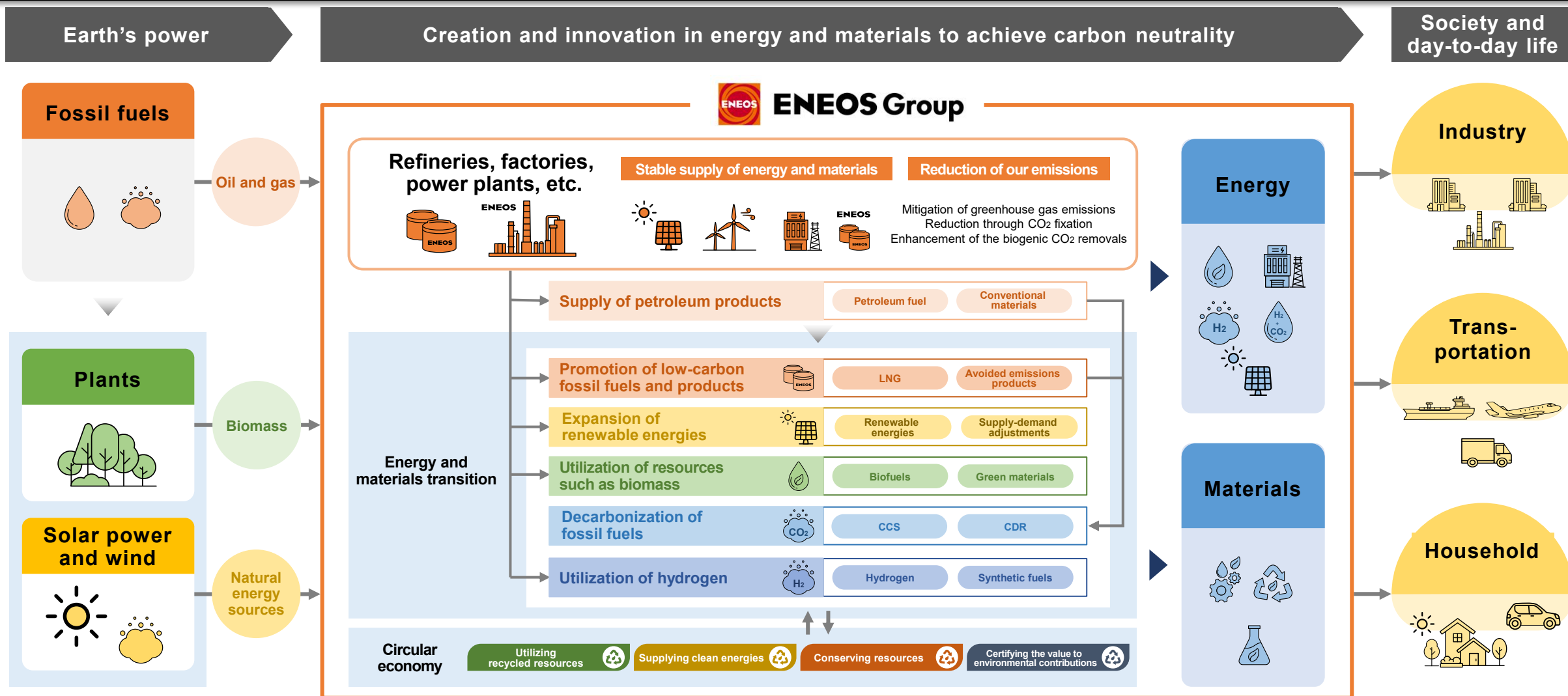
(As of the end of March 2025)

*1 Domestic fuel oil: Gasoline, kerosene, diesel oil, and A fuel oil total
*2 Carbon dioxide Capture and Storage : CO₂の回収・貯留

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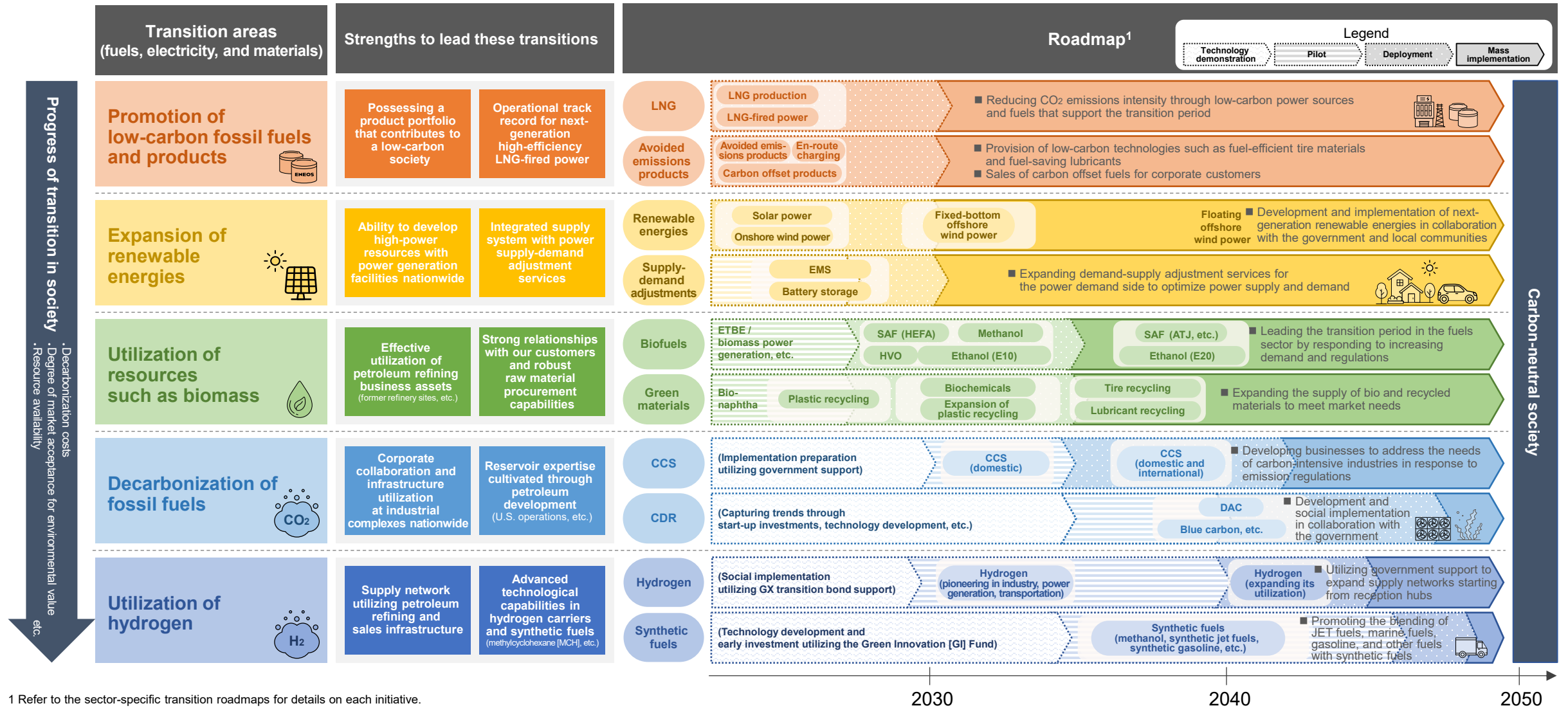
Conceptual Diagram of Carbon Neutrality Plan

- Contributing to community development and a vibrant future by leveraging ENEOS Group's facilities, experience, and expertise to balance energy and materials transition with stable supply



Roadmap for the Reduction of Greenhouse Gas Emissions in Society

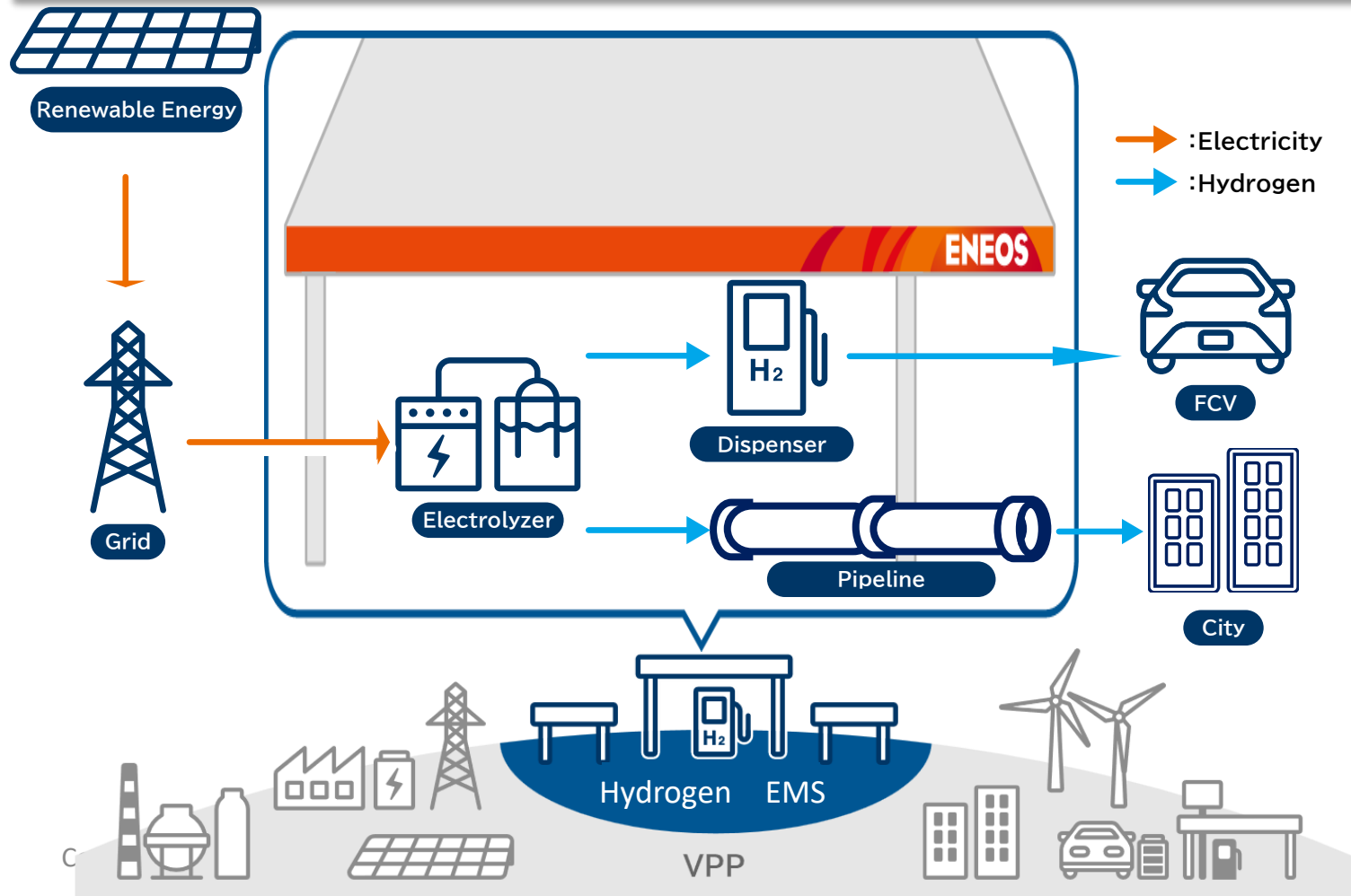
- Ensuring a stable supply of energy and materials by leveraging our strengths amid ongoing societal transitions



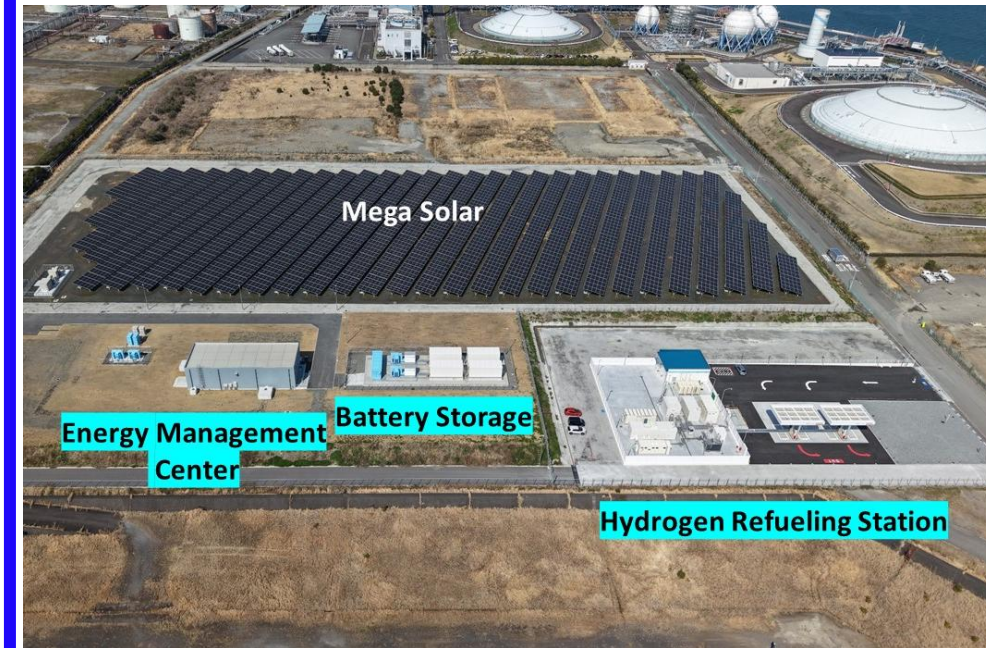
¹ Refer to the sector-specific transition roadmaps for details on each initiative.

New Concept Hydrogen Refueling Station

- ENEOS started first HRS operation from 2014, now we operate 31 out of ~150 HRS in Japan.
- Our Shimizu and WOVEN CITY HRSs supply hydrogen not only for FC buses and tracks, but also for home and industry via pipeline.
- ENEOS Hydrogen EMS optimize hydrogen production, storage, and supply for customer.

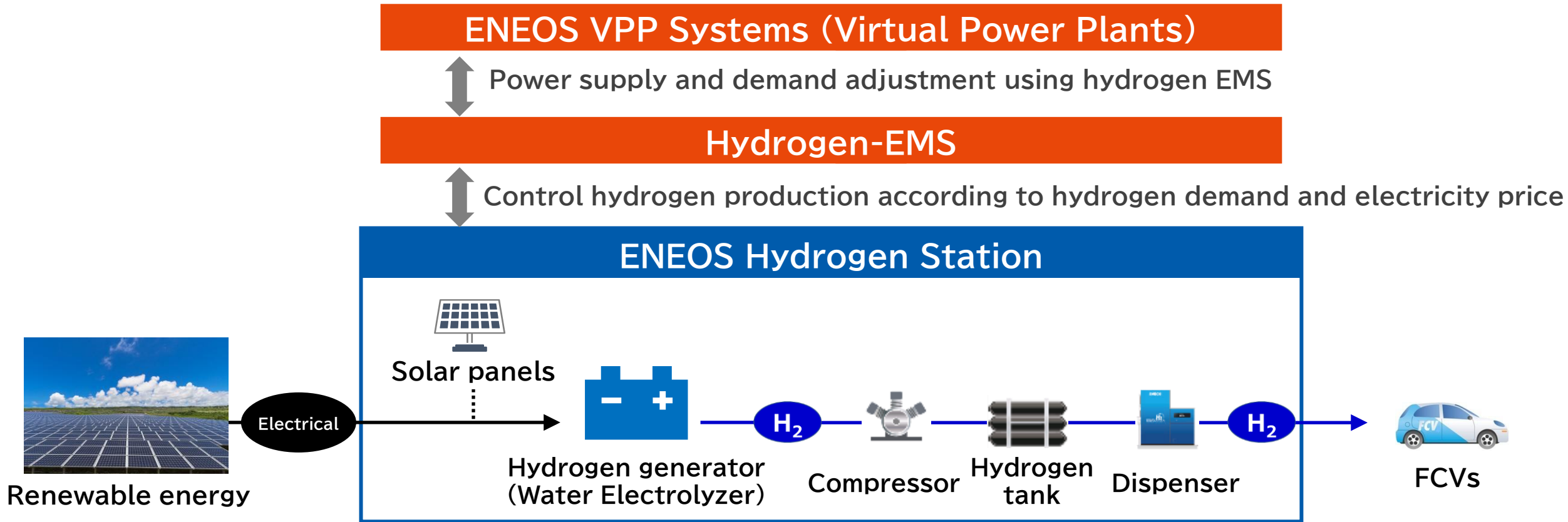


ENEOS Mirai Connect @Shimizu



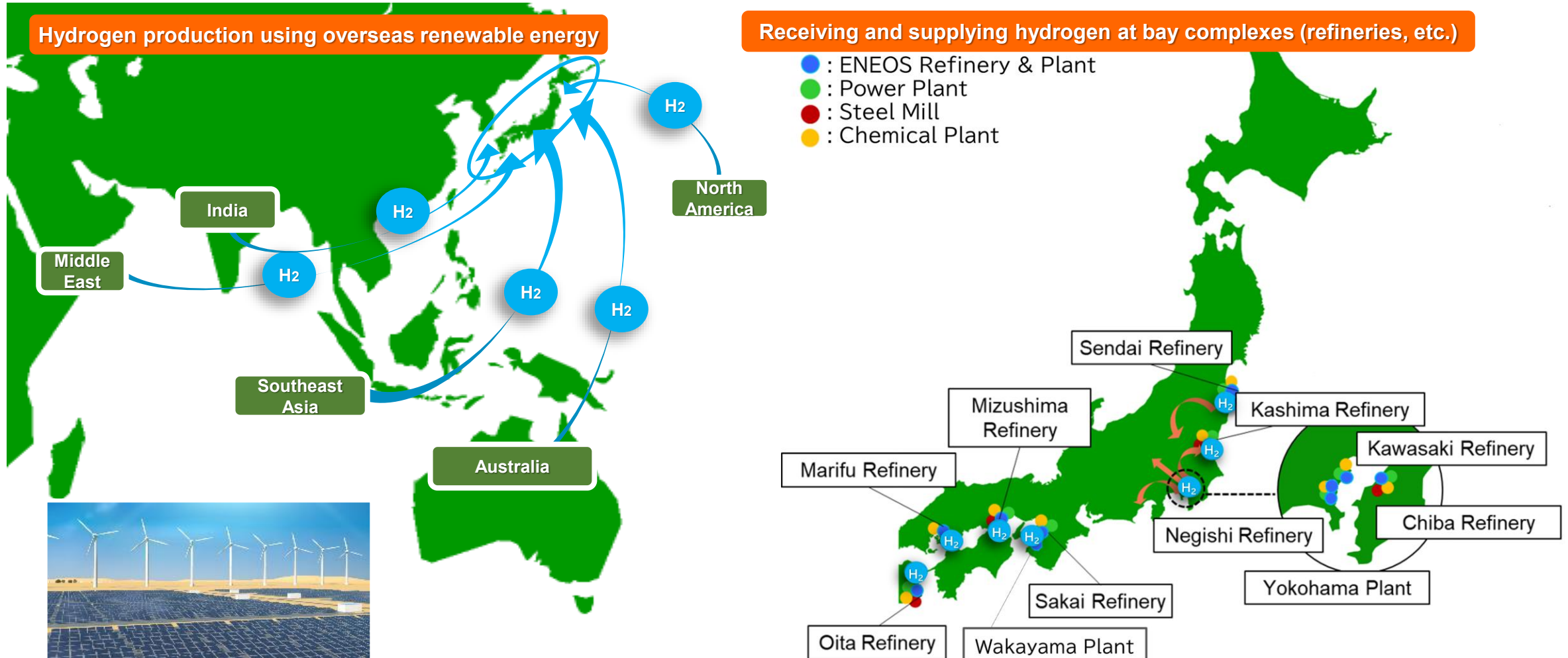
ENEOS Hydrogen Energy Management System (EMS)

- Water electrolyzer is automatically controlled harmonized with hydrogen demand forecast, etc.
- Key Aspects:
 1. Hydrogen Production Timing
 2. Minimizing deterioration of Water Electrolyzer
 3. Improvement of the hydrogen stations profitability



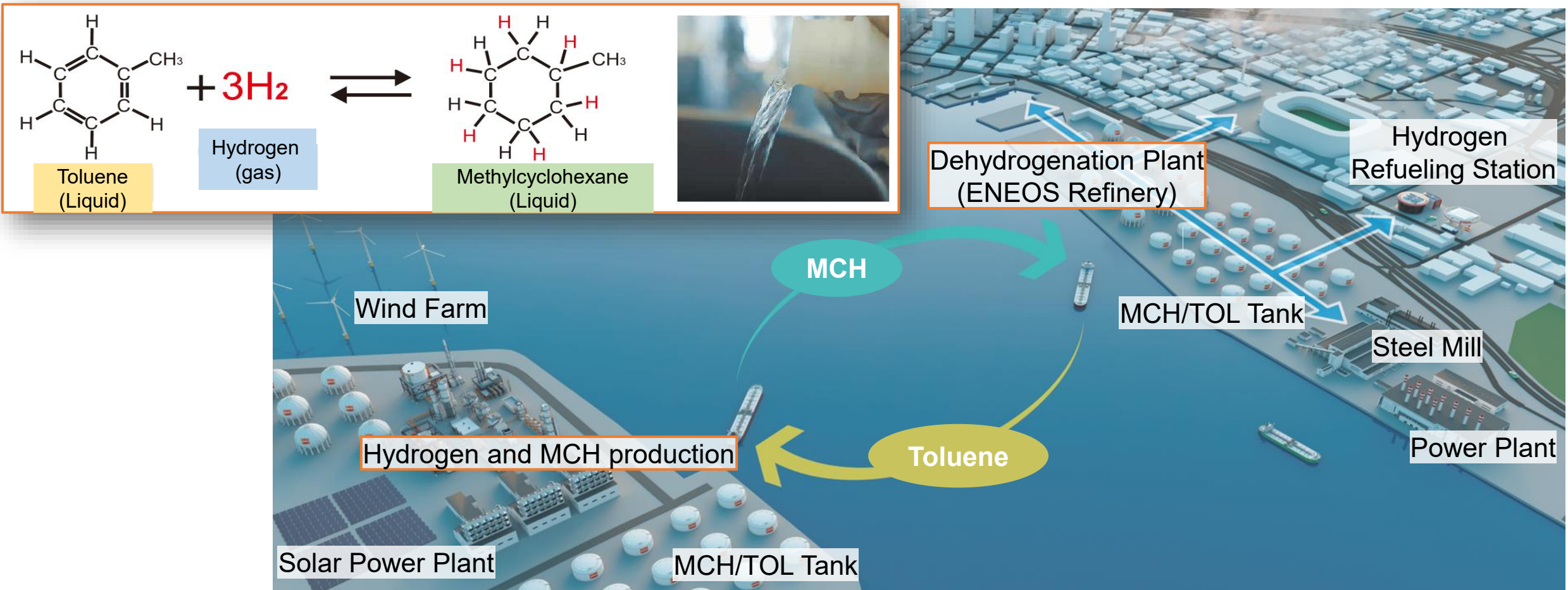
Establishing Global Hydrogen Supply Chain

- Investigating and examining the potential in Australia, Southeast Asia, and other countries
- Planning to utilize domestic assets such as refineries to establish hydrogen supply hubs



Features and Advantages of MCH as Hydrogen Carrier

- Storing hydrogen efficiently and stably at room temperature and pressure
- Supplying hydrogen efficiently by utilizing petroleum refining technologies for dehydrogenation and delivery



Direct MCH®

- Developing proprietary Direct MCH® technology for direct synthesis of MCH in electrolytic cells
- Reducing CAPEX by eliminating hydrogenation equipment and tanks
- Enhancing responsiveness to renewable energy output fluctuations

Image of the hydrogen supply chain using conventional

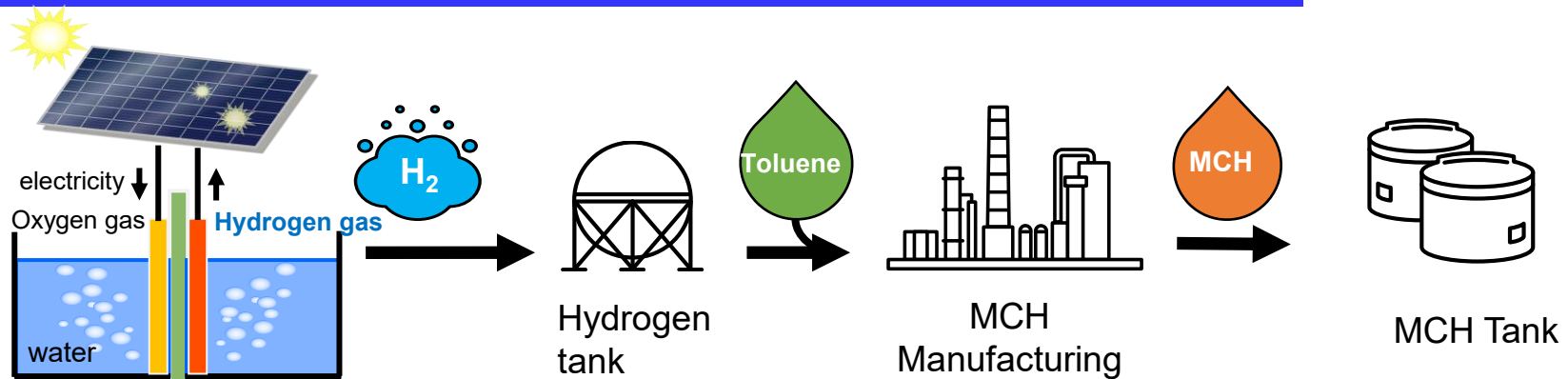
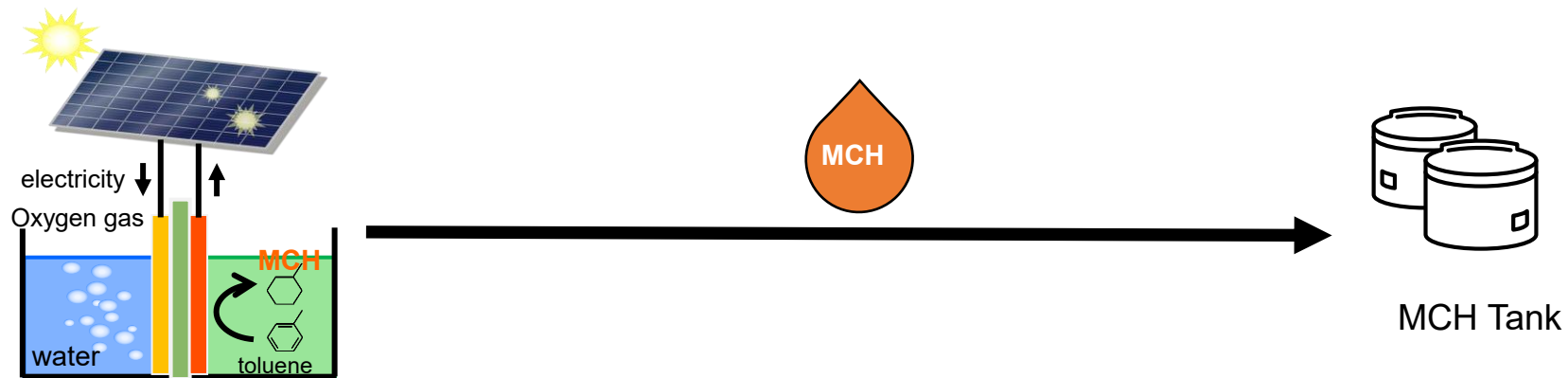
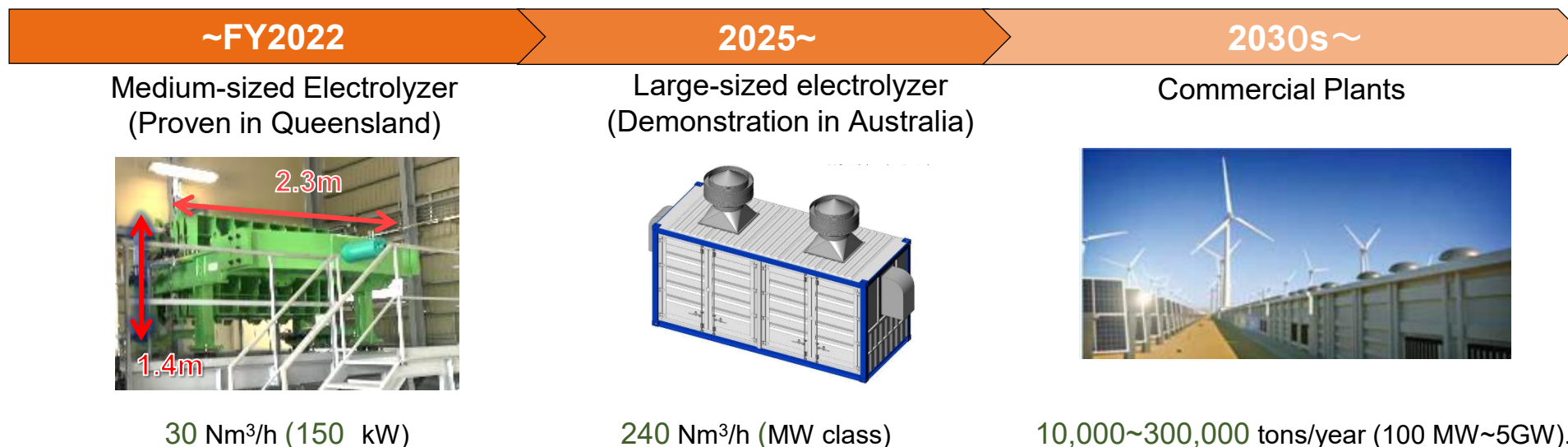


Image of the manufacturing method using the new technology (Direct MCH®)



Direct MCH[®] Development Roadmap

- Completed a MCH manufacturing plant with a 150kW electrolyzer and 250kW solar equipment (January 2023)
- Scaling up demonstration step-by-step through FY2025, and targeting commercialization in FY2030 and beyond



Field photo of a medium-sized demonstration plant (January 2023)



Key Success Factor for Supply Chain Development

- Leveraging the strengths of existing assets and downstream business strengths to advance the implementation of a hydrogen society
- Contributing to a sustainable and carbon-neutral future through global collaboration



ENEOS's Capability

Connections with end-users for energy supply in Japan

Technology for competitive supply chain development



Global Collaboration

Competitive resources for hydrogen production

Collaboration among key stakeholders

$H_2 =$ (水) (素)



未来のクリーンエネルギー

