



Japan's Effort for Green Hydrogen

COP26 Side Event in Japan Pavilion

11th November, 2021

Ministry of the Environment, Japan (MOEJ)



● “Basic Hydrogen Strategy” (Prime Minister Abe’s Initiative)

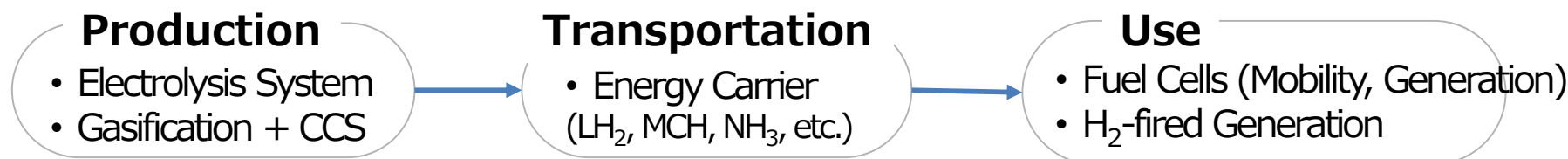
- ✓ First comprehensive national strategy
- ✓ H₂ as a future energy option toward 2050
- ✓ Goals : making H₂ affordable
(\$3/kg by 2030 ⇒ \$2/kg by 2050)



3 conditions for realizing affordable hydrogen

- [Supply] { ① **Inexpensive feedstock** (unused resources, renewables)
- [Demand]... ② **Large scale H₂ supply chains**
- ③ **Mass usage** (Mobility ⇒ Power Generation ⇒ Industry)

● Key Technologies to be Developed



Expansion of domestic renewable energy introduction and regional revitalization

(Efforts of the Ministry of the Environment based on the basic hydrogen strategy)

Demand

(e.g.)



FC Forklift



FC Bus



BCP



Renewables (Regional and Green Resources)

(e.g.)



Solar Power



Hydro Power



Wind Power



Livestock Manure



Used Plastics



Off-grid

Builds a self-reliant and decentralized region

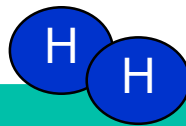


**SUSTAINABLE
DEVELOPMENT**

including: Activation of regional employment and economy

H2 for a hotel from plastic waste

④ Kawasaki City, Kanagawa Pref.



Through
Dedicated
Pipelines

Transformation from
plastic waste

30% of total energy use of a hotel will be covered by hydrogen from a plastic recycling facility

Hydrogen Fuel Cell in front
of a hotel



Deliver hydrogen to home~Hydrogen in daily life~

⑥ Tomiya City, Miyagi Pref.



Water electrolyzer
from Solar power



**3 Hydrogen
absorbing alloys**
in a cassette
(17 kg / cassette)



Fuel-Cells for Home



Delivery



Co-op truck
for delivery

Delivery



Fuel-Cells

- Co-op
(Supermarket)
- Children's clubhouse

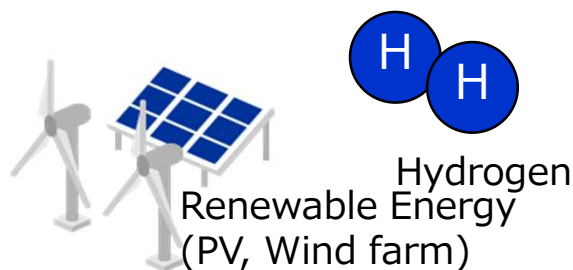
**Handling hydrogen
in daily life**

Pilot project for comprehensive support throughout the whole hydrogen supply chain abroad



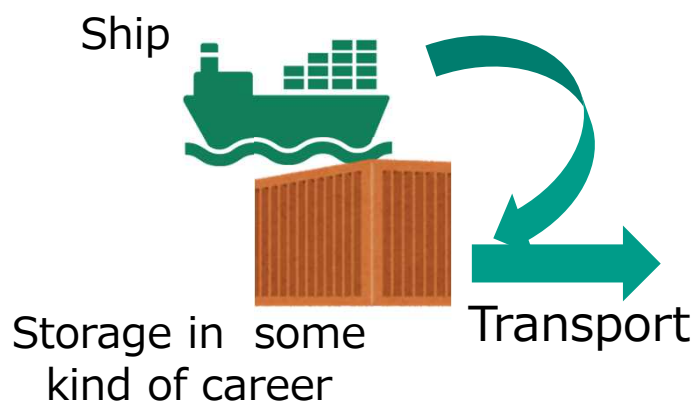
- Produce and storage renewable hydrogen in a third country where renewable energy is abundant, and transport to supply and use in island countries.
- Cultivate demand market by supplying renewable hydrogen to island countries, which will lead to JCM projects and help developing countries transition to a decarbonized society.

Production

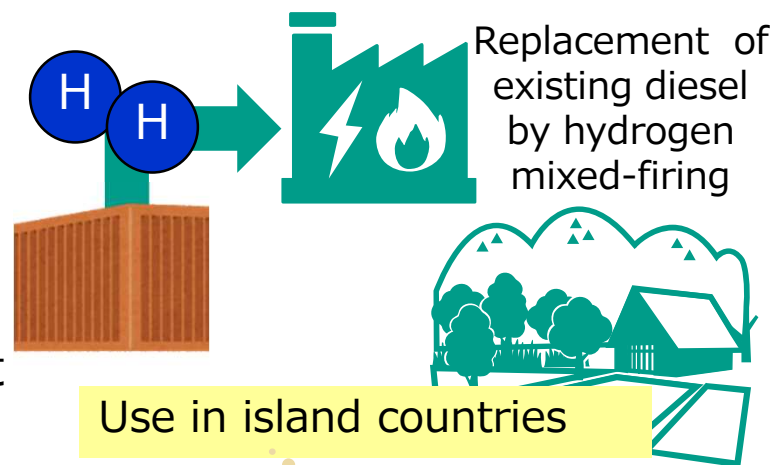


Produce hydrogen by using surplus RE in a third country
※Large amount of surplus RE is needed.

Storage & Transportation



Supply & Use



Future Vision

JCM project, horizontal expansion

1st project

1. Produce hydrogen by establishing an EMS (energy management system) using water electrolyzer (1.25MW) and batteries in Australia

2. Transport to Java island using storage alloy

3. Install a fuel battery (3.5kW) to supply both electricity and heat (cogeneration) to offices in an industrial park, Indonesia



Thank you very much for your kind attention!