

Hydrogen perspective in Japan

24 March 2021

Eiji Ohira

New Energy and Industrial Technology Development Organization (NEDO)

- In October 2020, the Japanese government declared its ambition to reduce greenhouse gas emissions to **net zero by 2050**
- METI formulated a “**Green Growth Strategy Through Achieving Carbon Neutrality in 2050**” as industrial policy and **established the “Green Innovation Fund (approx. US\$ 19 billion)** to accelerate socialization of promising technology including hydrogen.
- With the fund, several hydrogen-related projects have started.
(ex. large-scale transportation, power generation, renewable hydrogen, marine engine, steel production, etc.)
- **1% Hydrogen/Ammonia are positioned** in 2030 energy mix by 6th Japan's Strategic Energy Plan

Direction: How to promote Hydrogen

Goals

Cost (\$/kg): \$3/kg by 2030 & less than \$2/kg by 2050

	Short Term (- 2025) Approx. 2 million tons	Mid Term (- 2030) Max. 3 million tons	Long Term (- 2050) 20 million tons	
Supply	Existing source (ex. By products)	Maximize utilization as major source	Decarbonization of hydrogen production (with CCUS)	
	Import	Accumulation of knowledge and cost reduction through demonstration project	Development of large-scale international hydrogen supply chain	Further scale up through diversification of hydrogen source
	New domestic source	Accumulation of knowledge and cost reduction through demonstration project	Start up hydrogen production by electrolysis using excess energy from renewables	Scale up hydrogen production by electrolysis, and realizing innovative hydrogen production technology
Demand	Transportation	Expansion to FC trucks in addition to FCVs and FC buses	Launch of ships (FC ships, etc.) to the market	Use of hydrogen and synthetic fuel for aviation
	Power generation	Using of stationary fuel cell and small gas turbine for distributed energy	Commercialization of large-scale hydrogen power generation turbine	Further scale up and function as balancing power
	Industry (raw material)	Conducting technology demonstration project (refinery, steel process, chemical process, etc.)		Realizing hydrogen steel process, green chemical, etc.
	Thermal (Industry, business, household)	Substitute fossil fuels through installation of fuel cell and decarbonization of supply infrastructure using electrolysis and existing gas pipes		Expanding supply through infrastructure development and hydrogen cost reduction

Source: METI

Current Topic: Liquefied Hydrogen

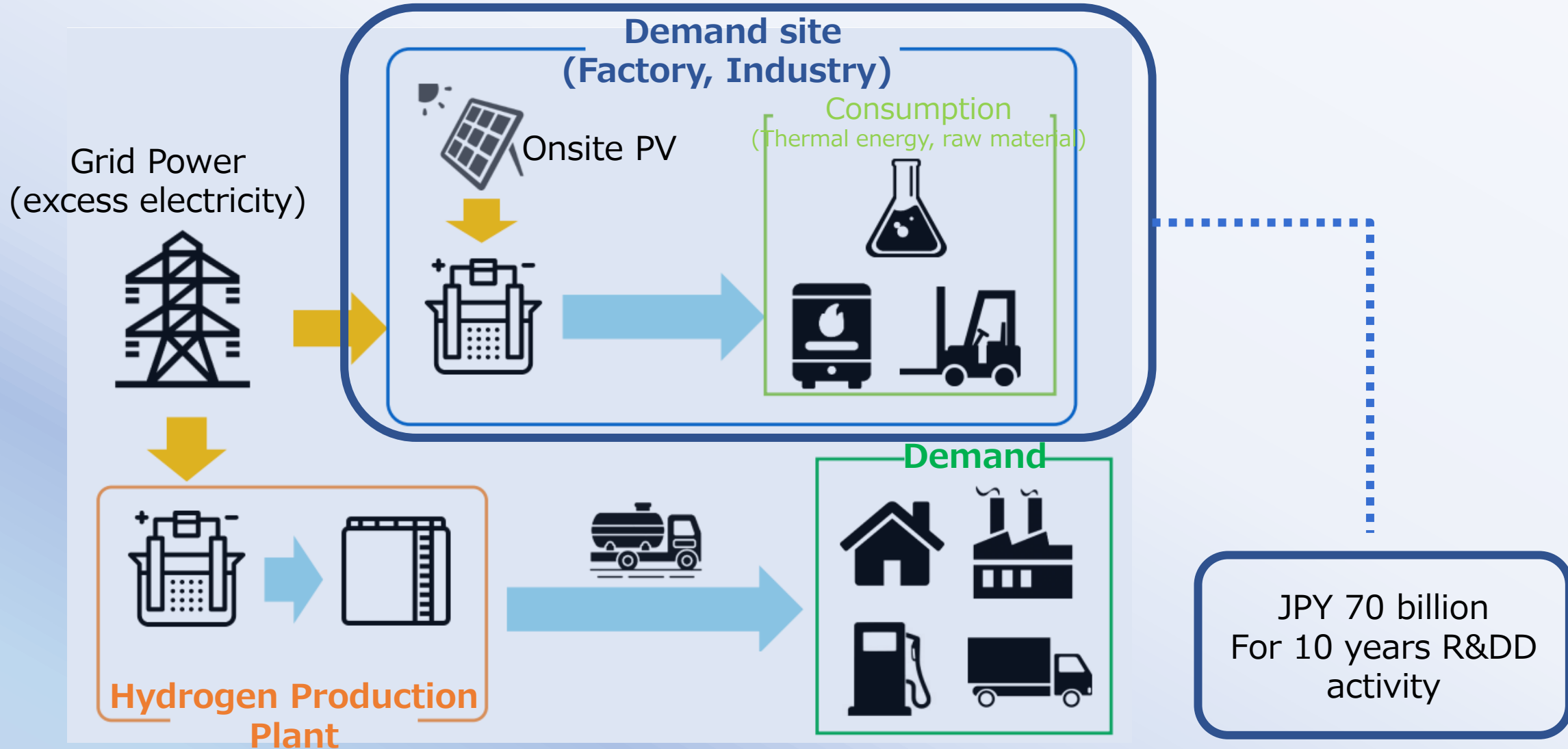


Current topic: MW scale Power-to-Gas



New Project: Hydrogen scaling-up

Power to Gas for decarbonization at Industry Sector





Thank you!