INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

IPHE Country Update April 2019: Japan

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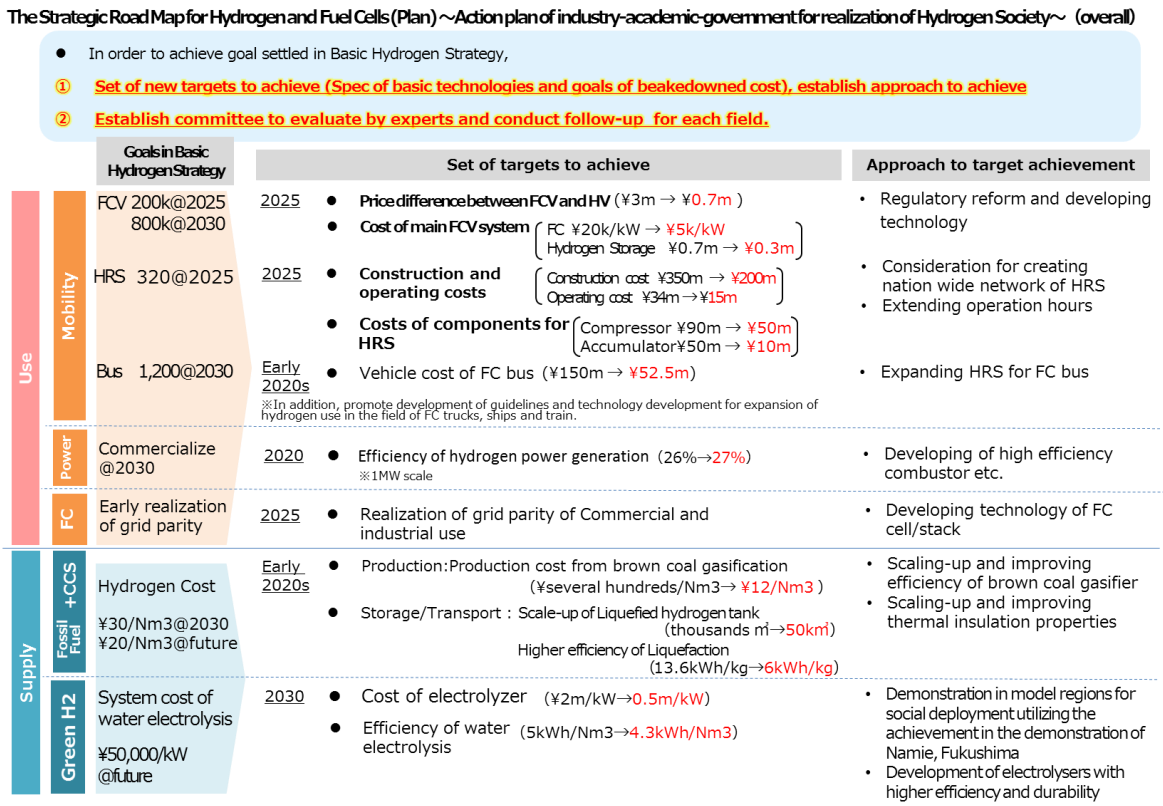
Covered Period	January – April 2019

1. New Initiatives, Programs, and Policies on Hydrogen and Fuel Cells

The Strategic Road Map for Hydrogen and Fuel Cells was released March 12, 2019. In order to achieve goals set in the Basic Hydrogen Strategy, Japan set new targets and decided to establish an Expert Committee to evaluate and conduct follow-up for each field.



2. Hydrogen and Fuel Cell R&D Update

Nothing new to report in this period.

3. Demonstration, Deployments, and Workforce Developments Update

Nothing new to report in this period.

4. Events and Solicitations

Hydrogen Energy Ministerial Meeting 2019 is scheduled for September 25th in Tokyo. (tentative)

5. Investments: Government and Collaborative Hydrogen and Fuel Cell Funding

METI decided its Hydrogen and Fuel Cell Budget for FY2019 is JPY 60.2Billion.

6. Regulations, Codes & Standards, and Safety Update

Nothing new to report in this period.

Summary Country Update April 2019: Japan

Transportation	Target Number	Current Status	Partnerships, Strategic Approach	Support Mechanism
Fuel Cell Vehicles[1]	40,000 by 2020 200,000 by 2025 800,000 by 2030	3,026 As of March 2019	-	• Subsidy for purchase (national and local government initiative)
FC Bus	100 by 2020 1,200 by 2030	18 As of March 2019	-	• Subsidy for purchase (national and local government initiative)
Fuel Cell Trucks[2]	No target	-	-	・Subsidy for R&D, demonstration (national government initiative)
Forklifts	500 by 2020 10,000 by 2030	160 As of March 2019	-	・Subsidy for R&D, demonstration (national government initiative) • Subsidy for purchase (national government initiative)
H_2 Refueling Stations	**Target Number**	**Current Status**	**Partnerships, Strategic Approach**	**Support Mechanism**
70 MPa On-Site Production	160 by 2020 900 by 2030	17 operational As of March 2019 (2 in progress)	• Initially focusing on four major metropolitan areas	• Subsidy for CAPEX/OPEX(national government and partially local government initiative)

[1] Includes Fuel Cell Electric Vehicles with Range Extenders

[2] As above

70 MPa Delivered		86 operational As of March 2019 (8 in progress)	• Establishing Japan H2 mobility LLC, (JHyM) for development of a hydrogen station network • Regulatory reform of HRC	
35 MPa On-Site Production		24 operational As of November 2018	• Municipality lead instruction as official vehicles	
35 MPa Delivered		—		
Stationary	**Target Number[3]**	**Current Status**	**Partnerships, Strategic Approach**	**Support Mechanism**
Small[4]	1.4 M by 2020 5.3 M by 2030	276,245 As of March 2019	・Establishing ENE-FARM Partners (manufactures, gas companies and constructors) ・Commercializing fuel cells(PEFC) for application by 2019 ・Commercializing fuel cells(SOFC) for application by 2021	• Subsidy for purchase (national government initiative)
Medium[5]	No target	SOFC:2		・Subsidy for purchase of (national government initiative)

[3] Targets can be units installed and/or total installed capacity in the size range indicated
[4] <5 kW (e.g., Residential Use)
[5] 5kW – 400 kW (e.g., Distributed Residential Use)

Large[6]	No target			
District Grid[7]	No target			• e.g., no Value-Added Tax applied to fuel cell generated electricity
Regional Grid[8]	No target			
Telecom backup	No target			
H_2 Production	**Target[9]**	**Current Status**	**Partnerships, Strategic Approach**	**Support Mechanism**
Fossil Fuels[10]	Procure 300,000 ton of Hydrogen annually by 2030 Reduce the cost of hydrogen to JPY30/Nm3		• Japan-Australia Hydrogen Supply Chain pilot project	・Subsidy for R&D, demonstration (national government initiative)
Water Electrolysis[11] (PEM, Alkaline, SOEC)		10.9 MW	・Large scale 10MW water electrolyser Project has started in Fukushima.	・Subsidy for R&D, demonstration (national government initiative)
By-product H_2				
Energy Storage from Renewables	**Target[12]**	**Current Status**	**Partnership, Strategic Approach**	**Support Mechanism**

[6] 0.3MW – 10 MW (e.g., Industrial Use)
[7] 1MW – 30 MW (e.g., Grid Stability, Ancillary Services)
[8] 30MW plus (e.g., Grid Storage and Systems Management)
[9] Target can be by quantity (Nm^3, kg, t) and by percentage of total production; also, reference to efficiency capabilities can be a target
[10] Hydrogen produced by reforming processes
[11] Please indicate if targets relate to a specific technology (PEM, Alkaline, SOEC)
[12] Can be expressed in MW of Installed Capacity to use the electricity from renewable energy generation, and Annual MWh of stored energy capacity

Power to Power[13] Capacity	No target			
Power to Gas[14] Capacity	No target			・Subsidy for R&D, demonstration (national government initiative)

[13] Operator has an obligation to return the electricity stored through the use of hydrogen back to electricity

[14] Operator has the opportunity to provide the stored energy in the form of hydrogen back to the energy system through multiple channels (e.g., merchant product, enriched natural gas, synthetic methane for transportation, heating, electricity)