



IPHE Country Update December 2018: Japan

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Covered Period	May – December 2018

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

I. Hydrogen Energy Ministerial Meeting

Japan hosted the Hydrogen Energy Ministerial Meeting in October 2018. It was the first Ministerial-level meeting, which set “Hydrogen” as a main agenda. More than 20 countries as well as the European Commission and International Energy Agency got together and shared the view that hydrogen can be a key contributor to the energy transitions underway to a clean energy future and an important component of a broad-based, secure, and efficient energy portfolio. Also, delegates confirmed the value of collaborating on the following four priorities in the “Tokyo Statement” to achieve the “Hydrogen Society”.

- ◆ Harmonization of Regulation, Codes and Standards
- ◆ International Joint R&D emphasizing Safety
- ◆ Study and Evaluation
- ◆ Communication, Education, and Outreach

Japan is planning to host the 2nd Hydrogen Energy Ministerial Meeting in the autumn of 2019.

II. Memorandum of Cooperation with New Zealand

Japan and New Zealand signed a memorandum of cooperation (MOC) to promote cooperation on hydrogen.

2. Hydrogen and Fuel Cell R&D Update

Nothing new to report in this period.

3. Demonstration, Deployments, and Workforce Developments Update

In July 2018, construction started on a large scale R&D for water electrolysis plant. This project aims to build a 10,000 kW water electrolyser and produce hydrogen from renewable energy. This facility will start operation in 2020.

4. Events and Solicitations

Hydrogen Energy Ministerial Meeting was held in October 2018 in Japan. (As mentioned above.)

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

METI is requesting JPY 64.1 billion (US\$ 56.3 million) for budget of FY2019.



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6. Regulations, Codes & Standards, and Safety Update

Nothing new to report in this period.



Summary Country Update December 2018: 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 2025	2,824 As of September 2018	-	• Subsidy for purchase (national and local government initiative)
FC Bus	100 by 2020 1,200 by 2030	5 As of October 2018	-	• 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	100 As of October 2018	-	• 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	15 operational As of November 2018 (6 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



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70 MPa Delivered		85 operational As of November 2018 (9 in progress)	<ul style="list-style-type: none"> Establishing Japan H2 mobility LLC, (JHyM) for development of a hydrogen station network Regulatory reform of HRC 	
35 MPa On-Site Production		22 operational As of November 2018 (2 in progress)	<ul style="list-style-type: none"> 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	264,543 As of September 2018	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Subsidy for purchase (national government initiative)
Medium ⁵	No target	SOFC:1		<ul style="list-style-type: none"> 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)



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Large ⁶	No target			
District Grid ⁷	No target			
Regional Grid ⁸	No target			
Telecom backup	No target			
H₂ Production	Target⁹	Current Status	Partnerships, Strategic Approach	Support Mechanism
Fossil Fuels ¹⁰	Procure 300,000 tonnes of Hydrogen annually by 2030 Reduce the cost of hydrogen to JPY30/Nm3		<ul style="list-style-type: none"> Japan-Australia Hydrogen Supply Chain pilot project 	<ul style="list-style-type: none"> Subsidy for R&D, demonstration (national government initiative)
Water Electrolysis ¹¹ (PEM, Alkaline, SOEC)		10.9 MW	<ul style="list-style-type: none"> Large-scale 10MW water electrolyser project has started in Fukushima. 	<ul style="list-style-type: none"> Subsidy for R&D, demonstration (national government initiative)
By-product H ₂				
Energy Storage from Renewables	Target¹²	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 (Nm³, 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



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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)