



International Partnership
for Hydrogen and Fuel Cells
in the Economy

Japan Update

39th IPHE Steering Committee Meeting
26 – 27 April 2023
Pretoria, South Africa

Announcements / New Initiatives *Japan*

Policies/Initiatives

- The Subcommittee for hydrogen policy published their interim report - January 2023
on Support scheme for narrowing the price gap between clean hydrogen and counterfactual fuels for a set period and on Support scheme for developing infrastructure
- “Basic Policy for Realizing GX” was approved by the Cabinet – February 2023
- Focus discussion committee for Hydrogen Safety Strategy published their interim report – March 2023
- The Renewable energy and Hydrogen related Ministerial Meeting has officially started to review the National Hydrogen Strategy – April 2023

Announcements / New Initiatives *Japan*

Support Scheme (subject to further changes)

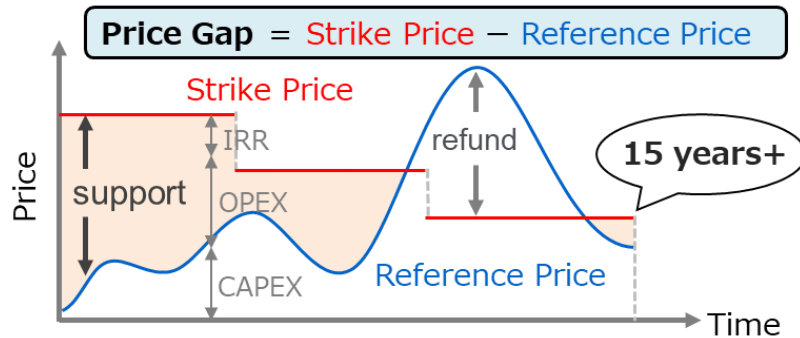
- **Aim to develop large-scale and resilient hydrogen supply chains** (both domestic and international) with a view to expanding the supply volume and reducing the supply cost.
- Aim to deploy and induce **more than 7 trillion yen (= \$53.8 billions*) of public and private investment.**

Published On.
January 4, 2023

*USD1=JPY130

Proposed *supplier* support scheme

- narrowing the price gap between clean hydrogen (ammonia) and counterfactual fuels for a set period: variable premium (a type of CfD)



Strike Price : **Agreed price** for supply costs, including production, transportation and (if applicable) dehydrogenation costs, and return. To be **periodically reviewed** to reflect the cost-saving effects from the **technology developments** and **business expansion**.

Reference Price : **Market price of counterfactual fuels***

*At the early stage, natural gas import price (for hydrogen) and coal import price (for ammonia) are expected to be used.

Support : Part or whole of the price gap (details TBC)

Project evaluation criteria

- ① Having regard to the S+3E* principles, evaluate the suppliers' projects from a strategic perspective.

*Japan's primary energy policy: to achieve a stable ("Energy Security") and cost-effective ("Economic Efficiency") energy supply whilst pursuing environmental acceptability ("Environment"), without compromising safety ("Safety") issues.

【Examples of evaluation items (TBC)】

- Production cost and volume
 - Cost reduction potential
 - Contribution to energy security
 - Deliverability etc.
- ② Meeting the clean hydrogen standard

- To introduce an internationally comparable carbon intensity standard

Target by 2030
Well-to-Gate emissions
~3.4kg-CO₂/kg-H₂*

*Proposed from Japan Hydrogen Association ("JH2A")

(Ref.) Standards of different country or area	Life cycle GHG emissions [kgCO ₂ /kgH ₂]
RED/RFNBO (EU)	3.4
CertifHy Low Carbon (EU)	4.4
EU taxonomy (EU)	3
Low Carbon Hydrogen Standard (UK)	2.4
CHPS (US)	4
IRA (US)	0~4



Announcements / New Initiatives *Japan*

Support Scheme (subject to further changes)

- Aim to support the development of internationally competitive industrial clusters to realize **large-scale demand aggregation** and **establish effective supply chains** for stable and competitive supply.
- **More than 1 trillion yen (= \$7.7 billions*) of public and private investment** expected. *USD1=JPY130

Published On.
January 4, 2023



(Examples of types of cluster)

Large-scale power generation cluster

- Large-scale thermal power station



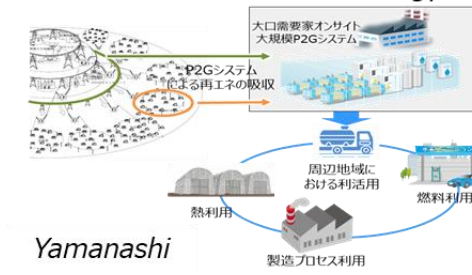
Multi-industry cluster

- Heat supply, oil refining/chemical use, steel industry etc.



Local renewable energy generation cluster

- Production of hydrogen/ammonia from local renewable energy.



<Anticipated number of clusters to be developed within a decade>

- Large scale** : Approx. 3 locations mainly in the mega-city areas
- Middle scale** : Approx. 5 locations in the various smaller regions



Announcements / New Initiatives *Japan*

Funding

High-efficiency boiler subsidy, JPY 30 billion

The 2022FY supplementary budget is supporting the introduction of high-efficiency boiler, due to addressing the hot water supply accounts for a large portion of household energy consumption.



Stationary Residential Fuel Cells
Subsidy: JPY 150k/unit



Hybrid Boiler (gas & heat-pump)
Subsidy: JPY 40k/unit



Heat-pump Boiler
Subsidy: JPY 40K/unit

Announcements / New Initiatives *Japan*

New Research & Development, Demonstration and/or Deployment Activities

DENSO
Crafting the Core

TOYOTA

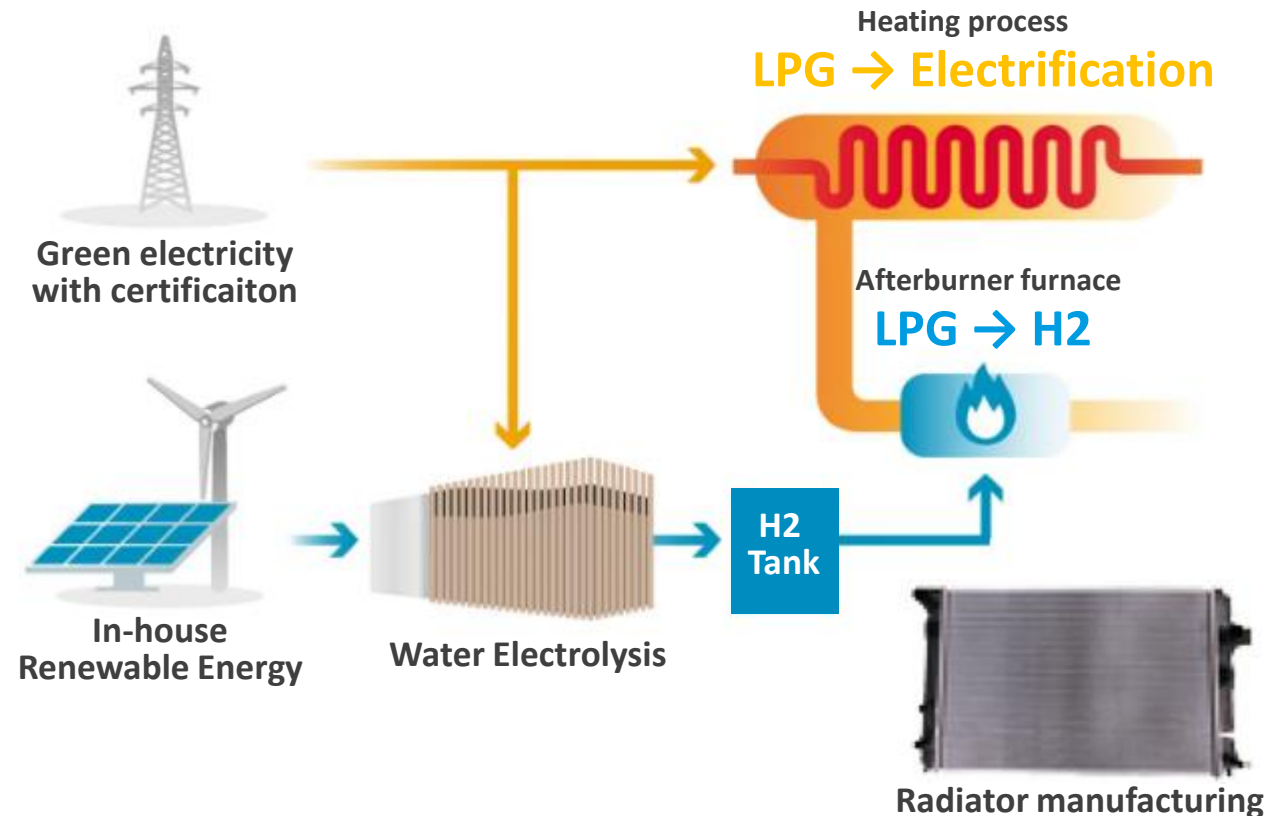


at DENSO Fukushima factory

<https://www.denso.com/global/en/news/newsroom/2023/20230309-g01/>

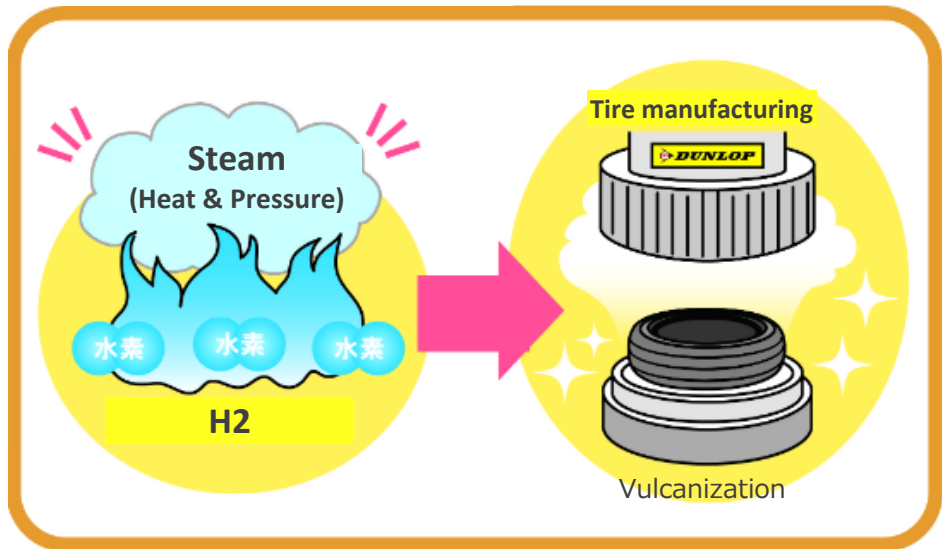
<https://global.toyota/en/newsroom/corporate/38917359.html>

https://www.denso.com/jp/ja/driven-base/project/fukushima_factory/



Announcements / New Initiatives *Japan*

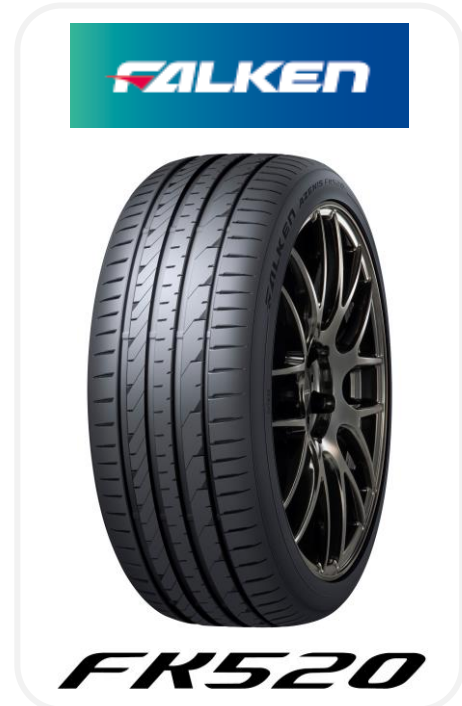
New Research & Development, Demonstration and/or Deployment Activities



Hydrogen trailer



Hydrogen Boiler - 24 hours operation



Announcements / New Initiatives *Japan*

Key Collaborations

On December 2, 2022, H.E. NISHIMURA Yasutoshi, Minister of Economy, Trade and Industry, signed a Memorandum of Cooperation (MOC) on Hydrogen with H.E. Kadri Simson, European Commissioner for Energy, in order to further promote cooperation in the field of hydrogen.

Under the MOC, Japan and the EU agreed to exchange information on hydrogen policy, regulations, incentives, and other matters and to cooperate in international hydrogen trade toward development of a hydrogen society. Japan and the EU are already cooperating in the field of hydrogen, and the signing of the MOC is expected to further accelerate cooperation in this field through close cooperation with the EU.



Japan – Profile April 2022

Status of Deployments

- Fuel Cell Vehicles: 7,692 as of Feb. 2023
- FC Bus: 132 as of Feb. 2023
- Forklifts: 397 as of Feb. 2023
- 70MPa HRS: 167 operational as of Mar. 2023
- Stationary residential fuel cells (ENE-FARM): 480,373 as of Mar. 2023

Leading Government Initiatives

- The Sixth Strategic Energy Plan was approved by the Cabinet on October 22, 2021

Deployment Goals *Cumulative number

- Deployment target by 2030:
- Fuel Cell Vehicles: 800,000
 - H₂ Refueling Stations: 1,000
 - Fuel Cell Buses: 1,200
 - Stationary residential fuel cells: 3 million

Goals or Focus Areas

- Cost (JPY/Nm³ – H₂)
JPY 30 /Nm³ by 2030
JPY 20 /Nm³ by 2050
- Hydrogen supply & demand
3 M tones by 2030
20 M tones by 2050

Funding – 2023FY

- Fuel Cells R&D: JPY 7.9 billion
 - H₂ Supply Chain RD&D: JPY 8 billion
 - H₂ Hub demonstration: JPY 6 billion
 - High-Efficient Boiler Subsidy, including stationary residential fuel cells: JPY 30 billion
- Green Innovation Fund
- Large-scale H₂ supply chain: JPY 300 billion
 - Large electrolyzer development: JPY 70 billion



Thank you



International Partnership
for Hydrogen and Fuel Cells
in the Economy