Country Update

JAPAN

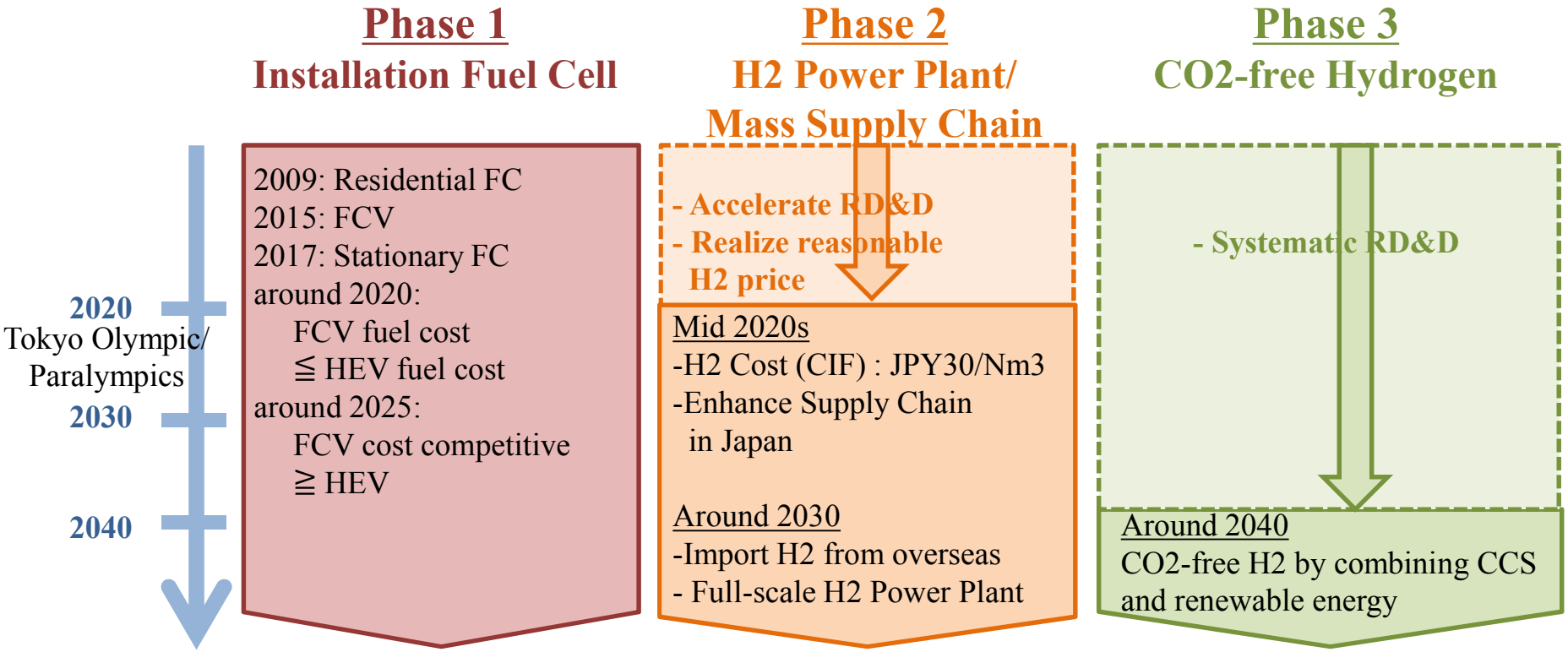
May 27th, 2015

23rd IPHE SC Meeting

Wuhan, China

Hydrogen / FC Strategic Roadmap

➢ Step by step approach to realize Hydrogen Society



Market on H2 and FC in Japan

Approx. 1 trillion yen in 2030 → Approx. 8 trillion yen in 2050

Recent Trend in FCV and HRS

Toyota Motor

<December 15, 2014>

■Released “MIRAI” at a price of 7 million yen

<January 6, 2015>

■Announced the patent license for free of charge (approx. 5,680 items)

<January 15, 2015>

■First MIRAI has come to Cabinet

Honda Motor

<November 17, 2014>

■ Announced a FCV release within FY 2015

JX Nippon Oil & Energy

<October 1, 2014>

■Established ENEOS Hydrogen Supply and Service, dedicated to the HRS business.

<November 12, 2014>

■Announced a plan to open 11 HRS within FY 2014

Iwatani

<July 14, 2014>

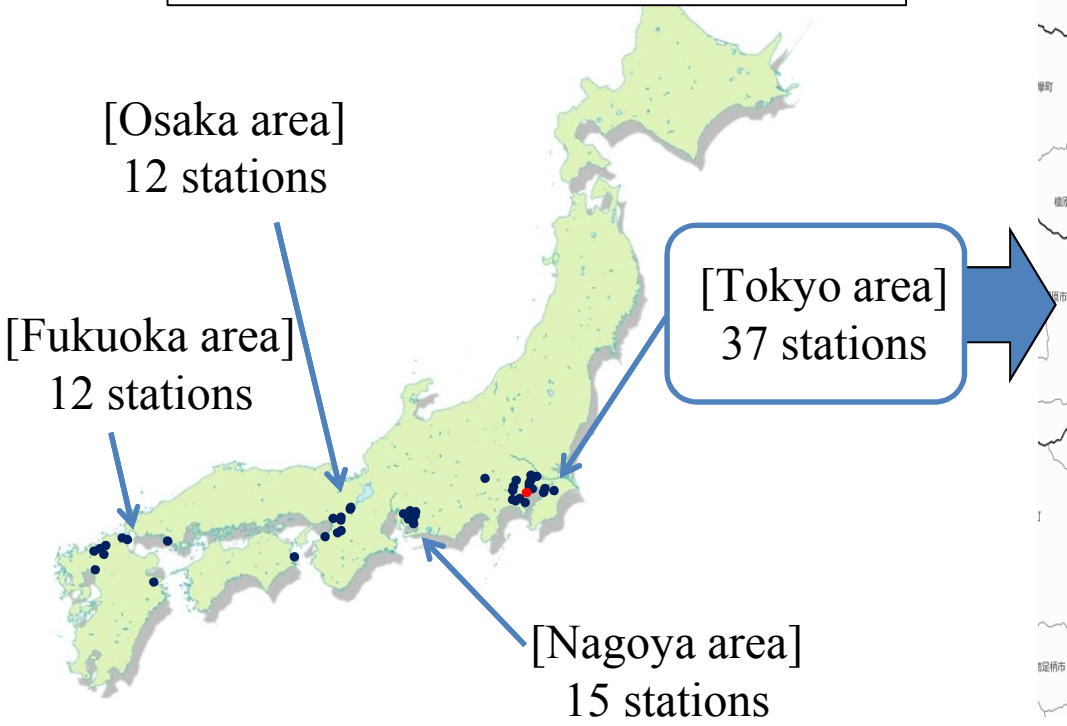
■Opened Japan's first commercial HRS in Hyogo

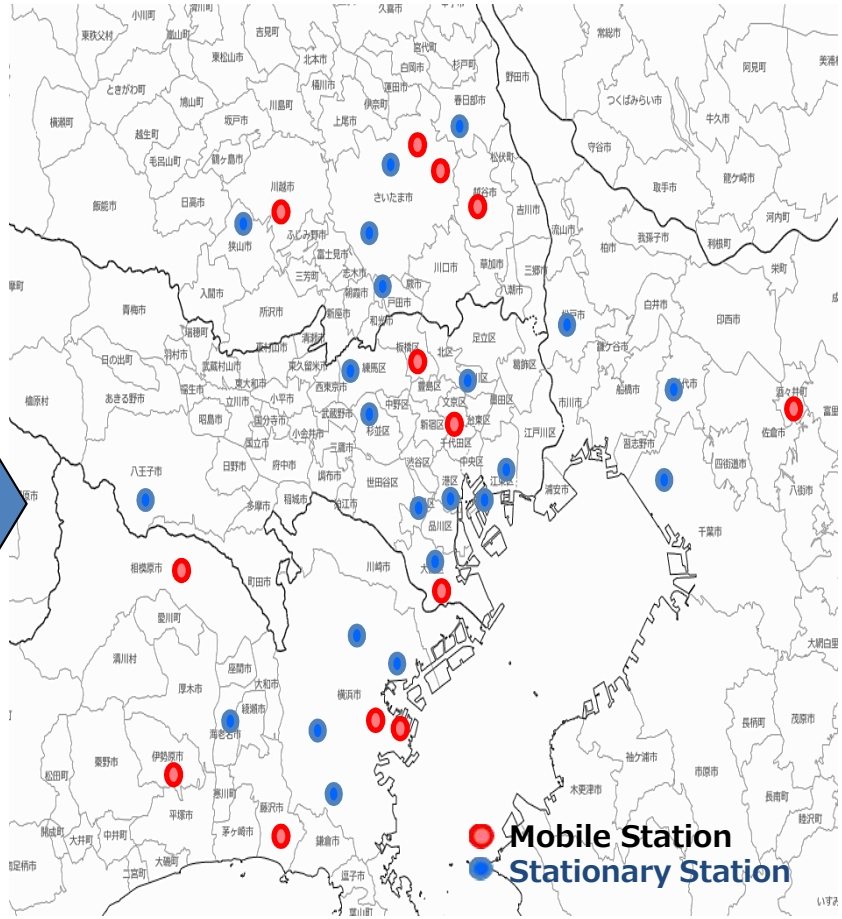
<April 14, 2015>

■Opened HRS on central Tokyo

- Target: 100 HRSs in 4 major populated areas within FY 2015
- METI subsidizes around 50 % or more of installation cost and 2/3 of operation cost

Status of HRSs (as of May 25th)
- Budget secured: 76 stations
- Open: 22 stations





Further Deregulation and technology development of HRS

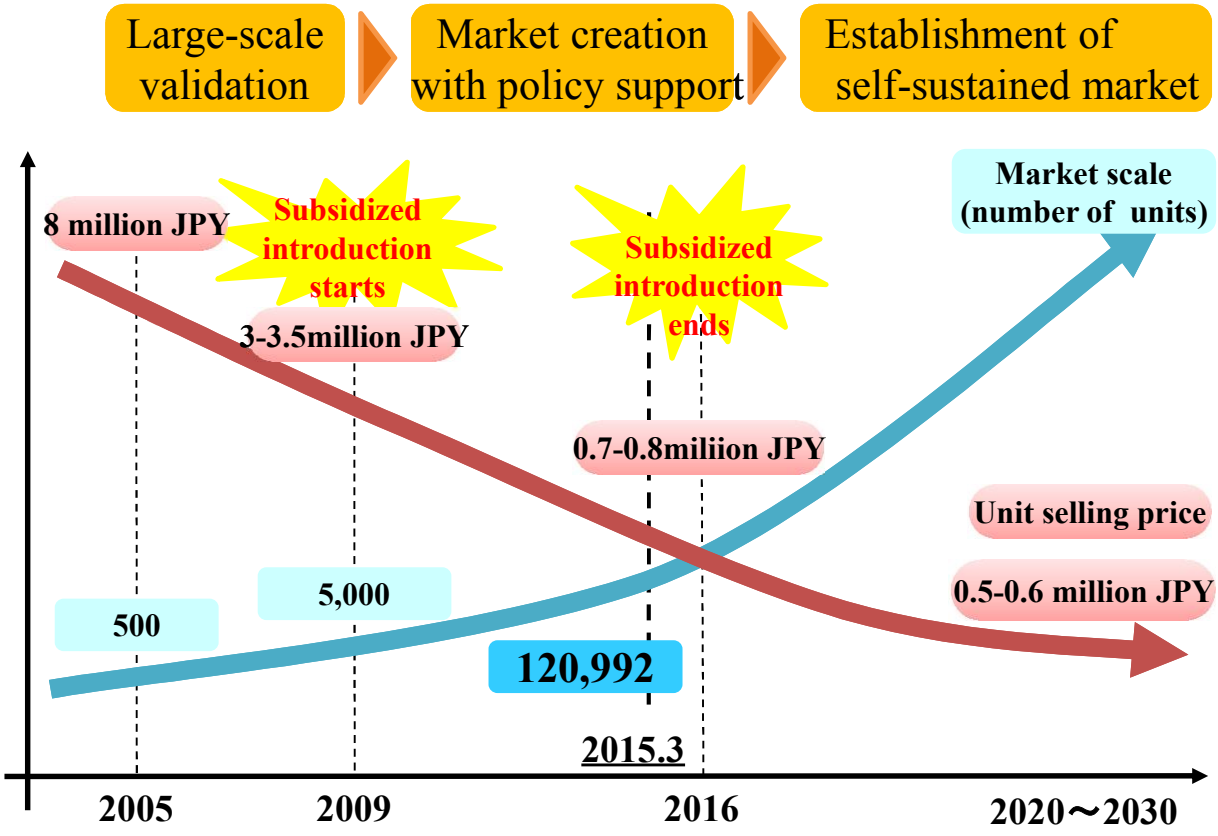
Announced by Prime Minister Abe at the Ceremony for Delivery of the First "Mirai" (January 15, 2015)

We have reached a new era regarding hydrogen. Smooth acceleration, a silent cabin, it was a really comfortable ride. I hope all government offices will introduce this type of vehicle. We have mitigated and eliminated many regulations to promote the introduction. I will continue in this progress by conducting further deregulation and technology development in parallel.

In addition, I will implement deregulation to allow self-servicing hydrogen refueling stands. The Council for Regulatory Reform will discuss this issue. This car is very comfortable to ride and stylish, as well as eco-friendly. I believe that it will usher in a new era.

Residential FCs ("ENE-FARM")

- Total units installed: 120,992 (as of 2015.3)
- Target: 1.4million units by 2020, 5.3million units by 2030



Budget to H2 / FC in FY 2015 (including supplementary Budget in FY 2014)

Phase 1 — **Installation Fuel Cell** — Focus on implementation from the present

Phase 2 — **H2 Power Plant/ Mass Supply Chain** — Realization in the late 2020s

Phase 3 — **CO2-free Hydrogen** — Realization in 2040s

Dissemination of stationary FCs

Subsidies for Micro-CHP FCs
[185 million USD]

Promote the accelerated introduction of ENE-FARMs. Promote lower cost through mass production.

ENE·FARM

Dissemination of FCVs

Subsidies for HRSs
[80 million USD]

Support the building of HRSs. Partially subsidize activities for creating new demand, etc.

Support for FCVs
[Included in 250 million USD]

Building a H2 supply chain

Demonstrations for a global H2 supply chain
[17 million USD]

Demonstrate how hydrogen can be produced from untapped overseas energy resources, e.g., by-product hydrogen, brown coal, etc., transported in the form of liquefied hydrogen or organic hydride, and used to generate power.

R&D of FC, etc.

R&D of FCs
[33 million USD]

Conduct R&D to enhance performance and lower costs of FCs, and demonstrate commercial applications of FCs.

Large-CHP FCs

R&D of HRSs
[35 million USD]

Develop technologies to lower costs of HRSs, enhance safety and security and collect data so as to review regulations.

Construction of a H2 energy network

Construction of a H2 energy network
[Included in 65 million USD]

Build a network that effectively connects multiple hydrogen applications in the region.

R&D of H2 production, transport and storage

R&D for producing, transporting and storing H2 derived from renewable energy
[14 million USD]

Develop technologies of high efficiency water electrolysis units, tanks for storing liquefied hydrogen, etc. with the use of renewable energy sources in mind

Exchange rate: 1USD=120yen

NEDO's Program for Hydrogen and Fuel Cell

Item 1: Hydrogen Infrastructure

- Streamlining Regulations, making Code and Standard
- Low cost equipment for HRS
- HRS reliability Database, Social acceptance

Item 2: Fuel cell technology

- Basic technology and Production technology for PEFC,
- Fundamental study for rapid evaluation method of SOFC durability,
- Demonstration of SOFC system for business use

Item 3: Large scale Hydrogen utilization

- Power to Hydrogen, Hydrogen transportation, Hydrogen utilization