

# **Fuel cell vehicle demonstration and Hydrogen infrastructure project in Japan**

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# 1. Introduction

## 1-1 About HySUT\*

\*The Research Association of **Hy**drogen **S**upply / **U**tilization **T**echnology

### - Goal and Objective -

- ✓ Our goal is **commercialization of hydrogen supply business and FCVs** by private companies.
- ✓ Our objective is to **solve the issues of technology, consumer awareness, social acceptance and to assist business establishment** through our demonstration program.

<b>Date of establishment</b>	July 31 <sup>st</sup> , 2009
<b>Members</b>	19 Companies and Organizations
	4 Petroleum / 4 City gas / 6 Industrial gas, Devices, Engineering & Materials
	3 Automotive / 2 Related organizations
<b>Term</b>	2009 to FY2015



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**1. Introduction**

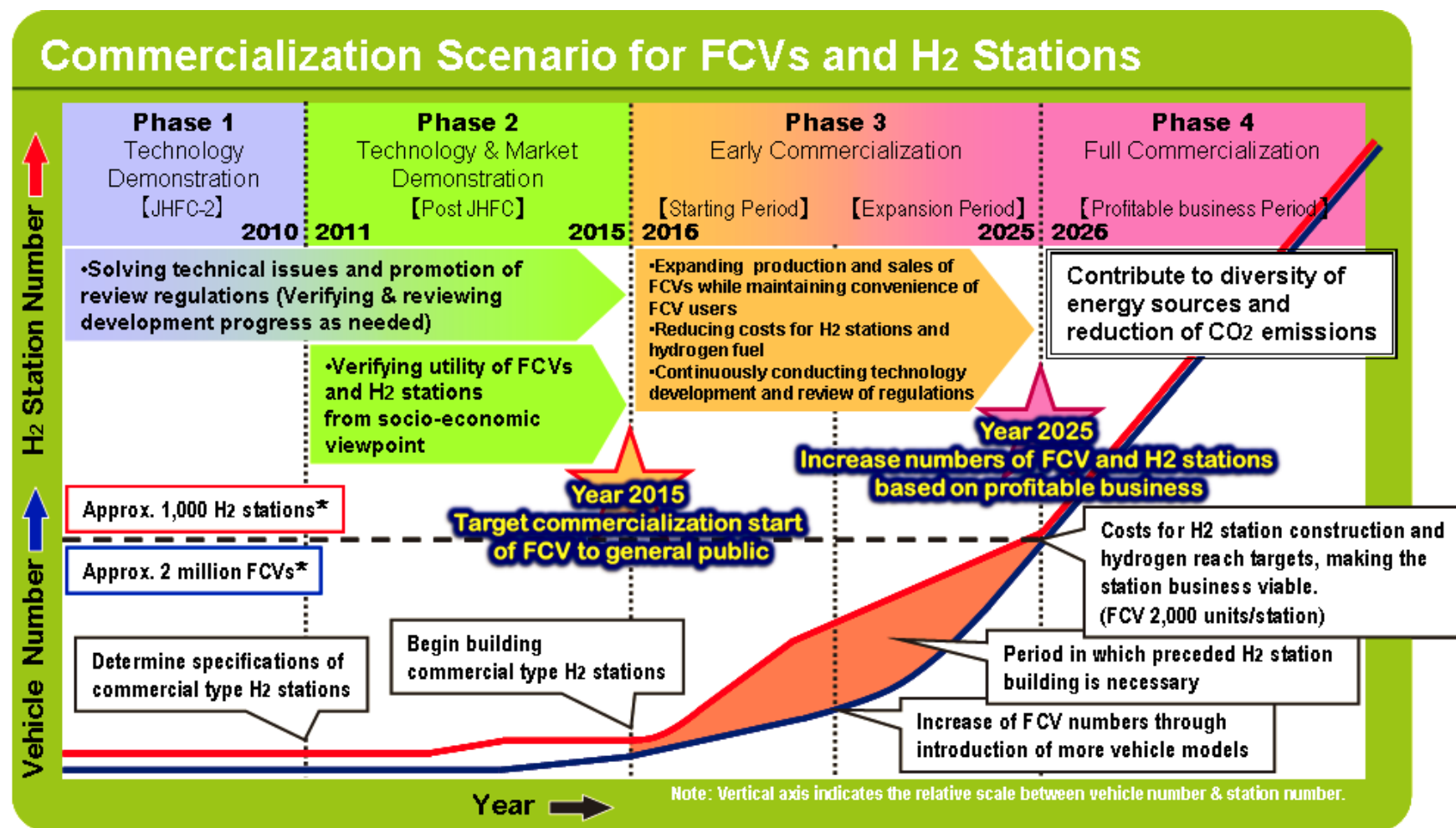
**2. Japan's target for FCV and Hydrogen station**

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## 2. Japan's target for FCV and Hydrogen station

### 2-1 Commercialization Scenario in Japan



\* Precondition: Benefit for FCV users (price/convenience etc.) are secured, and FCVs are widely and smoothly deployed

Reference : FCCJ, March 2010 <http://fccj.jp/>

## 2-2 Joint Announcement by 13 Japanese Companies

### Automakers (3 private companies):

Toyota Motor Corporation, Nissan Motor Co., Ltd.,  
Honda Motor Co., Ltd.

### Hydrogen fuel suppliers (10 private companies):

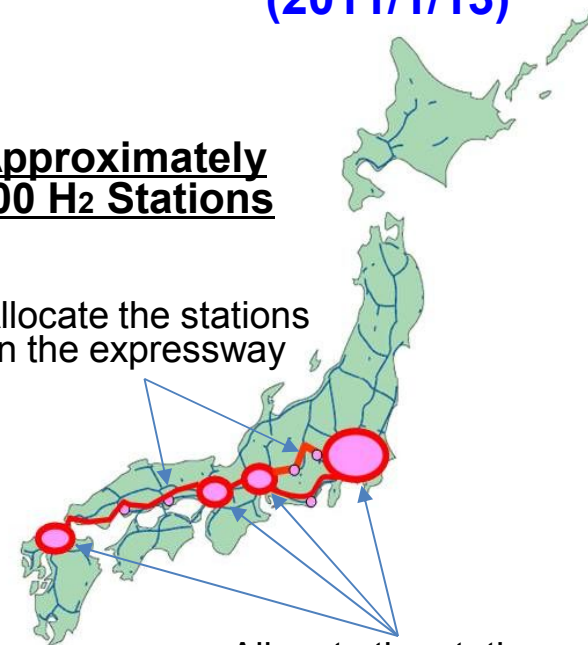
JX Nippon Oil & Energy Corporation,  
Idemitsu Kosan Co., Ltd., Iwatani Corporation,  
Osaka Gas Co., Ltd., Cosmo Oil Co., Ltd.,  
Saibu Gas Co., Ltd., Showa Shell Sekiyu K.K.,  
Taiyo Nippon Sanso Corporation,  
Tokyo Gas Co., Ltd., Toho Gas Co., Ltd.

1. **Automakers** are aiming to launch FCVs in the Japanese market—mainly in the country's four major metropolitan areas—in 2015.
2. **Hydrogen fuel suppliers** are aiming to construct approximately 100 hydrogen stations by 2015.
3. **Automakers and Hydrogen fuel suppliers will work together** to expand the introduction of FCVs and develop the hydrogen supply network throughout Japan.

(2011/1/13)

**Approximately  
100 H<sub>2</sub> Stations**

Allocate the stations  
on the expressway



Allocate the stations  
initially on Japan's four  
metropolitan areas

In four metropolitan areas  
local government, local METI  
and private companies established  
joint committee to disseminate  
the strategy for the initial demand  
creation in the region.

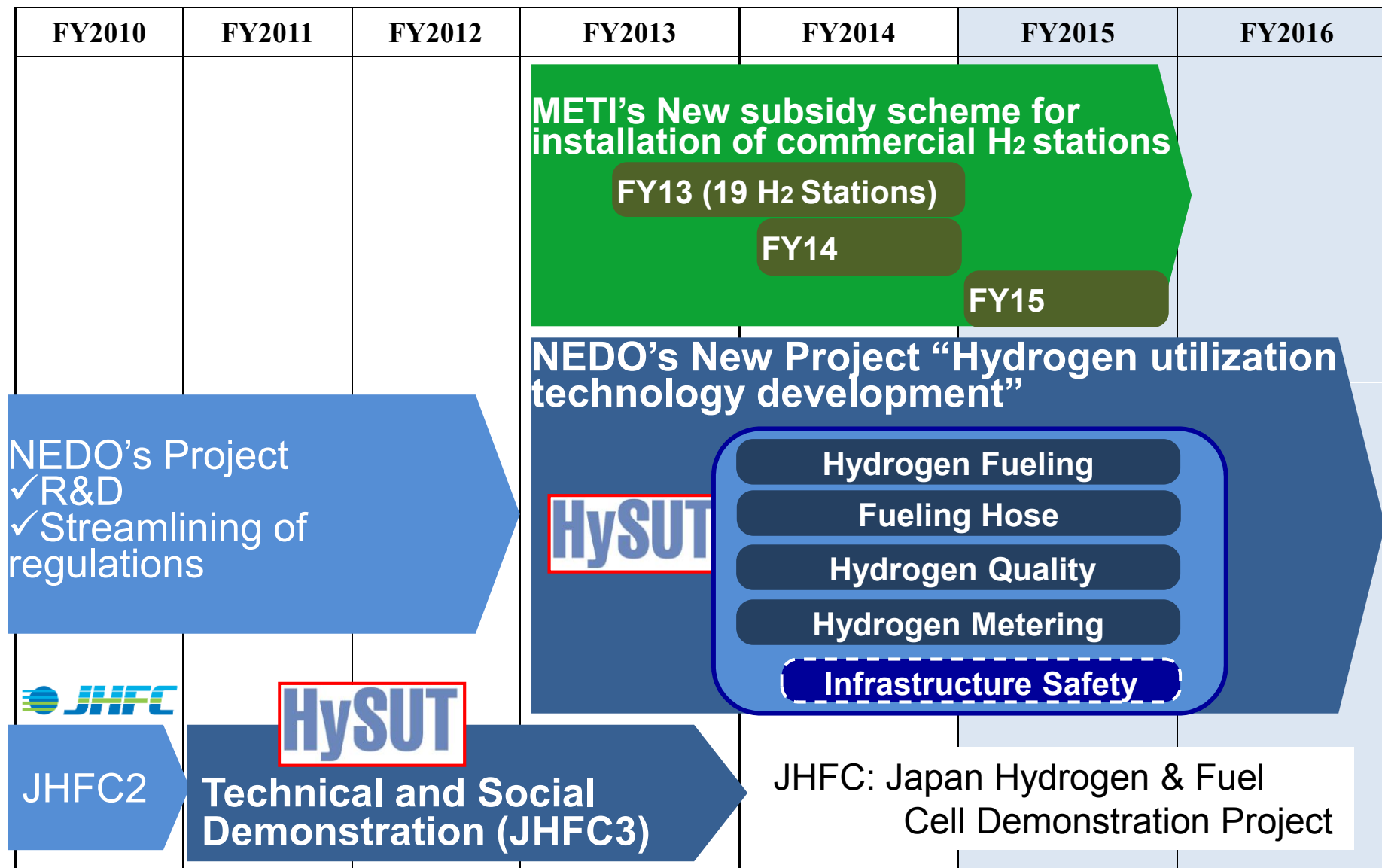
※ METI, Chubu Bureau of METI, Osaka Prefecture and Fukuoka Prefecture simultaneously press released.



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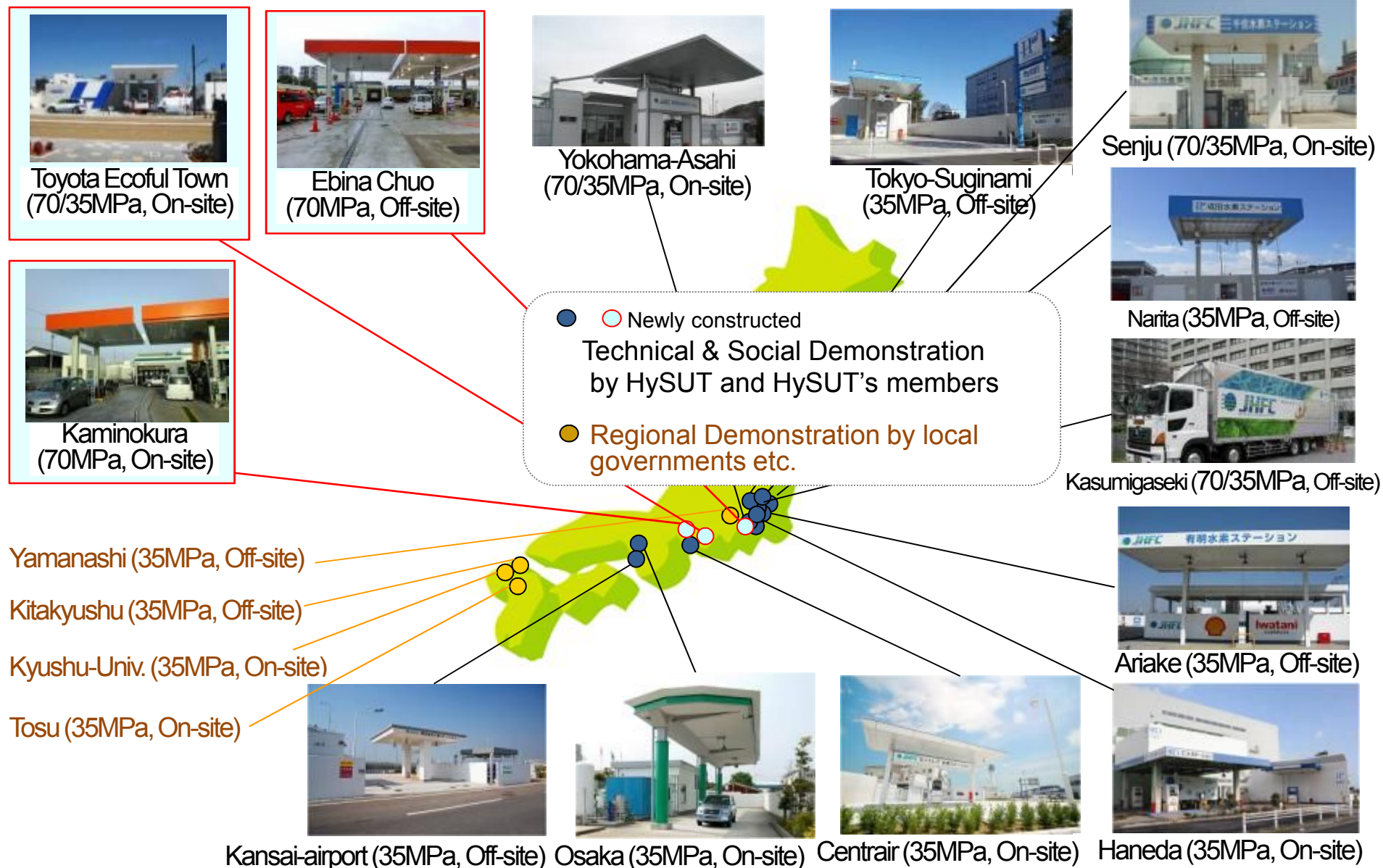
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## 3-1 Current Status of National Projects in Japan

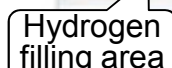
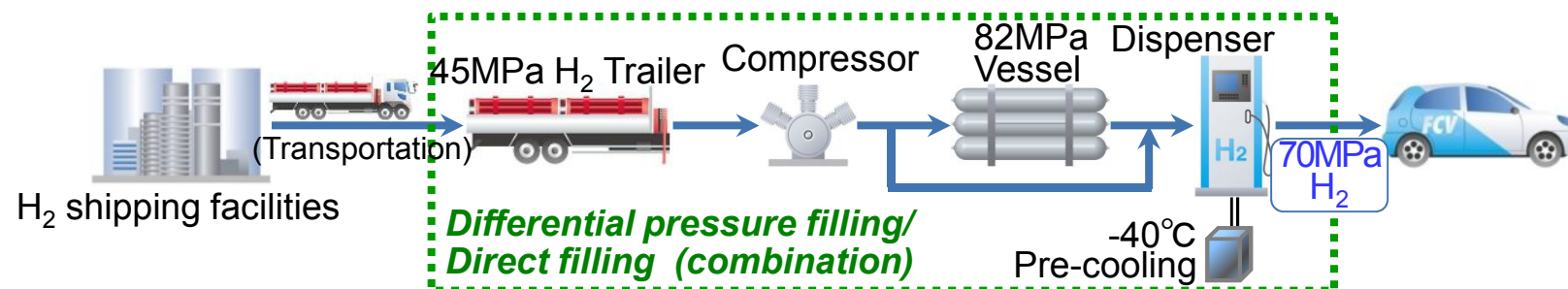




## 3-2 Hydrogen stations for JHFC3

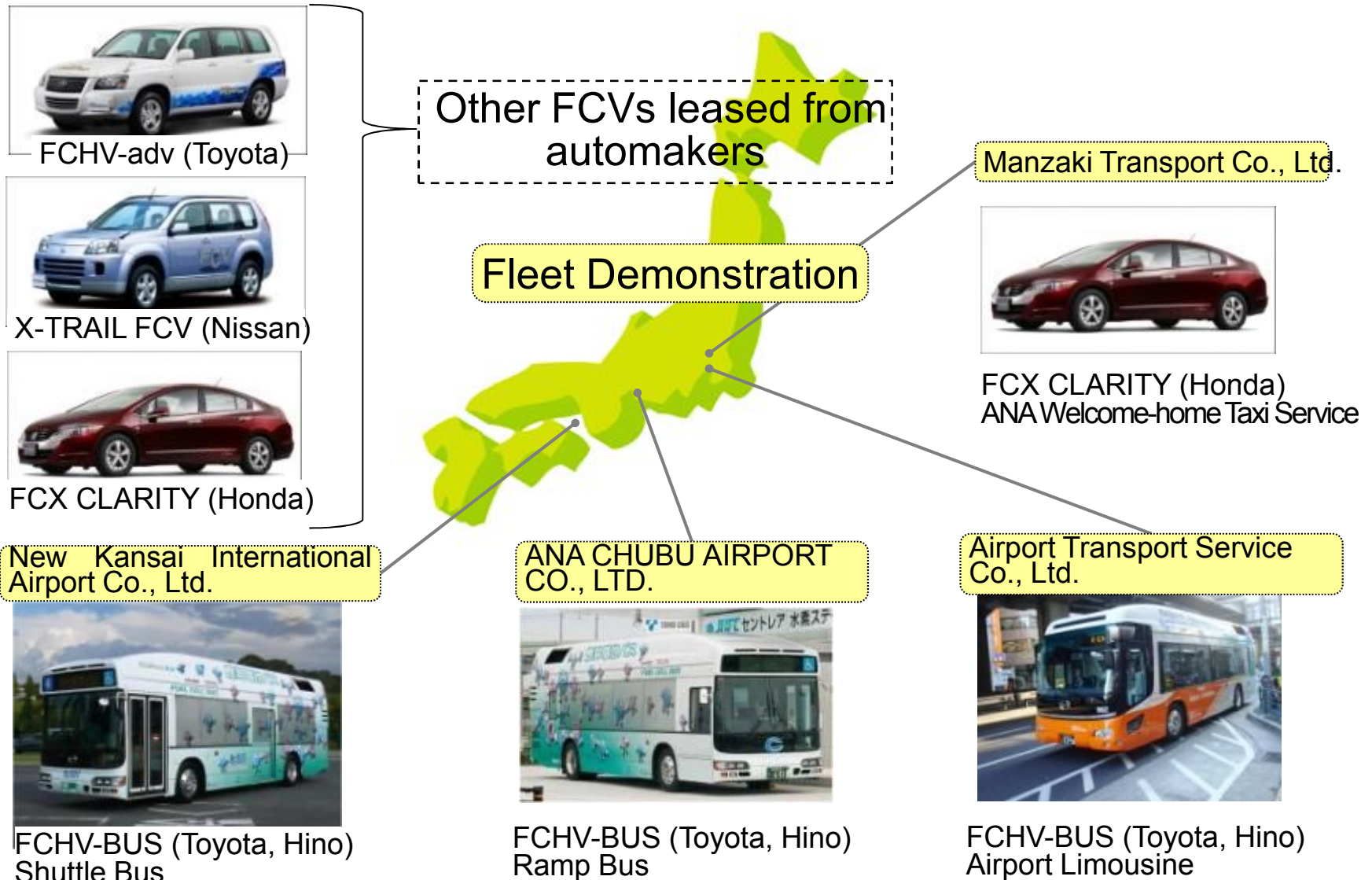


# 3-3 Ebina Chuo Hydrogen station (Off-site)



: H<sub>2</sub> station facilities area (about 470m<sup>2</sup>, the entire area of the gas station is about 3,200m<sup>2</sup>)

## 3-4 FCVs & FC Buses Served for JHFC3

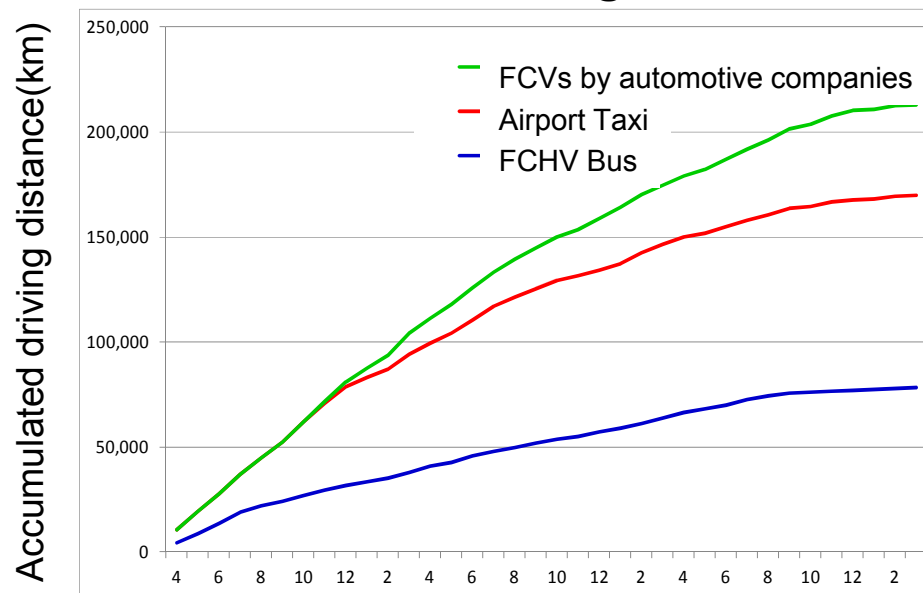


## 3-5 FCV & Hydrogen fueling Demonstration

### Accomplishments:

- > 220,000km driving
- ~ 2,000 hydrogen fills
- > 7,000kg hydrogen dispensed

### FCV & FC Bus driving test summary



2011~13 FY



## 3-6 Fueling performance test at hydrogen station

### Objectives

- Evaluate the fueling protocol(JPEC S 0003) through communication device
- Validate fueling performance at each hydrogen station.

### HySUT Test Truck

- Tank : 36L × 5
- Communication equipment
- Recording device for fueling data
- Hydrogen combustion engine vehicle (JARI approved)



Validation Test @ Senju  
H<sub>2</sub> station

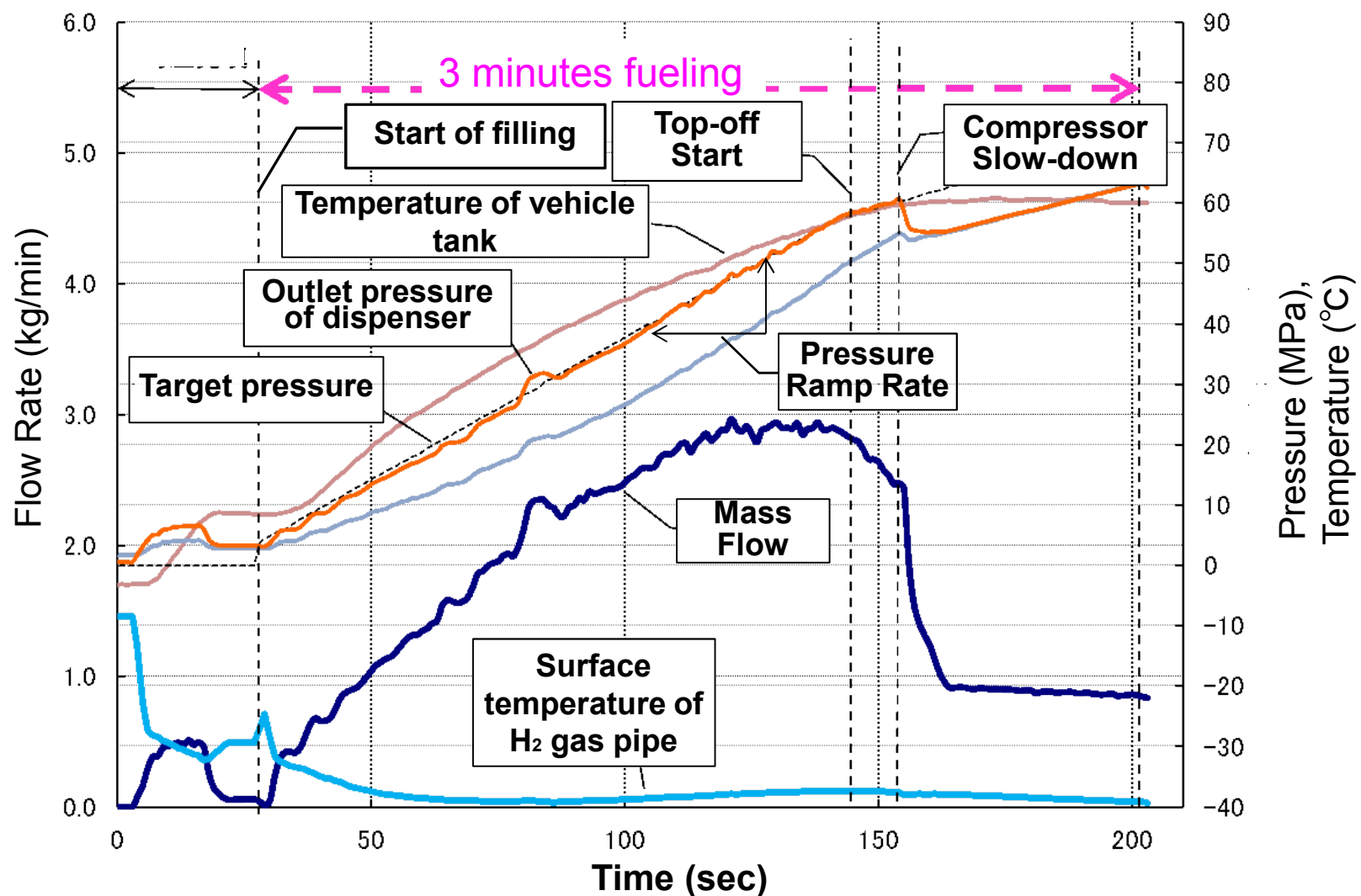


HySUT Test Truck



Test Apparatus

## 3-7 Fueling performance data at hydrogen station



## 3-8 Social Acceptance Activity at FC EXPO Tokyo



Hydrogen Station booth

**Feb.26 -28, 2014**

**Visitors : over 30,000**

### **Outcome**

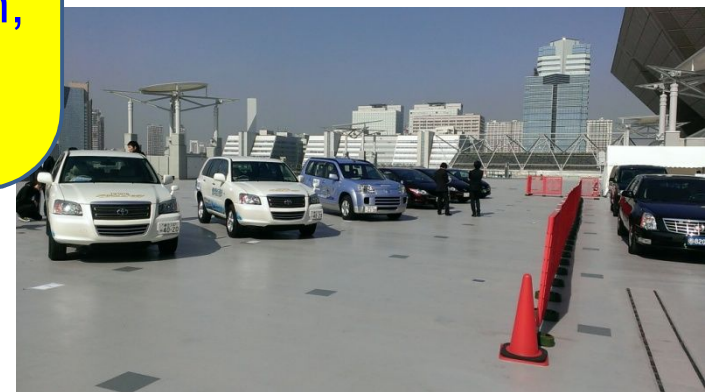
Promoted the understanding of visitors about hydrogen, hydrogen supply chain, FCV and safety measures.



Fuel Cell Vehicle booth



Short presentation and movie booth (Audience : About 3,000)



FCV Test Drive : 230



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## 4. Summary

- 1) HySUT has been playing an important role in the demonstration program for the FCV and Hydrogen station in accordance with the commercialization scenario in Japan.
- 2) As a result of the construction of three commercial models of Hydrogen stations, HySUT contributed to the solutions for the practical problems towards commercial Hydrogen stations .
- 3) HySUT's test truck made it possible for fueling performance validation test which is necessary for commercial Hydrogen stations.
- 4) HySUT is improving the social acceptance of general public for FCV and hydrogen infrastructure through the exhibits and outcomes of the demonstration project.
- 5) METI's new subsidy scheme began in 2013 for installation of commercial Hydrogen stations .



**Thank you very much for your attention!**



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