



Status on Activities for Hydrogen Infrastructure in Japan

April 25, 2017

Tetsufumi Ikeda

The Association of Hydrogen Supply and Utilization Technology (HySUT)

te-ikeda@hysut.or.jp <http://hysut.or.jp/>



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1. Introduction 1-1 About HySUT

HySUT

The Research Association of
Hydrogen Supply/Utilization
Technology

April 1st 2016

HySUT

The Association of Hydrogen
Supply and Utilization
Technology

1. Technology Development

- ✓ Fueling, Quality, Metering etc.
- ✓ Guidelines
- ✓ ISO/TC197

2. Safety and Reliability

- ✓ Future Technology
- ✓ Training and Education
- ✓ Database, Safety Control

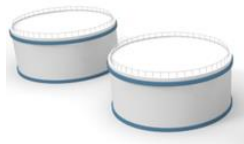
3. Support Program

- ✓ HRS Operation

4. Others

- ✓ Public Awareness
- ✓ International Collaboration

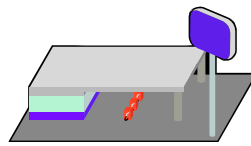
42 Member Companies and Organizations



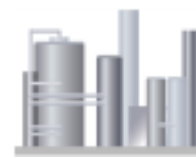
Oil



City gas /
Industrial gas



Hydrogen
station



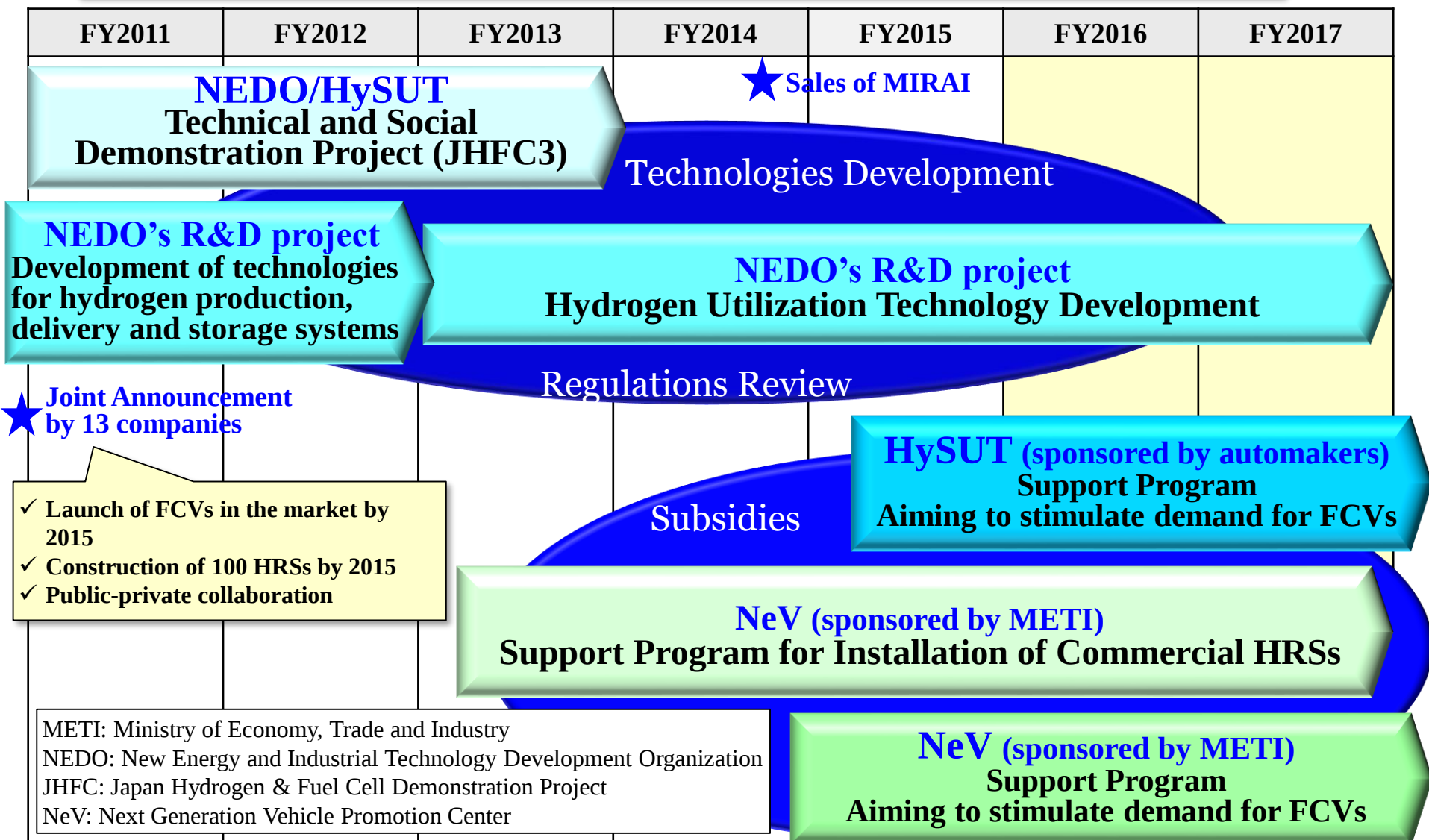
Engineering /
Machinery



Automotive

2. Overview of National Programs

2-1 Support Programs for Commercialization



2-2 Support Program for Installation of Commercial HRSs by NeV (sponsored by METI) in **FY2017**

Facility	Capacity (Nm3/h)	Type	Support	Max. amount (Million US\$)
HRS	300 or more	On-site (for bus refueling)	1/2	3.9
		Off-site (for bus refueling)	1/2	3.5
		On-site (Compact type)	2/3	2.9
		On-site (Others)	1/2	2.9
		Off-site (Compact type)	2/3	2.5
		Off-site (Others)	1/2	2.5
		Mobile	2/3	2.5
	50 or more and less than 300	On-site (Compact type)	2/3	2.2
		On-site (Others)	1/2	2.2
		Off-site (Compact type)	2/3	1.8
		Off-site (Others)	1/2	1.8
		Mobile	2/3	1.8
Gaseous Hydrogen Production and Shipping			1/2	0.6
Liquefied Hydrogen Shipping			1/2	0.4

2-3 Support Program Aiming to stimulate demand for FCVs in **FY2017**

Program by NeV (sponsored by METI)

Type	Max. support amount per HRS (million US\$)
On-site HRS	0.22
Off-site HRS	0.22
Mobile (Refueling site: 1)	0.22
Mobile (Refueling sites: 2 or more)	0.26
Capacity (Nm ³ /h): 50 or more and less than 100	0.16

Program by HySUT (sponsored by Automakers)

Type	Max. support amount per HRS (million US\$)
On-site HRS	0.11
Off-site HRS	0.11
Mobile (Refueling site: 1)	0.11
Mobile (Refueling sites: 2 or more)	0.13
Capacity (Nm ³ /h): 50 or more and less than 100	0.08

3. Deployment of FCVs and Commercial HRSs

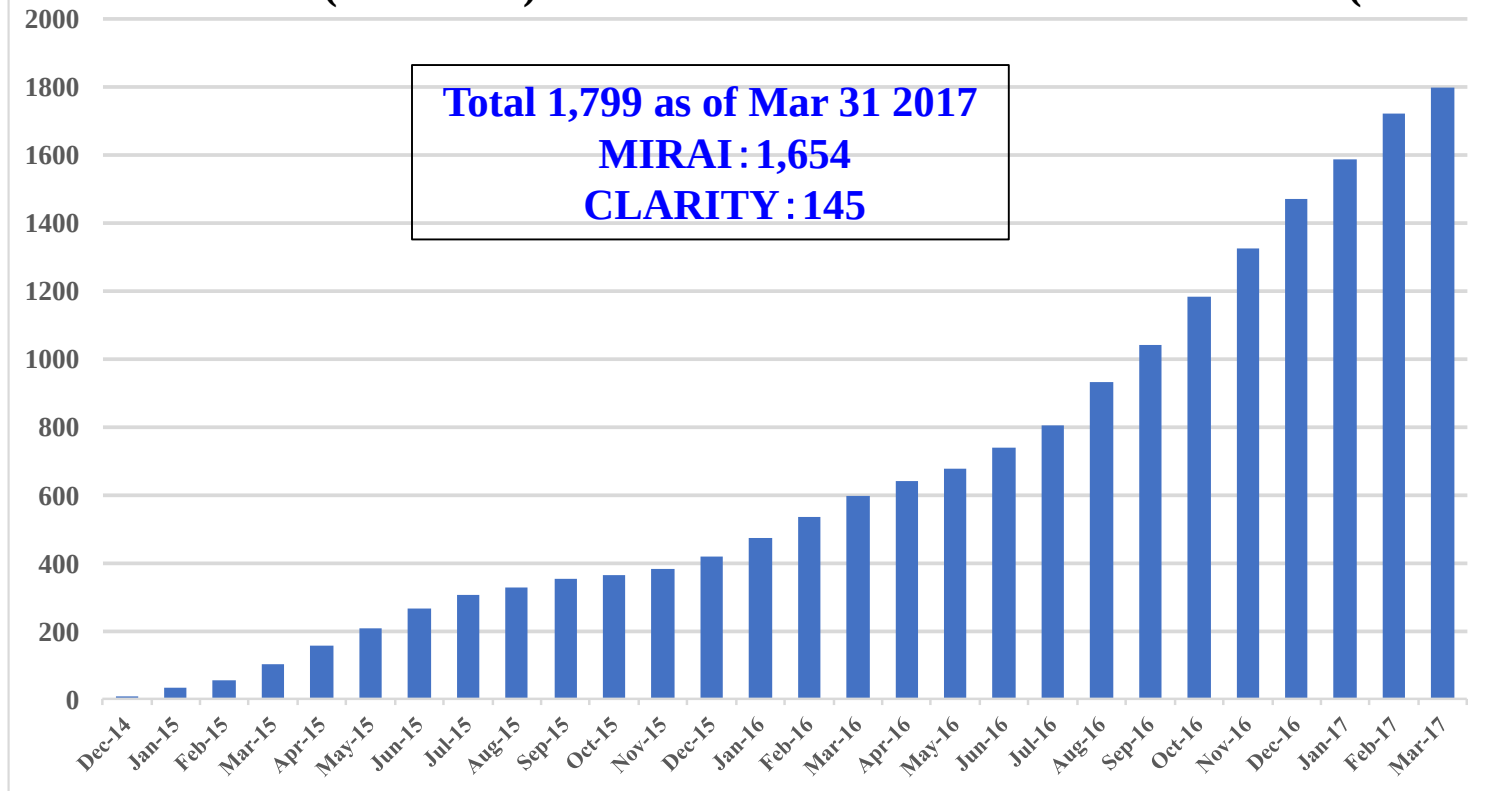
3-1 Number of registered FCVs in Japan



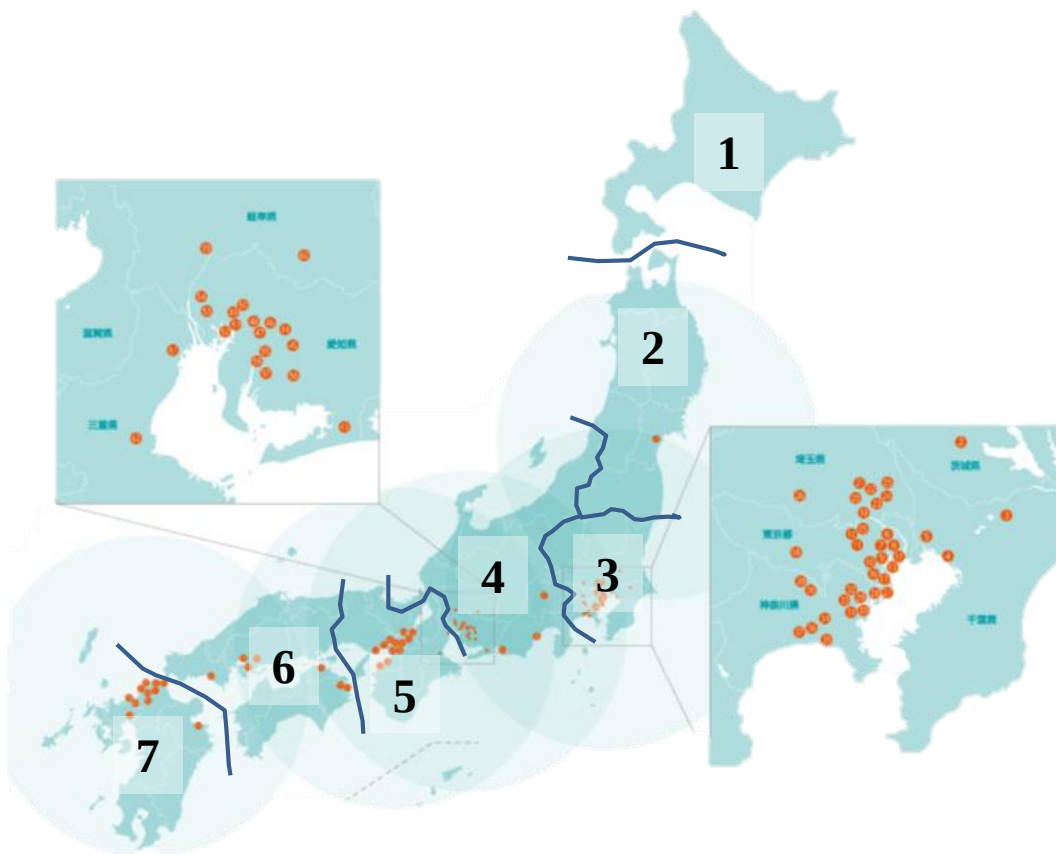
TOYOTA MIRAI (Dec. 2014)



HONDA CLARITY FUEL CELL (Mar. 2016)



3-2 Commercial HRSs (1)



Area	Number of HRSs	Number of FCVs (Feb.28 2017)
1. Hokkaido	0	4
2. Tohoku	1	8
3. Kanto	39	659
4. Chubu	22	714
5. Kansai	12	172
6. Chugoku/ Shikoku	6	62
7. Kyushu	12	104
Total	92	1,723

3-3 Commercial HRSs (2)

Company	Number of HRSs
JXTG Nippon Energy	40
Iwatani	16.5
Air Liquide Japan	4
Tokyo Gas	3
Toho Gas	2.5
Osaka Gas	2
Nippon Mobile Hydrogen Station Services	5
Toyota Tsusho Air Liquide Hydrogen Energy	2
Idemitsu Kosan, Saibu Gas Chubu Gas, Seiryu Power Energy Mie Hydrogen Station Shikoku Taiyo Nippon Station Oita EBL Hydrogen Station Others	1 to 2

Type	Number of HRSs
On-site	15
Off-site	44
Mobile	33
Total	92

3-4 Other Features



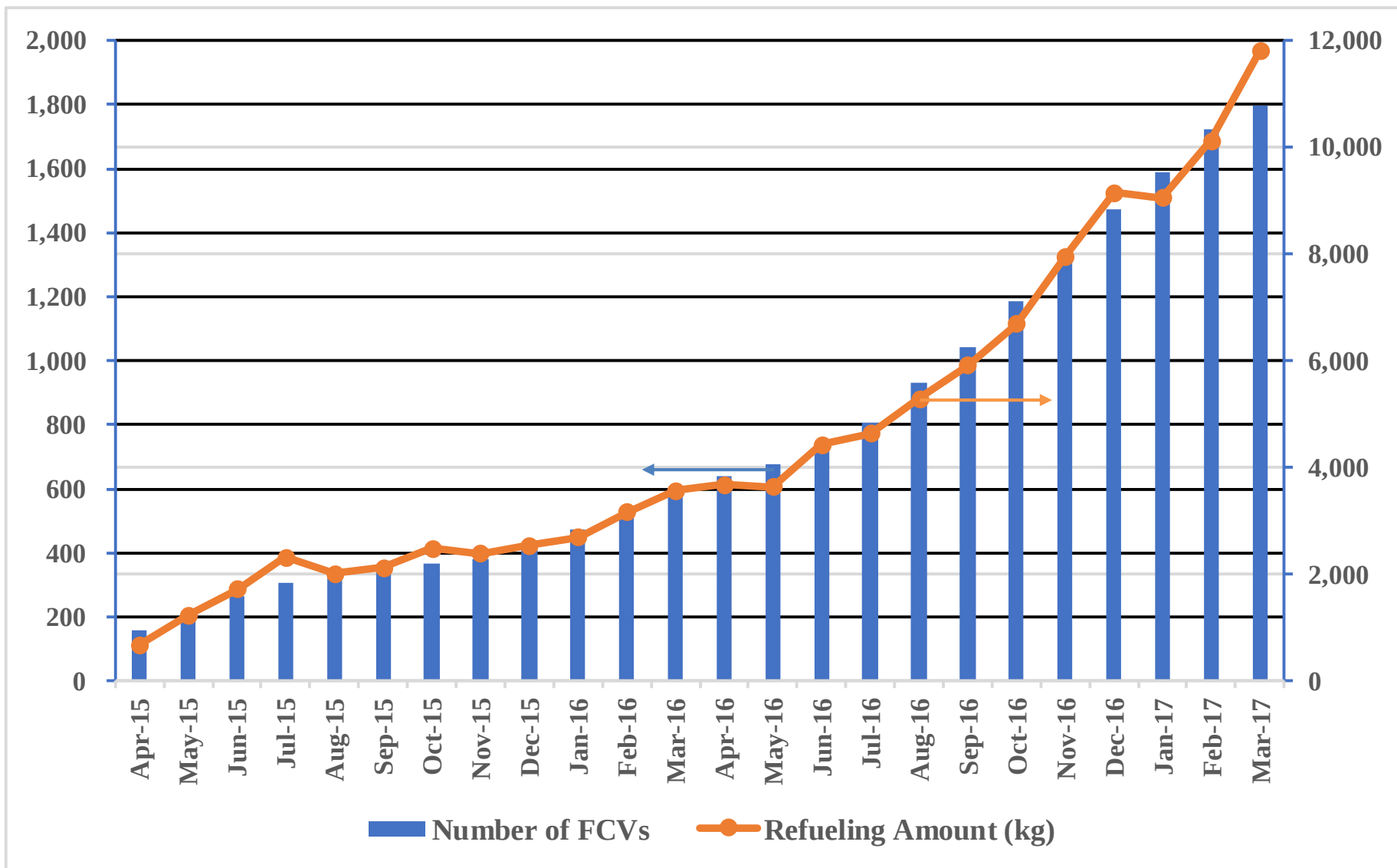
Ebina-Chuo Station by JXTG
(Multi-Fuel)



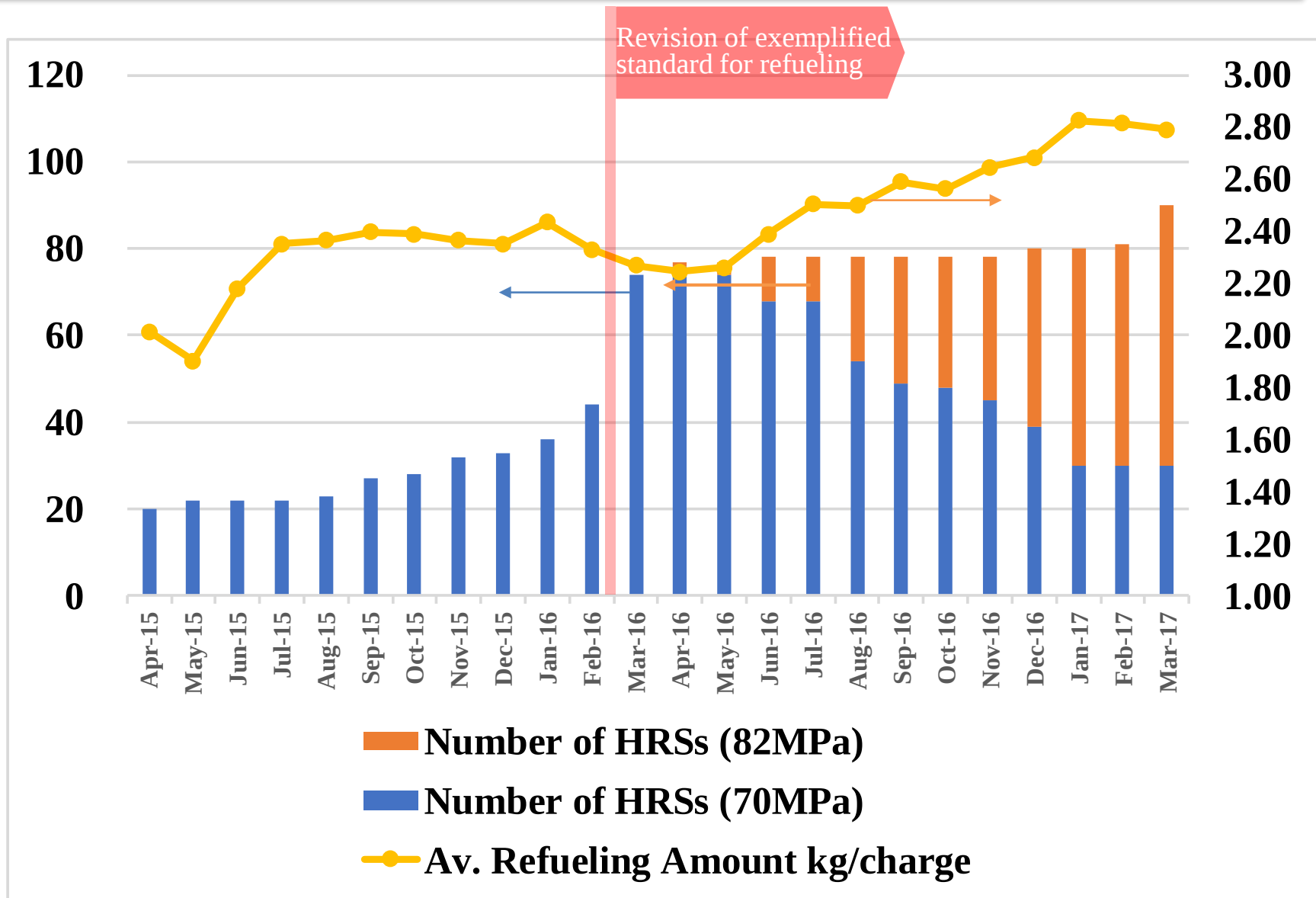
Narita Station by Idemitsu Kosan
(Narita Airport)

Features	Station
Multi-Fuel (Integrated gas station)	✓18 HRSs by JXTG
Multi-Fuel (Hydrogen, Gasoline, CNG,LPG)	✓ Nissin HRS by Toho Gas
Multi-Fuel (Hydrogen, CNG)	✓2 HRSs by Tokyo Gas
Multi-Fuel (Hydrogen, LPG)	✓Otsu HRS by Iwatani
Station with convenience store	✓2 HRSs by Iwatani
Near the highway	✓4 HRSs by JXTG ✓1 HRS by Toyota Tsusho
Airport	✓Narita HRS by Idemitsu Kosan ✓Kansai Airport HRS by Iwatani

3-5 Number of FCVs and Refueling Data at Commercial HRSs

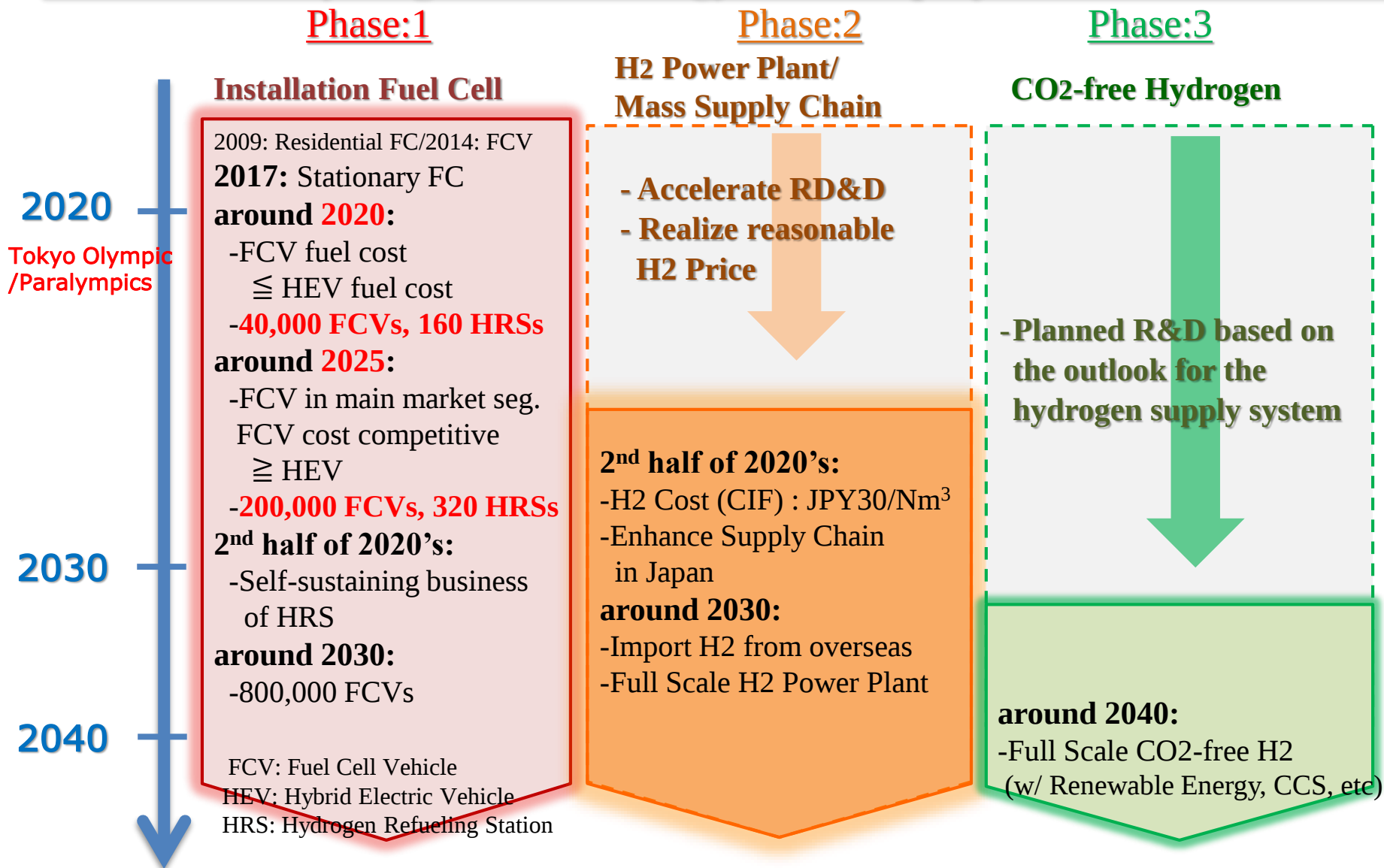


3-6 Refueling Data at Commercial HRSs

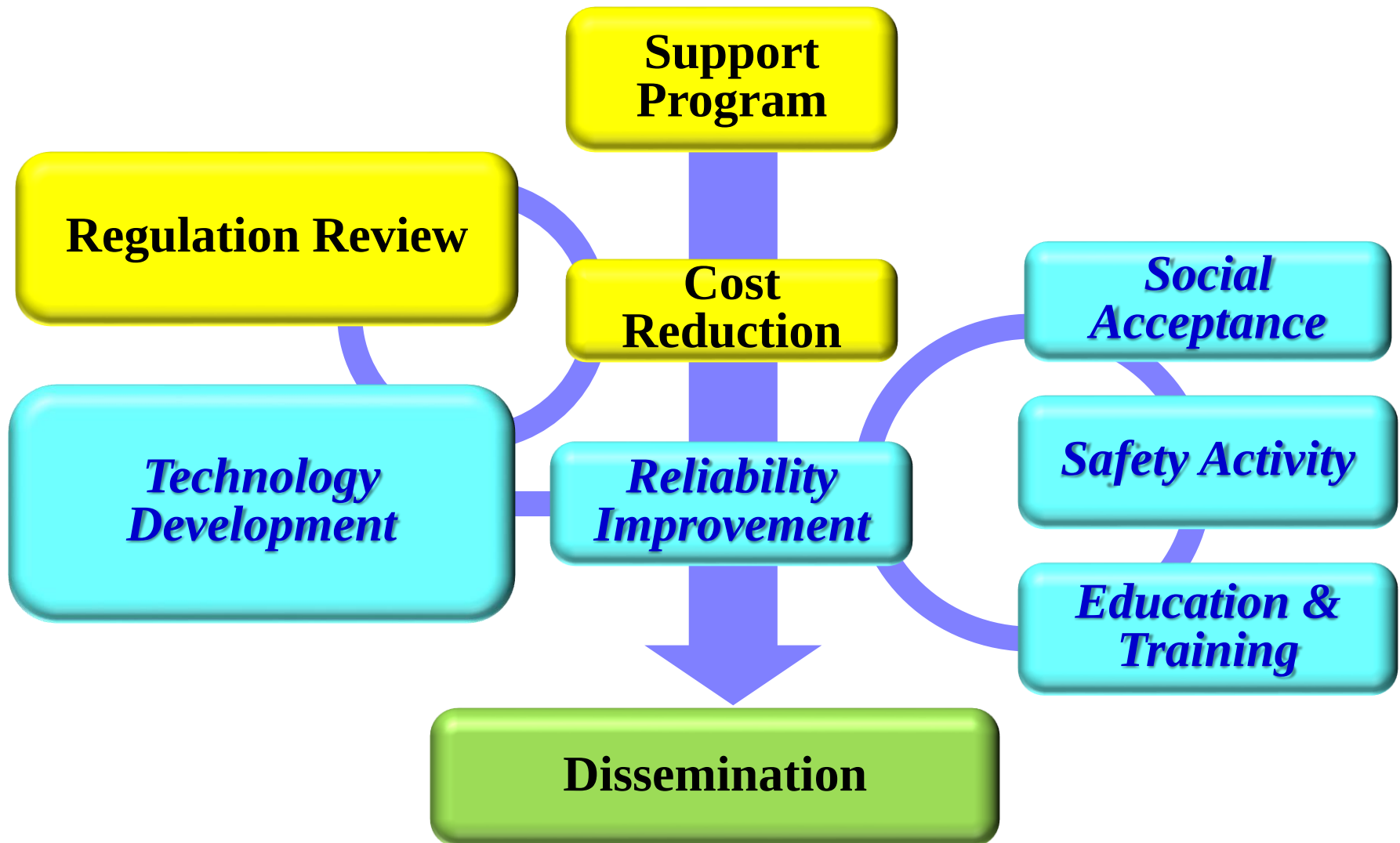


4. Future Issues

4-1 Revised Hydrogen/FC Strategy Roadmap by METI (March 2016)



4-2 Challenges for dissemination of FCV/Hydrogen Infrastructure



Thank you very much for your attention!



This report contains the results of the research program supported by New Energy and Industrial Technology Development Organization (NEDO).