

FCV and H₂ infrastructure in Japan, R&DD to dissemination

October 12th, 2012

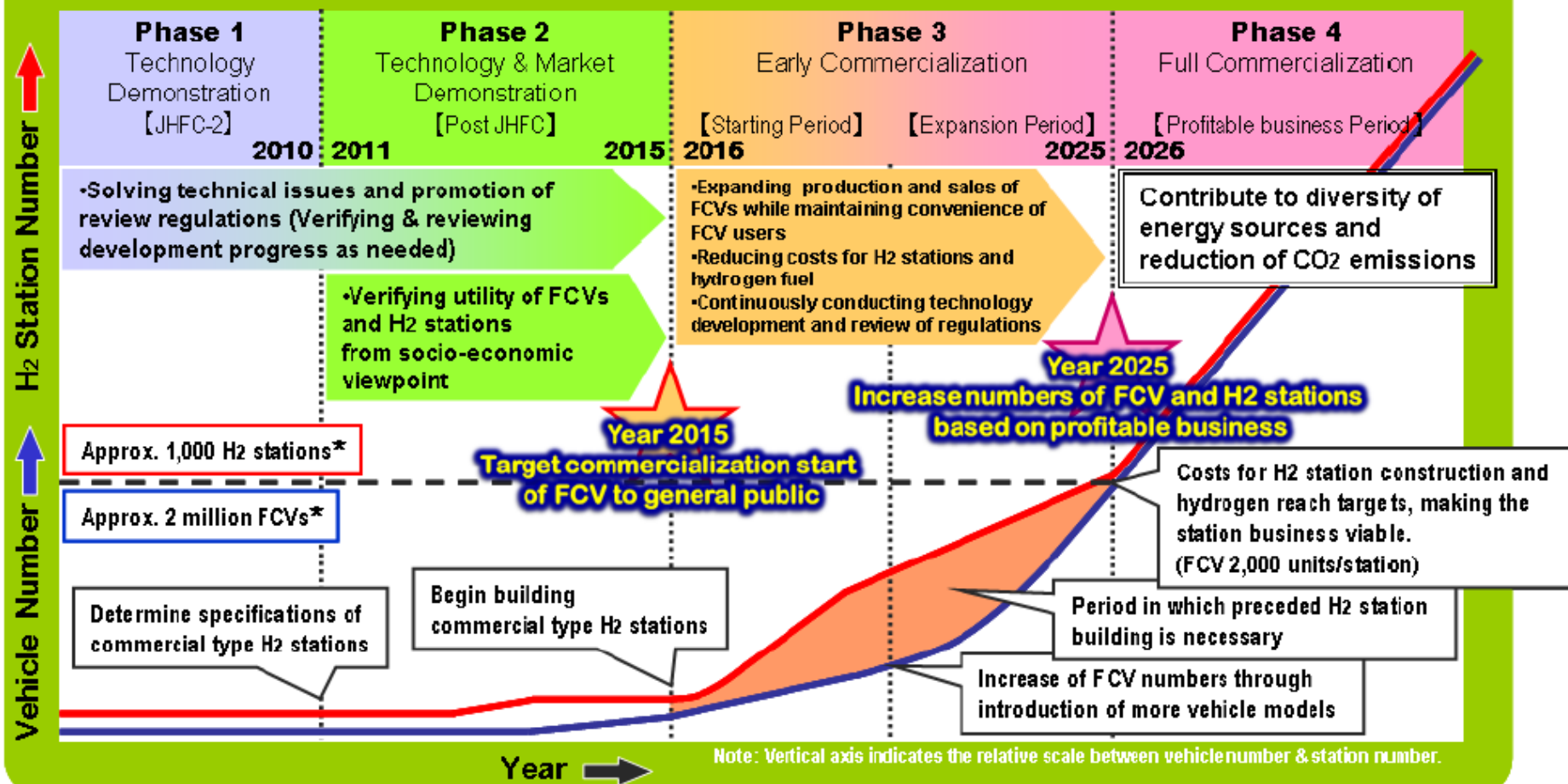
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(NEDO)

1. Commercialization Scenario

Commercialization Scenario for FCVs and H2 Stations



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

Source : Fuel Cell Commercialization Conference of Japan (FCCJ)

2. Phased Approach

■ In Policy

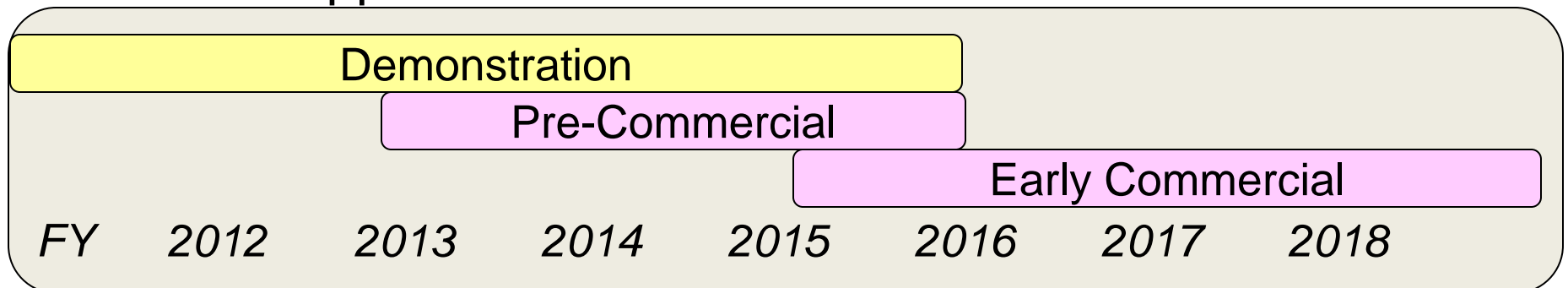
Important technology for energy conservation & global warming due to;

- high energy efficiency
- No CO₂ emission when producing power

■ In Practice

- Demo phase : JHFC 3 (*FY2011-2015*)
- Pre-Commercial : 100 HRS will be built with subsidy (*FY 2013-2015*)
- Early Commercial : business launched (*FY2015-*)

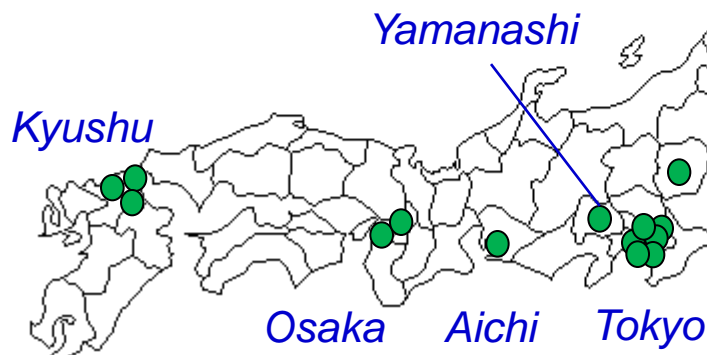
■ Phased Approach



3. Demo Project

- Japan Hydrogen Fuel Cell Demo Project Phase 3

- Executed by Research Association of Hydrogen Supply/Utilization Technology (HySUT)
- 16 HRS under operation
- 3 HRS under construction



➤ 50 FCVs

- Buses
- Passenger vehicles



3. Demo Project

- JHFC3 Contractual Scheme



Tokyo, Aichi and Osaka region

HySUT *

JX Nippon Oil & Energy

Toyota

Idemitsu Kosan

Honda

Showa Shell Sekiyu

Nissan

Cosmo Oil

Kawasaki Heavy Industries

Tokyo Gas

Iwatani

Osaka Gas

Taiyo Nippon Sanso

Toho Gas

Nikko City

**Engineering Advancement
Association of Japan**

**Nikko Hydrogen Energy Society
Promotion Council**

Yamanashi region

Yamanashi Prefecture

Iwatani

Kyushu region

Fukuoka Prefecture

Saga Prefecture

Kyushu University

Nippon Steel

**Kyushu Electric Power
Company**

**Tosu Environment
Development General Center**

Kyuden Technosystems

**Japan Air
Liquide**

HySUT: The Research Association of Hydrogen Supply / Utilization Technology*

4. Reference of Subsidy for Residential Fuel Cells named Ene-Farm

- METI introduced a subsidy program for Ene-Farm in FY2009.
- The subsidy will be phased out by FY2015.
- ENE-FARM dissemination is expected without subsidy after FY2016.



ENE-FARM subsidy

		FY 2009	FY2010	FY 2011			FY 2012
				Initial	1 st additional	2 nd additional	
Budget (M Yen)	Total	8,110	6,770	8,670	3,900		9,000
	Per unit	1.40	1.30	1.05	1.05	0.85	0.70
Inst. number		5,030	4,985	8,000	585	3,775	5,635
Accum. number		5,030	10,015	18,015	22,375		28,010
							40,310

Actual for FY2009 - 2011, planned for FY2012.

5. Auto OEM movement

Proceeding to sales

➤ OEMs are developing FCV



Toyota FCV-R



Nissan TeRRA



Honda Clarity

6. Outline of NEDO funded projects

- FC/FCV/H2 Infrastructure Budget



Million JPY

Project	Duration	FY2011 Budget	FY2012 Budget
Strategic Development of PEFC Technologies for Practical Application	2010-2014	3,841	3,500
Development of System and Elemental Technology on SOFC	2008-2012	618	618
R&D on Industrial Electric Power Generation by SOFC	2012-2014	—	900
Advanced Fundamental Research on H2 Storage Materials	2007-2011	595	—
Development of Technologies for H2 Production, Delivery and Storage Systems	2008-2012	1,486	1,500
Fundamental Research on Advanced H2 Science	2006-2012	694	800
JHFC Phase 3 (2/3 NEDO funding, 1/3 industry funding)	2011-2015	916 (excluding industry funding)	3,006 (ditto as left)
	Total	8,150	10,324

1. Commercialization Scenario
2. Phased approach from demo to commercialization
3. Demo project: JHFC3 by HySUT, 19 HRS & 50 FCV
4. Reference Subsidy : for Ene-Farm from 2009 till 2015
5. Auto OEM : developing FCV
6. Budget of NEDO projects

Thank you for your kind attention.

<http://www.nedo.go.jp/english/index.html>

