

Japan India Policy Research Workshop

Session 2: Update of climate change policies and measures among major countries

# Japan's INDC and current climate change policies



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# Agenda

1. Japan's INDC
2. Current climate change policy

# Process for the INDC development in Japan

## Preparation

- **Oct. 2014 – Apr. 2015** Open discussion by the **Joint Experts' Meeting of the Central Environment Council and the Industrial Structure**. (7 sessions). Energy policies and the energy mix were also discussed by the Advisory Committee for Natural Resources and Energy.
- **30 April 2015** Draft Outline of the INDC was discussed. Draft energy mix was also discussed on 28 April.
- **2 June** **Draft INDC** was discussed and approved by the Ministerial Headquarter for Global Warming.
- **3 June –** Public comment procedure (for 1 month)

## Submission and implementation

- Submitted the INDC on 17<sup>th</sup> July after the public comment procedure for the draft INDC was completed.
- Will Revise the Plan for Global Warming Countermeasures based on the Act on Promotion of Global Warming Countermeasures to implement the INDC.

# Emission reduction target for 2030 (1)

Emission of **1.042 Billion t-CO<sub>2</sub> in FY 2030**

= **26% reduction from FT2013** and 25.4% reduction from FY2005

- ❑ achieved by domestic emission reduction and removals.
- ❑ supported by bottom-up calculation of policies, measures and technologies, taking into account possible challenges including technical limitations and cost issues to ensure consistency with the energy mix.

## Scope

- 100 % Coverage of emission in Japan: all sectors and GHGs CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub>

## Assumptions and Methodologies

- in accordance with the latest IPCC GHG Inventory Guideline
- Net removals by forest and other carbon sinks are to be accounted by methodologies under the Kyoto Protocol.
- The Joint Crediting Mechanism (JCM) is not included as a basis of the bottom-up calculation of above numbers, but emission reductions and removals acquired by Japan will be appropriately counted as Japans' reduction.
- These methodologies are subject to future international negotiations on accounting rules.

# Target for 2030 (2)

## Gas by gas emissions

	Expected Emissions in FY2030 (Approx.)	Reduction Compared to FY 2013 and FY2005	
Energy-related CO <sub>2</sub>	927 Mt- CO <sub>2</sub>	- 25%	- 24 %
Non-energy- originated CO <sub>2</sub>	70.8 Mt- CO <sub>2</sub>	- 6.7%	- 17.0%
Methane	31.6 Mt- CO <sub>2</sub>	- 12.3%	- 18.8%
Nitrous Oxide	21.1 Mt- CO <sub>2</sub>	- 6.1%	- 17.4%
Fluorinated gases	28.9 Mt- CO <sub>2</sub>	- 25.1%	+ 4.5%

## Removals by carbon sink

37 Mt-CO<sub>2</sub> (2.6% of emission in FY2013 and FY2013)

# Target for 2030 (3)

## International Contributions

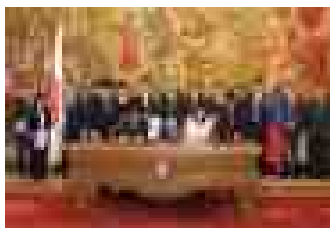
- Although it is not counted in the calculation of the reduction target, Japan will continue to implement the JCM.
- Apart from contributions achieved through private-sector based projects, accumulated emission reductions or removals by FY 2030 through governmental JCM programs to be undertaken within the government's annual budget are estimated to be ranging from 50 to 100 million t-CO<sub>2</sub>.

## Basic Concept of the JCM

Japan establishes and implements the JCM in order both to appropriately evaluate contributions from Japan to GHG emission reductions or removals in a quantitative manner achieved through the diffusion of low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions in developing countries, and to use them to achieve Japan's emission reduction target.

# (Reference) JCM Partner Countries

➤ Japan has held consultations for the JCM with developing countries since 2011 and has established the JCM with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile and Myanmar.



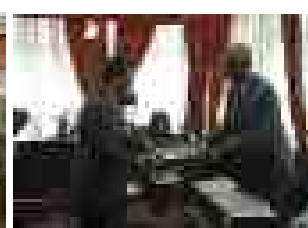
Mongolia  
Jan. 8, 2013  
(Ulaanbaatar)



Bangladesh  
Mar. 19, 2013  
(Dhaka)



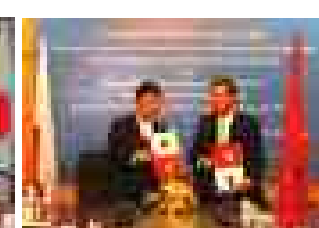
Ethiopia  
May 27, 2013  
(Addis Ababa)



Kenya  
Jun. 12, 2013  
(Nairobi)



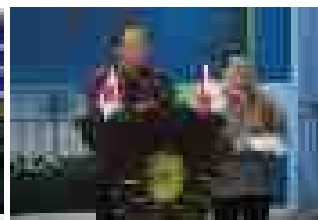
Maldives  
Jun. 29, 2013  
(Okinawa)



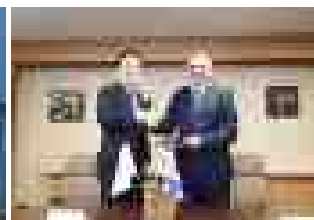
Viet Nam  
Jul. 2, 2013  
(Hanoi)



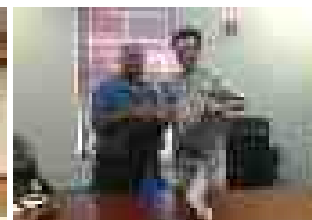
Lao PDR  
Aug. 7, 2013  
(Vientiane)



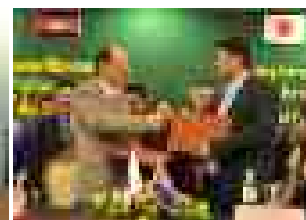
Indonesia  
Aug. 26, 2013  
(Jakarta)



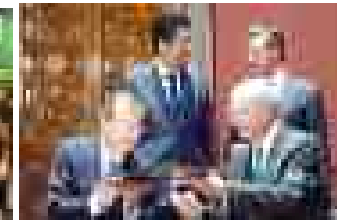
Costa Rica  
Dec. 9, 2013  
(Tokyo)



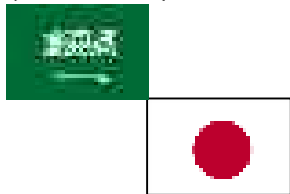
Palau  
Jan. 13, 2014  
(Ngerulmud)



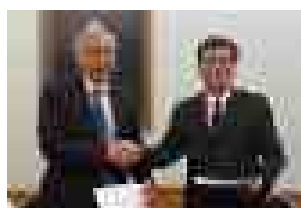
Cambodia  
Apr. 11, 2014  
(Phnom Penh)



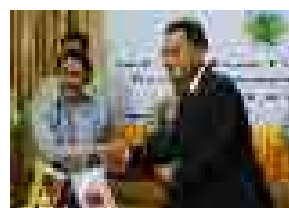
Mexico  
Jul. 25, 2014  
(Mexico City)



Saudi Arabia  
May 13, 2015



Chile  
May 26, 2015  
(Santiago)



Myanmar  
Sep. 16, 2015  
(Nay Pyi Taw)

➤ Three (3) JCM projects between Indonesia and Japan, one (1) JCM project between Palau and Japan, two (2) JCM projects between Mongolia and Japan and one (1) JCM project between Viet Nam and Japan have been registered respectively.

# Energy mix used for the emission reduction target

	FY2030
Final energy consumption	326 M kl
(Energy efficiency measures)	50 M kl

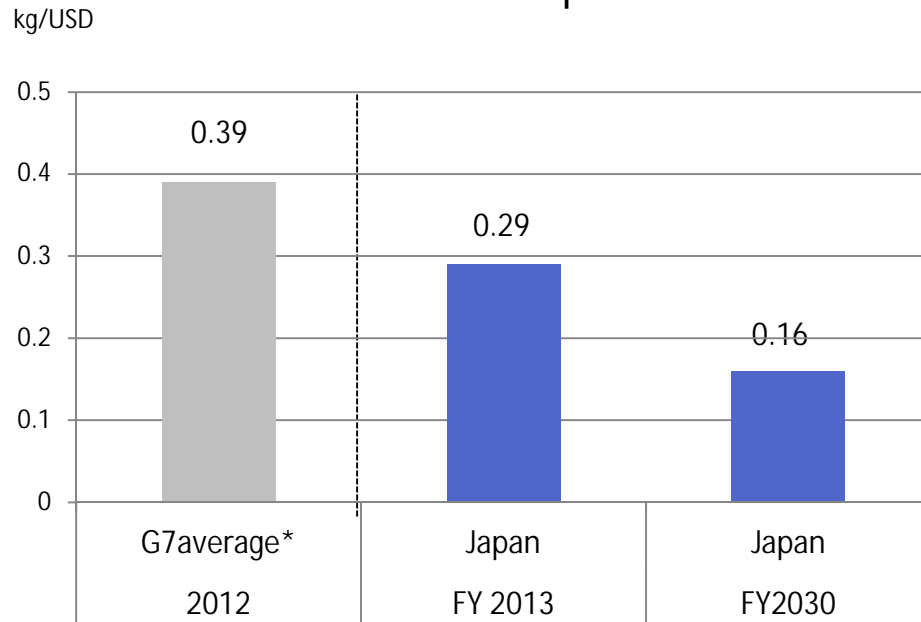
Total power generation	approx. 1065 M kWh
Renewables	approx. 22-24%
Nuclear power	approx. 22-20%
Coal	approx. 26%
LNG	approx. 27%
Oil	approx. 3%
(within renewables)	
Solar	approx. 7%
Wind power	approx. 1.7%
Geothermal	approx. 1.0-1.1%
Hydro power	approx. 8.8-9.2%
Biomass	approx. 3.7-4.6%



# Trend of GHG emissions per GDP and GHG emissions per capita

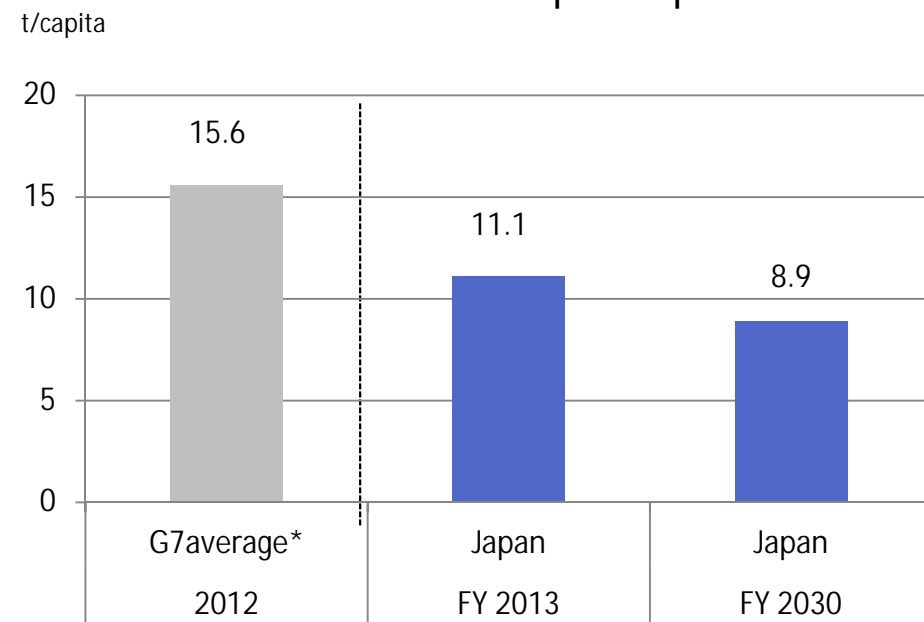
- Japan's GHG emissions per gross domestic product (GDP) are 0.29 kg-CO<sub>2</sub>eq./U.S. dollar in 2013 and per capita are 11t-CO<sub>2</sub>eq./person in 2013, all of which are already at the leading level among developed countries.
- The indicators noted above are projected to improve by around 20 to 40% by 2030 with further measures to reduce emissions.

## GHG emissions per GDP



\* average of the other G7 nations (excluding Japan)

## GHG emissions per capita



\* average of the other G7 nations (excluding Japan)

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# 2020 Emissions Reduction Target (submitted in 2013)

Emissions reduction target	3.8 % below the base year
Base year	FY2005
Target year	FY2020
Covered gases	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> and NF <sub>3</sub>
GWP	IPCC Fourth Assessment Report (AR4)
Covered sector	Energy, Transport, Industrial Processes, Agriculture, LULUCF and Waste
Removals from the LULUCF	Included (Activity-based approach)
Market based mechanisms	Joint Crediting Mechanism (JCM)
Nature of the target	This is a target at this point, which has not yet taken into account the emission reduction effect resulting from nuclear power, given that the energy policy and energy mix, including the utilization of nuclear power, are still under consideration. A firm target, based on further review of the energy policy and energy mix, will eventually be set at a later stage.
Plan for achieving the target	The Plan for Global Warming Prevention, as replacement of the Kyoto Protocol Target Achievement Plan, will be developed.

# Toward Achievement of the 2020 Target

The target will be achieved by implementing the following measures, while attaining the economic growth goal set by the government:

- ◆ 20% improvement in energy intensity, which is at the world leading level
- ◆ Improvement of emission factor of electricity by introducing renewable energy
- ◆ Strengthening fluorocarbons countermeasures based on amended law on fluorocarbons
- ◆ Application of the "Joint Crediting Mechanism (JCM)"
- ◆ Enhancement of forest management and other sinks activities

# Framework of Policies and Measures

Japan is implementing a variety of policies and measures and strictly reviewing their progress.

Basic Environment Law

Basic Environment Plan

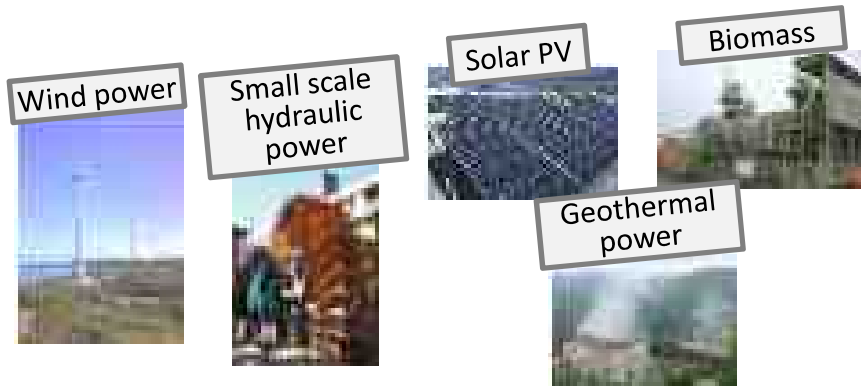
Act on Promoting of Global Warming Countermeasures

- ✓ Plan for Global Warming Prevention (To be developed)
- ✓ National and Local Government Action Plan
- ✓ Guidelines for Controlling Emissions
- ✓ GHG Emissions Accounting, Reporting and Disclosure System
- ✓ Center for Climate Change Action
- ✓ Emissions Trading in Kyoto Mechanisms (Registry)
- ✓ Global Warming Prevention Headquarters

# Key Policies and Measures (Energy Conversion & Industry)

## Feed-in Tariff

- Operation of a feed-in-tariff scheme for renewable energies



## Industry's Action Plans

- GHG emissions reduction plans including 2020 targets by 95 industry groups, covering 80% of energy related CO<sub>2</sub>
- Being strictly assessed and verified by the government in a transparent way
- Challenging aggressive targets is encouraged

## Low-Carbonization of Electricity

- To call on the power sector to develop a sector-wide framework for reducing CO<sub>2</sub> emissions
- To require new fossil fuel-fired power plants to adopt best available technologies

## Energy Conservation Law

- Measurement and reporting of energy consumption by business operators
- Energy efficiency standards for buildings and houses
- "Top Runner program" applied to household appliances, equipment and automobiles

# Key Policies and Measures (Transport, Commercial & Residential)

## Highly Energy-Efficient Vehicles

- To increase highly energy-efficient next-generation vehicles in the new car sales by creating initial demand, supporting



Hybrid vehicles (HEV)



Electric vehicles (EV)



Fuel cell vehicles (FCV)

Share of next-generation vehicles

**50 ~ 70 %** (by FY2030)

## Top Runner Program

- Mandatory program for manufacturers and importers to fulfill energy efficiency targets within 3 to 10 years, encouraging competition and innovation of energy efficiency



Air-conditioners

**32.3 %** (FY1997→FY2007)



Electric refrigerators

**43.0 %** (FY2005→FY2010)

## Low-Carbonization of Houses and Buildings

- To comply with energy efficiency standards for newly constructed houses and buildings by 2020

## National Campaign for Low-Carbon Society

- A variety of initiatives and activities to involve citizens for GHG reductions

COOLBIZ

WARMBIZ



smart  
move

ECO  
DRIVER





Thank you for your attention