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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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 17th 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-CO2 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 CO₂, CH₄, N₂O, HFCs, PFCs, SF₆ and NF₃

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 Japan’s reduction.
- These methodologies are subject to future international negotiations on accounting rules.
### Gas by gas emissions

<table>
<thead>
<tr>
<th></th>
<th>Expected Emissions in FY2030 (Approx.)</th>
<th>Reduction Compared to FY 2013 and FY2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy-related CO₂</td>
<td>927 Mt- CO₂</td>
<td>- 25%</td>
</tr>
<tr>
<td>Non-energy-originated CO₂</td>
<td>70.8 Mt- CO₂</td>
<td>- 6.7%</td>
</tr>
<tr>
<td>Methane</td>
<td>31.6 Mt- CO₂</td>
<td>- 12.3%</td>
</tr>
<tr>
<td>Nitrous Oxide</td>
<td>21.1 Mt- CO₂</td>
<td>- 6.1%</td>
</tr>
<tr>
<td>Fluorinated gases</td>
<td>28.9 Mt- CO₂</td>
<td>- 25.1%</td>
</tr>
</tbody>
</table>

### Removals by carbon sink

37 Mt-CO₂ (2.6% of emission in FY2013 and FY2013)
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.

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-CO2.

Basic Concept of the JCM
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.

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

<table>
<thead>
<tr>
<th>Total power generation</th>
<th>FY2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final energy consumption</td>
<td>326 M kl</td>
</tr>
<tr>
<td>(Energy efficiency measures)</td>
<td>50 M kl</td>
</tr>
<tr>
<td><strong>Total power generation</strong></td>
<td>approx. 1065 M kWh</td>
</tr>
<tr>
<td>Renewables</td>
<td>approx. 22-24%</td>
</tr>
<tr>
<td>Nuclear power</td>
<td>approx. 22-20%</td>
</tr>
<tr>
<td>Coal</td>
<td>approx. 26%</td>
</tr>
<tr>
<td>LNG</td>
<td>approx. 27%</td>
</tr>
<tr>
<td>Oil</td>
<td>approx. 3%</td>
</tr>
<tr>
<td>(within renewables)</td>
<td></td>
</tr>
<tr>
<td>Solar</td>
<td>approx. 7%</td>
</tr>
<tr>
<td>Wind power</td>
<td>approx. 1.7%</td>
</tr>
<tr>
<td>Geothermal</td>
<td>approx. 1.0-1.1%</td>
</tr>
<tr>
<td>Hydro power</td>
<td>approx. 8.8-9.2%</td>
</tr>
<tr>
<td>Biomass</td>
<td>approx. 3.7-4.6%</td>
</tr>
</tbody>
</table>
Japan’s GHG emissions per gross domestic product (GDP) are 0.29 kg-CO2eq./U.S. dollar in 2013 and per capita are 11t-CO2eq./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.

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

- **GHG emissions per GDP**
  - G7average*: 0.39 kg/USD
  - Japan: 0.29 kg/USD
  - Japan FY2030: 0.16 kg/USD

- **GHG emissions per capita**
  - G7average*: 15.6 t/capita
  - Japan: 11.1 t/capita
  - Japan FY2030: 8.9 t/capita

* average of the other G7 nations (excluding Japan)

**Sources** Compiled from Japan’s INDC, “Long-term Energy Supply and Demand Outlook” and related materials, GHG Inventories, IEA estimates and UN “World Population Prospects”
1. Japan’s INDC
2. Current climate change policy
# 2020 Emissions Reduction Target

<table>
<thead>
<tr>
<th>Emissions reduction target</th>
<th>3.8 % below the base year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base year</td>
<td>FY2005</td>
</tr>
<tr>
<td>Target year</td>
<td>FY2020</td>
</tr>
<tr>
<td>Covered gases</td>
<td>CO₂, CH₄, N₂O, HFCs, PFCs, SF₆ and NF₃</td>
</tr>
<tr>
<td>GWP</td>
<td>IPCC Fourth Assessment Report (AR4)</td>
</tr>
<tr>
<td>Covered sector</td>
<td>Energy, Transport, Industrial Processes, Agriculture, LULUCF and Waste</td>
</tr>
<tr>
<td>Removals from the LULUCF</td>
<td>Included (Activity-based approach)</td>
</tr>
<tr>
<td>Market based mechanisms</td>
<td>Joint Crediting Mechanism (JCM)</td>
</tr>
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</table>

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

- 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
Feed-in Tariff

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

Low-Carbonization of Electricity

- To call on the power sector to develop a sector-wide framework for reducing CO₂ emissions
- To require new fossil fuel-fired power plants to adopt best available technologies

Industry’s Action Plans

- GHG emissions reduction plans including 2020 targets by 95 industry groups, covering 80% of energy related CO₂
- Being strictly assessed and verified by the government in a transparent way
- Challenging aggressive targets is encouraged

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 R&D, etc.
  - 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

**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

- Air-conditioners
  - 32.3% (FY1997→FY2007)
- Electric refrigerators
  - 43.0% (FY2005→FY2010)
Act on Rational Use & Proper Management of Fluorocarbons

- To promote low-GWP/non-fluorocarbons in refrigeration and air-conditioning
- To prevent leakage during operation
- To promote recovery and destruction

Actions in the Waste Management Sector

- To promoting waste reduction and recycling
- To reduce direct landfill disposal of organic waste
- To upgrade combustion technology at waste and sewage sludge incineration facilities

Tax for Climate Change Mitigation

- Tax rate corresponding to the amount of CO₂ emissions for all fossil fuels
- Enforced from Oct. 2012 and increases in the tax rate gradually over 3 and a half years
- All the tax revenue are allocated for curbing energy-originated CO₂ emissions
Thank you for your attention