Japan's Climate Change Policies

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GHG Emissions Trend (1990-2013)

Emissions by sector in FY 2013 (excluding LULUCF)

- Energy: 89%
- Industrial Processes and Product Use (IPPU): 6%
- Agriculture: 3%
- Waste: 2%
- CO2

**GHG Emissions Trend by Sector / by Gas (1990-2013)**

**Emissions trend by sector**

- Energy
- IPPU
- Agriculture
- Waste

**Emissions trend by gas**

- CO₂
- CH₄
- N₂O
- F-gases


Note: The values of GHG emissions are based on the 2015 GHG inventory submission, which were revised from the values reported in the BR1/NC6.
Change of National Circumstances after the Great East Japan Earthquake

- Date : 11 March 2011
- Magnitude : 9.0 (the largest magnitude recorded in Japan’s history)

Casualties (as of May, 2015)

<table>
<thead>
<tr>
<th></th>
<th>Dead: 15,891</th>
<th>Missing: 2,579</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building damage (as of May, 2015)</td>
<td>Total collapse: 124,657</td>
<td>Half collapse: 274,340</td>
</tr>
</tbody>
</table>

Estimated economic damage

<p>| |</p>
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<tbody>
<tr>
<td>Estimated economic damage</td>
</tr>
<tr>
<td>JPY 16.9 trillion (USD 170 billion)</td>
</tr>
</tbody>
</table>

Trend of Electric Power Sources

- Renewable
- Hydraulic
- Oil
- LNG
- Coal
- Nuclear

Fukushima Dai-ichi Nuclear Power Station
(Loss of all power sources due to the Earthquake and Tsunami)

All nuclear reactors (48 reactors) are suspended. (under inspection)
Trends of Energy Consumption and GHG Intensity

Final energy consumption

Source: General Energy Statistics of Japan (April, 2015)

GHG intensity of GDP


Note: The values of GHG emissions are based on the 2015 GHG inventory submission, which were revised from the values reported in the BR1/NC6.
Based on the Act on Promotion of Global Warming Countermeasures

Ministry of the Environment (Low-carbon Society Promotion Office, Global Environment Bureau)

**Ministry of the Environment** (Low-carbon Society Promotion Office, Global Environment Bureau) is responsible for inventory compilation. It interacts with various organizations including the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat and private agencies to gather and submit data on greenhouse gas emissions.

**Committee for the GHG Emissions Estimation Methods**
- Review and approval of estimation methodologies

**GHG Inventory Quality Assurance Working Group**
- Expert Peer Review of inventory (QA)

**UNFCCC Secretariat**
- Inventory Submission

**Ministry of Foreign Affairs of Japan**
- Inventory Submission

**Private Agencies**
- Request for reviewing NIR&CRF (QC)

**Other Stakeholder Organizations**

**Relevant Ministries**
- Ministry of Economy, Trade and Industry
- Ministry of Land, Infrastructure and Transport
- Ministry of Agriculture, Forestry and Fisheries
- Ministry of Health, Welfare and Labor
- Ministry of Finance
- Ministry of Internal Affairs and Communications
- Ministry of the Environment (Other sections)

Data requests and revisions are made according to the institutional arrangement set forth in Japan's National Inventory System.
# 2020 Emissions Reduction Target (Submitted in 2013)

<table>
<thead>
<tr>
<th><strong>Emissions reduction target</strong></th>
<th>3.8 % below the base year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base year</strong></td>
<td>FY2005</td>
</tr>
<tr>
<td><strong>Target year</strong></td>
<td>FY2020</td>
</tr>
<tr>
<td><strong>Covered gases</strong></td>
<td>CO₂, CH₄, N₂O, HFCs, PFCs, SF₆ and NF₃</td>
</tr>
<tr>
<td><strong>GWP</strong></td>
<td>IPCC Fourth Assessment Report (AR4)</td>
</tr>
<tr>
<td><strong>Covered sector</strong></td>
<td>Energy, Transport, Industrial Processes, Agriculture, LULUCF and Waste</td>
</tr>
<tr>
<td><strong>Removals from the LULUCF</strong></td>
<td>Included (Activity-based approach)</td>
</tr>
<tr>
<td><strong>Market based mechanisms</strong></td>
<td>Joint Crediting Mechanism (JCM)</td>
</tr>
<tr>
<td><strong>Nature of the target</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Plan for achieving the target</strong></td>
<td>The Plan for Global Warming Prevention, as replacement of the Kyoto Protocol Target Achievement Plan, will be developed.</td>
</tr>
</tbody>
</table>
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
# Projections for 2020 (indirect emissions)

<table>
<thead>
<tr>
<th></th>
<th>BY (FY2005)</th>
<th>Estimated emissions in FY2020</th>
<th>(B-A)/A</th>
<th>Compared to BY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A [Million t-CO₂eq.]</td>
<td>B [Million t-CO₂eq.]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy-originated CO₂</td>
<td>1,203</td>
<td>1,208</td>
<td>+0.4%</td>
<td></td>
</tr>
<tr>
<td>Industry</td>
<td>459</td>
<td>484</td>
<td>+5.4%</td>
<td></td>
</tr>
<tr>
<td>Commercial and others</td>
<td>236</td>
<td>263</td>
<td>+11.4%</td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>174</td>
<td>176</td>
<td>+1.1%</td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td>254</td>
<td>190</td>
<td>-25.2%</td>
<td></td>
</tr>
<tr>
<td>Energy conversion</td>
<td>79</td>
<td>95</td>
<td>+20.3%</td>
<td></td>
</tr>
<tr>
<td>Non-energy-originated CO₂</td>
<td>80</td>
<td>70</td>
<td>-12.5%</td>
<td></td>
</tr>
<tr>
<td>Methane</td>
<td>23</td>
<td>18</td>
<td>-21.7%</td>
<td></td>
</tr>
<tr>
<td>Nitrous oxide</td>
<td>24</td>
<td>22</td>
<td>-8.3%</td>
<td></td>
</tr>
<tr>
<td>Fluorinated gases</td>
<td>22</td>
<td>46</td>
<td>+109.1%</td>
<td></td>
</tr>
<tr>
<td>HFCs</td>
<td>11</td>
<td>41</td>
<td>+272.7%</td>
<td></td>
</tr>
<tr>
<td>PFCs</td>
<td>7</td>
<td>3</td>
<td>-57.1%</td>
<td></td>
</tr>
<tr>
<td>SF₆</td>
<td>5</td>
<td>2</td>
<td>-60.0%</td>
<td></td>
</tr>
<tr>
<td>NF₃</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
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</tbody>
</table>

Note: The projection was prepared based on the 2013 GHG inventory submission. The coverage, methodologies and GWP used are different from the latest GHG inventory submission. CO₂ emissions from electricity generation are allocated to each sector based on the amount of electricity consumption.
Content of Japan’s INDC

Japan’s INDC*

*Intended Nationally Determined Contributions

○ Set the target of **26.0% reduction by FY2030 compared to FY2013 (25.4% reduction compared to FY2005)** (approximately 1.042 billion t-CO$_2$) based on the amount of domestic emission reductions and removals assumed to be obtained.

○ Set as a feasible target, ensuring consistency with its energy mix, making bottom-up calculation with concrete policies and measures, and taking technological and cost constraints into adequate consideration.

Toward Submission of INDC

○ On June 2, 2015 INDC was approved at Global Warming Prevention Headquarters, and public comment period was carried out.

○ After hearing public comments, INDC was decided at Global Warming Prevention Headquarters, and submitted to UNFCCC Secretariat on July 17, 2015.
Prime Minister, Shinzo Abe to the 189th Session of the Diet: “We will mobilize all measures to promote thorough energy conservation and introduce renewable energies to the greatest possible extent.”

- Present
- Economic growth
- Households increase

- Energy demands framework
- Energy saving

- Energy demands with energy-saving measures
- Natural increase without energy-saving measures

- Energy demands with energy-saving measures

- Energy supply framework
- Renewable
- Nuclear
- Thermal
- Coal
- Gas
- Heavy/Light oil etc.

- Co2 emissions
- Oil-fired
- Gas-fired
- Coal-fired

*Also removals from forest, CH₄ reduction, measures against fluorocarbons etc.
Japan will pursue the goal of **80% reduction in GHG emission by 2050** in order to fulfill the responsibility as an industrialized country, as is stated in the fourth Basic Environmental Plan (revised in April 2012).

Global Environment Committee presented the picture of 80% GHG reduction in 2050 as follows:

- In the end-use sector, large-scale energy saving and electrification would be realized particularly in Building and Transportation sectors, which leads to approx. 40% reduction in final energy consumption.
- Energy would be decarbonized, which leads to renewable energy deployment accounting for approx. half of primary energy supply.
- 200 Mt-CO$_2$ would be captured and stored per year.

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**Final Energy Consumption**

**Primary Energy Supply**

**GHG Emissions**

Cited from: “Report on Policies and Measures beyond 2013” by Global Environment Committee under the Central Environment Council (June 2012)
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
- GHG emissions reduction plans including 2020 targets by 95 industry groups, covering 80% of energy related CO\textsubscript{2}
- Being strictly assessed and verified by the government in a transparent way
- Challenging aggressive targets is encouraged

**Industry’s Action Plans**
- GHG emissions reduction plans including 2020 targets by 95 industry groups, covering 80% of energy related CO\textsubscript{2}
- 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\textsubscript{2} 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 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

**Improvement of energy efficiency**
- **Air-conditioners**
  - 32.3% (FY1997→FY2007)

- **Electric refrigerators**
  - 43.0% (FY2005→FY2010)

**National Campaign for Low-Carbon Society**
- A variety of initiatives and activities to involve citizens for GHG reductions
Other Key Policies and Measures

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
Joint Crediting Mechanism (JCM) 14 partner countries as of May 2015

- **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 (Riyadh)

- **Chile**
  - May 26, 2015 (Santiago)
JCM project pipelines
(Selected projects under Financing Programme and Demonstration Projects)

**Mongolia**
- Upgrading and Installation of Centralized Control System of High-Efficiency Heat Only Boiler (HOB)
- High efficiency and low loss power transmission and distribution system

**Kenya**
- Solar Diesel Abatement Projects

**Bangladesh**
- Energy Saving for Air Conditioning & Facility Cooling by High Efficiency Centrifugal Chiller (Suburbs of Dhaka)

**Malaysia**
- PV power generation and relevant monitoring system for the office building
- Thin-Film solar power plant

**Viet Nam**
- Anaerobic Digestion of Organic Waste for Biogas Utilization at Market
- Eco-driving with the Use of Digital Tachographs
- Introduction of amorphous high efficiency transformers in power distribution systems
- Energy saving by inverter air conditioner optimum operation at National Hospital
- Energy saving by BEMS optimum operation at Hotel

**Palau**
- Small-Scale Solar Power Plant for Commercial Facilities in Island States Project
- Small-Scale Solar Power Plants for Commercial Facilities Project II
- Solar PV System for Schools Project

**Indonesia**
- Energy Saving for Air-Conditioning and Process Cooling at Textile Factory (in Batang city)
- Energy Savings at Convenience Stores
- Energy Efficient Refrigerants to Cold Chain Industry
- Energy Saving by Double Bundle-Type Heat Pump at Beverage Plant
- Energy Saving for Air-Conditioning and Process Cooling at Textile Factory
- Power Generation by Waste Heat Recovery in Cement Industry
- Solar Power Hybrid System Installation to Existing Base Transceiver Stations in Off-grid Area
- Energy Saving through Introduction of Regenerative Burners to the Aluminum Holding Furnace of the Automotive Components Manufacturer
- Energy Saving for Textile Factory Facility Cooling by High Efficiency Centrifugal Chiller
- Introduction of high efficient Old Corrugated Cartons Process at Paper Factory
- Reducing GHG emission at textile factories by upgrading to air-saving loom
- Energy saving by optimum operation at Oil factory
- Utility facility operation optimization technology into Oil factory

**Maldives**
- Solar Power on Rooftop of School Building Project
- Smart Micro-Grid system for POISED Project in Addu Atoll

**Red**: JCM Model Project
**Black**: ADB JF JCM Project
**Green**: Demonstration Project
日本的总温室气体排放量在财年2013年为1,408 Mt CO₂ eq.

- 日本的财年2020目标是在财年2005水平下减少3.8%。
- 日本的财年2030目标是在财年2013水平下减少26%（INDC）。
- 全球变暖防止计划将被制定。
- 日本正在促进建立和实施联合归因机制。
- 日本正在实施各种政策和措施，并连续审查其进展。

谢谢您的关注。