

Japan's National Greenhouse Gas Emissions in Fiscal Year 2011 (Preliminary Figures) <Executive Summary>

Concerning the estimation of the preliminary figures: this estimation of greenhouse gas emissions is based on annual data compiled from statistics from a variety of sources - however, some of this data is not yet available. For such data - for which FY2011 values are not available - the FY2010 values were used to estimate the preliminary figures. Therefore, there may be some difference in the preliminary figures reported here when compared to the final figures to be reported in April 2013.

Note: Although some statistics were affected by the Great East Japan Earthquake (e.g., missing data), no corrections were made for the preliminary figures. It is planned that this issue will have been addressed by the time the final figures are summarized as needed.

- Japan's total greenhouse gas emissions in FY2011 were 1,307 million tonnes of carbon dioxide equivalents (Mt CO₂ eq.).
- Total emissions increased by 3.6% (46 Mt CO₂ eq.) compared to those of the base year under the Kyoto Protocol (FY1990 for CO₂, CH₄, N₂O and calendar year (CY) 1995 for HFCs, PFCs, SF₆).
- Total emissions increased by 3.9% (49 Mt CO₂ eq.) compared to the previous year mainly due to an increase in CO₂ emissions from power generation.

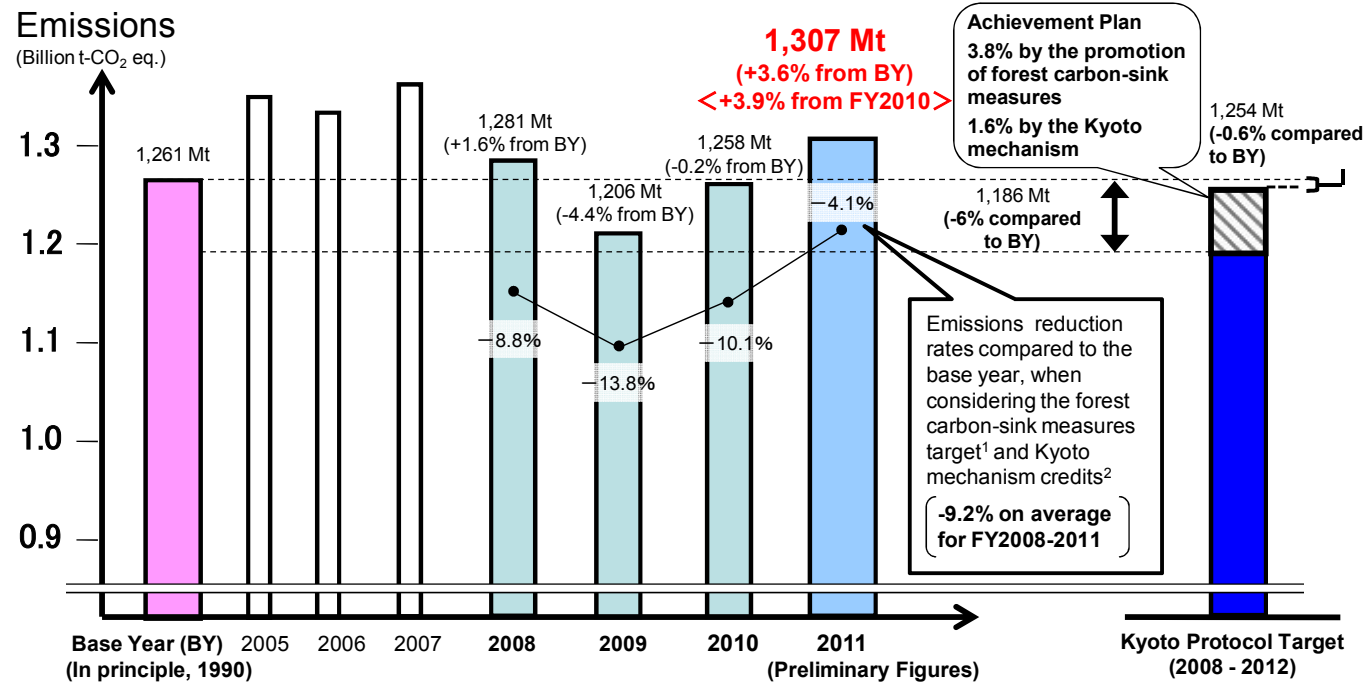
(Reference)

- The key driver for the rise in emissions in FY2011 as compared to FY2010 was the increased fossil fuel consumption in response to the expansion of thermal power generation, although the amount of manufacturing production decreased due to the influence of the Great East Japan Earthquake, etc.

Japan's Greenhouse Gas Emissions

Japan's greenhouse gas emissions in FY2011 increased 3.6% compared to the base year and 3.9% compared to the previous year.

Average emissions for four years of the first commitment period under the Kyoto Protocol (FY2008-2011) decreased 9.2% compared to the base year, when considering the forest carbon-sink measures target¹ and Kyoto mechanism credits².



1. Forest carbon-sink measures target: About 3.8% (47.67 Mt CO₂/yr) of the base year emissions according to the Kyoto Protocol Target Achievement Plan.
2. Kyoto mechanism credits:
 Acquired by the Government: Total credits that were contracted until FY2011 through the Kyoto Mechanisms Credit Acquisition Program (97.559 Mt) divided by 5 (yrs)
 Acquired by the private sector: The amount of credits that were acquired by the Federation of Electric Power Companies of Japan (According to the *Environmental Action Plan by the Japanese Electric Utility Industry* [FY2009 to FY2012])

Figure 1 Japan's national greenhouse gas emissions

Table 1 Japan's national greenhouse gas emissions,
comparison with the base year and the previous year

	Base year under Kyoto Protocol [Share]	FY2010 (Compared to base year)	Changes from FY2010	FY2011 (Preliminary figure) (Compared to base year) [Share]
Total	1,261 [100%]	1,258 (-0.2%)	→ <+3.9%> →	1,307 (+3.6%) [100%]
Carbon Dioxide (CO₂)	1,144 [90.7%]	1,192 (+4.2%)	→ <+4.1%> →	1,242 (+8.5%) [95.0%]
Energy-origin Carbon Dioxide	1,059 [84.0%]	1,123 (+6.1%)	→ <+4.4%> →	1,173 (+10.7%) [89.7%]
Non-Energy-origin Carbon Dioxide	85.1 [6.7%]	68.9 (-19.0%)	→ <+0.3%> →	69.1 (-18.8%) [5.3%]
Methane (CH₄)	33.4 [2.6%]	20.4 (-38.8%)	→ <-1.8%> →	20.1 (-39.9%) [1.5%]
Nitrous Oxide (N₂O)	32.6 [2.6%]	22.2 (-32.0%)	→ <-0.9%> →	22.0 (-32.6%) [1.7%]
F-gases	51.2 [4.1%]	23.5 (-54.0%)	→ <+0.0%> →	23.5 (-54.0%) [1.8%]
Hydrofluorocarbons (HFCs)	20.2 [1.6%]	18.3 (-9.7%)	→ <+0.0%> →	18.3 (-9.7%) [1.4%]
Perfluorocarbons (PFCs)	14.0 [1.1%]	3.4 (-75.8%)	→ <+0.0%> →	3.4 (-75.8%) [0.3%]
Sulfur Hexafluoride (SF ₆)	16.9 [1.3%]	1.9 (-89.0%)	→ <+0.0%> →	1.9 (-89.0%) [0.1%]

(Unit: Mt-CO₂ eq.)

Table 2 Energy-origin CO₂ emissions within each sector

(With allocation of CO₂ emissions from power generation and steam generation in each final demand sector)

	Base year under Kyoto Protocol [Share]	FY2010 (Compared to base year)	Changes from FY2010	FY2011 (Preliminary figure) (Compared to base year) [Share]
Total	1,059 [100%]	1,123 (+6.1%)	→ <+4.4%> →	1,173 (+10.7%) [100%]
Industries (factories, etc)	482 [45.5%]	421 (-12.6%)	→ <-0.2%> →	420 (-12.8%) [35.8%]
Transport (cars, etc)	217 [20.5%]	232 (+6.7%)	→ <-0.8%> →	230 (+5.8%) [19.6%]
Commercial and other (commerce, service, office, etc)	164 [15.5%]	217 (+32.1%)	→ <+14.0%> →	247 (+50.6%) [21.1%]
Residential	127 [12.0%]	172 (+34.9%)	→ <+9.7%> →	189 (+48.1%) [16.1%]
Energy Industries (power plants, etc)	67.9 [6.4%]	81.1 (+19.6%)	→ <+6.1%> →	86.1 (+26.8%) [7.3%]

(Unit: Mt-CO₂)

【Details of increase/decrease in energy-origin CO₂ emissions compared to FY2010】

- Industries sector (factories, etc.): 1.0 million tonnes (0.2%) decrease
 - Emissions from manufacturing and others decreased with the decrease of manufacturing production due to the influence of the Great East Japan Earthquake, etc.
- Transport sector (cars, ships, etc.): 2.0 million tonnes (0.8%) decrease
 - Emissions from passenger vehicles and trucks/lorries decreased.
- Commercial and Other sectors (commerce, service, office, etc.): 30.5 million tonnes (14.0%) increase
 - Emissions from electricity consumption increased due to deteriorated CO₂ emissions intensity.
- Residential sector: 16.7 million tonnes (9.7%) increase
 - While the emissions from electricity consumption decreased thanks to the effect of power-saving measures, total emissions from electricity consumption increased due to deteriorated CO₂ emissions intensity.
- Energy Industries sector (power plants, etc.): 4.9 million tonnes (6.1%) increase
 - Emissions associated with transmission and distribution loss increased due to deteriorated CO₂ emissions intensity.

【Details of increase/decrease in greenhouse gas emissions other than those of energy-origin CO₂ emissions compared to FY2010 (CO₂ equivalents)】

- Non-energy origin CO₂ emissions: 0.2 million tonnes (0.3%) increase
 - Emissions from the Industrial Processes sector (e.g., cement production) increased due to the increase in cement production because of the recovery of private-sector demand.
- Methane (CH₄) emissions: 0.4 million tonnes (1.8%) decrease
 - Emissions from the Waste sector (e.g., solid waste disposal on land) and the Agriculture sector (e.g., enteric fermentation, rice cultivation) decreased.
- Nitrous Oxide (N₂O) emissions: 0.2 million tonnes (0.9%) decrease
 - Emissions from the Industrial Processes sector (e.g., adipic acid production) decreased due to the decrease in the emissions from adipic acid production, etc.
- Hydrofluorocarbons (HFCs)
 - The 2010 data is used with exceptions.
- Perfluorocarbons (PFCs)
 - The 2010 data is used.
- Sulfur Hexafluoride (SF₆)
 - The 2010 data is used.