

Japan's National Greenhouse Gas Emissions in Fiscal Year (FY) 2013

(Preliminary Figures) <Executive Summary>

- Japan's total greenhouse gas emissions in FY2013 were 1,395 Mt CO₂ eq.
- Total emissions increased by 1.6% (22 Mt CO₂ eq.) when compared to those of FY2012 of 1,373 Mt CO₂ eq.
- Total emissions increased by 1.3% (18 Mt CO₂ eq.) when compared to those of FY2005 of 1,377 Mt CO₂ eq.
- Total emissions increased by 10.6% (134 Mt CO₂ eq.) when compared to those of FY1990 of 1,261 Mt CO₂ eq.

(Reference)

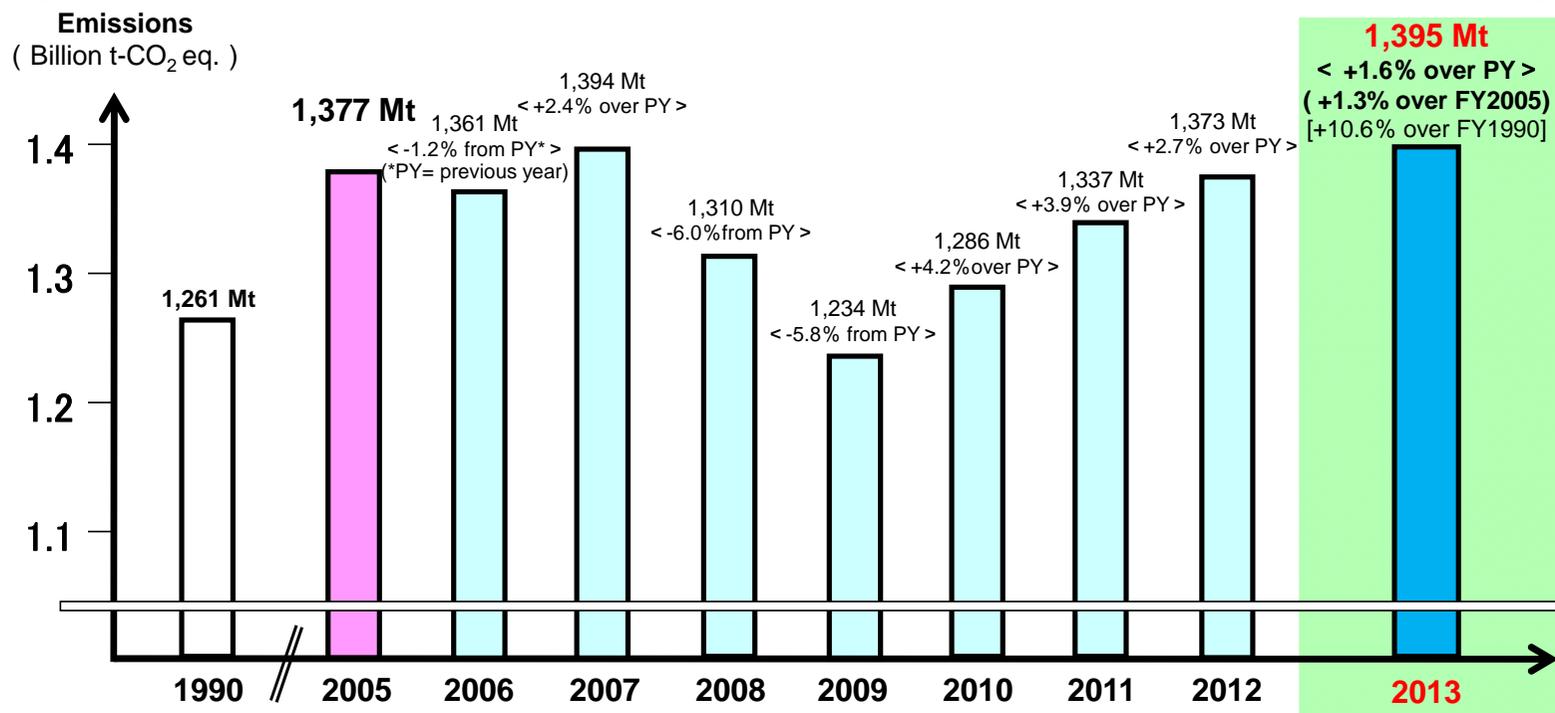
- The main factor for the rise in GHG emissions in FY2013 as compared to FY2012 is increased energy-origin CO₂ emissions from the industries sector and commercial and other sector, caused by increased fossil fuel consumption.
- The main factors for the rise in emissions in FY2013 as compared to FY2005 are the increased energy-origin CO₂ emissions, caused by the increased fossil fuel consumption accompanying the increase of thermal power generation, and the rise in hydrofluorocarbon emissions from refrigerants, following their substitution in place of ozone-depleting substances.

* In estimating the preliminary figures in the current summary, gases and emission sources were added, and estimation methodologies and Global Warming Potentials (GWPs) were changed, in response to the revision of the guidelines which state reporting requirements of GHG inventories for emissions/removals under the UN Framework Convention on Climate Change (UNFCCC). Emissions for 2012 and before were recalculated based on new and modified estimation methodologies; therefore there are some changes from the FY2012 final figures (released in April 15, 2014).

* Emissions are estimated based on annual figures in various statistics; as for preliminary figures in FY2013, some annual figures in FY2012 were temporarily used in place of FY2013 figures that have yet to be released. Moreover, further estimation methodologies to provide more precise estimations of emissions are currently being considered. As such, the final figures to be released in April 2015 are likely to change from the preliminary figures in the current summary. Removals of CO₂ by forest and other carbon sinks will also be estimated and announced in the final figures.

Japan's total greenhouse gas emissions in fiscal year (FY) 2013 (preliminary figures)

- Japan's total greenhouse gas emissions in FY2013 were 1,395 Mt CO₂ eq. (1.6% increase as compared to FY2012; 1.3% increase from FY2005; and 10.6% increase from FY1990 levels)
- The main factor for the rise in GHG emissions in FY2013 as compared to FY2012 is increased energy-origin CO₂ emissions from the industries sector and commercial and other sector, caused by increased fossil fuel consumption.
- The main factors for the rise in emissions in FY2013 as compared to FY2005 are the increased energy-origin CO₂ emissions caused by the increased fossil fuel consumption accompanying increased thermal power generation, and the rise in hydrofluorocarbon emissions from refrigerants, following their substitution in place of ozone-depleting substances.



- 1: In estimating the preliminary figures in the current summary, gases and emission sources were added, and estimation methodologies and Global Warming Potentials (GWPs) were changed, in response to the revision of the guidelines which state reporting requirements of GHG inventories for emissions/removals under the UN Framework Convention on Climate Change (UNFCCC). Emissions for 2012 and before were recalculated based on new and modified estimation methodologies; therefore there are some changes from the FY2012 final figures (released in April 15, 2014).
- 2: Emissions are estimated based on annual figures in various statistics; as for preliminary figures in FY2013, some annual figures in FY2012 were temporarily used in place of FY2013 figures that have yet to be released. Moreover, further estimation methodologies to provide more precise estimations of emissions are currently being considered. As such, the final figures to be released in April 2015 are likely to change from the preliminary figures in the current summary. Removals by forest and other carbon sinks will also be estimated and announced in the final figures.

Figure 1 Japan's national greenhouse gas emissions in fiscal year 2013 (Preliminary figure)

Table 1 Japan's national greenhouse gas emissions,
comparison with FY2005 and the previous year

	FY1990 [Share]	FY2005 [Share]	FY2012 [Share]	Changes from FY2012	FY2013 (Compared to FY2005) [Share]
Total	1,261 [100%]	1,377 [100%]	1,373 [100%]	→ <+1.6%> →	1,395 (+1.3%) [100%]
Carbon Dioxide (CO₂)	1,154 [91.6%]	1,297 [94.2%]	1,291 [94.0%]	→ <+1.5%> →	1,310 (+1.0%) [93.9%]
Energy-origin Carbon Dioxide	1,059 [84.0%]	1,203 [87.3%]	1,208 [88.0%]	→ <+1.4%> →	1,224 (+1.8%) [87.8%]
Non-Energy-origin Carbon Dioxide	95.3 [7.6%]	94.1 [6.8%]	82.8 [6.0%]	→ <+3.4%> →	85.6 (-9.0%) [6.1%]
Methane (CH₄)	39.7 [3.1%]	28.2 [2.1%]	24.6 [1.8%]	→ <-1.6%> →	24.2 (-14.2%) [1.7%]
Nitrous Oxide (N₂O)	31.3 [2.5%]	24.7 [1.8%]	21.8 [1.6%]	→ <-0.1%> →	21.8 (-11.7%) [1.6%]
F-gases	35.3 [2.8%]	27.1 [2.0%]	35.9 [2.6%]	→ <+7.8%> →	38.7 (+42.9%) [2.8%]
Hydrofluorocarbons (HFCs)	15.9 [1.3%]	12.7 [0.9%]	29.1 [2.1%]	→ <+10.3%> →	32.1 (+152.0%) [2.3%]
Perfluorocarbons (PFCs)	6.5 [0.5%]	8.1 [0.6%]	3.3 [0.2%]	→ <-4.7%> →	3.1 (-61.0%) [0.2%]
Sulfur Hexafluoride (SF ₆)	12.9 [1.0%]	5.1 [0.4%]	2.3 [0.2%]	→ <-5.8%> →	2.2 (-57.2%) [0.2%]
Nitrogen trifluoride (NF ₃)	0.04 [0.003%]	1.2 [0.1%]	1.3 [0.1%]	→ <+8.4%> →	1.4 (+8.9%) [0.1%]

(Unit: Mt-CO₂ eq.)

Table 2 Energy-origin CO₂ emissions from each sector
(After the allocation of electricity and heat)

	FY1990 [Share]	FY2005 [Share]	FY2012 [Share]	Changes from FY2012	FY2013 (Compared to FY2005) [Share]
Total	1,059 [100%]	1,203 [100%]	1,208 [100%]	→ <+1.4%> →	1,224 (+1.8%) [100%]
Industries (factory, etc)	482 [45.5%]	459 [38.2%]	418 [34.6%]	→ <+3.0%> →	430 (-6.3%) [35.1%]
Transport (cars, etc)	217 [20.5%]	254 [21.2%]	226 [18.7%]	→ <-1.8%> →	222 (-12.6%) [18.2%]
Commercial and other (commerce, service, office, etc)	164 [15.5%]	235 [19.6%]	272 [22.6%]	→ <+3.2%> →	281 (+19.5%) [23.0%]
Residential	127 [12.0%]	174 [14.5%]	203 [16.8%]	→ <-0.4%> →	203 (+16.3%) [16.6%]
Energy Industries (power plants, etc)	67.8 [6.4%]	79.3 [6.6%]	87.8 [7.3%]	→ <+0.2%> →	88.0 (+11.0%) [7.2%]

(Unit: Mt-CO₂)

【Details of increase/decrease in energy-origin CO₂ emissions compared to FY2012】

- Industries sector (factories, etc.): 12.4 million tonnes (3.0%) increase
 - Emissions from manufacturing (steel, chemical, etc.) increased.
- Transport sector (cars, etc.): 4 million tonnes (1.8%) decrease
 - Emissions from passenger transport (passenger cars, etc.) decreased.
- Commercial and other sectors (commerce, service, office, etc.): 8.8 million tonnes (3.2%) increase
 - Consumption of petroleum products and electricity increased.
- Residential sector: 0.8 million tonnes (0.4%) decrease
 - Consumption of fuel such as kerosene decreased.
- Energy industries sector (power plants, etc.): 0.2 million tonnes (0.2%) increase
 - Emissions from utility power generation and production of petroleum products increased.

【Details of increase/decrease in greenhouse gas emissions other than those of energy-origin CO₂ emissions compared to FY2012 (CO₂ eq.)】

- Non-energy origin CO₂ emissions: 2.8 million tonnes (3.4%) increase
 - Emissions from the Industrial Processes and Product Use sector (e.g. cement production) increased.
- Methane (CH₄) emissions: 0.4 million tonnes (1.6%) decrease
 - Emissions from the waste sector (e.g. solid waste disposal on land) and agriculture sector (e.g., enteric fermentation by livestock) decreased.
- Nitrous Oxide (N₂O) emissions: 0.03 million tonnes (0.1%) decrease
 - Emissions from agriculture sector (e.g. manure management) decreased.
- Hydrofluorocarbons (HFCs): 3 million tonnes (10.3%) increase
 - Emissions from refrigerants increased.
- Perfluorocarbons (PFCs): 0.2 million tonnes (4.7%) decrease
 - Emissions from semiconductor and LCD manufacturing decreased.
- Sulfur hexafluoride (SF₆): 0.1 million tonnes (5.8%) decrease
 - Emissions from gas insulated electrical equipment decreased.
- Nitrogen trifluoride (NF₃): 0.1 million tonnes (8.4%) increase
 - Fugitive emissions during production increased.