

Japan's National Greenhouse Gas Emissions in Fiscal Year 2013 (Final Figures¹) <Executive Summary>

- Japan's total greenhouse gas emissions in fiscal year* (FY) 2013² were 1,408 million tonnes of carbon dioxide equivalents (Mt CO₂ eq.).
 - Total emissions increased by 1.2% (17 Mt CO₂ eq.) when compared to those of FY2012. (1,390 Mt CO₂ eq.)
 - Total emissions increased by 0.8% (11 Mt CO₂ eq.) when compared to those of FY2005. (1,397 Mt CO₂ eq.)
 - Total emissions increased by 10.8% (138 Mt CO₂ eq.) when compared to those of FY1990. (1,270 Mt CO₂ eq.)

* Japan's fiscal year is from April 1 to March 31.

Note:

- The main factors for the rise in emissions in FY2013 as compared to FY2012 are the increased energy-origin CO₂ emissions, caused by the increased coal consumption in thermal power generation and the increased consumption of electricity or petroleum products in the commercial and other sector.
- The main factors for the rise in emissions in FY2013 as compared to FY2005 are the rise in hydrofluorocarbon emissions from refrigerants following their substitution in place of ozone-depleting substances and the increased energy-origin CO₂ emissions caused by the increased fossil fuel consumption accompanying the increase of thermal power generation.
- Removals by forest and other carbon sinks³ under the Kyoto Protocol in FY 2013 were 61 Mt CO₂ eq. (consisting of 52 Mt CO₂ eq. by forest carbon sinks measures, and 9 Mt CO₂ eq. by cropland management, grazing land management, and urban revegetation).

¹ "Final figures" means the figures officially submitted to the secretariat of the United Nations Framework Convention on Climate Change (hereinafter, referred to as "Convention") as Japan's GHG emissions and removals in a national GHG inventory. The final figures compiled at this time will be revised when annual values in statistical data are updated, and/or estimation methods are revised.

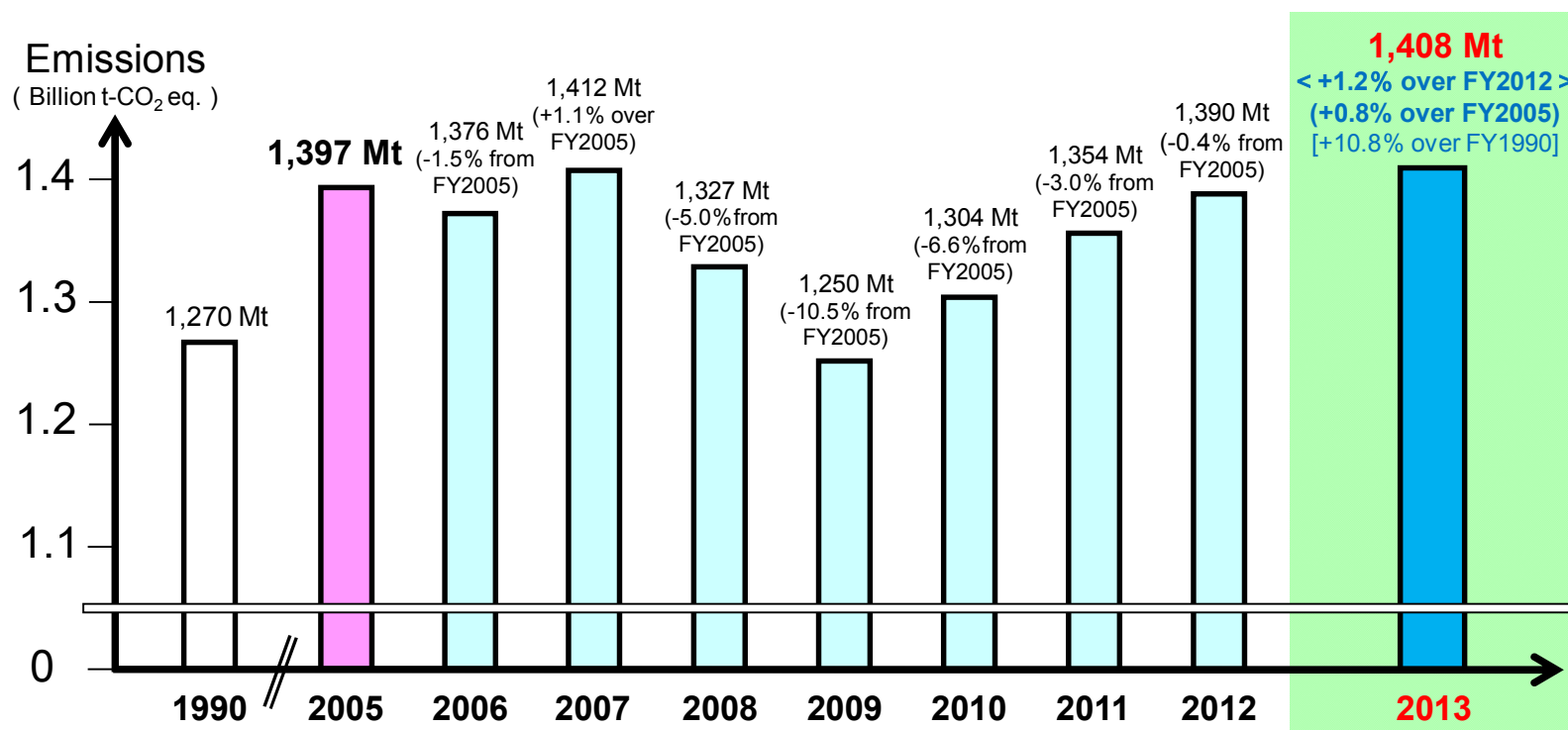
² There are some discrepancies between the final figures reported this time and the

preliminary figures in FY2013 which were released in December 4, 2014 because, in accordance with the reporting guidelines for GHG inventories in emissions and removals under the Convention, some of the estimating methods were revised for a more accurate estimation, and recalculation was conducted based on various statistical annual data made available after the estimation of preliminary figures in FY2013.

³ The emissions and removals by forest and other carbon sinks under the Kyoto Protocol were estimated and reported in accordance with the decision of the 8th meeting of the Conference of the Parties to the Kyoto Protocol.

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

- Japan's total greenhouse gas emissions in FY2013 were 1,408 Mt CO₂ eq. (1.2% increase as compared to FY2012; 0.8% increase from FY2005; and 10.8% increase from FY1990 levels)
- The main factors for the rise in emissions in FY2013 as compared to FY2012 are the increased energy-origin CO₂ emissions, caused by the increased coal consumption in thermal power generation and the increased consumption of electricity or petroleum products in the Commercial and Other sector.
- The main factors for the rise in emissions in FY2013 as compared to FY2005 are the rise in hydrofluorocarbon emissions from refrigerants following their substitution in place of ozone-depleting substances and the increased energy-origin CO₂ emissions caused by the increased fossil fuel consumption accompanying the increase of thermal power generation.



- 1: "Final figures" means the figures officially submitted to the secretariat of the United Nations Framework Convention on Climate Change (hereinafter, referred to as "Convention") as Japan's GHG emissions and removals in a national GHG inventory. The final figures compiled at this time will be revised when annual values in statistical data are updated, and/or estimation methods are revised.
- 2: There are some discrepancies between the final figures reported this time and the preliminary figures in FY2013 which were released in December 4, 2014 because, in accordance with the reporting guidelines for GHG inventories in emissions and removals under the Convention, some of the estimating methods were revised for a more accurate estimation and recalculation was conducted based on various statistical annual data which made available after the estimation of preliminary figures in FY2013.
- 3: The removals by forest and other carbon sinks under the Kyoto Protocol are not taken into account in emissions in each fiscal year and percentage changes from past fiscal years (change from FY2005, etc.).

Figure 1 Japan's national greenhouse gas emissions in FY2013 (final figures)

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	1,270 [100%]	1,397 [100%]	1,390 [100%]	→ <+1.2%> →	1,408 (+0.8%) [100%]
Carbon Dioxide (CO₂)	1,154 [90.9%]	1,304 [93.4%]	1,296 [93.2%]	→ <+1.2%> →	1,311 (+0.5%) [93.1%]
Energy-origin Carbon Dioxide	1,067 [84.0%]	1,219 [87.3%]	1,221 [87.8%]	→ <+1.1%> →	1,235 (+1.3%) [87.7%]
Non-Energy-origin Carbon Dioxide	87.6 [6.9%]	85.4 [6.1%]	74.6 [5.4%]	→ <+1.8%> →	75.9 (-11.1%) [5.4%]
Methane (CH₄)	48.6 [3.8%]	39.0 [2.8%]	36.4 [2.6%]	→ <-1.0%> →	36.0 (-7.5%) [2.6%]
Nitrous Oxide (N₂O)	31.9 [2.5%]	25.5 [1.8%]	22.5 [1.6%]	→ <-0.1%> →	22.5 (-12.0%) [1.6%]
F-gases	35.4 [2.8%]	27.7 [2.0%]	36.1 [2.6%]	→ <+6.9%> →	38.6 (+39.5%) [2.7%]
Hydrofluorocarbons (HFCs)	15.9 [1.3%]	12.7 [0.9%]	29.1 [2.1%]	→ <+9.2%> →	31.8 (+149.7%) [2.3%]
Perfluorocarbons (PFCs)	6.5 [0.5%]	8.6 [0.6%]	3.4 [0.2%]	→ <-4.5%> →	3.3 (-62.0%) [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)	0.03 [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

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

	FY1990 [Share]	FY2005 [Share]	FY2012 [Share]	Changes from FY2012	FY2013 (Compared to FY2005) [Share]
Total	1,067 [100%]	1,219 [100%]	1,221 [100%]	→ <+1.1%> →	1,235 (+1.3%) [100%]
Industries (factory, etc)	503 [47.2%]	457 [37.5%]	432 [35.4%]	→ <-0.7%> →	429 (-6.0%) [34.8%]
Transport (cars, etc)	206 [19.3%]	240 [19.7%]	226 [18.5%]	→ <-0.7%> →	225 (-6.3%) [18.2%]
Commercial and other (commerce, service, office, etc)	134 [12.5%]	239 [19.6%]	254 [20.8%]	→ <+9.9%> →	279 (+16.7%) [22.6%]
Residential	131 [12.3%]	180 [14.8%]	204 [16.7%]	→ <-1.3%> →	201 (+11.9%) [16.3%]
Energy Industries (power plants, etc)	92.4 [8.7%]	104 [8.5%]	105 [8.6%]	→ <-3.8%> →	101 (-2.9%) [8.2%]

(Unit: Mt-CO₂)

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

- Industries sector (factories, etc.): 2.9 million tonnes (0.7%) decrease
 - Emissions mainly from manufacturing (manufacturing of machinery, manufacturing of food and beverage, etc.) decreased.
- Transport sector (cars, etc.): 1.6 million tonnes (0.7%) decrease
 - Emissions from passenger transport (passenger cars, etc.) decreased.
- Commercial and Other sector (commerce, service, office, etc.): 25 million tonnes (9.9%) increase
 - Consumption of electricity and petroleum products, and others increased.
- Residential sector: 2.7 million tonnes (1.3%) decrease
 - Consumption of fuel such as kerosene decreased.
- Energy Industries sector (power plants, etc.): 3.9 million tonnes (3.8%) decrease
 - Emissions mainly from own-use during gas production decreased.

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

- Non-energy origin CO₂ emissions: 1.3 million tonnes (1.8%) increase
 - Emissions from the Industrial Processes and Product Use sector (cement production, etc.) increased.
- Methane (CH₄) emissions: 0.4 million tonnes (1.0%) decrease
 - Emissions from the Waste sector (solid waste disposal, etc.) and Agriculture sector (enteric fermentation by livestock, etc.) decreased.
- Nitrous Oxide (N₂O) emissions: 0.03 million tonnes (0.1%) decrease
 - Emissions from the Agriculture sector (manure management, etc.) decreased.
- Hydrofluorocarbons (HFCs) emissions: 2.7 million tonnes (9.2%) increase
 - Emissions from refrigerants increased.
- Perfluorocarbons (PFCs) emissions: 0.2 million tonnes (4.5%) decrease
 - Emissions from semiconductor and LCD manufacturing, and others decreased.
- Sulfur Hexafluoride (SF₆) emissions: 0.1 million tonnes (5.8%) decrease
 - Emissions mainly from gas insulated electrical equipment decreased.
- Nitrogen trifluoride (NF₃) emissions: 0.1 million tonnes (8.4%) increase
 - Fugitive emissions during NF₃ manufacturing increased.