Japan's National Greenhouse Gas Emissions in Fiscal Year 2017 (Preliminary Figures) <Executive Summary>

- Japan's total greenhouse gas emissions in fiscal year* (FY) 2017 were 1,294 million tonnes of carbon dioxide equivalents (Mt CO_2 eq.).
  - Total emissions decreased by 1.0% (12 Mt CO_2 eq.) when compared to those of FY2016 (1,307 Mt CO_2 eq.).
  - Total emissions decreased by 8.2% (115 Mt CO_2 eq.) when compared to those of FY2013 (1,409 Mt CO_2 eq.).
  - Total emissions decreased by 6.2% (86 Mt CO_2 eq.) when compared to those of FY2005 (1,380 Mt CO_2 eq.).

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

Note:

- The main factor for the lower emissions in FY2017 as compared to FY2016 is the decrease in energy-related CO_2 emissions due to the increase in the share of non-fossil fuels within the domestic energy supply brought by the wider adoption of renewable energy such as solar and wind power and the resumption of nuclear power plant operation, despite the increase in hydrofluorocarbon emissions from refrigerants that substitute for ozone-depleting substances.
- The main factor for the decrease in emissions in FY2017 as compared to FY2013 is the decrease in energy-related CO_2 emissions due to the increase in the share of non-fossil fuels within the domestic energy supply brought by the wider adoption of renewable energy such as solar and wind power and the resumption of nuclear power plant operation, and the decrease in energy consumption, despite the increase in hydrofluorocarbon emissions.
- The main factor for the decrease in emissions in FY2017 as compared to FY2005 is the decrease in energy-related CO_2 emissions owing to the decrease in energy consumption, despite the increase in hydrofluorocarbon emissions.

** These preliminary figures for FY2017 were estimated based on annual figures in various statistics. Some annual figures from FY2016 were temporarily used in place of FY2017 figures that have yet to be released. Moreover, some estimation methodologies are currently being reconsidered in order to make more accurate estimations of emissions. As such, the final figures to be released in April 2019 could differ from the preliminary figures in this summary. Removals by forest and other carbon sinks will also be estimated and announced at the time of the final figures.

Japan's total greenhouse gas emissions in fiscal year (FY) 2017 (Preliminary figures)

Japan's total greenhouse gas (GHG) emissions in FY2017 (preliminary figures) were 1,294 Mt CO_2 eq. (1.0% decrease as compared to FY2016; 8.2% decrease from FY2013; and 6.2% decrease from FY2005 levels)

- The main factor for the lower emissions in FY2017 as compared to FY2016 is the decrease in energy-related CO_2 emissions due to the increase in the share of non-fossil fuels within the domestic energy supply brought by the wider adoption of renewable energy such as solar and wind power and the resumption of nuclear power plant operation, despite the increase in hydrofluorocarbon emissions from refrigerants that substitute for ozone-depleting substances.
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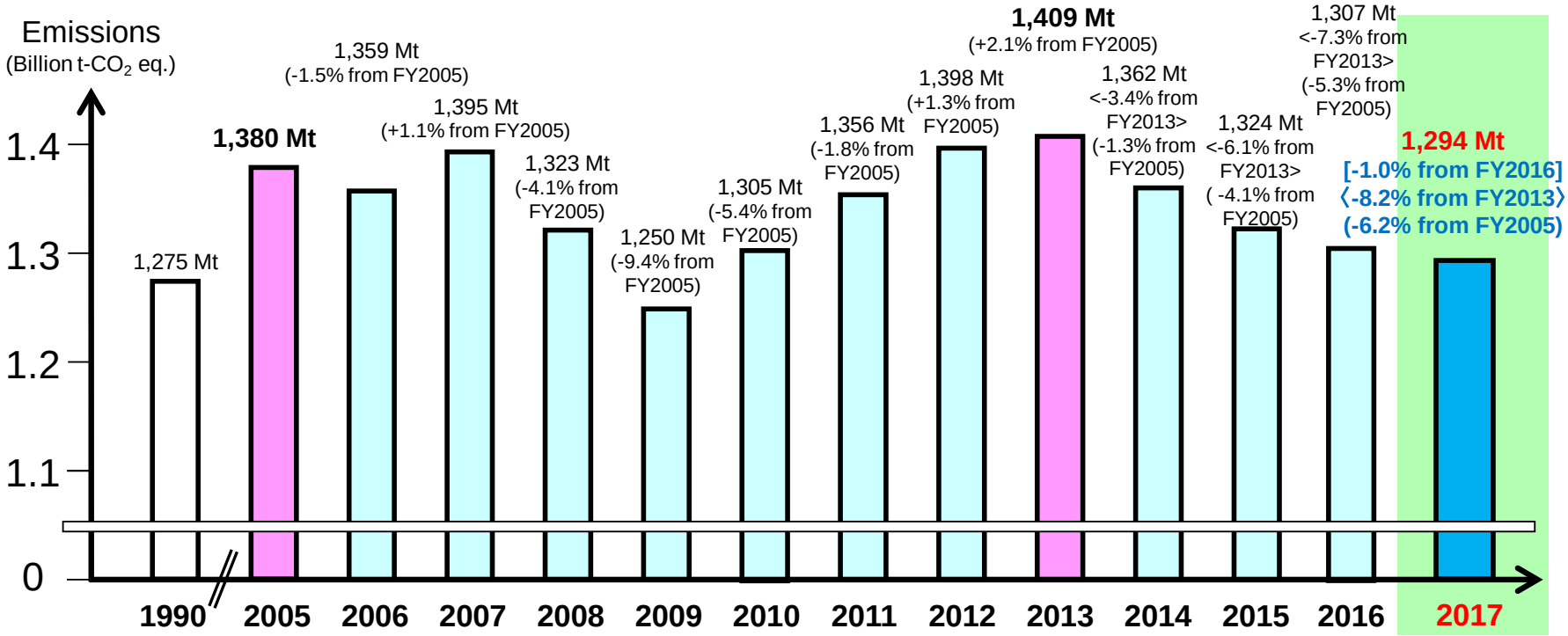

1. These preliminary figures for FY2017 were estimated based on annual figures in various statistics. Some annual figures from FY2016 were temporarily used in place of FY2017 figures that have yet to be released. Moreover, some estimation methodologies are currently being reconsidered in order to make more accurate estimations of emissions. As such, the final figures to be released in April 2019 could differ from the preliminary figures in this summary. Removals by forest and other carbon sinks will also be estimated and announced at the time of the final figures.
2. Total GHG emissions in each FY and percent changes from previous years (such as changes from FY2013) do not include removals by forest and other carbon sinks from activities under the Kyoto Protocol.

Figure 1 Japan's national greenhouse gas emissions in FY2017 (preliminary figures)

Table 1　Japan's national greenhouse gas emissions by gas (comparison with FY2005, FY2013, and FY2016)

	FY1990 emissions [Share]	FY2005 emissions [Share]	FY2013 emissions [Share]	FY2016 emissions [Share]	FY2017 (Preliminary figures)			
					Emissions [Share]	(Compared to FY2005)	(Compared to FY2013)	(Compared to FY2016)
Total	1,275 [100%]	1,380 [100%]	1,409 [100%]	1,307 [100%]	1,294 [100%]	-6.2%	-8.2%	-1.0%
Carbon Dioxide (CO_2)	1,164 [91.3%]	1,291 [93.6%]	1,316 [93.4%]	1,207 [92.3%]	1,191 [92.1%]	-7.8%	-9.5%	-1.3%
Energy-related Carbon Dioxide	1,068 [83.8%]	1,200 [86.9%]	1,235 [87.6%]	1,128 [86.3%]	1,112 [85.9%]	-7.3%	-10.0%	-1.4%
Non-energy-related Carbon Dioxide	95.7 [7.5%]	91.8 [6.7%]	80.9 [5.7%]	78.6 [6.0%]	79.3 [6.1%]	-13.6%	-2.0%	+0.8%
Methane (CH_4)	44.3 [3.5%]	35.6 [2.6%]	32.5 [2.3%]	30.8 [2.4%]	30.5 [2.4%]	-14.1%	-6.1%	-0.8%
Nitrous Oxide (N_2O)	31.7 [2.5%]	24.9 [1.8%]	21.6 [1.5%]	20.5 [1.6%]	20.4 [1.6%]	-17.9%	-5.3%	-0.1%
F-gases	35.4 [2.8%]	27.9 [2.0%]	39.1 [2.8%]	48.8 [3.7%]	51.8 [4.0%]	+85.6%	+32.6%	+6.3%
Hydrofluorocarbons (HFCs)	15.9 [1.2%]	12.8 [0.9%]	32.1 [2.3%]	42.5 [3.3%]	45.7 [3.5%]	+257.8%	+42.5%	+7.6%
Perfluorocarbons (PFCs)	6.5 [0.5%]	8.6 [0.6%]	3.3 [0.2%]	3.4 [0.3%]	3.5 [0.3%]	-59.3%	+7.1%	+4.1%
Sulfur Hexafluoride (SF_6)	12.9 [1.0%]	5.1 [0.4%]	2.1 [0.1%]	2.2 [0.2%]	2.1 [0.2%]	-57.7%	+1.6%	-4.6%
Nitrogen Trifluoride (NF_3)	0.03 [0.003%]	1.5 [0.1%]	1.6 [0.1%]	0.63 [0.05%]	0.45 [0.03%]	-69.4%	-72.2%	-29.1%

(Unit: Mt-CO_2 eq.)

Table 2　Energy-related CO_2 emissions from each sector

(CO_2 emissions from power and heat allocated to each final demand sector)

	FY1990 emissions [Share]	FY2005 emissions [Share]	FY2013 emissions [Share]	FY2016 emissions [Share]	FY2017 (Preliminary figures)			
					Emissions [Share]	(Compared to FY2005)	(Compared to FY2013)	(Compared to FY2016)
Total	1,068 [100%]	1,200 [100%]	1,235 [100%]	1,128 [100%]	1,112 [100%]	-7.3%	-10.0%	-1.4%
Industries (factories, etc.)	503 [47.1%]	469 [39.1%]	466 [37.7%]	419 [37.1%]	413 [37.1%]	-11.9%	-11.5%	-1.5%
Transport (cars, etc.)	207 [19.4%]	244 [20.4%]	224 [18.1%]	215 [19.1%]	213 [19.2%]	-12.7%	-4.9%	-0.9%
Commercial and other (commerce, service, office, etc.)	130 [12.2%]	221 [18.4%]	236 [19.1%]	211 [18.7%]	206 [18.5%]	-6.7%	-12.9%	-2.7%
Residential	131 [12.2%]	170 [14.2%]	208 [16.8%]	185 [16.4%]	188 [16.9%]	+10.4%	-9.5%	+1.8%
Energy transformation	96.7 [9.1%]	95.9 [8.0%]	101 [8.2%]	97.4 [8.6%]	92.3 [8.3%]	—	—	—
Oil refineries, power plants, etc.	96.8 [9.1%]	102 [8.5%]	106 [8.6%]	103 [9.1%]	98.0 [8.8%]	-3.7%	-7.4%	-4.6%
Statistical discrepancy from power and heat allocation	-0.03 [-0.003%]	-5.7 [-0.5%]	-4.8 [-0.4%]	-5.3 [-0.5%]	-5.6 [-0.5%]	—	—	—

(Unit: Mt-CO_2)

【Details of main increases/decreases in energy-related CO_2 emissions (after allocation of power and heat), as compared to FY2016】

○ Industries sector (factories, etc.): 6.4 million tonnes (1.5%) decrease

・Emissions from manufacturing decreased.

○ Transport sector (cars, etc.): 1.9 million tonnes (0.9%) decrease

・Emissions from passenger and freight transport decreased.

○ Commercial and other sector (commerce, services, office, etc.): 5.7 million tonnes (2.7%) decrease

・Emissions from electricity consumption decreased.

○ Residential sector: 3.2 million tonnes (1.8%) increase

・Emissions from oil product (kerosene, etc.) consumption increased.

○ Energy transformation sector (oil refineries, power plants, etc.) (excluding statistical discrepancy from power and heat allocation): 4.7 million tonnes (4.6%) decrease

・Emissions from utility power producers decreased.

【Details of main increases/decreases in emissions other than energy-related CO_2 emissions, as compared to FY2016 (CO_2 eq.)】

○ Non-energy related CO_2 emissions: 0.64 million tonnes (0.8%) increase

・Emissions from the Industrial Processes and Product Use sector increased.

○ Methane (CH_4) emissions: 0.24 million tonnes (0.8%) decrease

・Emissions from the Waste sector decreased.

○ Nitrous Oxide (N_2O) emissions: 0.03 million tonnes (0.1%) decrease

・Emissions from the Industrial Processes and Product Use sector decreased.

○ Hydrofluorocarbon (HFC) emissions: 3.2 million tonnes (7.6%) increase

・Emissions from refrigerants increased.

○ Perfluorocarbon (PFC) emissions: 0.14 million tonnes (4.1%) increase

・Emissions from semiconductor and liquid crystal display (LCD) manufacturing increased.

○ Sulfur Hexafluoride (SF_6) emissions: 0.10 million tonnes (4.6%) decrease

・ Emissions from metal production decreased.

○ Nitrogen Trifluoride (NF_3) emissions: 0.18 million tonnes (29.1%) decrease

・ Fugitive emissions from NF_3 production decreased.