

## Japan's National Greenhouse Gas Emissions in Fiscal Year 2015 (Preliminary Figures) <Executive Summary>

- Japan's total greenhouse gas emissions in fiscal year\* (FY) 2015 were 1,321 million tonnes of carbon dioxide equivalents (Mt CO<sub>2</sub> eq.).
  - Total emissions decreased by 3.0% (41 Mt CO<sub>2</sub> eq.) when compared to those of FY2014. (1,362 Mt CO<sub>2</sub> eq.)
  - Total emissions decreased by 6.0% (84 Mt CO<sub>2</sub> eq.) when compared to those of FY2013. (1,405 Mt CO<sub>2</sub> eq.)
  - Total emissions decreased by 5.2% (72 Mt CO<sub>2</sub> eq.) when compared to those of FY2005. (1,393 Mt CO<sub>2</sub> eq.)

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

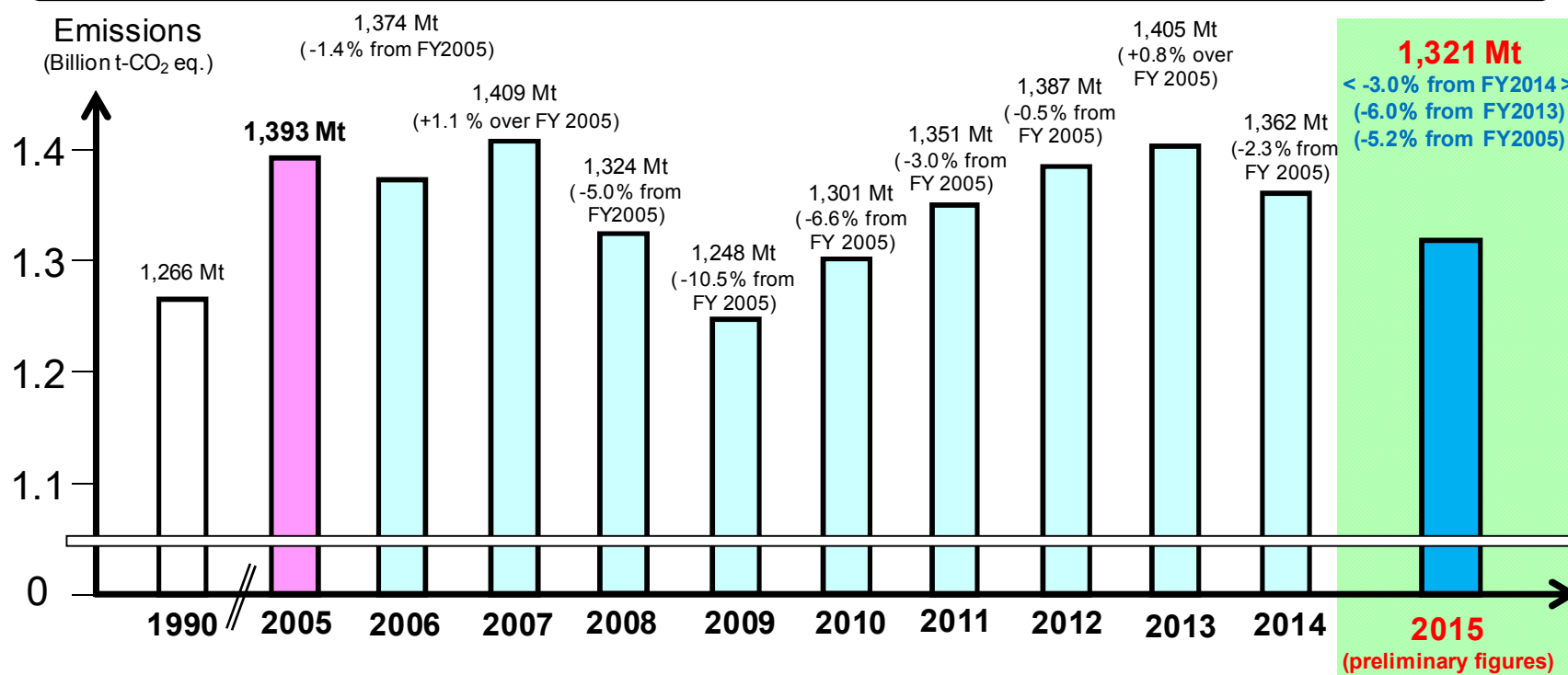
### Note:

- The main factor in the drop in emissions in FY2015 as compared to FY2014 and FY2013 is the decreased energy-related CO<sub>2</sub> emissions due to lowered CO<sub>2</sub> emissions from power generation, owing to decreased electricity consumption and the improvement of carbon intensity in power generation.
- The main factor in the drop in emissions in FY2015 as compared to FY2005 is the decreased energy-related CO<sub>2</sub> emissions in industrial and transport sectors, despite the increase in hydrofluorocarbon emissions from refrigerants following their substitution in place of ozone-depleting substances.

\* Emissions are estimated based on annual figures in various statistics; as for preliminary figures in FY2015, some annual figures in FY2014 were temporarily used in place of FY2015 figures that have yet to be released. Moreover, some estimation methodologies to provide more precise estimations of emissions are currently being considered. As such, the final figures to be released in April 2017 are likely to differ 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.

## Japan's total greenhouse gas emissions in fiscal year (FY) 2015 (preliminary figures)

- Japan's total greenhouse gas (GHG) emissions in FY2015 were 1,321 Mt CO<sub>2</sub> eq. (3.0% decrease as compared to FY2014; 6.0% decrease from FY2013; and 5.2% decrease from FY2005 levels)
- The main factor in the drop in emissions in FY2015 as compared to FY2014 and FY2013 is the decreased energy-related CO<sub>2</sub> emissions due to lowered CO<sub>2</sub> emissions from power generation, owing to the decreased electricity consumption and the improvement of carbon intensity in power generation.
- The main factor in the drop in emissions in FY2015 as compared to FY2005 is the decreased energy-related CO<sub>2</sub> emissions in industrial and transport sectors, despite the increase in hydrofluorocarbon emissions from refrigerants following their substitution in place of ozone-depleting substances.



1. Emissions are estimated based on annual figures in various statistics; as for preliminary figures in FY2015, some annual figures in FY2014 were temporarily used in place of FY2015 figures that have yet to be released. Moreover, some estimation methodologies to provide more precise estimations of emissions are currently being considered. As such, the final figures to be released in April 2017 are likely to differ 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.
2. Total GHG emissions in each FY and percent changes from past year (such as changes from FY2005) 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 FY2015 (preliminary figures)

Table 1 Japan's national greenhouse gas emissions by gas,  
comparison with FY2005, FY2013, and FY2014

|   | FY1990<br>[Share] | FY2005<br>[Share] | FY2013<br>[Share] | FY2014<br>[Share] | FY2015 (Preliminary figures) |                         |                         |                         |
|---|-------------------|-------------------|-------------------|-------------------|------------------------------|-------------------------|-------------------------|-------------------------|
|   |                   |                   |                   |                   | FY2015<br>[Share]            | (Compared to<br>FY2005) | (Compared to<br>FY2013) | (Compared to<br>FY2014) |
| <b>Total</b>                            | 1,266<br>[100%]   | 1,393<br>[100%]   | 1,405<br>[100%]   | 1,362<br>[100%]   | 1,321<br>[100%]              | -5.2%                   | -6.0%                   | -3.0%                   |
| <b>Carbon Dioxide (CO<sub>2</sub>)</b>  | 1,156<br>[91.3%]  | 1,306<br>[93.7%]  | 1,312<br>[93.4%]  | 1,266<br>[93.0%]  | 1,223<br>[92.6%]             | -6.3%                   | -6.7%                   | -3.4%                   |
| Energy-related Carbon Dioxide           | 1,067<br>[84.3%]  | 1,219<br>[87.5%]  | 1,235<br>[87.9%]  | 1,190<br>[87.4%]  | 1,148<br>[86.9%]             | -5.8%                   | -7.0%                   | -3.5%                   |
| Non-energy-related Carbon Dioxide       | 89.2<br>[7.0%]    | 86.9<br>[6.2%]    | 76.6<br>[5.5%]    | 76.1<br>[5.6%]    | 75.0<br>[5.7%]               | -13.7%                  | -2.1%                   | -1.5%                   |
| <b>Methane (CH<sub>4</sub>)</b>         | 44.1<br>[3.5%]    | 35.1<br>[2.5%]    | 32.6<br>[2.3%]    | 31.9<br>[2.3%]    | 31.2<br>[2.4%]               | -11.2%                  | -4.3%                   | -2.4%                   |
| <b>Nitrous Oxide (N<sub>2</sub>O)</b>   | 30.8<br>[2.4%]    | 24.5<br>[1.8%]    | 21.5<br>[1.5%]    | 21.1<br>[1.5%]    | 20.9<br>[1.6%]               | -14.7%                  | -2.9%                   | -0.9%                   |
| <b>F-gases</b>                          | 35.4<br>[2.8%]    | 27.7<br>[2.0%]    | 38.8<br>[2.8%]    | 42.0<br>[3.1%]    | 45.4<br>[3.4%]               | +64.0%                  | +17.0%                  | +8.1%                   |
| Hydrofluorocarbons (HFCs)               | 15.9<br>[1.3%]    | 12.8<br>[0.9%]    | 32.1<br>[2.3%]    | 35.8<br>[2.6%]    | 39.4<br>[3.0%]               | +208.5%                 | +22.9%                  | +10.2%                  |
| Perfluorocarbons (PFCs)                 | 6.5<br>[0.5%]     | 8.6<br>[0.6%]     | 3.3<br>[0.2%]     | 3.4<br>[0.2%]     | 3.3<br>[0.3%]                | -61.6%                  | +0.9%                   | -1.6%                   |
| Sulfur Hexafluoride (SF <sub>6</sub> )  | 12.9<br>[1.0%]    | 5.1<br>[0.4%]     | 2.1<br>[0.1%]     | 2.1<br>[0.2%]     | 2.1<br>[0.2%]                | -58.0%                  | +1.0%                   | +2.7%                   |
| Nitrogen Trifluoride (NF <sub>3</sub> ) | 0.03<br>[0.003%]  | 1.2<br>[0.1%]     | 1.4<br>[0.1%]     | 0.8<br>[0.1%]     | 0.6<br>[0.04%]               | -54.3%                  | -58.0%                  | -31.3%                  |

(Unit: Mt-CO<sub>2</sub> eq.)

Table 2 Energy-related CO<sub>2</sub> emissions from each sector

(With allocation of CO<sub>2</sub> emissions from power generation and steam generation to each final demand sector)

|   | FY1990<br>[Share] | FY2005<br>[Share] | FY2013<br>[Share] | FY2014<br>[Share] | FY2015 (Preliminary figures) |                         |                         |                         |
|---|-------------------|-------------------|-------------------|-------------------|------------------------------|-------------------------|-------------------------|-------------------------|
|   |                   |                   |                   |                   | FY2015<br>[Share]            | (Compared to<br>FY2005) | (Compared to<br>FY2013) | (Compared to<br>FY2014) |
| <b>Total</b>  | 1,067<br>[100%]   | 1,219<br>[100%]   | 1,235<br>[100%]   | 1,190<br>[100%]   | 1,148<br>[100%]              | -5.8%                   | -7.0%                   | -3.5%                   |
| Industries<br>(factory, etc.)                             | 502<br>[47.0%]    | 457<br>[37.5%]    | 432<br>[35.0%]    | 421<br>[35.4%]    | 413<br>[35.9%]               | -9.7%                   | -4.4%                   | -2.1%                   |
| Transport<br>(cars, etc.)                                 | 206<br>[19.3%]    | 240<br>[19.7%]    | 225<br>[18.2%]    | 220<br>[18.5%]    | 216<br>[18.8%]               | -9.7%                   | -3.7%                   | -1.8%                   |
| Commercial and other<br>(commerce, service, office, etc.) | 137<br>[12.8%]    | 239<br>[19.6%]    | 278<br>[22.5%]    | 264<br>[22.2%]    | 249<br>[21.7%]               | +4.3%                   | -10.5%                  | -5.7%                   |
| Residential   | 131<br>[12.2%]    | 180<br>[14.8%]    | 201<br>[16.3%]    | 191<br>[16.1%]    | 182<br>[15.8%]               | +1.1%                   | -9.7%                   | -4.8%                   |
| Energy Industries<br>(power plants, etc.)                 | 91.1<br>[8.5%]    | 104<br>[8.5%]     | 98.9<br>[8.0%]    | 93.3<br>[7.8%]    | 88.2<br>[7.7%]               | -14.9%                  | -10.8%                  | -5.4%                   |

(Unit: Mt-CO<sub>2</sub>)

**【Details of main increase/decrease in energy-related CO<sub>2</sub> emissions compared to FY2014】**

- Industries sector (factories, etc.): 8.6 million tonnes (2.1%) decrease
  - Emissions from manufacturing (manufacture of iron and steel) decreased.
- Transport sector (cars, etc.): 3.9 million tonnes (1.8%) decrease
  - Emissions from freight and passenger transport decreased.
- Commercial and other sector (commerce, service, office, etc.): 15.0 million tonnes (5.7%) decrease
  - Emissions due to electricity consumption decreased.
- Residential sector: 9.2 million tonnes (4.8%) decrease
  - Emissions due to electricity consumption decreased.
- Energy Industries sector (power plants, etc.): 5.1 million tonnes (5.4%) decrease
  - Emissions from utility power generation and manufacture of coal products decreased.

**【Details of main increase/decrease in greenhouse gas emissions other than those of energy-related CO<sub>2</sub> emissions compared to FY2014 (CO<sub>2</sub> eq.)】**

- Non-energy related CO<sub>2</sub> emissions : 1.2 million tonnes (1.5%) decrease
  - Emissions from Industrial Processes and Product Use sector (cement production, etc.) decreased.
- Methane (CH<sub>4</sub>) emissions: 0.8 million tonnes (2.4%) decrease
  - Emissions from Agriculture sector (rice cultivation, etc.) decreased.
- Nitrous Oxide (N<sub>2</sub>O) emissions: 0.2 million tonnes (0.9%) decrease
  - Emissions from the Industrial Processes and Product Use sector, and Energy sector decreased.
- Hydrofluorocarbons (HFCs) emissions: 3.6 million tonnes (10.2%) increase
  - Emissions from refrigerants increased.
- Perfluorocarbons (PFCs) emissions: 0.05 million tonnes (1.6%) decrease
  - Emissions from semiconductor and LCD manufacturing decreased.
- Sulfur Hexafluoride (SF<sub>6</sub>) emissions: 0.06 million tonnes (2.7%) increase
  - Emissions from metal production increased.
- Nitrogen Trifluoride (NF<sub>3</sub>) emissions: 0.3 million tonnes (31.3%) decrease
  - Fugitive emissions during NF<sub>3</sub> manufacturing decreased.