Japan's National Greenhouse Gas Emissions in Fiscal Year 2008 (The Final Figures) <Executive Summary>

In this document, "final figures" means the figures officially submitted to the UNFCCC secretariat as Japan's greenhouse gas (GHG) emissions and removals in a 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.

- Japan's total greenhouse gas emissions in FY 2008 were 1,282 million tons of carbon dioxide equivalents.
- Total emissions increased by 1.6 % compared to the base years under the Kyoto Protocol (FY 1990 for CO_2, CH_4, N_2O and calendar year (CY) 1995 for HFCs, PFCs, SF_6) as a result of increases in energy-origin CO_2 emissions from sectors such as the Commercial and Other sector and the Residential sector.
- Total emissions decreased by 6.4% compared to the previous year as a result of decreases in energy-origin CO_2 emissions from all the sectors including the Industries sector.
- Total removals by forest carbon sink measures and others under the Kyoto Protocol in FY 2008 were 44 million tons of carbon dioxide equivalents (consisting of 43.3 million tons by forest carbon sink measures and 0.7 million tons by urban revegetation). The removals corresponded to 3.5% of the total emissions in the base years (of this, the removals by forest carbon sink measures corresponded to 3.4%).

(Reference)

- The primary reason for the decrease in emissions in FY 2008 compared to FY 2007 was the drop in energy demand within all the sectors, including the Industries sector, due to the severe economic recession induced by the financial crisis in the second half of FY 2008.
- If the rate of operation of nuclear power plants in FY 2008 was at the same level as before their long-term shutdown (i.e., at the level of FY 1998), the total emissions in FY 2008 would be 3.4% lower than those of the base years.

Japan's Greenhouse Gas Emissions

Japan's greenhouse gas emissions in FY 2008 were
+1.6% over the base year and -6.4% below the previous year.
(If the rate of operation of nuclear power plants was 84.2%, -3.4% below the base year.)

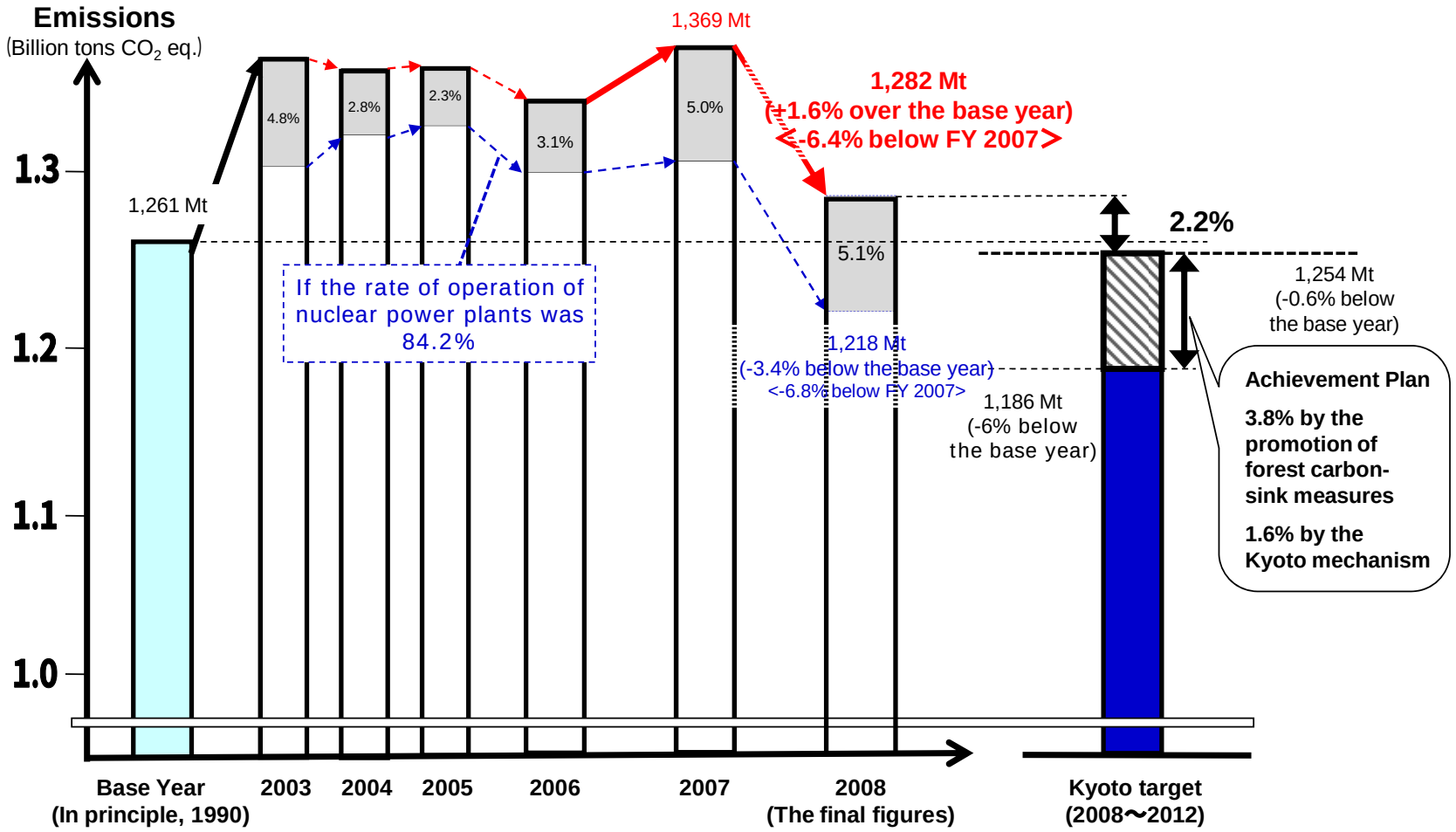

Figure 1 Japan's national greenhouse gas emissions

Table 1　Japan's national greenhouse gas emissions

	Base year under Kyoto Protocol (Share)	FY2007 (Compared to base year)	Changes from FY2007	FY2008 (Compared to base year)
Total	**1,261 (100%)**	**1,369 (+8.5%)**	→ **<-6.4%>** →	**1,282 (+1.6%)**
Carbon Dioxide (CO_2)	1,144 (90.7%)	1,301 (+13.7%)	→ **<-6.6%>** →	**1,214 (+6.1%)**
Energy-origin Carbon Dioxide	1,059 (84.0%)	1,218 (+15.1%)	→ **<-6.6%>** →	**1,138 (+7.5%)**
Non-Energy-origin Carbon Dioxide	85.1 (6.7%)	82.1 (-3.5%)	→ **<-7.1%>** →	**76.3 (-10.3%)**
Methane (CH_4)	33.4 (2.6%)	21.7 (-34.9%)	→ **<-2.1%>** →	**21.3 (-36.2%)**
Nitrous Oxide (N_2O)	32.6 (2.6%)	22.6 (-30.8%)	→ **<-0.5%>** →	**22.5 (-31.2%)**
F-gases	51.2 (4.1%)	24.1 (-52.9%)	→ **<-1.9%>** →	**23.6 (-53.8%)**
Hydrofluorocarbons (HFCs)	20.2 (1.6%)	13.3 (-34.3%)	→ **<+15.0%>** →	**15.3 (-24.5%)**
Perfluorocarbons (PFCs)	14.0 (1.1%)	6.4 (-54.3%)	→ **<-28.0%>** →	**4.6 (-67.1%)**
Sulfur Hexafluoride (SF_6)	16.9 (1.3%)	4.4 (-74.0%)	→ **<-14.7%>** →	**3.8 (-77.8%)**

(Unit: Mt-CO_2 eq.)

Table 2　Energy-origin CO_2 emissions by sector
(CO_2 emissions from power generation and steam generation are allocated on an end-user basis)

	Base year under Kyoto Protocol (Share)	FY2007 (Compared to base year)	Changes from FY2007	FY2008 (Compared to base year)
Total	**1,059 (100.0%)**	**1,218 (+15.1%)**	→ **<-6.6%>** →	**1,138 (+7.5%)**
Industries (factories, etc)	482 (45.5%)	467 (-3.0%)	→ **<-10.4%>** →	**419 (-13.2%)**
Transport (cars, ships, etc)	217 (20.5%)	245 (+12.9%)	→ **<-4.1%>** →	**235 (+8.3%)**
Commercial and Other (commerce, service, office, etc)	164 (15.5%)	243 (+47.9%)	→ **<-3.3%>** →	**235 (+43.0%)**
Residential	127 (12.0%)	180 (+41.1%)	→ **<-4.9%>** →	**171 (+34.2%)**
Energy Industries (power plants, etc)	67.9 (6.4%)	82.9 (+22.2%)	→ **<-5.7%>** →	**78.2 (+15.2%)**

(Unit: Mt-CO_2)

【Details of increase/decrease in energy-origin CO_2 emissions compared to FY 2007】

○ Industries sector (factories, etc.): 48.8 million tons (10.4%) decrease
  ・Emissions from manufacturing and others decreased.

○ Transport sector (cars, ships, etc.): 10.0 million tons (4.1%) decrease
  ・Emissions from private cars and trucks/lorries decreased.

○ Commercial and Other sectors (commerce, service, office, etc.): 8.0 million tons（3.3%) decrease
  ・Emissions associated with consumption of oil products (e.g., fuel oil, kerosene) and electricity decreased.

○ Residential sector: 8.7 million tons (4.9%) decrease
  ・Emissions associated with consumption of oil products (e.g., kerosene, LPG) and electricity decreased.

○ Energy Industries sector (power plants, etc.): 4.8 million tons (5.7%) decrease
  ・Emissions associated with oil refinery and own use for power generation decreased.

【Details of increase/decrease in greenhouse gas emissions other than energy-origin CO_2 emissions compared to FY 2007 (CO_2 equivalents)】

○ Non-energy origin CO_2 emissions: 5.8 million tons (7.1%) decrease
  ・Emissions from the Industrial Processes sector (e.g., cement production) and the Waste sector (e.g., waste incineration) decreased.

○ Methane (CH_4) emissions: 0.5 million tons (2.1%) decrease
  ・Emissions from the Waste sector (e.g., solid waste disposal on land) decreased.

○ Nitrous Oxide (N_2O) emissions: 0.1 million tons (0.5%) decrease
  ・Emissions from the Energy sector (e.g., transportation) and from the Agriculture sector (e.g., agricultural soils) decreased.

○ Hydrofluorocarbons (HFCs): 2.0 million tons (15.0%) increase
  ・Emissions from refrigeration increased as a result of substituting HCFC, which is an ozone depleting substance, with HFC.

○ Perfluorocarbons (PFCs): 1.8 million tons (28.0%) decrease
  ・Emissions from semiconductor manufacturing, cleaning agents/solvents and others decreased.

○ Sulfur Hexafluoride (SF_6): 0.6 million tons (14.7%) decrease
  ・Emissions from metal production and semiconductor manufacturing decreased.