Japan's National Greenhouse Gas Emissions in Fiscal Year 2020 (Final Figures¹) <Executive Summary>

- Japan's total greenhouse gas (GHG) emissions² in fiscal year³ (FY) 2020 were 1,150 million tonnes of carbon dioxide equivalent (Mt CO₂ eq.).
- > Total emissions decreased by 5.1% (62 Mt CO₂ eq.) compared to FY2019 emissions (1,212 Mt CO₂ eq.).
- Total emissions decreased by 18.4% (259 Mt CO₂ eq.) compared to FY2013 emissions (1,409 Mt CO₂ eq.). Emissions

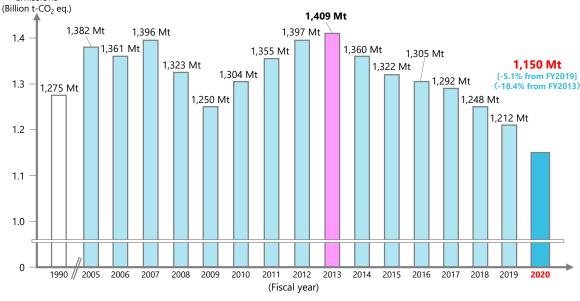


Figure 1 Japan's total national GHG emissions in FY2020 (final figures)

Note:

- Total GHG emissions have decreased for the seventh consecutive year, falling to a record low following FY2019 and since FY1990, when emission estimates began.
- The main factor for the decrease in emissions as compared to FY2019: the reduced energy consumption due to reduced production in manufacturing industries and decrease in the amount of passenger and freight traffic, etc., resulting from the spread of the coronavirus disease 2019 (COVID-19).
- The two main factors for the decrease in emissions as compared to FY2013: the reduced energy consumption (due to improved energy conservation, the effects of the spread of COVID-19, etc.) and the decrease in CO₂ emissions from electricity production due to the wider use of low-carbon electricity (wider adoption of renewable energy, resumption of nuclear power plant operations).
- The emissions of hydrofluorocarbons that substitute ozone-depleting substances as refrigerants are increasing every year.
- Removals by forests and other carbon sink measures in FY2020 were 44.5 Mt CO₂ eq., consisting of 40.5 Mt CO₂ eq. by forest carbon sink measures, 2.7 Mt CO₂ eq. by carbon sink measures for agricultural soils, and 1.3 Mt CO₂ eq. by promotion of revegetation.
- The subtraction of Japan's removals by forests and other carbon sink measures from the total GHG emissions yielded 1,106 Mt CO₂ eq. (a decrease by 60 Mt CO₂ eq. from FY2019), reflecting a 21.5% (303.6 Mt CO₂ eq.) decrease compared to the total GHG emissions in FY2013.

Footnote:

- 1. "Final figures" refers to the figures officially submitted to the Secretariat of the United Nations Framework Convention on Climate Change as Japan's GHG emissions and removals in the national GHG inventory. The final figures compiled this time may be recalculated when annual statistical data are updated, and/or estimation methods are revised.
- 2. There are some differences between the final figures compiled this time and the preliminary figures released on December 10, 2021, due to recalculations conducted based on annual statistical data made available after the preliminary estimation, and further revision of estimation methods. The preliminary figures for GHG emissions in FY2020 were 1,149 Mt CO2 eq., showing a 5.1% decrease compared to FY2019 (an 18.4% decrease compared to FY2013).
- 3. Japan's fiscal year runs from April 1 to March 31.

1

				FY2020			
	FY1990	FY2013	FY2019		Amount of change 《Rate of change》		
	emissions	emissions	emissions	Emissions			
	[Share]	[Share]	[Share]	[Share]	Compared to	Compared to	
					FY2013	FY2019	
Total	1,275	1,409	1,212	1,150	-259.0	-62.1	
	[100%]	[100%]	[100%]	[100%]	《-18.4%》	《-5.1%》	
Carbon dioxide (CO ₂)	1,164	1,318	1,108	1,044	-273.7	-63.9	
	[91.2%]	[93.5%]	[91.4%]	[90.8%]	《 -20.8%》	《-5.8%》	
Energy-related CO ₂	1,068	1,235	1,029	967	-268.0	-61.2	
	[83.7%]	[87.7%]	[84.9%]	[84.1%]	《-21.7%》	《 <i>-</i> 5.9%》	
Non-energy-related CO ₂	96.1	82.5	79.5	76.8	-5.7	-2.7	
	[7.5%]	[5.9%]	[6.6%]	[6.7%]	《-6.9%》	《-3.4%》	
Methane (CH ₄)	44.1	30.1	28.5	28.4	-1.7	-0.08	
	[3.5%]	[2.1%]	[2.3%]	[2.5%]	《-5.6%》	《-0.3%》	
Nitrous oxide (N ₂ O)	32.4	22.0	20.3	20.0	-2.1	-0.27	
	[2.5%]	[1.6%]	[1.7%]	[1.7%]	《 -9.4%》	《-1.3%》	
Four gases incl. alternative CFC	35.4	39.1	55.4	57.5	+18.4	+2.1	
	[2.8%]	[2.8%]	[4.6%]	[5.0%]	《 +47.1%》	《+3.8%》	
Hydrofluorocarbons (HFCs)	15.9	32.1	49.7	51.7	+19.6	+2.0	
	[1.2%]	[2.3%]	[4.1%]	[4.5%]	《+61.0%》	《+4.0%》	
Perfluorocarbons (PFCs)	6.5	3.3	3.4	3.5	+0.19	+0.05	
	[0.5%]	[0.2%]	[0.3%]	[0.3%]	《+5.7%》	《 +1.5%》	
Sulfur hexafluoride (SF ₆)	12.9	2.1	2.0	2.0	-0.05	+0.03	
	[1.0%]	[0.1%]	[0.2%]	[0.2%]	《 -2.3%》	《+1.4%》	
Nitrogen trifluoride (NF ₃)	0.03	1.6	0.26	0.29	-1.3	+0.03	
	[0.003%]	[0.1%]	[0.02%]	[0.03%]	《 -82.1%》	《 +10.5%》	
					(Unit∙Mt-CO₂ ea)	

Table 1 Japan's national GHG emissions by gas in FY2020 (compared to FY2013 and FY2019)

(Unit: Mt-CO₂ eq.)

Table 2 Energy-related CO₂ emissions from each sector (after allocation of power and heat)

					FY2020			
		FY1990 emissions	FY2013 emissions	FY2019 emissions	Emissions		unt of change e of change》	
		[Share]	[Share]	[Share]	[Share]	Compared	Compared	
						to FY2013	to FY2019	
Total		1,068	1,235	1,029	967	-268.0	-61.2	
	[100%]	[100%]	[100%]	[100%]	《-21.7%》	《-5.9%》		
Industry		503	464	387	356	-108.1	-31.2	
(factories, etc.)		[47.2%]	[37.5%]	[37.6%]	[36.8%]	《-23.3%》	《 -8.1%》	
Transport		208	224	206	185	-39.5	-21.0	
(cars, etc.)		[19.5%]	[18.2%]	[20.0%]	[19.1%]	《-17.6%》	《-10.2%》	
Commercial and ot	her:	131	237	191	182	-55.1	-8.9	
(commerce, service, offi	ce, etc.)	[12.3%]	[19.2%]	[18.6%]	[18.8%]	《-23.2%》	《-4.7%》	
Residential		129	208	159	166	-41.1	+7.2	
Residential	[12.1%]	[16.8%]	[15.5%]	[17.2%]	《-19.8%》	《+4.5%》		
Energy conversion	96.2	103	85.7	78.4	_	_		
	[9.0%]	[8.3%]	[8.3%]	[8.1%]	-	_		
Power plants, oil refineries, etc.		96.2	106	89.6	82.1	-24.1	-7.5	
Fower plants, off refineries, etc.	[9.0%]	[8.6%]	[8.7%]	[8.5%]	《 -22.7%》	《 -8.4%》		
Statistical discrepancy fi	om power	-0.007	-3.5	-3.9	-3.6		_	
and heat allocat	ion	[-0.0006%]	[-0.3%]	[-0.4%]	[-0.4%]	-	-	
							(Linit: Mt)	

(Unit: Mt)

Note: "After allocation of power and heat" refers to the allocation of energy-related CO₂ emissions from power and heat generation to each sector based on the consumption of power and heat.

Details of main increases/decreases as compared to FY2019

1) Energy-related \mbox{CO}_2 emissions (after allocation of power and heat)

- Industry sector (factories, etc.): 31.2 Mt (8.1%) decrease
 The production in manufacturing industries decreased.
- Transport sector (cars, etc.): 21.0 Mt (10.2%) decrease
 - The amount of traffic decreased.
- Commercial and other sector (commerce, services, office, etc.): 8.9 Mt (4.7%) decrease
 - The tertiary industry activities stagnated.
- Residential sector: 7.2 Mt (4.5%) increase
 The time spent at home increased.
- Energy transformation sector (power plants, oil refineries, etc.) (excluding statistical discrepancy from power and heat allocation): 7.5 Mt (8.4%) decrease
 - Emissions from the manufacturing of oil products decreased.

2) Emissions other than energy-related CO₂ (CO₂ eq.)

- CO₂ emissions not related to energy: 2.7 Mt (3.4%) decrease
 Emissions from the Industrial Processes and Product Use sector decreased.
- Methane (CH₄) emissions: 0.08 Mt (0.3%) decrease
 - Emissions from the Waste sector decreased.
- Nitrous oxide (N₂O) emissions: 0.27 Mt (1.3%) decrease
 - Emissions from fuel combustion/ fugitives decreased.
- Hydrofluorocarbon (HFC) emissions: 2.0 Mt (4.0%) increase
 Emissions from refrigerants increased.
- Perfluorocarbon (PFC) emissions: 0.05 Mt (1.5%) increase
- Emissions from semiconductor and liquid crystal display (LCD) manufacturing increased.
- Sulfur hexafluoride (SF₆) emissions: 0.03 Mt (1.4%) increase
 - Emissions from metal production increased.
- Nitrogen trifluoride (NF₃) emissions: 0.03 Mt (10.5%) increase
 - Emissions from semiconductor and LCD manufacturing increased.