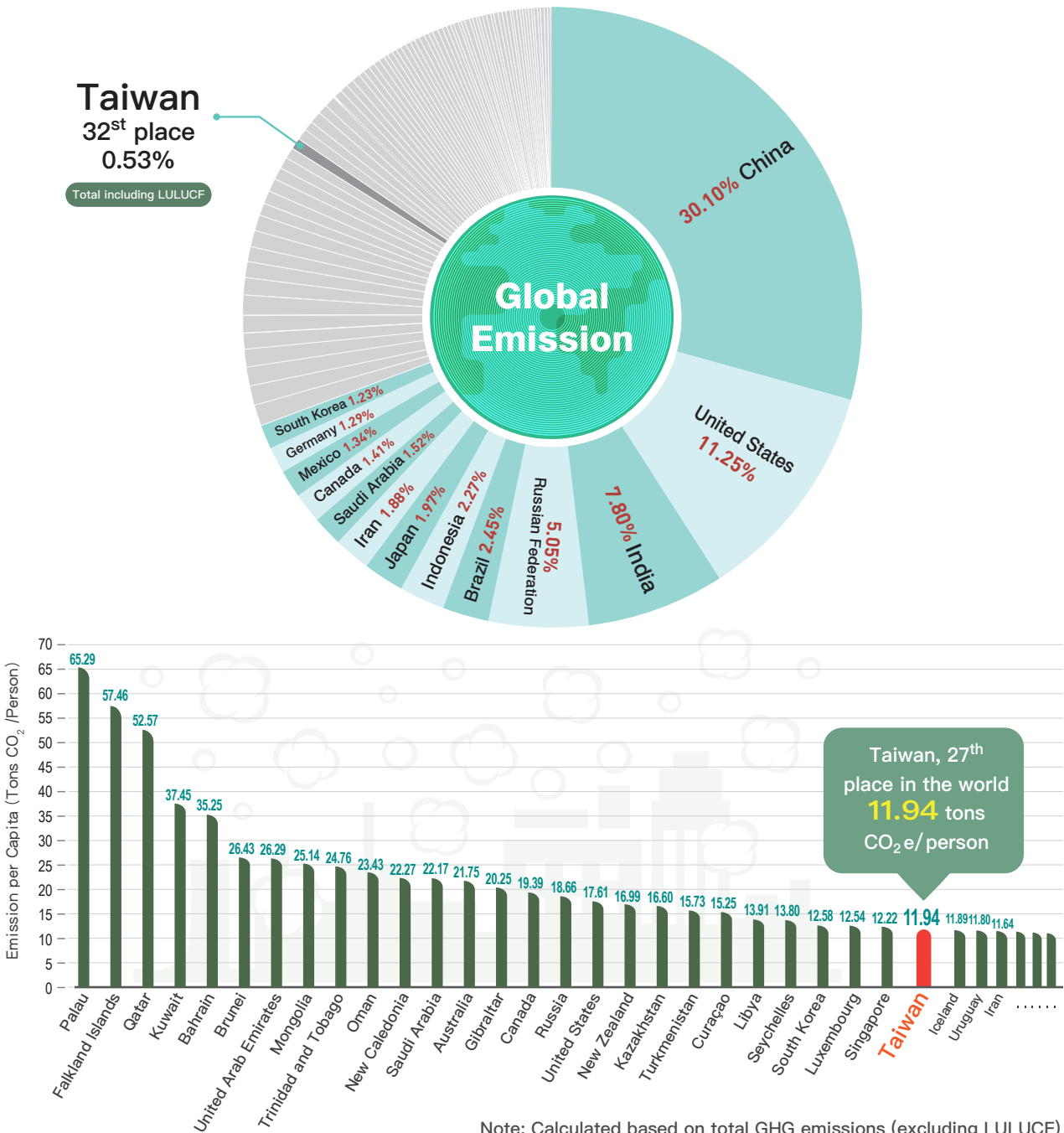


Global Share of Taiwan's Greenhouse Gases Emission

Taiwan belongs to the island-type independent energy system. More than 96% of energy is imported. The economy is guided by export trade.

In 2023, Taiwan's semiconductor industry accounted for 19.37% of the global market, ranking second worldwide. Among its sub-sectors, the semiconductor foundry and IC packaging and testing industries held global market shares of 65% and 53%, respectively, both ranking first in the world.

But Taiwan's greenhouse gases emission only makes up 0.53% of the global amount. The major industries are continuing to reduce greenhouse gases emission in order to maintain their international competitiveness. However, as it subscribes to the non-nuclear homeland policy, Taiwan is facing greater difficulty as it endeavors to further reduce emissions.



2025 TAIWAN Greenhouse Gases Inventory - 1990 ~ 2023 -



環境部
Ministry of Environment

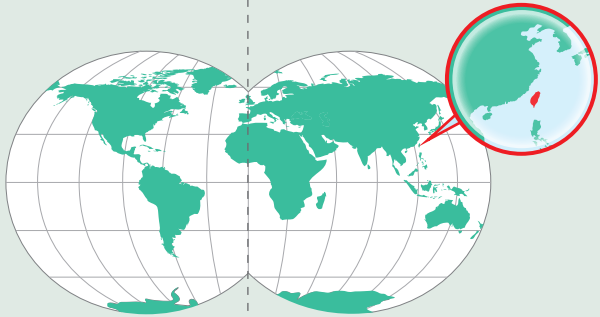
Advertisement

2025 TAIWAN Greenhouse Gases Inventory - 1990 ~ 2023 -

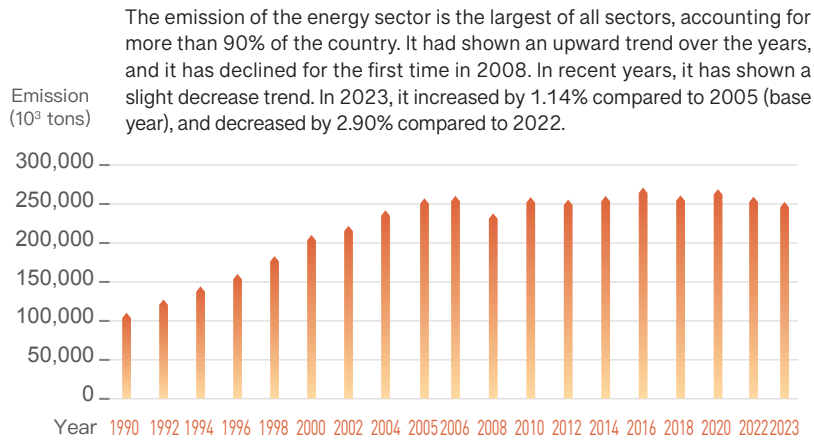


Trends of Various Emission Sources

The emission sources in Taiwan come from five major sectors: energy, industrial processes and product use, agriculture, land use change and forestry and waste.

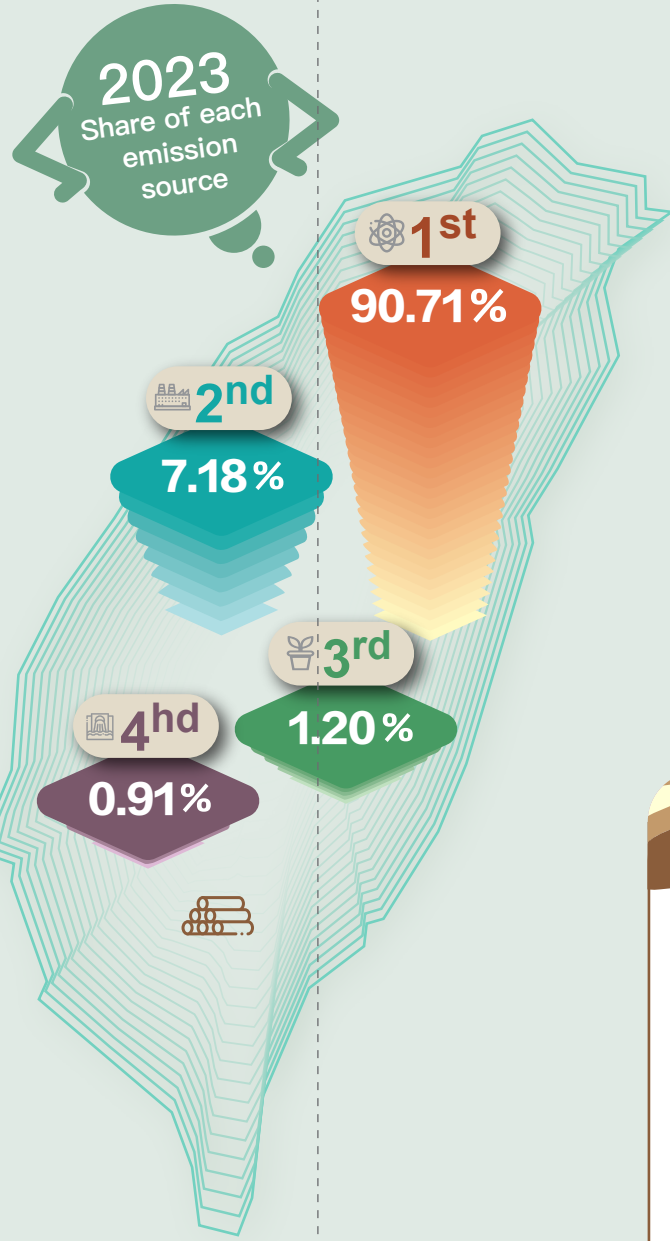
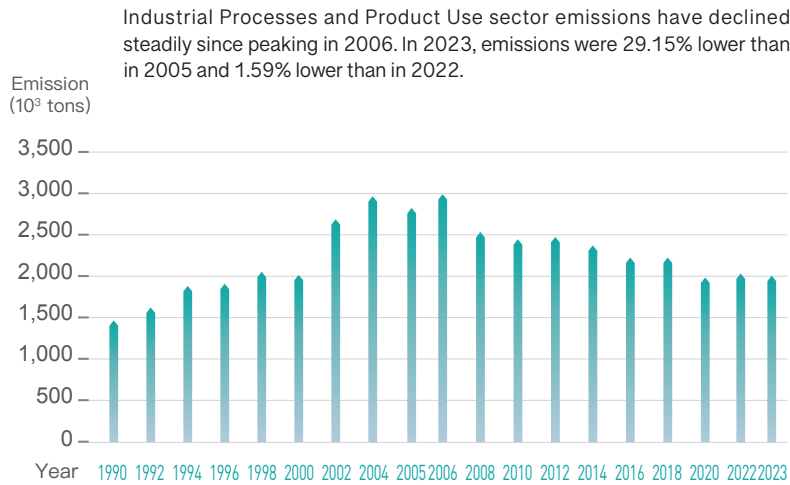


Energy Sector

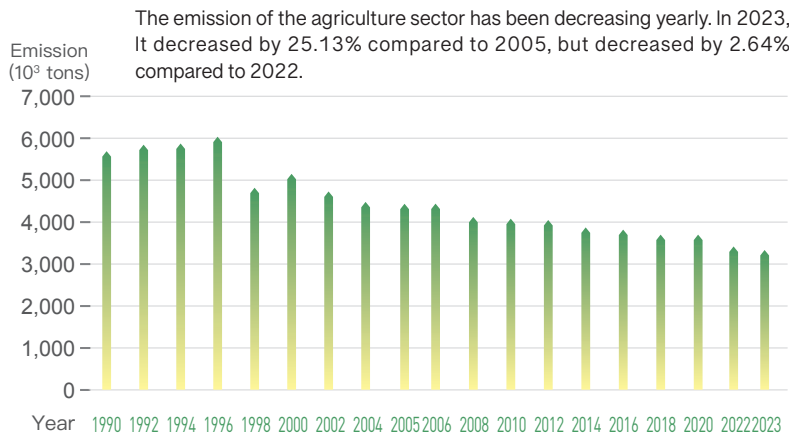


Energy industry 70.24%, Manufacturing and Construction Industries 11.83%, Transportation 14.00%, Service 1.56%, Residential 1.63%, Agriculture, fishery, and husbandry 0.61%, Fugitive emissions from fuels 0.13%.

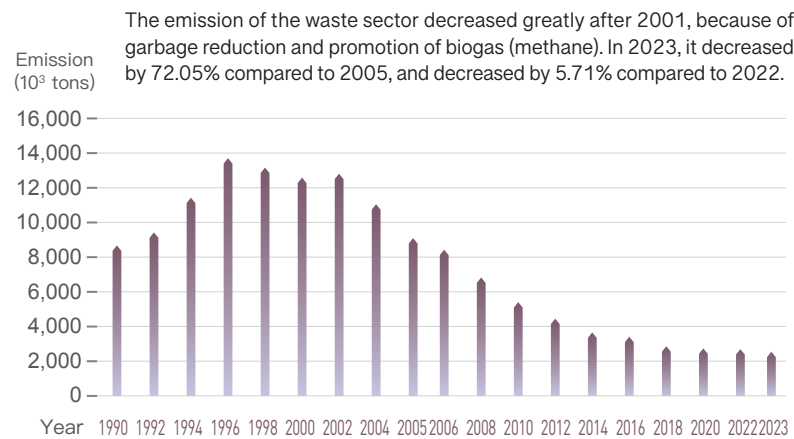
Industrial Processes and Product Use Sector



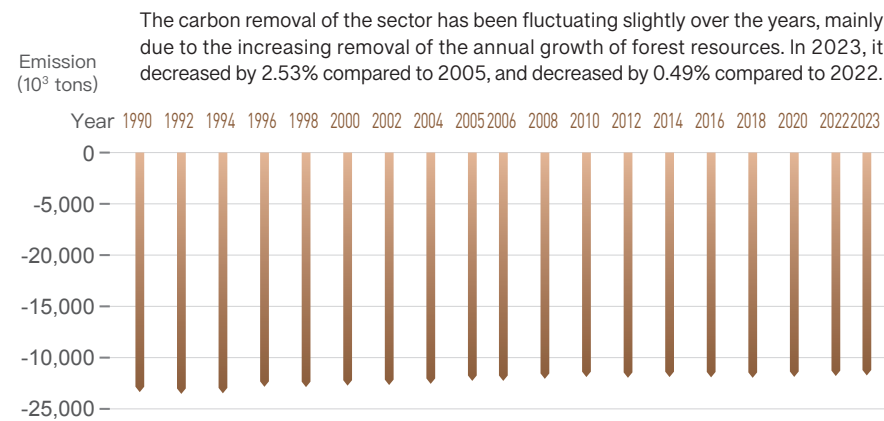
Agriculture Sector



Waste Sector



Land Use Change and Forestry Sector



Emission Trends of Greenhouse Gases

2023

Emission share of each greenhouse gas

CO₂ 95.86%

50

CH₄ 1.60%

Total fluoride gases 1.31%

N₂O 1.23%

1st CO₂ 95.86%

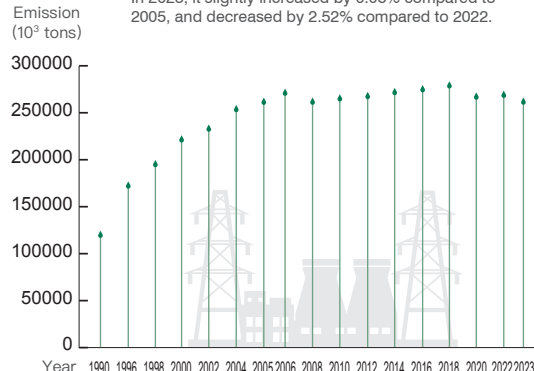
2nd CH₄ 1.60%

3rd Total fluoride gases 1.31%

4th N₂O 1.23%

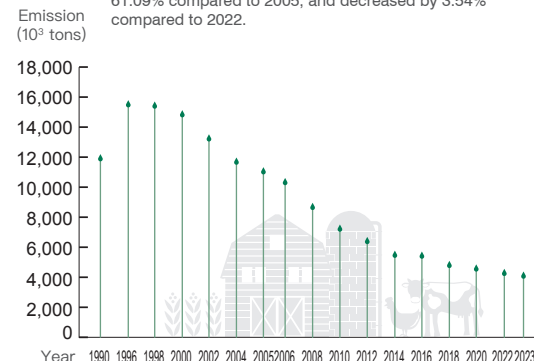
CO₂ Carbon dioxide

The primary emission sources are Energy Sector and Industrial Processes and Product Use Sector. In 2023, it slightly increased by 0.08% compared to 2005, and decreased by 2.52% compared to 2022.



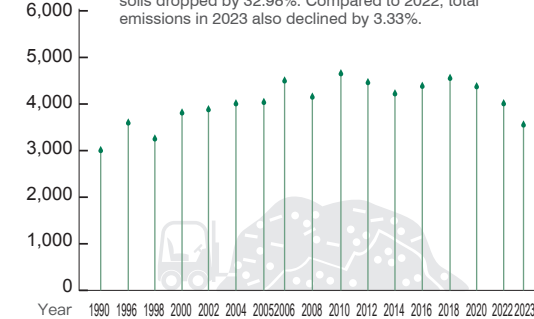
CH₄ Methane

The primary emission sources are Agriculture Sector and Waste Sector. The annual emission of methane has been decreasing since 2000, mainly due to promotion of garbage reduction, zero landfill of waste, biogas recovery for power generation, rising connection rate of sewage, three-stage treatment of livestock excrements, and farmland reduction. In 2023, it decreased by 61.09% compared to 2005, and decreased by 3.54% compared to 2022.



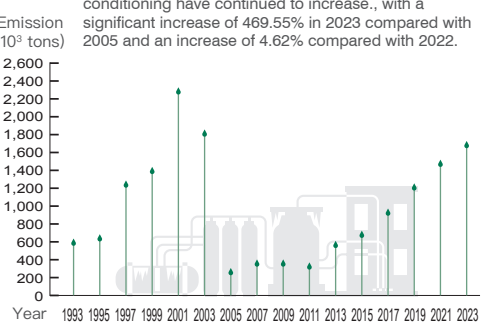
N₂O Nitrous oxide

The primary emission sources are Industrial Processes and Product Use Sector, Agriculture Sector, and Energy Sector. In 2023, emissions decreased by 11.77% compared to 2005, mainly due to the Ministry of Agriculture's promotion of rational fertilization and the implementation of fallow practices. Notably, emissions from agricultural soils dropped by 32.98%. Compared to 2022, total emissions in 2023 also declined by 3.33%.



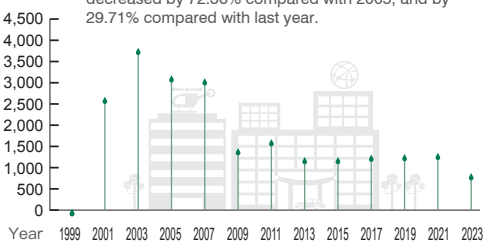
HFCs Hydrofluorocarbons

After the closing of the only HFCs producing plant in 2004, the emission has been decreasing every year. In recent years, HFCs emissions by refrigeration and air conditioning have continued to increase., with a significant increase of 469.55% in 2023 compared with 2005 and an increase of 4.62% compared with 2022.



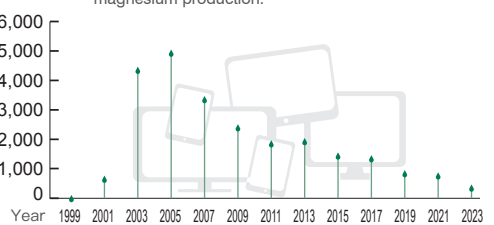
PFCs Perfluorocarbons

Since 2004, Taiwan Semiconductor Industry Association has cooperated with the government to promote the voluntary reduction scheme, including the introduction of waste gas disposal and the improvement for the manufacturing process by semiconductor and optronic industries, which has led to a gradual reduction of emissions. In 2023, it decreased by 72.36% compared with 2005, and by 29.71% compared with last year.



SF₆ Sulfur hexafluoride

The emission of SF₆ has been decreasing since 2005, mainly due to the lower usage amount in TFT flat screen display, power equipment, and magnesium production.



NF₃ Nitrogen trifluoride

The emission of NF₃ has been fluctuating due to the variance for the production of semiconductor and TFT flat screen display.

