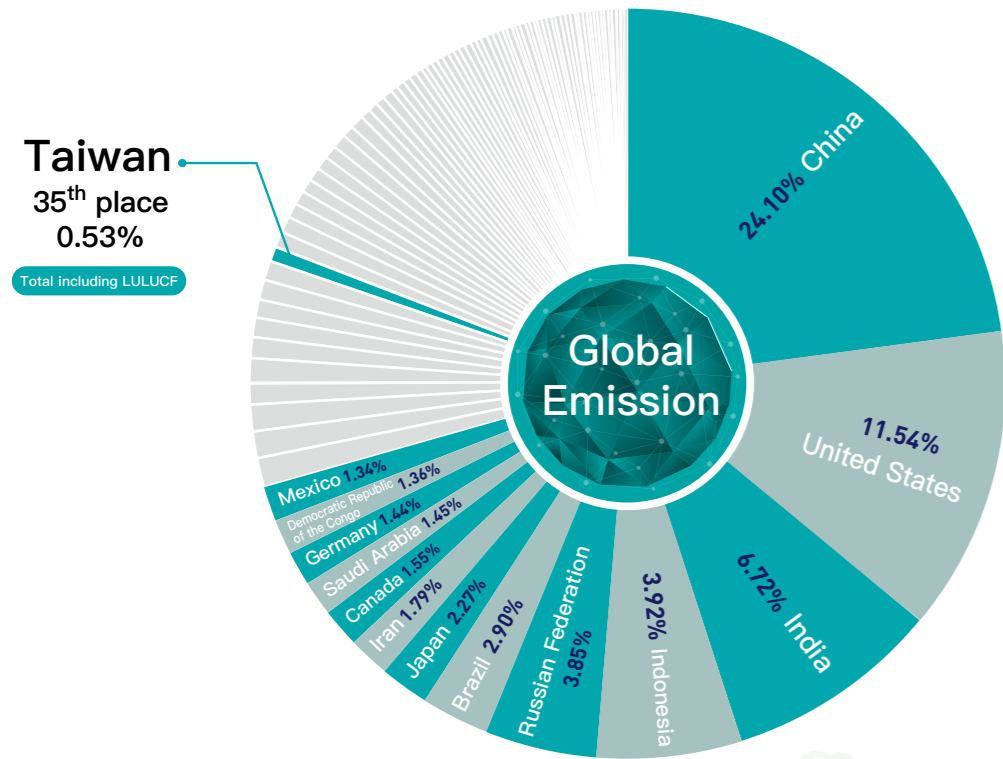


Global Share of Taiwan's Greenhouse Gases Emission

Taiwan belongs to the island-type independent energy system. More than 98% of energy is imported. The economy is guided by export trade. The industrial structure is mainly manufacturing, in which semiconductor and panels output value ranks the second 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.



2022 TAIWAN Greenhouse Gases Inventory

- 1990 ~ 2020 -

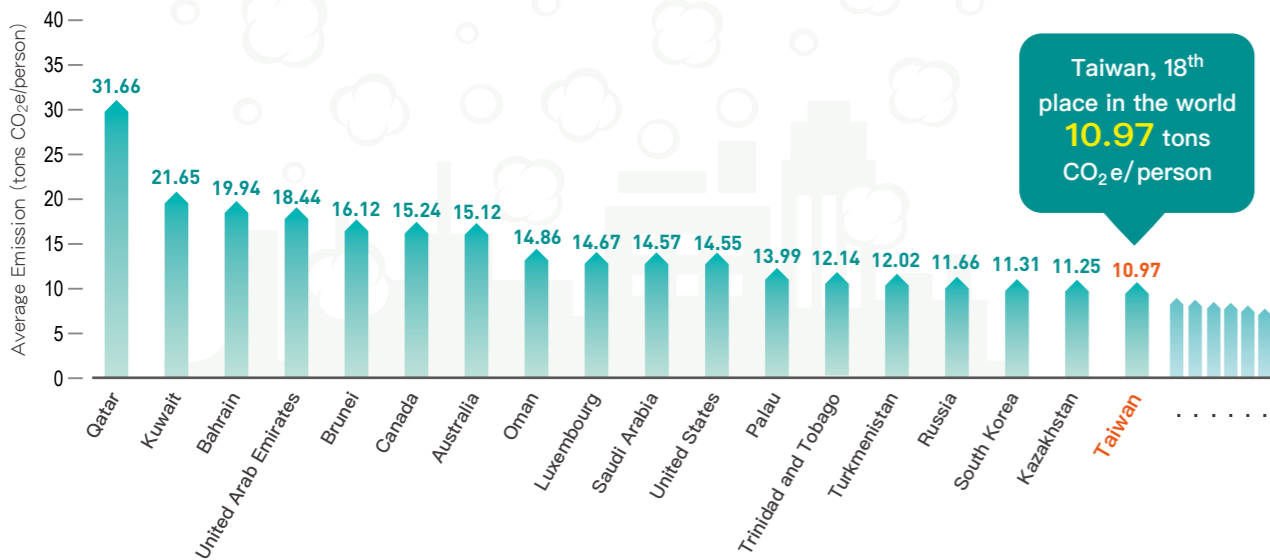
2022 TAIWAN Greenhouse Gases Inventory

- 1990 ~ 2020 -

Taiwan Environmental Protection Administration
<http://www.epa.gov.tw>



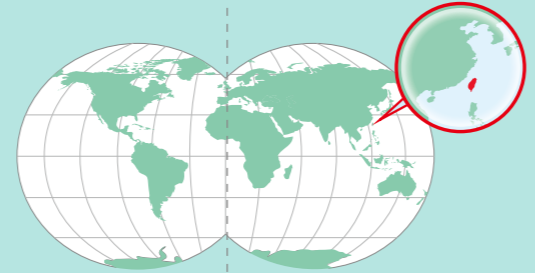
Advertisement



Taiwan, 18th place in the world 10.97 ton CO₂e/ person *GHG emission (Excluding LUCF)

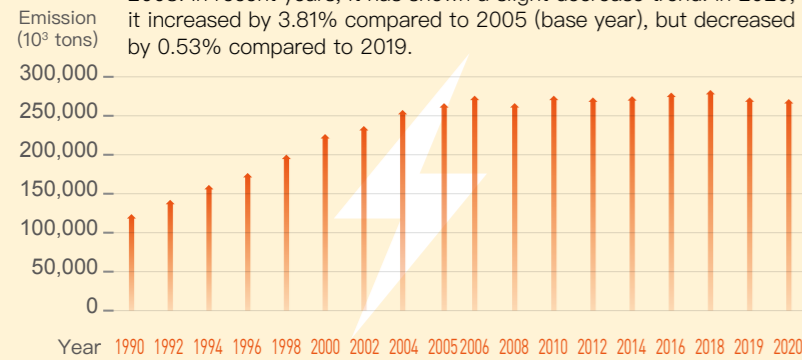
Trends of Various Emission Sources

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

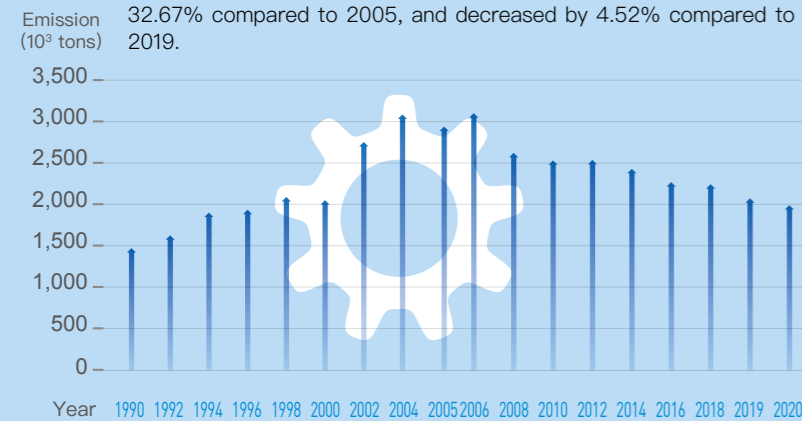
The emission of the energy sector is the largest of all sectors, accounting for more than 90% of the country. It had shown an upward trend over the years, and it has declined for the first time in 2008. In recent years, it has shown a slight decrease trend. In 2020, it increased by 3.81% compared to 2005 (base year), but decreased by 0.53% compared to 2019.



Energy industry 69.91%, Manufacturing and Construction Industries 12.25%, Transportation 14.08%, Service 1.36%, Residential 1.78%, Agriculture, fishery, and husbandry 0.51%, Fugitive emissions from fuels 0.10%.

Industrial Processes and Product Use Sector

The year with the highest emission for this sector was 2006, which made up 10.37% of national emission, and then the greenhouse gases emission has been a downward trend. In 2020, it decreased by 32.67% compared to 2005, and decreased by 4.52% compared to 2019.



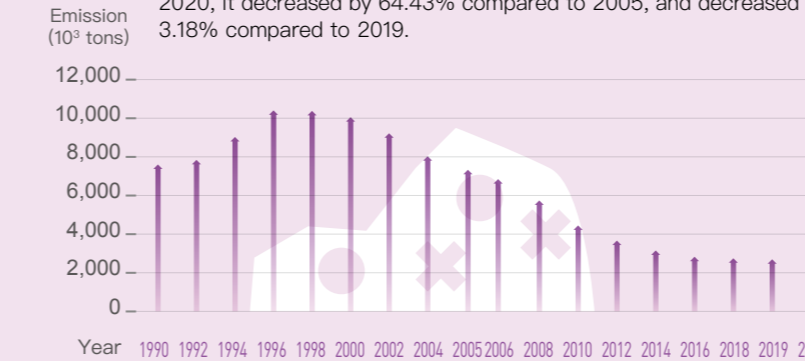
Agriculture Sector

The emission of the agriculture sector has been decreasing yearly. In 2020, it decreased by 15.73% compared to 2005, but slightly increased by 1.33% compared to 2019.



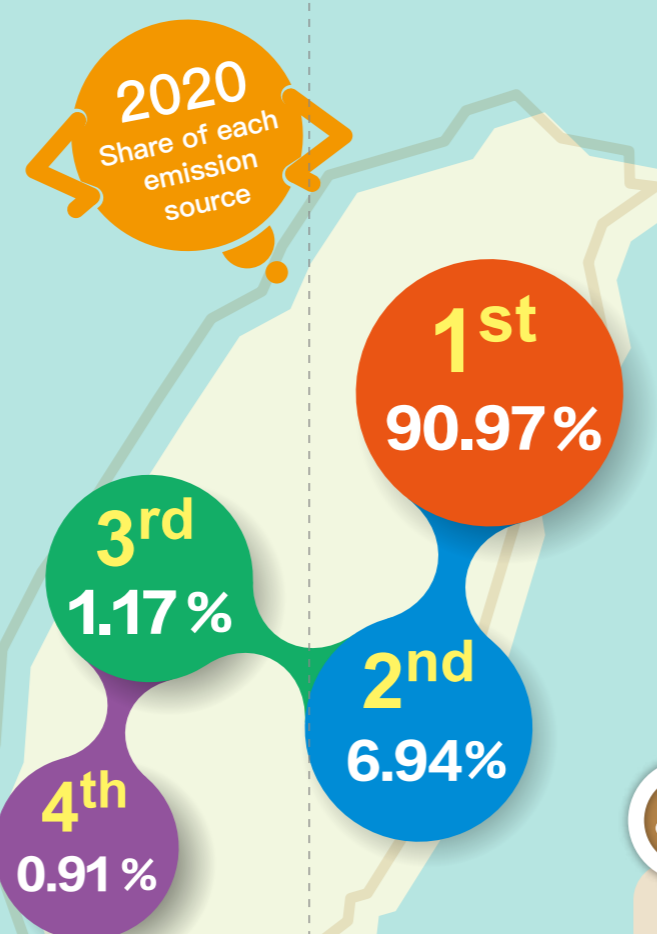
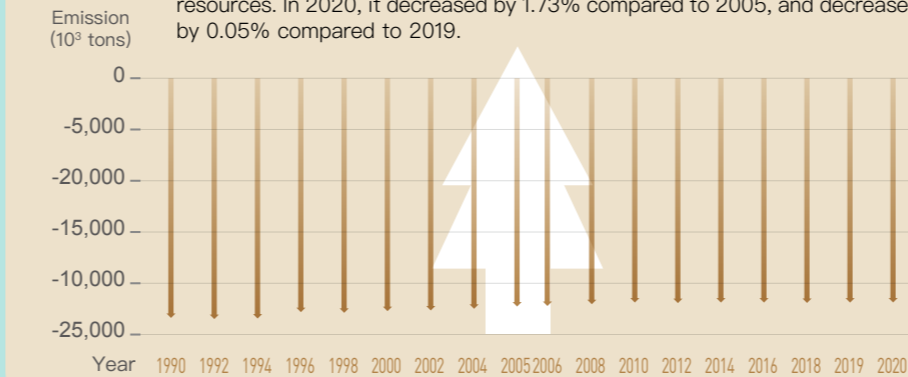
Waste Sector

The emission of the waste sector decreased greatly after 2000, because of garbage reduction and promotion of biogas (methane). In 2020, it decreased by 64.43% compared to 2005, and decreased by 3.18% compared to 2019.



Land Use Change and Forestry Sector

The carbon removal of the sector has been fluctuating slightly over the years, mainly due to the increasing removal of the annual growth of forest resources. In 2020, it decreased by 1.73% compared to 2005, and decreased by 0.05% compared to 2019.



Emission Trends of Greenhouse Gases

2020

Emission share of each greenhouse gas

CO₂
95.29%

CH₄ 1.62%
N₂O 1.72%

1.37%
Total fluoride gases

1st CO₂
95.29%

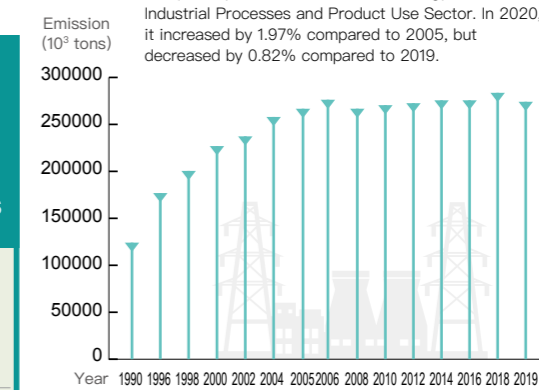
2nd CH₄
1.62%

3rd N₂O
1.72%

Total fluoride gases
1.37%

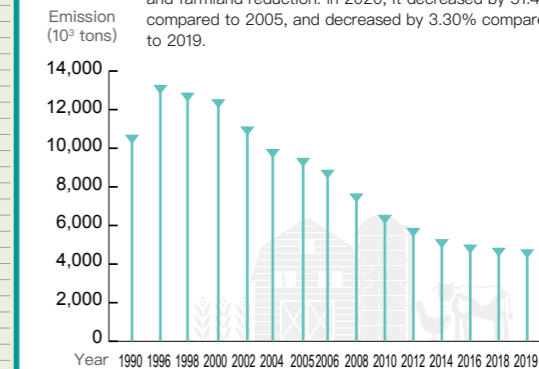
CO₂ Carbon dioxide

The primary emission sources are Energy Sector and Industrial Processes and Product Use Sector. In 2020, it increased by 1.97% compared to 2005, but decreased by 0.82% compared to 2019.



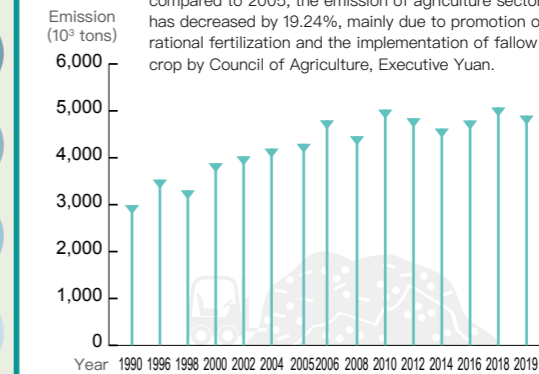
CH₄ Methane

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 2020, it decreased by 51.43% compared to 2005, and decreased by 3.30% compared to 2019.



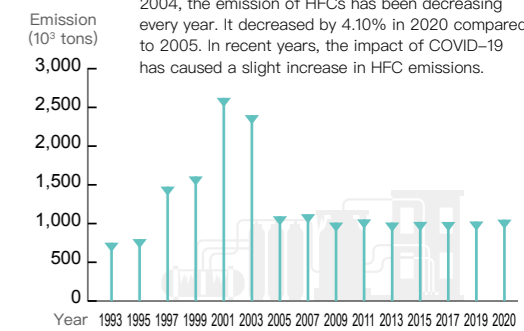
N₂O Nitrous oxide

The primary emission sources are Industrial Processes and Product Use Sector, Agriculture Sector, and Energy Sector. In recent years, nitrous oxide emission has slowed down. Although it increased by 14.08% in 2020 compared to 2005, the emission of agriculture sector has decreased by 19.24%, mainly due to promotion of rational fertilization and the implementation of fallow crop by Council of Agriculture, Executive Yuan.



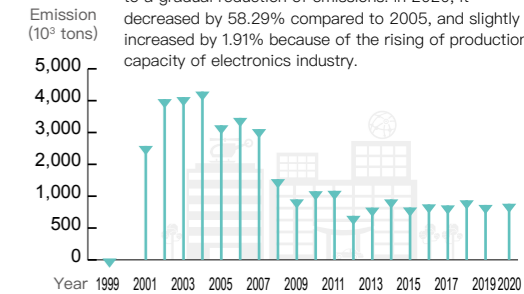
HFCs Hydrofluorocarbons

After the closing of the only CFC-producing plant in 2004, the emission of HFCs has been decreasing every year. It decreased by 4.10% in 2020 compared to 2005. In recent years, the impact of COVID-19 has caused a slight increase in HFC emissions.



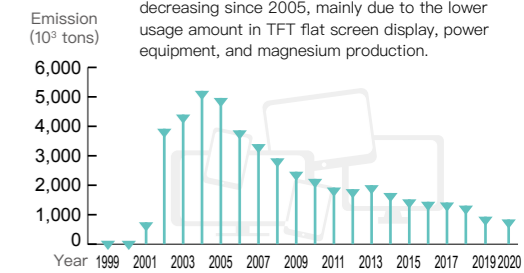
PFCs Perfluorocarbons

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 2020, it decreased by 58.29% compared to 2005, and slightly increased by 1.91% because of the rising of production capacity of electronics industry.



SF₆ Sulfur hexafluoride

The emission of sulfur hexafluoride 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 Nitrogen trifluoride has been fluctuating due to the variance for the production of semiconductor and TFT flat screen display.

