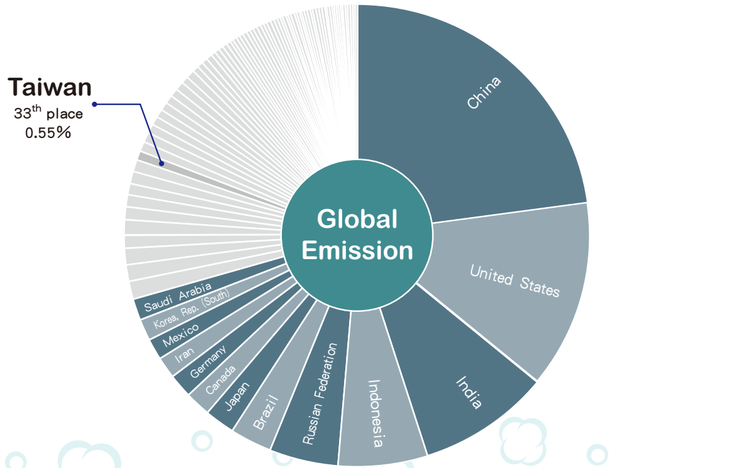
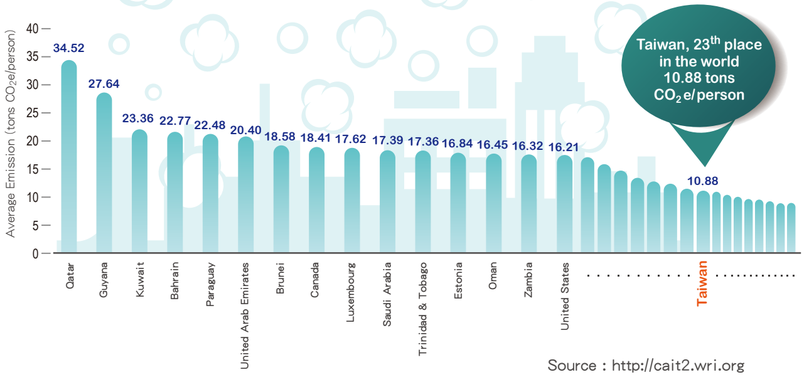
Global Share of Taiwan's Greenhouse Gases Emission

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, wherein the global share for production value is 25% for semiconductor and 38 to 40% for panels. But Taiwan' s greenhouse gases emission only makes up 0.55% 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.





Source : http://cait2.wri.org
＊GHG emission (including LUCF)

2019

TAIWAN

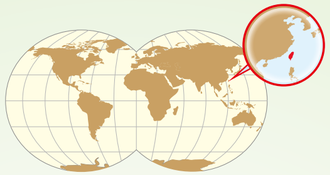
Greenhouse Gases Inventory

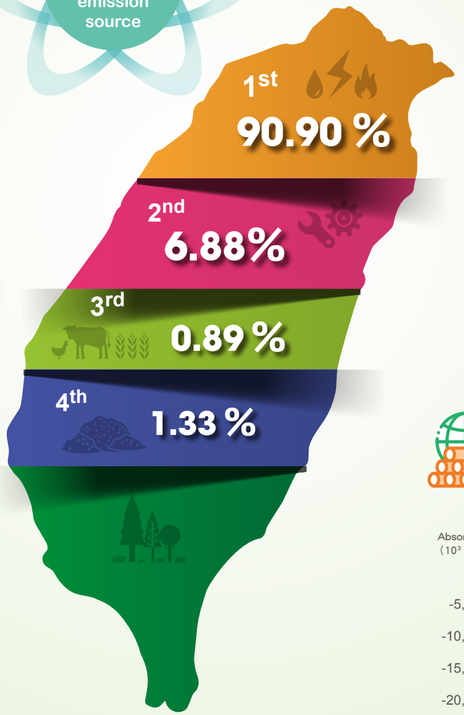
1990 - 2017

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

Trends of Various Emission Sources

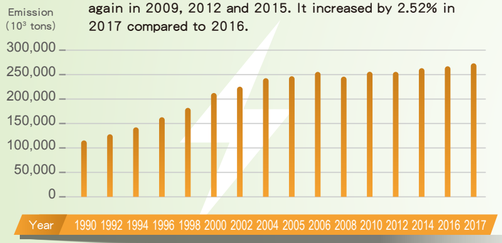
The emission sources in Taiwan come from five major sectors: energy, industrial processes and product use, agriculture, land use change and forestry and waste.





Energy Sector

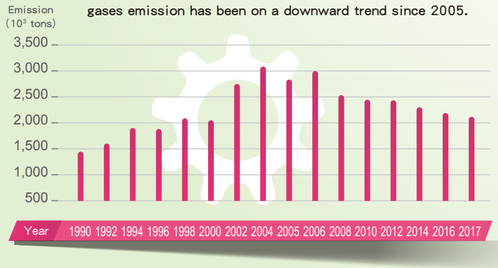
The emission of the energy sector is more than 90% at first place. It decreased in 2008 for the first time, and decreased again in 2009, 2012 and 2015. It increased by 2.52% in 2017 compared to 2016.



Energy Industry 69.20%, Manufacturing and Construction Industries 13.60%, Transportation 13.64%, Service industrinstitution 1.40%, Residential 1.63%, Agriculture, fishery, and husbandry 0.45%, Fugitive emissions from fuels 0.08%

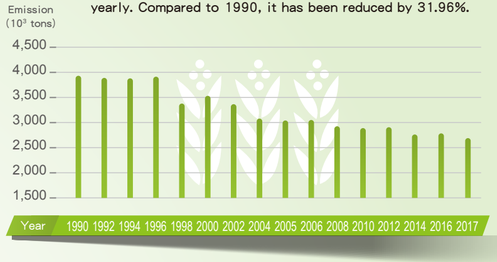
Industrial Processes and Product Use Sector

The year with the highest emission for this sector was 2004, which made up 10.82% of national emission. The greenhouse gases emission has been on a downward trend since 2005.



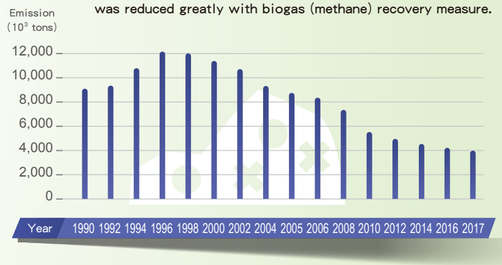
Agriculture Sector

The emission of the agriculture sector has been decreasing yearly. Compared to 1990, it has been reduced by 31.96%.



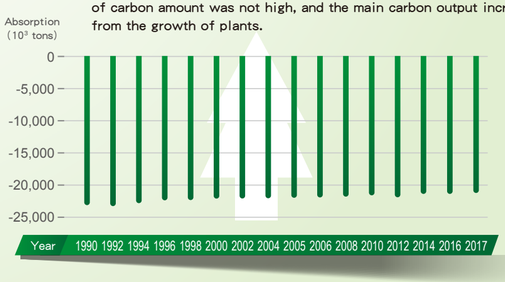
Waste Sector

The emission of the waste sector decreased greatly after 2000 because of garbage reduction. The number of landfills was reduced greatly with biogas (methane) recovery measure.



Land Use Change and Forestry Sector

The removal has been fluctuating slightly over the years. The variance of carbon amount was not high, and the main carbon output increased from the growth of plants.



Emission Trends of Greenhouse Gases

2017

Emission share of each greenhouse gas

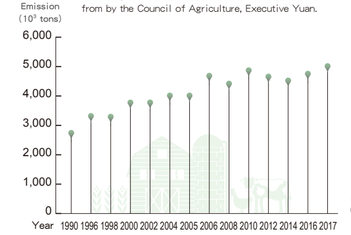
1st	CO_2	95.36%
2nd	CH_4	1.85%
3rd	N_2O	1.64%
Total fluoride gases		1.15%

CO_2 Carbon dioxide

The emission of CO_2 has increased by 129.56% in 28 years. The annual average growth rate is 3.13%.

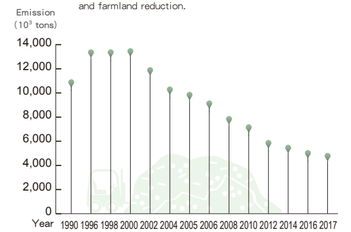
N_2O Nitrous oxide

The emission of N_2O had increased by 68.99% from 1990 - 2017. The annual average growth rate was 1.96%. The emission of agriculture sector has decreased by 31.11% due to the implementation of fallowing and promotion of rational fertilization from by the Council of Agriculture, Executive Yuan.



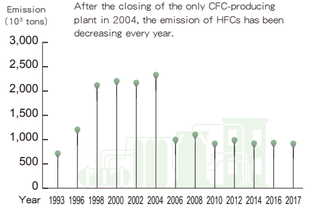
CH_4 Methane

The annual emission of CH_4 has been decreasing since 2000 due to the promotion of garbage reduction, zero landfill of waste, biogas recovery for power generation, rising connecting rate of sewage, 3-stage treatment of livestock excrements, and farmland reduction.



HFC_s Hydrofluorocarbons

After the closing of the only CFC-producing plant in 2004, the emission of HFCs has been decreasing every year.



PFC_s Perfluorocarbons

Since 2004, the Taiwan Semiconductor Industry Association has started to cooperate with the government to promote voluntary reduction scheme, including the introduction of waste gas disposal by the semiconductor and optronical industries, and their process improvement. This has led to a gradual reduction of emissions.

SF_6 Sulfur hexafluoride

The emission of SF_6 has been decreasing since 2005 because its use in TFT flat screen display, power equipment and magnesium production was reduced.

NF_3 Nitrogen trifluoride

The emission of NF_3 has been fluctuating due to the variance for the production of semiconductor and TFT flat screen display.