

# Greenhouse gases emissions, energy efficiency and carbon reduction

In accordance with the push of Republic of China's "Greenhouse Gas Reduction and Management Act", **cpc** aims to decrease in-plant temperature, replace air conditioning system and reduce energy consumption by raised design, adding outer walls and adopting natural circulation for ventilation & heat dissipation based on energy saving and carbon reduction during factory design and reducing greenhouse gas emissions. However, the main source of greenhouse gas emissions is electricity. Therefore, power saving and other energy-saving projects are the company's main environmental protection management goals:

## 1. Carbon reduction targets

- (1) Following the ISO50001 standard, **cpc** aims to save energy in accordance with the provisions of Articles 8, 9 and 12 of the Energy Administration Act. Energy users whose energy consumption meets the level stipulated by the Government, shall establish its own energy audit system and set objectives for energy conservation and execution, in order to achieve an annual energy saving rate of more than one percent.
- (2) According to the data provided by Bureau of Energy, Ministry of Economic Affairs, the energy savings and carbon reduction measures for the year 2018 produced 0.533kg of CO<sub>2</sub> per kilowatt hour, while the amount of electricity saved was 121,246.58 degrees, and carbon reduction of 64624.42 kg.
- (3) According to the data provided by Bureau of Energy, Ministry of Economic Affairs, the energy savings and carbon reduction measures for the year 2019 produced 0.509kg of CO<sub>2</sub> per kilowatt hour, while the amount of electricity saved was 150,393.6 degrees, and carbon reduction of 76550.34 kg.

- (4) According to the data provided by Bureau of Energy, Ministry of Economic Affairs, the energy savings and carbon reduction measures for the year 2020 produced 0.502kg of CO<sub>2</sub> per kilowatt hour, while the amount of electricity saved was 99,400 degrees, and carbon reduction of 49898.8 kg.
- (5) According to the data provided by Bureau of Energy, Ministry of Economic Affairs, the energy savings and carbon reduction measures for the year 2021 produced 0.509kg of CO<sub>2</sub> per kilowatt hour, while the amount of electricity saved was 94078.6 degrees, with carbon reduction of 47,886 kg as the target.
- (6) According to the data provided by Bureau of Energy, Ministry of Economic Affairs, the energy savings and carbon reduction measures for the year 2022 produced 0.495kg of CO<sub>2</sub> per kilowatt hour, while the amount of electricity saved was 304,956.96 degrees, with carbon reduction of 150,953 kg as the target.
- (7) According to the data provided by Bureau of Energy, Ministry of Economic Affairs, since the Bureau of Energy Bureau of the Ministry of Economic Affairs has not announced yet, the calculation is based on 0.495 kg CO<sub>2</sub> emission per kWh energy generated of electricity in 2022., while the amount of electricity saved was 284,575.33 degrees, with carbon reduction of 140,865 kg as the target.

## 2. Energy saving and carbon reduction measures

- (1) In 2018, the energy saving measures implemented was replacing the motors for the production line machines. By replacing the old motors with high-efficiency ones, the machineries' production efficiency increased from 75% to 91% while reducing power consumption. It is estimated this will prevent the loss of 121,246.58 degrees, with an annual power savings rate of 1.68%, and carbon reduction of about 64624.42 kg.
- (2) The energy savings measures done in 2019 were the replacement of 200hp air compressors with high-efficiency screw air compressors. The

estimation of power consumption can be reduced by 150,393.6 degrees of about 1.29% and carbon reduction of about 76550.34 kg.

- (3) The energy savings measures done in 2020 were the Replacement of traditional 40 of 500W projection lamps, and the estimation of power consumption can be reduced by 99,400 degrees of about 1.20% and carbon reduction of about 49898.8 kg.
- (4) The energy savings measures done in 2021 were the On-site AIR pipeline damage replacement, and the estimation of power consumption can be reduced by 94078.6 degrees of about 0.98% and carbon reduction of about 47,886 kg.
- (5) The energy savings measures done in 2022 were, the power saving measure was to replace the operating parts of the SIGMA 5100 wheel grinding machine, and the estimation of power consumption can be reduced by 304,956.96 degrees of about 2.75% and carbon reduction of about 150,953 kg.
- (6) The energy savings measures done in 2023 were, KENT surface grinding machine, SIGMA 2500 wheel grinding machine (replacement of screw and bearing), and the estimation of power consumption can be reduced by 284,575.33 degrees of about 3.08% and carbon reduction of about 140,865 kg.
- (7) The company cooperates with Republic of China 's green energy development goals to by using solar energy at the Shugu Plant. The solar equipment can reach up to 181kw.

3. The company's greenhouse gas emissions, water consumption and total waste weight and management policies in the past two years.

For the company's greenhouse gases emissions, the direct emission sources are mainly from purchased electricity. From 2019 to 2023, it was 9,080.8 degrees Celsius in 2019, 8,705.4 degrees Celsius in 2020, 9,537degrees Celsius in 2021, 10,547degrees Celsius in 2022 and 8,924degrees Celsius in 2023. The company's

total emissions in 2019 were approximately 4,622.127 metric tons of CO<sub>2</sub> e/year, 2020 were approximately 4,370.110 metric tons of CO<sub>2</sub> e/year, 2021 were 4,854.434 metric tons of CO<sub>2</sub> e/year, 2022 were 5,220.963 metric tons of CO<sub>2</sub> e/year and 2023 were 4,417.578 metric tons of CO<sub>2</sub> e/year. In response to the environmental impact caused by greenhouse gases, we will promote the reduction of greenhouse gases emissions, achieve sustainable energy development that takes into account cost and resource efficiency, energy conservation, and environmental protection.

Year	2019	2020	2021	2022	2023
Total Power Consumption (KWh)	9,080,800	8,705,400	9,537,200	10,547,400	8,924,400
CO <sub>2</sub> Emissions (mt)	4622.127	4370.110	4854.434	5220.963	4417.578
Energy Bureau of the Ministry of Economic Affairs	0.509 kg CO <sub>2</sub> emission per kWh energy generated	0.502 kg CO <sub>2</sub> emission per kWh energy generated	0.509 kg CO <sub>2</sub> emission per kWh energy generated	0.495 kg CO <sub>2</sub> emission per kWh energy generated	Since the Bureau of Energy Bureau of the Ministry of Economic Affairs has not announced yet, the calculation is based on 0.495 kg CO <sub>2</sub> emission per kWh energy generated of electricity in 2022.

The main energy consumption of the company comes from purchased electricity. In the past two years, the main source of emissions is purchased electricity,

accounting for more than 82% of the overall emissions, and the rest is diesel from emergency generators, gasoline from official vehicles, refrigerants, septic tanks, and WD-40).

Year	greenhouse gas emissions (tonCO <sub>2</sub> e)
109	5354.76
110	4900.43
111	5331.52

Improve energy use efficiency in 2011: Zhide Technology Co., Ltd. Shugu Phase I set up renewable energy equipment for solar photovoltaic systems. The solar equipment has a capacity of 268.46KW, an installation area of 1403.52 square meters, and 866 solar panels. The power generation capacity of one-piece solar panels is 310W, and the solar power generation capacity in 2023 will be 342,412 kWh. According to the 2022 electricity carbon emission coefficient of 0.495 kg CO<sub>2</sub>/kWh recently announced by the Energy Bureau, it can reduce 169.493 metric tons of CO<sub>2</sub> emissions and increase renewable energy by 3.83% usage amount.

The company will install 999.81KW solar power generation equipment in the second phase of Shugu new plant to increase the consumption of renewable energy.

Renewable energy usage efficiency			
Year	2021	2022	2023
Solar power generation degree	352,896	221,106	342,412
CO <sub>2</sub> emissions reduced (metric tons)	179.624	109.447	169.493
Increase the use of renewable energy	3.70%	2.10%	3.83%
Energy Bureau of the Ministry of Economic Affairs	0.509 kg CO <sub>2</sub> emission per kWh energy generated	0.495 kg CO <sub>2</sub> emission per kWh energy generated	Since the Bureau of Energy Bureau of the Ministry of Economic

			Affairs has not announced yet, the calculation is based on 0.495 kg CO <sub>2</sub> emission per kWh energy generated of electricity in 2022.
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The water consumption of the company from 2020 to 2023 is as follows:

Year	Water consumption (cubic meter)	Number of employees (average)	Average water consumption (cubic meter)
2020	37,306	409	91.21
2021	36,038	386	93.36
2022	35,054	442	79.31
2023	37,283	397	93.91

The total weight of waste in the company from 2020 to 2023 is as follows:

Year	Total weight of waste (metric tons)	
	Hazardous waste	Non-hazardous waste
2020	0	321
2021	0	378
2022	0	455
2023	0	301

The company's water consumption and total waste weight have been verified by the ISO 14001 environmental management system. The verification process is carried out with water pollution prevention measures and waste management plans, and is coordinated with the environmental protection permit management of the Environmental Protection Agency information system to validate the data.

Water resource management or reduction goals:

1. Rainwater recycling: Use the rainwater in the rainwater recycling tank to flush toilet urinals, toilets, and planting spray tanks to reduce tap water consumption.
2. Recycling of cutting fluid from waste grinding sand: During the manufacturing process, waste grinding sand will be produced after grinding, and the waste grinding sand contains an average of 37% cutting fluid. The cutting fluid is filtered out by a centrifugal dehydrator and then recycled to the machine for circulation Utilize, reduce tap water addition.

Waste Management Policy or Reduction Target:

1. Manufacturers recycle wooden boxes for reuse, reducing the waste of waste wooden boxes and reducing tree felling.
2. Utilize the recycling of cutting fluid from waste abrasive sand to reduce the weight of waste abrasive sand for transportation.
3. Recycled pallets, wooden boxes, etc. are used as shipping packaging or inventory management.
4. Implement garbage resource classification and recycling.
5. The waste oil in the factory is produced by the recycling equipment to produce recycled oil, and the recycled oil is cleaned up in accordance with the Ministry of Environment to reduce environmental impact.