

南亞電路板股份有限公司

Nan Ya PCB Co., Ltd.



2023

Task Force on Climate-Related  
Financial Disclosures Report

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Global warming caused by the emission of greenhouse gases has brought significant risks to the growth of the global economy in recent years and will affect a greater number of businesses in the future. However, it may be difficult for investors to learn which companies are susceptible to the risks of climate change, which companies are adequately prepared, and which ones are taking response actions. Accordingly, it is the reason why the Financial Stability Board (FSB) has assembled a special task force called the Task Force on Climate-related Financial Disclosures (TCFD), which published its "TCFD Recommendations Report" in June 2017 after spending 18 months gathering opinions from business and financial leaders. The Recommendations Report provides suggestions to businesses and investors with clear information disclosure principles and a well-defined assessment framework for disclosing risks and opportunities associated with climate change and for reflecting risks in financial data.

As a response to global trends, NAN YA PRINTED CIRCUIT BOARD CORPORATION (hereinafter referred to as "the Company") has disclosed risks and opportunities associated with climate change in accordance with the TCFD Recommendations Report and made a more reasonable and efficient allocation of capital in line with the Company's responsibilities and strategies to realize our vision towards low-carbon transition.



A detailed, high-magnification photograph of a printed circuit board (PCB) is shown on the left side of the page. The image reveals the intricate patterns of copper traces, various electronic components like resistors and capacitors, and the complex layout of the board. The lighting creates a sense of depth, highlighting the three-dimensional nature of the components.

# 01

## Governance

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## 1.1 Company introduction

The Company started its operation in 1985. It was initially under the PCB Division of NAN YA PLASTICS and then became NAN YA PCB Co. Ltd. in 1997. The Company is engaged in the R&D, manufacturing, and sales of printed circuit boards and IC substrates.

We are committed to meeting our customers' requirements on product quality through continuous process improvement and R&D, and to reducing production costs and improving efficiency through vertical integration within the Company. On the other hand, the Company has always believed that the only way to have a meaningful existence is to generate reasonable profits while making good contributions to society; therefore, we are committed to fulfilling our corporate citizenship by improving our performance in environmental protection, social responsibility, and corporate governance.

## 1.2 Organization and Responsibilities

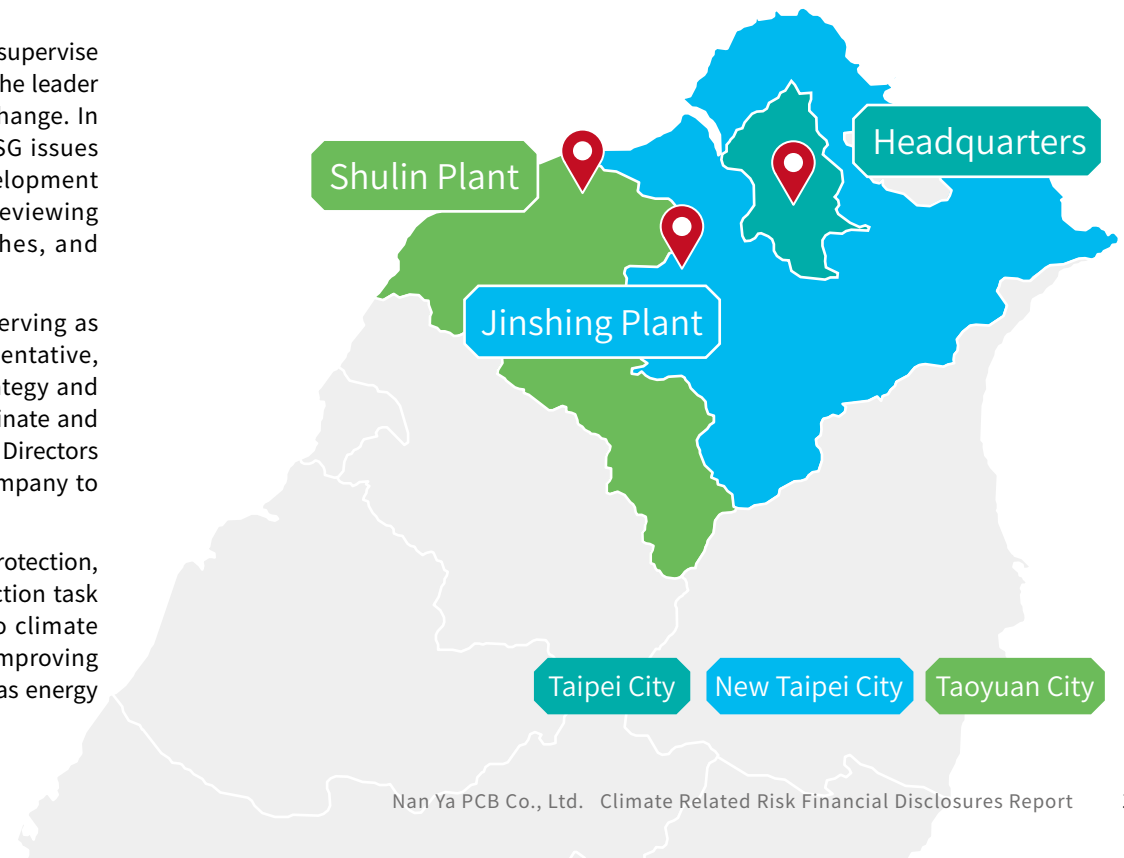
The Board of Directors is the highest governing body to make decisions and supervise the Company in response to climate change. The Chairman of the Board is the leader and is responsible for overseeing issues and matters related to climate change. In addition, to strengthen the Board's responsibility for supervising the ESG issues related to climate change, the Company established a Sustainable Development Committee under the Board of Directors in 2022 to be responsible for reviewing sustainable development policies, strategies, management approaches, and supervising the implementation of sustainable development initiatives.

The Company has set up an "ESG Promotion Team" with the President serving as the general convener and the Vice President as the management representative, responsible for formulating the Company's sustainable development strategy and supervising performance, under which supervisors are appointed to coordinate and promote the Company's sustainability programs and report to the Board of Directors on ESG-related issues, in order to provide important guidance for the Company to formulate its sustainability policy.

The Company has set up separate task forces for promoting environmental protection, social responsibility, and corporate governance. The environmental protection task force is responsible for collecting and evaluating information related to climate change, formulating plans to respond to climate change, reviewing and improving them on a regular basis, and implementing climate-related initiatives such as energy conservation and emission reduction.

## 1.3 Organizational Boundary

Name	Location
Headquarters	7F., No. 390, Sec. 6, Nanjing E Rd., Neihu District, Taipei City, Taiwan
Jinshing Plant	No. 338, Section 1, Nankan Road, Luzhu District, Taoyuan City, Taiwan
Shulin Plant	No. 57, Weiwang Street, Shulin District, New Taipei City, Taiwan







# 02

## Strategy

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The Company is aware of its responsibility in environmental and climate protection challenges and is actively promoting pollution prevention, energy saving, emission reduction, and other environmental protection initiatives in response to climate change, and ensuring its sustainability and social responsibility by investigating the underlying causes and making continuous improvements.

Climate change is considered an important issue in the Company's business strategy and is one of the challenges we must address or the opportunities we must strive for. In response to the global trend of climate change and the Sustainable Development Goals (SDGs) 13 of the United Nations, the Company adopted the global temperature target of 2°C as the assumption and Taiwan's INDC as the scenario to analyze the impact on the Company's operations and to formulate short-, medium-, and long-term strategies to reduce the impact on the environment and to achieve sustainability in society.

## 2.1 Short-term strategies (0~3 years)

1. The Company improves energy efficiency, promotes energy saving and water conservation programs, introduces AI applications, and implements clean production processes to reduce the need for energy and water.

The implementation status for 2023 is described below:

- (1) In 2023, we completed 72 improvement projects related to saving electricity by 13,939.7 kWh/day and reducing carbon emissions by 4,577.3 tons/year. For example, we have replaced air compressors, chillers, and high-efficiency public equipment, and upgraded the diesel forklift to an electric forklift.
- (2) We completed 14 water-saving improvement projects in 2023 to save 169.9 tons of water per day by improving equipment, process operation, or water recycling to save water and make improvements.
- (3) We replaced conventional lighting fixtures with LED lights or other energy-efficient fixtures to save electricity and reduce GHG emissions.

2. We have been actively purchasing products with the "Energy Saving, Water Saving, Environmental Protection, Carbon Reduction, and Green Building Materials" labels in line with the government's green procurement policies. We have reported our procurement results to the government every year and have been receiving recognition from the environmental protection authorities. We participated in the voluntary GHG reduction project in the industry, and the results of our energy-saving measures have been reviewed by the Pure Green Foundation, a commissioning body of the Industrial Development Bureau, thus demonstrating the effective implementation of our sustainable development strategy. In addition, starting in 2022, the Company will compile quarterly statistics on green procurement products and the corresponding material numbers in the Company and will indicate and control the requisition and procurement priorities in order to minimize resource consumption, reduce environmental pollution, and the impact on the earth. In 2023, the amount of green procurement reached NT\$7,121,000.

3. To increase all employees' awareness of carbon reduction and include it in the business decision-making, the Company will implement an internal carbon pricing mechanism in 2022 regarding the Climate Change Response Act in terms of carbon charges for excessive carbon emissions. The related carbon cost is included in the internal income statement as the basis for the implementation of carbon risk management. In addition to continuing to formulate greenhouse gas emission reduction measures, the relevant information is a crucial indicator for performance evaluation, products and operations, and investment evaluation to maintain the Company's competitiveness.

4. We plan for a low-carbon energy transition, install renewable power-generating equipment, and purchase or implement wind power, solar energy, and other green energy. The implementation status for 2023 is described below:

- (1) A solar power system has been installed on the roof of Shulin Plant 2 in the Shulin Plant area. The system started to generate power in June 2023. The total installed capacity of all plants in Taiwan is 340KW. The investment cost is NT\$29,112,000. In 2023, the power generation was about 214,000 kWh/year, and 107 tons of CO<sub>2</sub>e were reduced.
- (2) It is planned to introduce green electricity in 2024. The estimated purchase price is 18.42 million kWh/year (carbon reduction by 2,966 tons CO<sub>2</sub>e), and the green electricity expenditure is NT\$103,502,000/year.

In addition, the Company has assessed its current suppliers on a semi-annual basis and requested them to pay attention to environmental and social governance (ESG, Environment, Social, and Governance indicators account for 10% of the overall rating); the Company has actively requested its suppliers to obtain RBA (Responsible Business Alliance) certification, ISO 45001 occupational safety and health system certification, and AEO (Authorized Economic Operator) certification. Each year, we evaluate about 20 suppliers and provide consultation to each supplier so that they can meet the requirements related to social and environmental responsibilities. The Company will choose the suppliers that are assessed as having outstanding performance to be our long-term partners. The results of the assessment will be used as a reference when selecting the suppliers in the procurement department. Currently, all of the major suppliers we have assessed are meeting the requirements of environmental governance.







# 03

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## Management of Climate Change Risks and Opportunities

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## 3.1 Risk and opportunity identification process

The EHS department is in charge of collecting risk and opportunity information every six months together with the relevant units (Operations Analysis Group/Management Group/Sales Division/Utility Division) to consider transition risks (policy and legal/market/technology/reputation) and physical risks (chronic and acute), as well as a risk description of possible events, including the financial impact level, impact duration (short, medium, long), impacted parties in the value chain, and risk probability. When we create an opportunity scenario, we consider resource efficiency, energy, products and services, markets, and adaptability, and we make an opportunity description for events that may occur, including the degree of financial impact, impact duration (short, medium, long), parties in the value chain impacted, and risk likelihood.

After assessing the risks and opportunities associated with climate change, they are monitored in the ISO 14001 environmental management system along with other environmental issues. The Company also addresses potential events with significant risks and makes countermeasures in advance: such as, risk shifting or risk avoidance and solutions to prevent the risks from occurring and to lower the financial impact to reduce the potential loss from the risk.



## 3.2 Risk and Opportunity Assessment

A matrix is used to determine significant risks and opportunities based on the financial impact level and the risk and opportunity possibilities, and the indicators are rated on a scale of 5 to 1 (as shown below).

Financial impact level	Amount	Risk and opportunity probability				
		Almost certain (5 points)	Very likely (4 points)	Likely (3 points)	Unlikely (2 points)	Rarely (1 point)
		Certain to occur	May occur several times in a given period of time (e.g., 10 years)	May occur more than one time in a given period (e.g., 10 years)	Never occurred in a given period of time (e.g., 10 years)	Never occurred
High(5 points)	Over 20 million	R1·R5·O1	R3	O2		R6
Medium to high(4 points)	Over 5 million ~ less than 20 million		O3			
Medium(3 points)	Over 1 million ~ less than 5 million			O4		
Medium to low(2 points)	Over 0.5 million ~ less than 1 million				R7	R4
Low (1 point)	less than 0.5 million					R2

The results of the above risk and opportunity matrix were classified as follows:

(1) Score 15 to 25: High risk/Opportunity (Red) (2) Score 6 to 14: Moderate risk/opportunity (Blue) (3) Score 1 to 5: Low risk/opportunity (Green)

Note: Please refer to 3.3 on the risks or opportunities for items 1~11.

### 3.3 Summary Table of Impact of Risks and Opportunities on the Company

No.	Analysis of Current Risks or Opportunities (possible impact on the company)	Issue Category	Risk/ Opportunity Level	Response Strategy
<b>R1. Carbon Fee Collection</b>	The "National Climate Change Action Guideline" and the "Climate Change Response Act" specify Taiwan's long-term greenhouse gas reduction targets and establish a total greenhouse gas emission control and allocation method for manufacturing departments. After the control is imposed, we may have to purchase emission amounts, and energy bills will rise, causing our production costs to go up. Moreover, in 2023, the "Climate Change Response Act" was officially promulgated, and the carbon fee will be levied soon, which will lead to an increase in expenses. Assuming that the carbon cost cannot be transferred, the product price will be less competitive, resulting in a significant financial impact.	Transition risk/ Policy and law	Major Risk	The Company can shorten the manufacturing process and improve the yield by using AI technology to reduce the amount of raw materials used, including reducing the baking process and improving the yield, improving the yield of the solder ball mounting process, and improving the yield of the solder paste process. In addition, the energy and water-saving solutions in the plant are divided into three categories, including "energy reduction in process", "energy management", and "public equipment efficiency improvement". We monitor and manage the energy and water consumption in each plant every month, and formulate climate change countermeasures to mitigate the risks arising from climate change.
<b>R2. Renewable Energy Development Act - Green Energy Installation</b>	The amendment to the "Renewable Energy Development Act" in Taiwan was officially passed in April 2019. Since the contracted capacity of 47,117 KW of electricity consumed by the Company is larger than the 5,000 KW required by law, it is necessary to install 10% of the contracted capacity (or 8% within three years) of renewable energy power generation facilities, storage facilities, or purchase renewable energy certificates within five years; otherwise, monetary substitution must be paid.	Transition risk/ Policy and law	Low Risk	The Company has merged it into the parent company's overall planning and improvement of large electricity consumption credits, so the large electricity user clause does not apply. However, the Company will continue to increase the proportion of renewable energy used to increase green manufacturing and achieve net zero goals. In 2023, a 340KW solar photovoltaic system was installed in the Shulin Factory area and put into operation to supply power.
<b>R3 Energy Technology</b>	The price of coal is on the rise as a result of the reduction in coal-producing countries and the end of coal mining in some places. All of these happened in response to climate change. The public power station of NYPC is likely to face an increase in energy cost expenditure.	Transition Risk/Energy Technology	Major Risk	<ol style="list-style-type: none"> <li>"There is regular monitoring and management of the energy consumption and water usage for each of the factory areas under the various projects, namely, "Reduction of Manufacturing Energy", "Energy Management", and "Public Facilities Efficiency Enhancement". This can mitigate the risks arising from energy cost expenditure.</li> <li>Continue to search for available space to install renewable energy solar photovoltaic systems to reduce the cost of electricity purchase.</li> </ol>
<b>R4. Negative feedback on the Company's reputation due to climate change</b>	In recent years, due to the increasing trend of ESG, investment institutions tend to evaluate clients' ESG performance during the evaluation of investment and loan extension. If a business fails to meet the ESG sustainability requirements, its reputation can be negatively affected. Thus, it will affect the borrowing interests of the financial institutions leading to an increase in the cost of loans.	Transformation risk/Reputation	Low Risk	<p>The Company actively participates in the ESG ratings in Taiwan and overseas and in the energy saving and carbon reduction initiatives. The highlight projects are as follows:</p> <ol style="list-style-type: none"> <li>Taking part in the International Carbon Disclosure Project (CDP) rating, TCFD Initiative, and Science Based Target Initiative (SBTi), fully demonstrating our determination to promote ESG and carbon reduction outcomes.</li> <li>Active promotion in energy saving and carbon reduction, such as continuous installation of solar power systems, green power procurement, promoting circular economy, and other carbon reduction plans. We will continue to move towards low-carbon energy transformation by reducing the usage of fuel.</li> </ol>



No.	Analysis of Current Risks or Opportunities (possible impact on the company)	Issue Category	Risk/ Opportunity Level	Response Strategy
<b>R5. Green Energy Demanded by Customer</b>	One of the top ten customers in consumer electronics demanded a full introduction of green energy by 2025. If this demand is not met, it is possible to lose relevant revenue.	Transformation risk/Market	Major Risk	To meet customers' requirements, the Company has developed a response plan for installing renewable energy. In 2023, a 340KW solar photovoltaic system was installed in the Shulin Plant and put into operation with the power system to supply power. The Company has started to assess the various renewable energy providers to purchase the electricity and will make adjustments to the green power market accordingly. It is expected that 18.42 million kWh/year will be used by 2024.
<b>R6. Change in precipitation pattern - Floods</b>	Strong winds or typhoons caused by abnormal weather conditions will suspend the operation of the factory production line to avoid process hazards. Heavy rainfall or flooding will cause the factory to stop work due to flooding. The abovementioned situations will affect operations and may result in a loss of revenue. Flood simulation map of the National Science & Technology Center for Disaster Reduction's contingency procedures and emergency response procedures) and the accumulated precipitation in 24 hours of 650mm is used as the assessment result. This indicates that the Company needs to take precautions against flood risks from heavy rainfall. After reviewing the drainage capacity and response procedures (typhoon preparedness procedures, emergency response procedures) of the Company's Jinshing Plant and Shulin plants, both factories have sufficient capacity to cope with heavy rainfall scenarios, which has limited the minimum impact of heavy rainfall on production.	Physical risk/ Acute	Low Risk	The Company periodically monitors and manages the energy consumption and water consumption of each plant site on a monthly basis and establishes climate change countermeasures to mitigate the risk arising from climate change. The Plant is installed with the flood control pumps, and inspection, repair, and maintenance are performed regularly, in order to reduce the occurrence of flooding in the plant site due to heavy rainfall.
<b>R7. Change in precipitation pattern - Drought</b>	The Company considers responses to deal with water shortages or drought caused by abnormal climate scenarios which will cause revenue loss. Based on the climate scenario simulations of the "Taiwan Climate Change Projection Information and Adaptation Knowledge Platform", simulation parameters are analyzed based on the Socioeconomic Sharing Pathway (SSP) for the four scenarios for the years 2021-2040 and 2041-2060, respectively. The annual average precipitation is increasing.	Physical risk/ Chronic	Low Risk	We have signed a contract with the Taoyuan North District Water Recycling Center to use reclaimed water. It is estimated that in 2025, 11,000 tons of reclaimed water per day for daily livelihood will be able to be supplied to the plant.
<b>O1 Electric Vehicle Market</b>	Many countries around the world have set a timetable to implement fuel bans from 2020 to 2040 in response to net zero carbon emissions. Twenty years later, consumers in these countries will have no choice but to buy electric vehicles or hydrogen fuel cell vehicles, which will drive the rapid development in the EV market. The Company actively engages in the research and development of products related to the EV industry, such as carrier boards for EV peripheral products, which is expected to increase the Company's revenue from related products.	Opportunity/ product and service	Major opportunity	The Company has focused on the development of high-density and large-size substrates to meet the needs of the electric vehicle market for wireless transmission and vehicle networking applications. We are also developing high-end precision alignment technology for high-end communication substrates, as well as high-speed I/O count and 90μm solder ball pitch technology. As for the future product technology challenges, in addition to developing short, medium, and long-term R&D projects for key processes to ensure our technology will continue to lead in the future, new material development such as high-reliability substrates and inks, low surface roughness and high dimensional stability substrates, low-loss transmission build-up films and others will be introduced to meet the future demand for high-speed communication products.

No.	Analysis of Current Risks or Opportunities (possible impact on the company)	Issue Category	Risk/ Opportunity Level	Response Strategy
<b>O2 Establishment of renewable energy facilities</b>	Inspect and evaluate opportunities to install solar energy systems for the existing sites of the Company. If it is possible to set up, it can reduce the Company's external purchase of electricity and it will reduce our carbon emissions. This will meet the sustainable development goals of the Company.	Opportunities/ Source of Energy	Major opportunity	In 2023, a 340KW solar photovoltaic system was installed in the Shulin Plant and put into use in the power system to supply power. In 2023, the power generation was about 214,000 kWh/year, and 107 tons of CO <sub>2</sub> e were reduced.
<b>O3 Circuit boards for EV peripheral products</b>	If the circuit boards/substrates for electric vehicle peripheral products are successfully developed with customers, the Company's revenue can be increased as the market demand for electric vehicles increases.	Opportunity/ product and service	Major opportunity	Development of related products is made following the customer demands for automotive electronics applications, such as self-driving cars and In-Vehicle Infotainment systems, required for the new generation low polluting eco-friendly emission and energy (electric vehicle) market.
<b>O4 Resilient supplier sourcing</b>	Increase climate resilience by engaging raw material suppliers who are at multiple locations and use local production in Taiwan and backup inventory replacing materials from Japan as a strategy.	Opportunity /resilience	Major opportunity	There would be a constant search for diverse suppliers for the procurement of important raw materials in order to stabilize the market procurement prices.

### 3.4 Climate Risk Scenario Analysis

Per the TCFD's recommendations, the Company adopts the worst-case scenarios for the transition and the physical risks and includes the analysis results in the strategic resilience assessment.

For the transition risk, the goal is to achieve carbon neutrality by 2050, and the emission reduction required to achieve the near-term goal by 2030 is used as the parameter for scenario analysis. Using the official SBTi assessment tool, we input Scope 1 and Scope 2 emissions with 2020 as the base year and confirm our target of a 25% reduction by 2030, a 25% reduction in 10 years. The Company analyzes the transition strategies, operating costs, capital expenditures, and other items that may be adopted to achieve emission reduction targets.

Since electricity consumption accounts for about 90% of the Company's greenhouse gas emissions, in the first stage goal, purchasing green electricity is used as the scenario for assessing the operating cost required to achieve the reduction goal.

Assuming input parameters: The unit price of green power is NT\$2.5 - NT\$3.0/kWh of increase in electricity cost compared to the current status. If the electricity consumption in 2022 is used as the evaluation scenario, the operating cost will increase by NT\$55 million.

For physical risks, the Shared Socioeconomic Pathways (SSP) defined in the Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) is used to estimate future emission scenarios, considering the four different pathways,

low emissions (SSP1-2.6), medium emissions (SSP2-4.5), high emissions (SSP3-7.0), and extremely high emissions (SSP5-8), as well as using the climate change indicators of the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), we conducted scenario analysis focusing on the extent of temperature rise in the 21st century relative to the period 1850-1900 and the potential impacts of climate change in the medium term (2041-2060) to further analyze the potential disaster risks of acute flooding, high temperature, drought, and slope lands in each plant area under different scenarios.

Assuming extreme weather events such as heavy rainfall, flooding, drought, and so on, the Company may suspend production. It is estimated based on the operating conditions in 2023 that the daily operating revenue of the Company may be affected by about NT\$80 million. Only after reviewing the drainage capacity and response procedures (typhoon preparedness procedures, emergency response procedures) of the Company's Jinshing Plant and Shulin plants, both of which have sufficient capacity to cope with heavy rainfall scenarios.

As for the physical risk, we refer to the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) and the National Science and Technology Center for Disaster Reduction to estimate sea level rise, temperature rise, maximum consecutive number of days without rain, and total rainfall for the scenarios of SSP2.6, SSP4.5, SSP8.5, and more.

## || Climate change physical risk scenario analysis summary table (by factory) ||

	Jinshing Plant	Shulin Plant
Mean temperature (temperature change in degrees Celsius)	+ 1.6 °C (1.1 °C ~ 2.2°C )	+ 1.6 °C (1.1 °C ~ 2.2°C )
Daily maximum high temperature (temperature change in degrees Celsius)	+ 1.5° C (0.9° C - 2.1° C)	+ 1.5° C (1.1° C - 2.1° C)
Heat Wave Duration Index (HWDI) (number of days added)	+40.3 days (24.5 to 63 days)	+39.9 days (25.2 to 61.9 days)
Total rainfall (rainfall change rate %)	+ 6.0 % (-9.3% to 23.1%)	+5.2% (-8.6% to 23.1%)
Longest consecutive days without rainfall (number of days increased)	+ 2 days (-3.4 days to 8.8 days)	+ 1.9 days (-4.4 days to 13.1 days)
Sea level rise overrun risk (1m)	No overrunning areas within 500 meters	No overrunning areas within 500 meters

\*Note 1: Values in this table are based on SSP5-8.5 scenario, the medium-term scenario of climate change (2041-2060) for extreme climate risk management.

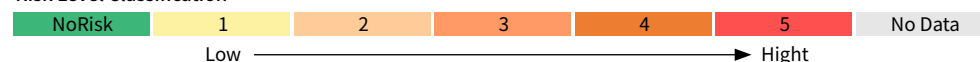
\*Note 2: ( ) The ranges in parentheses are the 95th percentile and 5th percentile.)

### • Climate change physical risk scenario analysis summary table (by plant area and scenario)

The acute flooding scenario is based on the flood simulation map of the National Science & Technology Center for Disaster Reduction's contingency procedures and emergency response procedures, and the accumulated precipitation in 24 hours of 650mm is used as the assessment result. This indicates that the Company needs to take precautions against flood risks from heavy rainfall. After reviewing the drainage capacity and response procedures (typhoon preparedness procedures, emergency response procedures) of the Company's Jinshing Plant and Shulin plants, both factories have sufficient capacity to cope with heavy rainfall scenarios, which has limited the minimum impact of heavy rainfall on production.

Plant Site	Scenario	Climate Disaster				
		Acute Flooding	Draught	High Temperature	Landslide	Slope*
Chin Hsing Plant	SSP1-2.6	5	1	1	0	1
	SSP2-4.5	5	1	2	0	1
	SSP3-7.0	5	1	2	0	1
	SSP5-8.5	5	1	2	0	1
Shulin Plant	SSP1-2.6	3	1	1	0	1
	SSP2-4.5	3	1	2	0	1
	SSP3-7.0	5	1	2	0	1
	SSP5-8.5	5	1	2	0	1

#### Risk Level Classification



\*Note 1: Analysis of slope disasters is based on historical events.

Disaster Potential	Chin Hsing Plant	Shulin Plant
Potential debris flow torrent	No Risk	No Risk
Large-scale landslide potential areas	No Risk	No Risk
Dip slope	No Risk	No Risk
Rockslide	No Risk	No Risk
Debris slide	No Risk	No Risk
Falling rocks	No Risk	No Risk
Soil liquefaction potential areas	No Risk	Low Risk
Active fault	No Risk	No Risk

#### Risk Level Classification

No Risk	No potential areas within 500 meters.
Low Risk	Not directly located in a potential area, but within 500 meters of one
Medium Risk	Directly located in a low potential area
High Risk	Directly located in a medium or high potential area





# 04

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## Indicators and Targets

4.1 Carbon Reduction Absolute Targets and Emission Indicators	14
4.2 Scope 3 Emission Indicator	16



## 4.1 Carbon Reduction Absolute Targets and Emission Indicators

The Company's short-, medium-, and long-term climate change-related goals are as follows:

Strategy	Indicator	Targets
Deployment of green technology in production	Scope 1 and Scope 2 GHG emissions reduction (%)	25% reduction in 2030, base year is 2020
	Self-installed renewable energy installation capacity (kW)	340kW installation had been completed in 2023 (to start operating in June 2023)
Adapting to climate change risks	Water Consumption per Unit of Production Value (million liters/NTD thousand)	Reduce water consumption by 2% per year based on the actual water consumption of the previous year
	Volume of water discharge recovered (million liters/day)	The amount recovered will be increased by 1% per year based on the actual discharge of wastewater recovered in the previous year.
	Waste generation per unit of production value (tons/NTD 1,000)	Reduce waste by 1% per year based on the amount of waste generated in the previous year
	Proportion of reclaimed water used (%)	Increase the proportion of external reclaimed water used.
Join Hands with Sustainable Partners	Scope 3 emission reductions (%)	Using 2020 as the base year, reduce 12.3% by 2030.
Climate Initiatives	CDP Climate Change	Leadership level and above
	CDP Water Safety	Leadership level and above

The Company conducts GHG emissions inventory and completes the GHG emissions verification through the British Standards Institute every year to ensure the accuracy of GHG emissions.

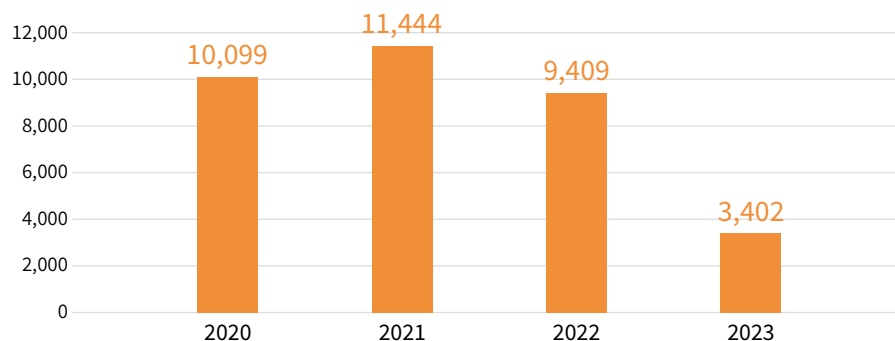
The Company has passed the Science Based Target (SBT), set 2020 as the baseline year to keep temperature rise no higher than 2° C as the target, and achieve a 25% reduction in Scope 1 and 2 emissions by 2030.

Since the expansion of the Shulin Plant was completed and officially put into production in 2022, the Company's greenhouse gas emissions in 2022 and 2023 have been included. Thus, the emissions have increased from the base year.

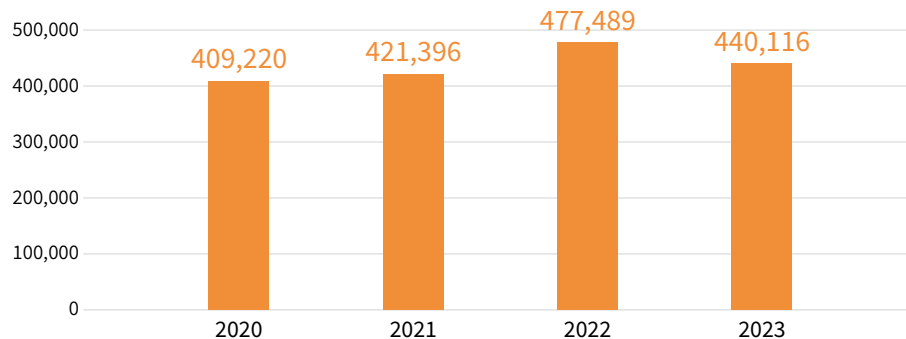
|| Table 4.1 Description of emissions and annual target emissions ||

Year	2020 (Base Year)	2023	2030 n(target year)
Carbon emission volume (Ton-CO <sub>2</sub> e)	419,319	443,518	-
Compared to the base year (%)	-	10.5%	-25%

|| Scope 1 Emissions for Taiwan ||

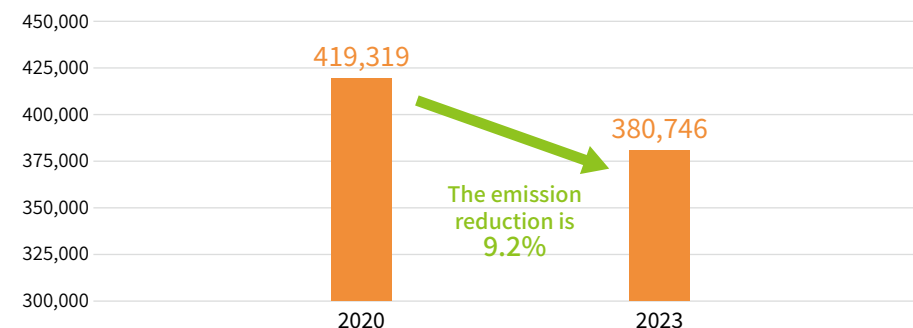


|| Scope 2 Emissions for Taiwan ||



If only analyze Jinshing Plant's emission changes between the base year and 2023, the emission reduction is 9.2%.

|| Figure 4.2 Total Scope 1 and Scope 2 emissions from the Jinshing Plant ||



Note 1: Scope 1 refers to the direct emission of greenhouse gas.

Note 2: Scope 2 refers to the indirect emission of greenhouse gas.

Note 3: The SGS and BSI inspection verification data is used for 2018-2020. In addition, for 2023, the emission data is still under verification. Therefore, the internal audit data (from the computer database of Formosa Plastic Corporation) is used. The data for 2023 will be verified and disclosed in 2024 Quarter 3.

Note 4: The GWP in the IPCC's Fourth Assessment Report (2007) will be used to calculate the emission according to the EPA's regulations after 2016.

The greenhouse gas emissions of the Company's factories in Taiwan are verified by an impartial third party every year. The extracted data are summarized as follows:

Year	Data coverage	Scope 1	Scope 2	Scope 1 and 2 emission intensity (tCO <sub>2</sub> e/NTD million)
2022	All factories in Taiwan	9,409	477,489	7.5

Note: 2023 data and information under verification.



## 4.2 Scope 3 Emission Indicator

The Company conducts an annual inventory of the relevance and emission data of Scope 3 and such data has been verified by a third party. The base year for Scope 3 is 2020, its start year is 2021 and the target year is 2030. A reduction of 12.3% is expected over the next 10 years.

|| Table 4.3 Information on Scope 3 emission indicator ||

Scope 3 emission sources	Relevance	Emissions in 2022 (tCO <sub>2</sub> e )	Calculation Scope
Products and services purchased	Relevant and counted	129,738	Raw material purchase amount 100%
Capital goods	Relevant and counted	42,178	Land. Buildings. Machinery and equipment. Transport equipment. Electronic and computer equipment. Boiler equipment. Utility equipment. General affairs equipment. Every item of equipment is included in the calculation (100%)
Fuel and energy-related activities (not included in Scope 1 or 2)	Relevant and counted	67,749	Include all fuel and energy activities, such as coal, pyrolysis low sulfur fuel oil, and natural gas (100%).
Upstream transportation and distribution	Relevant and counted	2,418	Raw material purchase amount 100%
Business waste output	Relevant and counted	855	The scope of this inventory covers 100% of the emissions from the disposal of business waste.
Business trips	Relevant and counted	52	Emissions from air travel
Employee commuting	Relevant and counted	639	Application for car parking for employees to commute to work (excluding employees at accommodation)
Upstream asset leasing	Irrelevant	-	None of such activities.
Downstream transportation and distribution	Relevant and counted	414	Carbon emissions from downstream transportation and distribution generated by products that are delivered to tier-one customers and paid for by the customers themselves.
Processing of sold products	Relevant and counted	122,368	The calculation of product processing procedures is mainly based on assembly testing.
Use of products sold	Irrelevant	-	Our product, the circuit board, is an intermediate product and does not consume electricity, so it is not relevant.
Ultimate disposition of the products sold	Relevant and counted	41	Calculate the carbon emissions from the ultimate disposal of carton materials used in products sold
Downstream asset leasing	Irrelevant	-	None of such activities.
Franchising	Irrelevant	-	None of such activities.
Investment	Irrelevant	-	The relevance for investment in business capable of generating additional generate additional greenhouse gas emission is relatively low

As the emissions for 2023 are still under calculation and to be verified, it is impossible to access the relevant information by the deadline of the Report, the information will be disclosed via other public channels subsequently.



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## Report management

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- This report covers the period from January 1, 2020 to December 31, 2023.
- Preparation frequency of this report: Annually
- This report has been prepared primarily based on the Recommendations of the Task Force on Climate-related Financial Disclosures (June 2017).

## Report Contact Information



President's Office Operation Analysis Team



Mr. Yang



Tel.: 03-3223751 ext.1016



Email: [kurtyang@nanyapcb.com.tw](mailto:kurtyang@nanyapcb.com.tw)







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## TCFD Report Index

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Themes	TCFD Recommended Disclosure	Corresponding Pages
Governance	Describe the board's oversight of climate-related risks and opportunities.	P.3
	Describe management's role in assessing and managing climate-related risks and opportunities.	P.3
Strategy	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	P.5~6
	Describe the impact of climate-related risks and opportunities on the organization's business, strategy, and financial planning.	P.5~6
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2° C or lower scenario.	P.5~6
Risk Management	Describe the organization's processes for identifying and assessing climate-related risks.	P.8
	Describe the organization's processes for managing climate-related risks.	P.8
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	P.9~12
Metrics and Targets	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	P.14~16
	Disclose Scope 1, Scope 2, and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	P.14~16
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	P.14~16