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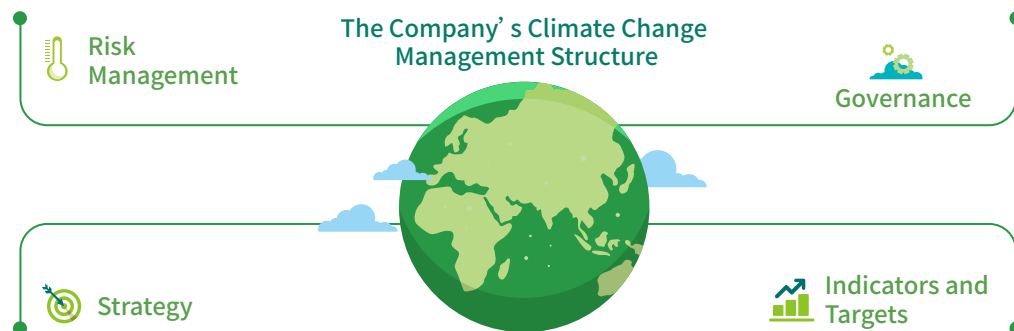
## Introduction

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 risks of climate change, which companies are adequately prepared, and which ones are taking response actions. Accordingly, the Financial Stability Board (FSB) has assembled a special task force: Task Force on Climate-related Financial Disclosures (TCFD), which has published its "TCFD Recommendations Report" in June 2017 after spending 18 months gathering opinions from business and financial leaders. The Recommendations Report provides businesses and investors with a complete assessment framework for disclosing risks and opportunities associated with climate change and for reflecting risks in financial reports.

As a response to global trends, Formosa Chemicals & Fibre Corporation ( "he 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 toward low-carbon transition.

- The identification and assessment of climate change related risks and opportunities is conducted through the gathering, analyzing and compilation of related information every half a year.
- Countermeasures for every risk scenario are formulated from the identification of the environmental risks and opportunities each year in accordance with the assessment procedure of ISO 14001.

- The appointment of the Sustainable Development Committee falls under the Board of Directors. The Committee is responsible for the monitoring and strategic decisions of the Company's response to climate change related issues and matters.
- An ESG Promotion Working Group is appointed under the Sustainable Development Committee. The Working Group is to develop strategic plans for climate change risks and opportunities and the compilation of corresponding action plans.
- Regular convening of the Energy Saving, Carbon Reduction and Circular Economy and ESG Review Meetings on a monthly basis and regular tracking on the progress of the countermeasure plan.



- **Energy efficiency improvement:** Carry out optimization of manufacturing process to improve energy efficiency.  
2022 Carbon Reduction 289 thousand ton CO<sub>2</sub>e
- **Energy transformation:** Use low carbon energy, promote coal reduction, and develop green power.  
2022 Carbon Reduction 503 thousand ton CO<sub>2</sub>e
- **Circular economy:** Promote CO<sub>2</sub>, marine debris and plastic wastes recycle and reuse.  
2022 Carbon Reduction 14,202 thousand ton CO<sub>2</sub>e
- **Other measures:** Low-carbon transportation, paperless office and develop green products.  
2022 Carbon Reduction 4,987 thousand ton CO<sub>2</sub>e

Note: The scope of carbon reduction for the circular economy and other measures is different and does not belong to the Company's scope 1 and 2 carbon emissions.


The Company's GHG emissions in 2010 has reached the peak of 1,223 ten thousand tons. It is 854 ten thousand tons in 2020 which is a reduction of 30.2% compared to 2010; the Company declares its base year as 2020 and establishes its absolute reduction target as follows:

- **Short-term reduction target:** reduction of carbon emission by 10% from the base year in 2025 (reduction by 37.1% compared to the peak year).
- **Medium-term reduction target:** reduction of carbon emission by 25% from the base year in 2030 (reduction by 47.6% compared to the peak year).
- **Long-term reduction target:** reach carbon neutrality in 2050.

# 1 Governance

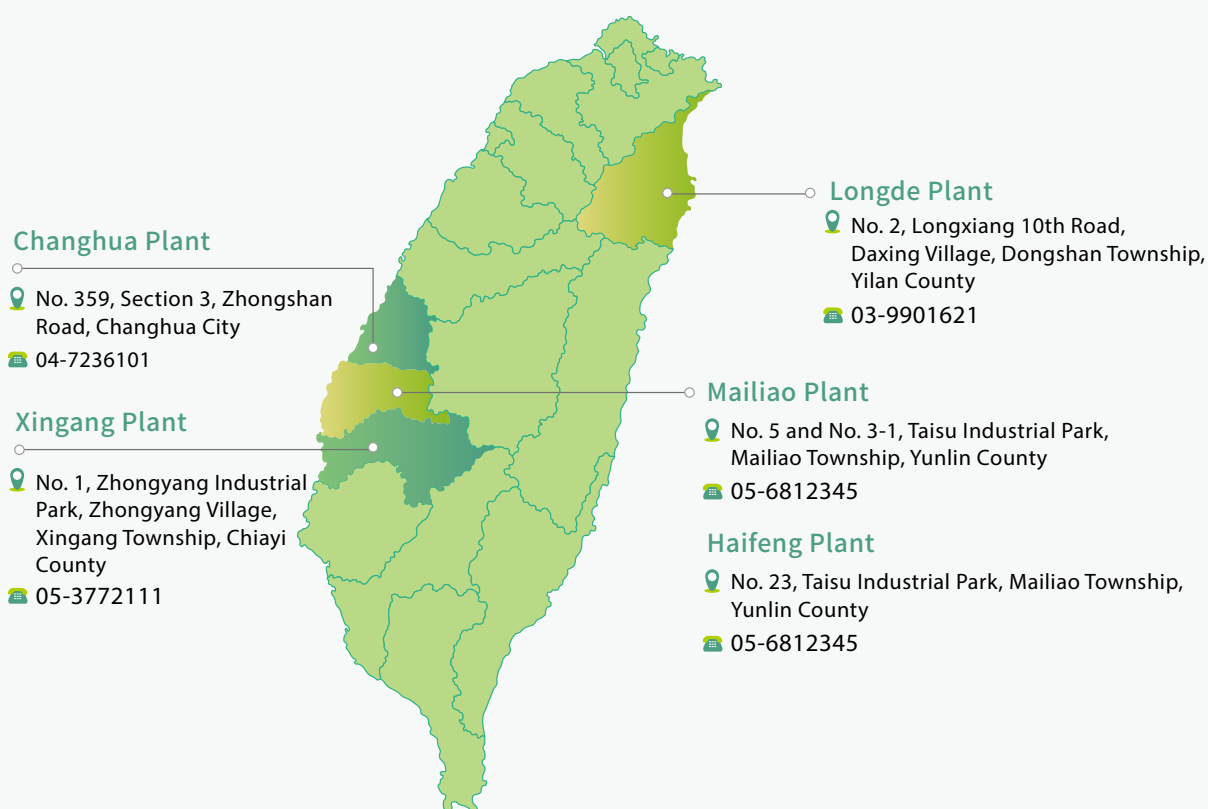
## 1.1 Company Profile

Formosa Chemicals & Fibre Corporation has a capital of NT\$58.61 billion. Its products can be categorized into petrochemical, plastic, synthetic fiber and textile. The Company operates businesses across every region and operates co-generation power plants to produce water, electricity and steam for use by manufacturing plants. With the promotion of the circular economy in recent years, the Company has made some achievements in aspects of energy saving and water saving. It is also committed to the research and development of waste recycling and re-manufacturing technologies becoming one of the few companies globally to be able to recycle nylon using chemical method for mass production.

	Location of Headquarters	Changhua County, Taiwan	Year of establishment	1965
	2022 Consolidated revenue	NT\$379.897 billion	Industry item	
	The number of full-time employees in Taiwan in 2022	4,099 people	Petrochemical, plastic, synthetic fiber, textile, co-generation power	

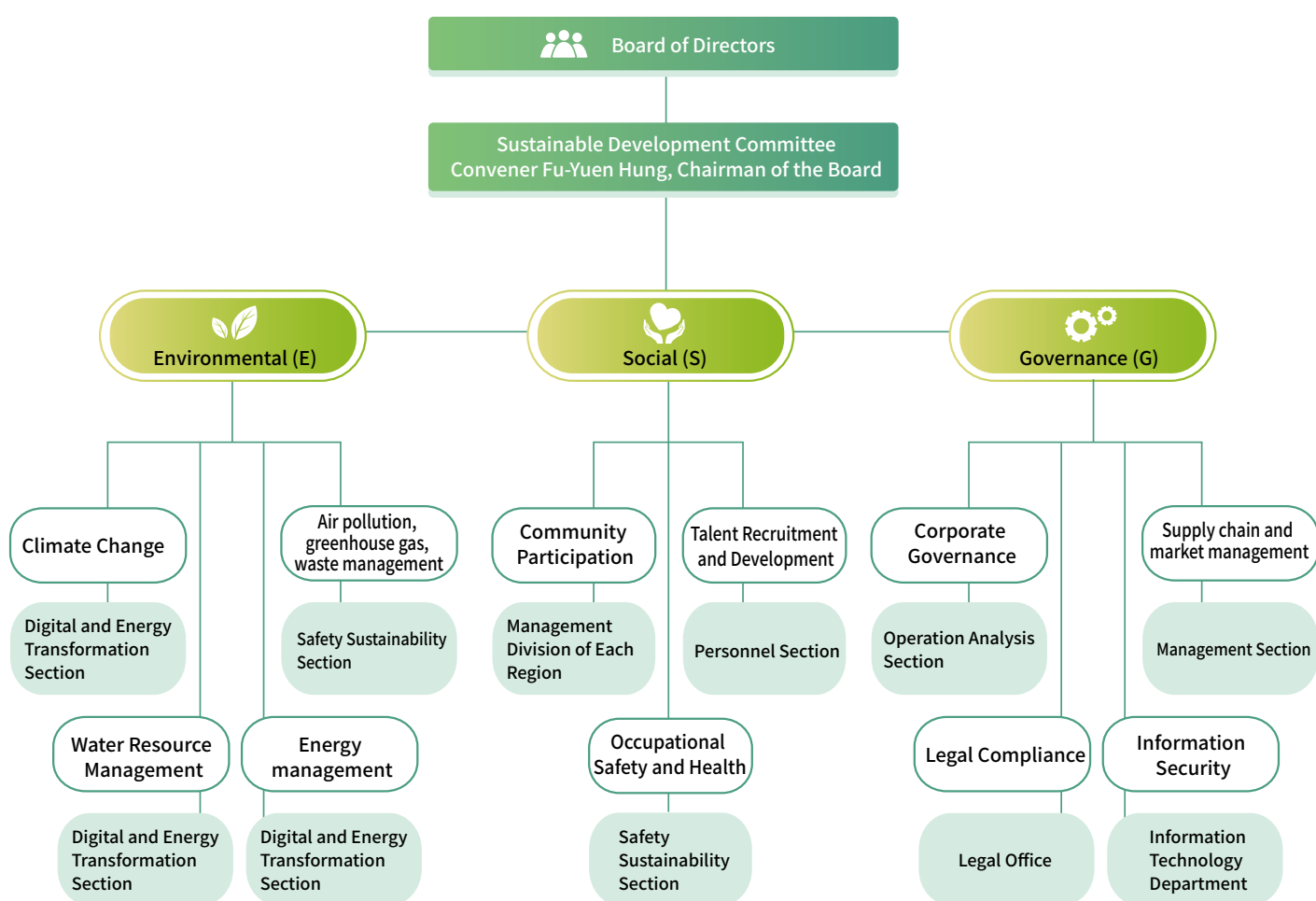
Overview of the Company

## 1.2 Organizational Boundary



## 1.3 Organization and Responsibility

Formosa Chemicals & Fibre values Environment, Society and Corporate Governance (ESG)-related issues as the fundamental of corporate sustainable development. On May 6, 2022, the Board of Directors has approved the establishment of the Sustainable Development Committee, in order to enhance the supervision responsibility of the Board of Directors on sustainable matters in response to climate change. The Chairman of the Board acts as the convener of the Sustainable Development Committee, and the President acts as the deputy convener, in charge of the establishment of corporate sustainability strategy, relevant performance supervision, promoting environmental protection, fulfilling social responsibility and working on risk management.



The Sustainable Development Operations Team of the Formosa Chemicals & Fibre Corporation



Climate change related topics are a highly concerned ESG aspect of the enterprise. Thus, the Company has created a TCFD Working Group under the Sustainable Development Committee. The Working Group is responsible for compiling the risks and opportunities of every unit and to develop corresponding action plans, tracking the progress of these plans through the monthly Energy Saving, Carbon Reduction and Circular Economy Meetings and the ESG Promotion Meetings. The outcomes are to be reported to the Sustainable Development Committee. Subsequently, the Sustainable Development Committee will report to the Board of Directors at least once every half a year. The Chairman is the highest management level in charge of supervising the climate change related topics and matters.



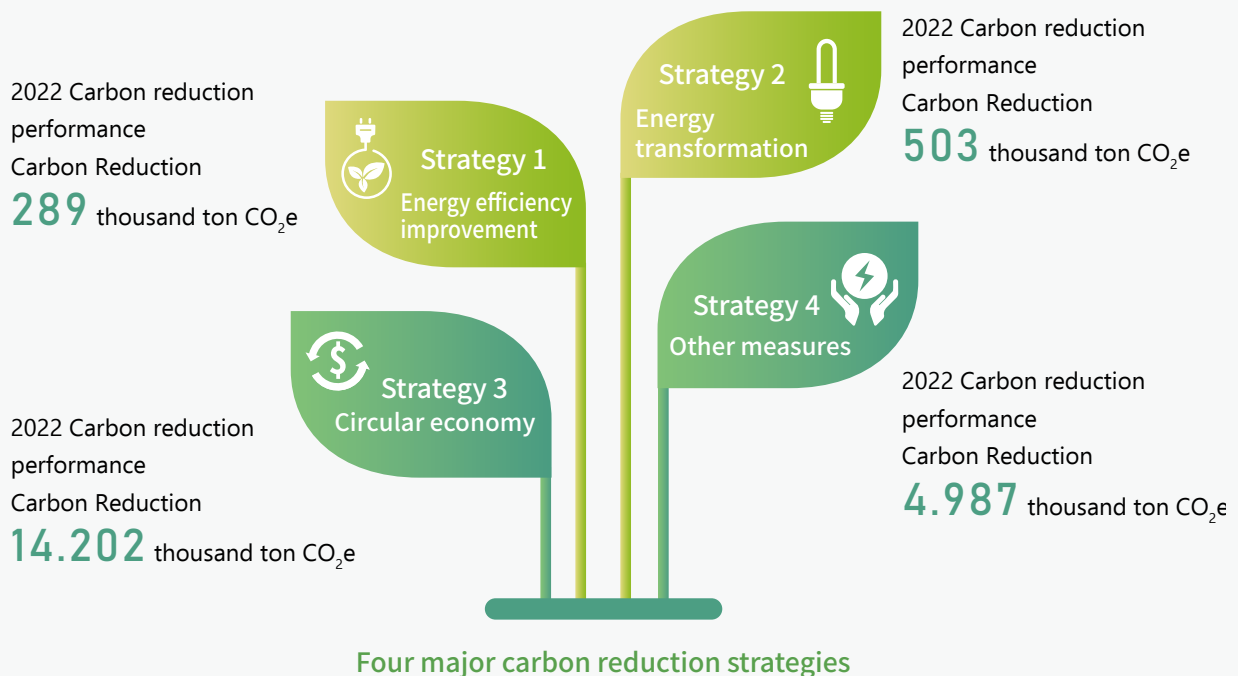
TCFD organizational structure chart



# 2 Strategy

The Company upholds the philosophy of thinking from zero and actively promotes energy saving and carbon reduction, circular economy and pollution prevention. Introduction of AI for the optimization of the manufacturing processes through a comprehensive inventory and applying the best possible control technology. It is a goal to achieve minimum energy and resource input and waste output through source reduction method. We are in pursuit of fulfilling social responsibility and sustainable operation with the spirit of continuous improvement by getting to the root of the problem.

The Company takes an active approach in tackling the risks and opportunities brought about by the climate change issues. In response to the global ESG development trend and the United Nations Sustainable Development Goal (SDGs) 13 on Climate Action, the Company has established its 2050 carbon neutrality goals. Our sustainable development pathway is formulated around the four major aspects: 1. Energy efficiency improvement, 2. Energy transformation, 3. Circular economy, and 4. Other measures.



Note: Strategies 3 and 4 Carbon reduction scope do not belong to scope 1 and 2 of the Company's carbon emissions.

## 2.1 Energy efficiency improvement

### Completed executions and the recent plans

Completed 288 improvement projects in 2022 with gas saving of 100.2 tons/hour, electricity saving of 7.3 thousand kWh/hour, fuel saving of 0.5 tons/hour, and an annual carbon reduction of 289 thousand tons CO<sub>2</sub>e.

- (1) Introduced AI technology to conduct process optimization control, reducing energy consumption of productions starting from the source.
- (2) Recycle the waste heat from processes and conduct heat integration to reduce energy loss.
- (3) Inventory the actual needs of processes for re-selection of appropriate equipment in order to improve energy efficiency.



Item	Completed in 2022	Expected in 2023
Number of improved cases (case)	288	206
Steam saving (ton/hour)	100.2	84.4
Electricity saving (thousand kWh/hour)	7.3	12.7
Fuel saving (ton/hour)	0.5	6.2
CO <sub>2</sub> e reduction (thousand ton/year)	289	438
Investment amount (NT\$ hundred million)	9.1	27.4
Investment benefits (NT\$ hundred million/year)	13.0	15.4

### Future plan

In 2023, there are expectations for 206 cases, an investment amount of NT\$2740 million, and an annual carbon reduction of 438 thousand ton CO<sub>2</sub>e.

## 2.2 Energy transformation

### Completed executions and the recent plans

(1) **Using low-carbon energy:** Target to convert 29 fuel boiler to natural gas by the end of 2025. In 2022, 4 boilers have been improved with an annual carbon reduction of 128,732 tons CO<sub>2</sub>e.

Item	Unit	2020	2021	2022	2023	2024	2025	Total
Completed volume	ST	3	13	4	3	4	2	29
Carbon Reduction	ton/year	4,355	21,704	128,732	7,145	1,157	438	163,530

(2) **Coal reduction:** The co-generation power plants at the factory sites have been converted to using steam power for operations reducing the coal powered electricity in the factory areas, increasing green power and the low-carbon electricity. In 2022, an annual carbon reduction of 339 thousand tons was achieved compared to the base year.

Year	Target in 2030	Actual in 2022	Expected in 2023
Carbon Reduction (thousand ton/year)	826	339	357

Note: The calculation of the carbon reduction takes 2020 as the base year.

(3) **Develop green electricity:** The target for before the end of 2030 is to install 72,000 kW green electricity capacity, of which the solar power is at 49,000 kWp; hydropower at 23,000 kW; the newly-installed capacity in 2022 was 7,889 kW, an accumulated capacity of 31,852 kW; the 2022 power generation was at 67,547 thousand kWh, an annual carbon reduction of 35,594 tons CO<sub>2</sub>e.

① Installed capacity planning:

Year		Target in 2030	2022	2023	2024	2025~2030
Solar power generation (kWp)	Newly-installed	-	7,814	19,307	14,505	6,000
	Accumulated	49,000	9,311	28,618	43,123	49,123
Hydropower (kW)	Newly-installed	-	75	-	800	-
	Accumulated	23,000	22,541	22,541	23,341	23,341
Total(kW)	Newly-installed	-	7,889	19,307	15,305	6,000
	Accumulated	72,000	31,852	51,159	66,464	72,464

② power generating capacity:

Year	Target in 2030	Actual in 2022	Expected in 2023
Solar power generation (thousand kWh)	60,384	4,000	18,598
Hydropower (thousand kWh)	77,349	63,547	72,506
Total (thousand kWh)	137,733	67,547	91,104
Carbon Reduction (ton/year)	122,211	35,594	52,528



## Future plan

- (1) **Improve energy efficiency:** The hydrogen compressor of the original process uses condenser driven method and the self-produced low pressure steam uses machine for power generation. The energy use efficiency was only 20~30% and it requires using a large amount of cooling water. They have been changed to motor-driven and using electrical compressor to increase the pressure to supply for heating use by the processes. This can improve energy efficiency.
- (2) **Low level energy to become high level:** The residual heat from low level process cannot be reused. Only the cold air or cold water can be used for cooling; The change is made to recycle the residual heat from processes to produce low pressure steam, followed by using electrical compressor to increase the pressure and supply them to our own factories or to other factories for heating use during processes.



## 2.3 Circular economy

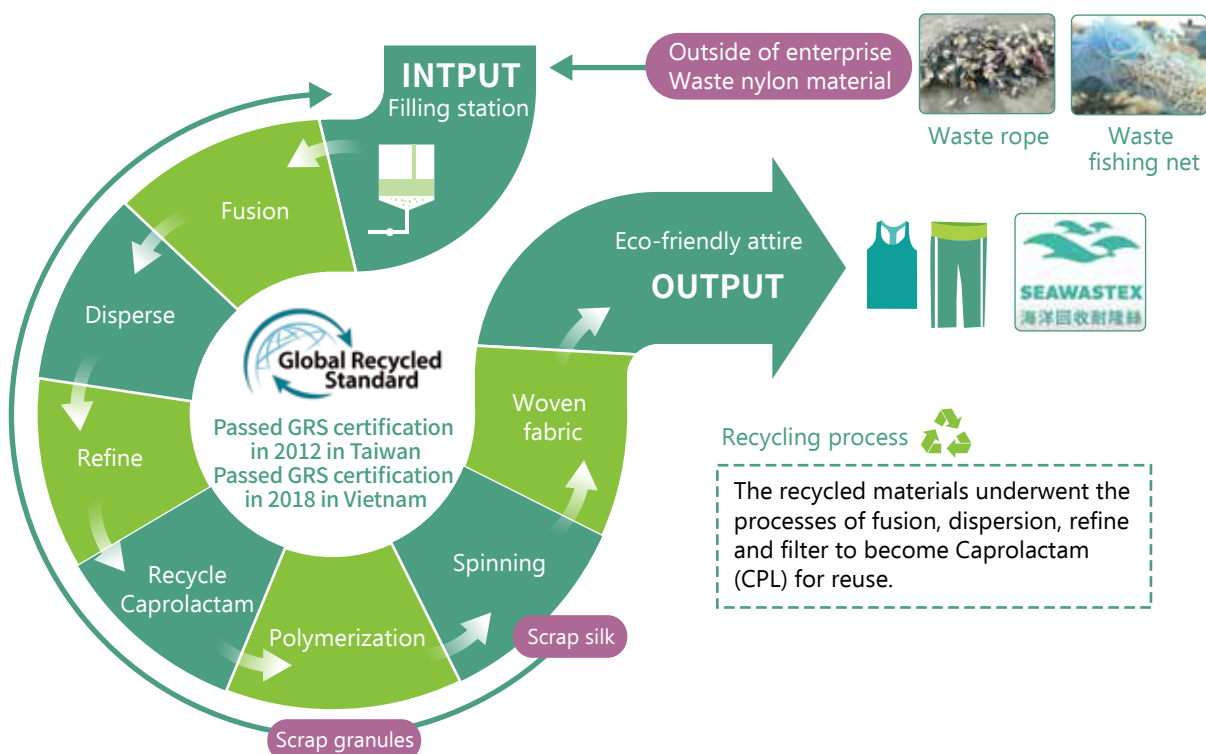
### Completed executions and the recent plans

(1) **CO<sub>2</sub> Recycle and reuse:** The CO<sub>2</sub> generated from the acetic acid plant can be recycled and transformed to CO. It can upgrade the production capacity of CO without the need to add light-oil.

Year	Target in 2030	Actual in 2022	Expected in 2023
CO <sub>2</sub> recycled volume (ton/year)	9,400	0	4,700
Carbon Reduction (ton/year)	9,400	0	4,700

(2) **Ocean waste recycling and reuse:** Put the waste fishing nets, waste ropes (the main ingredient is mainly the nylon 6. The raw material of nylon 6, Caprolactam (CPL), mainly comes from the petrochemical process) into the nylon recycling process. The wastes are made into CPL after heating and fusion, dispersion, refining and filtering. It is made into recycled and eco-friendly polyester filament to produce outdoor functional active wear. In 2022, the carbon reduction volume was 1,710 CO<sub>2</sub>e.

Year	Target in 2026	Actual in 2022	Expected in 2023
Sales volume (ton/year)	9,000	1,049	5,700
As a percentage of the total sales	15%	1.9%	9.8%
Carbon Reduction (ton/year)	14,670	1,710	9,291

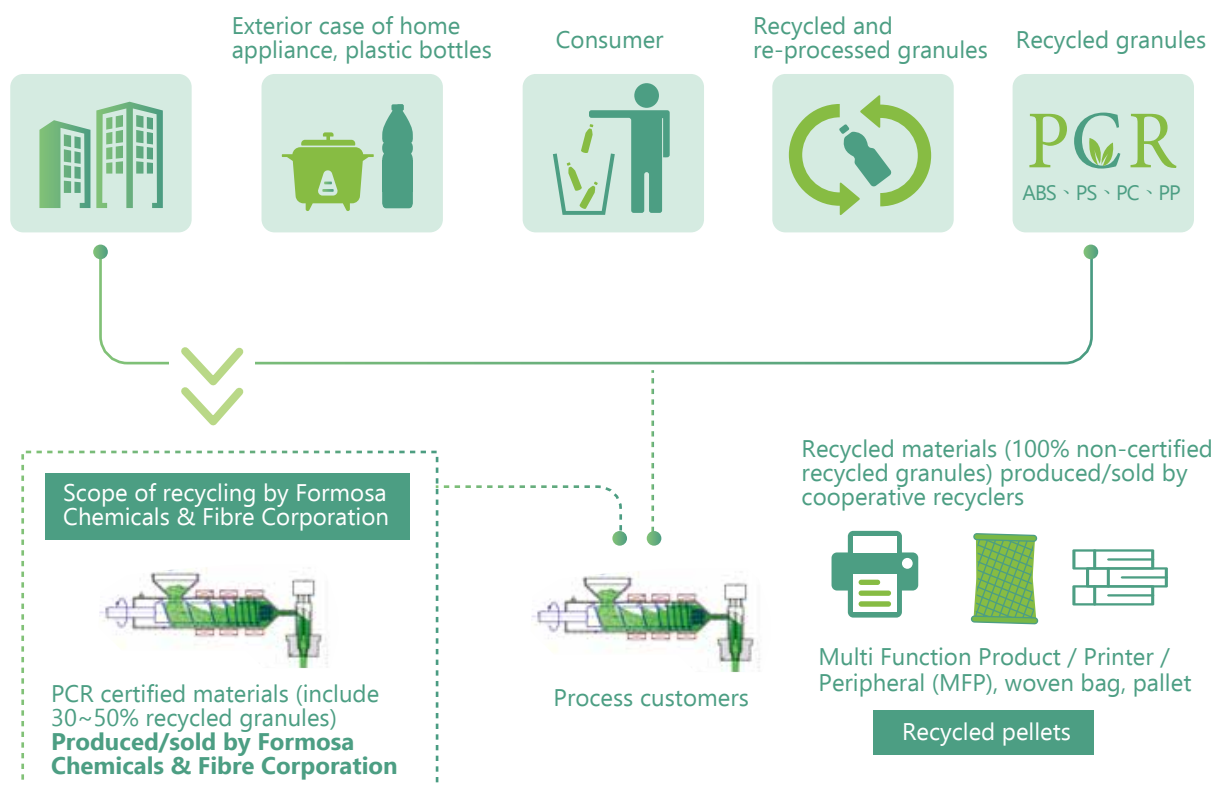


(3) **Waste plastic recycle and reuse:** Plastic granules products promotion (ABS, PS, PC, PP) have in recent years subsequently declared the use of recycled resource materials. Market demands for recycled materials have gradually increased. Obtaining PCR material sources which are of good quality and stable supply is relatively important.

Most of the times, 100% PCR recycled plastic granules are not able to meet the requirements of customers in physical and quality aspects. Formosa Chemicals & Fibre Corporation has its own technical development team which can develop formulas adjusting the physical properties according to the requirements of the customers, and obtain third party verification. Through steady production and strict quality control and professional sales services, we provide customers with eco-friendly PCR recycled granules meeting their quality requirements. In 2022, the carbon reduction volume was 2,286 tons CO<sub>2</sub>e.

Year	Target in 2026	Actual in 2022	Expected in 2023
Sales volume (ton/year)	16,000	2,113	5,040
As a percentage of the total sales of hard rubber	6%	0.8%	1.9%
Carbon Reduction (ton/year)	17,312	2,286	5,453

Formosa Chemicals & Fibre Corporation performs Compounding at its PABS plant or PP plant producing eco-friendly recycled plastic granules with 30~97% recycled materials. Explanation on the process cycle for recycling of plastic is as follows:

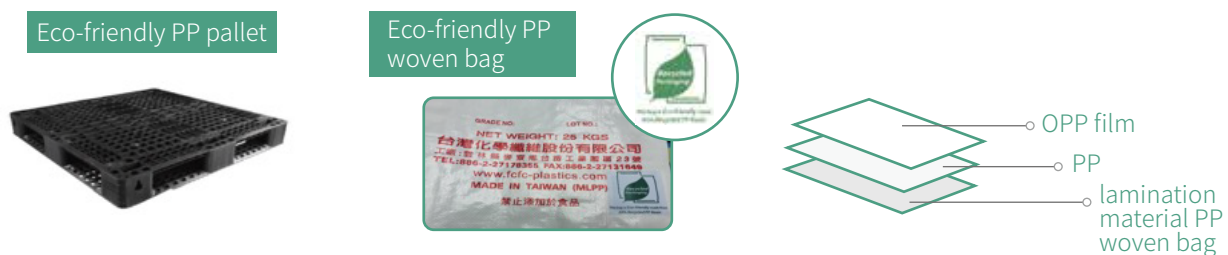


- (4) **Eco-friendly yarn products:** We recycled and re-processed waste PET bottles obtaining the polyester material for input to the spinning process. Combining with different materials (such as natural cotton, viscose, etc.) to produce eco-friendly yarn products that meets the customer requirements. The products are handed to the downstream for production of clothing wear for daily living and sports. The 2022 carbon reduction volume was 9,821 tons CO<sub>2</sub>e.

Year	Target in 2026	Actual in 2022	Expected in 2023
Sales volume (ton/year)	43,545	4,365	5,295
As a percentage of the total sales	54%	8%	9%
Carbon Reduction (ton/year)	97,976	9,821	11,914

- (5) **Eco-friendly woven bag/pellet:** To continue to reduce environmental loads, we actively develop and promote applications of eco-friendly PCR plastics granules. The principal item is the PP woven bag and eco-friendly pallet. We are one of the first few companies in the industry to change to using eco-friendly PP woven bag and pallet for all PP COPO specification packaging and pallets of the Department of Plastics. In 2022, the carbon reduction volume was 285 CO<sub>2</sub>e.

Year	Target in 2026	Actual in 2022	Expected in 2023
Sales volume (ton/year)	1,094	137	547
Carbon Reduction (ton/year)	2,282	285	1,141



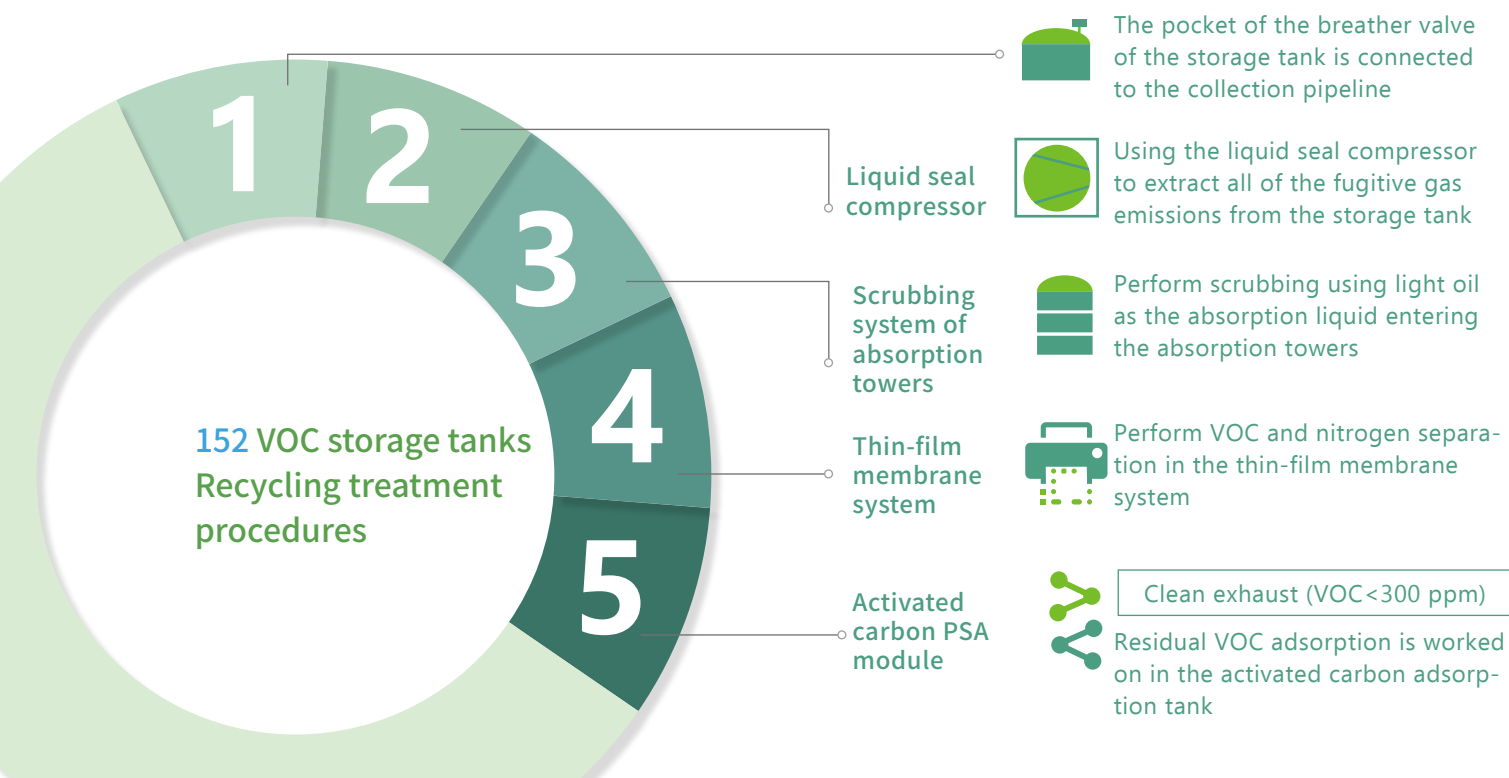
- (6) **VOC Recovery System for Storage Tank:** Installed film recycling treatment system to properly collect the VOC that dissipates from the breather valve for recycling treatment. The recycled VOC is sent back to the manufacturing process for use. This reduces waste emissions and raw material usage. In 2022, carbon reduction was at 99.55 CO<sub>2</sub>e.

① Annual emissions reduction volume

Year	Actual in 2022	Expected in 2023
VOC emissions reduction volume (ton/year)	108.62	114.02
Carbon Reduction (ton/year)	99.55	110.4

② Equipment improvement plan:

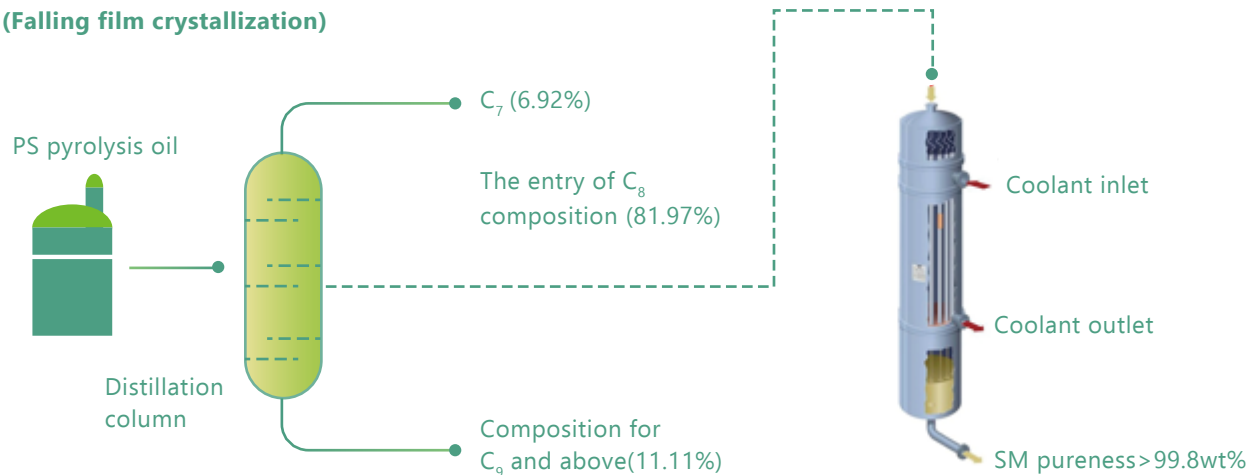
Depar	Storage tank VOC emissions		Processin	Year of
	Before improvement	After improvement		
Chemical Department I	74.30	2.07	97.2%	2016
Chemical Department II	51.97	15.58	70.0%	2022
	6.50	0.30	95.4%	2023
Total	132.77	17.95	86.5%	-



## Future plan

(1) **Chemical recycling of waste plastics and pyrolysis oil:** The quality of recycled materials is limited due to the physical recovery method of recycled plastics. When the recycled materials are re-manufactured into products, problems such as physical degradation and instability from processing occur easily. To meet the needs of use and the circular economy philosophy, the Company actively develops the chemical recovery method for waste plastics. Convert them into raw materials through the pyrolysis technology, followed by re-polymerization to become plastics. It can maintain the same properties as new materials and also reduce the use of petrochemical materials and carbon emissions. Initial discussions will be on the separation and purification of Styrene Monomer (SM) from Polystyrene (PS) pyrolysis oil, followed by its introduction to the PCR of the plastic production.

### Falling film crystallization purification device (Falling film crystallization)



## 2.4 Other measures

### Completed executions and the recent plans

- (1) **Low-carbon transport modes:** Provide subsidies to employees for purchasing new or exchanging for electric scooters. The subsidy for new purchase is NT\$10,000, and for exchange is NT\$16,000. Prioritize the purchase of energy-saving company car. Replacement is made for gas-powered cars which are more than 11 years. Selecting energy-saving vehicles (hybrid electric vehicle, all-electric vehicle, etc.) for the purchase of new passenger car and van is a priority. The 2022 carbon reduction was 15 tons of CO<sub>2</sub>e.

Year	Actual in 2022	Expected in 2023
Subsidy for electric scooters (vehicle/year)	92	-
Purchase of energy saving company car (vehicle/year)	1	5
Carbon Reduction (ton/year)	15	7

#### Remarks:

- Carbon reduction of electric vehicles: Diesel engine scooter 55g/km; electric scooter 26.5g/km; mileage: 20 km/day X 252 days/year = 5,040 km/year; carbon reduction is calculated based on 0.144 ton/vehicle a year.
- Hybrid Electric Vehicle carbon reduction: Gasoline vehicle 341 g/km; hybrid electric vehicle 196 g/km; mileage: 1 ten thousand km/year; carbon reduction is calculated based on 1.45 ton/vehicle a year.

### Formosa Plastics Group provides subsidies to employees purchasing new or exchanging for electric vehicles



- (2) **Paperless office:** Use iPad during meetings and document approval are done via electronic means to reduce printing papers. In 2022, carbon reduction was 35 tons CO<sub>2</sub>e.

Year	2019	Actual in 2022	Expected in 2023
Total amount of paper used (thousand pieces/year)	22,255	16,828	11,128
Reduction amount (thousand pieces/year)	Base year	5,427	11,127
Carbon Reduction (ton/year)		35	71

Remarks: Calculation for the carbon emissions of papers: 3.2 kg CO<sub>2</sub>e/A4,70g(210mm x 297mm) Each packet of 500 pieces

- (3) **Spun-dyed yarn:** Allowed fabrics to be processed to DTY, woven, and directly cut into clothing, without the dyeing and finishing procedures, in alignment with the clients' needs, without the dyeing and finishing costs and the issue of wastewater discharge achieving reduction in environmental pollution and carbon emissions. It is an environmental-friendly and low carbon green product. The 2022 carbon reduction was 4,937 tons of CO<sub>2</sub>e.

Year	Target in 2026	Actual in 2022	Expected in 2023
Sales volume (ton/year)	2,400	1,488	1,800
Carbon Reduction (ton/year)	7,966	4,937	5,974



## Future plan

- (1) **Bio-Based Polyamide PA11 (Polyamide 11):** PA11 monomer is extracted from castor oil. It is then polymerized to PA11 nylon granules. Castor oil grows in dry land, it does not need to be watered and it is not edible. Hence, it does not have issues of competing for food or land with organisms. The Department of Fibers collaborated with French business to develop the PA11 fiber which is applied in shoe materials and clothing fabric. It is a green product that is low-carbon, biomass and can be recycled for use.



# 3 Management of Climate Change Risks and Opportunities

## 3.1 Risk and Opportunity Identification Process

With respect to the climate change risk identification method, we follow the Recommendations of the Task Force on Climate-related Financial Disclosures (June 2017) and take into consideration transition risks (Policy and Legal/Market/Technology/Reputation) and physical risks (chronic and acute) when devising risk scenarios. Meanwhile, we provide risk descriptions for potential events, including the degree of financial impact, impact duration (short, medium, long), parties in the value chain impacted, and risk likelihood. 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.

Therefore, we have established the Digital and Energy Transition Task Force to be able to duly implement our risk response measures within the Company. The climate change risk issue analysis process is shown in the figure below.



Figure 3.1-1 Climate change risk issue analysis process

The Digital and Energy Transition Task Force identifies and defines an inventory of environmental risks and opportunities each year. The inventory list specifies that the responsible person for each risk category shall collect risk-related information systematically. Risks and opportunities with influential duration assessed as less than 10 years get directly included in the correspondent program drafted under the regular goal planning procedure mentioned above. Risks and opportunities with influential duration assessed as greater than 10 years will be reported by the Chairman to the Board for setting a special strategy for correspondence. The Company's Digital and Energy Transition Task Force is responsible for tracking the progress of the response plans through the Monthly Energy Conservation and Emission Reduction Circular Economy Meeting.

Each production department and the Safety and Health Department adopt a risk and opportunity matrix in the ISO 14001 environmental review guidelines to identify and evaluate the risks and opportunities related to climate change. The internal and external issues in the identification and assessment process are divided into physical risk and transition risk, including climate and weather, environmental policies and regulations, as well as market risk, including transportation and logistics and energy supply, reputation, and technology development.

In addition, due to the increasing impact of the ever-changing internal and external environments on the enterprise's operation, every change will pose a certain degree of risk to the enterprise. Therefore, the Company aims to minimize the impact of each risk. The defects in risk management can be reported to the Company's Audit Office, independent directors, or the Board of Directors. Each risk department evaluates the performance of the identification and mitigation of risks by itself, and the President's Office also evaluates the risk departments' performance and offers them guidance

TCFD Convener

Unit Representatives for TCFD

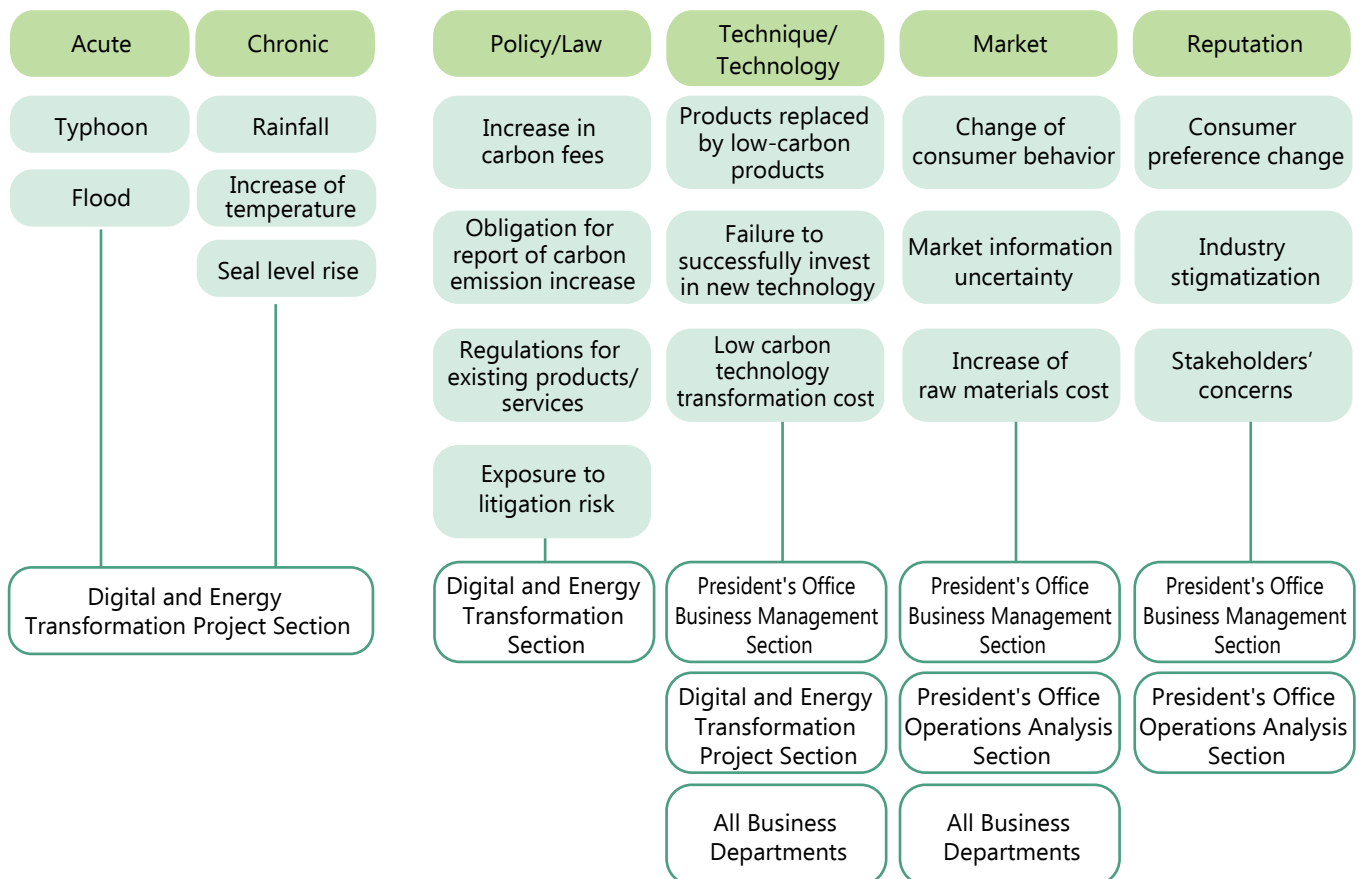
the Responsible Department

Content of Work

Risk

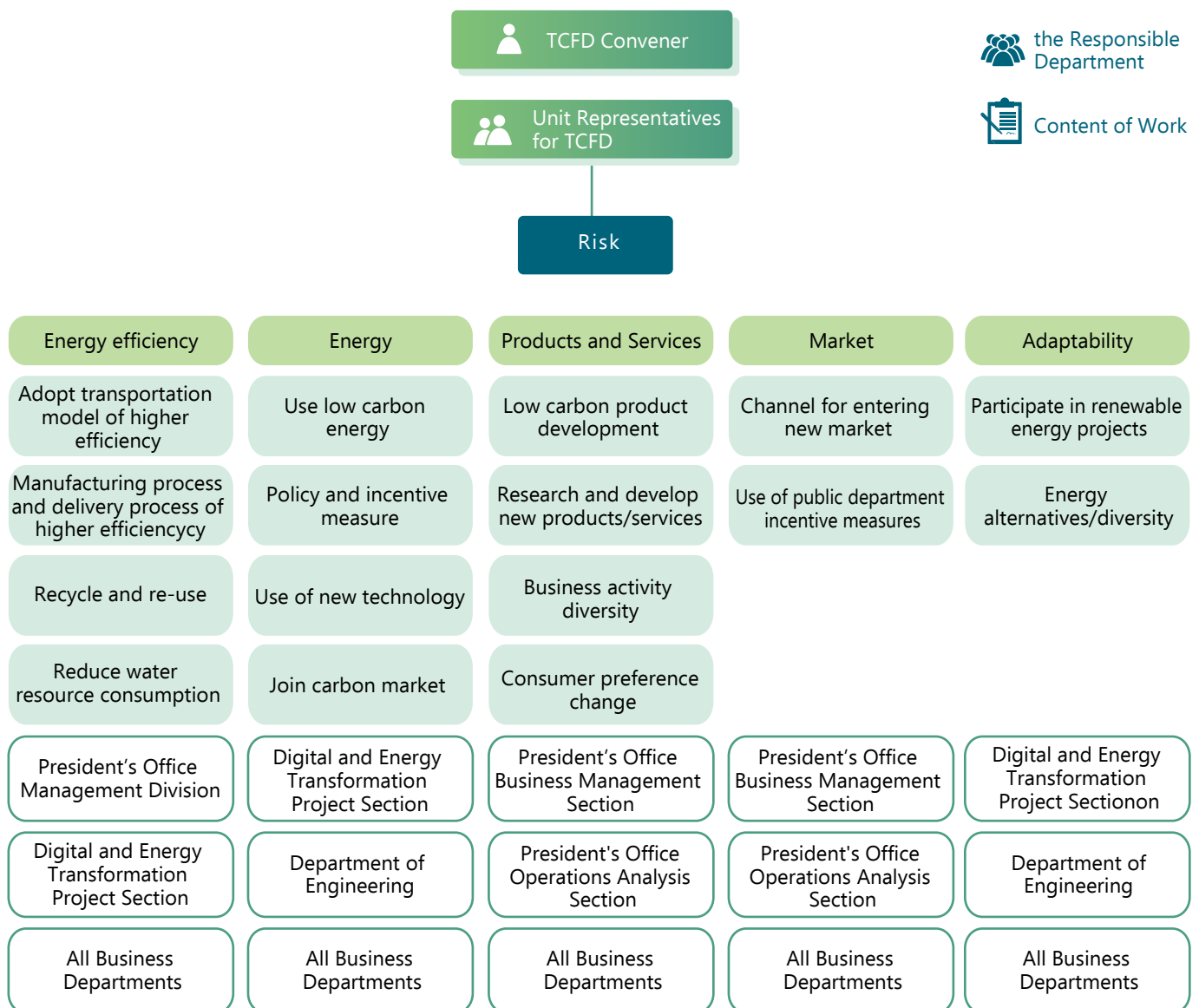
Physical Risk

Transformation Risk



Division of labor of climate change risk identification





Division of labor of climate change opportunity identification



We consider each risk and opportunity, the degree of impact, and other factors for a risk and opportunity matrix, and divide the severity and likelihood of the financial impact that risks and opportunities may cause on the Company into five levels with scoring as per the impact and the likelihood; the financial impact and the likelihood are then weighted. The risk matrix is as follows:

Climate Change Risk Matrix						
Financial impact level	Potential affected amount (New Taiwan Dollars, NTD	Scoring of corresponding risk				
	Above NT\$8 billion	5	10	15	20	25
	\$4 billion to \$8 billion	4	8	12	16	20
	\$500 million to \$4 billion	3	6	9	12	15
	\$50 million to \$500 million	2	4	6	8	10
	\$1 million to \$50 million	1	2	3	4	5
		<20%	20%<X<50%	50%<X<75%	75%<X<95%	>95%
Likelihood of occurrence		Rare	Unlikely	Possible	Likely	Almost certain

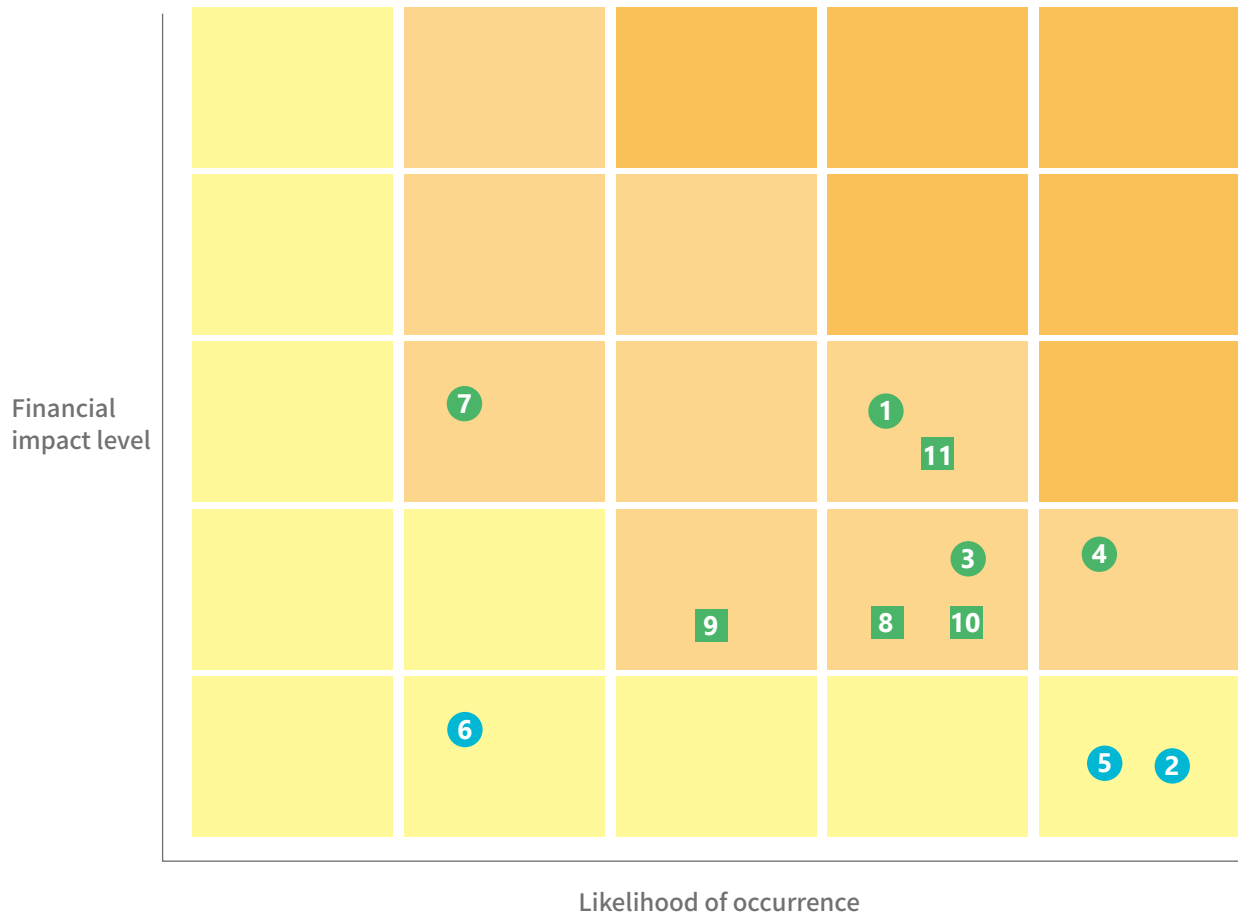
Figure 2.1-1 Climate change financial impact and likelihood matrix

When confirming and assessing climate-related risks, the Company defines a financial impact of over NT\$1 million as a material impact. According to the results of the above risk and opportunity matrix, the risks and opportunities are classified as follows:

- ① 15-25 points: High Risk, a priority for developing corresponding countermeasures.
- ② 6-14 points: Medium Risk, no actions are required yet, but for continuous monitoring.
- ③ 1-5 points: Low Risk, acceptable risk.



After the climate change risks and opportunities are assessed by each unit, the risks and opportunities are compiled into a risk-opportunity matrix correspondingly. The risk-opportunity matrix is as shown in the figure below:



● Major Risk

■ Major opportunity

● Medium Risk

■ Medium opportunity

● Low Risk

■ Low opportunity

1 Proposed carbon tax collection

2 Collecting Water Conservation

3 Charge Levy carbon border tax

4 Impact of high-carbon products

5 Negative impact to reputation

6 Flooding resulting from strong winds or typhoons

7 Water shortage or drought

8 Recycled materials used in the product

9 Low carbon products requested by customers

10 Low carbon fuel or renewable energy

11 Diverse product applications

## 3.2 Climate Change Risks and Opportunities and Financial Impact List

### Risks/Opportunities topics list





Topic number	Risks/Opportunities topic	Topic description	Impact level (High, medium, low)
1	Risks/Policy and Law	To cope with the climate change, government plans to collect carbon tax in the future	Medium
2	Risks/Policy and Law	The government has announced the amended Water Act in February 2023, which will levy Water Conservation Charge on users who consume large amount of water resources.	Low
3	Risks/Policy and Law	The EU will begin to levy carbon border tax after 2026. Direct emission taxes will initially be levied on five major industrial products: electricity, cement, chemical fertilizers, steel and aluminum.	Medium
4	Risks/Technology and technique	With increasing awareness in green consumption among customers, the number of clients who require eco-friendly products continues to increase. Therefore, if the product life cycle and product value chain are considered, high-carbon products will have an impact on the Company.	Medium
5	Risks/Reputation	In recent years, with the boom in ESG, investment institutions will dissect clients' ESG performance when evaluating their investments and loans. If a business fails to meet the ESG requirements, its reputation will be negatively affected.	Low
6	Physical risk/Acute	The Company considers the impact of strong winds or typhoons caused by abnormal climate events, it is necessary to provide safe parking at the plant site in order to prevent process hazard. Considering the impact of heavy rainfall/flood, operations at the plant site will be suspended due to floods, resulting in risks of losses in revenue.	Low
7	Physical risk/Chronic	The period of 1986~2005 is used as the base period to predict the climate condition of the plant site in recent period (2016~2035). It is predicted that there will be two months of water shortage or drought every year. Water shortage or drought caused by abnormal climate will cause risks of revenue loss.	Medium
8	Opportunity/Technique	Research and development of low carbon products from the raw materials to recycling and reuse, recycling ocean wastes from the terminal end customers for re-production into products. It will lower production costs and drive resource sustainable use.	Medium
9	Opportunity/Resource efficiency	Brand customers are requesting for post-consumer recycled content in the products of the Company. With our leading technology, we can provide such kind of products as a priority, increasing our revenue.	Medium
10	Opportunity/Resource efficiency	The Company has installed renewable energy systems such as solar power and hydropower which can meet the requirements of the Renewable Energy Development Act of Taiwan.	Medium
11	Opportunity/Technique	On the requirements for renewable energy, as the Company's products are applicable for the renewable energy equipment, we are able to seize the business opportunities arising from the policies driving green power and energy storage facility construction and increase our revenue.	Medium

## Impact of risk issues on finance

Figure on the scope of impact: Upstream ▲ Operation ● Downstream ▼

Topic number	Risk category/ Risk topic	Scope of impact	Level of impact	Topic analysis		
				Topic description	Potential financial impact	Management countermeasures (Eliminate risks/Lower risks/ Bear the risks)
1	Policy and law/ Carbon fee collection	●	Medium	The Legislative Yuan has in January 2023 passed the third reading of the Greenhouse Gas Reduction and Management Act for amendment to the Climate Change Response Act. Carbon tax collection will be implemented. At the same time, carbon fees preferential rate, regulations on emissions reduction volume deducting carbon tax collection of the emissions volume will be established.	The Company's GHG emissions are about 850 ten thousand tons. It is calculated based on NT\$300 per ton. Each year, a carbon fee of NT\$2.55 billion has to be paid. It will increase the fees expenses.	<ol style="list-style-type: none"> <li>1. Conduct GHG inventory each year to confirm the sources of emission.</li> <li>2. Drive energy efficiency improvement and energy transformation to lower GHG Emissions.</li> <li>3. Formulate carbon reduction goal and strategy to aim for carbon fees with preferential rate.</li> <li>4. Drive energy saving technology to aim for carbon reduction project subsidy.</li> <li>5. Implement internal carbon pricing as an important indicator for performance evaluation, product operation, investment assessment and so on matters in order to maintain competition.</li> </ol>
2	Policy and Law/Collection of Water Conservation Charge	●	Low	The government has announced the amended Water Act in February 2023, which will levy Water Conservation Charge on users who consume large amount of water resources.	Excess water volume and rate during dry-period is calculated at NT\$3/m <sup>3</sup> , with a total Water Conservation Charge of NT\$42,192 thousand. The charge is halved before the end of 2025 at NT\$21,096 thousand.	<ol style="list-style-type: none"> <li>1. Entitled to preferential rate of NT\$2/m<sup>3</sup> or NT\$1/m<sup>3</sup> when the recycling rate for each of the Company's plant is improved to above the industry standard.</li> <li>2. Enhance guidance on water recycling concept to plant sites with lower than standard value for recycling rate.</li> <li>3. Apply AI technology to raise the water saving volume throughout the</li> </ol>
3	Policy and law/ European Union (EU) to levy carbon border tax	▲ ●	Medium	EU in July 2021 On the 14th of July, EU has announced the Carbon Border Adjustment Mechanism (CBAM). The carbon emissions volume of carbon-intensive products of cement, steel, electricity, plastics, and petrochemicals that are imported into Europe needs to be declared and the carbon border tax to be collected. The CBAM is expected to be officially implemented in 2027. The collection method for the carbon border tax payment is based on the differences to the benchmark value for carbon emissions during production process.	<p>The main products of the Company for export sales to Europe that would be impacted in the future are plastics and organic chemicals, including PIA, PTA, ABS, PS, PP, and more. This would increase cost and weaken product competition.</p> <p>The export amount to EU in the year 2022 was NT\$2.77 billion, with the assumption that the cost is to increase by 10%, the increased cost would be NT\$270 million.</p>	<ol style="list-style-type: none"> <li>1. Continue to promote energy saving and carbon reduction, energy transformation and circular economy to reduce the carbon emission per unit product.</li> <li>2. Taiwan will also collect carbon tax which can be discounted in the carbon border tax.</li> </ol>

Topic number	Risk category/ Risk topic	Scope of impact	Level of impact	Topic analysis		
				Topic description	Potential financial impact	Management countermeasures (Eliminate risks/Lower risks/Bear the risks)
4	Market/Carbon Reduction Demanded by Customer	▲ ● ▼	Medium	Textile customers have requested for over 90% of the materials to be recycled materials for re-production by 2030 in order to reduce carbon emissions and to achieve net zero emissions by 2050 under the Paris Agreement.	The market now is full of "eco-friendly yarns," the low carbon spun yarn product. If calculate taking the sales price of eco-friendly yarn at NT\$15,574/piece, production capacity of 28,270 pieces/year, accounting for 50% of the 2026 target, the impact each year is NT\$220 million.	<ol style="list-style-type: none"> <li>1. Produce and promote PET bottle recycled polyester yarn, develop low carbon products with differentiation and high value to reduce the carbon footprint of yarn products.</li> <li>2. Apart from using Nanya's polyester for the raw materials used in production, we will continue to locate more suppliers for replacement with low price raw materials to lower production cost.</li> <li>3. Target the water-jet loom customers to promote MVS yarn version in order to lower labor costs for customers and to increase competitiveness.</li> </ol>
5	Company reputation/ Goodwill	●	Low	Financial sector is including ESG performance of a company into consideration for the evaluation of investments and loans as ESG is increasingly becoming valued. The Ministry of Finance requested all public banks to sign an agreement committing to stop financing coal power plants. Eight other private companies, such as Fubon Bank, have also joined in.	Formosa Chemicals & Fibre Corporation is coping with the climate change methods. If the company is unable to satisfy the requirements of the finance institution, there would be negative impacts to its reputation. An increase in interest fees, between NT\$10 million to NT\$50 million, might be given by the financial institution as a result.	<ol style="list-style-type: none"> <li>1. The Company actively participates in the Carbon Disclosure Project (CDP), TCFD initiative and Science Based Target initiative (SBTi) demonstrating the company's determination in promoting ESG and carbon reduction outcome to secure a reduction of interest rates.</li> <li>2. We will continue to observe the development schedule of hydrogen and relevant government regulations to assess the best appropriate energy transformation pathway.</li> <li>3. Formosa Chemicals &amp; Fibre Corporation undertakes the Sustainability-linked Loan with the Mizuho Bank, Ltd. and MUFG Bank, Ltd.. The Company will be entitled to discounted interest rates in the future when we fulfil the banks' approved ESG KPI.</li> </ol>
6	Acute Physical Risk/ Flooding	●	Low	The impacts of heavy rainfall/flood caused by abnormal climates can result in flooding the factory area, and the associated shutdowns will result in losses of turnovers.	Assuming that the flooding from rainfall caused the shutdown of factory for one day, the estimated loss would be NT\$680 million based on the 2022 revenue of NT\$247.4 billion.	<ol style="list-style-type: none"> <li>1. 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 the climate change.</li> <li>2. Increase the height of the gutter around each of the factory site for embankment, add wicket gate and water extraction pumps. This can avoid flooding at the factory site.</li> </ol>

Topic number	Risk category/ Risk topic	Scope of impact	Level of impact	Topic analysis		
				Topic description	Potential financial impact	Management countermeasures (Eliminate risks/Lower risks/Bear the risks)
7	Chronic Physical Risk/ Water Shortage		Medium	We consider the impact of water shortage due to abnormal climate. If we are unable to reduce the production of each process when water resources are limited, the production load of the process will decrease or the production will be halted in the event of a serious water shortage.	In accordance with the contingency measures drafted by the Company for the Mailiao Plant, when the water is limited to 10% at the plant, the company shall cope by lowering the capacity for PTA factory to 80% and for PC factory to 90%. Taking the assumption that 10% water limit might occur in the future lasting for 4 months, it will affect the company's revenue at NT\$144 million.	<ol style="list-style-type: none"> <li>Promote emergency water saving measures.</li> <li>There is the anti-drought wells 10st installed at Longde Plant which can provide water at a capacity of approximately 4.9 ten thousand tons/day.</li> <li>There is the anti-drought wells 12st installed at Xingang Plant which can provide water at a capacity of approximately 30 thousand tons/day.</li> <li>A seawater desalination plant is installed at the Mailiao plant with a daily supply of 10 ten thousand tons. It acts as one of the water source during dry periods.</li> </ol> <p>Examples:</p> <ol style="list-style-type: none"> <li>Cooling systems for air cooling + water cooling. Assessment shows to increase air cooling load in the short term to reduce the loss of evaporation from the water cooling.</li> <li>Discharge water recycling system of the cooling water tower for the phenol plant, it is assessed to reduce water quality in the short term to increase water volume produced.</li> </ol>
8	Technology/ Circular economy	  	Medium	Considering the product life cycle and product value chain, the Company has researched and developed low carbon products from the reuse and recycling of raw materials to the process improvements, adopting the concept of a circular economy. By recycling and reusing the scrap materials from the processes to further recycle the ocean wastes of terminal customers, we can reduce production costs and also promote the sustainable use of resources.	The raw material of nylon fiber products is Caprolactam (CPL). CPL is the recycled and regenerated material from the Company's efforts to increase the use of recycled materials (ocean waste or nylon 6 recycled pure material) in pursuit of environmental sustainability and to expand the introduction of circular economy. It has increased from 656 tons in 2021 to the targeted 3,600 tons for 2022. Calculating based on the unit price of CPL at NT\$57,000/ton, the recycled CPL that is regenerated into fiber finished products is estimated to impact revenues for NT\$205 million yearly.	FPC implements a circular economy and develops PCR (post-consumer recycled resin materials) in order to effectively reduce the crude oil materials and carbon emission of the product. <Case> Ocean wastes - Waste fishing nets and ropes are recycled and regenerated into CPL. Through polymerization and spinning, the material is made into nylon yarn which is used to produce functional and outdoor sportswear. It is a low energy-consuming green product throughout its production cycle from raw material to manufacturing process. We will continue to develop the recycling of qualified fishing nets, ocean waste nylon and other recyclable nylon products in Taiwan and overseas.

## Impact of opportunity issues on finance

Figure on the scope of impact: Upstream ▲ Operation ● Downstream ▼

Topic number	Risk category/ Risk topic	Scope of impact	Level of impact	Topic analysis		
				Topic description	Potential financial impact	Management countermeasures (Eliminate risks/Lower risks/Bear the risks)
9	Resource efficiency/ Waste material for reuse	●	Medium	Brand customers are requesting for post-consumer recycled (PCR) content in the products of the Company. If we can provide such kind of products, it will increase our revenue.	The Department of Plastics estimated the impact to the revenue is at NT\$420 million/year based on an estimated annual sales of 12,700 tons with sales amount at NT\$33/Kg.	Mix 30% to 85% of the PCR content into the new material of the plastic product for sale to the brand customers in meeting their requirements. <Case> The brand customers require that it is mandatory to contain PCR contents for the products that the Company is providing. If we can use PCR content in all products, it is anticipated to increase our revenues.
10	Resource efficiency/ Renewable Energy	●	Medium	The amendment to Taiwan's "Renewable Energy Development Act" was formally passed in April 2019. It is mandatory to establish renewable energy equipment and energy storage equipment with 10% of the contracted capacity within 5 years or purchase renewable energy certificates. Otherwise, a commission fee will be charged.	Based on the photovoltaics capacity of 43,123 kWp, its estimated benefit is NT\$97,333 thousand/year; the hydroelectric capacity is 23,256 kW, its estimated benefit is NT\$150 million/year, and a total of NT\$250 million/year.	<ol style="list-style-type: none"> <li>Photovoltaics:               <ol style="list-style-type: none"> <li>(1) The Company has installed solar power for 1,497kWp in 2018 at the Xingang Plant;</li> <li>(2) In 2022, the solar power installation was expanded for the rooftops of the offices and plants, completing 6,018 kWp for the solar sites at Xingang Plant and 1,796 kWp at Mailiao Plant for a total of 7,814 kWp.</li> <li>(3) The anticipated completing sites for 2023 shall have 19,307 kWp, the design has been completed and is under construction;</li> <li>(4) Solar sites that are in the midst of planning for 2024 would have 14,505 kW.</li> </ol> </li> <li>Water and electricity:               <ol style="list-style-type: none"> <li>(1) Has already invested in the hydroelectricity of the three reservoirs of Chia Nan Industrial for an installation capacity of 22,466 kW.</li> <li>(2) Completed the aqueducts of the small hydropower in Xingang Lantan in 2022 for 75 kW.</li> <li>(3) It is scheduled to complete the hydroelectricity in Shalu District of Taichung by 2024 for 800 kWp.</li> </ol> </li> <li>The solar sites currently in the middle of planning are of 43,123 kWp, and the hydroelectricity is of 23,256 kW. The green power is sold in bulk to Taipower and for self-use, and it can be traded in the renewable energy market.</li> </ol>



Topic number	Risk category/ Risk topic	Scope of impact	Level of impact	Topic analysis		
				Topic description	Potential financial impact	Management countermeasures (Eliminate risks/Lower risks/Bear the risks)
11	Technology/ Diverse application of products	●	medium	<p>For the purpose of enhancing power supply stability and the development of renewable energy, the Ministry of Economic Affairs (MOEA) has established three major goals to be achieved by the end of 2025. The goals are: 1. Increase net supply capacity to more than 3,000 MW; 2. Set up renewable energy storage capacity to more than 1,500 MW; and, 3. Install solar energy and off-shore wind power for 20GW and 5.6 GW, respectively. With respect to the national policy, efforts are underway to expedite the installation of green energy and the energy storage facilities. The Company can obtain business opportunities from it.</p>	<p>The Department of Plastics estimated that the business opportunities for the plastics materials used in the solar trunking, solar energy storage cabinet, and charging station is 580 million by 2025.</p> <p>The monitoring system developed by the Department of Engineering can save annual software expenses for NT\$1.695 million/year.</p>	<ol style="list-style-type: none"> <li>1. The composite material of the PABS plant of the Company' s Department of Plastics can be applied for use in solar power and wind power trunking, wiring, connector, charging station and energy storage cabinet equipment' s exterior cover.</li> <li>2. The Automatic Control Division of the Department of Engineering self-developed the monitoring system. Apart from monitoring optoelectronics, it can combine with the AI technology of the Department in the future to provide system fault diagnosis and alert function. It can be applied at the sites outside of the Company and it can also help to seize other business opportunities from other companies internally and externally.</li> <li>3. The Electricity Division of the Department of Engineering develops the microgrid systems integrating solar power, energy storage and charging stations. It can bring a huge development opportunity following the renewable energy growth trend and the government' s policy promotion.</li> </ol>



### 3.3 Climate Risk Scenario Analysis

As 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.

The transition risk refers to the IEA WEO 450 Scenario (2016) and the Nationally Determined Contribution (NDC) target set by each manufacturing site. In Taiwan's Intended Nationally Determined Contribution (INDC) report in 2015, the greenhouse gas emissions are set to be reduced by 50% by 2050 based on the business-as-usual (BAU) scenario. Under such scenario, the power generation structure in 2025 will be 20% for renewable energy, 30% for coals and 50% for gases. After the above scenarios are imported, the impact on the Company is analyzed in terms of market, technology, reputation, finance and operations in the future.

As for physical risks, with reference to World Bank's Climate Change Knowledge Portal, Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), and National Science & Technology Center for Disaster Reduction, the temperature rise, rainfall, flooding and drought between 2020 and 2040 in the scenarios of RCP2.6, RCP4.5, and RCP8.5 are estimated.

Plant Site Type	Longde Plant	Mailiao Plant	Xingang Plant	Changhua Plant
<b>Scenario Analysis</b>	Prediction is made for the scenarios of RCP2.6, RCP4.5, RCP6.0, and RCP8.5, and scenario RCP 8.5 is used to perform the risk assessment of extreme weather			
<b>Sea level rise</b>	Partially impacted	Impacted	No impact	No impact
<b>Area below the 2050 flood line</b>	Impacted	Impacted	Partially impacted	No impact
<b>Total precipitation</b>	1,085mm	1,085mm	1,085mm	1,085mm
<b>Maximum rainfall intensity</b>	Maximum 7.5 days of consecutive rainfall	Maximum 7.5 days of consecutive rainfall	Maximum 7.5 days of consecutive rainfall	Maximum 7.5 days of consecutive rainfall
<b>Temperature rise (Maximum)</b>	2.66	2.59	2.57	2.6
<b>Risk of flooding</b>	High Risk	Medium to Low Risk	High Risk	Medium to Low Risk
<b>Risk of drought</b>	Medium to Low Risk	Medium to Low Risk	Medium to Low Risk	Medium to High Risk

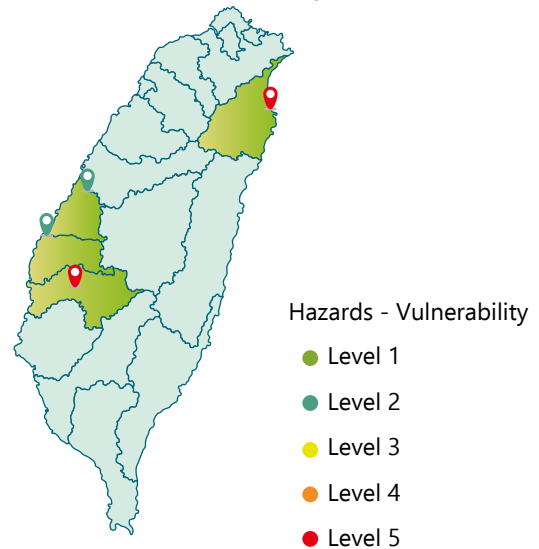
### Risk Assessment Grade Levels for Floods

The flood risk assessment of 4 production locations as a reference for the organization's strategic planning:

- There are a total of **2** locations (50%) with low to medium risks.
- A total of **0** locations (0%) with medium to high risks.
- A total of **2** locations (50%) with high risks.



### Risks distributions for the productions sites of Formosa Chemicals & Fibre Corporation

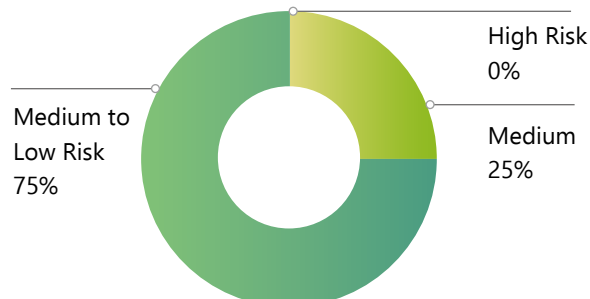


Estimated risk assessment outcomes on future flooding hazards and vulnerability (RCP 8.5 scenario analysis)

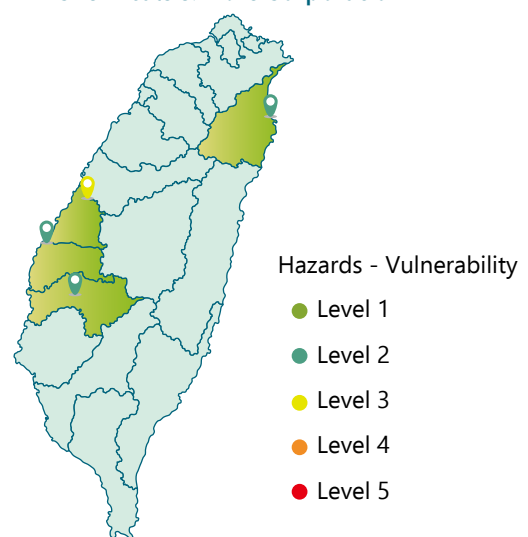
### Risk Assessment Grade Levels for Droughts

The flood risk assessment of 4 production locations as a reference for the organization's strategic planning:

- There are a total of **3** locations (75%) with low to medium risks.
- A total of **1** locations (25%) with medium to high risks.
- A total of **0** locations (0%) with high risks.



### Risks distributions for the productions sites of Formosa Chemicals & Fibre Corporation



Estimated risk assessment outcomes on future drought hazards and vulnerability disclosure (RCP 8.5 scenario analysis)

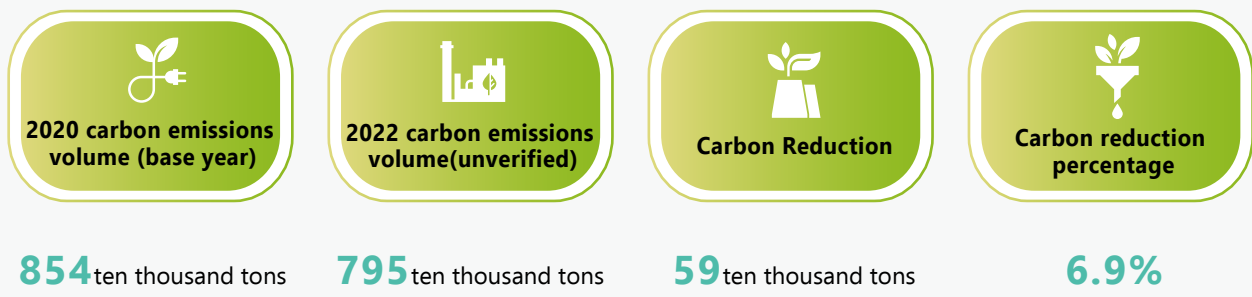


# 4 Indicators and Goals

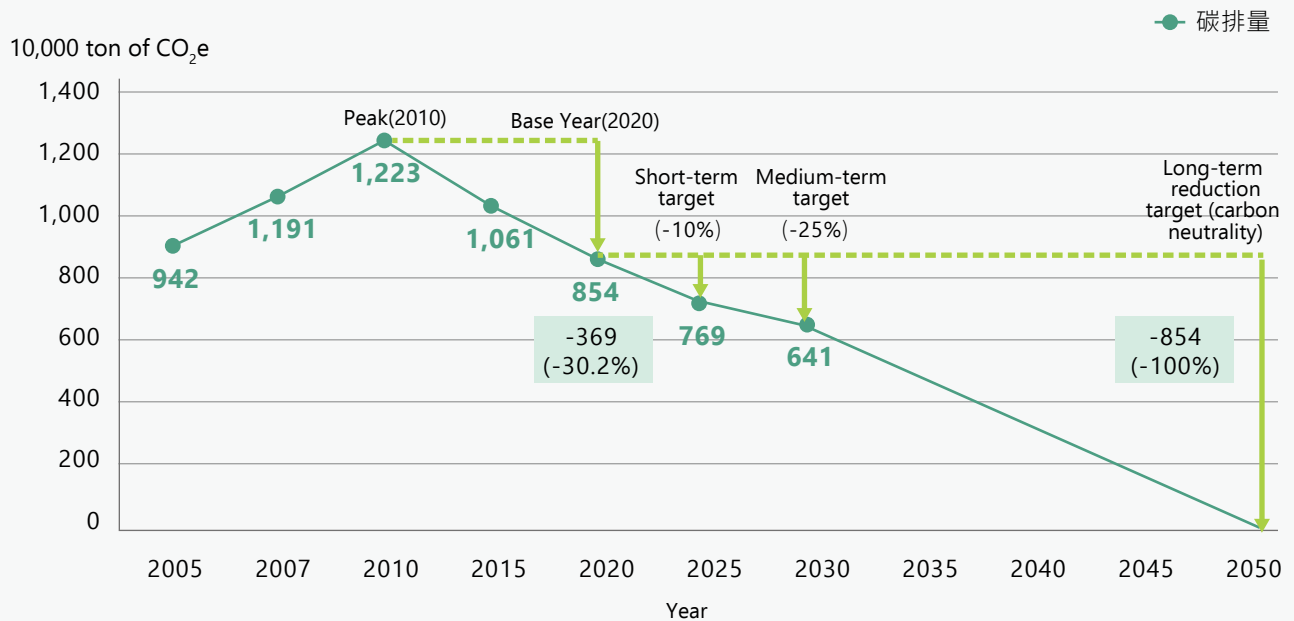
## 4.1 Carbon Reduction Goal

After analyzing the risks and opportunities of climate change, the Company has formulated a carbon reduction strategy for a scenario far below 2 ° C to reach carbon neutrality by 2050. The Company's GHG emissions have reached its peak in 2010. The emissions in 2020 is already 30.2% lesser than in 2010. The Company has declared its base year as 2020 and has established its short, medium, and long term carbon reduction goal as follows:

- **Short-term target:** Reduction of carbon emission in 2025 by 10% from the base year. (reduction by 37.1% compared to the peak year)
- **Medium-term target:** Reduction of carbon emission in 2030 by 25% from the base year. (reduction by 47.6% compared to the peak year)
- **Long-term reduction target:** reach carbon neutrality in 2050.



Formosa Chemicals & Fibre Corporation  
(including Taiwan Vinegar Biomedical Co.,Ltd.) carbon reduction roadmap



## 4.2 Information on greenhouse gas emissions

The Company has conducted an inventory of greenhouse gas emissions in accordance with ISO 14064-1 since 2009, and the data has been verified. The data on the Mailiao Plant in Yunlin has been verified by the British Standards Institution (BSI), and data on the Changhua, Xingang (in Chiayi) and Longde (in Yilan) Plants has been verified by System & Serviced Certification (SGS). After the verification was completed in 2022, the data was reported and registered on the National Greenhouse Gas Registration Platform at the end of August in accordance with the EPA's Greenhouse Gas Emissions Inventory Registration Management Regulations. The greenhouse gas emissions from each plant disclosed in this report are the data for 2021, as shown in the figure below:

Unit: metric tons of CO<sub>2</sub>e

Plant Site Type	Mailiao Plant (including the Haifeng Plant and acetic acid)	Xingang Plant	Changhua Plant	Longde Plant	Subtotal for each scope
Scope 1	1,873,507	2,213,660	1,580	1,309,470	5,398,217
Scope 2	3,171,649	66,967	26,362	135	3,265,113
Subtotal for each plant	5,045,157	2,280,627	27,942	1,309,605	8,663,330

Figure 4.2-1 The Company's greenhouse gas emissions in 2021

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 (please refer to Table 4.2-1 for details).

Table 4.2-1 Scope 3 emissions

Scope 3 Emission Source	Relevance	Emission (tons CO <sub>2</sub> e)	Calculation Scope
Products and services purchased	Relevant and counted	12,342,501	The scope of this inventory is the emissions from the first-tier raw material suppliers' manufacturing, covering 100% of the main raw material suppliers.
Capital goods	Relevant and counted	226,042	The scope of this inventory covers 100% of real property in 2020. The total property assets for 2022 was NT\$29.4 billion. Carbon emissions are calculated by taking 260 tons CO <sub>2</sub> e generated for every investment of NT\$340,000.
Fuel and energy-related activities (not included in Scope 1 or 2)	Relevant and counted	1,074,887	The scope of this inventory covers 100% of fuel and energy activities not included in scope 1 or 2, such as coal, pyrolysis low sulfur fuel oil, and natural gas, as well as energy extraction and transport activities.
Upstream transportation and distribution	Relevant and counted	9,264	The scope of this inventory covers 100% of emissions from the first-tier raw material suppliers' transport activities.
Business waste output	Relevant and counted	2,892	The scope of this inventory covers 100% of the emissions from the disposal of business waste.
Business trips	Relevant and counted	64	The scope of this inventory covers 100% of the emissions from business trips by air.

Scope 3 Emission Source	Relevance	Emission (tons CO <sub>2</sub> e)	Calculation Scope
Employee commuting	Relevant and counted	223.0187	The scope of this inventory covers 100% of the emission from transportation services of vehicles used for employee commuting.
Upstream asset leasing	Irrelevant	-	The Company does not engage in upstream asset leasing activities.
Downstream transport and distribution	Relevant and counted	213,055.9851	The scope of this inventory covers 100% of products shipped to main clients.
Processing of sold products	Relevant and counted	4,846,638.1214	The Company's products are usually upstream products, which are used in the products of the value chain, such as food, medical care, agriculture, automobiles, and daily necessities. For example, we have more than 20,000 different clients in different areas for our products, and these clients' greenhouse emissions are very different. Clients will sell their products to a wider variety of end users. After investigation, only PS, ABS, PP, PC, and PET could be identified. After these raw materials are sold, they are processed through injection or extrusion, and the remaining products will be processed multiple times and unable to be analyzed for now. Based on the annual sales, the output of PS, ABS, PP, PC, and PET accounts for 24.05% of the total output.
Use of sold products	Irrelevant	-	The Company manufactures plastic raw materials. Our products need to be processed after being sold, and our products after sold do not produce greenhouse gas emissions.
Final disposal of sold products that is	Irrelevant and has been counted	10,255.7672	The Company's products are usually upstream products, which are used in the products of the value chain, such as food, medical care, agriculture, automobiles, and daily necessities. For example, we have more than 20,000 different clients in different areas for our products, and these clients' greenhouse emissions are very different. Clients will sell their products to a wider variety of end users. After investigation, only PS, ABS, PP, PC, and PET could be identified. After these raw materials are sold, they are processed through injection or extrusion. The products are manufactured as general daily necessities. As per the EPA's survey, the recycling rate of plastic resources is about 73%. It is estimated that about 27% of PS, ABS, PP, PC, and PET raw materials will be discarded at the landfill for incineration. The final disposal of the products sold by the Company is based on the carbon emissions produced from the incineration of 27% of PS, ABS, PP, PC, and PET.
Downstream asset leasing	Irrelevant	-	The Company does not engage in downstream asset leasing activities.

Scope 3 Emission Source	Relevance	Emission (tons CO <sub>2</sub> e)	Calculation Scope
Use of sold products	Irrelevant	-	The Company manufactures plastic raw materials. Our products need to be processed after being sold, and our products after sold do not produce greenhouse gas emissions.
Investment	Irrelevant	-	During the Company's assessment of greenhouse gas emission sources, no investment has been found to produce additional greenhouse gas emissions.
Others (upstream)	Irrelevant	-	The Company's assessment of greenhouse gas emission that is The other relevant upstream GHG emission sources have not been considered.
Others (downstream)	Irrelevant	-	The Company's assessment of greenhouse gas emission that is The other relevant downstream GHG emission sources have not been considered.

### 4.3 Other indicators

FPC's other energy saving and carbon reduction targets are as follows:

#### 1. Water Resource Management:

In addition to the methods of process improvement, equipment performance enhancement, operating criteria optimization, waste recycle and reuse, in order to increase the water consumption efficiency, FPC also promotes the rainwater recycle and reuse. Accordingly, the target product unit water consumption is expected to be 5% less than the average value of previous year.

#### 2. Execution of product carbon footprint inventory in 2023:

For the purpose of enhancing carbon management of the Company, we have set the carbon reduction goals and have also declared the execution of product carbon footprint inventory in 2023.

#### 3. Electricity for the office and control room of the plant site will completely use renewable energy in 2024:

FPC plans to gradually increase the renewable energy use ratio via the method of self-installation of renewable energy power generation facilities. The target for the renewable energy is to completely use renewable energy for the electricity consumption of the office and control room of the plant site in 2024.

#### 4. Complete the greenhouse gas inspection verification for all levels of subsidiaries listed in the consolidated financial statements in 2024:

All levels of subsidiaries listed in the consolidated financial statements of FPC have implemented the greenhouse gas emission inspection work. The third party verification work is expected to complete in 2024 and relevant information will be disclosed in the "Sustainability Report."



# Appendices

## Report management

- The coverage period of this Report is from January 1, 2022 to December 31, 2022.
- 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).
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