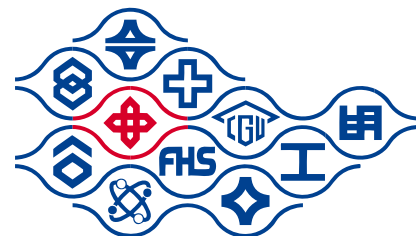


2021

Nan Ya
Plastics
Corporation

Sustainability Report



台塑企業
FORMOSA PLASTICS GROUP



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About This Report

Report Overview

This is the Sustainability Report (hereinafter "this report") of Nan Ya Plastics Corp. (hereafter referred to as "the Company"). The content is compiled based on the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) issued by the Global Report Initiative (GRI) in 2016. This report presents the data for the most recent 4 years and is expected to be published once a year. To communicate with our stakeholders through this report effectively, we provide an accurate and detailed introduction to specific actions and performance in Environment Protection(E), Social Welfare(S), and Corporate Governance(G) of the Company.

Publication Overview

Publication date of the first edition:
December 2015

Publication date of the previous edition:
June 2021

Publication date of the current edition:
June 2022

Publication date of the next edition: June
2023



2018 CSR Report



2019 CSR Report



2020 CSR Report

Boundaries of the Report

The disclosure scope of this report mainly focuses on the Company and subsidiaries in Taiwan, including Nan Chung Petrochemical Corp., Nan Ya Printed Circuit Board Corp., and PFG Fiber Glass Corp. (hereafter referred to as "subsidiaries in Taiwan". Among the subsidiaries, Wen Fung Industrial Co., Ltd., Wenling Technology Corp., and Formosa Plastics Group Investment Corp. have a very low impact on the consolidated revenue. Therefore, relevant information from these subsidiaries is not disclosed). Overseas reinvestments are also excluded. The data citation and disclosed boundaries of this report have not been changed from the previous year. Information disclosure period: From January 1st, 2021 to December 31st, 2021.

The financial data is publicly published after being audited by the CPA. Besides, part of statistical data is quoted from public information published by government agencies and related websites and are described and presented in conventional word and numerical values. Any exceptions will be specifically stated in the report.

Preparation Principles

The Company has prepared this report following the "Procedure for Information Disclosure Filing of Environment, Social and Governance (ESG)" and "Procedure for Information Disclosure Application Correction Filing of Environment, Social and Governance (ESG)" developed by the Taiwan Stock Exchange. The structure of this report is based on GRI Standards (GRI Sustainability Reporting Standards) and compiled according to the guideline and structure listed in the "Core Compliance". It disclosed the Company's main sustainability topics, strategies, goals, and measures.

- GRI Sustainability Reporting Standards (GRI Standards)
- Sustainability Accounting Standard issued by the Sustainability Accounting Standards Board (SASB)
- Recommendations on Task Force on Climate-related Financial Disclosures, TCFD
- Materiality, Inclusivity, Responsiveness, and Impact of AA1000 Accountability Principles Standard (2018 Edition)
- Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies
- The UN Global Compact
- UN Sustainable Development Goals, SDGs

Third-Party Assurance

To ensure the transparency and credibility of this report, the disclosed information has been independently verified by the British Standard Institute (BSI), a third-party international assurance authority, following the AA1000 Accountability Type 1 assurance and the core options of GRI Standards for independent assurance. BSI's independence assurance statement is also included in this report.

Contact Information

Thank you for reading this report. Should you have any concerns or suggestions regarding this report, please feel free to give us your feedback. Our contact information is:

Nan Ya Plastics Corporation

Contact: Operating Analysis Section, President's Office

Contact person: Mr. Chang

Email: NPC_ESG@npc.com.tw

Tel: +886-2-27122211 Ext: 5615

Address: 3F., 201 Dunhua North Road, Taipei (front building)

This report is available for download at: https://www.npc.com.tw/j2npc/zhtw/csr_report.jsp



Nan Ya Plastics Corp.'s
official website "Download
Reports"

Message from the Chairman

The Company has always adhered to the business philosophy of “diligence, perseverance, frugality and trustworthiness” as well as “to aim at the sovereign good” to reinforce corporate governance, implement corporate social responsibility, and create a safe and happy working environment. In 2021, with the efforts of all colleagues, we continue to improve various management operations, the Company was selected as a constituent of the “FTSE4Good TIP Taiwan ESG index” and gained an excellent grade of A- in both CDP Climate Change Performance Index and Water Impact Index. In the future, we will uphold the solid foundation laid in the past and continue to move toward the goals of “Sustainable Operation, Social Contribution”.

In response to the varied business environment, we continue to promote four major management guidelines, namely, “optimizing product portfolio to meet high-end applications”, “continue to vertically integrate the supply chain to satisfy customer needs”, and “achieve circular economy to reduce carbon emissions” and “make good use of AI to execute digital transformation” to create the business value of the Company and improve the overall operational performance.

In 2021, we set up the carbon reduction goal of “based on 2007, reduce carbon by 20% in 2025, reduce carbon by 35% in 2030, and achieve carbon neutrality in 2050” and actively promote carbon reduction strategies, including “Low-Carbon Energy Transition”, “Circular Economic of Energy Reservation and Carbon Reduction”, “Renewable Energy Usage Increasement”, “Carbon Capture Technology Application”, etc. Great efforts were made on low-carbon energy transition, circular economy, green products, and low-carbon manufacturing process.

We continue to research and develop high-value green products actively and provide various options of eco-friendly products to customers, some of the products have even obtained environmental labels, green building labels or global recycle standard certification for Textile. Take the total sales of 109 thousand tons of PET bottle recycled products in 2021 as an example, approximately 188 thousand tons of greenhouse gas emissions can be reduced which is equivalent to the carbon sequestration of 482 Daan Forest Parks.

In terms of creating a safe and happy working environment, “all-around security” is our constant core value. Only a safe and happy workplace can attract the best talents, enhance the Company's core competitiveness, and become a good foundation for sustainable development. Therefore, we forge a positive industry safety culture by continuously improving standard operating procedures, implementing safety actions, preparing safety tools, educating safety awareness, and cultivating safety attitudes. Moreover, we provide employees with competitive salaries and benefits, solid training, and good promotion channels. We also care about employees' physical and mental health and the workplace environment.

Going forward, we will continue to implement ISO 45001 and TOSHMS occupational safety and health management systems by encouraging full participation in industrial safety activities, and strive to provide employees with a safe and secure working environment.

In terms of social care, various large-scale public welfare activities such as local performances by art and cultural groups were suspended in line with governance's epidemic prevention regulations in 2021. We continued to participate in activities organized by local communities and disadvantaged groups in the spirit of “what is taken from the society is used in the interests of the society”. We also encourage our employees to provide warmth and assistance to the community with empathy and support, to bond with the community.

In addition, the seven foundations and charitable trusts established by the two founders have long been contributing resources and efforts to various fields including education, medical and health care, disadvantaged groups, cultural, and sports promotions. For example, for a few years, we have been helping children with developmental delays and improving the quality of service provided to institutions that take care of the disabled. Moreover, we have also assisted in rehabilitating drug addicts to acquire skills that would help their reintegration into society. It is our wish to bring happiness and hope to every corner of society.

Striving to become an excellent corporate citizen, the Company has integrated sustainable development into its operational strategies. In 2021, we continued to implement the UN's Sustainable Development Goals (SDGs) and identified and corresponded 6 relevant SDGs based on our core business.

Going forward, we will continue to implement the business philosophy of "diligence, perseverance, frugality, and trustworthiness," "to aim for the sovereign good," "perpetual business operation," and "dedication to the society" through promoting corporate governance, building a sustainable environment, and actively engaging in social welfare activities. We will listen and respond to the needs of the environment and society, and use the feedback to redirect our effort.

Through positive interaction and continuous improvement, the Company can make more contributions to the environment and society. Social responsibility is integrated into our business philosophy while we strive for sustainable development. We hope to protect our planet along with our stakeholders by caring for the environment and society to create a happier and more beautiful future.

Nan Ya Plastics Corporation
Chairman

Chia-Chau Wu

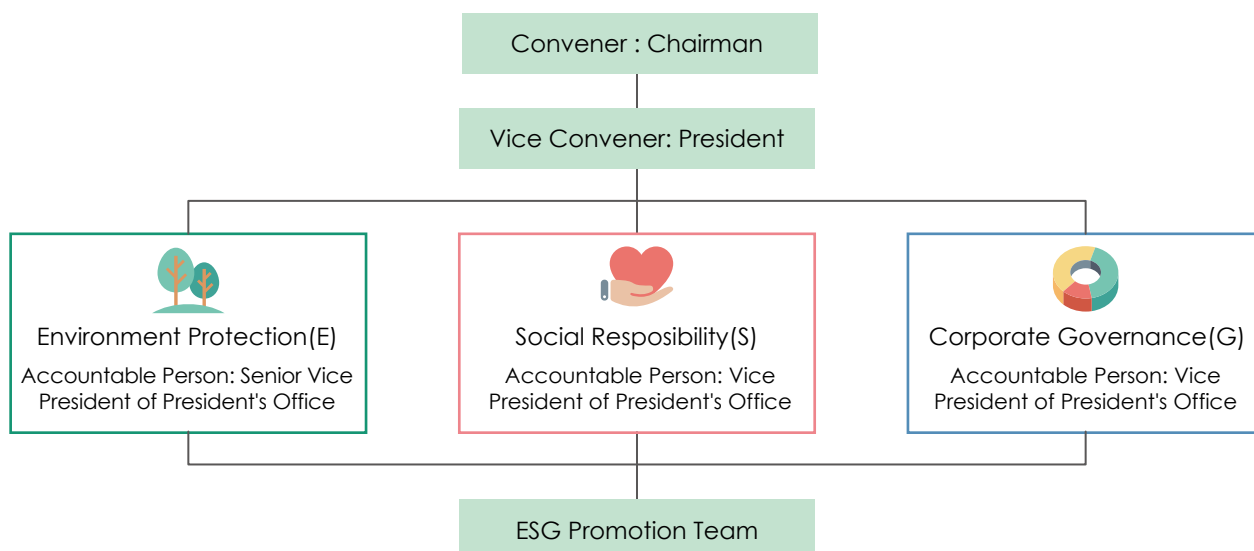
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The Report and Management of Sustainable Issues

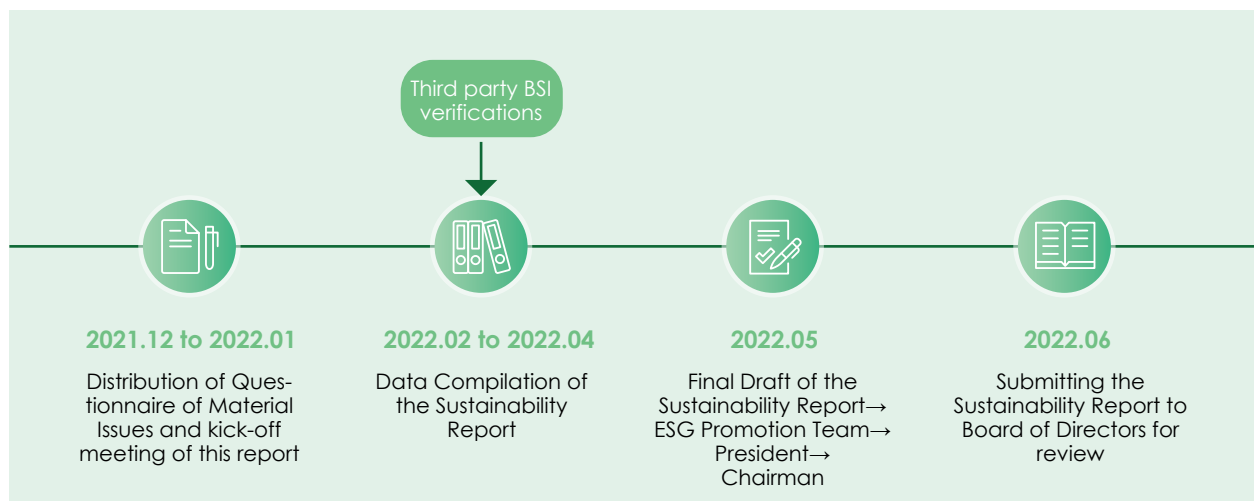
To effectively integrate and promote ESG tasks, the Company has set up an "ESG Promotion Organization", which is responsible for formulating company-wide strategies for environmental protection (E), social welfare (S), and corporate governance (G). The organization actively promotes the execution of various businesses, regularly conducts performance monitoring, and timely adjusts relevant strategies and goals through continuous communications with stakeholders. We hope to create mutual benefits with our stakeholders and to achieve the long-term goal of sustainable development and social contribution of the Company.

In addition, the Company conducted ESG training with a total of 256 participants and 768 training hours in 2021 to assist the management and representatives of various promotion teams understand the international sustainability trend which in turn the ESG tasks.

Organizational Chart of ESG Promotions




The Compiling Process of the Sustainability Report










Stakeholder Engagement


The ESG promotion team takes into consideration the five major principles of the AA1000 Stakeholder Engagement Standard (SES) announced in 2015: Dependency, Tension, Influence, Responsibility, and Diverse Perspectives. Upon confirmation from the convener, 8 stakeholders that are highly important to the Company's sustainable development have been identified, to communicate with them and respond to their needs and expectations. Through the process of stakeholder engagement, the Company's accountability to the stakeholders has been enhanced, while internal sustainable strategies have also been reinforced.

 Residents in the Operating Areas	 Government Institutions	 Experts and Scholars	 Environmental Groups
 Shareholders and Investors	 Customers	 Suppliers and Contractors	 Employees

Communications with Stakeholders

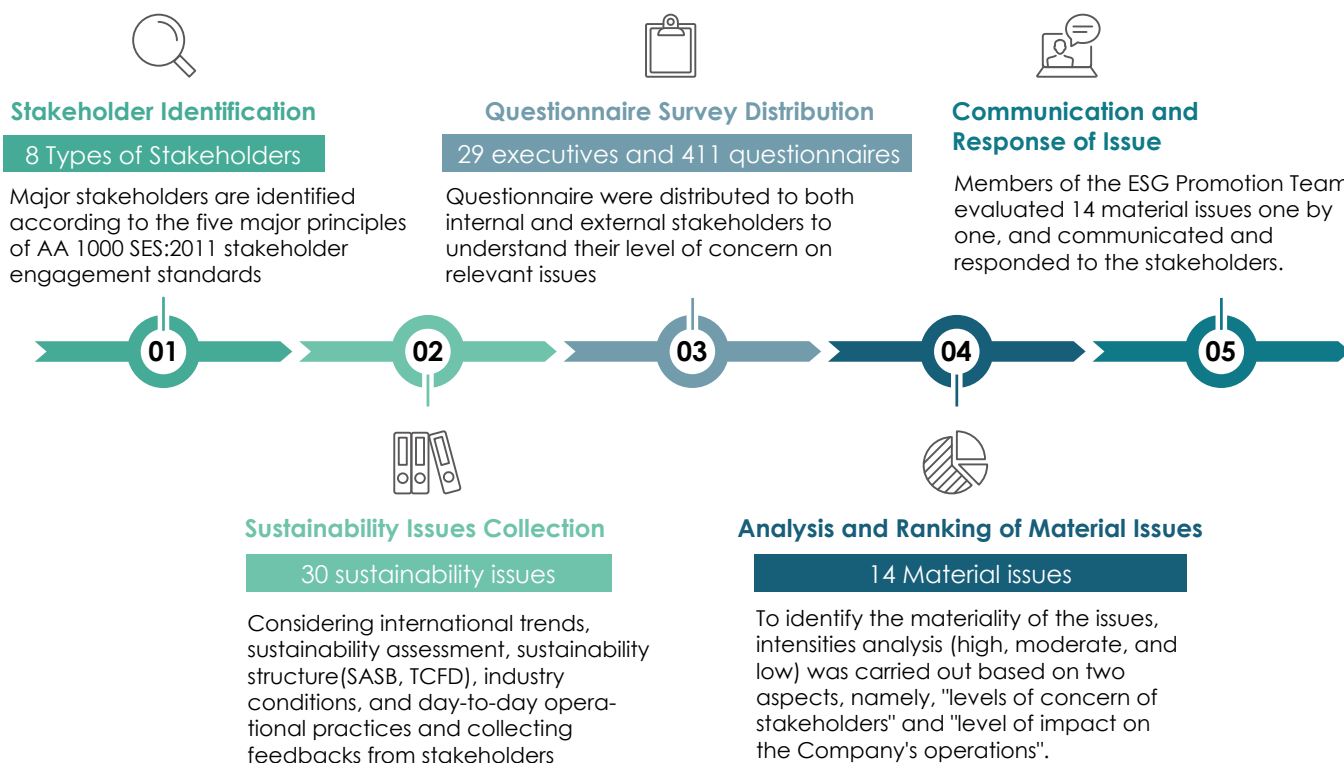
Stakeholders	Significance to NPC	Frequency and Methods of Communication	Major Topics of Concern	Corresponding Chapter
 Residents in the Operating Areas	Creating co-prosperity with the community has been a long-term commitment to the Company's operations. Caring for residents around the plant areas and society is the factor that will be considered while setting our annual strategic goals.	【Regularly - monthly】 Special Visits 【Occasionally】 1. Meetings - village (Vil.) meetings, factory construction (expansion) briefings, symposiums, observation tours, conferences, etc. 2. Email/Telephone Contact Person Taipei Administration Department Mr. Hsu TEL:(03)328-4191 #182	➔ Waste Management ➔ Circular Economic Promotion ➔ Community Engagement and Social Welfare	3. Green Environment Management Promotion 5. The Pursuit of Co-Prosperity and a Better Homeland
 Government Institutions	Government Agencies formulate relevant policies, therefore, besides complying with relevant regulations, we also communicate with the government to promote the sustainable development of the industry	【Occasionally】 1. Meetings (e.g., public hearings, seminars, etc.) 2. Official Correspondence 3. Special Visits 4. Email/Telephone Contact Person 1. President Office Mr. Chang (Operating Analysis Team) TEL:(02)2712-2211 #5615 2. Safety & Health Department Mr. Chang TEL:(02)2712-2211 #5627	➔ Ethical Corporate Management ➔ Corporate Governance ➔ Industrial and Public Safety ➔ Regulatory Compliance ➔ Occupational Health and Safety	1.2 Corporate Governance 2.3 Supplier and Contractor Management 3. Green Environment Management Promotion 4. Creating a Happy and Safe Workplace
 Experts and Scholars	We attach importance to suggestions from academic theories concerning sustainability issues and aspire to apply such theories to practice to collectively enhance Taiwan's industrial competitiveness and environmental sustainability.	【Occasionally】 1. Meetings (such as EIA review meeting for new (expansion) construction and the EIA conclusion implementation supervisory meeting) 2. Email/Telephone Contact Person Resource Recycling Department Mr. Li and Mr. Chen TEL:(05)681-8223	➔ Climate Change Mitigation and Adaptation ➔ Greenhouse Gas Management ➔ Air Pollutants Management ➔ Water Resource Management ➔ Circular Economic Promotion	3. Green Environment Management Promotion

Stakeholders	Significance to NPC	Frequency and Methods of Communication	Major Topics of Concern	Corresponding Chapter
 Environmental Groups	<p>Besides attaching importance to academic theories on sustainability issues, we also attach the same importance to environmental sustainability issues just like environmental groups. We aspire to apply such theories to practice to collectively enhance Taiwan's industrial competitiveness and environmental sustainability.</p>	<p>【Occasionally】</p> <ol style="list-style-type: none"> Meetings (such as EIA review meeting for new (expansion) construction and the EIA conclusion implementation supervisory meeting) Email/Telephone <p>Contact Person</p> <p>Resource Recycling Department Mr. Li and Mr. Chen TEL:(05)681-8223</p>	<ul style="list-style-type: none"> ➔ Climate Change Mitigation and Adaptation ➔ Greenhouse Gas Management ➔ Air Pollutants Management ➔ Water Resource Management ➔ Circular Economic Promotion 	3 Green Environment Management Promotion
 Shareholders/ Investors	<p>Shareholders and investors are owners of the Company, and non-financial information disclosure has gradually become a factor for investors in screening investment targets</p>	<p>【Annually】 Shareholders' Meeting</p> <p>【Quarterly】 Board of Directors Meetings</p> <p>【Occasionally】</p> <ol style="list-style-type: none"> Market Observation Post System (MOPS) "Investor Section" of the Company's website Investor Conference Email/Telephone <p>Contact Person</p> <p>President Office Ms. Tsai (Operating Analysis Team) TEL:(02)2712-2211 #5612</p>	<ul style="list-style-type: none"> ➔ Ethical Business Management ➔ Corporate Governance 	1.2 Corporate Governance
 Customers	<p>Earning the customers' support is the value of the Company, and customer feedback is the driving force for our progress</p>	<p>【Annually】 Dealer Meetings</p> <p>【Occasionally】</p> <ol style="list-style-type: none"> Product Exhibitions Special Visits Customer Satisfaction Survey, Customer Complaint Form Customer Complaints Email/Telephone <p>Contact Person</p> <p>President Office Mr. Liu (Management Team II) TEL:(02)2712-2211 #5626</p>	<ul style="list-style-type: none"> ➔ Product Innovation, Research, and Development ➔ Controlled Chemical Substances 	<ol style="list-style-type: none"> Product Value Expansion Green Environment Management Promotion
 Suppliers and Contractors	<p>Collaboration and support of strategic partners are the key factors in the Company's pursuit of success and sustainable development</p>	<p>【Annually】 Supplier Briefing</p> <p>【24 Hours】 Customer Service of Formosa Technology E-market Place</p> <p>【Occasionally】</p> <ol style="list-style-type: none"> Supplier/Contractor Grievance Channels Email/ Telephone Contractor Mediation Meeting <p>Contact Person</p> <p>President Office Mr. Wei (Management Team I) TEL:(02)2712-2211 #5621</p>	<ul style="list-style-type: none"> ➔ Ethical Business Management ➔ Industrial and Public Safety ➔ Regulatory Compliance 	<ol style="list-style-type: none"> Corporate Governance Supplier and Contractor Management

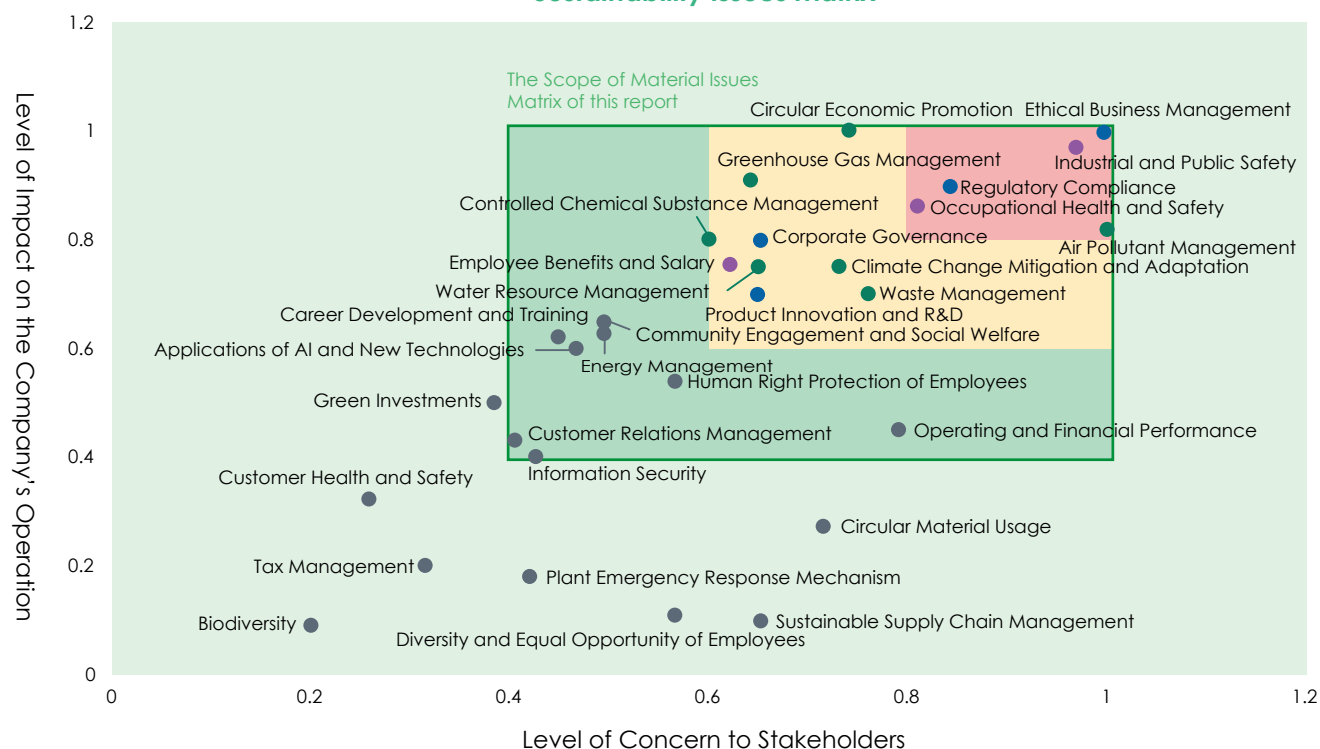
Stakeholders	Significance to NPC	Frequency and Methods of Communication	Major Topics of Concern	Corresponding Chapter
 Employees	<p>Employees are the foundation of the Company in strengthening its competitiveness. By providing sound education and training and a friendly workplace environment, the Company can enhance the employees' cohesion, thus creating a good foundation for sustainable management.</p>	<p>【Annually】 Employee Satisfaction Survey</p> <p>【Quarterly】 Occupational Safety and Health Committee Meetings</p> <p>【Every 2 months】 "FPG" Bimonthly Magazine</p> <p>【Daily】 Morning Meetings</p> <p>【24 Hours】 1. Set Up Online/Offline Suggestion Boxes (Notes, Outlook) 2. Factory "799" hotline</p> <p>【Occasionally】 1. Direct Communications between Senior Executives and Union Representatives 2. Labor Union (Labor-Management Meetings), Welfare Committees, etc. 3. Management System Feedback Form</p> <p>Contact Person President Office Mr. Pai (Human Resources) TEL:(02)2712-2211 #5648</p>	<p>→ Welfare and Salary of Employees</p> <p>→ Ethical Business Management</p> <p>→ Occupational Health and Safety</p>	<p>1.2 Corporate Governance 4 Creating a Happy and Safe Workplace</p>

Identification and Analysis of Sustainability Issues

Identification of stakeholders and sustainability issues are the core of ESG implementation. In preparing the Sustainability Report each year, the Company convenes meetings involving members of the "ESG promotion team" to communicate, discuss, and gain consensus on current stakeholders and topics that they concerned about, then takes these as important references for the content disclosure in the Sustainability report. The Company's 2021 analysis process is as follows:



Sustainability Issues Matrix



● Economic Issue ● Environment Issue ● Social Issue

Comparison after 2021 Adjustment

Aspect	Highly Material Issues to Management Approach	Moderately Material Issues to Management Approach	Low-level Issues Requiring Monitoring
Economic	2	2	2+1
Environmental	1	2+4	4-3
Social	2	0+1	4+1-1

Issue	Materiality in 2021	Materiality in 2020	Adjustment	Reasons for change	Corresponding page number
Product Innovation and R&D	Moderately	Monitoring	Increase	The Company has invested in innovation and R&D for a long time, and the management team and the stakeholders have paid more attention to this issue year by year.	36
Corporate Governance	Moderately	NA	Add	In response to international trends, the level of attention to ESG risk has increased, and the Company needs to make further explanations about the management measure of relevant operation risk.	22

We will properly disclose the content of these issues of concern in this report to pursue constant improvement. Going forward, we will continue to communicate with stakeholders and list the shortcomings as key points for improvement, and strive to maintain positive interactions and partnerships with our stakeholders.

R&D and Improvement

R&D and evaluate project ▶ Formulate mass production criteria and quality standards
▶ Research and testing & Quality confirmation ▶ Patent Application

Subject of Impact: Employee, Customers, Industry/academia

After-Sale Service & Consultations

Visit customer ▶ Satisfaction survey
▶ Feedback and improvement

Subject of Impact: Employee, Customers

Raw Material Procurement

Raw material procurement need ▶ Price negotiation
▶ Order placement ▶ Inspection & payment

Subject of Impact: Employee, Supplier

Product Sales

Order confirmation ▶ Manufacturing
▶ Product delivery







Subject of Impact: Employee, Customers, Logistics Contractors

Manufacturing and Production

Materials preparation and production scheduling
▶ Production ▶ Quality assurance/inspection
▶ Inventory

Subject of Impact: Employee, Supplier, Residents, Government



Identification and Ranking	Sustainable Development Goals (SDGs)		Sustainability Issue	Value Chain					
	Goal	Sub-Goal		Upper Stream		Operation	Down Stream		
				R&D and Improvement	Raw Material Procurement	Manufacturing and Production	Product Sales	After-Sale Service & Consultations	
Core Connection		3.9	Controlled Chemical Substance Management	●	✓	●	●		
			Air Pollutants Management	●	✓	●	●		
			Waste Management	●	✓	●			
		-	Ethical Business Management	●	✓	●	●	✓	
			Regulatory Compliance	●	✓	●	●		
			Corporate Governance	●	✓	●	●		
		8.1	-		✓	●	✓		
		8.5	Employee Welfare and Salary	●	✓	●	●	✓	
		8.8	Occupational Health and Safety		✓	●	●		
	Industrial and Public Safety				●	●			
		12.2	Water Resource Management	●		●			
		12.4	Controlled Chemical Substance Management	●	✓	●	●		
			Air Pollutants Management						
		12.5	Waste Management	●	✓	●			
	Secondary Connection		6.3	Water Resource Management	●		●		
Controlled Chemical Substance Management				●	✓	●	●		
6.5			Water Resource Management	●		●			
		Circular Economy Promotion							
		9.4	Product Innovation and R&D	●					
		9.5							
		13.3	Greenhouse Gas Emission Management	●	✓	●	●	✓	
		Climate Change Risk Management							

Note: (1) Sustainability issues marked with "*" represent issues that are important to the Company but do not correspond to the GRI Standards. (2) Level of involvement: Direct relations (●), Indirect relations (○) Business relations (✓).

	Subject of Impact	2021 Highlights Results	Corresponding Chapter
	Employee, Supplier, Resident, Government, Customer, Industry/Academia, Logistics Contractors	DINT, an eco-friendly plasticizer, obtained a 3rd category new chemical substances registration from Environment Protection Administration, and the Company accepted the "Green Project" interview of the Toxic and Chemical Substances Bureau in November.	3.6
		The 2021 air pollutant emissions of the Company and subsidiaries in Taiwan decreased by 11.6% for SOx, 19.3% for NOx, and 21% for TSP compared with 2020.	3.3
	Employee, Supplier, Resident, Government, Customer, Industry/Academia,	The resource recovery of waste of the Company and subsidiaries in Taiwan was approximately 83%.	3.5.1
	Employee, Supplier, Resident, Government, Customer, Industry/Academia, Logistics Contractors	<ul style="list-style-type: none"> No incident related to corruption or trade secret violation occurred in 2021. Promote education training on "Prevention of insider Trading" and "Ethical Business" with a total of 12,390 participants and 6,196 training hours. 	1.2.4
	Employee, Supplier, Resident, Government, Customer, Logistics Contractors	Operating Performance Compared with 2020: The consolidated revenue and operating net profit increased by 51% and 240% respectively and domestic and overseas investment are promoted continuously.	1.1.3
	Employee, Supplier, Resident, Government, Customer, Industry/Academia, Logistics Contractors	<ul style="list-style-type: none"> The Company was granted the "Golden Medal" of Manufacturing Industry Happiness Enterprise from 1111 Job Bank in 2021. The employees' salary and welfare expenses of the Company in 2021 increased by 15.5% compared with 2020. 	4.2
	Employee, Supplier, Resident, Government, Customer, Logistics Contractors	There was no fatality occurred in the Company and subsidiaries and among various occupational injury indicators, Disabling Injuries Frequency Rate was 0.22, Disabling Injuries Severity Rate was 3 and Frequency-severity Indicator was 0.02 which are superior to industrial peers.	4.4
		Promote public safety drills to strengthen employees' concept of fire protection and other industrial safety protection.	
	Employee, Supplier, Resident, Government, Customer, Industry/Academia,	The BG Plant formulated a hydrolytic reaction AI model and found the optimal operation condition which complied with control standards, lowering the flow of cooling water and is expected to save water 96 kilolitre/day.	3.4
	Employee, Supplier, Resident, Government, Customer, Industry/Academia, Logistics Contractors	Conducted 4 disaster prevention drills on toxic chemical substances.	3.6
		Replaced the fuel of cogeneration boiler from bunker oil to natural gas lower the emission concentration of SOx, NOx, and TSP.	3.3
	Employee, Supplier, Resident, Government, Customer, Industry/Academia	The trimming of glass fabrics was disposed of by landfill and incineration due to its component contained waste glass fiber, after being grounded by the manufacturer, it's now being used as an additive of low-strength concrete.	3.5
	Employee, Supplier, Resident, Government, Customer, Industry/Academia	The effluent of each plant area met the effluent standard. No exception occurred.	3.4
	Employee, Supplier, Resident, Government, Customer, Industry/Academia, Logistics Contractors	The leak detection warning equipment was tested and calibrated regularly. No abnormal leakage of controlled chemical substances occurred.	3.6
	Employee, Supplier, Resident, Government, Customer, Industry/Academia	The Company and subsidiaries in Taiwan completed 66 water conservation improvement projects with a 50 million investment amount and the yearly benefit is approximately 5 million.	3.4
	Employee, Customer, Industry/Academia	The Company obtained 73 patents in 2021, with an accumulated amount of 476.	2.1.2
	Employee, Supplier, Resident, Government, Customer, Industry/Academia, Logistics Contractors	<ul style="list-style-type: none"> Set up short/ medium/long-term carbon reduction goals. Promoted the construction of renewable energy facilities. Participated in Task Force on Climate-Related Financial Disclosures (TCFD) Unit carbon emission reduced from 4.13 in 2020 to 2.89 in 2021. 	3.2

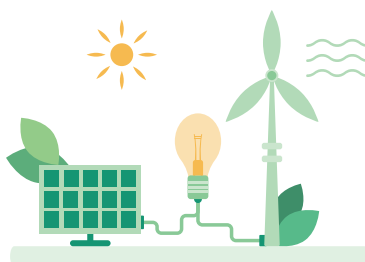
Sustainability Performance

Economic Aspect



- The Company was selected as a constituent of the "FTSE4Good TIP Taiwan ESG index", "FTSE TWSE Taiwan 50 Index", and "TWSE CG 100 Index".
- The Company's R&D expenses amounted to over NT\$1 billion in 2021, which showed a **6.9%** growth over the 2019 figures (increased for four consecutive years).
- 2021 customer satisfaction survey results indicated an overall score of 4.3 points, accounting for **86%** of the total score.
- **No major violations occurred** in 2021.

Environment Aspect



- The Company scored "**Leadership Level (A-)**" in both the climate change sector and the water security sector in the 2021 Carbon Disclosure Project (CDP).
- The 2021 greenhouse gas emission intensity (greenhouse gas emission/operating revenue of the Company) of the Company decreased from 4.13 in 2020 to **2.89** in 2021.
- The 2021 wastewater effluent of the Company and subsidiaries in Taiwan decreased by **3.2%** compared with 2020.
- The 2021 air pollutant emissions of the Company and subsidiaries in Taiwan decreased by **11.6%** for SO_x, **19.3%** for NO_x, and **21%** for TSP compared with 2020.

Social Aspect

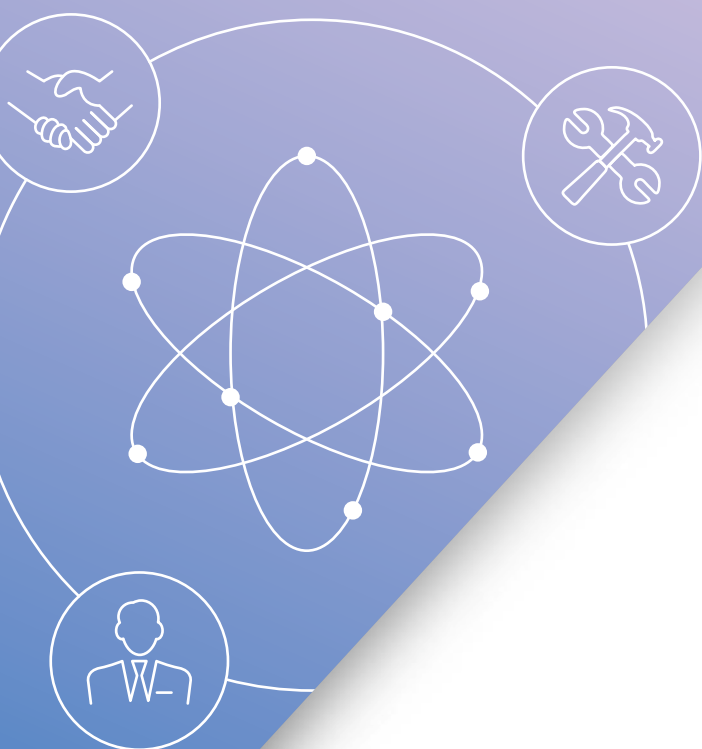


- The Company was granted the "**Golden Medal**" of Manufacturing Industry Happiness Enterprise from 1111 Job Bank in 2021.
- Employee hiring of the Company and subsidiaries in Taiwan: more than **93%** are full-time employees, and **93%** are Taiwanese citizens.
- In 2021, the average monthly voluntary resignation rate from the Company and subsidiaries in Taiwan was **0.13%**.
- A total of 18 environmental protection volunteering activities were held by sites in northern Taiwan with **573** participants.
- A total of **3 beach cleanup activities** were held in 2021 and **3,300** employees and their family dependents participated.



1

Ongoing Sustainable Governance Strategy





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NPC complies with legal regulations, adheres to the principle of ethical standards, and continues to strengthen corporate governance and risk control mechanisms, as well as enhance the ethical business awareness of all employees. The Company aims to become the most trusted corporation with the business philosophies of "diligence, perseverance, frugality and trustworthiness" and "to aim at the sovereign good".

Strategy	United Nations Sustainable Development Goals (SDGs)	Sustainability issues
<ul style="list-style-type: none"> ■ Sustainable development - Continue to expand businesses and promote high-value products ■ Ethical business management - Sound corporate governance and ensure the rights and interests of shareholders ■ Implement operational risk management - Control operational risks and develop risk response measures 		Corporate Governance, Ethical Business Management

2021 Implementations (○ Did not meet the goals ☑ Goals met ★ Exceeded expectations)

 Sustainable Development	2021 Goals <ul style="list-style-type: none"> ● Carry out domestic investment plans to develop polyester film and advanced synthetic paper ● Carry out investment in aluminum plastic film plant in China 	2021 Implementations <ul style="list-style-type: none"> ☑ Domestic Polyester film in Linkou and advanced synthetic paper has completed and put into production ☑ Aluminum Plastic Film Plant in China has been completed and put into production, on the other hand, investment in the copper foil plant and glass fabrics plant are ongoing.
	Short-term Goals (2022 Goals) <ul style="list-style-type: none"> ● Carry out investment in blood bag and leukocyte reduction filter system ● Carry out investment in cooper plant and BPA plant in China ● Investment in "Formosa Smart Energy Tech Corp." ● Set up "Sustainable Development Committee" under the Board of Directors 	Medium- and Long-term <ul style="list-style-type: none"> ● Continue to improve the product competitiveness and develop high-value and differentiated products, and look for new investment/development opportunities to ensure the Company's sustainable development
 Ethical Business Management	2021 Goals <ul style="list-style-type: none"> ● Conduct "Self-Evaluation of the Board of Directors" ● Participation in 4 or more investor conferences at least once per quarter ● Information announcements in both Chinese and English ● Continuously improve various internal control systems in line with legal and practical needs ● Offer stable return on equity for shareholders ● No major violations (with penalties exceeding NT\$1 million) 	2021 Implementations <ul style="list-style-type: none"> ☑ "Self-Evaluation of the Board of Directors" has been conducted in 2021 ☑ Participated 6 investor conferences in 2021 ☑ In 2021, 48 material messages were announced in Chinese and English ☑ Completed 52 audits based on the "2021 Audit Plan" and all abnormalities found have been improved ☑ 2021 earnings per share reached NT\$10.25 ☑ No major violations occurred in 2021
	Short-term Goals (2022 Goals) <ul style="list-style-type: none"> ● Regularly conduct "Self-Evaluation of the Board of Directors" on an annual basis ● Participation in 4 or more investor conferences at least once per quarter ● Information announcements in both Chinese and English ● Continuously improve various internal control systems in line with legal and practical needs ● Offer stable return on equity for shareholders ● No major violations (with penalties exceeding NT\$1 million) 	Medium- and Long-term <ul style="list-style-type: none"> ● To protect the rights and interests of shareholders, the Company shall ensure that all of its operations comply with legal requirements, continue to strengthen corporate governance, and properly disclose material Company information



 Implement Operating Risk Management	2021 Goals <ul style="list-style-type: none"> Identify risk events and draft responsive measures accordingly Report to the Board of Directors in regards to the status of "risk management" implementation at least once every year 	2021 Implementations <ul style="list-style-type: none"> 21 risk events including climate change have been identified in 2021, and response measures have been drafted accordingly The implementation of "risk management" has been reported to the Board of Directors in July 2021.
	Short-term Goals (2022 Goals) <ul style="list-style-type: none"> Identify risk events and draft responsive measures accordingly Set up "Information Security Committee" to strengthen the information security management 	Medium- and Long-term <ul style="list-style-type: none"> The Company shall identify internal and external risks on a timely basis and draft countermeasure policies to mediate the hazard of risks and strengthen operational flexibility

1.1 About Nan Ya Plastics

1.1.1 Company Introduction

Established in 1958, Nan Ya Plastics Corporation (hereinafter referred to as "the Company" or "NPC") initially focused on plastic secondary processing products, including PVC pipes, PVC leather, and PVC sheeting. The Company gradually expanded to the fields of chemical products, polyester fibers, electronic materials, and mechanical and electrical engineering projects, and has been expanding overseas to the United States, China, and other foreign business since 1979. To date, the Company has established itself as an international and diversified business. (For the Company's history, please refer to the "Company History" section on NPC's website.)



"Company History" on NPC website



Nan Ya Plastics Corporation

Date of establishment
August 22, 1958

Listing Date
November 5, 1967

Capital
NT\$79,308,215,890

2021 Revenue
NT\$411,670,391 thousand

Major Operations

electronic materials, chemical products, polyester fibers, plastics processing, and mechanical and electrical engineering

Operating Locations

Registered address: 101, Shuiguan Road, Renwu Dist., Kaohsiung City 814, Taiwan
Taipei Branch: 3F., 201 Dunhua North Road, Taipei (front building)

Global Locations

Taiwan, China, the United States
(6 of the subsidiaries listed in the consolidated financial statements are from Taiwan, and 23 are based overseas)

Number of employees in 2021

32,812 employees (this Report is mainly based on 18,202 employees, including Nan Ya Printed Circuit Board Corp., PFG Fiber Glass Corp., and Nan Chung Petrochemical Corp. The number does not include overseas subsidiaries listed in the consolidated financial statements)

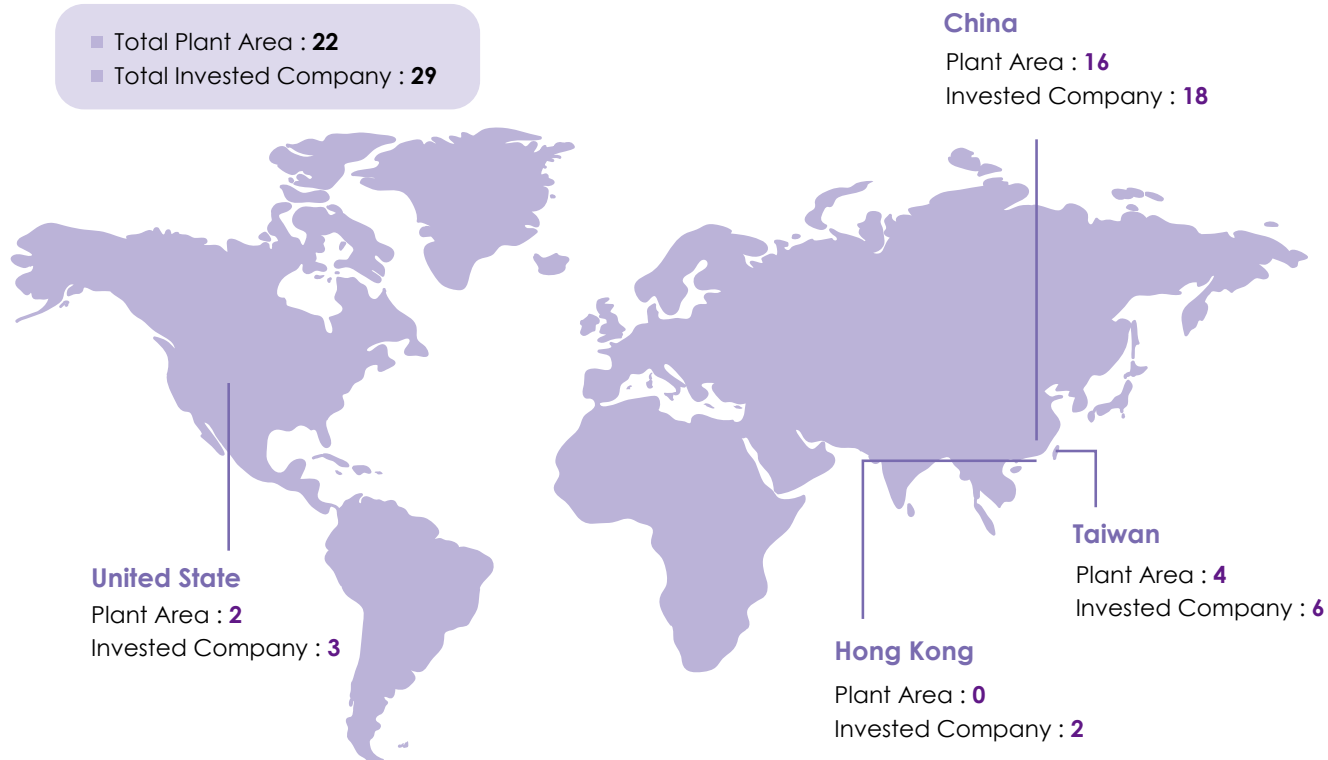
Note 1: The source of employee numbers comes from the 2021 Annual Report (as of December 31, 2021, including the subsidiaries in the consolidated financial statements)

Note 2: The revenue, global locations, and number of subsidiaries are based on the data in the 2021 consolidated financial statements



Locations of Global Operations

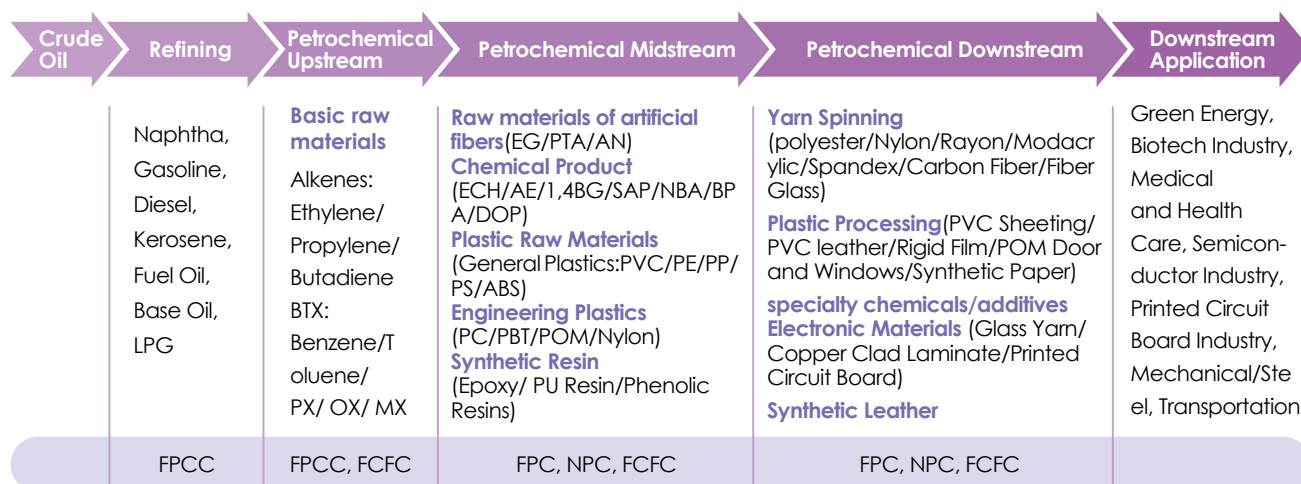
- Total Plant Area : **22**
- Total Invested Company : **29**



Source: 2021 Consolidated financial statements
(For more information please refer to the "Investment" on the NPC website)

Formosa Plastic Group Product Relationship Diagram

The Company is affiliated with Formosa Plastics Group (FPG). We actively engage in the vertical integration of upstream and downstream industries, by expanding economies of scale FPG reduces production costs to meet the customers' needs for raw materials and enhance market competitiveness. FPG has achieved an integrated supply chain in terms of oil refinement, petrochemical raw materials, plastics, fibers, and electronics.



Note: Please refer to the Annual Report for details on the "Raw Material Consumptions" and "Production and Sales Volume".



1.1.2 Business Philosophy

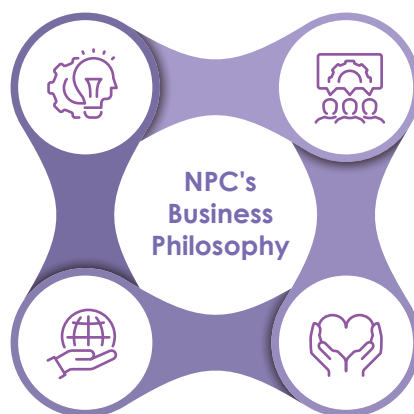
The Company's business philosophy is to pursue the rationalization of all things with the attitude of "diligence, perseverance, frugality, and trustworthiness", and to work toward the ultimate goal of "to aim at the sovereign good". While pursuing "perpetual business operation", the Company also strives to achieve the purpose of "dedication to the society", and to become a model leader and a benchmark that brings happiness to employees, a sense of security to investors, and trustworthiness to the society.

Diligence, Perseverance, Frugality, and Trustworthiness

Diligence is the use of wisdom to maintain a work ethic of being down-to-earth practically and realistically, inquire into the root of the matter seek constant improvement, and rationalize corporate management.

Perpetual Business Operation

To improve the quality and efficiency of work and make sure all operations comply with statutory requirements. We strengthen our long-term profit potential through rationalizing corporate management and achieve a mutually beneficial and strong partnership with customers by providing them with high-quality and low-cost raw materials.



To Aim at the Sovereign Good

Due to the rapid changes in the external environment, the rationalization of corporate management must improve continuously to stay current and to seek innovation and development.

Dedication to Society

The Company adheres to the purpose of "what is taken from the society is used in the interests of the society", focusing on the development of medical and educational public welfare. We contribute corporate resources to the benefit of all humanity.

1.1.3 Operating Performance

The consolidated revenue of the Company was NT\$411.670 billion in 2021 increasing by 50.6% compared with NT\$273.354 billion in 2020. The consolidated profit before tax was NT\$10.346 billion in 2021, a growth of 240% from the NT\$3.043 billion in 2020. Going forward, the Company will continue to actively promote the four key management targets in optimizing product portfolio to meet high-end applications", "continue to vertically integrate the supply chain to satisfy customer needs", and "achieve circular economy to reduce carbon emissions" and "make good use of AI to execute digital transformation", and ", and aspires to maintain stable growth and profits in the face of complex international situations.

The Company's Operating Performance (Unit: NTD thousand)				
Item	2018	2019	2020	2021
Operating revenue	333,061,560	286,303,059	273,353,806	411,670,391
Operating costs	283,997,975	258,165,832	233,757,892	307,825,083
Profit before tax	61,525,186	26,689,030	30,437,740	103,463,955
Retained earnings	220,788,020	204,105,146	212,630,726	273,458,343
Earnings per share, EPS (NT\$)	6.65	2.91	3.24	10.25
Return on equity (%)	13.97%	6.25%	7.55%	21.60%
Total tax paid (excluding business tax)	2,817,655	2,781,360	932,021	1,812,450

Source: consolidated financial statements and Annual Report from each year



Analysis of the Company's Revenues from Major Departments in 2021		
Type of Product	Amount (NTD thousand)	Ratio (%)
Plastic products	48,623,718	11.81%
Plastic raw materials	117,234,313	28.48%
Electronic materials	182,319,184	44.28%
Fiber products	58,320,368	14.17%
Other departments	5,172,808	1.26%
Total	411,670,391	100.00%

Source: NPC's 2021 consolidated financial statements

Analysis of the Company's Domestic/Export Sales in 2021		
Region	Amount (NTD thousand)	Ratio (%)
Taiwan	116,471,431	28.29%
China (including Hong Kong)	177,988,608	43.24%
USA	45,834,440	11.13%
Other countries	71,375,912	17.34%
Total	411,670,391	100.00%

Source: NPC's 2021 consolidated financial statements

1.1.4 External Associations Participation

To improve the management foundation of Taiwanese industries, the Company is actively involved in various industry associations and also serves in important functions ranging from directors and representatives for certain associations. By sharing our management experiences, latest market trends, changes in supply and demand, and technological news with the industry peers via these associations, we hope to contribute to the overall industry.

External Association Name	Position	Company Manager
New Taipei City Industrial Development Advisory Committee	Advisory Member	Chairman Chia-Chau Wu
Petrochemical Industry Association of Taiwan	Director	President Ming-Jen Tzou (Representative of Nan Chung Petrochemical Corp.)
	Director	Senior Vice President Chung-Yueh Shih
Taiwan Man-made Fiber Manufacturing Industries Association	Managing Director	Senior Vice President Sin-Yi Huang
	Director	Consultant Zo-Chun Jen
Taiwan Textile Printing, Dyeing & Finishing Association	Director	Senior Vice President Sin-Yi Huang
Taiwan Accreditation Foundation	Director	Senior Vice President Fong-Chin Lin
Other external associations: Taiwan Responsible Care Association, Taiwan Printed Circuit Association, Taiwan Association of Machinery Industry, etc.		



1.1.5 Awards



2021 Ranked Leadership level in the Carbon Disclosure Project (CDP) for "Climate Change Project" and "Water Security Project"



FTSE4Good Index Series
FTSE4Good TIP Taiwan ESG index



6-20% of 2021 Corporate Governance Evaluation System
FTSE TWSE Taiwan 50 Index
TWSE CG 100 Index
TWSE HC100 Index



1111 Job Bank
The "Gold Medal" of Manufacturing Industry Happiness Enterprise in 2021



"Taiwan Excellence Award" from the Ministry of Economic (Plastic 2nd Division, Switch-board Section of Engineer and Construction Division)



"Taiwan iSport" certificate from Sports Administration, Ministry of Education (Kung San Site)



Taoyuan City Government
"Excellent Enterprise of Green Life Happy Shopping Festival" (Kung San Site)





1.2 Corporate Governance

1.2.1 Organizational Framework

The Company's organizational structure has a clear division between rights and responsibilities. To ensure the independence of the Company's operations, the current Chairman does not concurrently serve in a managerial position at the Company. In addition, the Company is divided into 10 business divisions according to their respective business product categories, and indirect departments are also set up based on different functional attributes. All business divisions and indirect departments are under the President's jurisdiction. Please refer to NPC's website on "Company Organization" for the organizational chart.



"Company Organization" on NPC's website.

1.2.2 Board of Directors

Members of the Board

The election of the Company's directors is based on the nomination of candidates system. Upon resolution from the Board of Directors, the shareholders will select from a roster of candidates. All those selected serve a three-year term and Board meetings will convene at least once every quarter. Currently, the Board has 15 directors, of which 3 are independent directors, and 2 are female directors. Please refer to the Company's website (<https://www.npc.com.tw>) and the Annual Report for details on the list of directors and their respective educational and work experiences.

The role of Board of Directors of NPC				
The purpose of the Board of Directors Approve important regulations, formulate management norms, supervise the Company to implement ethical business management, strengthen the promotion of various ESG businesses, and control potential risks to create the maximum value for the enterprise.	The vision of Sustainable Development Implement corporate governance, strengthen the Company's sustainable information disclosure, keep in line with international forward-looking trends, and fulfill the obligations of social citizens to achieve the vision of sustainable development.		ESG strategies and policies Understand the key points of stakeholders, grasp the changes in international ESG trends, lead the Company to formulate ESG policies, and regularly review and optimize the specific actions of the promotion departments.	
Overview of the Board's Composition				
Number of directors (including independent directors) 15 Directors	Independent directors Seats 3 Percentage 20%	Female directors Seats 2 Percentage 13%	Meetings convened in 2021 6 times	Directors Attendance Rate 97.78%
2021 Major Resolution of Board of Directors				
Majority Vote			Supermajority Vote	
【Corporate Governance Completeness】		【Economics Creation】		Formulated 2020 employee compensation.
1. Formulated 2020 "Internal Control System Statement" of the Company. 2. Amendment to the "Rules for Election of Directors", "Rules of Procedure for Shareholders' Meetings", and "Principles of Corporate Governance". 3. Proposed to the Shareholders' Meeting to agree to release the non-compete restriction of directors of the Company. 4. Formulated 2022 annual audit plans.		1. Approved 2020 Financial Statements and profit distribution. 2. Compiled plan of lending funds for each quarter. 3. Issued letter of support for invested business to loan from banks or negotiate credit lines with financial institutions. 4. Re-signed the Plant Leasing Contract with Nan Ya PCB Corp. 5. Set up the record day and distribution day for cash dividends of 2020. 6. Approved the transaction with related parties. 7. Approved the managers' salary adjustments in 2021 shall not exceed the salary adjustment of employees. 8. Approved to donate Chang Gung University for NT\$3,780,948 dollars.		



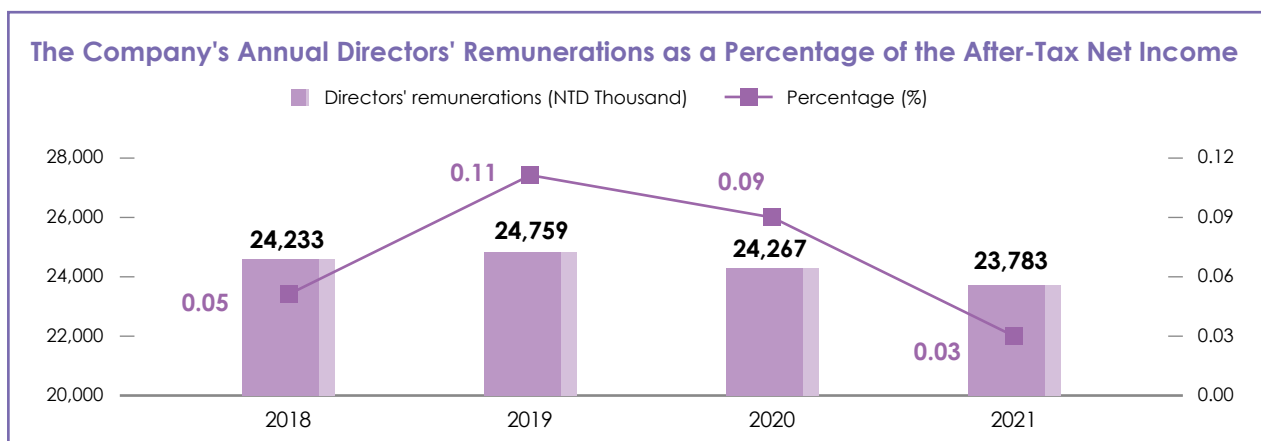
Diversity of Directors

Diversity Item Title/Name	Director Attendance Rate	Gender	Concurrent Employment	Age		
				55-64	65-74	Above 75
Chia-Chau Wu	100%	Male				✓
Wen-Yuan Wong	100%	Male				✓
Wen-Chiao Wang	100%	Male			✓	
Ruey-Yu Wang	100%	Female		✓		
Chih-Kang Wang	100%	Male				✓
Yi-Fu Lin	100%	Male				✓
Yun-Peng Chu	100%	Male			✓	
Ming-Jen Tzou	100%	Male	✓		✓	
Shen-Yi Lee	100%	Male				✓
Zo-Chun Jen	100%	Male	✓			✓
Kuei-Yung Wang	100%	Female	✓			✓
Fong-Chin Lin	83%	Male	✓		✓	
Sin-Yi Huang	100%	Male	✓		✓	
Cheng-Chung Lee	83%	Male	✓		✓	
Ching-Cheng Chang	100%	Male		✓		

Note: For industrial experience and professional ability of each director please refer to "Board of Directors" on NPC's website and Annual Report.

Remuneration for Directors and Managers

The current remuneration standard and structure of directors and managers of the Company not only assessed and approved by Remuneration Committee, but also reported to the Board of Directors for approval. The performance of managers is evaluated by the Chairman based on the overall performance within the scope of manager's responsibility and the achievement status of personal "Annual Work Goals" to ensure managers understand and co-achieve the Company's strategic goal. It is also an incentive system which connects the manager's performance with the Company's overall performance.



Note: Percentage refers to the directors' remunerations as a percentage of the after-tax net income



2021 Directors' Training

Every year, the Company provides or assists in arranging continuing studies courses for directors to facilitate the directors in staying on top of the latest international trends. In 2021, directors' continuing studies courses included "2021 Economic Forecast and Industry Trends", "Roles that Institutional Investors Play in Enhancing Corporate Governance", "Corporate Social Responsibility and Sustainable Management", etc. Please refer to the Company's Annual Report for detailed information on the directors' continuing studies.



1.2.3 Functional Committees

To strengthen the supervisory function of the Board of Directors, two functional committees, namely the "Audit Committee" and the "Remuneration Committee", have been set up under the Board's jurisdiction. Both committees are composed of independent directors. The Audit Committee convened 5 times in 2021, and the Remuneration Committee twice. The main functions of the committees and the attendance of the members are as follows:

Major Functions of the Committees

Audit Committee

1. Ensure fair presentation of the Company's financial statements.
2. The appointment (or dismissal) of Certified Public Accountants (CPA), and evaluation of the CPA's competency, independence, and performance.
3. The effective implementation of the Company's internal control system.
4. Ensures that the Company follows the relevant laws and regulations and controls both existing or potential risks.

Remuneration Committee

Evaluate the Company's directors and managers' compensation policies and systems, make recommendations to the board of directors for decision-making.



Annual total compensation ratio (Note1)
13.42 times



Percentage increase in annual total compensation ratio (Note2)
54.47 %

Note1: Annual total compensation ratio = highest-paid individual's annual salary / Median of other employees' annual salary

Note2: Percentage increase in annual total compensation ratio = increase ratio of highest-paid individual's annual salary / increase ratio of median of all employees' annual salary (exclude the highest-paid individual)

2021 Meeting Attendance

Title	Name	Audit Committee			Remuneration Committee		
		Actual Attendance	Attendance by Proxy	Attendance Rate	Actual Attendance	Attendance by Proxy	Attendance Rate
Managing Director (Independent Director)	Chih-Kang Wang (Convener)	5	0	100%	2	0	100%
Independent directors	Yi-Fu Lin	5	0	100%	2	0	100%
Independent directors	Yun-Peng Chu	5	0	100%	2	0	100%



2021 Major Resolution

【Audit Committee】

1. Approved 2020 Financial Statements and profit distribution.
2. Amended "Internal Control System" and "Internal Audit Implement Rules"
3. Compiled plan of lending funds for each quarter.
4. Re-signed the Plant Leasing Contract with Nan Ya PCB Corp.
5. Proposed to the Shareholders' Meeting to agree to release the non-compete restriction of directors of the Company.

【Remuneration Committee】

1. Managers' salary adjustments in 2021.

Note: For matters regarding the communications between independent directors, CPAs, and internal audit officer, please refer to the "Board of Directors" on NPC's website.

1.2.4 Integrity Management and Anti-corruption

Material Issue

Sustainable Issue: Ethical Business Management, Corporate Governance
Corresponding GRI Standards: Anti-corruption

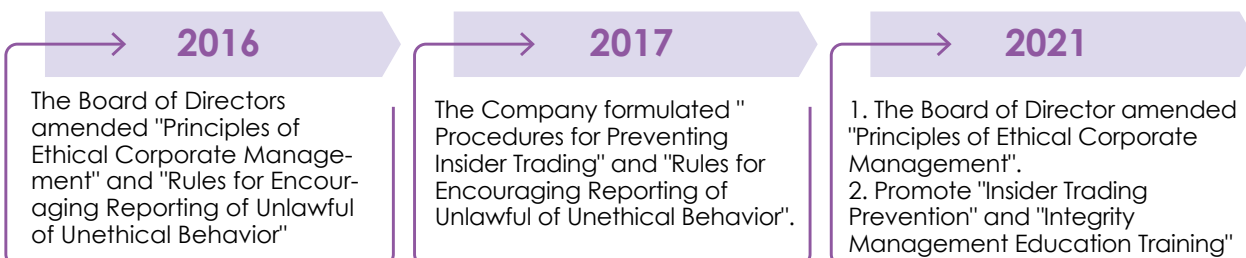


- **Commitment and Policies:** The Company sees ethical business management as the highest guiding principle for all business activities and continues to strengthen its corporate governance. We enhance employees' awareness for "anti-corruption, malpractice prevention, and strict discipline" through three major aspects of "setting of institution and norm", "self-discipline document signing" and "educational training implementation", and have computerized the management of various operations and uses technology to achieve management purposes. Last but not least, the Company implements audit operations as an aid to eliminate fraud and reduce relevant risks.
- **Responsibilities and Goals:** The Company formulates relevant ethical business management policies, the President's Office promotes related operations, and computerizes the management operations of various businesses to reduce human error in intervention and judgment. The audit office conducts audits according to the annual plan. Additionally, external and internal grievance channels are also provided to ensure the implementation of ethical business management as well as to prevent the occurrence of personnel frauds.
- **Resources:** Formulate relevant ethical management policies and computerize management of various operations to reduce human error in intervention and judgment.
- **Grievance Channel:** Provide internal and external channels for reporting illegal activities in accordance with the "Employee Grievance Procedures" and "Rules for Encouraging Reporting of Unlawful of Unethical Behavior"
- **Performance Evaluation Methods and Results:**
 - 1.No corruption incident occurred in 2021.
 - 2.The Company ranked in the top 20% of 913 listed companies that were evaluated in the 8th Corporate Governance Evaluation in 2021.
- **Specific Actions:**
 - 1.Standards and regulations: An internal real-time query channel for regulations such as "Principles of Ethical Corporate Management", the "Principles of Corporate Social Responsibility", the "Principles of Corporate Governance", and the "Personnel Management Rules."
 - 2.Grievance mechanism: Internal and external reporting channels have been specified in the "Employee Grievance Procedures" and the "Rules for Encouraging Reporting of Unlawful of Unethical Behavior."
 - 3.Internal control: The management of various operations has been computerized. Each department conducts independent business inspections on a regular basis, and the independent audit department also performs inspections from time to time.



The Company has formulated rigorous ethical and relevant standards. We expect that our employees' speech and conduct must meet the ethical requirements and the Company's reputation and regulations, whether in the workplace or their daily lives.

Integrity Management Promotion Overview in Recent Years



Professional Ethics

Strict Disciplines

Employees who violate these rules will not be given lenient treatment. Their direct supervisors will also be punished accordingly in a public manner to serve as a warning.



"Code of Ethics and Business Conduct" on NPC's website



Anti-Corruption

Internal regulations expressly stipulate that vendors' invitations and gifts must be turned down. Those who engage in malpractices, misappropriation of public funds, bribery, and commissions shall be dismissed.

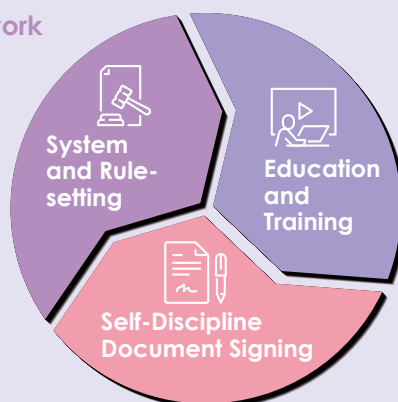
Anti-Fraud

Employees who hold positions in operation, procurement, finished goods storage, work supervision and budgeting must be regularly rotated to avoid misconducts that involve vendors.

Anti-corruption Policies and Actions

Professional Ethics Framework

- Anti-corruption
- Compliance to the Labor Standards Act
- Environmental Protection
- Insider Trading
- Intellectual Property Rights Protection
- Personal Data and Privacy Protection
- Gender Equality



Types of Training

- New employee training
- On-the-job training
- Senior executive training course
- Class-based instruction
- Online course

Self-Discipline Document

- Signing the Pledge
- Compliance with the "Trade Secrets Act"
- Personal Work Rules Manual
- "Principles of Ethical Corporate Management" of the Company
- "Principles of Corporate Governance"
- "Personnel Management Rules"
- "Self-Discipline Pact"
- "Code of Ethical Conduct for Directors & Managers"



Code of Conduct and Preventing Conflicts of Interest

The Company has formulated 20 important standards and rules including "Principles of Corporate Governance" and "Principles of Ethical Corporate Management", all of which are disclosed in the "Investor" section on NPC's website.

Antitrust

To ensure the Company's operation comply with regulation set by local government, reduce the risk of law violation, employees and supervisors at all levels are strictly required to abide by various rules and regulation of "Antitrust Law" and timely report to the Board of Directors on their compliance. Meanwhile, regular training courses were hold for relevant colleagues. No violation of "Antitrust Law" occurred in 2021.

Education and Training

To strengthen moral awareness of employees including integrity management, the Company has promoted education and training item like "Insider Trading Prevention" and "Integrity Management (includes anti-corruption and antitrust law)". The implement status is as right :

Insider Trading Prevention	Integrity Management (includes anti-corruption and antitrust law)
<ul style="list-style-type: none"> 6,189 people were trained Total training hours are 3,095 	<ul style="list-style-type: none"> 6,201 people were trained Total training hours are 3,101

Whistleblowing Channels

The Company provides internal whistleblowing channels for reporting illegal activities through the systematic "Employee Grievance Procedure". When the Company and the designated investigators are handling the reported incidents, principles of fairness and impartiality shall be upheld during investigations and case reporting. The whistleblower shall not receive retaliation, and the process shall remain confidential to avoid potential punishment (see 4.2.4 Valuing Employee Feedback for details on internal communication channels).

Implement Status of Anti-Corruption of the Company and subsidiaries in Taiwan				
Number of Cases \ Year	2018	2019	2020	2021
Total number of reported cases	1	2	1	2
Number of reported cases related to anti-corruption policy	0	0	0	0
Number of cases that violate anti-corruption policies after investigation	0	0	0	0
Number of completed pieces	1	2	1	2

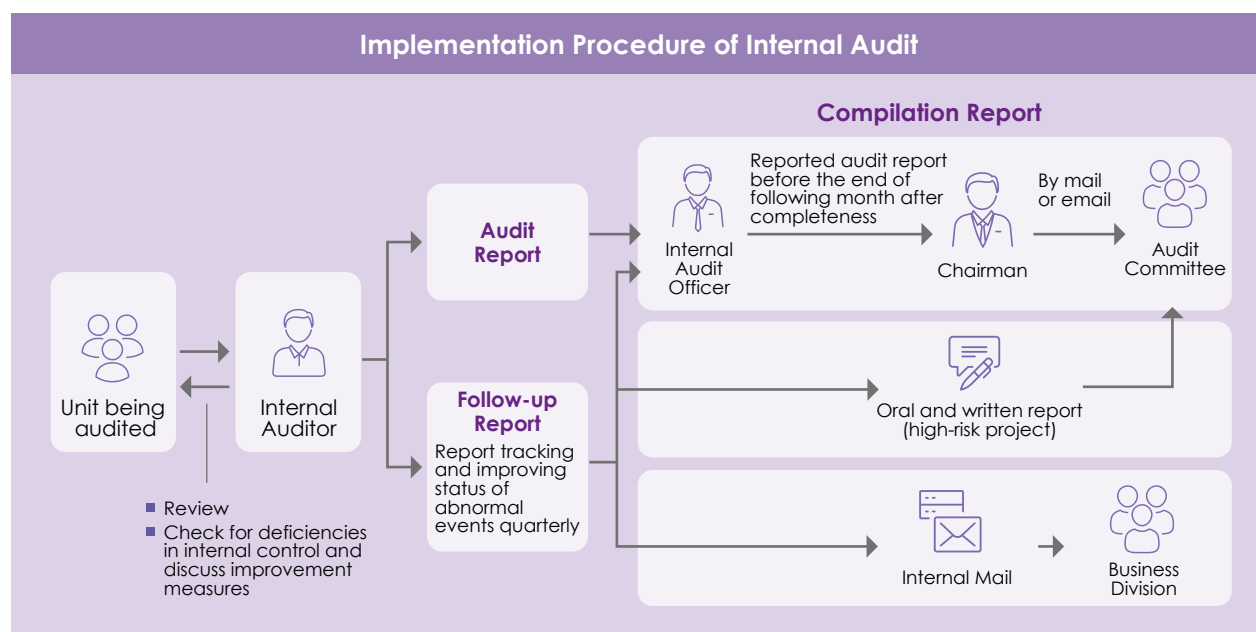
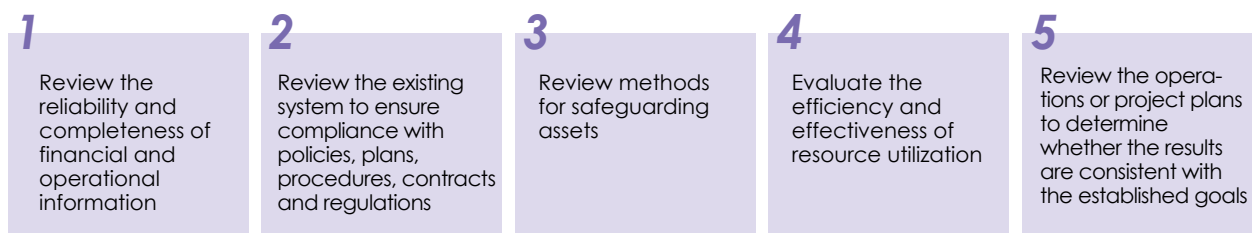
Note: The scope of assessment and disclosure includes all the business locations in Taiwan.

1.2.5 Internal Control Mechanism

The Company has established an efficient and complete internal control mechanism. Through interconnecting personnel, finance, business, production, supplies, and engineering functions by technology, the Company has implemented overall computerization of operational management. The computer system automatically checks the data and debugs through preset logic. Once an abnormality is found, the relevant personnel are immediately prompted so they could understand and handle it accordingly. Additionally, the Company has also established an Audit Office under the Board of Directors. Dedicated internal auditors will carry out the auditing tasks based on the annual audit plan, as well as participate in audit-related courses organized by professional training institutions every year to continuously improve their professional capabilities.



The Scope of Internal Audit



Internal Auditor Training in 2021

Numbers of Participant	Total training hours	Name of major courses
27 people	414 hours	1. Orientation training for the new internal auditor (5 people). 2. Practical analysis of how enterprises construct risk management development blueprint from corporate governance 3.0 3. Discussing the lack of internal control system and the responsibility of auditors from the perspective of securities law cases

Statistics of Internal Audit of NPC				
Item	2018	2019	2020	2021
Number of audit items performed	48	48	51	52
Number of abnormalities found	10	10	11	10 ^{note}
Abnormality improvement rate	100%	100%	100%	100%

Note: 10 abnormalities were found in 2021, in which 4 were production and sales abnormalities; 1 were supplies and engineering abnormalities; 3 were personnel and administrative abnormalities; and 2 were finance. None of which was material, and all have been improved.



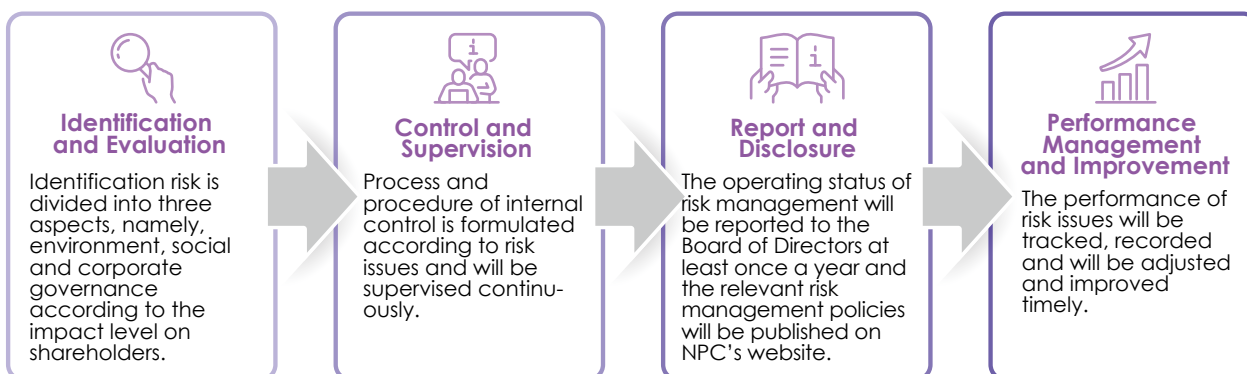
1.3 Risk Management

1.3.1 Risk Management Promotional Organization and Identification Process

To achieve sound operations and sustainable development, the Company has formulated comprehensive risk management culture to carry out risk management in practice. "Risk Management Promotional Team" has been set up and "Risk Management" of NPC has been proved by the Board of Directors on December 16, 2020 to formulate the risk management policies of the Company. The Company hopes to enhance the awareness of all employees through these procedures. This will allow the Company to maintain risk at tolerable levels and ensures the completeness and reasonableness of risk management and maximize benefits.



Risk Management Process



1.3.2 Operational Risk Evaluation and Response Measures

The Company's "Risk Management" has identified 21 risks, including "climate change", in 2021 (6 risks in environmental aspect, 4 risks in social aspect, and 11 risks in corporate governance). Please refer to "Risk Management" on NPC's website for the management strategies, mitigation measures, and management departments of various risks.



"Risk Management" on NPC's website

NPC's Major Risk Issues in 2021



Environmental (E)

Climate change, Greenhouse gas management, Air pollutant management, Waste management, Controlled chemical substance management, Water resource management



Social (S)

Human rights and talent retention (including employee benefits and compensations), Occupational health and safety, Industrial and public safety, Epidemic risk



Corporate Governance (G)

Ethical business management, Legal compliance, Changes in interest rates, Changes in exchange rates, Loaning of funds, Endorsements/guarantees, Derivative transactions, Supply interruptions, Market risk (e.g., US-China trade conflicts, ECFA termination), Equipment maintenance, Information security threats

Note: Risks that are also material sustainable issues of the Company are colored.



1.3.3 Information Security Management

To ensure the security and stability of the information network, the Company has formulated specific information security management measures in the "Enterprise Network Management Measures". Specifications on the management of information systems, networks and personal computers, as well as the safety code of conduct for employees to surf the Internet, as well as sending and receiving emails are briefed as follows:

The Structure of the Information Security Management

The Company assigned assistant vice president of the president office as the representative of information security management. The representative is in charge of supervising the execution of security management affairs and holding cross department cyber security promotion meeting annually to review the implement and performance of information security control measure. In addition, coordinating the promotion of information security management affairs. Meanwhile, cooperating with information security team of information department to promote information security management measures, integrate the work division and execution consistency of information security affairs, and dispatching and allocation of enterprise resources.

Policy of Information Security

Comply with legal requirements and promote information security awareness.

Attach importance to risk management and protect data security.

All employees are required to participate and pursue continuous improvement.

Information Security Control Measures

Through two major aspects of "perfect governance" and "cognition popularization", we promote corresponding management practices, continuously adjust and optimize the control process, and through irregular education, training and publicity, improve employees' sensitivity toward information security to improve the Company's information security management.

NPC's Information Security Management

Perfect Governance

- A multi-layered in-depth framework used to build firewalls, intrusion prevention systems (IPS), malicious URL filtering and advanced persistent threat defense (APT) are being adopted to prevent malicious attacks from external networks.
- Set up employee Internet access, e-mail and personal information/sensitive data loss prevention mechanisms (DLP) to prevent improper disclosure or leakage of personal and sensitive information, and prevent internal systems from being implanted with malicious programs.
- Regularly require password changes and enable password complexity settings to strengthen authentication for system logins.
- Install anti-virus software on the computer, update virus patterns and security patches in real time, establish security access policies, and control the connection and access of USB devices to strengthen endpoint detection and response capabilities.
- Interpretation and analysis of system logs, real-time warning of abnormality, and emergency response to avoid increased threat and risks.
- The computer room and other information infrastructures are equipped with access control and CCTV systems. Backup systems, uninterruptible power supply and fire protection facilities are regularly simulated and drilled to strengthen physical security.

Cognition Popularization

- Conduct regular training and testing for employees annually to strengthen the employees' awareness of cyber security risks.
- Review information security policies and regulations annually, pay attention to security issues and its developments, and draw up response plans to ensure its appropriateness and effectiveness.

Implementation of Information Security Education, Training and Publicity in 2021

Online Information Security Training

- A total of **6,194** participants.
- A total of **3,097** training hours.

Social Engineering Email Training

- A total of **3,052** participants. (a total of 227 people clicked the email)
- Accounts for **7.4%** of the total.



1.4 Issues Concerned by the Society

【Responding to the Global Trends – FPG 2050 Carbon Neutrality Vision】

1. Companies of FPG has reviewed the specific carbon reduction plan and formulated “2007 as the base year which is the carbon emission peak of the entire enterprise over the years and set up the target of reduce carbon by 20% in 2025, 35% in 2030, and achieve carbon neutrality in 2050”, striving towards low-carbon energy transformation, circular economy, green products and other low-carbon processes. The carbon reduction plan of FPG is more stringent than the "Greenhouse Gas Reduction and Management Law" announced and implemented by the nation in 2015 which carbon reduction target is to reduce 10% and 20%.
2. The carbon emission peak of the Company is in 2007, and will reduce by 9.6% until 2021 according to the preliminary inventory. To achieve the carbon reduction target, we actively promote four major carbon reduction strategies, low-carbon energy transformation, energy saving, carbon reduction, circular economy, raising the usage of renewable energy, and application of carbon capture technology to promote energy saving and carbon reduction affairs.

【News Incident: Burst of NPC’s Waste Cement Pipe】

1. Explanation of the Incident: The Environmental Protection Bureau found that there was a mud flow in Guizikeng Creek during the inspection at 16:30 on Jan. 13, 2021. After tracking down to the pollution source they found that it was the seepage of wastewater with sediment due to the burst of the Company’s pipe.
2. Explanation of the Cause:
 - (1) The pipe was cracked by the dumped trunk caused by the successive rains and earthquakes which is force majeure. The Company immediately closed the valve when finding the burst of pipe at 10:20 on Jan. 13, limiting the scope of influence to the water treatment plant, thus Guizikeng Creek was not affected. When the Environmental Protection Bureau inspected that day, there were no seepage at the rupture anymore.
 - (2) During the site meeting, the mud flow of Guizikeng Creek was orange and turbid which may caused by the collapsing yellow soil of the adjacent hillside of public ravine above the water treatment park.
 - (3) Instead of the wastewater contained sediment mentioned in the news, the content of the pipe line was the filtered water from the sedimentation basin of Taishan Water Treatment Plant of NPC. (The Environmental Protection Bureau also collected sample from the sedimentation basin of water treatment plant for various statutory testing, such as suspended solids (SS), chemical oxygen demand (COD) and heavy metals and all of the results met the national standards.)
3. Improvement Status:
 - (1) In addition to closing the valve immediately to effectively limit the scope of influence, staff will be dispatched to assist in cleaning buildings and roads.
 - (2) To cooperate with expropriation procedure, the water source extracted from the water treatment plant and equipment were dismantled on June 30 because it was located at the land readjustment area of New Taipei City Government.

【News Incident: Fire Alarm of NPC INA Plant at Sixth Naphtha Cracker causing the Raising the Concentration of nearby Observation Station】

After understanding, both the location of observation station and the monitoring concentration displayed met the standards of air quality peripheral boundary. In addition, there were no outlier after the incident. To avoid the recurrence of similar anomalies, the software and hardware of the safety precautions and fire emergency response measures have been reviewed and strengthened in the fire area (i.e. dismantling color steel to avoid its affect toward disaster relief, setting up a fixed water mist fire protection system and sensors to remote start-up and preventive watering, etc.) to strengthen the ability to respond to disasters.



【Special Action】

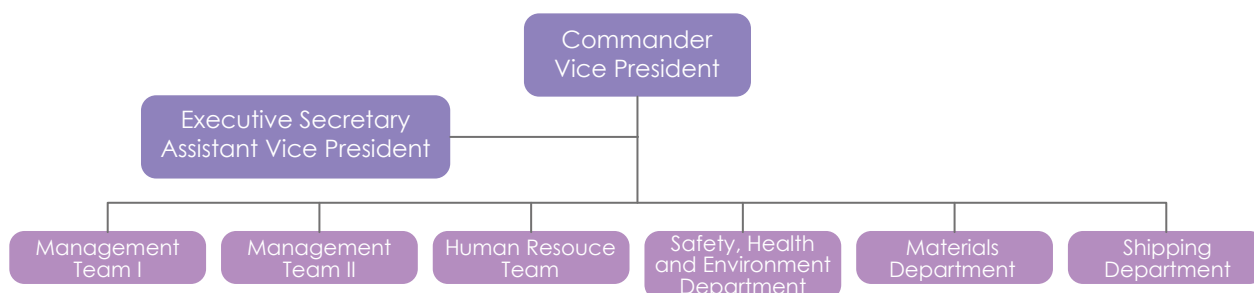
The Company has valued and promoted environment sustainability and various ESG relevant issues in a long term. In respond to the trend of international sustainable finance development, on Dec. 16, 2021, the Board of Directors of the Company resolved to co-participated with Formosa Plastics Corp. and Formosa Chemicals & Fibre Corp. in the "Sustainability Linked Loan (SLL)" jointly organized by Mizuho Bank and Mitsubishi UFJ Bank. Linking loan interest rate conditions with ESG KPI indicators, in addition to demonstrating the company's determination to promote ESG and hoping to attract others and lead more peers to jointly implement sustainable actions.



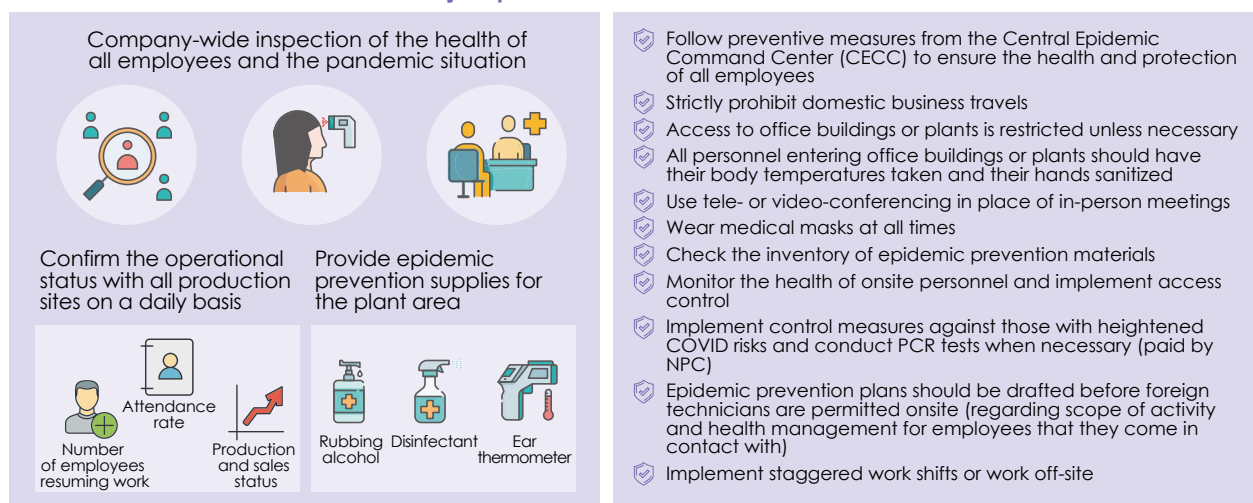
1.5 Response to COVID-19

On February 11, 2020, the Company set up a "COVID-19 Response Unit". The unit is headed by the Vice President from the President's Office, and the Assistant Vice President serves as its secretary, while it oversees the Management Team I, Management Team II, Human Resource Team, Safety, Health and Environment Department, Materials Department and Shipping Department. The unit regularly convenes COVID-19 pandemic prevention meetings.

To control the spread of the COVID-19 pandemic, which may lead to various business interruptions, the pandemic prevention meeting has drafted response measures corresponding to varying levels of epidemic prevention in Taiwan. The measures target various aspects ranging from general practices to personnel, production and sales, materials, finished products, and engineering. At the same time, the response unit also stays up to date on the health conditions of employees, contractors, and relevant personnel.



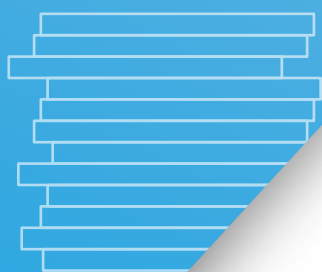
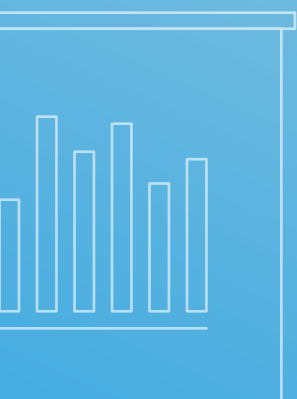
Major Epidemic Control Measures





2

Product Value Expansion



2.1	Diversified Product Application	35
2.2	Positive Customer Relations	46
2.3	Supplier and Contractor Management	48



NPC is committed to providing diverse and high-quality products to customers. We are continuing to invest in research and development and innovations, as well as using new technologies, including artificial intelligence (AI) and digital transformation, to strengthen our corporate competitiveness and product quality. Moreover, we are also committed to practicing supply chain management hoping to generate a positive circle and contribute toward the industry's sustainable development.

Strategy	United Nations Sustainable Development Goals (SDGs)	Sustainability issues
<ul style="list-style-type: none"> Reinforce R&D and innovation and enhance customer service Promote sustainable supply chain management 		Legal Compliance, Innovation and Development of Product

2021 Implementations (○ Did not meet the goals ☑ Goals met ★ Exceeded expectations)

<p>Reinforce R&D and innovation and enhance customer service</p>	2021 Goals <ul style="list-style-type: none"> Strengthen research and development, increase the ratio of differentiated and high-value products Carry out the customer satisfaction survey, and timely review and improve No major violation regarding product labeling, customer privacy, etc. (with a penalty exceeding NT\$1 million) 	2021 Implementations <ul style="list-style-type: none"> ☑ The Company's R&D expenditure in 2021 exceeded NT\$1 billion, showing a 7% growth from 2020 (increased for 4 consecutive years) ☑ Overall customer satisfaction survey results in 2021 reached 4.3 points, accounting for 86% of the total score (higher than 2020 results) ☑ No major violation regarding product labeling, customer privacy, etc. occurred in 2021
	Short-term Goals (2022 Goals) <ul style="list-style-type: none"> Strengthen research and development, increase the ratio of differentiated and high-value products Carry out the customer satisfaction survey, and timely review and improve No major violation regarding product labeling, customer privacy, etc. (with a penalty exceeding NT\$1 million) 	Medium- and Long-term <ul style="list-style-type: none"> Maintain customer relations via innovation and R&D, helping the Company to seize market trends and develop a potential niche market
<p>Implement sustainable supply chain management</p>	2021 Goals <ul style="list-style-type: none"> Increase "CSR Commitment" response rate to 85% and "CSR Survey" response rate to 75% 	2021 Implementations <ul style="list-style-type: none"> ○ "CSR Commitment" response rate reached 81% in 2021 and "CSR Survey" reached 75%; will continue to request vendor cooperation
	Short-term Goals (2022 Goals) <ul style="list-style-type: none"> Increase "CSR Commitment" response rate to 90% Increase "CSR Survey" response rate to 85% 	Medium- and Long-term <ul style="list-style-type: none"> Strengthen sustainable supply chain management to set the foundation for sustainable industry development



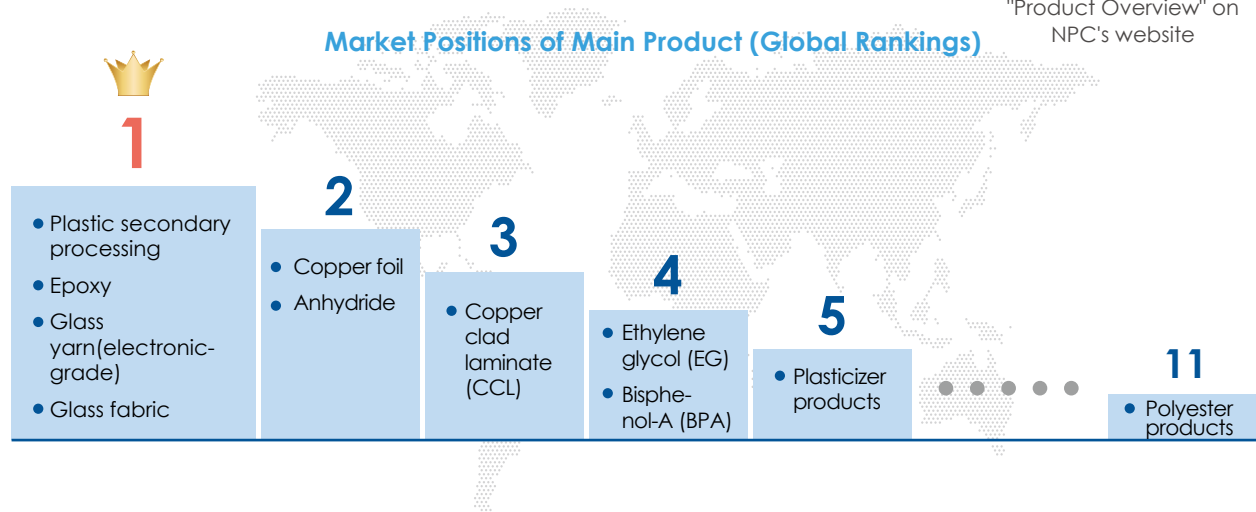


2.1 Diversified Product Application

The Company produces diverse products, ranging from plastic products, chemical products, polyester products, electronic materials, and switchboards. The main product market position (global rankings) are as follows. For detailed products, please refer to "Product Overview" on NPC's website.



"Product Overview" on NPC's website




2.1.1 Major Brands

Most of the products are marketed globally under NPC's brand. After years of diligent effort, a good industry reputation has been achieved.

Jiemei Film	TAIRILIN (Dec. 1, 2007)	Neuma (Dec. 16, 2000)	Splendid (Feb. 16, 2002)
南亞保鮮膜 NAN YA WRAP 	台麗綾 TAIRILIN 	Neuma 節能氣密窗 	舒麗 SPLENDID
Product PVC cling film	Product Polyester fiber	Product Energy-saving airtight POM window, Entrance fire door, SMC door	Product PU artificial leather
Applications Packaging	Applications Garment	Applications Interior and outdoor construction materials	Applications Sofas, office chairs, car upholstery



<p>Pearlescent Paper (PEPA) (May 1, 2010)</p> <p>珠光 PEPA</p>  <p>Product Synthetic paper</p> <p>Applications Printing, tags and labels</p>	<p>ECO (Jul. 16, 2011)</p> <p>南亞 舒活</p>  <p>Product Panel and decking, decorative panels</p> <p>Applications Interior and outdoor construction materials</p>	<p>Deluxe (Nov. 16, 1997)</p> <p>華麗</p>  <p>Product Hollow tiles, plastic flooring, hollow foamed plates</p> <p>Applications Flooring, furniture board, door panels</p>	<p>Nan Ya ICE COOL insulation films</p> <p>NAN YA ICE COOL</p>  <p>Product Energy-saving films</p> <p>Applications Insulation for glass panels in vehicles and buildings</p>
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Note: For detailed product information, please go to the websites listed below:



"Product Overview" on NPC's website



NPC's PVC cling film website



NPC's energy-saving airtight POM windows website



NPC synthetic paper and compound paper website

2.1.2 Product Development and Innovation

Material Issue

Sustainable issues: Innovation and Development of Product
Corresponding GRI Standards: 201 Economic Performance
SASB: Product Design for Use-phase Efficiency



- **Commitment and Policies** : The Company continues to strengthen research and development. In addition to developing green products, it also develops high-value and differentiated products to enhance the company's competitiveness and develop new niches for the Company.
- **Responsibilities and Goals** : R&D center, technical department in each plant
- **Resources** :
 1. The Company has set up an R&D center, and each business division has also set up the R&D technical department
 2. The R&D expenses in 2021: NT\$1,341,713
- **Grievance channel** : Please refer to the chapter on "Stakeholder Communications".
- **Performance evaluation methods and results** :
 1. Establish an R&D system: The Company has set up an R&D center, and each business division has also set up the R&D technical department to strengthen R&D capabilities
 2. FPG Technological Application Seminar: FPG Group regularly held the seminar every year. By selecting innovative research works to participate in R&D competitions and representations, companies can communicate and grow with each other
- **Specific actions** : FPG Technological Application Seminar



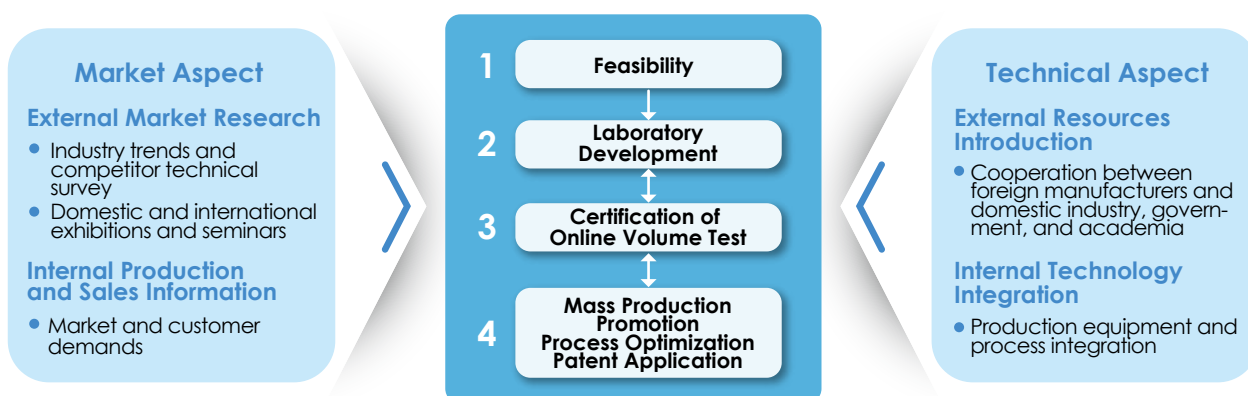
Management Processes of R&D and Innovation

■ R&D Organization

A development team in the management office, technical department, and technical group has been set up for each of the Company's divisions, which are responsible for new products/development/production/quality assurance, and so forth. An independent R&D Center for high-end products has also been set up to integrate inter-departmental resources, assist departments in breaking through technical obstacles, and expand into new niche markets.

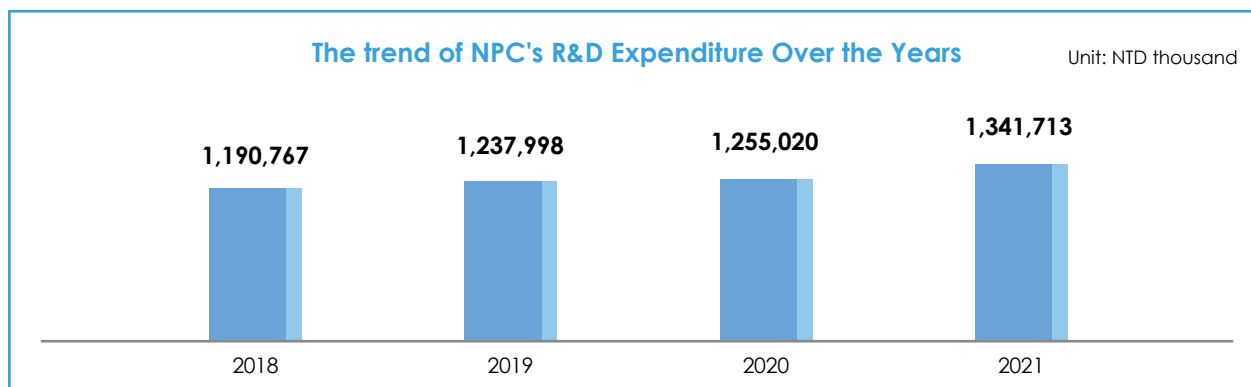
■ R&D Operational Model

1. Integrate technical and market aspects, hold regular production, sales, and technical meetings, and develop high-value products with development potential that meet the short-, medium- and long-term needs of the market.
2. Join hands with domestic and foreign partners, including peers, raw materials suppliers, equipment manufacturers, customers, universities, and research institutions to jointly develop products and markets to create synergistic growth.



R&D Investment

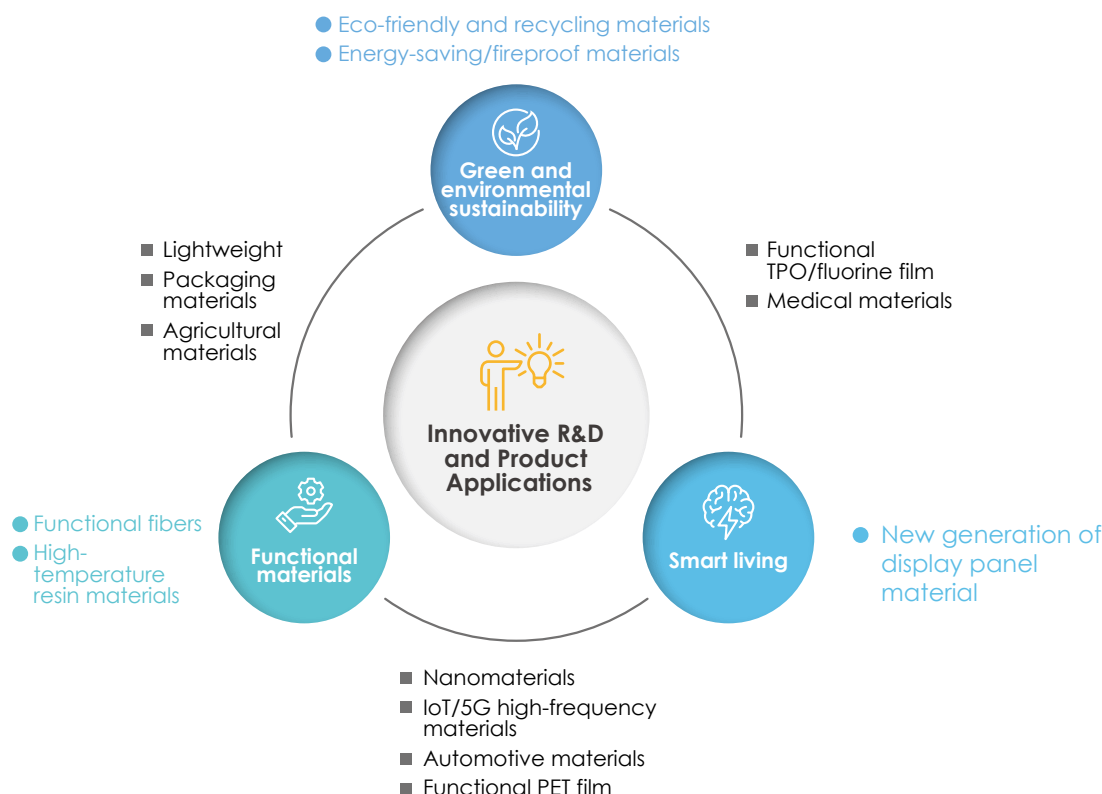
To reduce raw material costs from directly producing new products, the Company has purchased various trial and mass production equipment and precision analytical instruments. This also enables the Company to provide small-batch samples for customers to evaluate, thereby shortening the development schedule. R&D expenses in the past four years are as follows:





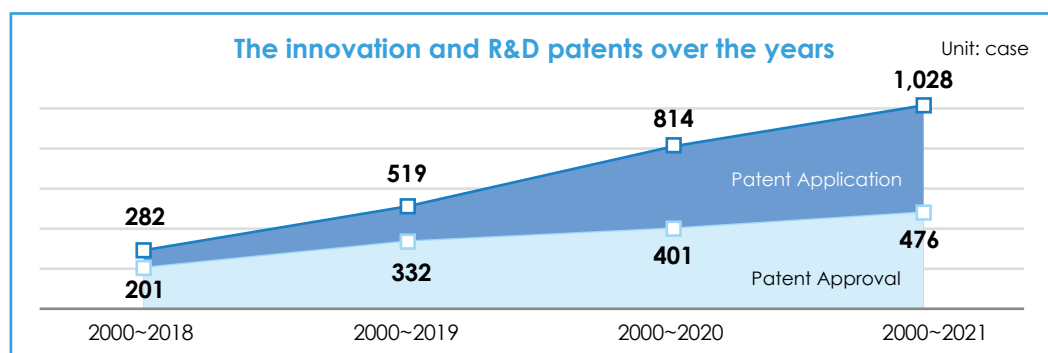
Innovative R&D and Product Applications

The Company's products span the fields of plastic, chemical, electronics, fiber, etc. In terms of product categories, they can be divided into plastic products, chemicals, electronic material, fibers and textiles, machinery and switchboard, etc. On top of promoting the Industrial 4.0 intelligent chemical plants in the product line in recent years, the Company has also committed to the R&D of innovative products in line with government policies. These efforts include 14 innovative R&D fields, such as recycling and environmentally friendly materials, energy-saving/fireproof materials, IoT/5G high-frequency materials, and automotive materials. For future R&D projects, in which the Company expects to invest, please refer to the Company's Annual Report.



Innovative R&D Patents & IP Rights Protection

To encourage innovation and strengthen the protection of intellectual property (IP) rights, the Company has formulated "R&D Management Procedures" and "R&D Personnel Incentive Measures" and introduced a knowledge management platform to enhance R&D and innovation competencies. Moreover, various measures have been implemented to protect patents, trademarks, and trade secrets. The Company uses a digitized management system to mitigate hazards and risks and reports the status of IP rights management to the Board of Directors at least once a year. Please refer to "IP Management" on the Company's website for further details. The innovation and R&D patents over the years are listed in the image below:



"IP Management"
on NPC's website



2021 Major R&D Results



Development of insulation coating, aluminum plastic film, self-production materials, material for quantum coating of new generation display panel, long-fiber reinforced engineering plastic, preprocessing/chemical recycling processing of PET woven products, the high-frequency substrate for 5G telecommunications, recycling applications of PET industrial material, medical materials (blood bags, electrospun film, regenerated medical materials, etc.), and more.

Boosting the Excellent Performance of Innovation and R&D Team

To boost R&D, Formosa Plastics Group has set up various R&D incentives to reward patent proposals, certifications, and key products or patents that derive major benefits. All departments are regularly invited to convene the “FPG Technological Application Seminar” to select innovative works for competitions and to announce relevant results. Divisions with superior research results are publicly praised and awarded bonuses to inspire the exchange of ideas and to further stimulate research and innovation within the Group.

2.1.3 Green and Environmentally Friendly Products

The Company attaches great importance to the health and safety of our customers. Therefore, the production process is continuously improved (such as reducing harmful formulas, energy saving, carbon reduction, and green product development). To follow market trends and meet customer needs, we have shifted our focus to produce non-toxic and environmentally friendly products with improved production processes as well as green energy products. The Company's major green and environmentally friendly products are as follows, and the estimated annual carbon reduction (CO₂ emissions reduction) benefit is about 115,353 tons in total:

Green and Environmentally Friendly Solutions	Major Products	Description of Green Benefits
Energy efficiency	Thermal Insulating Coating	1. Verified by National Taiwan University of Science and Technology to conserve 31.8% of air conditioning energy consumption in summer 2. Actual coating of solvent tankards in Mailiao has been verified that VOC effusion can be reduced by 60%
	ICE COOL (Insulation Film)	Non-toxic, anti-scattering, highly transparent, and high IR with UV resistance, allowing users to reduce energy consumption while ensuring internal spatial safety
	Dry type transformer	Energy efficiency ratio of 99.2; a 4% competitive edge over the CNS standard of 98.8
	Energy-saving airtight POM window	Low heat conductivity; insulation is 1/1250 of aluminum steel, allowing users to save energy consumption by more than 20%
	Aluminum-plastic film	The aluminum-plastic film is used for lithium battery packaging and could be further used in energy storage systems and electric vehicles to reduce oil/coal consumption
	Quantum dot film	1. The color gamut of traditional LCD is far less than OLED, but it can save about 42% of power 2. After adding quantum dot film, traditional LCD can still save 40% of power under the same color gamut performance as OLED
Emissions reduction	Long-fiber reinforced engineering plastic	With high specific strength, modulus, and high impact resistance, it can be used in products requiring high strength and lightweight. If the product is designed with the same physical properties and strength, compared with short fiber pellets, taking PP with 40% glass fiber as an example, the weight can be reduced by about 20~25%
	Water-based treatment agent Water-based ink Water-based PU leather Non-VOC anti-corrosion coating Pressure sensitive adhesive	Water-based or solvent-free products could effectively exclude emission rates of total volatile organic compound (TVOC)



Green and Environmentally Friendly Solutions	Major Products	Description of Green Benefits
Waste reduction	Eco-friendly plasticizers (DHIN, DHEH, DOTP)	Reduces emissions of phthalate-containing wastes
Water conservation	Natural color yarn	Saves up to 94% of water consumption in comparison with traditionally dyed yarns
Non-toxic	PVC leather, PVC sheeting, PU leather, TPU leather, PP construction material sheeting, Green building resin (waterproof material, IAAF runway)	Could produce products in compliance with REACH and RoHS, solvent-free TPU environmental tape could be 100% recycled. MDI is used instead of TDI as the raw material for PU resin, plasticizers are used to replace traditional solvents, and the low VOC recipe meets the requirements of green building materials.
	Titanium catalyst	Replaced traditional antimony catalysts with titanium catalysts to avoid emissions of heavy metals during the dyeing process of polyester products, or waste antimony coming into contact with the soil.
	Eco-friendly plasticizers (DHIN, DHEH, DOTP)	DHIN and DHEH have low toxicity; their PVC products have passed the biocompatibility tests for acute toxicity, skin irritation, skin sensitivity, hemolysis, and cell toxicity.
	Epoxy resin surface coating, Epoxy resin primer	NPC's epoxy flooring coat adopts a self-flattening form that adheres to the surface of the floor and forms smooth and seamless epoxy-coated flooring. Provides good adhesion, anti-abrasion, withstands pressure, insulation, water-resistance, oil resistance, and is durable against generic drugs. And meets relevant standards for low toxicity and has achieved the "Green Building Material" label, and comes with benefits including low toxicity and low formaldehyde effusion.
	High-frequency substrate used for 5G communication	Using non-toxic materials that comply with RoHS standards. And the use of communication boards has been driven by 5~10% due to the epidemic.
	Polyethylene pipes for conveying domestic water and general purposes, Polyethylene pipe for gas	The product does not contain lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium (Cr6+), polybrominated diphenyl ethers (PBDE), polybrominated biphenyls (PBB).
Health	Mold-resistant and bacterial-resistant PVC leather, PVC sheeting, PU leather, and TPU leather	NPC can produce anti-mold and anti-bacterial (Staphylococcus, E. coli, pneumonia) products.
	Eco-friendly plasticizers (DHIN, DHEH, DOTP)	Does not contain reproductive toxicity and can be used for manufacturing yoga mats, respiratory masks, badminton balls, food packaging materials, sports and recreational flooring, toys, and medical products.
	Medical materials	Products include surgical anti-adhesive film, alveolar periosteum, and blood materials, which can improve human well-being.
Recycled products	Non-woven fabric from PET fibers, PU synthetic leather from PET fibers, Recycled PET polyol, Waterproof PVC sheeting, PP water tank panels, R-PET	Recycle PET bottles, reproduce them as fibers and reuse them in production. Recycle PET bottles for alcoholysis, and add different adipic acid raw materials to produce different Tg polyols. Adding isocyanates such as MDI, chain extender BG, etc. to polyols to produce TPU pellets, which are used in hot melt adhesives, synthetic leather, shoe materials, and other products. By implementing carbon reduction and energy saving to meet the demands of regeneration and environmental protection.
	Recycling of PET bottles	Recycle used PET bottles and reproduce them as fibers or PET bottles to significantly reduce the environmental impacts of PET bottles.
	Pretreatment of PET fabric/chemical recycling process	Recycle used PET fabrics to produce recycled PET fibers, creating a circular economy for PET fabrics.
	PET industrial material recycling applications	The remanufactured PET polyester pellets have a significant reduction in CO ₂ emissions compared to the PET ester pellets produced from a conventional petrochemical process, which can be reduced by about 86.2~95.67%.
	PP recycled pallet	Using 100% recycled materials, and regularly entrusting professional organizations to conduct RoHS inspections, all are free of harmful substances.



Green and Environmentally Friendly Solutions	Major Products	Description of Green Benefits
Safety	Fire-retardant wallpaper Automotive PVC leather/PU leather Fire blanket	Prevents fire and protects personal safety
	SMC Fire Doors	Shock-resistant, fireproof, and smoke control, to protect property and asset

Environmental Labels and Certificates



Global Recycle Standard, GRS Version 3.0



Green Building Material Label



Green Mark



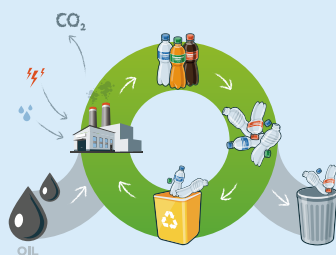
Singapore Green Building Product (SGBP) Label



Low Carbon Building Alliance (LCBA) Label

Promotion Practices and Achievements of Plastic recycling

Recycling of PET bottles



- PET bottles are recycled and pelletized to replace virgin polyester resins, reducing carbon emissions by **72%**.
- 8.7 billion** recycled PET bottles were used in 2021, reducing carbon emissions by **188,000 tons per year**.
- After recycling, **90%** is used to produce technically difficult and high-value-added filaments.
(It is mostly used to produce staple fibers, sheets, etc. in the industry, only 7.7% is used for long filaments)
- Continue to expand the production line, the production capacity target of recycled resins is to reach more than **75%** of that of virgin bottle resins in Taiwan

Total Recycled Products

1 ton of recycled product = 80,000 PET bottles

In **2021**, **109,008** tons were recycled \approx **8.7 billion** , which can circle the **148** times

CO₂ emissions reduction

Carbon absorption of 1 Daan Forest Park = 390 tons/ year

188,039 tons/year of reduction in **2021** **CO₂**
 \approx Carbon absorption of **482** Daan



Recycling of release film for the multi-layer ceramic capacitor (MLCC)

Previously, it was disposed of as waste after customers used it. Now it is recycled by the Company for the production of UP resin and polyester staple fiber and other products. The recycling capacity is 600 tons/month, and the release film used for MLCC and optical purposes could be recycled after domestic customers used it.



Recycling of fabrics

The Company has had the recycling technology for pure PET grey cloth, finished cloth, and leftover materials, and has established a pre-treatment and pelletizing production line with a monthly production capacity of 1,000 tons. We are currently developing high-end depolymerization and recycling technology by ourselves and will build a pilot factory as the basis for future mass production.

Recycling source



Used clothes



Waste clothes



leftovers

Process



Fabric shredding



Catalyzation and alcoholysis

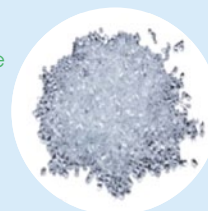


Decolorization and purification



BHET

Polymerize



Recycled resins
Quality = virgin polyester resins



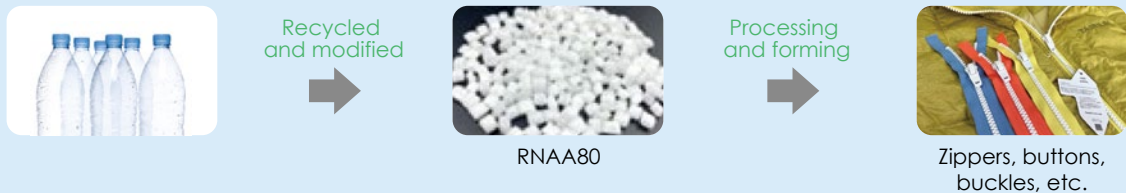
Product Development - Single Material Design

To expand the scope of recycling and make it more convenient, it is a future trend to design and develop products with a single material, so the Company is currently carrying out the following development projects:

Develop modified polyester resins

- Clothing and accessories are designed using a single material: At present, traditional clothing and accessories (such as zippers, buttons, etc.) are mostly made of non-PET materials, which need to be removed manually after recycling. Modified polyester resins are developed to replace the original materials of clothing and accessories so that the clothing and accessories are made of a single material.
- Curtains are designed using a single material: Cooperate with domestic curtain manufacturers to replace other materials unfavorable for recycling with modified PET to produce all-polyester curtains.

Clothing and accessories are designed using a single material

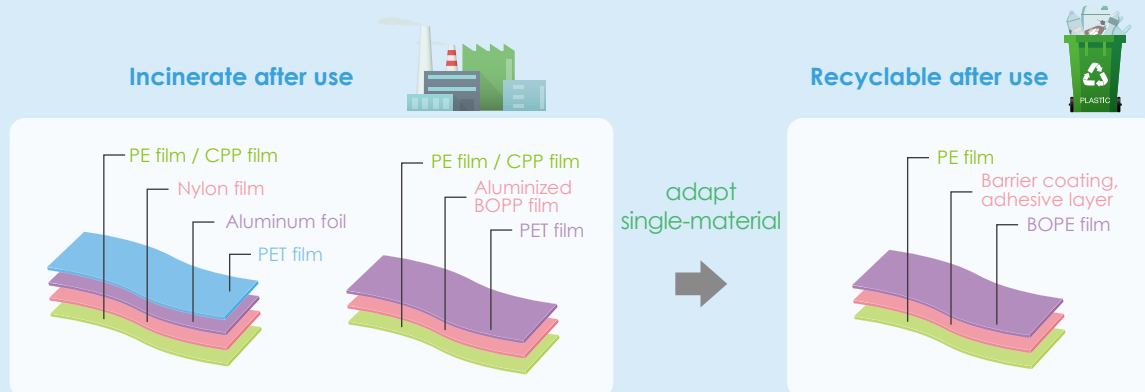


Curtains are designed using a single material



Develop single-material packaging film

Based on quality and preservation considerations, functional packaging films need to have high moisture resistance and oxygen resistance. Since using different materials for lamination would cause difficulties in recycling, the single-material packaging material (high-barrier BOPP, BOPE film) is developed, which is conducive to future recycling.





2.1.4 Artificial Intelligence (AI) Applications

Artificial intelligence (AI) has set off a digital revolution worldwide. Since 2018, the Company has organized and trained an internal AI promotions team to develop relevant technologies used in image flaw detection, virtual instrument establishment, and other application fields. Through process optimization and AI technology introduction, the Company hopes to enhance factory automation, digitalization, and intelligence to gradually construct smart factories.

Promotional Organization

The President is appointed by the Chairman of the Board of Directors to act as the general convener of the Company's AI promotions. The President's Office, the manager's office and the data scientists of each factory (department), and the process field experts jointly form the AI promotion team. With the division of labor between the President's Office and the manager's office AI promotion team, AI projects can be accelerated.

Professional Training for AI Talents

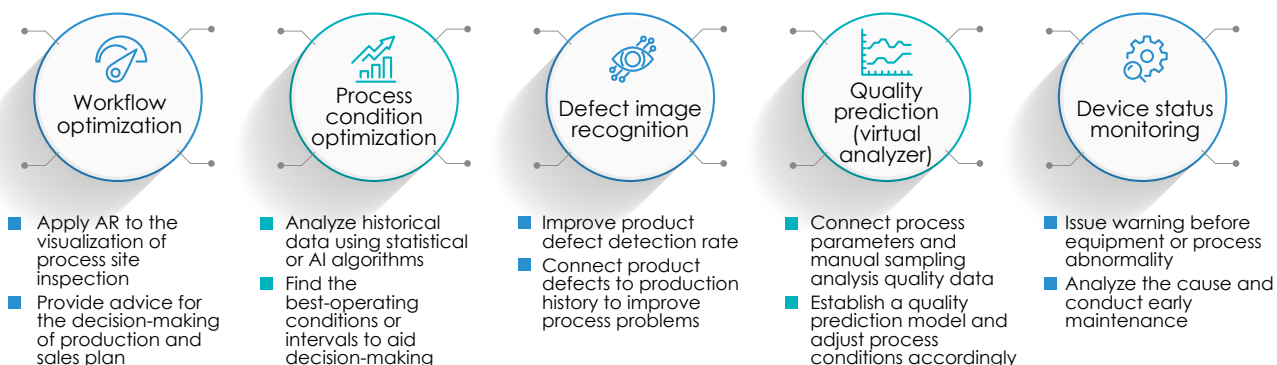
To train AI professionals and strengthen the ability to develop AI applications internally, the Company develops relevant personnel using three major approaches including "external training at Taiwan AI Academy," "internal AI training," and "industry-academic cooperation." The key points are as follows:

External Training at Taiwan AI Academy		Other AI Training	
Numbers of AI education trainees in 2021	Total training hours in 2021	Number of events held in 2021	Total participants in 2021
6 persons	1,440 hours	5 events	524 persons

Collaboration with the Industry and Academia	
Collaborative partners in 2021 Carried out technical exchanges with ITRI and other units to strengthen data preprocessing and module development competencies, and collaborated with academia such as Chang Gung University and Ming Chi University of Technology	Results of collaboration in 2021 Jointly introduce the AI applications into areas such as defect image recognition, smart farms, rotating equipment life prediction, and efficiency improvement in reaction sections, transfer technology from the process of cooperation, and establish independent technology to facilitate subsequent horizontal expansion

AI Applications and Development Goals

The Company is presently focused on the following five AI applications:





Development Goals of NPC

Focus on in-depth research and development for the five major applications, develop independent technologies, and gradually apply AI technology to various management functions

Establish smart factories with adaptability and resource efficiency

Equip the factory with the ability of sensory collection, environmental monitoring, Internet, information exchange, manufacturing execution, decision analysis, and so on through the integration of software and hardware

AI Implementations and Overview

As of the end of 2021, the Company has implemented 323 AI projects (both completed and ongoing). The estimated investment was NT\$588,388 thousand, while the expected annual benefits were NT\$1,848,156 thousand. The highlights are as follows:

	2018	2019	2020	2021
Officially launched AI application projects	52 projects	72 projects	105 projects	94 projects
Investments	NT\$91,464 thousand	NT\$145,803 thousand	NT\$244,099 thousand	NT\$102,022 thousand
Expected annual benefits	NT\$591,576 thousand	NT\$352,704 thousand	NT\$580,104 thousand	NT\$323,772 thousand





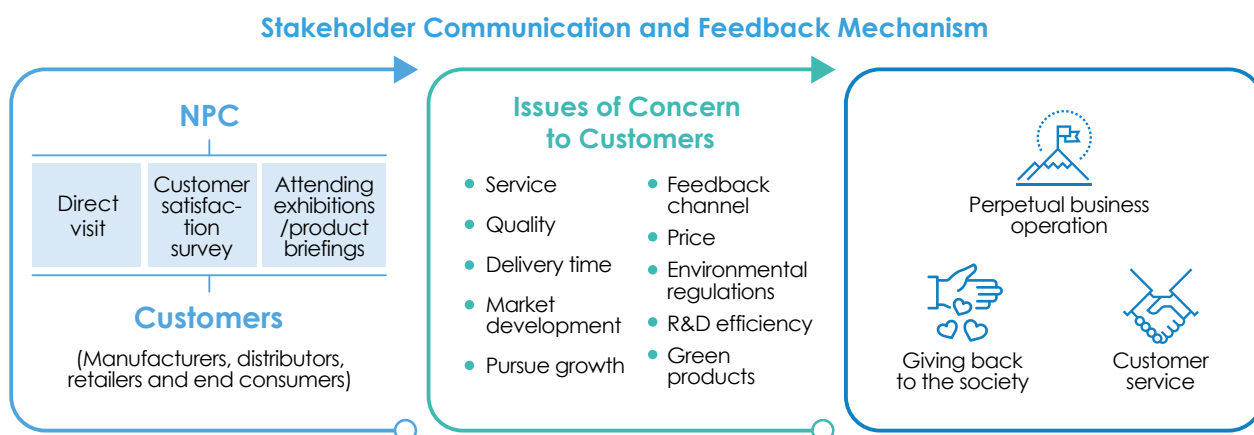
2.2 Positive Customer Relations

The Company puts great emphasis on customer rights and feedback. Enhancing customer satisfaction does not only fall on the sales divisions but the collective goal of all NPC employees. When the downstream customers' business expands, it is an affirmation and support for the Company. The Company hopes to form a virtuous circle and grow with our customers, to achieve a win-win relationship.

2.2.1 Collaborative Customer Relations

Mutually-benefiting Interactions

To strengthen customer relationships, the sales divisions regularly visit customers, exchange opinions on existing or new products, and establish an interactive and timely communication channel. Through attending product exhibitions, we can talk face-to-face with the customers about market information as well as integrate customer feedback as an important reference for the Company's operations and future improvements.



Responding to Customer Feedback

Customer relationship management is an important part of the Company's perpetual business operation. To understand the valuable opinions of customers, NPC has specified the following customer complaints channel, return, refund, and compensation application procedures:



2.2.2 Customer Satisfaction Survey

To understand whether our products and services meet our customer's needs and expectations, we collect customers' feedback and suggestions as a reference for the improvement of internal operations. The survey includes eight major topics, such as product characteristics, product quality, product delivery time, product price, service attitude, technical service, brand image, and overall satisfaction. The survey topics will be adjusted based on the customers' concerns.



Customer Satisfaction Survey Model

According to the results of the 2021 customer satisfaction survey, the overall satisfaction was 4.3 points, accounting for 86% of the total score. Seven performance indicators were above “satisfactory” though some product pricing failed to meet customer expectations. This was mostly attributed to the fact that customers perceived that the Company did not adjust the prices of certain products when their raw material prices had decreased. The Company will continue to pursue cost reduction and share profits with our customers while maintaining product quality.



Year	Technical research	Service attitude	Brand image	Product delivery time	Product quality	Product characteristics	Product price	Overall satisfaction
2018	4.3	4.5	4.4	4.2	4.3	4.3	3.7	4.3
2019	4.3	4.4	4.3	4.2	4.3	4.3	3.7	4.3
2020	4.4	4.5	4.4	4.3	4.4	4.4	3.8	4.4
2021	4.3	4.5	4.4	4.3	4.3	4.3	3.7	4.3

Note: 5 points indicate extremely satisfied; 4 indicates satisfied; 3 indicates neutral; 2 points indicate dissatisfied, while 1 point means the customer is extremely dissatisfied.

2.2.3 Legal Compliance

Material Issue

Sustainable issues: Laws and Regulations Compliance

Corresponding GRI Standards: 307 - Environmental Compliance, 419 - Socioeconomic Compliance

SASB: Management of the Legal & Regulatory Environment



- **Commitment and relevant policies:** Compliance with regulations and standards is the Company's most fundamental principle, and it is also the foundation of the Company's philosophy of "to aim at the sovereign good, and perpetual business operation." We will strictly abide by the local laws and regulations of each operation, and use this as the foundation to improve each business and reduce the occurrence of external risks.
- **Responsibilities and Goals:** Legal compliance is a basic requirement for the stable operation of the Company. The President's Office keeps abreast of the changes in various laws and regulations, formulating corresponding countermeasures, which are then implemented by each business division. Audit operations are also conducted to ensure that no major violations of regulations occur.
- **Resources:** Formulate corporate governance, risk management, and internal control system, and projects promoted in line with statutory requirements.
- **Grievance channel:** Please refer to the chapter on "Stakeholder Communications".
- **Performance evaluation methods and results:**
 1. All production sites have been certified with ISO 9001, ISO 14001, and ISO 45001.
 2. The audit office has completed the 2021 Audit Plan and no major abnormality was found. Abnormalities found have been improved.
- **Specific actions:**
 1. Regular monitoring of legal and policy compliance.
 2. Regularly conduct audit operations to avoid legal violations.
 3. Training related to legal compliance.



Environmental Regulations

The Company's production and sales operations are conducted under the laws and regulations. We continue to develop environmentally friendly products that comply with EU's RoHS, REACH, and other environmental regulations, and either meet Green Building materials standards or can be used as Green Energy applications. The Company hopes to safeguard the health and safety of customers while contributing to the sustainable development of the environment.



Product Labeling

The labeling of the Company's product information meets statutory requirements and the requirements from the Industrial Development Bureau, MOEA. The label "Not fit for human and animal consumption" is marked on the outer packaging and product delivery note of specific products that are non-food additives.



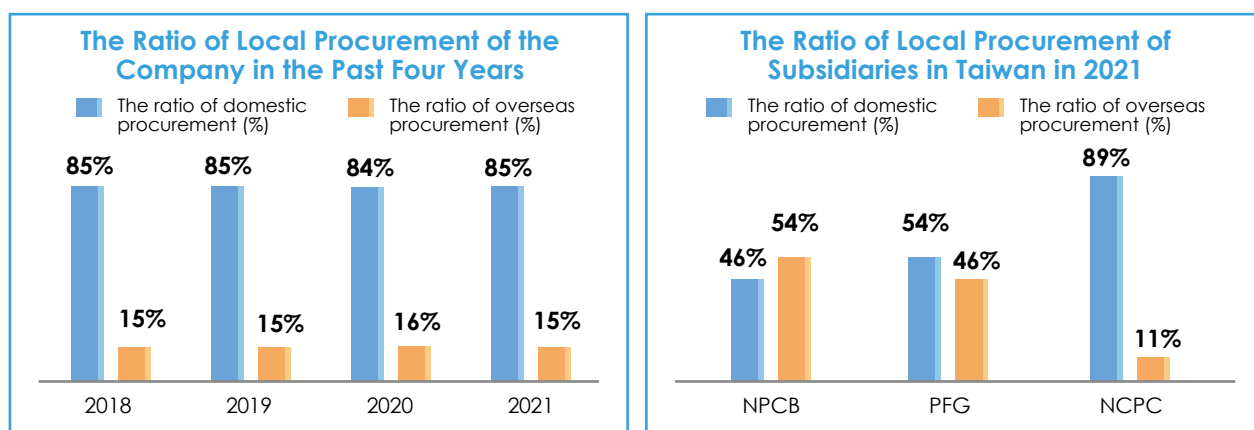
Data Protection

NPC has established the "Regulations Governing Personal Information Management", which requires all relevant departments to list personal data management as a self-inspection item. Only authorized personnel are allowed to browse employee or customer information. Any personnel that wishes to access such information due to business needs must sign the "Application Form for Personal Information Collection, Processing and Use", while verification has to be carried out to ensure that such application complies with the regulations before access may be granted. The method of such access is also strictly regulated.

2.3 Supplier and Contractor Management

Prioritizing Local Procurement Principle

The Company's procurement and contracting policies prioritize local procurement and contracting. Procurement and tender only occur abroad in the absence of local options. The domestic procurement ratio during the past four years is as follows:



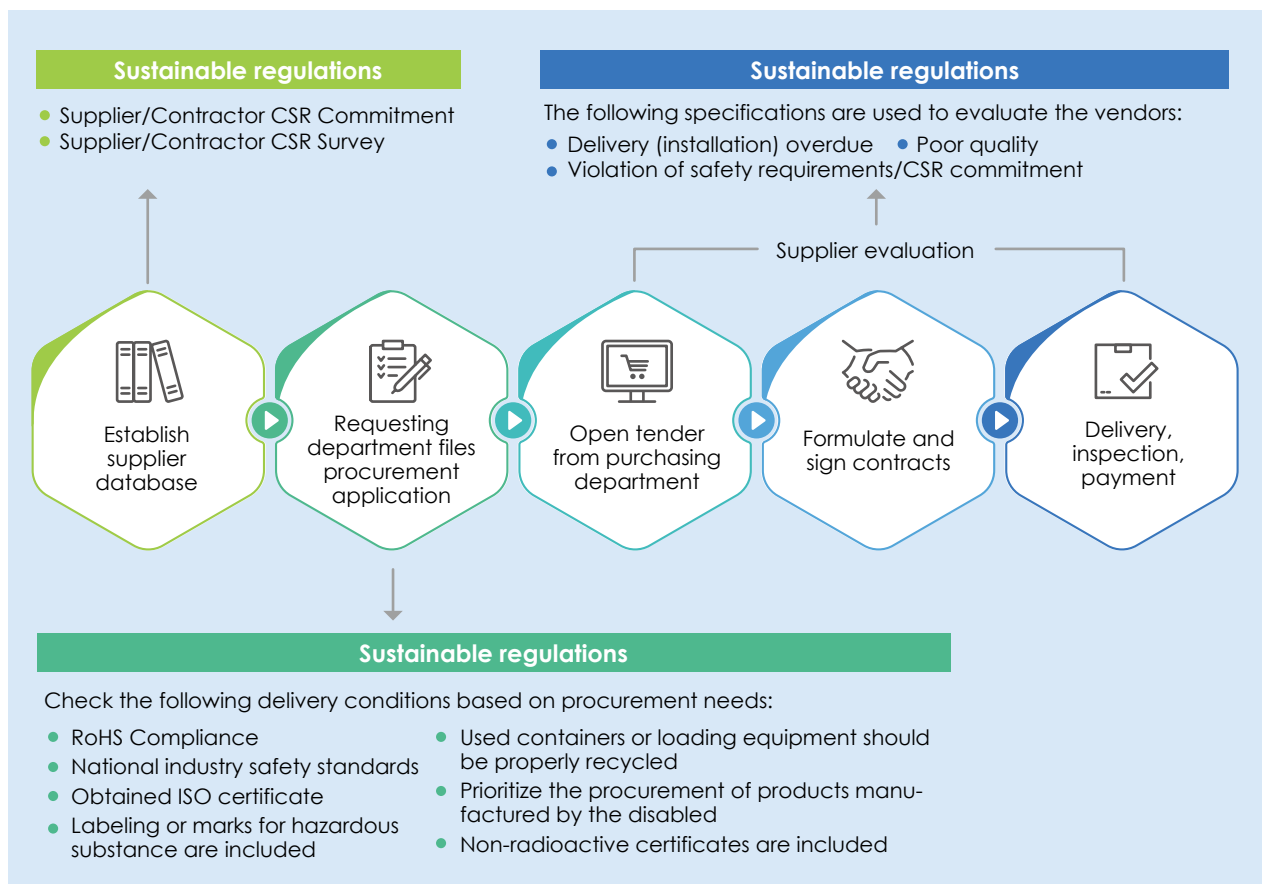
Moreover, relevant operations will continue to use electronic transactions to establish a harmonious relationship between both parties and to achieve the goal of building an open, fair, and just procurement and contracting mechanism. And eliminate inferior contractors while cultivating long-term excellent partners through the sound contractor management mechanism.



2.3.1 Vendor Management

Supplier Sustainability Issues

During procurement processes, the Company adheres to the principle of perpetual business operation and fair trade. The Company is committed to requiring vendors to comply with environmental protection, work safety, and human rights requirements. If a vendor fails to meet such requirements, their products will be rejected and the offending vendor will be included in the vendor evaluation. The procurement process is as follows:



In addition, traditional invoices have been replaced with e-invoices to reduce costs and increase management efficiency. Thus far, over 80% of suppliers have adopted e-invoices, which has significantly reduced the time and costs of manual labor from both parties as well as the costs of stamps and paper.

The ratio of E-Invoice of the Company and its Subsidiaries in Taiwan				
Year	2018	2019	2020	2021
Traditional invoice ratio (%)	18.33	17.40	17.04	16.28
Electronic invoice ratio (%)	81.67	82.60	82.96	83.72



Contractors Sustainability Issues

To reinforce safety management, control the quality of contractors, improve the contractors' occupational safety standards, and prevent injuries for their employees, a contractor ranking system has been set up.

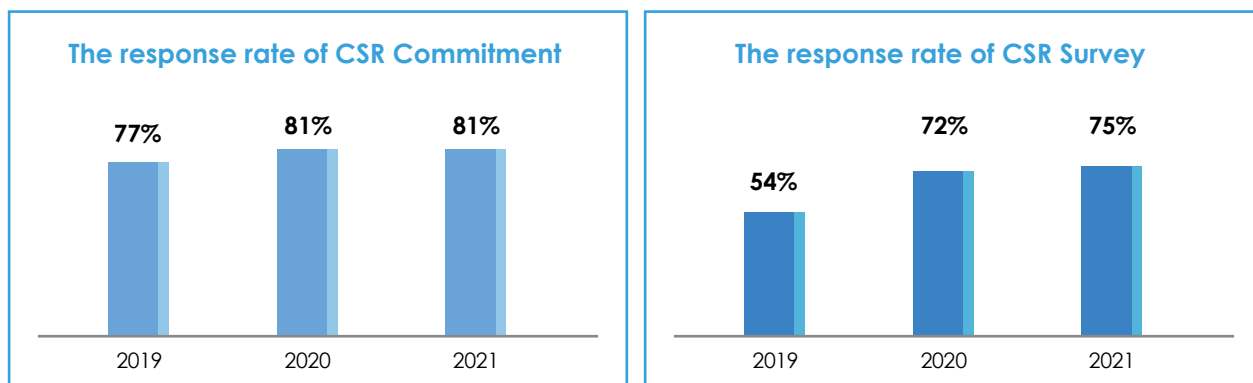
Contractor Ranked Management System

Assessed Item				Contractor Ranking		
Factory site, construction equipment	Site safety management capability	Technical skills	Past contracting performance	A	B	C

The contractor ranking system is used as a reference by the contracting department in the tender process. In addition, the Company has stipulated safety and health management expenses as a required budget expense for the outsourced business. Besides including contract specifications and computer control, the Company also reviews safety and health management expenses during the tender process. To avoid contractors from sacrificing safety and health management for pricing concerns, the amount of management expenses cannot be lower than the budget.

2021 Supply Chain Management Practices

Starting from October 1, 2019, the "Supplier/Contractor CSR Commitment" and "Supplier/Contractor CSR Survey" have been formulated one by one, and are sent to the vendors once they log into the Formosa Technology E-Market Place or complete an order. Vendors are asked to sign and respond to the forms and to abide by relevant rules. The response rate of the Company's vendors is as follows:



At the same time, to make the dealers follow the operating regulations of FPG Group for procurement and outsourcing, resolutely resist the occurrence of collusion in bidding (quotation), bribery, favoritism, and fraud. "Integrity and Confidentiality Commitment Letter for FPG Suppliers" was formulated, suppliers were required to download the commitment letter from the supplier section of Formosa Technology E-Market Place, sign it and reply to the Company since 2021; if the letter is not replied to, it would be included in the supplier's ranking assessment, which is set as the priority reference when ordering.

2.3.2 Contractor Safety Management

To ensure the safety of the workplace environment, the Company requires contractors to comply with laws and regulations regarding occupational safety and health, and safety and health management personnel have also been set up. The contractors must pass safety and health education and hazard identification training before entering the factory. The Company also promotes autonomous management among contractors to achieve zero disaster goals through mutual trust and cross-supervision. To establish a platform that promotes positive, bilateral communications and coordination, the Company has adopted the following management practices:



Organizing Coordination Meetings

Exchange information about workplace hazards and possible improvement suggestions with vendors to work safely.

Personnel Access Management

The number of workers can be regulated through access control. Moreover, to enhance safety and health knowledge, contractors must be educated and trained as well as pass tests before entering the factory.

Organizing Toolbox Meetings

Before entering the factory every day, the contractors will be reminded of potential risks and hazards that may occur during the operations. Also, the mental state of the personnel is checked every day to avoid work-related incidents.

Implementing Regular Audit

The contractors are required to abide by the safety and health regulations of the Company and relevant laws. If an abnormality is discovered during the audit, a review meeting will be held in the same afternoon to address the problem and prevent its recurrence.

In addition, to strengthen the safety management of contractors and ensure workplace safety, the Company also promotes the following operations:

Item	Safety Supervisor	Safety & Quality Assessment System (SQAS)	Mailiao Industrial Complex Occupational Safety Joint Inspection
Promotion periods	Since 2012	Since 2011	Since September 2011
Key operations	<ol style="list-style-type: none"> 1. Conduct safety supervision before, during, and after construction 2. Accompany the contractor to conduct self-inspection before the operation, and report the abnormal construction of the contractor 	<ol style="list-style-type: none"> 1. Contractors who fail the SQAS evaluation may not undertake or pick up hazardous substances from NPC 2. Each transport vehicle that passed the SQAS evaluation will be equipped with GPS or dash cam. The vehicle must be equipped with regularly inspected protective devices based on the characteristics of the hazardous substances 	Formosa Plastics Corp., Nanya Plastics Corp., Formosa Chemicals and Fibre Corp., and Formosa Petrochemical Corp. were convened by the Safety, Health and Environment Center to form a joint inspection team to inspect the start-up and shut-down of petrochemical process, the regular maintenance, the fire accidents, the occupational disaster prevention, etc. in Mailiao Industrial Complex
Results in 2021	To strengthen the on-site construction supervision ability of safety supervisors, the technical training center is responsible for handling training and certification operations, and 85 training and certification were held in 2021	In 2021, 31 contractors were evaluated, of which 30 passed the evaluation, with a pass rate of 97%	<ol style="list-style-type: none"> 1. In 2021, 41 abnormalities were found, among which 6 cases were abnormal electrical work, 6 cases were equipment pipeline corrosion, followed by 4 cases of abnormal scaffolding 2. The above abnormalities were all improved



3

Green Environment Management Promotion



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To pursue sustainable development of the environment, NPC actively manages all environmental impacts from its operations. The Company is committed to implementing energy and water conservation projects and integrates the circular use of raw materials, energies, resources, and waste throughout all plants to prevent or mitigate the risk of environmental impacts. In addition, the Company has also formulated goals to examine the effectiveness of sustainable performance so as to fulfill the responsibilities of green production.

Strategy

- Promote circular economy - circular use of raw materials energies, resources, and waste
- Mitigate climate change risks - promote energy conservation and carbon reduction improvement projects, reduce greenhouse gas (GHG) emissions, and respond to energy transition policies
- Strictly comply with environmental laws and regulations - manage controlled chemical substances and air pollutants and achieve zero environmental legal violations

United Nations Sustainable Development Goals (SDGs)



Sustainability issues

Air pollutant management, circular economy promotions, controlled chemical substance management, water resource management, waste management, climate change mitigation and adaptation, greenhouse gas management

2021 Implementations (○ Did not meet the goals ☑ Goals met ★ Exceeded expectations)



Circular Economy Promotions

2021 Goals

- Continue to promote energy conservation and water conservation projects; reduce total water consumption, gas consumption, and electricity consumption from the 2020 figures
- Reduce water consumption per unit product by 2%, energy consumption per unit product by 3%, and waste generation per unit product by 1% from the consumption per unit product of the previous year at Mailiao site on an annual basis
- Increase rainwater collection and wastewater reuse at each business division

Short-term Goals (2022 Goals)

- Continue to promote energy conservation and water conservation projects; reduce total water consumption, gas consumption, and electricity consumption from the 2021 figures
- Reduce water consumption per unit product by 2%, energy consumption per unit product by 3%, and waste generation per unit product by 1% from the consumption per unit product of the previous year at Mailiao site on an annual basis
- Increase rainwater collection and wastewater reuse at each business division

2021 Implementations

- Compared with 2020, consumption of water, gas, and electricity were increased by 2.1%, 11.6%, and 10.7%, respectively (due to the increase in production capacity)
- Compared with 2020, water consumption per unit product was increased by 0.8%, gas consumption was increased by 5.9%, electricity consumption was reduced by 4.0%, and energy consumption was increased by 7.0% at Mailiao site (due to the resumption of production line 1 of 1,4BG)
- In 2021, rainwater collection was 1,915 tons/day; wastewater reuse was 592 tons/day



Medium- and Long-term

- Continue to promote water conservation, energy conservation, carbon reduction, and waste reduction as well as increase rainwater storage and utilization
- Install wastewater recycling facility and improve rainwater collection system progressively





2021 Implementations (○ Did not meet the goals ☑ Goals met ★ Exceeded expectations)

 <p>Mitigate Climate Change Risks</p>	<p>2021 Goals</p> <ul style="list-style-type: none"> ● Complete internal audit and external third-party verification on 2020 GHG inventories ● Reduce GHG emissions or reduce emissions intensity (GHG emissions/ NPC individual revenues) by 3% compared with 2020 ● Plan to gradually install photovoltaic devices at sites in south Taiwan, which receive ample sun exposure ● Maintain "leadership level" on the "climate change" and "water security" sectors in 2020 Carbon Disclosure Project (CDP) ● Reduce energy consumption per unit product by 3% from the previous year at Mailiao site on an annual basis 	<p>2021 Implementations</p> <ul style="list-style-type: none"> ☑ Internal audit and external third-party verification on 2020 GHG inventories were completed ☑ Although the GHG emissions in 2021 were increased by 5.98% compared with 2020 because of the successful business operation, the GHG emissions intensity dropped from 4.13 kilotons/NT\$100million to 2.89 kilotons/NT\$100million (-30%) ☑ The promotion operation of building photovoltaic devices on the roof of the plant was divided into two phases. Moreover, Hsinkang switchboard plant has been approved to install the facilities with 1,500 kW ☑ Maintained the "leadership level" on the "climate change" and "water security" sectors in 2021 Carbon Disclosure Project (CDP) ★ Compared with 2020, electricity consumption per unit product was reduced by 4.0% and energy consumption was reduced by 1.5%
	<p>Short-term Goals (2022 Goals)</p> <ul style="list-style-type: none"> ● Complete internal audit and external third-party verification on 2021 GHG inventories ● Reduce GHG emissions or reduce emissions intensity (GHG emissions/ NPC individual revenues) by 2.5% compared with the previous year ● Complete the construction of solar power equipment with 1,500 kW in Hsinkang switchboard plant ● Maintain "leadership level" on the "climate change" and "water security" sectors in 2022 Carbon Disclosure Project (CDP) ● Publish the Company's first TCFD report 	<p>Medium- and Long-term</p> <ul style="list-style-type: none"> ● Continue to promote energy conservation and carbon reduction improvements and engage in external assurance to enhance energy-saving technologies and effectiveness ● Reduce 2025 GHG emissions by 20% compared with 2007; Reduce 2030 GHG emissions by 35% compared with 2007 ● Set up renewable energy facilities with 8% of the contracted capacity of electricity by 2023 ● Continue to fill and submit CDP surveys to understand the international trends on response to climate change
 <p>Strict Compliance with Environmental Laws</p>	<p>2021 Goals</p> <ul style="list-style-type: none"> ● Air pollutant emissions in 2021 to be lower than 2020 ● Reduce the number of penalties for environmental violations to less than 50% of 2020 (less than 1) 	<p>2021 Implementations</p> <ul style="list-style-type: none"> ☑ The Company's total air pollutant emissions in 2021 decreased by 33.36 tons compared with 2020, in which 21% for TSP and 19% for NOx ○ The Company was penalized 3 times for environmental violation in 2021, the same as 2020, and we will continue to strengthen internal management
	<p>Short-term Goals (2022 Goals)</p> <ul style="list-style-type: none"> ● Air pollutant emissions in 2022 to be lower than in 2021 ● Reduce the number of penalties for environmental violations to less than 50% of 2021 (less than 1) 	<p>Medium- and Long-term</p> <ul style="list-style-type: none"> ● Continue to reduce air pollutant emissions ● No environmental violation



3.1 Commitment to Environmental Protection

The Company has always been equally committed to environmental protection and industrial development, and also adheres to the goal of "zero accidents in environmental safety and health and ensuring perpetual business operation". Besides pledging to protect the environment and maintain community safety, all employees are required to enrich their professional skills and to treat safety, health, and environmental protection as their priority. Everyone should lead by example and regard safety, health, and environmental protection as a part of their responsibility. Please refer to the "Commitment to Environmental Protection" section on NPC's website for the Company's environmental protection policy.



"Commitment to Environmental Protection" on NPC's website

Long-term Goals of NPC	Environmental Goals
Increase high-value and differentiated products to enhance competitiveness	<ol style="list-style-type: none"> 1. Bio-degradable PBAT resin: The polyester fiber division has developed technologies of polymerization and modification for PBAT resin, and produced high-quality bio-degradable PBAT resin 2. Replace petrochemical raw materials with PLA (polylactic acid, corn, sugarcane or its residue) to produce packaging films
Volume reduction and waste reduction at source	Development of recycled and renewable products <ol style="list-style-type: none"> 1. Recycling of PET bottles: PET bottles are recycled and remade into polyester resins, which can replace virgin polyester resins and reduce carbon emissions by 72% 2. Recycling of release films for multilayer ceramic capacitor coating (release films for MLCC): The recycling productivity reaches 600 tons/day. Release films for MLCC sold in Taiwan can be 100% recycled.
Introduction of clean production	<ol style="list-style-type: none"> 1. Implement energy conservation and carbon reduction through process operating conditions change, model adjustment, AI and big data application, etc. 2. Implement low-carbon energy transition by replacing high-carbon energy (coal, heavy oil) with low-carbon energy (natural gas, etc.) 3. At present, the side reaction in the EO process will generate CO₂. After stripping, the total amount is 380,000 tons, some of which are sold. It is planned to achieve complete recycling and zero emissions through recycling, reuse and source reduction.
Strengthen environmental protection systems management	<ol style="list-style-type: none"> 1. Inventory the computerization of every environmental protection operations, and promote the electronization of management operations to strengthen the management 2. Implement internal carbon pricing operations 3. Strengthen environmental inspections

3.1.1 Safety, Health, and Environmental Protection Policy

The Company implements environmental protection policies and actively carried out measures such as "volume reduction and waste reduction at source", "introduction of clean production", and "strengthening environmental protection system management" to achieve the goal of zero pollution.

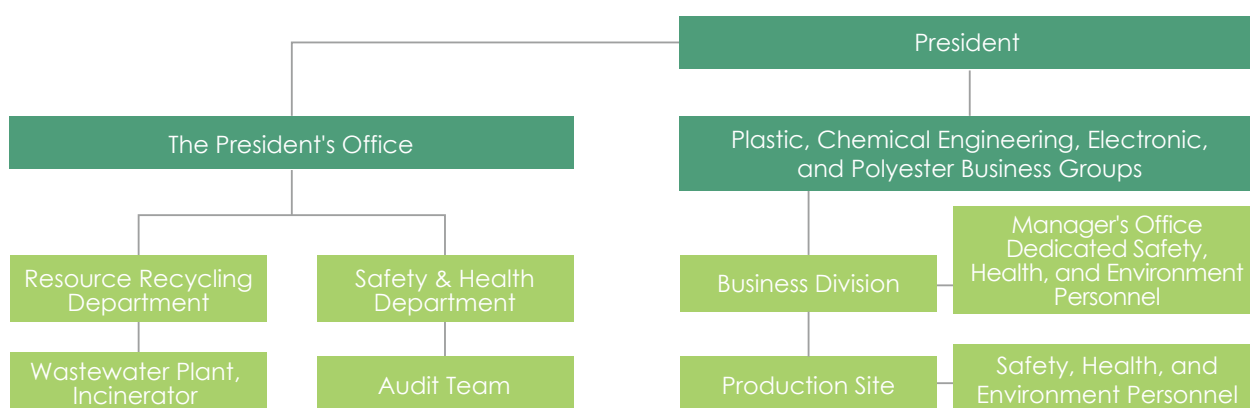




3.1.2 Organization and Promotion of Safety, Health, and Environmental Protection

Formosa Plastics Group established the "Energy Conservation, Carbon Reduction and Pollution Control Organization" in 2006 to integrate and promote water and energy conservation, as well as pollution prevention at each company. In addition, the "Safety and Health Department" and "Resource Recycling Department" have also been set up at the President's Office to coordinate the safety, health, and environmental protection tasks throughout the Company. An audit team has also been set up to audit and follow-up on improvements at the plants; meanwhile, safety, health, and environment management personnel have also been assigned to each division and production site to supervise and coordinate various relevant tasks.

The Safety, Health, and Environment Organization



NPC has received the following certificates for environmental management systems:

Name of Certificate	Received by Site/Product
ISO 14001: 2015 Environmental Management System	Shulin, Linkou, Kung San, Jinxing, Mailiao, Haifeng, Hsinkang, Chiayi, Renwu ,and Linyuan sites
ISO 50001 Energy Management System	Linkou site, Shulin site II, Chiayi site I, Hsinkang CCL site I, Hsinkang CCL site III
Green Factory Label	Shulin site II, Hsinkang CCL site I, Hsinkang CCL site III
Green Building Label	Linkou film site II (Silver Grade); Shulin site II, Hsinkang CCL site I, Hsinkang CCL site III
Responsible Business Alliance (RBA)	Shulin release film site
Water Footprint	The Company



3.1.3 Environmental Expenditure

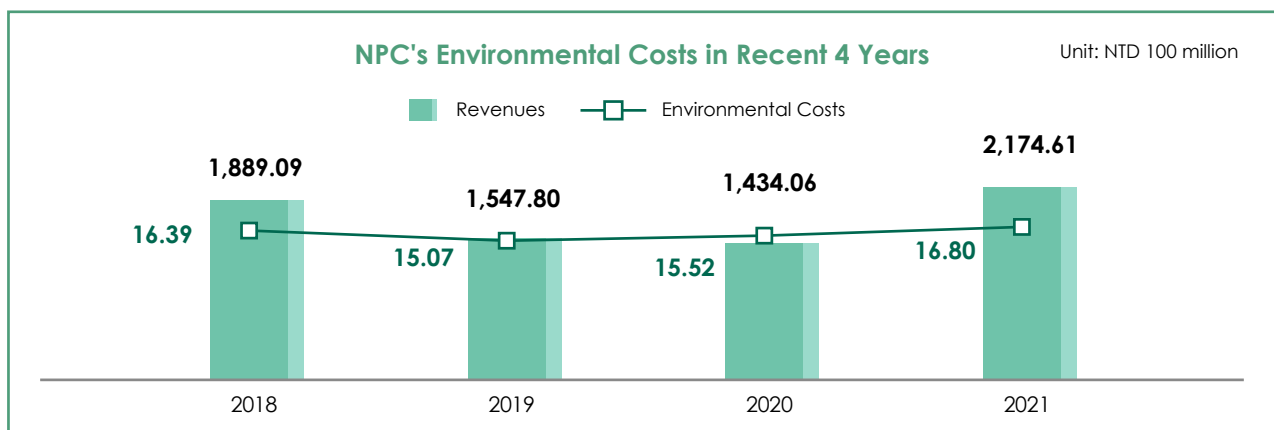
Environmental Accounting

The total amount of environmental costs invested by the Company in 2021 was NT\$1.680 billion, of which pollution prevention and control expenses was approximately NT\$1.005 billion, accounting for 59.8% of environmental costs.

NPC's Environmental Costs List (Unit: NTD thousand)					
Type	Item	2018	2019	2020	2021
Environmental Costs	Operational costs	1,492,969	1,382,589	1,441,032	1,558,872
	Costs associated with supply chain and customers	20,815	18,675	14,439	11,993
	Management activity costs	46,146	41,565	34,284	41,682
	Research and development costs	1,520	280	0	41
	Social engagement costs	23,952	18,511	17,855	18,440
	Loss and remediation costs	200	100	1,698	30
	Fees, taxes, energy taxes, and others	53,610	45,570	42,776	49,399
Total		1,639,212	1,507,290	1,552,084	1,680,457

Note: (1) Source: FPG's environmental accounting database

(2) The "Operational costs" includes FPG's derivative costs from green procurement, product recycling and reproduction costs, and expenses derived from product services for environmental protection



Source of information on revenues: NPC's individual financial statements throughout the years

Green Procurement

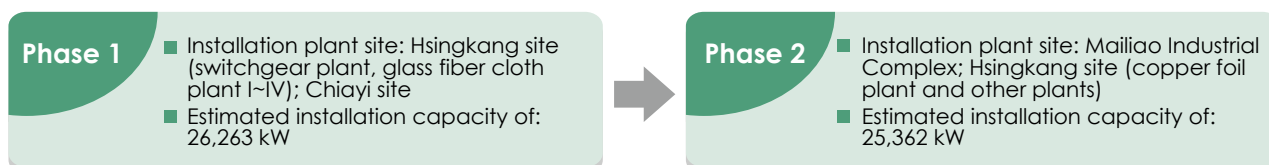
We prioritize purchases from products with environmental protection labels signifying that they are made from renewable materials, recyclable, pose low pollution, and conserve energy, as well as Type II environmentally preferable products. We also prefer to purchase products that add social value, reduce social costs with the same or similar performance (e.g. energy saving label, water saving label, and Energy Star label). According to statistics, in 2021 the green product procurement amounted to NT\$99.11 million and NT\$2.80 million for NPC and subsidiaries in Taiwan, respectively.



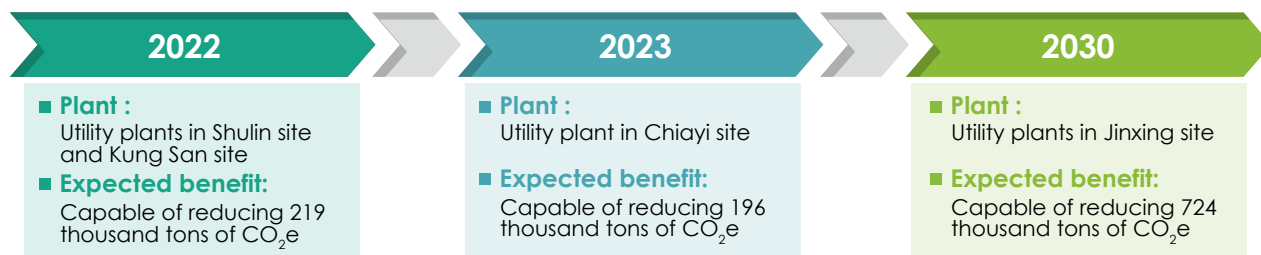
Cleaning Technology and Energy Investment

Aside from actively implementing process improvement on energy conservation and carbon reduction, in response to the international carbon reduction trend and in line with the government's energy transition policy, the Company actively seeks investment opportunities related to energy transition, increases the proportion of renewable energy and applies emerging technologies to reduce the impact of climate change. The key promotion projects are described as follows:

1. The Company will cooperate with the FPG's business plan to establish "Formosa Smart Energy Tech Corp." together with Formosa Plastics Corp., Formosa Chemicals & Fibre Corp., Formosa Petrochemical Corp., and Formosa Biomedical Technology Corp. in 2022. It is expected to seek transition opportunity by expanding the development in the fields of new energy and energy storage. The registered capital of Formosa Smart Energy Tech Corp. is NT\$7 billion, and the Company expects to invest in NT\$1.75 billion.
2. Solar photovoltaic system construction plan: Promote the construction of solar power generation equipment on the roof of each plant area. The 1,500kW solar energy system in Hsinkang switchboard plant is already under construction. By 2030, the total installed capacity is estimated to reach 51,625kW, accounting for 29.4% of Taipower's contracted capacity. And it is much higher than the 10% stipulated in the government's "large electricity consumption users clause".



3. Change of coal-fired to gas-fired in utility plant: To achieve the target of carbon neutrality, NPC plans to promote the change of coal-fired to gas-fired for each utility plant. The transformation for Linkou utility plant has been completed in 2021, and it is expected to reduce 148 thousand tons of CO₂e. For the rest of the utility plants, relevant operations are expected to be completed before 2030. The predefined transformation schedule for the utility plants is as follows:



Note: For the summary table of the Company's investment and implementation on energy conservation and water conservation, please refer to "3.2.3 Carbon Issue Management" and "3.4.3 Water Conservation Performance" respectively.





3.2 Risks and Opportunities of Climate Change

Material Issues

Sustainable issues: Mitigation and adaptation of climate change, GHG management

Corresponding GRI Standards: 305 - Emissions

SASB: Greenhouse gas emissions, energy management



- **Commitment and policies:** To mitigate and adapt the impacts from climate change, the Company has formulated clear carbon reduction targets, and actively promotes “Four carbon reduction policies”. The Company also invests in “Formosa Smart Energy Tech Corp.” and expands the electronic-grade and industrial -grade liquid CO₂ plants to seize the opportunity for transition.
- **Responsibilities and goals:** The Company’s takes 2007 as the base year to set short-term, medium-term, and long-term carbon reduction goals. The carbon emissions would be reduced by 20% and 35% from the base year in 2025 and 2030, respectively. And carbon neutrality will be achieved in 2050.
- **Resources:**
 - 1.The ESG Task and Risk Management Promotional Team is in charge of identifying and evaluating relevant risks, and formulating corresponding measures.
 - 2.The Company formulates incentive measures for energy management improvement, and encourages all departments to implement to reduce the risks that may be caused by climate change.
 - 3.The Company has formulated an ERP information management system:
 - (1)GHG inventory and reduction management system: promote GHG inventory and cost management for carbon emissions based on ISO 14064-1 standard
 - (2) Improvement management system for water conservation and energy conservation: tracking and management on improvement implementation
- **Grievance channel:** Please refer to the chapter on "Stakeholder Communications".
- **Performance evaluation methods and results:**
 1. To examine and enhance the Company's energy conservation and carbon reduction actions to fulfill GHG emissions management and to achieve reduction goals, an impartial third-party institution has been commissioned for this task.
 2. Continue to promote process optimizations, energy and water conservation improvements, and to regularly convene "water/energy conservation review meetings" to inspect response measures and to review the effectiveness of relevant practices.
 3. Evaluation results: Maintain "leadership level(A-)" in Carbon Disclosure Project (CDP) questionnaire.
- **Specific actions:**
 1. Participate in Carbon Disclosure Project (CDP)
 2. Sign up to the TCFD and support the advocacy
 3. Participate in Science Based Targets initiative (SBTi)
 4. Encourage personal creativity and promote incentives system for IE improvement proposals



3.2.1 Mitigation and Adaptation of Greenhouse Gas

Summary of Climate Strategies

Mitigation factors in climate	Effective Scope
<ul style="list-style-type: none"> CO₂ Greenhouse gas Greenhouse gas and others 	<ul style="list-style-type: none"> NPC's business scope Scope of Value chain
Actions of mitigation and adaptation measures	
<p>Four major carbon reduction strategies</p> <ul style="list-style-type: none"> Low-carbon energy transition: Stop the operation of coal-fired boilers and install gas-fired boilers and other equipment in utility plants, and replace high-carbon energy (such as coal, heavy oil) with low-carbon energy (such as natural gas) in each production plant Energy saving and carbon reduction and circular economy: Continue to promote process improvement, circular economy, AI and digital transformation, improve energy efficiency and reduce waste generation Increase the consumption of renewable energy: Install solar power equipment on the roofs of each plant area. The total installed capacity is estimated to be about 51,625kW by 2030, accounting for 29.4% of Taipower's contracted capacity. And it is much higher than the 10% stipulated in the government's "large electricity consumption users clause". Application of carbon capture technology: Expand the electronic-grade and industrial -grade liquid CO₂ plants. Recycle all CO₂ generated in the process into resources. 	

Short-, Medium-, and Long-term Carbon Reduction Strategies of NPC





	Short-term 2021-2025	Medium-term 2025-2030	Long-term 2030-2050
Low-carbon energy transition	Replace coal-fired boilers with gas-fired boilers in utility plants Replace high-carbon energy (such as coal, heavy oil) with low-carbon energy (such as natural gas) in each production plant Continue to grasp the development trend of hydrogen energy and other alternative energy sources and energy storage equipment, and appropriately introduce them after commercialization		Duly replace natural gas with bio-based material
Energy-saving and carbon-reduction and circular economy	Continue to promote process improvement for energy conservation and carbon reduction Promote resources recycling and other projects based on 4R circular economy principle Promote AI and digital transformation, introduce intelligent management systems, and improve utilization efficiency of energy and resources		
Increase the consumption of renewable energy	Install solar power equipment on the roofs of each plant are for about 51,625 kW Continue to evaluate and duly introduce applications of renewable energy such as water, wind and geothermal	Evaluate for purchasing renewable energy certificates (inadequate quotas that cannot be built by ourselves)	
Application of carbon capture technology	Expand the electronic-grade and industrial -grade liquid CO ₂ plants. Recycle all CO ₂ generated in the process into resources Carrying out research on forests and carbon sinks, negative emission technologies, carbon capture and storage, etc., with the industry and academia. The aforementioned practices will be introduced in due course after commercialization	Introduce feasible technologies in the industry such as carbon capture from flue gas to reduce CO ₂ emissions	



3.2.2 Identifying Risks and Opportunities Associated with Climate Change

The Company's climate change management is to supervise the implementation of related operations from top to bottom, and to identify climate change risks and opportunities, set carbon reduction goals, and promote carbon reduction strategies and other management actions in accordance with the framework of Task Force on Climate-related Financial Disclosures (TCFD) from Financial Stability Board (FSB).

Besides, in order to make global investors understand the Company's achievements in addressing global climate change issues, in addition to continuing to participate in the CDP climate change disclosure questionnaire and strive to achieve "leadership level", the Company also participates in the TCFD advocacy, applies to join the "Science-Based Targets Initiative (SBTi)", and carries out other actions to strengthen the Company's resilience to climate change.

Item	Management Strategies and Action Plan	2021 Implementation
 Governance	<ol style="list-style-type: none"> 1. The Board of Directors discusses the implementation of ESG, which includes climate-related issues at least once a year 2. The TCFD task force under the "Risk Management Promotion Team" is responsible for identifying climate change risks and opportunities, formulating countermeasures, and reporting the results to the Chairman 	<ol style="list-style-type: none"> 1. Established TCFD task force 2. Approved by the Chairman to Participate in TCFD advocacy and apply to join the SBTi 3. A "Sustainable Development Committee" was planned to be established under the Board of Directors in June 2022 4. The first TCFD report of NPC was planned to be published in 2022 and the TCFD implementation would be reported to the Board of Directors in June
 Strategies	<ol style="list-style-type: none"> 1. Set short-term, medium-term, and long-term carbon reduction goals 2. Promote "internal carbon pricing" and other management strategies 3. Identify the risks and opportunities of climate 4. Implement four major carbon reduction strategies including "low-carbon energy transition" 	<ol style="list-style-type: none"> 1. The short-term, medium-term, and long-term carbon reduction goals have been set up 2. The "internal carbon pricing" operation has been carried out 3. The TCFD task force has finished the identification of risks and opportunities of climate 4. Continue to promote four major carbon reduction strategies, such as the 1,500kW solar power equipment that has been approved to install in Hsinkang switchboard plant 5. The GHG inventories and certification of scope1~3 in 2020 have been completed
 Risk Management	<ol style="list-style-type: none"> 1. Establish the Company's climate risk identification process based on the TCFD framework 2. Identify the ranking of climate risks according to ISO 14001 Risk Management Process, and formulate corresponding solutions according to the ranking 	<p>The TCFD task force has identified 3 opportunities and 6 risks. The results have been reported to Chairman for approval</p>
 Indicators and Targets	<ol style="list-style-type: none"> 1. Promote GHG inventories based on "ISO 14064-1 standard" 2. Draft climate change management goals and review the implementation status according to the scenario analysis and Science Based Targets 	<ol style="list-style-type: none"> 1. The Company's takes 2007 as the base year to set short-term, medium-term, and long-term carbon reduction goals. The carbon emissions would be reduced by 20% and 35% from the base year in 2025 and 2030, respectively. And carbon neutrality will be achieved in 2050 2. It is expected that the third-party verification of GHG in 2021 will be completed in the second half of 2022

Notes: For more details please refer to 2021 NPC TCFD Report



Governance Body and Supervisory System

To cope with the global sustainability trend of carbon reduction, in 2021, NPC has established the “Risk Management Promotion Team” and the TCFD Task Force has been further established to handle the identification of risks and opportunities associated with climate change, following which the “ESG Promotion Team” and “Energy Saving and Carbon Reduction Promotion Team” discuss and establish the management actions of climate change risk adjustment and enhancement of risk resilience, and periodically tracks the energy saving and carbon reduction promotion of each business division and relevant unit. For implementation associated with climate change, in addition to reporting to the Chairman (the top management of the “ESG promotion organization”) timely, it is also reported to the Board of Directors by “ESG Promotion Organization” at least once a year.



"Download for Annual Reports" on NPC's website

Climate Risk Identification and Management Process



Plan & Do

Check & Action



Analysis of Risk and Opportunities associated with Climate Change

The risk and opportunity matrix is made after considering the probability of occurrence of each risk and opportunity, the financial impact, and other factors. The severity of the financial impact and the probability of risks and opportunities associated with climate change of the Company are divided into five levels, and the scores are given according to different financial impacts and the probability of occurrence. The risk and opportunity matrix is completed after weighting the financial impacts and the probability of occurrence, and the risk matrix is as follows:

Financial Impact level	NT\$ 10 billion ↑	5	10	15	20	25
	NT\$ 1 billion ↑	4	8	12	16	20
	NT\$ 100 million ↑	3	6	9	12	15
	NT\$ 10 million ↑	2	4	6	8	10
	NT\$ 1 million ↑	1	2	3	4	5
		<20%	20%-50%	50%-75%	50%-95%	>95%
		Probability of occurrence				

15-25 points: Material risk
Plan corresponding management solution in priority, and track the execution performance

5-14 points: Moderate risk
Presently, no action is adopted; continue to monitor changes

1-4 points: Low risk
Considered as acceptable risk

According to the results of the above risk and opportunity matrix, the risks and opportunities are classified as follows:

- Score of 1–4 is defined as low risk: Level of risk is considered as acceptable risk.
- Score of 5–14 is defined as moderate risk: No action is required at this time, and changes are continuously monitored.
- Score of 15–25 is defined as material risk: Planning of the corresponding management strategy is prioritized and the performance outcome is tracked periodically

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:

Financial Impact level	Low risk/ opportunity	Moderate risk/ opportunity	Material risk/ opportunity	
		5 6	8	3
			7	1 2 9
		4		
		Probability of occurrence		

【Transition Risk】

- ① Policy/legal - Risk of collection of carbon tax
- ② Policy/legal - Risk of installation of renewable energies
- ③ Product/market - Change of customer behavior
- ④ Company reputation - Causing negative feedback

【Physical Risk】

- ⑤ Acute - Extreme climate (heavy rainfall/flooding)
- ⑥ Acute - Extreme climate (water shortage/drought)

【Opportunity】

- ⑦ Product / market - New market development
- ⑧ Energy / technology - Carbon capture, storage and utilization
- ⑨ Resilience - Diverse business operation

Note: For relevant content and response strategy, please refer to the below summary table for details



Financial Impacts of Risks						
Category of Risk (Transition/ Physical)	Type of Risk	Scope of Impact			Level of Impact	Description of Major Potential Financial Impact
		Upstream	Business	Downstream		
Transition Risk	Policy and law		●		Approximately 0.29%~0.87%	" Climate Change Response Act " - Related expenses for complying with regulations (carbon tax)
			●		0.08%	Renewable Energy Development Act (large electricity consumption users clause)- Related expenses for complying with regulations (monetary substitution for renewable energy violations)
	Market		●	●	Approximately 0.76%	Change of customer behavior- Impact of reduced revenue from failing to satisfy customer demand
	Company reputation	●	●	●	Approximately 0.01%~0.03%	Impacted by the negative reputation, financial institutions may increase the interest rates on loans, or may even refuse to provide loans to industries of high carbon emissions.
Physical Risk	Acute - Extreme climate	●	●	●	Approximately 1%	Heavy rainfall/flooding
					Approximately 1.6%	Water shortage/drought
Financial Impacts of Opportunities						
Transition Opportunity	Product / marke				Approximately 2%	Consumers and governments of various countries continue to increase their demands for low-carbon products and product safety. As a result, the potential business opportunities of recycling products begin to rise up
	Energy / technology		●	●		
	Product / market		●	●	Approximately 4%	In recent years, due to the global impact of extreme climate, temperature continues to rise, and consumers' potential demand for low-carbon energy saving and heat insulation products also increases.
	Resilience	●	●	●	Approximately 0.5%	Diverse business operation- Many countries around the world have formulated the timetable for the ban on fuel sale from 2020~2040. In the next 20 years, 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.



Financial Impacts of Risks

Response Strategy/Example

1. Continue to promote the four main carbon reduction strategies of "Low carbon energy transition".
2. Promote low carbon manufacturing technologies
3. Increase energy-saving improvement benefits
4. The Company plans to complete the phase 1 construction planning of solar power generation facility before 2023. For parts of Hsinkang Plant and all Chiayi Plant, the building roofs of the plants are installed with the solar power generation system, total of which 26,263 kW
5. Cross-plant achievement case sharing

1. To meet the market trend, NPC accelerates the research and development of new applications of products, new materials, and products that satisfying the eco-friendly trend or with special specifications. NPC also seeks the production and sale collaboration and strategic alliance with international giant companies. By developing toward the manufacturing service industry to provide services satisfied by customers.
2. Continue to promote green solutions and develop eco-friendly products from eight aspects, including energy efficiency, emission reduction, waste reduction, water saving, non-toxic, healthy, recycled products and safety to enhance techniques and relevant applications.

Actively participates in international energy saving and carbon reduction advocacies, and promotes carbon reduction measures to increase the reputation. The promotion case examples are as follows:

1. Participate in the international "Carbon Disclosure Project (CDP)" evaluation, "TCFD Advocacy", "Science Based Target initiative (SBTi)".
2. Participate in the sustainability linked loan project of Mizuho Bank and MUFG Bank..

1. Renwu plant is installed with the flood control pumps, which the maintenance are performed periodically.
2. For Mailiao site, major desilting and dredging operation is performed annually.
3. Mailiao Industrial Complex seawater desalting plant project (constructed by FPCC).
4. Jinxing site uses effluent water of Taoyuan Norther District Water Resource Recycle Center as the process cooling water.
5. Implement circular economy, actively promote various water saving improvement projects.

Financial Impacts of Opportunities

Values customers' health and safety, and continues to improve operation to meet the market trend and downstream customer demands, the key examples are described in the following:

1. Strengthen the recycling of PET and recycled eco-friendly film products to reduce the carbon emission of value chain.
2. The CO₂ generated during the process are converted into liquid CO₂ via carbon capture technology for further sale to the downstream customers.
3. Through change of process operation criteria, and use of AI and Big Data, to achieve process energy saving and carbon reduction and reduce the carbon footprint.

Numerous green products have been developed. The Company continuous to invest in research and development, and expand the green business opportunities. The key examples are summarized in the following:

1. Cooler Paint (heat insulation paint): The product which is verified by National Taiwan University of Science and Technology, is able to save 31.8% energy consumption of air conditioning in summer.
2. Energy saving airtight window: Low thermal conductivity, heat insulation, capable of saving energy consumption by more than 20%.
3. ICE COOL (heat insulation paper): Use non-toxic material, and equipped with the characteristics of anti-explosion, high light transmittance and high IR, UV isolation, capable of reducing energy consumption.

Actively engage in the research and development of electric vehicle industry related products. For instance, copper foils are initially used in electrical and electronic industries. With the continuous development of copper foils with high heat resistance and high strength, some of the copper foils can be further used as the electrodes of the lithium batteries of electric vehicles in recent years. Accordingly, the copper foil production line is expanded.

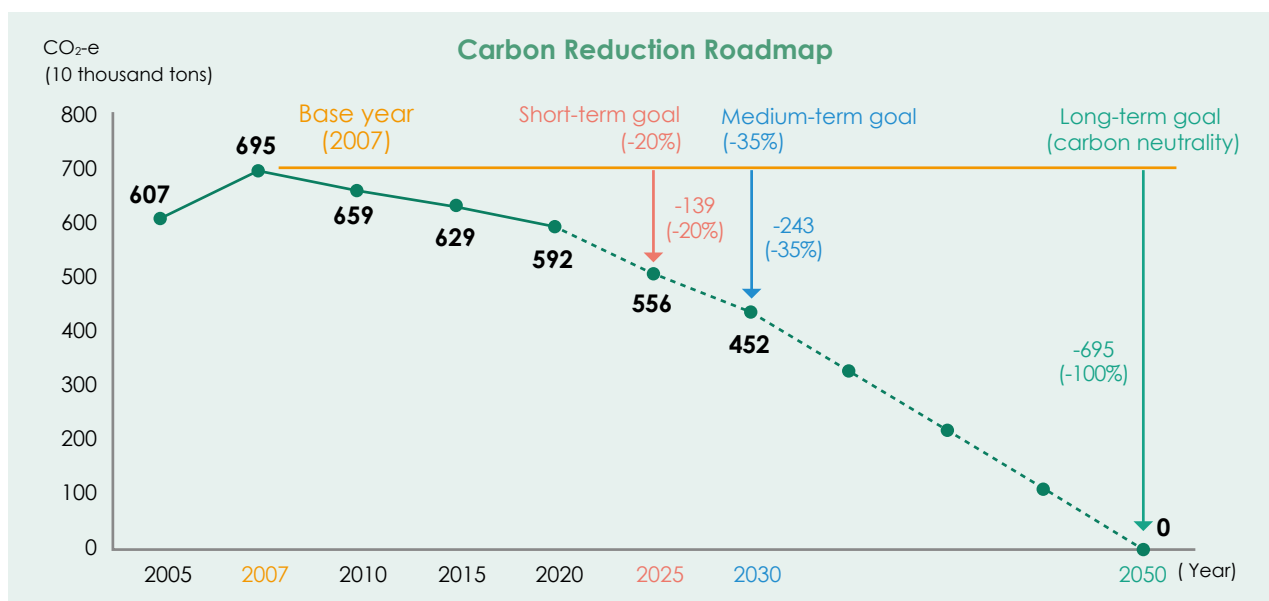


Scenario Analysis

	BAU scenario	Positive mitigation scenario
Description of Scenario	RCP 8.5	RCP2.6
Analysis Results	The lower the control of greenhouse gas emissions, the greater the degree of climate change, which leads to higher frequency and harm of floods and droughts	Under the trend of net zero carbon emissions, the awareness of controlling greenhouse gas emissions has increased, and the degree of climate change has been slowed down
Risk	Under the scenario of low control of greenhouse gas emissions, the intensification of climate change will lead to an increase in the frequency of floods and droughts, resulting in an impact on operating costs	In order to effectively control greenhouse gas emissions, it is necessary to consider the company's future operational growth and investment in various carbon reduction measures, and to evaluate the potential financial impact caused by low-carbon transition
Action Plan	<p>[Action plan for physical risks]</p> <ol style="list-style-type: none"> 1. Formulate an overall response plan for water shortage, establish water shortage early warning and contingency measures, in order to respond to drought or industrial water supply restrictions. 2. Set annual water reduction targets and regularly review the rationality of water consumption. 3. Examine the risk of flooding disasters caused by sea level rise, analyze the potential flooding caused by sea level rise in Taiwan plant sites with RCP8.5 scenario, and formulate the contingency plan. 4. NPC adheres to the principle of circular economy and promotes recycling and reuse projects of rainwater, wastewater and process water to mitigate the impact of floods and droughts. <p>[Action plan for transition risks]</p> <ol style="list-style-type: none"> 1. Through change of process operation criteria, model adjustment, and use of AI and Big Data, to achieve energy saving and carbon reduction. 2. Develop low-carbon products, recycling and reusing products, replaceable raw materials, and develop new markets, which can increase market share and increase the company's revenue. 3. Build solar power generation equipments and develop carbon capture technology applications. 	

3.2.3 Management of Carbon Issues

In order to comply with the international trend of carbon reduction, NPC sets carbon reduction goals as follows "take 2007 as the base year, reduce 20% emissions in 2025, reduce 35% emissions in 2030, and achieve carbon neutrality in 2050."





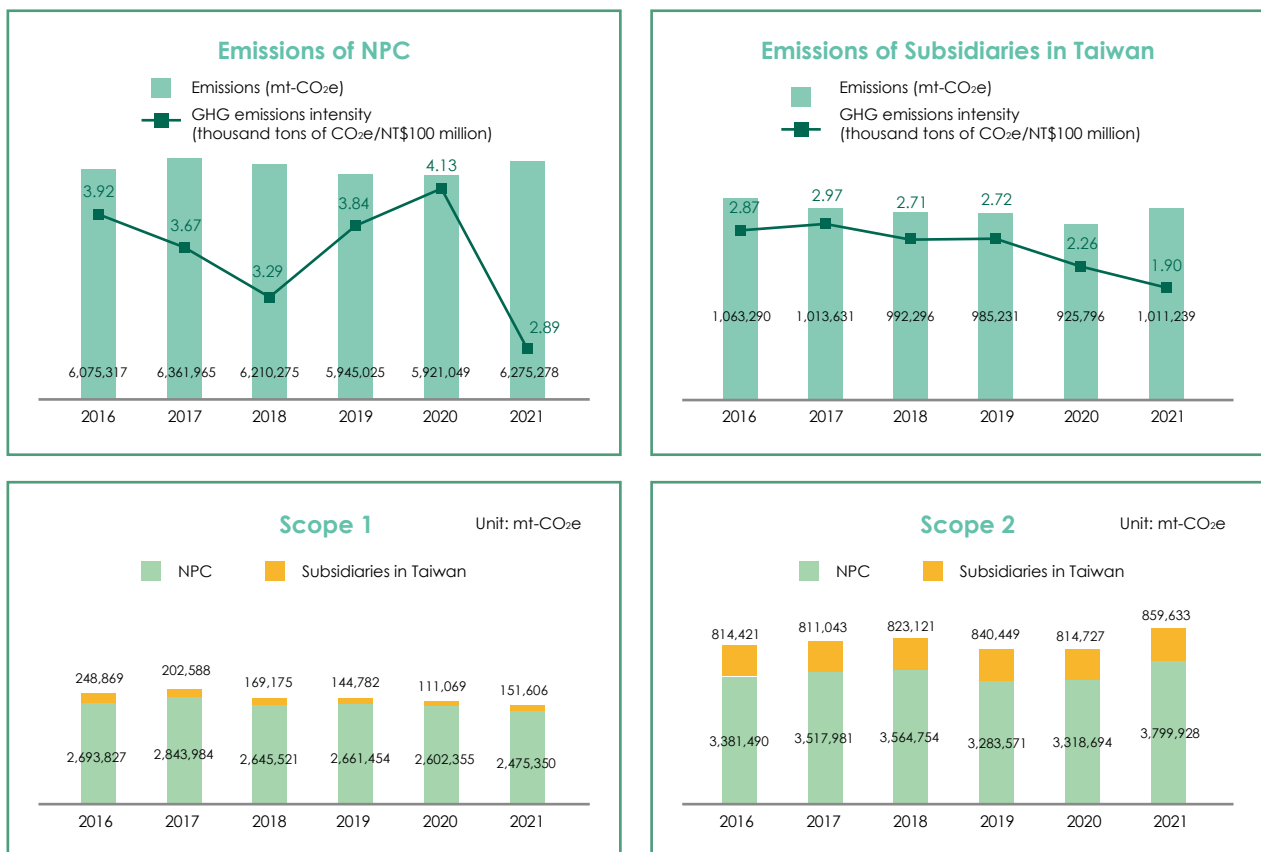
Greenhouse Gas Emissions Management

Material Issue

The Company commissions a third-party agency to conduct and verify greenhouse gas (GHG) inventories according to ISO 14064-1 standard each year. The GHG emissions in 2021 are still being verified. Additionally, internal audit results have indicated that the Company's Scope 1 emissions amounted to approximately 2.48 million mt-CO₂e, while Scope 2 emissions amounted to approximately 3.80 million mt-CO₂e. Though Scope 3 (supply chain) emissions are not compulsory; nevertheless, the Company has carried out both internal and third-party GHG inventories according to the emission standards.

Moreover, in 2021, the Company's revenues reached NT\$217.5 billion, and total emissions amounted to approximately 6.28 million mt-CO₂e, which shows a 5.98% increase from 2020. GHG emissions intensity reached 2.89 thousand tons of CO₂e/NT\$100 million, which shows a 30% decrease from the 4.13 thousand tons of CO₂e/NT\$100 million in 2020 (the revenues were NT\$143.4 billion); And a decrease of 17.43% compared to the base year.

Greenhouse Gas Emission Status



Note1: Scope 1 refers to direct GHG emissions, Scope 2 refers to indirect GHG emissions. The gases inventory include the following types: carbon dioxide, methane, nitrous oxide, HFCs, perfluorocarbons, sulfur hexafluoride.

Note2: The Company used SGS and BSI to verify its data from 2015-2020, and since 2021 emissions are still waiting to be verified, internal audited data (from the FPG database) is used.

Note3: After 2016 (inclusive), the GWP announced in the IPCC Fourth Assessment Report (2007) is used as the basis for calculating the carbon dioxide equivalent of emissions according to the regulations of the Environmental Protection Administration.

Note4: Regarding the emission factor, Scope 1 individual direct emission sources are calculated based on the "EPA Greenhouse Gas Emission Factor Management Table." (Version 6.0.3; version 6.0.4 was adopted for 2019). Scope 2 indirect emissions are based on the Taipower Power Coefficient published by the Bureau of Energy, Ministry of Economic Affairs. After BSI or SGS verification, the figures become the power and steam coefficient of each production site under Formosa Plastics Group (FPG).



Energy Management

In 2021, the total energy consumption of the Mailiao site and the plants other than the Mailiao site are shown in the table below. Based on the 2021 revenue of NT\$217.5 billion, the Company's energy intensity is approximately 218 kilojoules/NTD, and the scope 1 and 2 greenhouse gas emission intensity is 2.89 thousand metric tons of CO₂e/NT\$100 million.

NPC Major Emission Sources and Energy Consumption in 2021									
Mailiao site					Plants other than Mailiao				
Emission source	Consumption (A)	Heating value (B)	Total energy consumption (A)*(B)	Ratio of CO ₂ e emissions	Emission source	Consumption (A)	Heating value (B)	Total energy consumption (A)*(B)	Ratio of CO ₂ e emissions
FPG internally purchased electricity	1,532,988 MWh	3.60 GJ/MWh	5.52*10 ⁶ GJ	42.5%	Coal	641,505 tons	26.78 GJ/ton	1.72*10 ⁷ GJ	46.0%
Fuel	33,113 kL	33.01 GJ/kL	1.09*10 ⁶ GJ	2.7%	Fuel oil	89,937 kL	38.48 GJ/kL	3.46*10 ⁶ GJ	8.8%
Fuel gas	28,285 tons	37.77 GJ/ton	1.07*10 ⁵ GJ	2.5%	Fuel gas	42,529 tons	65.00 GJ/ton	2.76*10 ⁶ GJ	3.5%
FPG internally purchased gas	3,643,907 tons	2.83 GJ/ton	1.03*10 ⁷ GJ	34.3%	FPG internally purchased gas	331,524 tons	2.83 GJ/ton	9.38*10 ⁵ GJ	3.0%
					FPG internally purchased electricity	997,821 MWh	3.60 GJ/MWh	3.59*10 ⁶ GJ	28.6%
					Externally purchased electricity	879,842 MWh	3.60 GJ/MWh	3.17*10 ⁶ GJ	13.6%
Total			1.80*10 ⁷ GJ	82.0%	Total			2.94*10 ⁷ GJ	99.1%

Note1: The source of the table is 2021 Greenhouse Gas Emission Inventory of the Company (self-inventoried data).

Note2: The heating value of each emission source is calculated as an average value.

Note3: This table mostly includes electricity and gas purchased by the Company's Mailiao site, as well as the GHG emitted from production of heating sources, including fuel oil and fuel gas. It does not include GHG emissions generated from production processes, exhaust, and waste recycling's incineration.

Energy Management Improvement Incentive Program

Rewarding Project Improvements Implementing reward system for project improvements; NT\$300~NT\$20,000 bonus will be given based on merits.	Encouraging Creativity Implementing a reward system for proposing IE improvements; NT\$300~NT\$20,000 bonus and administrative incentives will be given based on merits.
Publicizing Outstanding Improvements <ul style="list-style-type: none"> Submit outstanding improvement projects for internal evaluations on an annual basis. Organize ceremonies to applaud outstanding environmental protection, energy/water conservation projects. 	Evaluations for Environmentally Friendly Enterprises Encourage all divisions/plants to participate in enterprise environmental protection, water/energy conservation evaluations/competitions organized by the government and to provide incentives for participation.



Energy Conservation Performance Management

Since 2020, the Company has aggregated and tracked the annual energy consumption by referring to the standard and recommendations of Sustainability Accounting Standards Board (SASB) to facilitate the evaluation and optimization of energy efficiency and achieve energy conservation goals.

Energy Consumption of NPC in 2021

Total energy consumption (GJ)	Proportion of electric consumption of the grid (%)	Total energy from self-generated electricity (GJ)
47,332,301	71.8 %	4,831,885

In recent years, the Company has continuously reviewed and strengthened the integration of resources across production sites and companies and actively promoted circular economy. As a result, the overall energy efficiency has been greatly improved. In 2021, the Company and its subsidiaries in Taiwan completed a total of 458 energy-saving improvement projects with an investment of NT\$800 million and an annual benefit of NT\$600 million. It is expected to reduce greenhouse gas emissions (CO₂e) by 760,000 tons/year. In addition, 416 energy-saving improvement projects are being promoted with an estimated investment of NT\$3.63 billion. This will further reduce greenhouse gas emissions (CO₂e) by approximately 287,000 tons/year.

Energy Conservation Practices from NPC and Subsidiaries in Taiwan						
Item \ Year	1999~2019 (A)	2020 (B)	2021 (C)	In progress (D)	Total (E=A+B+C+D)	
Improved Items	4,998	519	458	416	6,391	
Steam saved (ton/hour)	718.9	52.4	65.0	65.9	902.3	
Electricity saved (MWh/hour)	79.2	3.3	6.2	16.8	105.6	
Fuel saved (ton/hour)	26.2	1.7	40.6	1.5	70.0	
CO ₂ e reduction (10,000 tons/year)	247.2	17.7	76.0	28.7	369.7	
Amount invested (NT \$100 million)	71.7	6.6	8.0	36.3	122.6	
Investment benefit (NT \$100 million/year)	65.7	4.2	6.0	7.5	83.3	

Source: FPG Energy and Water Conservation Improvement Database; in-progress projects are counted as ongoing improvement cases for January 2022 statistics.

Energy-saving Projects and Performance in 2021

Project 1 Replacing coal-fired boilers with gas-fired boilers in Linkou utility plant GHG Reduction Performance 148,248 tons/year	Project 2 Applying ORC technology to improve waste heat of CO ₂ emissions in EG-4 plant GHG Reduction Performance 13,471 tons/year	Project 3 Recycling heat in reboiler to improve process efficiency and steam conservation in EG-1/2 plants GHG Reduction Performance 19,208 tons/year
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Each plant in the Company aims to reduce energy consumption per unit product by 3% compared to the previous year. However, due to the wide variety of products and different units of measurement, the energy consumption of the Mailiao site, which has the largest amount of consumption, will be used for the purpose of comparison.

In 2021, the steam consumption/unit at Mailiao site was 1.143 tons/ton, representing a 5.9% increase from 2020. This is mostly attributed to the cross-plant integrations in Mailiao site, the decrease in output of self-generated steam in PA plant and MA plant leading to unfavorable unit steam consumption. Additionally, the electricity consumption at Mailiao site was 174.0 MWh/hour, and the electricity consumption per unit for each product was 478.3 kWh/hour, representing a 4.0% decrease from 2020.



Energy Consumption of Unit Product of NPC					
Item	2018	2019	2020	2021	
	Mailiao site			Mailiao site	Others
Steam consumption (Unit: ton/ton)	1.315	1.163	1.079	1.143	0.457
Electricity Consumption (Unit: ton/ton)	496.8	520.3	498.1	478.3	410.1

Note: The scope of disclosure has been expanded since 2021. Originally, only Mailiao site's data was disclosed, now all plant sites in Taiwan have been added to the scope of disclosure.

3.3 Air Pollution Management

Material Issues

3.3.1 Air Pollution Prevention

Corresponding GRI Standards: 305 - Emissions
SASB: Air quality



- **Commitment and policies:** The Company adopts "effective reduction of source pollution and optimization of prevention equipment" practices based on the principle of best available control technology (BACT). Continuous improvement is made based on the specific characteristics of the processes. Equipment is regularly maintained to ensure optimal performance, while personnel are trained to familiarize them with system operations.
- **Responsibilities:** Management responsibilities are divided into plant divisions, manager's office, Safety and Health Department, and the President's Office based on respective roles and responsibilities.
- **Goals:** Continue to promote the reduction of air pollutants in the plants, and the execution of the white smoke abatement project (expected to be completed by June 2022).
- **Resources:**
 1. Environmental protection personnel are set up at each division to undertake day-to-day management and relevant reductions.
 2. The Safety and Health Department is in charge of external coordination.
- **Grievance channel:** Please refer to the chapter on "Stakeholder Communications".
- **Performance evaluation methods and results:**
 1. Evaluation method:
 - Internal audit: Dedicated personnel will regularly conduct daily inspections at each plant. The management department will perform inspection tasks based on annual plans.
 - External inspection: Qualified vendors will be commissioned to perform emission channel and component inspections based on the frequencies and items specified on the relevant permits.
 2. Results: Air pollutant emissions have been reduced by 33.36 tons in 2021 compared with 2020 (SOx were reduced by 67.28 tons; NOx by 248.43 tons; VOC by 299.02 tons, and TSP by 16.67 tons)
- **Specific actions:**
 1. Regular review and reduction proposals are conducted by each plant.
 2. Assess whether the process which operating hazardous air pollutants complies with the announced stricter standards.
 3. 21 health risk personnel that has been trained and acquired the certification were set in each plant site according to the regulations.



Air Pollution Prevention

The Company sets up prevention equipment according to the process exhaust characteristics to properly collect and treat the exhaust gas. Each discharge outlet is regularly commissioned for testing. The results are lower than the pollutant discharge standards stipulated by government regulations. Furthermore, continue to improve the existing equipment, which the newly installed gas-fired boilers in Linkou utility plant have officially put into use (coal-fired boilers were officially decommissioned in February 2021). Shulin plant has also completed the installation of a gas-fired boiler with 50 tons to respond to the policy of coal-free city in New Taipei City.



Appearance of gas-fired boilers in Linkou site



Internal Photo of the plant



Appearance of gas-fired boilers in Shulin site



50 tons gas-fired boiler

Continue to conduct rolling review of fuel type and prevention equipment performance. The key improvement in recent are as follows:

- It has changed to use gas as boiler fuel in steam-electricity cogeneration process in Chiayi (completed in December 2021), and the reduction rate of emission concentration reached over 60%

Pollutions	Before improvement	After improvement	Reduction rate
SOx	> 50ppm	<5ppm	>90%
NOx	> 100ppm	<40ppm	>60%
TSP	> 30ppm	<5ppm	>80%

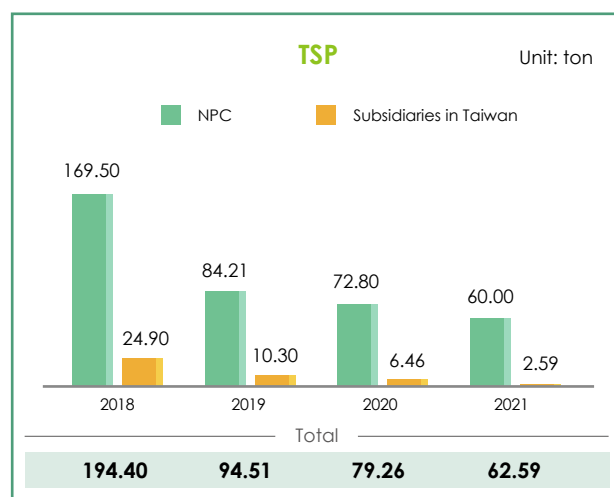
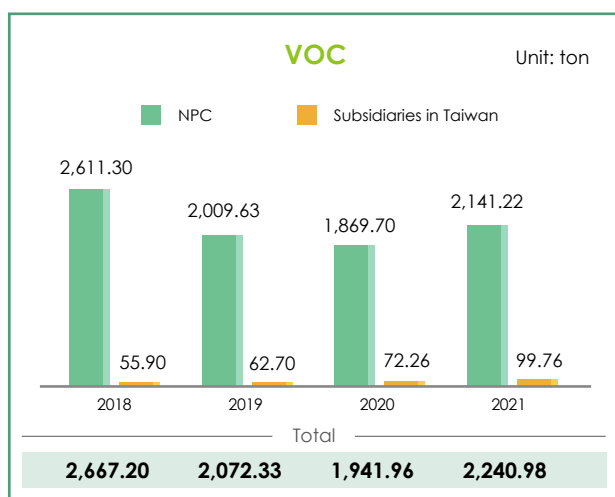
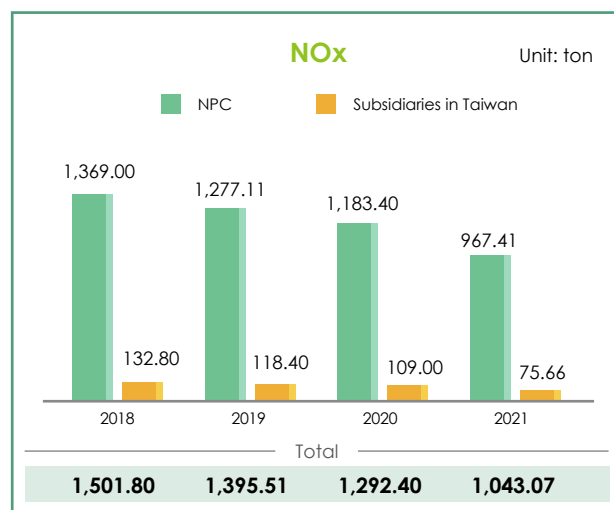
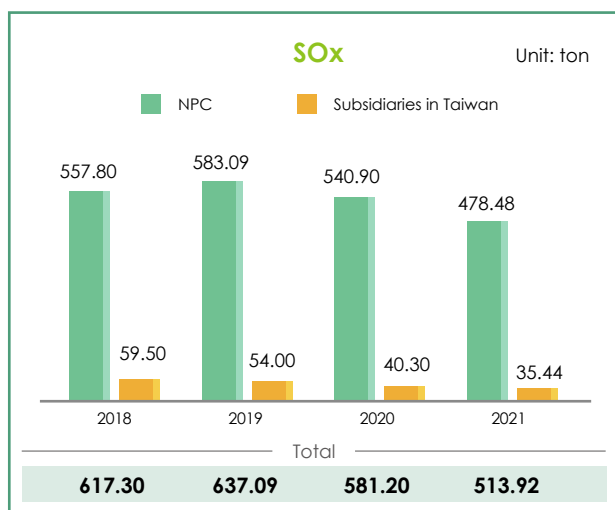


- It has changed to use methane as the fuel of coal-fired boilers and thermal oxidizers in Mailiao (expect to be completed in June 2022), and the reduction rate of emission concentration could reach over 70%

Pollutions	Before improvement	After improvement	Reduction rate
SOx	> 50ppm	<5ppm	>90%
NOx	> 100ppm	<30ppm	>70%
TSP	> 30ppm	<5ppm	>80%

- It's been under evaluated that changing to use high- efficiency catalyst to improve the operation efficiency of selective catalytic reduction equipment (SCR) in Jinxing utility plant, the emission concentration of oxides would reduce from 75 ⇩ 40ppm, with a reduction rate of 46%.

Statistics on Air Pollution Emissions



Note: Source: Stationary Pollution Source Air Pollution Fee and Emissions Reporting Management System of the Environmental Protection Administration



VOC Reduction and Odor Control

To present VOC effusion and to reduce complaints from the public regarding odors, the Company has undertaken the following practices besides regularly arranging dedicated personnel to patrol the surrounding environment:

Process optimization

Select raw materials that do not contain VOCs and reduce the number of components. (For example, change to use cold welding on dealing with threaded tube that diameter is smaller than 2 inches; The instrument capillary tubes of the equipment is replaced by mechanical tubing as the connection to the instrument to improve the tightness.)

Management improvement

Set up reminder function in the computer system maintenance to remind personnel to perform regular equipment maintenance. If a leak is found, in addition to repairing it immediately, it is necessary to self-check once a week and track it continuously for 4 weeks. Only there is no abnormality, it could be de-classification from monitoring and inspection.

Detection technology strengthening

Introduce GasFind IR infrared leak detectors to assist in shortening the timeframe required to finding possible effusion in equipment.

Hazardous Air Pollutant Management

The Company regularly entrusts testing agencies certified by the National Institute of Environmental Analysis to test the concentration of dioxin in the discharge pipes of the cogeneration coal-fired units and incinerators in accordance with regulations, and the test results all meet the standards:

- (1) The coal-fired units are inspected every 2 years, and the inspection values are all less than 1 ng-TEQ/Nm.
- (2) The incinerator is tested once a year, and the inspection values are all less than 0.1 ng-TEQ/Nm.

According to the Environmental Protection Administration's announcement "Emission Standards for Hazardous Air Pollutants from Stationary Pollution Sources" in 2021, the Company has completed the regulatory compliance check, and the actual emission concentrations of the regulated items are far below the first-phase standards. It is planned to start the compliance confirmation operation for the second-phase control standard (which would be implemented from July 2023) in 2022 and an improvement plan would propose if necessary.





3.4 Water Resource Management

Material Issues

Sustainable issues: Water Resource Management

Corresponding GRI Standards: 303 and 306 - Water, Effluents and Waste

SASB: Water management



- **Commitment and policies:** The Company promotes resource recycling of water resources, reduces wastewater discharge, and ensures that the quality of effluents and wastewater discharge meet regulatory standards such as Water Pollution Control Act.
- **Responsibilities and goals:**
 1. The Company follows the principle of waste reduction at the source and end-point control. By reducing the amount at the source at first to reduce the loading on treatment facilities, then letting the wastewater be treated by wastewater treatment plant to ensure compliance with regulatory standards to minimize environmental impact.
 2. The plants are required to propose various water-saving improvement and rainwater recycling projects to improve the water recycling efficiency.
- **Resources:**
 1. The Company checks the risk of water shortage at each plant on an annual basis by using the water resource risk evaluation from Water Resources Institute (WRI) and usable water analysis (AWARE). Various water-saving response measures are strengthened for plants with higher risks.
 2. The "Continuous Water Monitoring System (CWMS)" and "water pollution prevention management processing system" have been installed to ensure that water quality meets regulatory standards.
 3. The second phase wastewater recovery project of Haifeng wastewater treatment plant recycles 1,400 tons of wastewater per day, and use as supplementary water for cooling tower in the Haifeng plant to reduce the discharge volume of wastewater.
- **Grievance channel:** Please refer to the chapter on "Stakeholder Communications".
- **Performance evaluation methods and results:**
 1. Verification and assurance of water footprint inventories and reports are performed by external assurance institution.
 2. NPC will continue to promote process optimization, water and energy conservation improvements, and regularly convene "water and energy conservation review meetings" to review response measures and effectiveness of implementation.
 3. In 2021, A total of 66 water-saving improvement projects, which costing NT\$50 million, and saving water 897 tons/day have been completed by NPC and the subsidiaries in Taiwan to improve the water recycling efficiency.
- **Specific actions:**
 1. Coordinate companies and plants within FPG to integrate various energies and resources under the principle of circular economy.
 2. Maintain "leadership level" in Carbon Disclosure Project (CDP)'s "water security" questionnaire.
 3. Encourage employee creativity and promote IE improvement proposals by offering bonuses and incentives. The incentives are giving according to the profits of the proposal.

3.4.1 Statistics on Water Consumption

Water Management

The Company is committed to water conservation and pays close attention to the source of our water withdrawal. The Company has 9 sites throughout Taiwan, and uses mostly surface water and tap water. The total water consumption in 2021 amounted to 27,183 million liters/year, which has increased by 975 million liters compared with the 26,208 million liters in 2020, mainly due to the increase of production capacity. The sources of our water withdrawal mostly come from rivers, reservoirs, tap waters, and groundwater, etc.



Company	Plant	Water withdrawal source
NPC	Shulin	Shimen Reservoir, Dahan River, groundwater
	Linkou	Dahan River, groundwater
	Kung San	Shimen Reservoir, groundwater
	Jinxing	Taoyuan Irrigation
	Mailiao	Jiji Weir
	Chiayi	Lantan Reservoir, Zengwen Reservoir, Chianan Irrigation, groundwater
	Hsinkang	Lantan Reservoir, Zengwen Reservoir, Chianan Irrigation
	Renwu	Fengshan Reservoir and groundwater
	Linyuan	Fengshan Reservoir
NCPC	Mailiao	Jiji Weir
Nan Ya PCB	Jinxing	Taoyuan Irrigation
PFG	Hsinkang	Lantan Reservoir, Zengwen Reservoir, Chianan Irrigation

2021 Water Withdrawal Statistics (Unit: million liters/year)					
Company \ Water withdrawal source	Surface water	Well water (groundwater)	Third-party (tap water)	Others	Total
NPC	15,749	1,541	2,849	691	20,830
NCPC	1,454	0	0	47	1,501
Nan Ya PCB	0	0	4,002	213	4,215
PFG	637	0	0	0	637
Subtotal	17,840	1,541	6,851	951	27,183

Note 1: All plants are still investigating and organizing the data for the type of water drawn in 2021 (not yet verified).

Note 2: The other water sources for NPC and NCPC are water from recycled rainwater.

Note 3: The other water sources for Nan Ya PCB are transferred from NPC's Jinxing site.

Water Consumption at Jiji Weir

According to the "Jiji Weir Industrial and Public Water Supply Report" of the Industrial Development Bureau, MOEA, the annual water supply of Jiji Weir in the past four years (2018-2021) ranges from 1,750,730,000 to 5,100,060,000 tons. In 2021, the average industrial water consumption accounted for 3.4% of the total water supply, and the average diverted agricultural water usage only accounted for 2.4%. The water consumption is shown in the table below.



2018~2021 Jiji Weir Industrial and Public Water Supply Report (Unit: million tons)

Year	Inflow from the Jiji Weir	Agricultural Irrigation	Industrial consumption			
	(A)	Average Water Consumption (B)	Average Water Consumption (C)	Ratio on Volume at Water Source (C)/(A)	Diverted Agricultural Water (D)	Ratio of Total Agricultural Water Consumption (D)/(B)
2018	307,946	182,450	10,256	3.3%	3,618	2.0%
2019	510,006	189,778	9,840	1.9%	3,301	1.7%
2020	175,073	126,194	9,545	5.5%	3,500	2.8%
2021	284,714	135,989	9,726	3.4%	3,282	2.4%

The water consumption of the Mailiao Industrial Complex does not affect nearby agriculture and other industries. To prevent water shortage during the dry season, FPG prepared an environmental impact assessment (EIA) report to apply for setting up a seawater desalination plant that can produce 100,000 tons of fresh water per day. The report was approved by the EPA on October 9, 2018, and approved by the MOEA on December 26 in the same year. It is expected that the seawater desalination plant could produce fresh water by 2023.

Water Recycling

Water in the plant area is mainly used as industrial water, pure water, and steam used in the production process, and all plants have reasonably assessed their water consumption, continue to recycle and reuse water, and actively promote the resource recycling of process water, rainwater, and wastewater. Take the Mailiao site as an example. In 2021, the average rainwater collection was 699 kilotons/year (accounting for 5.7% of the water consumption at Mailiao), while wastewater recycling amounts to 237 kilotons/year. According to the water recovery rate (R2) announced by the Ministry of Economic Affairs, the water recovery rate of the Mailiao site can reach 90.8%.

Responding to Water Resource Risks

In response to the risk of water shortage from extreme weather conditions, the key promotion cases are as follows:

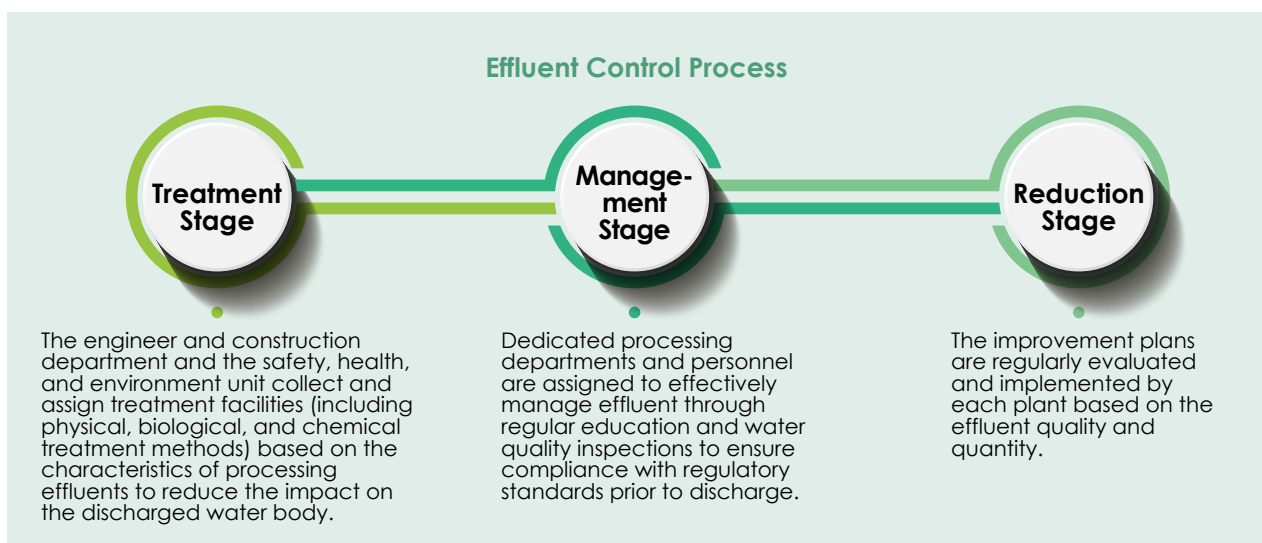
- Construct a seawater desalting plant in Mailiao Industrial Complex (constructed by FPCC): It began constructed in 2017, and expected to be completed in August 2023. The seawater desalting plant can supply about 100,000 tons of fresh water per day, providing more than 1/3 of the water in the industrial area.
- Jinxing site uses effluent water of Taoyuan Norther District Water Resource Recycle Center as the process cooling water.
- Implement circular economy, actively promote various water saving improvement projects.

Water Stress Assessment Test

When monitoring the use of water consumption, the Company also uses the water risk assessment of World Resources Institute (WRI) and Available Water Remaining (AWARE) to identify water risks and assess the impact of water stress. Water scenario simulation shows that none of the plants withdrawal water or discharge water in water stress areas (in terms of indicators such as "water stress", "water consumption", "annual variation of water supply" and "seasonal variation of water supply", the Baseline water stress rating of each plant are identified. In addition, the Company independently upgraded the management level, and continued to promote water-saving measures and improved the use of recycled water in the process according to the management intensity of water stress areas.



3.4.2 Effluent Management and Sewage Prevention



Specifications for Effluent Testing

Each site regularly commissions sampling and testing every quarter, and the processing department conducts testing at least once a day. The results all meet the national control standards. Among them, the Shulin, Mailiao, Hsinkang, and Chiayi sites have installed automatic continuous monitoring systems for water discharge (8 sets in total). The systems have real-time connections to the local competent authorities to monitor discharge volume, temperature, pH value, and conductivity (COD and SS are also measured for the Mailiao site) on a 24-hour basis. Please refer to "Prevention and Energy Conservation Performance" on NPC's website for the discharge volume from each plant.



"Prevention and Energy Conservation Performance" on NPC's website

Statistics on Wastewater Discharge

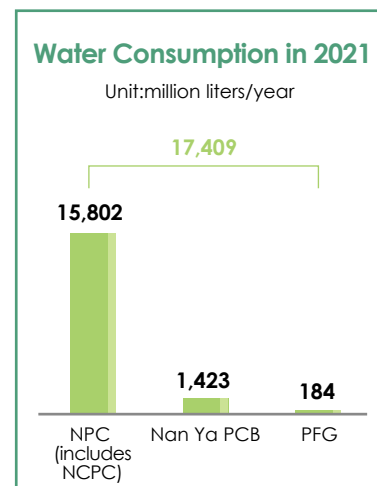
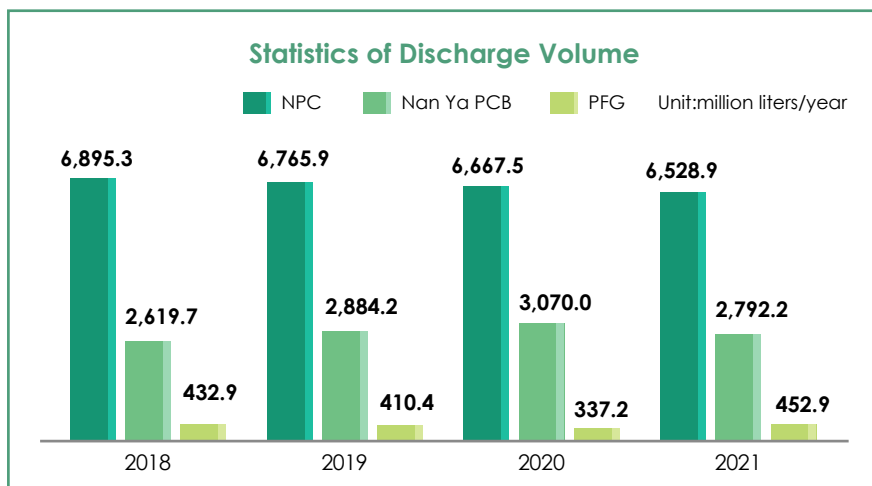
The total effluent of the Company and its subsidiaries in Taiwan in 2021 was 9,774.0 million liters; an increase of 300.7 million liters compared to 2020.

In addition, the following discharging water bodies have been designated as the total quantity control zone: Nankan River in Taoyuan (restrictions for copper) and Houjin River in Kaohsiung (restrictions for ammonia nitrogen).

Statistics on Discharge Volume in 2021 (Unit: million liters/year)				
Discharge Company	Surface water	Seawater	Third-party water	Total
NPC	1,815.0	2,883.9	1,830.0	6,528.9
Nan Ya PCB	2,792.2	0.0	0.0	2,792.2
PFG	452.9	0.0	0.0	452.9
Subtotal	5,060.1	2,883.9	1,830.0	9,774.0

Note 1: Effluents of Nan Chung Petrochemical Corp. is entrusted to the Company's Mailiao wastewater treatment plant for treatment

Note 2: The discharge water at each discharge end point in the table above is fresh water with a total dissolved solids (TDS) of 1,000 mg/L or less.



Note: Effluents of Nan Chung Petrochemical Corp. is entrusted to the Company's Mailiao wastewater treatment plant for treatment

Discharge Impact on Ecology: Ecological Preservation in Mailiao Industrial Complex

To evaluate the environmental impact and the ecological changes of nearby plants and animals of Mailiao Industrial Complex, FPG has commissioned professional institutions to investigate it over the years. According to the research results, the number of plant species is stable, and the number of animals is mostly



"Ecological Preservation"
on "The Beauty of
Mailiao Eco-industrial
Park" website

influenced by seasonal effects. The operation of Mailiao Industrial Complex brings no significant impact in the surrounding area. The average wastewater discharge of Mailiao Industrial Complex in 2020 was 73,560 tons/day, which is significantly lower than the EPA quotas 187,638 tons/day. According to the monitoring results over the years, all wastewater treatment plants strictly abide the regulations of discharging wastewater only when it meets the standards. In addition, the Chinese White Dolphins have been observed inhabiting in nearby sea area during the long-period observation of marine ecology. It shows that the operation of Mailiao Industrial Complex brings no impact on the ecology of Chinese White Dolphins.

Note: Please refer to the "Ecological Preservation" section on "The Beauty of Mailiao Eco-industrial Park" website

3.4.3 Water Conservation Performance

To ensure the effective use of water resources, the Company continues to implement measures such as process water reduction, water-saving management, and reduction of evaporation losses, as well as wastewater recycling and reuse, and strengthening rainwater collection at each plant. In 2021, a total of 66 water-saving improvement projects, costing NT\$50 million, have been completed by NPC and subsidiaries. The annual benefits of these projects are approximately NT\$5 million, and the water-saving performance is shown in the table below:



Summary of Water-Saving Implementation Status of the Company and its Subsidiaries in Taiwan

Item \ Year	1999~2019 (A)	2020 (B)	2021 (C)	In progress (D)	Total (E=A+B+C+D)
Improved Items	1,024	75	66	41	1,206
Water saved (ton/day)	40,779	1,522	897	2,599	45,797
Amount invested (NT\$100 million)	5.7	0.5	0.5	1.5	8.2
Improvement benefits (NT\$100 million/year)	2.1	0.06	0.05	0.06	2.3

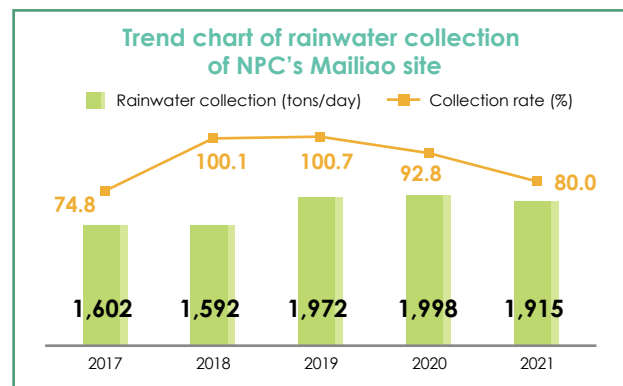
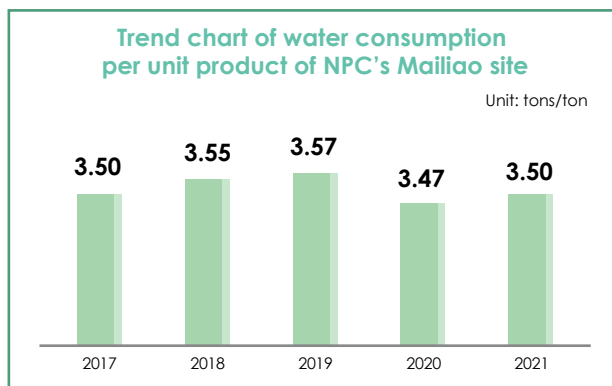
Source: FPG Water and Energy Conservation Project Database; in-progress projects are counted as ongoing improvement cases for January 2022 statistics.

Water-saving Projects and Performance in 2021

Project 1 EG-4 steam condensed water delivery to maleic anhydride (MA) plant to improve waste heat recycling Water-saving Performance 148 tons/day	Project 2 BG2 2E340 cooling water flow rate adjustment to improve water saving Water-saving Performance 96 tons/day	Project 3 BPA Plant absorption type of freezer with increased performance to improve water saving Water-saving Performance 28 tons/day
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Each plant in the Company aims to reduce water consumption per unit product by 2% compared to the previous year. However, due to the wide variety of products and different units of measurement, the water consumption of the Mailiao site, which has the largest amount of consumption, will be used for the purpose of comparison.

In 2021, the average water consumption of the Mailiao site was 33,382 tons/day, which shows a 10.1% increase from 30,312 tons/day in 2020. The water consumption per unit product was 3.498 tons/ton. This is mainly because the ORC generator of the EG-4 plant was put into use this year, the heat generated by the generator increased the evaporative loss of the cooling water tower, resulting in an increase of 0.8% in water consumption per unit product compared to 2020. In addition, the rainwater collection rate in the Mailiao site was 80.0%, and the average rainwater collection was 1,915 tons/day. The water consumption per unit product and rainwater collection of the Mailiao site are as follows:



Note:

- (1) Amount of rainwater collection = [amount of rainwater collected from each plant in Mailiao] / [number of days in the month].
- (2) Collection rate = [(rainwater collection ton/day) x (number of days in the month)] / [(monthly average rainfall from weather data mm/month) x (rainwater collection area of each plant) x coefficient of run-off]
- (3) Coefficient runoff = Strata, porous 0.2; Strata, impervious 0.8; therefore, the collection rate could be greater than 100%



3.4.4 Soil and Groundwater Management

To effectively manage the quality of soil and groundwater, groundwater monitoring operations have been carried out quarterly since the construction of the plant. To ensure that leakage incidents can be kept under control as soon as possible, after consulting the Soil and Groundwater Remediation Process of the Industrial Bureau of the Ministry of Economic Affairs as well as US experts, the Company has set up "Soil and Groundwater Pollution Remediation and Inspection Management Plan" to manage known pollution and potential pollution.

The groundwater monitoring results of the plant in 2021 all met the standards, and the implementation frequency is as follows:

- Monitoring is carried out biennially in the Shulin site, Kung San site, Linkou site, and Jinxing site : The sampling was only carried out in Shulin site this year, and no abnormality was found in 25 inspection locations.
- Monitoring is carried out once every quarter at the Mailiao site : A total of 40 samplings are carried out each time, and no abnormality was found this year.
- Monitoring is carried out every six months at the Hsinkang site : A total of 7 samplings are carried out each time, and no abnormality was found this year.

3.5 Waste Management and Circular Economy

3.5.1 Waste Management Material Issues

Sustainable issues: Waste Management
Corresponding GRI Standards: 306 - Waste
SASB: Hazardous Waste Management



- **Commitment and policies:** Environmental impact is reduced through source reduction and resource recovery. And phase management is applied to make sure the process all comply with laws and regulations.
- **Responsibilities:** Management responsibilities are divided into plant divisions, manager's office, Safety and Health Department, and the President's Office based on respective roles and responsibilities.
- **Goals:** Implement rolling review of waste reduction, making the recycling ratio more than 80% to ensure that no environmental laws related to waste disposal/clearance are violated.
- **Resources:**
 - 1.Environmental protection personnel are set up at each division to undertake day-to-day management and relevant reductions.
 - 2.The Safety and Health department is in charge of external coordination.
- **Grievance channel:** Please refer to the chapter on "Stakeholder Communications".
- **Performance evaluation methods and results:**
 - 1.Evaluation method:
 - Internal audit: Dedicated personnel will regularly conduct daily inspections at each plant. The management department will perform inspection tasks based on annual plans.
 - Waste disposal tracking: waste-generating department will visit the outsourced waste disposal vendor at least once a year.
 - 2.Results:
 - The Company's total waste in 2021 amounted to 158,021.6 tons, of which approximately 83% was recycled.
 - Completed a total of 332 verification of waste disposal tracking in accordance with statutory requirements
 - 0 violations for laws related to waste in 2022
- **Specific actions:** All plants and divisions will regularly review and formulate reduction projects based on their processing characteristics, and the safety and health department will monitor their implementation results with corresponding departments.



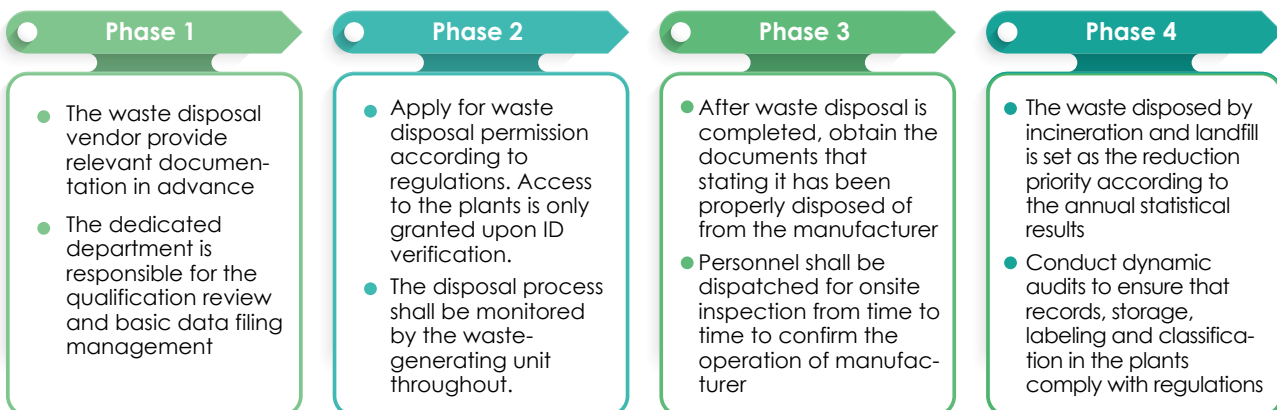
Waste Impact Assessment and Management Process

The Company identifies probable impact sources based on the operation and production process, and manage in accordance with the waste-related laws and regulations of Environmental Protection Agency, the waste disposal plan approved by the competent authority, and the "Management Regulations of Business Waste" formulated by FPG Group.

The general and hazardous wastes are mostly managed by the output department, and the manufacturers with qualified environmental protection licenses are entrusted to carry out the removal and disposal of wastes. Meanwhile, management measures of internal-audit for waste removal is established to ensure that all business wastes are properly addressed by the waste removal manufacturers.

In 2021, 332 verification of waste disposal tracking were completed in accordance with statutory requirements, and there was no abnormality in which wastes were arbitrarily disposed by the waste removal manufacturers.

Identification for Material Impact				
Item	Supplies of raw materials	Production Process		Shipping
		Product manufacturing	Pollution prevention (includes equipment maintenance)	
Description of impact source	<ul style="list-style-type: none"> Container of raw materials (e.g. flexible freight bags, 53 gallon barrels, etc.) 	<ul style="list-style-type: none"> Impurities in the chemical reactions Residues after raw materials are mixed and used Leftovers from the cutting process 	<ul style="list-style-type: none"> Resultant of wastewater treatment Resultant of electrostatic dust collection, flue-gas desulfurization, and denitrification Resultant of flue-gas desulfurization and denitrification Waste products from replacement of insulation materials and building renovations Engineering waste generated after annual repairs and maintenance 	<ul style="list-style-type: none"> Containers of products (e.g. pallets, 53 packaging bags, etc.) Replacement of product for it has reached the useful life



Statistics on Waste Disposal

In 2021, NPC and subsidiaries in Taiwan have cumulatively generated 158,021.6 tons of waste, in which 83% of which was recycled (the ratio of incineration includes energy recovered, reused, and recycled, among the total waste). Hazardous and general waste is classified as follows:

Statistics on Hazardous Industrial Waste Disposal (Unit: Ton)					
Company	Landfill	Incineration		Reused	Recycled
		Excluding energy recovery	Including energy recovery		
The Company	1,698.6	496.0	10.9	0.0	3,817.8
Subsidiaries in Taiwan	322.7	84.3	0.0	0.0	16,934.7
Subtotal	2,021.3	597.2	0.0	0.0	20,752.5
Total			23,371.0		



Statistics on General Industrial Waste Disposal (Unit: Ton)					
Company	Landfill	Incineration		Reused	Recycled
		Excluding energy recovery	Including energy recovery		
The Company	10,994.4	4,797.0	5,315.1	49.9	101,711.6
Subsidiaries in Taiwan	913.7	1,632.6	36.8	0.0	9,199.5
Subtotal	11,908.1	6,429.6	5,351.9	49.9	110,911.1
Total			134,650.6		

Item		Hazardous Industrial Waste (Unit: Ton)		General Industrial Waste (Unit: Ton)	
Disposal Method		On-site disposal	Offsite disposal	On-site disposal	Offsite disposal
Volume of waste treated	The Company	10.9	6,012.4	16,272.3	106,595.7
	Subsidiaries in Taiwan	0.0	17,341.7	843.7	10,938.9
	Subtotal		23,371.0		134,650.6
Total			158,021.6		

3.5.2 Circular Economy Promotion

Material Issues

Sustainable issues: Circular Economy Promotion

Corresponding GRI Standards: 303- Water and Effluents, 306 - Waste



- **Commitment and policies:** Circular economy such as water saving, energy saving, and waste reduction, etc. is the goal that the Company hopes to achieve when implementing various environmental protection measures. The Company will continue to actively promote various circular economy measures, so that environmental protection and economy could be developed soundly at the same time.
- **Responsibilities:** Proposed by each business division, and summarized by the Resource Recycling Department
- **Goals:** Continue to promote circular economy such as energy saving and emissions reduction
- **Resources:** Each business division is responsible for submitting improvement proposals associated with circular economy, and implementing after they were approved
- **Grievance channel:** Please refer to the chapter on "Stakeholder Communications".
- **Performance evaluation methods and results:**
 1. Evaluation method:
 - Mutual Observation Meetings and Presentations on Improvement Cases Selection of Excellent Environmental Management Plant of Formosa Plastics Group
 - Commendation Conference of Excellent Department on Energy Conservation, Carbon Reduction and Circular Economy Promotion in Mailiao Industrial Complex
 2. Results:
 - The INA plant won first prize in the "2021 Excellent Department on Energy Conservation, Carbon Reduction and Circular Economy Promotion in Mailiao Industrial Complex".
 - The BPA plant III won second prize in the "2021 Excellent Department on Energy Conservation, Carbon Reduction and Circular Economy Promotion in Mailiao Industrial Complex".
- **Specific actions:** NPC improved the air pollution of catalytic thermal oxidizers in PA plant. The fuel consumption reduced from 258 kg/h to 134 kg/h. In addition, the combustion effect is more complete due to the increase in temperature, the catalytic conversion efficiency is increased by 0.3% (99% ↗ 99.3%), and the VOCs emission is reduced.



The four major companies of Formosa Plastics Group (FPG) work together on integrating resources, and improving the effectiveness of energy saving and water saving by establishing the energy conservation and carbon reduction promotion groups. To encourage all units to implement improvement projects on energy-saving, carbon reduction and circular economy, the Company holds the presentations and mutual observation meetings on excellent cases of energy saving, water saving and environmental protection every year in cooperation with domestic universities.

Promotion Strategies

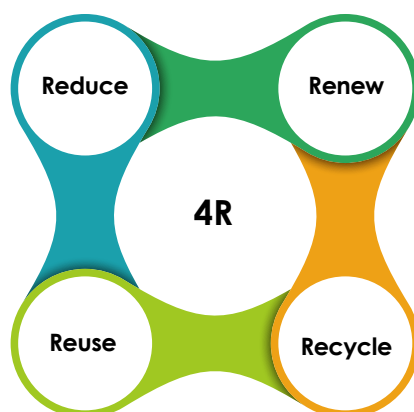
Regarding the four aspects of raw materials, water cycling, energy cycling and waste recycling, the Company reviews and actively promotes various improvement measures based on the 4R (reuse, reduce, recycle and renew) principles of circular economy: and actively promotes various improvement operations:

Reduce

- Reduction in use of raw materials
- Reduction in use of energies (improvements on energy saving and water saving)
- Reduce waste generation

Reuse

- Recycle and reuse every energy and resource in the process
- Cross-plant integration of energy and resource
- Reuse low-level energy



Renew

- Development of green products
- Development of energy-saving products
- Development of biodegradable products
- Application of carbon capture technology

Recycle

- Waste recycling
- Development of recycled products

Results of Promotion

To urge all units to strive to improve the effectiveness of energy saving, carbon reduction and circular economy, the Company not only holds the commendation conference for excellent plant, but also holds presentations on excellent cases of energy saving, water saving and environmental protection in cooperation with domestic universities.

2021.10.26

Location

2021 Commendation Conference of Excellent Department on Energy Conservation, Carbon Reduction and Circular Economy Promotion was hold by Mailiao Industrial Complex

Key achievements

- The INA plant won first prize in the "2021 Excellent Department on Energy Conservation, Carbon Reduction and Circular Economy Promotion in Mailiao Industrial Complex".
- The BPA plant III won second prize in the "2021 Excellent Department on Energy Conservation, Carbon Reduction and Circular Economy Promotion in Mailiao Industrial Complex".

2021.11.30

Location

Mutual Observation Meetings and Presentations on Improvement Cases Selection of Excellent Environmental Management Plant of Formosa Plastics Group was hold in National Cheng Kung University

Key achievements

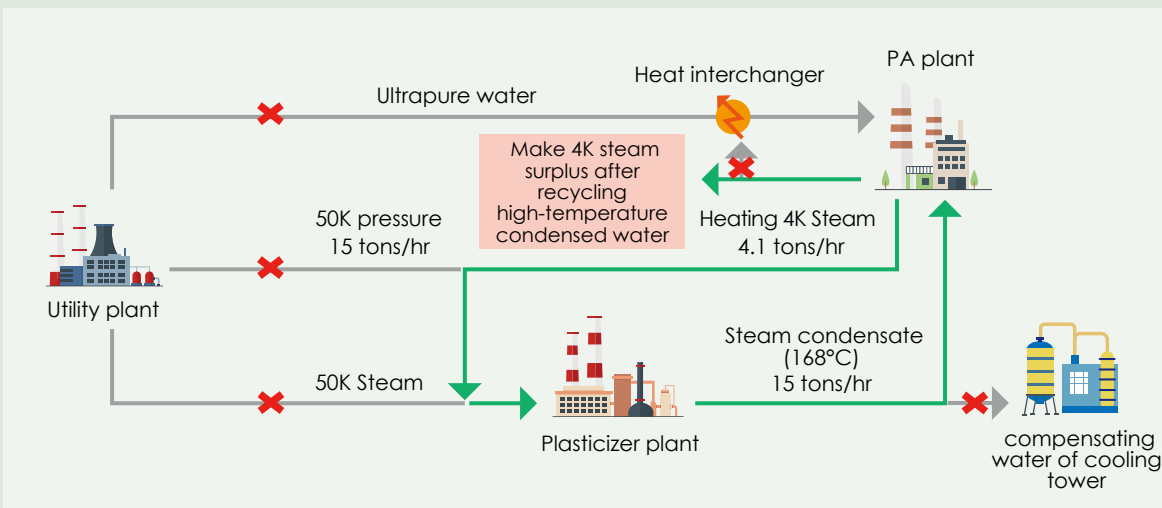
- The Company's PA plant of petrochemicals 1st division won the second place for "improvement on air pollution reduction of catalyst incinerator".
- The Company's polyester fiber division presented the case of "waste plastic recycling"

Circular Economy Practices

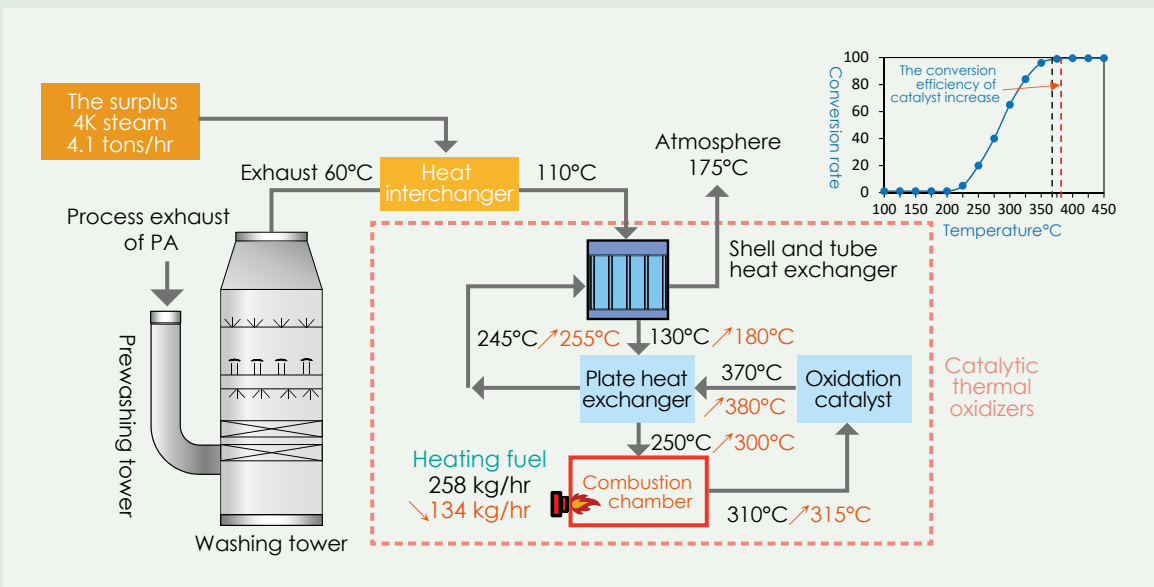
Improvement on air pollution reduction of catalyst incinerator in PA plant of NPC

After evaluated based on the 4R principles, it is proposed to reduce the fuel consumption of catalytic thermal oxidizers and reduce air pollutant emissions through two stages, as explained below:

【Stage I: Recycle】



【Stage II: Reduction】



1. The PA plant produces surplus steam by making oxidation reaction. The 50K steam is then piped to the plasticizer plant. After being used in the process of plasticizer plant, the steam condensate is returned to the PA plant for using in the boiler water system, which can save 4.1 tons/hour of 4K steam for preheating ultrapure water.
2. A heat exchanger is installed at the outlet for exhaust of the washing tower, and the surplus 4K steam is piped into the heat exchanger to serve as a heat source for preheating the process exhaust. Therefore, the temperature of process exhaust is increased from 60°C/↑110°C, and the inlet temperature of combustion chamber is increased from 250°C/↑300°C. After the improvement, the heat required by the heat of combustion is reduced (the temperature difference is reduced), and the fuel consumption is reduced from 258 kg/hr\134 kg/hr. In addition, the combustion become more complete as the temperature is raised, and conversion efficiency of catalyst is increased by 0.3% (99%/↑99.3%), leading to a reduction in VOCs emissions.



3.6 Controlled Chemical Substance Management

Material Issues

Corresponding GRI Standards: none



- **Commitment and policies:** To comply with statutory requirements, operating divisions must receive letters of approval from the competent authority before commencing operation. Moreover, drills should be conducted in line with hazard prevention and response plans.
- **Responsibilities:** Management responsibilities are divided into plant divisions, materials department, manager's office, Safety, Health and Environment Department, and the President's Office based on respective roles and responsibilities.
- **Goals:** Conduct controlled chemical substance management in line with the laws; all plants should regularly carry out drills and ensure that no penalties related to controlled chemical substances are received.
- **Resources:** 1.Environmental protection personnel are set up at each division to undertake day-to-day management.
2.The Safety and Health Department is in charge of external coordination.
- **Grievance channel:** Please refer to the chapter on "Stakeholder Communications".
- **Performance evaluation methods and results:**
 1. Evaluation method:
 - Internal audit: Dedicated personnel will regularly conduct daily inspections at each plant. The management department will perform inspection tasks based on annual plans.
 - Plant inspection: 1 emergency response topic will be formulated for every month, and relevant practice drills will be carried out by the plants on a rotational basis. Feedback and comments will be shared.
 2. Results: 50 emergency drills were organized. No violations on controlled chemical substance in 2021.
- **Specific actions:**
 1. Before producing or using chemical substances, it is necessary to confirm the necessity of implementing MOC change procedures and review the hazard of chemical substances, the perfection of existing protection, SOP revision and compliance with relevant laws and regulations, etc.
 2. It is planned to send 107 person to participate in the training of "Professional Responders of Toxic and Controlled Chemical Substance " and obtain certificates (expected completion date: the end of June 2023)

Management for Using Controlled Chemical Substance

With regard to the handling of chemical substances of NPC, there are 51 chemical substances which are classified as controlled chemical substance by the Environmental Protection Agency (of which 16 chemical substances are handling in small quantities and only used for laboratory research and testing). In order to make production, use, storage and transportation under safety control, the handling sites and facilities of controlled chemical substances in each plant are all operate properly, factors such as regulatory compliance, operational risks and disaster prevention have been taken into consideration before use. In addition to obtaining approval documents from the competent authority in accordance with regulations, reported operations, pipeline marking, etc. are included in the self-inspection items of each department.

Safety Management of Controlled Chemical Substance

- Hazard prevention, emergency response plans and emergency response drills (including unscheduled tests)

Each plant evaluates possible disaster losses by implementing PHA analysis, formulates "rescue specifications" with reference to the "SDS Data Sheet", and regularly reviews the appropriateness of the contents of the "hazard prevention and emergency response plan".

Continue to conduct unscheduled tests and overall drills, and cooperate with county and city authorities to conduct large-scale observation drills. In 2021, a total of 27 emergency response drills for EPA-controlled chemical substances have been conducted, including simulated notification, evacuation, disposal, and follow-up actions. The training focuses are as follows:

- (1)Familiar with the process of emergency response drill.
- (2)Strengthen the use of emergency response equipment and protective equipment.



- Disaster drill for toxic chemical substances in 2021

April 2021	September 2021	October 2021	October 2021
Location: Mailliao site Topic: Unscheduled test of union disaster prevention and protection for toxic chemical substances	Location: Mailliao site Topic: 2021 disaster prevention and protection drill of Yulin County	Location: Shulin site Topic: 2021 mutual aid group drill of disaster prevention and protection for toxic chemical substances of New Taipei City	Location: Mailliao site Topic: Simulated drill of toxic chemical substances leaking in nighttime

- External-training for professional emergency response personnel. To comply with the "Regulations on the Management of Emergency Responders of the Toxic and Concerned Chemical Substances" of Environmental Protection Agency, a total of 107 people has been scheduled to participate in the training according to the types of controlled chemical substances handling in each process and the evaluation results of the maximum daily handling volume from 2021 (12 people are specialist level, 12 people are incident commander level, 43 people are technician level, 27 people are operations level, 13 people are awareness level); The goal is to complete all training and personnel registration before 2023/7/1.

Green Chemistry Promotion

On November 30, 2021, the Company accepted an exclusive interview of "Green Program" with the Toxic and Chemical Substances Bureau to explain the Company's promotion and research and development of Non-Phthalates, such as technology of hydrogenating DEHP and DINP into DHEH and DHIN respectively. In addition, and the Company has been researching and developing environmentally friendly plasticizer, DINT since October 2015, the development was approved by the Environmental Protection Agency for New Chemical Substances Standard Registration Level 3 in October 2021.

3.7 Environmental Compliance

The Company and its subsidiaries in Taiwan did not experience any significant spills in 2021. However, 3 environmental protection tickets were received. The main reasons were:

- (1) Odor pollution caused by fire which generated from industrial safety incidents.
- (2) Insufficient personnel education and training, resulting in failure to record on time.

The goal of reducing the number of violations to 50% or less (≤ 1) wasn't achieved. After reviewing the reason of violation, the improvements are as follows:

- (1) For fire-prone areas, strengthen existing fire-fighting systems and dismantle structures that may affect disaster relief to reduce the risk of occurrence.
- (2) Collect abnormal events to use as teaching materials, which would be promoted in each plant site. And require environmental protection personnel of each plant to serve as seed teachers to ensure that people in their responsible area can learn the key points of laws and regulations associated with environmental protection.

Type	2018	2019	2020	2021
Air Pollution	6 cases/NT\$600,000	2 cases/NT\$200,000	2 cases/NT\$200,000	1 case/NT\$450,000
Water Pollution	1 case/NT\$105,000	0 cases/NT\$0	0 cases/NT\$0	2 cases/NT\$40,000
Waste Pollution	1 case/NT\$6,000	0 cases/NT\$0	1 case/NT\$6,000	0 cases/NT\$0
Others	0 cases/NT\$0	0 cases/NT\$0	0 cases/NT\$0	0 cases/NT\$0
Total	8 cases/NT\$711,000	2 cases/NT\$200,000	3 cases/NT\$206,000	3 cases/NT\$490,000

Note: An additional 2 penalty cases are being appealed.



4

Creating a Happy and Safe Workplace





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Employees are critical to a company's sustainable development. NPC strives to provide a safe and secure workplace environment and uses diverse channels to care for our employees' physical and mental well-being. We are committed to enhancing employees' safety awareness and to building a company that our employees would be proud of.

Strategy	United Nations Sustainable Development Goals (SDGs)
<ul style="list-style-type: none"> ■ Caring for employees' health - enhancing the quality of workplace environment and maintaining the physical and mental well-being of all employees ■ Formulating a culture of safety and health - implementing process safety and health management at each rank to prevent occupational hazards 	
Sustainability issues	
Employee benefits and salaries, occupational health and safety, industrial and public safety	

2021 Implementations (○ Did not meet the goals ✓ Goals met ★ Exceeded expectations)

 <p>Caring for Employees' Health</p>	2021 Goals <ul style="list-style-type: none"> ● Continue to organize interviews and seminars for new employees and actively care for and assist employees to solve problems so as to retain talents ● Continue to provide comprehensive training, smooth promotion channels for employees, and to build a safe and positive workplace environment ● Compile lists of abnormal health cases across each division to understand and manage high-risk individuals ● Continue to organize health promotional activities to reduce the occurrence rate of employees' occupational injuries and sick leaves to achieve the goal of employees' self-health management 	2021 Implementations <ul style="list-style-type: none"> ✓ In response to COVID-19, 599 online interviews were conducted for new recruits and got 190 feedback for the online opinion survey ✓ Average employee training hours in 2021 reached approximately 46 hours/person, and promotion exam opportunities were offered to qualified personnel ✓ Actively monitored employees with chronic diseases/poor control and worked with supervisors to care for these individuals ✓ Health promotional activities organized in 2021 with 2,810 participants
	Short-term Goals (2022 Goals) <ul style="list-style-type: none"> ● Provide competitive salaries and benefits, comprehensive training, and smooth promotion channels for employees ● Care for employees' physical and mental well-being and to provide a positive workplace environment 	Medium- and Long-term <ul style="list-style-type: none"> ● Provide competitive salaries and benefits, comprehensive training, and smooth promotion channels for employees ● Care for employees' physical and mental well-being and to provide a positive workplace environment
 <p>Formulating a Safety and Health Culture</p>	2021 Goals <ul style="list-style-type: none"> ● Continue to promote digital optimization of work safety, fire prevention, and PSM procedures ● Zero occupational injuries; zero accidents 	2021 Implementations <ul style="list-style-type: none"> ★ Implement Digital optimization for industrial safety, fire protection, and PSM management operations to improve operational efficiency and strengthen on-site management functions ○ In 2021, there was no fatal occupational incident, disabling frequency rate (FR) was 0.22, disabling severity rate (SR) was 3, frequency-severity indicator (FSI) was 0.02. Although the Company didn't reach its goal, the overall performance has improved compared with 2020, and it is planned to continue to strengthen the management
	Short-term Goals (2022 Goals) <ul style="list-style-type: none"> ● Continue to promote digital optimization of work safety, fire prevention, and PSM procedures ● No fatal occupational incidents, work safety incidents <6; zero accidents 	Medium- and Long-term <ul style="list-style-type: none"> ● Zero occupational injuries; zero accidents



4.1 Human Rights Protection and Employment

4.1.1 Human Rights Policy

The Company supports and abides by the fundamental principles on human rights, including the "United Nations' Universal Declaration of Human Rights," the "International Covenant on Civil and Political Rights" (ICCPR), and the "International Covenant on Economic, Social and Cultural Rights" (ICESCR), along with the local laws and regulations where we operate. Additionally, to protect current employees (including contractual and part-time workers), the Company has also formulated "NPC Human Rights Policy". Please refer to "Human Rights Policy and Specific Practices" on NPC's website.

In addition, the Company promoted the education and training of "human rights policy" in 2021, with a total of 6,199 people trained, and a total of 3,100 training hours.



"Human Rights Policy and Specific Practices" on NPC's website

4.1.2 Employment

The Company's recruitment process has always been fair, just, and impartial. The candidates are hired based on their qualifications while fully abiding by the provisions of the Labor Standards Act. Child labor has never been employed. In addition, we only take individual professional competencies and experience into consideration based on the human rights principle of equal employment opportunities. The promotions, evaluations, training, rewards, and disciplines are clearly specified and standardized for all employees after recruitment, so that all employees enjoy fair treatment. There were no violations of human rights or discrimination in 2021.

Age and Regional Distribution of New Employees of NPC and Subsidiaries in Taiwan in 2021 (Unit: Person)			
Type	Division	Female	Male
Age	Under 29	168	908
	30-39	66	310
	40-49	18	64
	50-59	0	1
	Over 60	0	1
Region	Northern Taiwan	182	763
	Central Taiwan	0	84
	Southern Taiwan	70	437
Total		252	1,284
Proportion of New Employees		6.9%	8.8%

Note: Ratio of new employees is calculated by the number of new employees for a particular gender divided by the total number of people of the same gender.

4.1.3 Workforce Structure

In 2021, the Company and its subsidiaries in Taiwan employed a total of 19,400 employees, of which 95% were Taiwanese citizens. 94% were full-time staff, 6% were contractors. 480 were from outsourced companies, including 286 males and 194 females, all of whom were Taiwanese nationals. Based on the analysis of the composition structure of all national full-time employees, the ratio of male and female is approximately 4:1 (of which, Non-production departments is 3.78:1, production departments is 4.36:1). The average age is 45.6 years old, and the average years of service is 20.6 years, including 180 persons with disabilities, accounting for 1.0% of the total full-time employees.



Workforce Structure of NPC and Subsidiaries in Taiwan in 2021 (Unit: Person)						
Type	Division	Female		Male		Total
		Number of employees	Proportion of the group	Number of employees	Proportion of the group	
Title	Executive and above	2	0.1%	59	0.5%	61
	First-, second-level supervisors	93	3.2%	1,986	16.1%	2,079
	Entry-level supervisors and entry-level personnel	3,539	96.7%	12,523	83.4%	16,062
Workplace location	Northern Taiwan	2,660	58.6%	8,176	44.2%	10,836
	Central Taiwan	61	3.2%	1,472	13.7%	1,533
	Southern Taiwan	913	38.2%	4,920	42.1%	5,833
Age	Under 29	368	11.3%	2,057	15.2%	2,425
	30-39	502	9.4%	2,659	17.2%	3,161
	40-49	1,819	43.7%	4,599	24.1%	6,418
	50-59	818	29.8%	4,179	33.8%	4,997
	Over 60	127	5.8%	1,074	9.7%	1,201
Length of service	Less than 10 years	678	18.7%	4,409	32.7%	5,087
	11 to 20 years	626	8.0%	2,025	5.5%	2,651
	21 to 30 years	1,692	44.4%	5,650	39.4%	7,342
	Over 30 years	638	28.9%	2,484	22.4%	3,122
Education	Ph.D.	0	0.0%	31	0.3%	31
	Master's degree	106	3.2%	847	6.1%	953
	Bachelor's degree	173	4.6%	1,796	13.4%	1,969
	Others	3,355	92.2%	11,894	80.2%	15,249
Gender subtotal		3,634	100%	14,568	100%	18,202

Note: This table is based on the number of full-time employees as of December 31, 2021.

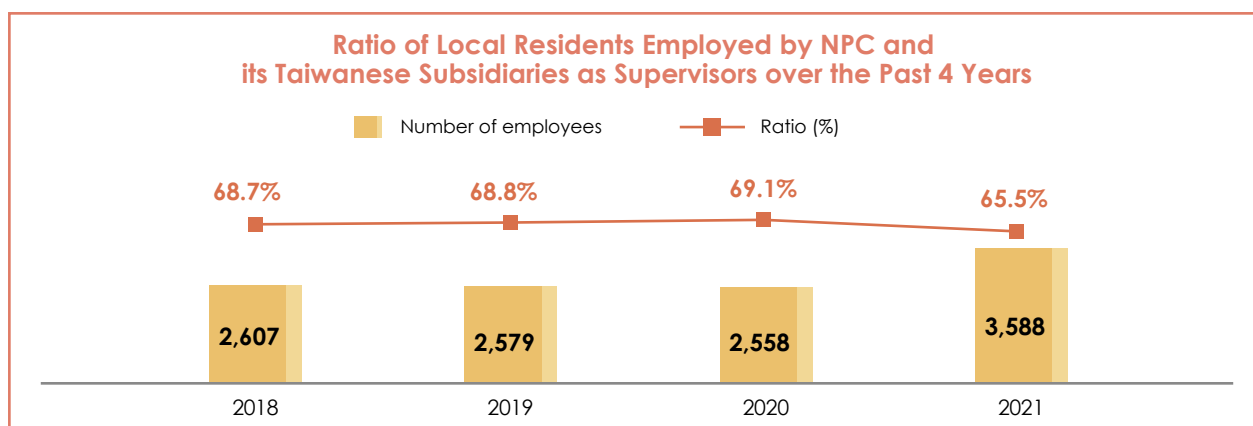
Contractor Manpower Structure of NPC and Subsidiaries in Taiwan in 2021 (Unit: Person)		
Title	Female	Male
Consultant	4	10
Regular contract workers	29	67
Foreign workers	486	576
Interns	8	18
Gender subtotal	527	671
Total	1,198	

Note: This table is based on the number of contracted workers as of December 31, 2021.



4.1.4 Ratio of Local Supervisors

To give back to the local communities, the Company and its subsidiaries in Taiwan have prioritized local residents when recruiting entry-level employees. In addition, the Company also actively develops local residents to become outstanding senior employees. Moreover, supervisors across all ranks are Taiwanese citizens and have been trained and developed internally to boost employee morale. The Company has maintained a 60% or above ratio of recruiting local residents as entry-level supervisors (inclusive) or above for the past four years.



4.2 Employee Rights and Benefits

Material Issue

Sustainable issues: Employee benefits and remuneration

Corresponding GRI Standards: 202 Market Presence; 401 Employment; 405 Diversity and Equal Opportunity



- **Commitment and policies:** The Company has formulated human rights policy, complies with relevant laws and regulations, protects the basic human rights of employees, and provides competitive pay and a sound management system to employees. In addition, we also offer solid training, smooth promotions and grievance channels, and welcome quality personnel from all walks of life.
- **Responsibilities:** HR department
- **Goals:** Continue to organize recruitment activities and to execute the "Personnel Counseling System" and training across all stages, and to provide comprehensive compensations, benefits measures, and promotion system.
- **Resources:** To provide stable and competitive compensations and well-rounded training and promotion/development systems, as well as comprehensive benefit measures.
- **Grievance channel:**
 1. Labor union (labor-management meetings), and Employee Welfare Committee, etc.
 2. Physical and online opinion mailboxes and "799" hotline have been set up across all operations.
- **Performance evaluation methods:** Annual Report and Sustainability Report.
- **Evaluation results:**
 1. NPC offers higher minimum wage than the statutory requirement, and the ratio of basic wages for men and women at the same ranks and positions is 1:1.
 2. NPC offers many benefit measures that are more competitive than statutory requirements.
- **Specific actions:** Labor and management can achieve adequate communications via organizations, such as labor unions and the Employee Welfare Committee.



4.2.1 Employee Remuneration

The remuneration given by the Company is better than the local minimum wage. Moreover, the remuneration is all above industry-average standards in order to attract and retain talent. In 2021, the Company's average employment cost is NT\$1,533,800, and the average annual salary adjustment in the past 10 years is about 3.03%. If a fixed amount of bonus is added, the total salary adjustment would reach 3.82%.

(1) Average and Median Remuneration

In 2021, the number of full-time employees who do not serve as manager and their average and median remuneration are as follows:

Year	2018	2019	2020	2021
Number of employees who do not serve as manager (person)	11,672	11,954	12,232	12,035
Average remuneration of employees who do not serve as manager (NT\$ thousand/year)	1,343	1,281	1,197	1,410
Median remuneration of employees who do not serve as manager (NT\$ thousand/year)	1,274	1,219	1,132	1,369

Note: The calculation scope of remuneration is mainly based on the employees in Taiwan.

(2) Ratio of Remuneration for Female and Male Employees

The remuneration standard of new employees is determined according to the qualifications required for the position, such as education and work experience. The basic salary ratio of female and male employees of at same position and grade is 1:1. After being hired, the salary and grade will be adjusted year by year according to their work performance, and the corresponding remuneration will be given.

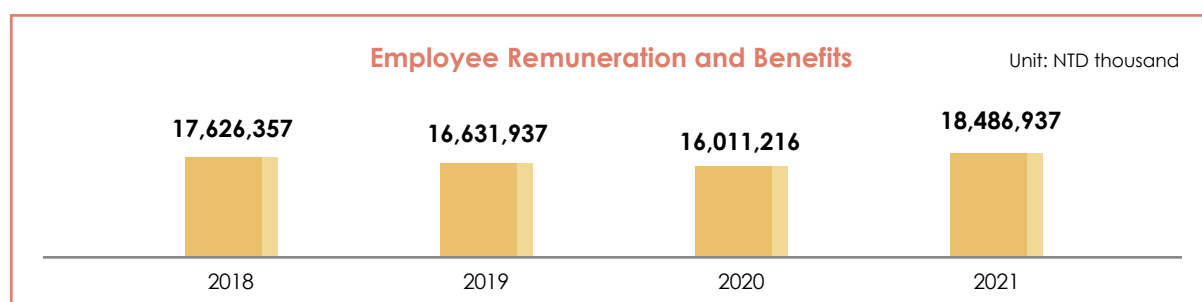
Remuneration Ratio for Female and Male Employees of the Same Position at NPC and Subsidiaries in Taiwan			
Second-level supervisors (inclusive) and above	Female	1	Male 1.22
Entry-level supervisors (inclusive) and below	Female	1	Male 1.27

Note: In 2021, the number of male employees was higher than that of female employees. The difference in the gender ratio of those who are second-level supervisors (inclusive) and above is due to the difference in seniority, and the difference in the gender ratio of those who are entry-level supervisors (inclusive) and below is due to the fact that most of the shift workers who receive shift allowances are male.

Minimum wage of basic level employee	Local minimum wage	Ratio of standard wage of basic level employee and local minimum wage
Male 39,194	Male 25,250	Male 1.55
Female 31,310	Female 25,250	Female 1.24

Note: The statutory minimum monthly basic wage for 2022 promulgated by the government in 2021 is NT\$25,250.

(3) Remuneration and Benefits





Stable Pension System

In terms of retirement protection, the Company allocates monthly contributions to dedicated pension accounts based on the employees' selection of the new or old pension scheme. This helps to ensure that the Company is able to provide pensions to employees when they meet the statutory conditions of retirement:

Old scheme (those who choose the retirement system under "Labor Standards Act")

4% of the total monthly wage will be deposited into a dedicated account at the Bank of Taiwan. In 2021, the cumulative labor pension reserve has reached NT\$4,877,939,000.

New scheme (those who choose the retirement system under "Labor Pension Act")

6% of the employee's individual salary is deposited to the personal pension account of the employee. In 2021, the cumulative pension that was contributed by the Company was NT\$2,540,582,000. And the cumulative pension that were voluntarily contributed in 2021 was NT\$1,098,037,000.

4.2.2 Job Security

The Company provides a safe and secure career for its employees. An integrated manpower mechanism that replaces staff dismissal with transfer has been formulated. When an employee is deemed as underqualified for his/her job, the person's department head will first communicate with the person before the person is counseled, transferred, or dismissed. Moreover, all relevant procedures are carried out in line with the Labor Standards Act and applicable laws and regulations. In 2021, the internal transfer ratio of employees was 14%. It is expected to let employees serve in positions that allow them to reach their full potential to achieve the purpose of flexible utilization of manpower.

The monthly average voluntary turnover rate of the Company and its subsidiaries in Taiwan in 2021 was 0.13%, while the absence rate was 0.36% (absence rate calculation takes sick leave, official leave, and occupational injury leave into account, of which males accounted for 0.36% and females 0.36%). The absence rate of outsourced employees was 0.1% (of which males accounted for 0.1%, and females 0.1%). These data fully demonstrate the Company's performance in caring for its employees and protecting their job security, as well as the employees' trust and sense of belonging.

Age and Regional Distribution of Employee Turnover of NPC and Subsidiaries in Taiwan in 2021
(Unit: Person)

Type	Division	Female	Male
Age	Under 29	48	209
	30-39	47	115
	40-49	25	95
	50-59	24	154
	Over 60	7	89
	Retirement	14	126
Region	Northern Taiwan	119	470
	Central Taiwan	0	51
	Southern Taiwan	46	267
Total		165	788
Turnover Rate		4.5%	5.4%

Note 1: The turnover rate in the table above includes retired and dismissed personnel.

Note 2: Turnover rate is calculated by dividing the number of turnover of a gender from the total number of people of the same gender.



4.2.3 Employee Benefits and Care

To let all full-time employees work with peace of mind and to fully unleash his/her expertise, the Company continues to treat employees like family. Basic food, accommodations, and recreational facilities have been planned right from the beginning of building each plant. Moreover, various comprehensive benefit systems have also been planned with the employees' long-term welfare in mind.

The Company has implemented a number of employee benefits and incentive measures that are superior to statutory requirements, including:



For more details of benefits and care, please refer to "Employee Benefits" on NPC's website

Occupational Benefits

- Vacation benefits
- Insurance benefits
- Wedding and childcare benefits
- Healthcare benefits
- Staff cafeteria
- Employee relationship promotions
- Personal safety and family care
- Expat benefits

Leisure and Personal Development Benefits

- Other general benefits
- Self-learning benefits



Retirement Benefits

- Retirement benefits
- Retirement Association



In addition, to implement the concept of a happy workplace, the Company has set up breastfeeding rooms inside the plants in line with the laws, set up a friendly office environment for employees. Moreover, a parental leave system is also offered. Eligible employees can adjust their work hours based on their childcare needs. In 2021, a total of 24 females and 13 males, or cumulatively 37 employees, have applied for parental leave. The reinstatement rate was 86.0%.

Application and Reinstatement Rate of Parental Leave of the Company and Subsidiaries in Taiwan
(Unit: Person)

Item	2018			2019			2020			2021		
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
Number of employees eligible for parental leave	21	214	235	47	316	363	32	305	337	30	331	361
Actual number of parental leave applications	9	5	14	12	10	22	39	7	46	33	15	48
Number of employees expected to be reinstated during the year (A)	10	8	18	12	3	15	37	12	49	29	14	43
Number of applications for reinstatement during the year (B)	9	7	16	12	2	14	23	7	30	24	13	37
Reinstatement rate % (B/A)	90	87.5	88.9	100	66.7	93.3	62.2	58.3	61.2	82.8	92.9	86.0
Still employed after reinstating over 1 year	9	7	16	11	2	13	22	7	29	22	13	35
Retention rate %	100	100	100	91.7	100	92.9	95.7	100	96.7	91.7	100	94.6

Note 1: Retention rate refers to the ratio of employees who have worked at the Company for one year or more after being reinstated after parental leave.

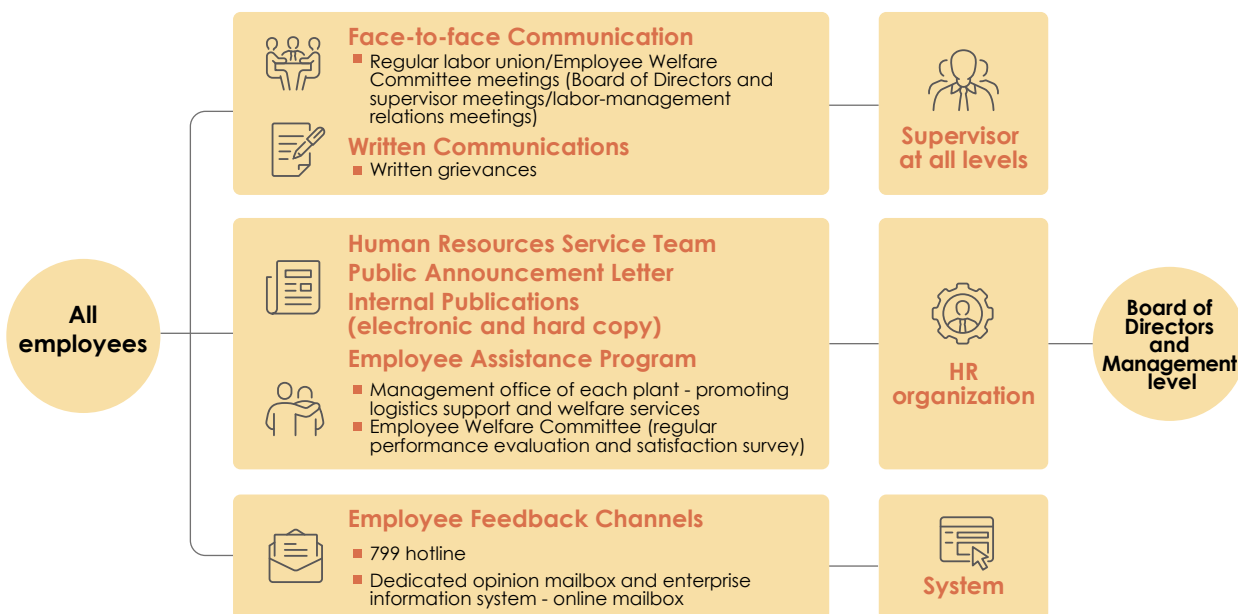
Note 2: Statistical data for 2019 ~2021 include NPC and its subsidiaries in Taiwan.

4.2.4 Valuing Employee Feedback

The Company strives to pursue harmonious labor-management relations and provides diverse and unimpeded communications channels. We also actively encourage employees to propose innovative ideas. All employees can voice their thoughts and ideas by joining organizations, including the labor union and the Employee Welfare Committee. Currently, 80% of all employees have joined the union.



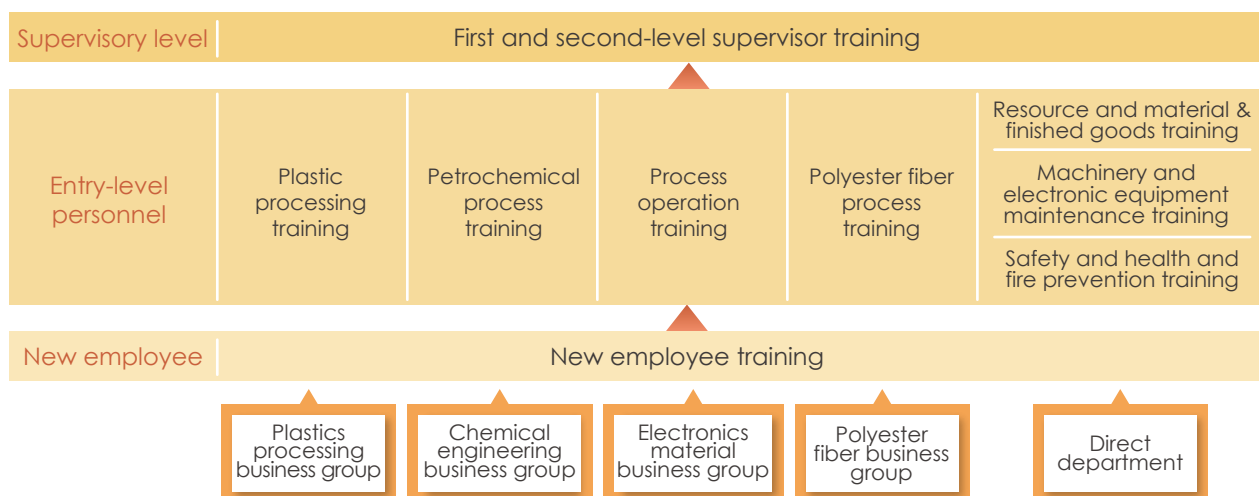
The Company's employer representatives regularly communicate with employee representatives during council or board of supervisors' meetings held by the union, as well as during labor-management meetings. When the subject concerns major labor relations issues, the Company gives priority to the opinions of the union, and all employees are protected by the mutual agreement between employers and employees. The Company's main communication channels are shown as follows:



4.3 Talent Training

The Company has developed a complete personnel training system. Through the online training management system, training can be completed step by step. The current training system includes pre-employment training, basic job training, professional competencies training, management trainee training, functional certification, and cross-functional studies in order to train well-rounded employees.

Employee Training System





4.3.1 Employee Training and Evaluation

In order to improve the profession and management abilities of employees at all levels, and to provide training that is better than the legal requirements, the Company organizes various education and training according to the characteristics of various works. In 2021, the average number of training hours per employee was approximately 46 hours. The average number of training hours for first-level supervisors was 12 hours, for second-level supervisors was 26 hours, for entry-level supervisors was 55 hours, and for entry-level personnel, 48 hours. The main courses and results are as follows:

	Professional Certificate Program	Safety and Health Training	Other Training Program
Purpose	Organize professional certificate courses associated with the jobs according to the operation and safety requirements of each department	Raise employees' awareness of human rights and work safety	Improve employees' personal professional ability
Strategies	<ul style="list-style-type: none"> Announce the "Occupational Safety and Health Act", "Labor Standards Act", "Sexual Harassment Prevention Act", "Act of Gender Equality in Employment" and other related laws and management policies For jobs with specific occupational hazards, conduct occupational safety education and training, and require all employees engaged in related businesses to pass relevant courses Use the medium such as "10-minute on-site training", "communication sessions", "morning meetings" and "formal trainings" to educate employees 		
Results	Number of courses in 2021: 6	Number of courses in 2021: 79	Number of courses in 2021: 24
	Number of participants in 2021: 329	Number of participants in 2021: 3,048	Number of participants in 2021: 485

Training Status for All Employees in the Past Four Years (Unit: Hour)												
Year	First-level supervisors			Second-level supervisors			Entry-level supervisors			Entry-level personnel		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
2018	13,942	43	13,985	44,281	1,235	45,516	212,648	3,852	216,500	601,865	139,303	741,168
2019	15,835	22	15,857	51,544	1,743	53,287	204,606	4,033	208,639	559,517	130,361	689,878
2020	13,575	55	13,630	40,481	859	41,340	201,880	4,741	206,621	536,573	128,938	665,511
2021	9,345	122	9,467	32,126	787	32,913	182,637	3,532	186,169	532,637	126,072	658,709

Note 1: Affected by the epidemic in 2020-2021, the number of training hours was reduced.

Note 2: The Company belongs to the (plastic) secondary processing industry, and female employees mostly serve in indirect functions at office settings and hence have fewer requisite professional training skills.

Training Completion Rate in All Stages for the Past Four Years (Unit: %)			
Year	Items	Basic job training	Professional competencies training
2018		100	99.9
2019		100	99.9
2020		100	100
2021		100	100

Note: Completion rate refers to the ratio of the assigned training programs that were completed in that year.



Employee Career Path



Furthermore, the Company has specified the "regular work evaluation" in its "Performance Review Procedures" in order to improve the quality of work and to cultivate a serious and responsible work attitude among the employees. All employees are reviewed every 1-3 months depending on their duties. Regular work evaluation motivates employees to pursue growth and to create a self-challenging work environment.

Entry-level Personnel

- Direct evaluation by the supervisor

Those who perform well are immediately informed and encouraged; those who perform poorly are interviewed, assisted, and coached for improvement.

Other Personnel

- Those who are being evaluated will submit a report on current progress of achieving their annual goals and KPI.

Direct supervisors will evaluate and communicate with those being evaluated face-to-face.

4.3.2 Security Personnel Training and Digital Learning & Knowledge Management System

The Company provides comprehensive professional security training for all security personnel to obtain necessary training certification, including "industrial safety", "security personnel work procedures", and "applicable laws and regulations". Moreover, an e-learning system has also been implemented to provide diverse and self-learning channels to our employees. Please refer to "Talent Development" on NPC's website for details.



"Talent Development" on NPC's website



4.4 Workplace Safety

Material Issue

Sustainable issues: Industrial and public safety, occupational health and safety
Corresponding GRI Standards: 403 - Occupational Safety and Health)



- **Commitment and policies:** The Company has set up the Occupational Safety & Health Committee to promote "Process Safety Management". We also hold PSM exchange and seminars every six months and encourage all plants to obtain ISO 45001 Occupational Safety and Health Management System and the Taiwan Occupational Safety and Health Management System (TOSHMS) certification in order to cultivate Industry Safety culture. This will help to reduce the frequency of occupational accidents and injuries, ensure the physical and mental health of employees, and maintain the safety of the plant and the surrounding neighborhood.
- **Responsibilities:** Occupational safety and health committee
- **Goals:** Zero occupational injuries, zero accidents.
- **Resources:**
 1. Dedicated personnel for work safety has been assigned in the President's Office, all business divisions, and plants to be in charge of occupational health and environmental management as well as to conduct relevant audits.
 2. Medical personnel in charge of workplace health promotions have been assigned in the management office of each plant.
- **Grievance channel:**
 1. PSM exchange and seminars are held once every six months, and the results of process risk management are presented each year.
 2. Coordination meetings with contractors are regularly convened, and toolbox meetings are held on a daily basis.
- **Performance evaluation methods and results:**
 1. Evaluation method:
 - (1) Obtain external certifications such as ISO and the evaluation for Accredited Healthy Workplace from the Ministry of Health and Welfare.
 - (2) Continuous monitoring of labor safety data and working hours.
 2. Evaluation results:
 - (1) ISO 45001 Occupational Safety and Health Management System and the Taiwan Occupational Safety and Health Management System (TOSHMS) certifications have been obtained by all NPC plants.
 - (2) A total of 8 disabling injuries happened in 2021. Further analysis showed that most of the injuries were caused by being trapped. The safety of rotating equipment has been comprehensively checked, and the improvement of fool-proofing has been actively promoted to ensure the safety of personnel.
- **Specific actions:**
 1. Promote "Process Safety Management (PSM)" procedures to cultivate Industry Safety culture and to reduce the risk of occupational hazards.
 2. Practice contractor engineering safety management, safety supervisor system, and transportation safety quality evaluation system.

4.4.1 Workplace Safety Management

To ensure workplace safety, the Company has established a specific occupational safety and health organization. The Occupational Safety Committee has been set up in all the plants in accordance with laws and regulations, and obtained the certifications of ISO 45001 Occupational Safety and Health Management System and the Taiwan Occupational Safety and Health Management System (TOSHMS). The scope of the workplace safety management system covers every plant and subsidiary in Taiwan. The inspection items include on-site environment, personnel operations, equipment safety, etc.



Occupational Safety Committee

Number of committee members: **341**

Employee representatives: **126**

“Employee representatives account for 37%, which is superior to the statutory requirement”

Meetings are held quarterly. Topics that were discussed in 2021 are as follows:

- (1) Discussion on the content of evaluation form for occupational disease prevention
- (2) Implementation Review of training program for plant safety and health
- (3) Traffic safety promotion proposal
- (4) Discussion on the occupational injury investigation report
- (5) Discussion on automated inspection and audits for safety and health
- (6) Review of improving the management performance



ISO 45001 Occupational Safety and Health Management System certificate



Taiwan Occupational Safety and Health Management System (TOSHMS) certificate

Occupational Injury Indicators

All occupational injury indicators of the Company and its subsidiaries in Taiwan were lower than that of our competitors (plastic product manufacturers) in 2021. Among the indicators, there were 8 disabling injuries. After being classified according to the type of occupational accidents, there were 3 cases of "being trapped by the equipment", 3 cases of "falling", 1 case of "contacting with harmful objects" and 1 case of "being cut".

Year	The Company and subsidiaries in Taiwan			Plastic products manufacturers		
	Disabling Injuries Frequency Rate (FR)	Disabling Injuries Severity Rate (SR)	Frequency-severity Indicator (FSI)	Disabling Injuries Frequency Rate (FR)	Disabling Injuries Severity Rate (SR)	Frequency-severity Indicator (FSI)
2018	0.33	6	0.04	1.46	185	0.52
2019	0.43	59	0.15	1.42	94	0.37
2020	0.27	170	0.21	1.54	209	0.57
2021	0.22	3	0.02	1.54	209	0.57

Note 1: Disabling Injuries Frequency Rate (FR) = number of disabling injuries x 10⁶ / total working hours

Note 2: Disabling Injuries Severity Rate (SR) = working days lost to disabling injuries x 10⁶ / total working hours

Note 3: Frequency-severity Indicator (FSI) = (FR × SR / 1000)^{1/2}

Management and Prevention of Occupational Accidents

Description of accidents	Approach to the accidents	Improvement
A man from polyester film plant 1 stumbled on his own foot and fell while he was carrying paper tubes in a hurry on 1/30.	After treatment at Linkou Chang Gung Memorial Hospital, the man was discharged from the hospital and returned home to recuperate on 2/2, and went back to work on 2/4.	<ol style="list-style-type: none"> 1. Set up a warning sign of "Do not rush when carrying and walking" 2. Make teaching materials to educate other employees 3. Strengthen the employees' awareness and interview of safety
A man from Shulin plant 2 was pinched between the automated guided vehicle and the door frame at the logistics entrance when he was confirming whether the empty pallet had arrived, and paid no attention to the automated guided vehicle slowly approaching from behind on 3/28.	After treatment at Taipei Hospital, the man went back to work on 4/2.	<ol style="list-style-type: none"> 1. Add guardrails on both sides of the range where the automated guided vehicle would pass by to prevent people from breaking in. 2. A light transmitter is added to the automated guided vehicle, and a safety BAR is added to the pinch point. When it is blocked, the vehicle would stop and move back. 3. Revise the SOP and take this case as education material.



Description of accidents	Approach to the accidents	Improvement
A man from MA plant had been wearing protective equipment to clear the end of the feeding pipe according to the SOP, but the cleaning rod suddenly fell off from the nozzle, causing him to be scalded by the high-temperature gas and catalyst ejected from the inside on 4/22.	After treatment at Yunlin Chang Gung Memorial Hospital, the man was discharged from the hospital and returned home to recuperate on 5/10, and went back to work on 6/10.	<ol style="list-style-type: none"> 1. Add a chain to limit the maximum extension of the cleaning rod and prevent it from falling off. 2. Set up a regular maintenance standard for cleaning rods, and install a steam jacket to the air pipeline for feeding during planned shutdown to avoid the combination of the material and the catalyst to form a hard block, which can reduce the frequency of cleaning.
A man from maintenance department 2 felled due to anemia caused by repeatedly standing up and squatting down while he was confirming the abnormality of the transport wheel of the vehicle on 8/10.	After treatment at China Medical University Hospital, the man has gone back to work.	<ol style="list-style-type: none"> 1. Set an inspection hole on the platform above the wheel of the vehicle, which is convenient for personnel to check. 2. Strengthen the employees' awareness and interview of safety.
A man from engineering plastics plant 3, who was cleaning the equipment, opened the cover of the discharge port to check whether there was any remained material without shutting down the power supply according to the regulations, causing his right finger to be cut by the rotating blade on 8/18.	After treatment at Ditmanson Medical Foundation Chia-Yi Christian Hospital, the man was discharged from the hospital on 8/30 and went back to work on 9/13.	<ol style="list-style-type: none"> 1. A photoelectric switch is added at the entrance of the operation platform, which can automatically stop when personnel enter. 2. The discharge port is equipped with a fixed protective net and a micro switch, and the equipment would automatically shut down when the discharge port cover is opened.
A man from BPA plant 2 was trying to close the reflux valve of the storage tank on 8/30. However, an adjustable wrench slipped from his hand causing him couldn't stand stably and fall from the top of the storage tank .	After treatment at Kaohsiung Chang Gung Memorial Hospital, the man was discharged from the hospital on 9/3 and went back to work on 9/28.	<ol style="list-style-type: none"> 1. Place grating platforms and external guardrails on the top of the flat storage tank. 2. The manual reflux valve is turned 90 degrees, which is convenient for personnel to operate.
A man from fiber glass yarn plant of PFG did not use the cake cart to collect the yarn according to the regulations but performed it directly between the machine channels. Because the yarn at the bottom of the tube in his hand was too close to other rotating machines, the yarn was rolled into the machine and his right finger was cut on 9/4.	After treatment at Ditmanson Medical Foundation Chia-Yi Christian Hospital, the man was discharged from the hospital and returned home to recuperate on 9/15, and went back to work on 10/18.	<ol style="list-style-type: none"> 1. Use mobile automatic doffing machines (5 units in total), and install monitors to monitor the whole area. 2. Strengthen the employees' awareness and interview of safety.
A man from polyester film plant 1 put the broken film back into the machine with his left hand without stopping the machine, causing his left palm to be injured by the roller on 11/22.	After treatment at Linkou Chang Gung Memorial Hospital, the man was discharged from the hospital on 11/27 and went back to work on 11/29.	<ol style="list-style-type: none"> 1. Install an AI image monitoring system, which could automatically stop the running of the longitudinal extension machine when detecting people walking under it. 2. Find the basic cause of abnormal, and reduce the frequency of abnormal materials drawing by further review and improve.

Occupational Injury Data from All Plants of the Company and Its Subsidiaries in Taiwan in 2021

Plant	Type	Male			Female		
		Disabling Injuries Frequency Rate (FR)	Disabling Injuries Severity Rate (SR)	Frequency-severity Indicator (FSI)	Disabling Injuries Frequency Rate (FR)	Disabling Injuries Severity Rate (SR)	Frequency-severity Indicator (FSI)
Taipei		0	0	0	0	0	0
Shulin		0.51	2	0.03	0	0	0
Linkou		0	0	0	0	0	0
Kung San		0.72	4	0.05	0	0	0
Jinxiang		0	0	0	0	0	0
Mailiao		1.05	28	0.17	0	0	0
Chiayi		0	0	0	0	0	0
Hsinkang		0.26	8	0.04	0	0	0
Renwu		0	0	0	0	0	0
Description		8 occupational injuries happened to male employees. 3 cases of "being trapped by the equipment", 3 cases of "falling ", 1 case of "contacting with harmful objects" and 1 case of "being cut".			No female employee was involved in any occupational injuries.		



Management Principle for Contractors

1. The supervisory department and the entrusting department shall confirm whether there are any changes in the workplace environment, potential hazards, construction methods, etc. before the start of construction, and list the safety notices in the "Information for Construction Safety"
2. The supervision department shall hold a pre-construction consultative meeting with the entrusting department before construction, and explain notices listed in the "Information for Construction Safety" to the person in charge of the contractor (or the person in charge of the construction site) and the safety and health management personnel. It is required to sign in person on the "Information for Construction Safety" to ensure that the contractor has understood the possible hazards and has well-prepared for safety and hygiene measures.
3. After the safety and health department of the plant (or the designated safety and environmental protection department) has reviewed and confirmed the content of the safety notification if any deficiency is found and considered to be explained, the supervisory department should supplement and re-notify it according to the above procedure.

Occupational Injury Indicators of Contractors

There were no fatal occupational injuries for contractors in 2021. Only 1 contractor was injured in Mailiao epoxy plant, which explained as follows:

Description of accidents	Approach to the accidents	Improvement
Yang ○○, an employee of the contractor (○○) of the Mailiao epoxy plant, was sprayed on his left calf and injured due to careless operation when he was cleaning the intermediate tank on the second floor of the first class with a water jet on 12/8.	After the treatment of debridement and suture and the emergency observation at Show Chwan Memorial Hospital, the man returned home to recuperate on 2021/12/9.	<ol style="list-style-type: none"> 1. Review the optimization of process conditions and equipment improvement from the source, and reduce the amount of gel and intermediates to reduce the frequency of water jet cleaning. 2. Find out the best engineering method, and evaluate to adapt 3D water jet to clean the tank that is used in non-solid and brominated processes and without coils to avoid personnel entering the tank for operation 3. Develop AI electronic fence identification. When the protective equipment worn by the operator does not meet the requirements, an alarm will be issued immediately through image identification, and the supervisor will be notified by text message to deal with it.

Year	Total Working Hours and Days		Number of Accidents	Total Days Lost	Disabling Frequency Rate (FR)	Disabling Severity Rate (SR)	Frequency-severity Indicator (FSI)
	Total Working Days	Total Working Hours					
2020	667,906	5,343,250	1	6,000	0.18	1,122	0.44
2021	484,908	3,879,264	1	1	0.26	0.26	0.008

Note 1: The statistical data for the contractors' total working hours and days began in 2020

Note 2: The definitions of the indicators are the same as employees' occupational injury indicators

4.4.2 Process Safety Management

The Company has implemented Process Safety Management (PSM) that includes 14 key items pursuant to corporate regulations. A total of 159 PSM personnel (90 in Taiwan, 58 in China, and 11 in Vietnam) have been assigned to various ranks throughout the Company to promote and manage the PSM operations and to ensure the quality of such implementations. The details of the operation are as follows:

Monthly	<ul style="list-style-type: none"> Conduct monthly audits based on the 14 PSM key items to ensure that all plants meet the requirements in following the standard procedures and work practices Safety management's KPIs are reported monthly to effectively control PSM risks (Taiwan only)
Annually	<ul style="list-style-type: none"> Select departments with high-performing safety culture (awards: PHA, MOC, Implementation of SOP - full participation) to attend FPG awards ceremony on behalf of the Company and to enhance the overall safety culture



Process Hazards Analysis, PHA

In terms of improving the quality of PHA, the Company has commissioned IHS to conduct training and certification for PHA facilitators. A total of 17 employees have been certified (12 in Taiwan, 5 in China) to perform PHA each month to comprehensively guide and promote the PHA operations at each plant. The goal is to identify the potential hazards in the workplace and effectively control process risks. In 2021, the Hazard and Operability Study (HzaOp) was further subdivided into routine operation and non-routine operation so as to ensure that all process risks and hazards can be comprehensively reviewed.

	Taiwan	China
Internal auditor	Executed by PHA facilitators and completed through cross-auditing.	
Progress	Quality inspection of 59 plants (offices) was completed in 2021. Continue to review the implementation of process risk assessment, analyze potential hazards and the adequacy of safety protection, and use the investigation reports of past incidents to re-examine the PHA	Quality inspection of 31 plants (offices) was completed in 2021. Continue to work with the analysis team in every plant to improve the content of preliminary hazard analysis and process risk assessment.

Year	2018	2019	2020	2021
Process Safety Incidents Count (PSIC)	3	1	0	1
Process Safety Total Incident Rate (PSTIR)	0.025	0.008	0	0.009
Process Safety Incident Severity Rate (PSISR)	0.074	0.025	0	0.009

Management of Change, MOC

To ensure that changes in all designs, equipment, raw materials, or operating conditions do not have a negative impact on the production process, a Management of Change (MOC) controller has been set up in each department to be in charge of MOC procedures and ensure all the changes are carried out in accordance with corporate regulations. The scope of MOC has been further expanded to construction vendors for "fixed asset bid" to continuously strengthen the breadth and depth of relevant reviews to establish more well-rounded management in 2021.

In addition, the designated personnel of the Safety and Health Department and the MOC personnel of the business division will perform monthly onsite confirmation of the quality and completeness of the MOC analysis.

	Taiwan	China
Internal auditor	Performed by PSM personnel in each department through cross-audit.	
Progress	Quality inspection of 59 plants (offices) was completed in 2021. It is confirmed that the review and assessment of MOC can clearly identify risks, effective control operation and improvement, and continue to implement pre-production/pre-commissioning/(operation) safety inspections.	Quality inspection of 40 plants (offices) was completed in 2021. Follow the MOC implementation in Taiwan plant sites such as process trial production and fixed asset auctions.

Job Safety Analysis, JSA

To ensure that the safety analysis procedures are practiced, organizational and systematic analysis techniques are applied to assess various potential hazard risks for the personnel and operations. Appropriate precautions are then taken to ensure safety. Personnel of the Safety and Health Department perform on-site checks monthly to confirm the integrity of the work safety analysis.



	Taiwan	China
Internal auditor	Inspection from personnel of the Safety and Health Department	
Progress	Quality inspection of 60 plants (offices) was completed in 2021. Continue to review and strengthen JSA hazard identification, risk assessment and control, and regularly track the progress of improvement.	Quality inspection of 40 plants (offices) was completed in 2021. Follow the JSA implementation in Taiwan plant sites and strengthen the implementation of education and training after the JSA assessment and on-site review.

Industrial Safety Protection Promotion Cases in 2021		
The promotion scope	The promotion item	The promotion result
Taiwan China	Install movable guardrails (shields) or horizontally expands the improvement of the interlocked guard safety device when entering the control area to enhance the intrinsic safety of the equipment.	<ol style="list-style-type: none"> 1. A total of 69 deficiencies of not equipped with interlocked guard safety devices have been improved. 2. A total of 1 deficiency of the interlocked device installed with the Bypass function has been improved. 3. The deficiency of equipment keeps running due to inertia after the interlock is turned on has been improved. 4. Through the above improvement, the implementation performance would be continuously evaluated.

Standard Operating Procedure, SOP

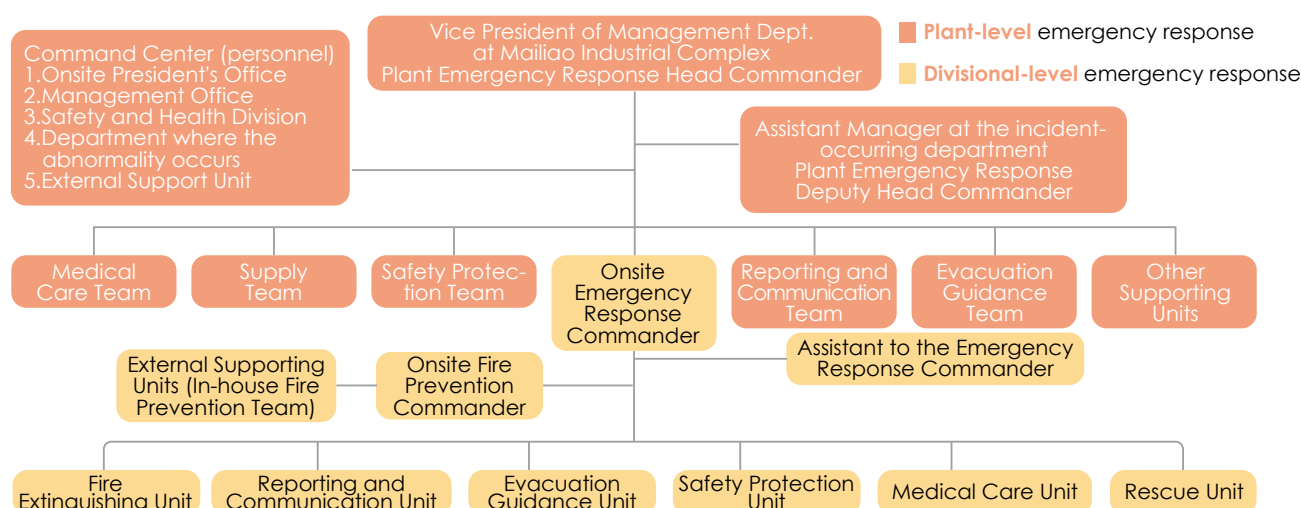
In order to ensure that each department of the Company implements the SOP and all employees participate in the promotion of the SOP, the Company regularly revises the contents of potentially hazardous and the corresponding SOPs based on the results of the work safety analysis, which is expected to comprehensively improve the safety of on-site operations. Each unit regularly holds "SOP review and revision seminars", "SOP amendments and training", "SOP case studies and feedback surveys", "SOP audits", "plant inspections and observation meetings", and "KPI assessment standards and performance reviews" to ensure the performance of SOP promotion. The safety and health personnel and leaders of each department would team up to perform onsite inspections to ensure the integrity of the implementation.

	Taiwan
Internal auditor	Joint inspection by Safety, and Health Department personnel and personnel responsible for supervising SOP from each department
Progress	Quality inspection of 67 plants (offices) was completed in 2021. Continue to quantify the control points of SOP and use SWAT to enhance SOP implementation.

4.4.3 Disaster Prevention Training

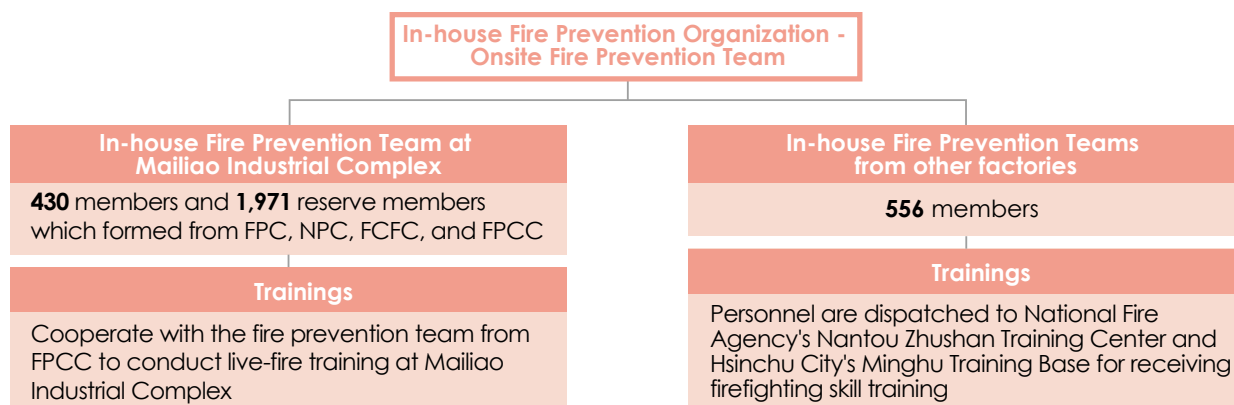
For the emergency response teams to better comprehend the hazardous factors and potential threats in each process, each plant not only conducts regular disaster prevention training, but also participates in joint practice drills from the competent authority. Emergency rescue procedures are simulated based on the nature of tasks, including emergency response drills of fire, poisoning, chemical disaster, and compound disasters. In response to poor air quality, the Company also collaborated with the local environmental protection department to organize emergency response drills of air pollution this year.

The Company's emergency response system is divided into three phases in accordance with the scale of the disaster and practical needs:



In-house Fire Prevention Organization

To ensure that in case of a major fire, nearby plants can be immediately notified, and firefighting equipment and manpower can be called upon to help each other. In-house fire prevention teams have been organized at each plant. The teams are trained externally and also participate in emergency response drills every six months to enhance their emergency response's ability.



4.4.4 External Transportation Safety

To ensure the safety of transportation operations and reduce the risk of operation, NPC follows the various systems and operating standards set by Formosa Plastics Group. These include the "Transportation Safety Management Measures" and "Emergency Response Management Measures", which are implemented through evaluation, education, training, and rescue drills.

Management approach	Descriptions	2020 Implementations
Evaluation	<p>The Company's transportation contractor must first pass the evaluation of the "Safety Quality Assessment System (SQAS)" and obtain a certificate of conformity (every three years)</p> <p>Qualified contractors are required to receive annual assessments in accordance with the assessment level. (Grade A contractors are assessed once every two years, grade B contractors once every year)</p>	A total of 30 contractors passed the evaluation (7 achieved grade A, 23 achieved grade B)
Education and Training	Safety review meetings with all plants are regularly held. Meetings with contractors are held from time to time to review and analyze all accidents.	At least once a month
Rescue drill	Each plant regularly holds disaster prevention training. Participate in joint drills held by the competent authority from time to time.	The main drills include "The 2021 Disaster Prevention and Rescue Drill" held by Yunlin County, etc.



4.4.5 Employee Healthcare

The Company systematically and continuously promotes health measures to provide a healthy and safe work environment and excellent training programs for employees. Employees are provided with specific goals to harness their talents and competencies and are encouraged to actively engage in Company activities.

Health Risk Management

In order to create a workplace that allows employees to work in peace, the Company refers to the five categories of the Ministry of Labor's "Occupational Disease Reference Guide", and summarizes "psychosocial", "physical", "chemical", "biological" and "human factors" five major hazards that may lead to occupational diseases. The Company further formulates corresponding preventive management actions and provides health inspection items that are superior to laws and regulations.

To care for the health of our employees, NPC implements not only the health examination items stipulated by the laws but also provides 4 additional examination items superior to statutory requirements. In addition, special health examination and health classification management are implemented for all employees who engage in special health hazard operations. In 2021, there were no abnormal cases of occupational diseases found in the special health examinations.

Health Risks		Measures added in 2021	Continuous measures	Results
psychosocial hazards and factors	Long working hours, working pressure	-	<ul style="list-style-type: none"> Identify and evaluate high-risk groups, arrange physician consultation and health guidance, adjust or shorten working hours and change job content, implement health checks, health management, and health promotion 	Arranged 44 on-site physician consultations
Physical hazards and factors	Abnormal temperature, ionizing radiation	-	<ul style="list-style-type: none"> Annual health management: Regularly monitor the health of employees to detect early whether employees may develop an occupational disease due to exposure to hazardous factors Education and training: Raise the employees' awareness of hazardous factors by providing health education 	Arranged 12 on-site physician consultations
Chemical hazards and factors	Dust, organic solvent, strong acid, alkali, etc.	-	<ul style="list-style-type: none"> For specific chemical substances and other operations, arrange operation environment monitoring, understand the organic solvent or dust operations used in the plant area, identify hazards, deal with leakage, provide personal protection facilities, and conduct regular health examinations. 	Arranged 12 on-site physician consultations, and provided education and training for employees based on the results of environmental tests.
Biological hazards and factors	Microorganisms, infectious diseases, etc.	-	<ul style="list-style-type: none"> Find out whether there are harmful microorganisms to the human body in the plant area, or if there is a risk of infectious diseases, take immediate protection improvement or strengthen the education promotion to avoid causing a pandemic or mutual infection. In addition, in order to prevent dengue fever and other insect-borne infectious diseases, each plant assigns dedicated personnel to regularly implement inspections, implement regular cleaning and disinfection in the plant area 	Please refer to the specific chapter of COVID-19
Human-factors	Long-term heavy lifting, etc.	<ul style="list-style-type: none"> The Company cites the German Key Indicator Methods (KIM) after referring to the Ministry of Labor's "Research Program on Prevention of Hazards Caused by Human Factors", and evaluates on-site manual handling operations to improve the high-risk ones. (such as replacing with machinery, adjusting the working position, etc.) 	<ul style="list-style-type: none"> For musculoskeletal diseases caused by repetitive actions and other work methods, adapt human factors engineering improvement measures (such as arranging physicians to conduct on-site consultation, etc.) 	Arranged 12 on-site physician consultations and held health education promotions



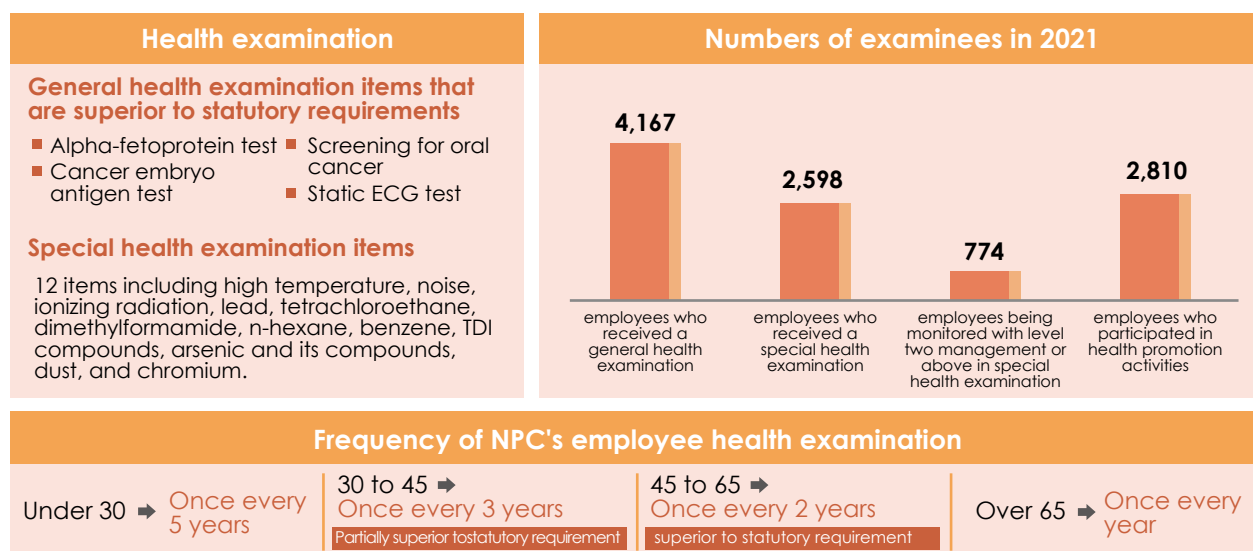
Occupational Disease Prevention Measures

To comply with the preventive regulations against emerging occupational diseases in the Occupational Safety and Health Act, the Company has implemented the following measures: maternal health protection, prevention of musculoskeletal diseases triggered by repetitive work, prevention of illegal infringement while on duty, and prevention of diseases triggered by abnormal workload.

Occupational Disease Prevention Measures	Details
Maternal health protection	Female employees are protected from maternal health hazards during pregnancy until one year after childbirth through hazard assessment and controls, physician guidance, graded risk management, and special work arrangements.
Prevention of musculoskeletal diseases triggered by repetitive work	Preventing musculoskeletal diseases caused by poor posture, excessive exertion, repetitive movements, etc. by adopting relevant human factors engineering improvement measures.
Prevention of illegal infringement while on duty	Preventing employees from being threatened or attacked in work-related environments by adopting measures such as hazard identification and assessment, job suitability arrangement, hazard prevention, and communication skills training to ensure zero violence in the workplace.
Prevention of diseases caused by abnormal workload	Preventing brain and cardiovascular diseases caused by irregular working hours, long working hours, frequent business trips and shifts, etc. Health advice, working hour adjustments, and job content changes will be given to the employees for better health management.

Health Promotion Measures

Onsite medical personnel has been set up in the plants to provide personal health instruction and consultation. Employees can enjoy health management measures such as weight management, tobacco hazard prevention, health seminars, preventive healthcare, and injury/illness treatments. Moreover, medical and health services provided by Chang Gung Memorial Hospital have been integrated to further raise the employees' health awareness. To safeguard the employees' health, onsite physicians study the work environment, employees' work habits, and safety protection practices to provide suggestions for improvement and related medical consultation services.



Healthy Diet Promotion

To promote healthy eating, we publish information on dietary nutrition every month. With the assistance of nutritionists from Chang Gung Memorial Hospital, we have improved the cooking methods, condiment usage, food selection, and menu. The ratio of fried foods is less than 6%. We inspected approximately 4,000 dishes in the staff restaurant every month in 2021, and the number of fried dishes was maintained at below 240 dishes.



The Achievement of Creating a Healthy Workplace in 2021





5

The Pursuit of Co-Prosperity and a Better Homeland



5.1 Local Engagement 110


5.2 Social Contribution 115



NPC is committed to social engagement, and actively promotes community events and local outreach programs. We participate in various social welfare activities along with Formosa Plastics Group to realize our social impact and to promote community development, in order to collectively work towards a better and more sustainable future.

Strategy	United Nations Sustainable Development Goals (SDGs)
<ul style="list-style-type: none"> ■ Neighborhood outreach ■ Expand social engagement 	

2021 Implementations (○ Did not meet the goals ☑ Goals met ★ Exceeded expectations)

 <p>Neighborhood Outreach and Social Engagement Expansion</p>	2021 Goals <ul style="list-style-type: none"> ● Continue to organize a voluntary cleaning team. Schedule one day per month to clean the roads around the production sites and the community environment before work ● Actively promote corporate volunteers to care for the disadvantaged groups 	2021 Implementations <ul style="list-style-type: none"> ☑ In 2021, a total of 18 environmental volunteer activities (street sweeping) were held, and 573 volunteers participated (749 hours of volunteer service) ☑ Beach cleaning at Zhuwei fishing harbor on 10/31, and river cleaning at Nankan River on 11/14 and 11/27, about 3,300 employees and their families responded to ecological protection together ☑ Corporate volunteering teams have been organized at each plant to care for the disadvantaged groups (orphanages and nursing homes). In 2021, 21 sessions were held with 456 participants and 2,479 hours of volunteer service
	Short-term Goals (2022 Goals) <ul style="list-style-type: none"> ● Continue to organize a voluntary cleaning team. Schedule one day per month to clean the roads around the production sites and the community environment before work ● Actively promote corporate volunteers to care for the disadvantaged groups 	Medium- and Long-term <ul style="list-style-type: none"> ● Continue to organize various neighborhood outreach and charity activities ● Reinforce the efforts to promote traditional arts

The Company has long played the role of a corporate citizen that fulfills its corporate social responsibility by investing in the community. We hope to create a vision of co-prosperity and a better homeland through the influence of Formosa Plastics Group (FPG). Take environmental protection at Mailiao Industrial Complex for example, besides setting up dedicated research units to conduct environmental monitoring and impact assessment, FPG also provides free healthcare and environmental knowledge promotion for the residents.

Additionally, neighborhood outreach programs including occasional visits, traditional culture promotion, charity service, and caring for disadvantaged groups are planned by the management teams at each plant. To strengthen communications and interactions with residents, employees are also encouraged to serve as corporate volunteers and to engage in local environmental cleanup and charity flea market events. The Company also gives back to society in coordination with FPG's plans. Besides, participating in and promoting "Formosa LOHAS Circle" activities, we also carry out various welfare activities in line with FPG's seven foundations and charitable trusts.



5.1 Local Engagement

5.1.1 Community Outreach

All sites of the Company promote various community outreach activities in line with the planning from local management teams. We hope to spread love and hope to all corners of society with residents through these activities, and to strengthen the ties between the plants and the local communities. Take the sites in the north area as an example, the community outreach activities that we participated in and promoted in 2021 are as follows:

Item	Collaborative Unit	Promotion Method	Results in 2021
Visits	1. Local village offices 2. Residents	1. Strengthening communication through occasional visits 2. The residents are invited to plant activities to foster stronger ties	Each site has maintained great relationships with the local communities. There have been no complaints or suggestions
Traditional Culture Promotion	Apple Theater (Shulin site) Ming Hwa Yuan Arts and Culture Group (Jinxing site)	Sponsoring theater companies to perform at the plants	Due to COVID-19, large-scale neighborhood outreach programs have been temporarily suspended and will resume post-pandemic
Community Outreach	1. Township Office 2. Village Office 3. Community development associations	Actively participate in activities held by township offices, village offices, and community development associations to strengthen relationships with the local communities	Sponsorship amounted to NT\$2,783,536
Environmental Protection Volunteering	Employees and their families of each plant	Enlist employees of each plant and their families to do environmental protection volunteering work to keep the plants as well as the surrounding areas clean	1. A total of 18 environmental volunteer activities of street sweeping were held, of which 573 volunteers participated 2. Beach cleaning at Zhuwei fishing harbor on 10/31, and river cleaning at Nankan River on 11/14 and 11/27, about 3,300 employees and their families responded to ecological protection together
Charity Service	1. Charity Service Club of Welfare Committee 2. Labor union 3. Local social welfare groups	1. Pay regular visits to orphanages and nursing homes. Goods are collected and donated to social welfare institutions 2. Flea markets were held in conjunction with the Charity Service Club of Welfare Committee and local public welfare groups. All proceeds were donated 3. Assist disadvantaged groups in applying for emergency relief from FPG's Ching Pao P.D. Charitable Foundation	1. A total of 21 charity service activities were organized with 456 participants, and total donations amounted to NT\$ 1,228,274 2. Emergency relief applications to FPG's Ching Pao P.D. Charitable Foundation amounted to NT\$406,000



The collection of bring new year's food for the elderly living alone



The collection of cleaning the living environment for the elderly living alone



Group photo – beach cleaning



Environmental volunteers are cleaning up the community environment



Environmental volunteers are cleaning up the Cixiu park of Taishan District



Organize the flea market event for charity sale and donate the sales to the Genesis Social Welfare Foundation

Fulfilling Responsibilities and Achieving Local Co-Prosperity Through "Formosa LOHAS Circle"

With the "circle" concept, FPG hopes to integrate local resources around the sites, such as communities, small farmers, businesses, and local governments. By forming a co-prosperity circle that promotes local economic development and local tourism, we can create local co-prosperity and the common good, thus bringing more positive energy to Taiwanese society.

Having begun in Taoyuan, "Formosa LOHAS Circle" has been established in Taoyuan, Yilan, Yunlin, Kaohsiung, and Changhua. All of which have developed diverse and distinctive tourism activities. For details, please refer to the official website for "Formosa LOHAS Circle".



Official website for "Formosa LOHAS Circle"

2021 Performance

To promote organic education, after considering that "YangMei Leisure Farm" has long-term adapting organic planting to be good for the land, the Company decided to use the idle land outside the YangMei Leisure Farm and collaborates with Organic Education Museum to scheme a series of food and agriculture and ecological education activities, and receive various groups to promote the concept and spirit of organic farming, environmental education, and good for the land. In addition, to preserve Taiwan's native species, the Company also cooperates with partners such as YangMei Leisure Farm, Yangmei Senior High School, YangMei Leisure Agriculture Area, and Taiwan Conservation Association of Native Fishes.

For example, Lij Chin Huang, a plant expert from The Society of Wilderness, was invited to assist in the quarterly plant survey; an ecological pond was built in the YangMei Leisure Farm, so that students could learn how to build an ecological pond, understand the importance of habitat protection, the threat of alien species and regeneration of Taiwan's native aquatic plants, etc. The Yangmei area was provided as a place for environmental education, which is also expected to contribute to the creation of biodiversity and the preservation of Taiwan's native species. In 2021, the Company has invested about NT\$860,000 in total. The details of the activities are as follows:



Project Name	Results	Numbers of Participants	Numbers of Volunteers
Parent-child activities for the winter vacation at FPG Museum	Through level-based activities that combined entertainment and education, the participating parents and children can experience the Company's intention to promote environmental sustainability and enhance knowledge of environmental sustainability, circular economy, plastic recycling, etc.	1,029	40
Subsidy Program for Innovation Competition of Chang Gung University	The visitors were guided by personnel in FPG Museum to understand the Formosa LOHAS Circle - six places including Yilan, Taoyuan, Yangmei, Changhua, Yunlin, and Kaohsiung to promote the Company's efforts to promote ESG.	32,000	40
Food and Agriculture Education Project in YangMei Leisure Farm	[Operation of Organic Education Museum] Cooperated with Formosa Environmental Technology Corp. with a three-year plan. By using the idle land outside the YangMei Leisure Farm and collaborating with Organic Education Museum to scheme a series of food and agriculture and ecological education activities, assisting in environmental remediation, planning and training organic food farming activities and tour guides, and receiving various groups to visit YangMei Leisure Farm to promote organic farming and environmental education.	1,049	0
	[Ecology investigation] A plant ecology investigation is conducted every quarter, and it is found that there are 121 kinds of plants in the YangMei Leisure Farm, and the relevant results are made into teaching materials, which are uploaded to the official website of Formosa Environmental Technology Corp. for the public to visit and learn about the beautiful ecology of YangMei Leisure Farm.	60	0
	[Ecological pool construction] YangMei Leisure Farm cooperated with Yangmei Senior High School to organize five ecological pool construction activities to let students understand the importance of habitat protection, leaflets were made as the teaching materials for Yangmei Senior High School, and uploaded to the official website of Formosa Environmental Technology Corp. at the same time for the public to understand.	140	0
	[Holiday] Invite employees and enthusiastic people from the society to Yangmei Senior High School to maintain the environmental habitat.	30	20
	[Organic Education Promotion] YangMei Leisure Farm and National 4-H Club Association, R.O.C. of Council of Agricultural organized 8 courses for the students of Yangmei Senior High School and Dahua Senior High School to learn about the control of RIFA in organic farming, high-value planting, etc. In addition, they went to Yangmei Senior High School to promote organic education and assist Yangmei Senior High School produced organic education promotion boards to win the National Environmental Education Award.	50	0
Total		34,358	100

Notes: Only the activities that the Company has participated in and invested in 2021 are counted. Except for the activities in the Yangmei area, which were fully borne by the Company, the rest of the expenses used in LOHAS Circle were shared equally by the Company, Formosa Plastics Corp., Formosa Chemicals and Fibre Corp., and Formosa Petrochemical Corp.



Guided by the plant expert of The Society of Wilderness to conduct plant investigation in YangMei Leisure Farm



Principal of Yangmei Senior High School, Yueh Ting Tsou led the students to build the ecological pool and plant on the slope



The regeneration status of ecological pool



Organic Education Museum received various groups to promote organic farming and environmental education



Yangmei Senior High School went to YangMei Leisure Farm to learn for environmental education and understand the threat of exotic species - American crayfish to native species in Taiwan, and its impact on ecological pools





5.1.2. Sustainable Development of Mailiao

Environmental Impact Assessment of Mailiao Industrial Complex

As the air quality impact of air pollution in Mailiao Industrial Complex has become a public concern, and the marine ecological impact of wastewater discharge needs further investigation, FPG has set up special research units such as "Evaluation and Advisory Committee on Mailiao Industrial Complex Impact on Air Quality" and "Marine Ecological Impact Assessment and Advisory Committee". In addition, a sound environmental monitoring network, which is equipped with eight layers of intensive monitoring and control system has been set up to easily track the emission sources and ensure the local air quality is acceptable. For details, please refer to "The Beauty of Mailiao Eco-industrial Park" and "Environmental Protection and Safety" on FPG's official website.



"Corporate Social Responsibility" section on

Healthcare for Mailiao Residents

To take care of the health of residents, National Cheng Kung University has been commissioned to conduct 64 health risk assessments caused by harmful air pollutants since 2009. The simulation results show that the maximum total noncarcinogenic risks of the assessments are all less than 1, which indicates that the impact on human health is acceptable. Besides, Yunlin Chang Gung Memorial Hospital was built. By integrating the medical and education resources within the Chang Gung Memorial System, we hope to improve the medical quality and healthcare in the neighboring areas and make Mailiao become a benchmark of the health community.

Health Research

- Building and maintaining health database
- Health data analysis
- Results sharing

Health Examination

- Abnormality management
- Increasing the rate of follow-up medical appointment
- Diagnosis and treatment
- Annual follow-up



Health Survey

- Resident's health trends
- Health concerns of residents and the public
- Care promotion measures

Healthcare

- Enhancing medical quality
- Improving residents' health
- Joint promotion from public and private sectors

Healthcare Progress in 2021

Target	Healthcare Program	Numbers of people
Residents	medical service	Yunlin Chang Gung Memorial Hospital: 140,961 outpatients; 13,416 emergency patients
	health examinations and follow-up diagnosis and treatment	8,982 people of Mailiao and Taixi Township had health examinations, of which 661 people with abnormalities in health examination results are being tracked
		A total of 8,494 people from seven township communities including Mailiao, Taixi, and Lunbei, etc., participated
Teachers and students	health education activities	<ul style="list-style-type: none"> • 1,383 junior high school students participated in tobacco hazards prevention courses • 509 teachers and students from Cyuan Jhou Elementary School and Shangde Elementary School of Mailiao Township, Lung Yen Elementary School of Baozhong Township, and Da Cheng Junior High School in Da Cheng Township participated in Happy-Running Project held by John Tung Foundation to advocate healthy exercise habits for young people



"Community Healthcare" on FPG's website

Please refer to "Community Healthcare" on FPG's website for more details on healthcare for residents in Mailiao.



Improving the Local Life Quality

Traffic Improvements

Purpose: To maintain good traffic conditions in communities near Mailiao Industrial Complex and ensure the safety of school children

Practices: Implement a vehicle diversion system for access to and from Mailiao Industrial Complex, and arrange volunteers to help maintain traffic safety at adjacent intersections

Results: Traffic is smooth near Mailiao Industrial Complex during commuting hours, and the safety of school children has been improved

Noise Management

Purpose: To effectively manage noises from production processes at Mailiao Industrial Complex

Practices: Perform regular noise monitoring operations in nearby areas

Results: The monitoring results show that the operation of Mailiao Industrial Complex has not had a significant noise impact on the local community

Air Quality

Purpose: To preserve the air quality in Yunlin County

Practices: Diesel vehicles are required to submit an emission certificate when applying for Mailiao Industrial Complex's access permit

Results: In 2021, 167 diesel vehicles were intercepted and 85 were inspected, only 1 unqualified

According to the statistics of diesel vehicle exhaust inspection conducted by the EPA of Yunlin County in 2021, 167 diesel vehicles on the roads around Mailiao Industrial Complex were intercepted and 85 were inspected, only 1 unqualified. Inspection results in the past 4 years are as follows:

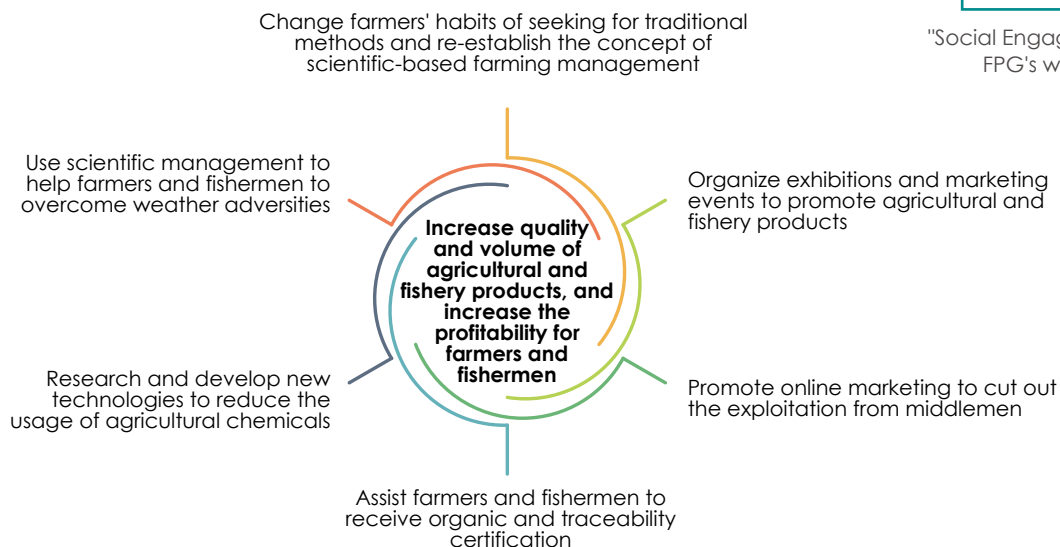
Year	Traffic Volume	Number of Interceptions	Number of Inspections	Number of Qualified Vehicles	Failure Rate of Interceptions	Failure Rate of Traffic Volume
2018	1,115	137	106	106	0.0%	0.0%
2019	1,245	438	80	80	0.0%	0.0%
2020	1,511	597	82	82	0.0%	0.0%
2021	1,502	167	85	84	0.6%	0.01%

Promoting Local Industry

To take care of the local livelihood and fulfill our vision of local co-prosperity, FPG commissioned experts to counsel residents who engage in agricultural and fishery industries in Mailiao, Taixi, Dongshih, Sihui, and Kouhu areas. Our goal is to increase the economic value of the crops and fishery products. Besides, we hope to promote the sustainable operation of local fisheries and create mutual prosperity in Mailiao area.



"Social Engagement" on FPG's website



Note: For details on agricultural and fishery counseling, please refer to "Social Engagement" on FPG's website.



5.2 Social Contribution

To implement the philosophy of the two founders, FPG has actively engaged with the government and various private organizations to gain a deeper understanding of social needs and to provide caring and assistance to disadvantaged groups. FPG continues to lend a hand to those in need by offering education, medical, and social benefits. Large-scale charity activities are all coordinated and planned by FPG's Group Administration, while NPC promotes and implements relevant projects on a timely basis. For details on their implementations, please refer to "Foundation and Charity Trusts" on FPG's website.



"Foundation and Charity Trusts" on FPG's website

5.2.1 Medical and Educational Promotion

Alarmed at the lack of medical resources in Taiwan during the 1970s, the two founders of FPG dedicated themselves to building a non-profit medical center-grade teaching hospital to give back to society. After 40 years of effort, branches of Chang Gung Memorial Hospital have been set up in Taipei, Linkou, Keelung, Kaohsiung, Chiayi, Taoyuan, and Yunlin one after the other. These hospitals provide integrated health care from preventive medicine, acute medical care, chronic medical care, traditional Chinese medicine, long-term care, and wellness community.

To cultivate industry-specific talent, Ming Chi Technical College (now Ming Chi University of Technology), Chang Gung College of Medicine (now Chang Gung University), and Chang Gung Institute of Nursing (now Chang Gung University of Science and Technology) were successively established beginning in 1963 to cultivate high-performing medical and nursing talents.



"Sustainable development" section on Chang Gung Memorial Hospital's website



Chang Gung University's website



Sustainable development of Corporate Social Responsibility" section on Ming Chi University of Technology's website



Chang Gung University of Science and Technology's website

5.2.2 Social Assistance

The two founders of FPG actively engaged in social welfare promotion by establishing seven foundations and charitable trusts. To concentrate the donations on underprivileged groups and social welfare groups, FPG strives to save personnel and administration costs. In addition, FPG collaborates with professional groups, scholars, and experts and promotes various social welfare projects based on the principles of "comprehensive, thorough, and systematic" operations.

Foundations and Charitable Trusts





Welfare for Women and Children

- Provide scholarships for disadvantaged families
- Promote the financial assistance program for abused families and provide financial assistance to abused family members
- Promote Medical and Economic Assistance Programs for Rare Diseases
- Promote various scholarships and part-time programs such as scholarships for disadvantaged families, hard-working semesters, and part-time summer vacation programs



Welfare for Physical and Mental Disabilities

- Created the first online "Early Treatment Forum", which is founded on the principles of evidence, family, and integration and aims to enhance the quality and numbers of institutions, personnel competencies, and parents' knowledge and competencies. Evaluation mechanisms, community service, and integrated education are promoted, enabling young children with learning disabilities to receive quality early treatment services. Over NT\$880 million has been invested from 2006 to 2021, benefiting approximately 23,000 persons, and 92 institutions have received counseling and subsidies.



Sports and Cultural Cultivation

- Donated over NT\$107 million to Taiwanese cultural theater groups, generating more than 360,000 views
- Over NT\$300 million has been invested in sponsoring exceptional tennis, table tennis, billiards, badminton, and golf athletes. Chang Gung Memorial Hospital also provides medical assistance such as player health examinations, sports injury clinics, medical entourage, etc.



Inmates Support

- Wang Jhan-Yang Social Welfare Foundation's "Rainbow Project" offers counseling to inmates with addiction and AIDS in Yunlin, Taipei, and Kaohsiung. The recidivism rate is less than 10% (far lower than the average 70-80%)
- Wang Jhan Yang Charitable Trust Fund's "Xiangyang Project" offers professional counseling to inmates with additions. The recidivism rate is less than 10% (far lower than the average 60-70%)



Welfare for the Elderly

- From 2007 to 2021, 1.16 million vaccine shots have been donated to the "Pneumococcal Vaccine for Elderly Program", which has saved nearly NT\$14.3 billion in medical expenses for the government
- From 2013 to 2021, the "Health Fitness Center for the Elderly" has helped over 17,000 seniors to lead healthier lives and to slow down aging.

"Senior Housing and Home Appliance Improvement Program" was launched in 19 cities and counties throughout Taiwan



"Foundation and Charity Trusts" on FPG's website



Wang Jhan Yang Charitable Trust Fund's website



Ching Pao Charitable Trust Fund's website



Wang Jhan-Yang Social Welfare Foundation's website



Ching Pao P.D. Charitable Foundation's website



Appendix



1. Global Reporting Initiative (GRI) Comparison Table	118
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3. Corporate Governance Evaluation ESG Indicator Disclosure Item - NPC	123
4. Independent Assurance Opinion Statement	124



Appendix 1 Global Reporting Initiative (GRI) Comparison Table

The indexes mentioned below are cross-referenced with the GRI Standards: 2016. As presented by the Independent Assurance Opinion Statement, except for "GRI 303 - Water and Effluents" and "GRI 403 - Occupational Health and Safety" adopt the GRI Standards: 2018, and "GRI 306 -Waste" adopt the GRI Standards: 2020, related information has been verified to meet the requirements of the GRI Standards:

GRI Standards	GRI Standards	Referenced Section	Pages	Description
GRI 102: General Disclosures 2016	Organizational profile			
	102-1 Name of the organization	1.1 About Nan Ya Plastics	P.17	
	102-2 Activities, brands, products, and services	2.1 Diversified Product Application	P.35	
	102-3 Location of headquarters	1.1 About Nan Ya Plastics	P.17	
	102-4 Location of operations	1.1 About Nan Ya Plastics	P.17	
	102-5 Ownership and legal form	1.1 About Nan Ya Plastics	P.17	
	102-6 Markets served	1.1 About Nan Ya Plastics	P.17	
	102-7 Scale of the organization	1.1 About Nan Ya Plastics 1.2 Corporate Governance	P.17 P.22	
	102-8 Information on employees and other workers	4.1 Human Rights Protection and Employment	P.89	
	102-9 Supply chain	2.1 Diversified Product Application 2.3 Supplier and Contractor Management	P.35 P.48	
	102-10 Significant changes to the organization and its supply chain	1.1.1 Company Introduction	P.17	
	102-11 Precautionary Principle or approach	1.3 Risk Management	P.29	
	102-12 External initiatives	3.2.2 Identifying Risks and Opportunities Associated with Climate Change 4.1.1 Human Rights Policy	P.61 P.89	NPC has participated in TCFD advocacy since 2021
	102-13 Membership of associations	1.1.4 External Association Participation	P.20	
	Strategy			
GRI 103: Management Approach 2016	102-14 Statement from senior decision-maker	Message from the Chairman	P.4	
	102-15 Key impacts, risks, and opportunities	Message from the Chairman 1.2.5 Internal Control Mechanism 1.3 Risk Management 5. The Pursuit of Co-Prosperity and a Better Homeland	P.4 P.27 P.29 P.108	
	Ethics and integrity			
	102-16 Values, principles, standards, and norms of behavior	1.1.2 Business Philosophy 1.2 Corporate Governance	P.19 P.22	
	Governance			
	Material Topic: Corporate Governance			
	103-1 Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6	
	103-2 The management approach and its components	1.2 Corporate Governance	P.22	
	103-3 Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6	
	102-17 Mechanisms for advice and concerns about ethics	1.2.4 Integrity Management and Anti-corruption	P.25	
	102-18 Governance structure	1.2 Corporate Governance	P.22	
	102-19 Delegating authority	The Report and Management of Sustainable Issues	P.6	
	102-20 Executive-level responsibility for economic, environmental, and social topics	The Report and Management of Sustainable Issues	P.6	
	102-21 Consulting stakeholders on economic, environmental, and social topics	The Report and Management of Sustainable Issues	P.6	
	102-22 Composition of the highest governance body and its committees	1.2 Corporate Governance	P.22	
GRI 102: General Disclosures 2016	102-23 Chair of the highest governance body	1.2 Corporate Governance	P.22	
	102-24 Nominating and selecting the highest governance body	1.2 Corporate Governance	P.22	
	102-25 Conflicts of interest	1.2 Corporate Governance	P.22	
	102-26 Role of highest governance body in setting purpose, values, and strategy	The Report and Management of Sustainable Issues	P.6	
	102-27 Collective knowledge of highest governance body	The Report and Management of Sustainable Issues	P.6	
	102-28 Evaluating the highest governance body's performance	The Report and Management of Sustainable Issues	P.6	
	102-29 Identifying and managing economic, environmental, and social impacts	The Report and Management of Sustainable Issues	P.6	
	102-30 Effectiveness of risk management processes	1.3 Risk Management	P.29	
	102-32 Highest governance body's role in sustainability reporting	The Report and Management of Sustainable Issues 1.2 Corporate Governance	P.6 P.22	
	102-33 Communicating critical concerns	1.2 Corporate Governance	P.22	



GRI Standards	GRI Standards		Referenced Section	Pages	Description
GRI 102: General Disclosures 2016	102-34	Nature and total number of critical concerns	1.2 Corporate Governance	P.22	The Company listens to the employees through the labor union instead of writing collective agreements to create harmonious labor-management relations
	102-35	Remuneration policies	4.2.1 Employee Remuneration	P.92	
	102-36	Process for determining remuneration	1.2 Corporate Governance	P.22	
	102-37	Stakeholders' involvement in remuneration	1.2.3 Functional Committees	P.24	
	102-38	Annual total compensation ratio	1.2.3 Functional Committees	P.24	
	102-39	Percentage increase in annual total compensation ratio	1.2.3 Functional Committees	P.24	
	Stakeholder engagement				
	102-40	List of stakeholder groups	The Report and Management of Sustainable Issues	P.6	
	102-41	Collective bargaining agreements	4.2.4 Valuing Employee Feedback	P.94	
	102-42	Identifying and selecting stakeholders	The Report and Management of Sustainable Issues	P.6	
	102-43	Approach to stakeholder engagement	The Report and Management of Sustainable Issues	P.6	
	102-44	Key topics and concerns raised	The Report and Management of Sustainable Issues	P.6	
	Reporting practice				
	102-45	Entities included in the consolidated financial statements	1.1 About Nan Ya Plastics	P.17	
	102-46	Defining report content and topic Boundaries	About This Report	P.2	
	102-47	List of material topics	The Report and Management of Sustainable Issues	P.6	
	102-48	Restatements of information	About This Report The Report and Management of Sustainable Issues	P.2 P.6	
	102-49	Changes in reporting	About This Report	P.2	
	102-50	Reporting period	About This Report	P.2	
	102-51	Date of most recent report	About This Report	P.2	
	102-52	Reporting cycle	About This Report	P.2	
	102-53	Contact point for questions regarding the report	About This Report	P.2	
	102-54	Claims of reporting in accordance with the GRI Standards	Appendix 1 Global Reporting Initiative (GRI) Comparison Table	P.118	
102-55	GRI content index	Appendix 1 Global Reporting Initiative (GRI) Comparison Table	P.118		
102-56	External assurance	Appendix 4 Independent Assurance Opinion Statement	P.124		
GRI 200: Topic - Specific Standards Economic Series 2016					
Material Topic: Product Innovation and R&D					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6	
	103-2	The management approach and its components	2.1 Diversified Product Application	P.35	
			The Report and Management of Sustainable Issues- Communications with Stakeholders	P.7	
103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6		
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	1.1.3 Operating Performance 4.2.1 Employee Remuneration	P.19 P.92	
	201-3	Defined benefit plan obligations and other retirement plans	4.2.1 Employee Remuneration	P.92	
Material Topic: Ethical Business Management					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6	
	103-2	The management approach and its components	1.2 Corporate Governance	P.22	
			The Report and Management of Sustainable Issues- Communications with Stakeholders	P.7	
103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6		
GRI 205: Anti-Corruption 2016	205-3	Confirmed incidents of corruption and actions taken	-	No incident related to corruption occurred in 2021.	
Material Topic: Regulatory Compliance					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6	
	103-2	The management approach and its components	2.2 Positive Customer Relations	P.46	
			The Report and Management of Sustainable Issues- Communications with Stakeholders	P.7	
103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6		
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	3.7 Environmental Compliance	P.86	
GRI 419: Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	2.2.3 Legal Compliance	P.47	



GRI Standards		GRI Standards	Referenced Section	Pages	Description
GRI 300: Topic - Specific Standards Environmental Series 2016					
Material Topic: Water Resource Management, Circular Economy Promotion					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6	
	103-2	The management approach and its components	3.4 Water Resource Management	P.74	
	103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6	
GRI 303: Water and Effluents 2018	303-1	Interactions with water as a shared resource	3.4 Water Resource Management	P.74	
	303-2	Management of water discharge-related impacts	3.4.1 Statistics on Water Consumption	P.74	
	303-3	Water withdrawal	3.4.1 Statistics on Water Consumption	P.74	
	303-4	Water discharge	3.4.1 Statistics on Water Consumption	P.74	
	303-5	Water consumption	3.4.1 Statistics on Water Consumption	P.74	
Material Topic: Greenhouse Gas Management, Climate Change Mitigation and Adaptation					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6	
	103-2	The management approach and its components	3.2 Risks and Opportunities of Climate Change	P.59	
	103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6	
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	3.2.3 Management of Carbon Issues	P.66	
	305-2	Energy indirect (Scope 2) GHG emissions	3.2.3 Management of Carbon Issues	P.66	
	305-4	GHG emissions intensity	3.2.3 Management of Carbon Issues	P.66	
	305-5	Reduction of GHG emissions	3.2.3 Management of Carbon Issues	P.66	
Material Topic: Air Pollutant Management					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6	
	103-2	The management approach and its components	3.3 Air Pollution Management	P.70	
	103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6	
GRI 305: Emissions 2016	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	3.3.1 Air Pollution Prevention	P.70	
Material Topic: Waste Management, Circular Economy Promotion					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6	
	103-2	The management approach and its components	3.5 Waste Management and Circular Economy	P.80	
	103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6	
GRI 306: Waste 2020	306-1	Waste generation and significant waste-related impacts	3.5.1 Waste Management	P.80	
	306-2	Management of significant waste-related impacts	3.5.1 Waste Management 3.5.2 Circular Economy Promotion	P.80 P.82	
	306-3	Waste generated	3.5.1 Waste Management	P.80	
	306-4	Waste diverted from disposal	3.5.1 Waste Management	P.80	
	306-5	Waste directed to disposal	3.5.1 Waste Management	P.80	
GRI 400: Topic - Specific Standards Social Series 2016					
Material Topic: Employee Benefits and Salary					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6	
	103-2	The management approach and its components	4.2 Employee Rights and Benefits	P.91	
	103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6	
GRI 202: Market Presence 2016	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	4.2.1 Employee Remuneration	P.92	
	202-2	Proportion of senior management hired from the local community	4.1.4 Ratio of Local Supervisors	P.91	
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	4.1.2 Employment 4.2.2 Job Security	P.89 P.93	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	4.2.3 Employee Benefits and Care	P.94	
	401-3	Parental leave	4.2.3 Employee Benefits and Care	P.94	
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	1.2 Corporate Governance 4.1 Human Rights Protection and Employment	P.22 P.89	
	405-2	Ratio of basic salary and remuneration of women to men	4.2.1 Employee Remuneration	P.92	



GRI Standards	GRI Standards	Referenced Section	Pages	Description
Material Topic: Occupational Health and Safety, Industrial and Public Safety				
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6
	103-2	The management approach and its components	4.4 Workplace Safety The Report and Management of Sustainable Issues- Communications with Stakeholders	P.98 P.7
	103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	4.4.1 Workplace Safety Management	P.98
	403-2	Hazard identification, risk assessment, and incident investigation	4.4.2 Process Safety Management	P.101
	403-3	Occupational health services	4.4.5 Employee Healthcare	P.105
	403-4	Worker participation, consultation, and communication on occupational health and safety	4.4.1 Workplace Safety Management	P.98
	403-5	Worker training on occupational health and safety	4.4 Workplace Safety	P.98
	403-6	Promotion of worker health	4.4.5 Employee Healthcare	P.105
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	4.4.2 Process Safety Management	P.101
	403-9	Work-related injuries	4.4.1 Workplace Safety Management	P.98
	403-10	Work-related ill health	4.4.5 Employee Healthcare	P.105

NPC Industry Issue				
GRI Standards	Disclosure Item	Referenced Section	Pages	Description
Material Topic: Controlled Chemical Substance Management				
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	The Report and Management of Sustainable Issues	P.6
	103-2	The management approach and its components	3.6 Controlled Chemical Substance Management The Report and Management of Sustainable Issues- Communications with Stakeholders	P.85 P.7
	103-3	Evaluation of the management approach	The Report and Management of Sustainable Issues	P.6

Appendix 2 Sustainability Accounting Standards Board (SASB) Comparison Table

Code	Accounting Metric	Corresponding Disclosure				Referenced Section
Disclosure Topic	Greenhouse Gas Emissions - NPC					
	Year	2018	2019	2020	2021	3.2 Risks and Opportunities of Climate Change
RT-CH-110a.1	Gross Scope 1 emissions (unit: CO ₂ -e)	2,645,521	2,661,454	2,602,355	2,475,350 (self-audit numbers)	
	The percentage covered under emissions-limiting regulations (unit: %)	Inventory under the regulations of the "Regulations for Registration of Inventory for Greenhouse Gas Emissions"				
RT-CH-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions-reduction targets, and an analysis of performance against those targets	Set the goal of "taking 2007 as the base year to reduce 20% emissions in 2025, reduce 35% emissions in 2030, and achieve carbon neutrality in 2050", and promote four carbon reduction policies to mitigate and adapt to the impact of climate change				
Disclosure Topic	Air Quality					
RT-CH-120a.1	Air emissions of the following pollutants: (unit: ton)	2018	2019	2020	2021	3.3 Air Pollution Management
	NO _x (excluding N ₂ O)	1,501.80	1,395.51	1,292.40	1,043.07	
	SO _x	617.30	637.09	581.20	513.92	
	Volatile organic compounds (VOCs)	2,667.2	2,072.33	1,941.96	2,240.98	
	Hazardous air pollutants (HAPs)	-	-	-	-	
Disclosure Topic	Energy Management - NPC					
	Year	2018	2019	2020	2021	3.2 Risks and Opportunities of Climate Change
RT-CH-130a.1	Total energy consumed (unit: GJ)	48,491,656	46,422,457	45,759,257	47,332,301	
	Percentage grid electricity (unit: %)	68.5%	67.1%	66.7%	71.8%	
	Percentage renewable (unit: %)	0	0	0	0	
	Total self-generated energy (unit: GJ)	5,093,670	5,093,670	5,254,620	4,831,885	



Code	Accounting Metric	Corresponding Disclosure				Referenced Section	
Disclosure Topic	Water Management - NPC						
	Year	2018	2019	2020	2021		
RT-CH-140a.1	Total water withdrawn (unit: 1000m³)	20,318	19,790	19,841	20,830	3.4 Water Resource Management	
	Water consumed in regions with high or extremely high baseline water stress (unit: %)	It does not apply to the current disclosure scope					
	Year	2018	2019	2020	2021		
	Total water consumed (unit: 1000m³) – include NCPC	11,865	13,406	14,436	15,802		
RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	Environmental violations related to water pollution in 2018-2021 (unit: case)				3.4 Water Resource Management	
		Type of violations \ Year	2018	2019	2020		2021
		Water pollution	1	0	0		2
		Soil and groundwater	0	0	0		0
RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	Assess the available consumption and withdrawn risk for water resources by using the risk matrix, ISO 14046, and the WRI Aqueduct assessment tool. The Company plans to increase the amount of wastewater recycling and desalination equipment to reduce the impact				3.4 Water Resource Management	
Disclosure Topic	Hazardous Waste Management						
	Year	2018	2019	2020	2021		
RT-CH-150a	Amount of hazardous waste generated (unit: ton)	15,125.4	17,045.8	21,057.7	23,371.0	3.5 Waste Management and Circular Economy	
	Percentage recycled (unit: %)	99	99	98	89		
Disclosure Topic	Community Relations						
RT-CH-210a.1	Describe the assessment and actions that the organization adapts to enhance the interests of community groups and help reduce risks of the community	Caring for the urgent needs of the community, donating social welfare expenditures and cooperating with academia to provide local agricultural and fishery scientific breeding techniques, operating in an environmentally friendly manner, and increasing output				5.1 Local Engagement	
Disclosure Topic	Workforce Health & Safety						
	Year	2018	2019	2020	2021		
RT-CH-320a.1	Total recordable incident rate (TRIR) and fatality rate for direct employees	The fatality rate: 0 TRIR: 0.066	The fatality rate: 0 TRIR: 0.086	The fatality rate: 1 TRIR: 0.054	The fatality rate: 0 TRIR: 0.044	4.4 Workplace Safety	
	Total recordable incident rate (TRIR) and fatality rate for contract employees	The fatality rate: 0 TRIR: 0	The fatality rate: 0 TRIR: 0	The fatality rate: 0 TRIR: 0	The fatality rate: 0 TRIR: 0		
RT-CH-320a.2	Description of efforts to reduce exposure of employees to long-term (chronic) health risks	To strengthen the process safety management and reduce the occurrence of harmful accidents, the Company continued to review the protective measures of the process at each plant in 2021 and installed interlocked guard safety devices, alarm devices, buzzers, etc., according to the process characteristics. All the Improvements are improved in the first half of 2021 to strengthen the intrinsic safety of equipment and implement in-plant safety management.					
Disclosure Topic	Product Design for Use-phase Efficiency - NPC						
RT-CH-410a.1	Revenue from products designed for use-phase resource efficiency (unit: currency used for reporting)	Green product sales accounted for about 4% of parent company-only revenue in 2021.					
Disclosure Topic	Safety & Environmental Stewardship of Chemicals						
RT-CH-410b.2	Description of strategy to manage chemicals of concern	Regularly track domestic and international relevant chemical specifications as the basis for internal chemical purchase and adoption, green product design and development, and process safety design.				3.5 Waste Management and Circular Economy	
	Description of strategy to develop alternatives with reduced human and/or environmental impact	Taking green product development and cleaner production as the main axle, the transition would focus on low harm to the human body, environmentally friendly, and emissions reduction of VOC.					
Disclosure Topic	Genetically Modified Organisms						
RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs) (unit: % by revenue)	The company does not manufacture products containing genetically modified organisms.				3.7 Environmental Compliance	
Disclosure Topic	Management of the Legal & Regulatory Environment						
	Year	2018	2019	2020	2021		
RT-CH-530a.1	An organization identifies risks and opportunities associated with environmental/ social regulations and the financial impacts	Violations: 8 cases Fine: NT\$711,000	Violations: 2 cases Fine: NT\$200,000	Violations: 3 cases Fine: NT\$206,000	Violations: 3 cases Fine: NT\$490,000	3.7 Environmental Compliance	
Disclosure Topic	Operational Safety, Emergency Preparedness & Response						
	Year	2018	2019	2020	2021		
RT-CH-540a.1	Process Safety Incidents Count (PSIC)	3	1	0	1	4.4 Workplace Safety	
	Process Safety Total Incident Rate (PSTIR)	0.025	0.008	0	0.009		
	Process Safety Incident Severity Rate (PSISR)	0.074	0.025	0	0.009		
Disclosure Topic	Production by reportable segment						
RT-CH-000.A	Description of Production by reportable segment (unit: m³ or ton)	Please refer to the sales volume/value table of the Company's annual report "2021 Annual Report" on the Company's website.				2.1.1 Major Brands	



Appendix 3 Corporate Governance Evaluation ESG Indicator Disclosure Item - NPC

Topic	Indicator	Description of Indicator	Results of 2021	Notes
Environmental issues				
GHG Emissions	Scope 1 GHG direct emission	tonCO ₂	2,602,355	The scope 1, scope 2, and scope 3 GHG emissions in 2021 are still being verified, therefore, the 2020 values were disclosed first.
	Scope 2 GHG indirect emissions	ton CO ₂	3,318,694	
	Scope 3 other GHG indirect emissions	ton CO ₂	25,309,161	
	GHG emissions intensity	ton CO ₂ /revenue (NTD thousand)	0.041	
	Strategies, methods, and goals of GHG management	qualitative narrative	3.2 Risks and Opportunities of Climate Change	
Energy Management	Renewable energy usage	renewable energy / total energy	0%	NPC has planned to build solar power generation equipment on the roof of each plant-site building in two phases by 2030, with an estimated total capacity of about 51,625kW. Among them, the construction capacity of 1,500kW on the roof of Hsinkang switchboard plant in 2021 was being constructed.
	energy efficiency	qualitative narrative	3.2 Risks and Opportunities of Climate Change	
	Use of recycled materials policy	qualitative narrative		
Water Resource	Water consumption	ton	20,830,240	
	Water density	water consumption/ revenue (NTD thousand)	0.0958	
	Water management or reduction targets	qualitative narrative	3.4 Water Resource Management	
Waste	Hazardous waste volumn	ton	6,023.3	
	Non-hazardous waste volume	ton	122,868	
	Total weight (hazardous + non-hazardous)	ton	128,891.3	
	Waste Intensity	water consumption/ revenue (NTD thousand)	0.0006	
	Waste management or reduction targets	qualitative narrative	3.5 Waste Management and Circular Economy	
Social issues				
Human Resource Development	Average employee remuneration	NTD/ person	1,242	
	Average employee benefits	NTD/ person	1,401	
	Average remuneration of full-time employees who do not serve as manager	NTD/ person	1,410	
	Median remuneration of full-time employees who do not serve as manager	NTD/ person	1,369	
	Proportion of female supervisors in management positions	Ratio	4.21%	Taking the first and second-level supervisors as the proportion of disclosure
	Number of Occupational Accidents	Number of people	8	no fatal occupational injuries in 2021.
	Occupational Hazard Rate	Ratio	0.07%	
Governance issues				
Board of Directors	Members of the Board of Directors	Number of people	15	
	Members of the independent directors	Number of people	3	
	Proportion of female directors	Ratio	13%	
	Attendance rate of Board of Directors	Ratio	97.78%	
	Proportion of training hours for directors and supervisors that in line with the training fundamentals	Ratio	100%	
Investor Communication	Number of investor conferences held by the company	Number of times	6 times	



Appendix 4 Independent Assurance Opinion Statement



INDEPENDENT ASSURANCE OPINION STATEMENT

2021 NAN YA PLASTICS CORPORATION Sustainability Report

The British Standards Institution is independent to NAN YA PLASTICS CORPORATION (hereafter referred to as NAN YA PLASTICS in this statement) and has no financial interest in the operation of NAN YA PLASTICS other than for the assessment and verification of the sustainability statements contained in this report.

This independent assurance opinion statement has been prepared for the stakeholders of NAN YA PLASTICS only for the purposes of assuring its statements relating to its sustainability report, more particularly described in the Scope below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by NAN YA PLASTICS. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is complete and accurate.

Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to NAN YA PLASTICS only.

Scope

The scope of engagement agreed upon with NAN YA PLASTICS includes the followings:

1. The assurance scope is consistent with the description of 2021 NAN YA PLASTICS CORPORATION Sustainability Report.
2. The evaluation of the nature and extent of the NAN YA PLASTICS' adherence to AA1000 AccountAbility Principles (2018) in this report as conducted in accordance with type 1 of AA1000AS v3 sustainability assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process.

This statement was prepared in English and translated into Chinese for reference only.

Opinion Statement

We conclude that the 2021 NAN YA PLASTICS CORPORATION Sustainability Report provides a fair view of the NAN YA PLASTICS sustainability programmes and performances during 2021. The sustainability report subject to assurance is free from material misstatement based upon testing within the limitations of the scope of the assurance, the information and data provided by the NAN YA PLASTICS and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are fairly represented. The sustainability performance information disclosed in the report demonstrate NAN YA PLASTICS' efforts recognized by its stakeholders.

Our work was carried out by a team of sustainability report assurers in accordance with the AA1000AS v3. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that NAN YA PLASTICS' description of their approach to AA1000AS v3 and their self-declaration in accordance with GRI Standards: Core option were fairly stated.

Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

- a review of issues raised by external parties that could be relevant to NAN YA PLASTICS' policies to provide a check on the appropriateness of statements made in the report.
- discussion with managers on approach to stakeholder engagement. However, we had no direct contact with external stakeholders.
- 12 interviews with staffs involved in sustainability management, report preparation and provision of report information were carried out.
- review of key organizational developments.
- review of the findings of internal audits.
- review of supporting evidence for claims made in the reports.
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000AP (2018).



Conclusions

A detailed review against the Inclusivity, Materiality, Responsiveness and Impact of AA1000AP (2018) and GRI Standards is set out below:

Inclusivity

This report has reflected a fact that NAN YA PLASTICS has continually sought the engagement of its stakeholders and established material sustainability topics, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. There are fair reporting and disclosures for the information of Environment, Social and Governance (ESG) in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the NAN YA PLASTICS' inclusivity issues.

Materiality

NAN YA PLASTICS publishes material topics that will substantively influence and impact the assessments, decisions, actions and performance of NAN YA PLASTICS and its stakeholders. The sustainability information disclosed enables its stakeholders to make informed judgements about the NAN YA PLASTICS's management and performance. In our professional opinion the report covers the NAN YA PLASTICS' material issues.

Responsiveness

NAN YA PLASTICS has implemented the practice to respond to the expectations and perceptions of its stakeholders. An Ethical Policy for NAN YA PLASTICS is developed and continually provides the opportunity to further enhance NAN YA PLASTICS' responsiveness to stakeholder concerns. Topics that stakeholder concern about have been responded timely. In our professional opinion the report covers the NAN YA PLASTICS' responsiveness issues.

Impact

NAN YA PLASTICS has identified and fairly represented impacts that were measured and disclosed in probably balanced and effective way. NAN YA PLASTICS has established processes to monitor, measure, evaluate and manage impacts that lead to more effective decision-making and results-based management within the organization. In our professional opinion the report covers the NAN YA PLASTICS' impact issues.

GRI Sustainability Reporting Standards (GRI Standards)

NAN YA PLASTICS provided us with their self-declaration of in accordance with GRI Standards: Core option (For each material topic covered by a topic-specific GRI Standard, comply with all reporting requirements for at least one topic-specific disclosure). Based on our review, we confirm that sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported or omitted. In our professional opinion the self-declaration covers the NAN YA PLASTICS' sustainability topics.

Assurance level

The moderate level assurance provided is in accordance with AA1000AS v3 in our review, as defined by the scope and methodology described in this statement.

Responsibility

The sustainability report is the responsibility of the NAN YA PLASTICS' chairman as declared in his responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

Competency and Independence

The assurance team was composed of Lead auditors experienced in relevant sectors, and trained in a range of sustainability, environmental and social standards including AA1000AS, ISO 14001, ISO 45001, ISO 14064 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.

For and on behalf of BSI:

Peter Pu, Managing Director BSI Taiwan

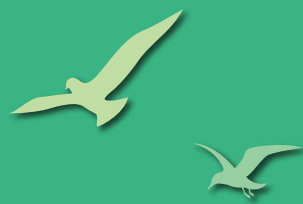


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Statement No: SRA-TW-2021052
2022-06-10

Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.

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Nan Ya Plastics Corporation

General Manager's Office Business Analysis Group

Address : 201, TUNG HWA NORTH ROAD TAIPEI TAIWAN, REPUBLIC OF CHINA

Tel : 886-2-27122211

Fax : 886-2-27178533

Email : NPC ESG@npc.com.tw

www.npc.com.tw