台塑企業
FORMOSA PLASTICS GROUP

2023

Nan Ya Plastics Corporation

Sustainability Report





About This Report

2-1、2-2、2-3、2-4、2-5、2-14

Report Overview

This is the Sustainability Report (hereinafter "this report") of Nan Ya Plastics Corp. (hereafter referred to as "the Company" or "NPC"). The content is compiled in accordance with the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) issued by the Global Report Initiative (GRI) in 2021. This report presents the data for the most recent 3 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 2023

Publication date of the current edition: August 2024

Publication date of the next edition: August 2025



2020 CSR Report



2021 Sustainability Report



2022 Sustainability Report

2023/9 – 2022/11

Set up material topics and held kick-off meeting for the Sustainability Report

2024/1 – 2024/4

Compiled relevant information of the Sustainability Report



2024/3 – 2024/5

Verified by third-party international agencies.



2024/6

- Completed final draft of the Sustainability Report
- Submit the report to the Sustainable Development Committee and the Board of Directors for approval in June.

2024/8

Announce the publication of the Sustainability Report



Note: In compliance with the regulatory requirements for greenhouse gas verification and in response to the domestic verification capacity constraints, the "NPC 2023 Sustainability Report" is scheduled to be published in August in accordance with the regulations.



Scope and boundaries of the Report

The reporting scope of this report mainly focuses on NPC and its 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 shallow impact on the consolidated revenue. Therefore, relevant information from these subsidiaries is not disclosed. Any other disclosures that do not align with the aforementioned scope will be explained separately in the respective sections. The data citation and disclosed boundaries are the same as in 2022. Information disclosure period: January 1st, 2023 to December 31st, 2023.

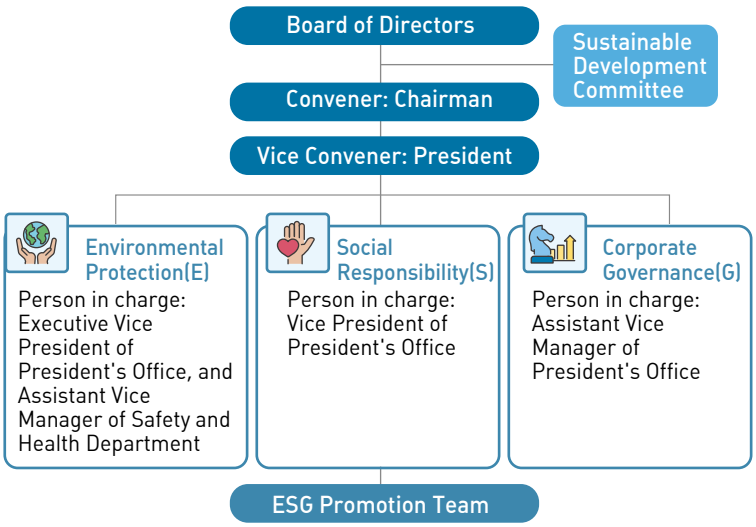
The financial data is publicly published after being audited by the CPA. Other statistical data are quoted from public information published by government agencies and related websites and are presented in words or numerical values. Any exceptions will be specifically stated in the report.

Editorial Principles and Reference Guidelines

Issued unit	Framework/ Regulation
The United Nations, UN	UN Sustainable Development Goals, SDGs
Global Sustainability Standards Board, GSSB	Universal Standards 2021
Financial Stability Board, FSB	Task Force on Climate-related Financial Disclosures, TCFD
International Sustainability Standards Board, ISSB	Sustainability Accounting Standards Board, SASB
Account Ability Organization	Materiality, Inclusivity, Responsiveness, and Impact of AA1000 Accountability Principles Standard
Taiwan Stock Exchange Corporation	Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies

Structure of ESG Sustainability Promotion Organization

To effectively integrate and promote the work of ESG, NPC has the Chairman of the board as the organizer to comprehensively manage related businesses and establish an "ESG Sustainability Promotion Organization," which is responsible for formulating company-wide strategies on environmental protection (E), social welfare(S), and corporate governance (G). The organization also actively promotes the execution of various businesses, conducts regular performance monitoring, and timely adjusts relevant strategies and promotion goals through continuous communication with stakeholders.





Third-Party Assurance

To ensure the transparency and credibility of this report, the disclosed information has been independently verified by "The British Standards Institution"(BSI), a third-party international assurance authority. This report was verified based on the Type 1 assurance of the AA1000 v3 assurance standard. The independence assurance statement is also included in this report.

Contact Information

Thank you for reading this report. If you have any concerns or suggestions regarding this report, please feel free to contact us and give us advice. Our contact information is listed below:

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This report is available for download at

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



2023 Sustainability Report

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Message from the Chairman 2-22

In order to actively promote sustainable development, NPC strengthens corporate governance, promotes environmental protection business, and implements corporate social responsibilities with the business philosophy of "diligence, perseverance, frugality, and trustworthiness" to create a safe and happy workplace. In recent years, the Company has been actively concerned with the global climate-changing issues and is committed to developing sustainable new blue ocean business opportunities, gradually integrating environmental protection sustainability into operations, and leading the industry as a whole toward a new, sustainable way of living.

In response to significant changes in the external operating environment in recent years, we have established the "Sustainable Operations and Development Group" internally to coordinate resources across the company. This group is leading four major transformation strategies: "Product Transformation," "Business Transformation," "Low-Carbon Transformation," and "Digital Transformation." These initiatives drive comprehensive optimization from internal management to product development and application. Aligned with global ESG sustainability trends, we aim to enhance the company's sustainable value and improve overall operational performance.

Facing a constantly changing business environment, we continuously promote: "Increase the proportion of high-value and differentiated products, and expand new applications and markets.","Develop new businesses, products, and technologies to strengthen the company's industrial layout.","Apply digital technology to enhance AI and digital transformation, achieving intelligent operations.", and "Develop green products, commit to energy saving and carbon reduction, and implement circular economy initiatives." These business strategies aim to create corporate value and improve overall operational performance.

The company has long adhered to environmental concepts such as the "circular economy," implementing water and energy conservation, waste reduction, and recycling initiatives. In recent years, we have also integrated emerging technologies like AI to promote waste reuse and resource recovery. Internally, we achieve resource conservation through multiple recycling loops, while externally, we actively collaborate with upstream and downstream value chain partners to expand the market for low-carbon recycled products, maximizing environmental and economic benefits. In 2023, our Linkou Plant No. 2 received the Ministry of Environment's "Gold Award for Resource Recycling Excellence" in recognition of outstanding achievements.

With a goal of "carbon neutrality by 2050," we are actively implementing carbon reduction strategies, including "low-carbon energy transformation," "energy-saving and circular economy," "increased renewable energy use," and "carbon capture technology application." We are committed to transitioning towards energy transformation, circular economy, and low-carbon processes for green products. Currently, we have installed solar power systems on the roofs of some facilities at our Chiayi and Hsinkang sites, and we continue to advance other energy transformation plans.

We are actively developing high-value green products to provide consumers with various environmentally friendly options. Some of these products have obtained eco-labels, green building material certifications, or the Global Recycled Standard for textiles, and we are advancing product carbon footprint assessments. For example, our "SAYA RSCUW" brand has pioneered BPA-Clear technology, a breakthrough for BPA control, enhancing product safety. Additionally, from 2021 to 2023, we sold a total of 278,000 tons of PET bottle recycled products, reducing greenhouse gas emissions by approximately 480,000 tons — equivalent to the carbon absorption of 1,219 Daan Forest Parks.

In terms of creating a safe and happy working environment, our core value is" all-around security". Only a safe and comfortable workplace can attract talented people, enhance the Company's core competitiveness, and become a good foundation for sustainable development. Therefore, we established a positive industry safety culture by continuously improving standard operating procedures, implementing safety actions, preparing safety tools, educating safety awareness, and cultivating safety attitudes.

In addition, NPC provides employees with generous salary benefits, solid training, and good promotion channels. In 2023, we release "Diversity and Inclusion Policy" and continuously offer several welfare measures, hoping to improve the physical and mental health of employees' work environment, and families can all receive appropriate care. In the future, we will continue to promote the participation of all employees in industrial safety activities, implement ISO 45001 and TOSHMS occupational safety and health management systems, and strive to provide employees with a safe and secure working environment.

In terms of social contributions, we uphold the principle of "giving back to society" by continually supporting local communities and vulnerable groups. We encourage our employees to engage wholeheartedly in providing warmth and assistance to these communities, fostering a spirit of unity between our company and local residents. In 2023, we also partnered with Taipei 101's "Vertical Marathon" event, creating the most eco-friendly race shirts to date using SAYA "Rscuw recycled yarn," which were provided to participants across various fields. Additionally, we held the "Planting Trees for Future Generations" event, aiming to pass on the values of public service and environmental awareness to the next generation.

In the future, we will continue to comply with the business philosophy of "diligence, perseverance, frugality, and trustworthiness" to implement and promote corporate governance, perpetual business operation, develop a sustainable environment, and actively engage in social welfare activities. We will listen and respond to the needs of the environment and society and work towards this direction. The Company can contribute more to the environment and society through positive interaction and continuous improvement. Social responsibility is integrated into our business while we strive for sustainable development. We want 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**

2024



About Nan Ya Plastics 2-6、2-28

Company Introduction

Nan Ya Plastics Corporation (hereafter referred to as "the Company" or "NPC") was founded in 1958 and initially specialized in plastic secondary processing products such as PVC pipes, PVC leather, and PVC sheeting. The Company gradually expanded to chemical products, polyester fibers, electronic materials, and mechanical and electrical engineering projects. NPC has expanded overseas to the United States, China, and other foreign business since 1979. The Company has established itself as an international and diversified business. (Please refer to the "Company History" section on NPC's website for the Company's history.)

"Company History" on NPC website

Nan Ya Plastics Corporation

Date of establishment
August 22, 1958

Listing Date
November 5,1967

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
Taipei Office: (7F, A1 Building) No. 380, Section 6, Nanjing East Road, Neihu District, Taipei City, Taiwan

Capital
NT$79,308,215,890

2023 Revenue
NT$259,755,344,000

Global Locations
Taiwan, China, the United States (6 of the subsidiaries listed in the consolidated financial statements are from Taiwan, and 22 are overseas)

Number of employees in 2023
30,392 employees (this Report is mainly based on 17,658 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 2023 Annual Report (as of December 31, 2023, 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 2023 consolidated financial statements.

Business Philosophy

The Company's business philosophy is to pursue the rationalization of everything 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". NPC is committed to becoming a company that brings happiness to employees, a sense of security to investors, and trustworthiness to society.



NPC's Business Philosophy

Diligence, Perseverance, Frugality, and Trustworthiness

Diligence is using wisdom to maintain a simple and realistic work attitude, get to the bottom of the matter, seek constant improvement, and rationalize corporate management.

To Aim at the Sovereign Good

Due to the rapid changes in the external environment, the rationalization of corporate management must improve continuously to change the existing situation. Therefore, the Company can seek innovation and development.

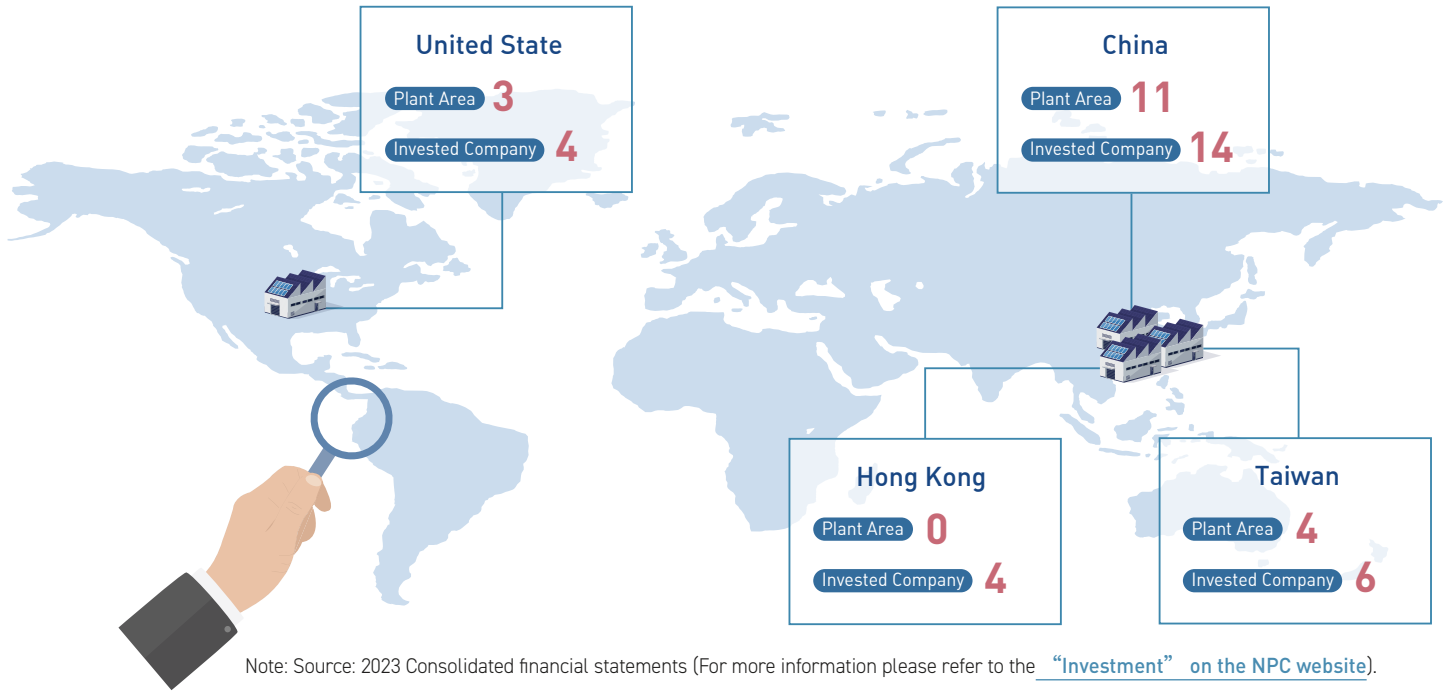
Perpetual Business Operation

To improve work quality and efficiency and ensure all operations comply with statutory requirements, we implement management rationalization to strengthen long-term profit potential. In addition, the Company provides customers with high-quality and low-cost raw materials to achieve a mutually beneficial and strong partnership.

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.

Locations of Global Operations

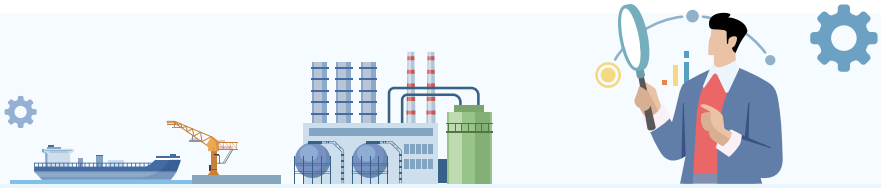


Note: Source: 2023 Consolidated financial statements (For more information please refer to the "Investment" on the NPC website).



Formosa Plastic Group Product Association Diagram

The Company is affiliated with Formosa Plastics Group (FPG). Through the vertical integration of upstream and downstream sectors, NPC actively lowers production costs and increases economic scale to meet customer demand for raw materials and enhance market competitiveness. In terms of oil refinement, petrochemical raw materials, plastics, fibers, and electronics, FPG has established an integrated supply chain.



Crude Oil		
Refining	Naphtha, Gasoline, Diesel, Kerosene, Fuel Oil, Base Oil, LPG	FPCC
Petrochemical Upstream	Basic raw materials Alkenes: Ethylene/Propylene/Butadiene BTX: Benzene/Toluene/PX/ OX/MX	FPCC, FCFC
Petrochemical Midstream	■ Raw materials of artificial fibers(EG/PTA/AN) ■ Chemical Product(ECH/AE/1,4BG/SAP/NBA/BPA/DOP) ■ Plastic Raw Materials (General Plastics: PVC/PE/PP/PS/ABS) ■ Engineering Plastics(PC/PBT/POM/Nylon) ■ Synthetic Resin(Epoxy/ PU Resin/Phenolic Resins)	FPC, NPC, FCFC
Petrochemical Downstream	■ Yarn Spinning (polyester/Nylon/Rayon/Modacrylic/ Spandex/Carbon Fiber/Fiber Glass) ■ Plastic Processing (PVC Sheeting/PVC leather/Rigid Film/POM Door and Windows/Synthetic Paper) ■ Specialty chemicals/additives ■ Electronic Materials (Glass Yarn/Copper Clad Laminate/Printed Circuit Board) ■ Synthetic Leather	FPC, NPC, FCFC
Downstream Application	Green Energy, Biotech Industry, Medical and Health Care, Semiconductor Industry, Printed Circuit Board Industry, Mechanical/Steel, Transportation	

Note: Please refer to P.185~P.186 of the Annual Report for details on the "Raw Material Consumptions" and "Production and Sales Volume".



Participate in external association

NPC is actively involved in various industry associations and serves essential functions ranging from directors and representatives for specific associations to assist Taiwan's industries in improving their business capabilities. We hope to contribute to the overall industry by sharing the latest market information, changes in supply and demand, and technological information with the industry.

At the same time, NPC is highly concerned about environmental sustainability issues, such as climate change, and actively participates in the evaluation and initiatives of various sustainability organizations on sustainability issues, hoping to have a sustainable impact and build a prosperous living environment.

External Association Name	Position
Taiwan Synthetic Resins Manufacturers Association	Managing Director
Petrochemical Industry Association of Taiwan	Director
Taiwan Man-made Fiber Manufacturing Industries Association	Managing Director/ Director
Taiwan Textile Printing, Dyeing & Finishing Association	Director
Taiwan Accreditation Foundation	Director

Other external associations: Taiwan Responsible Care Association, Taiwan Printed Circuit Association, Taiwan Association of Machinery Industry, etc.

Participation in Domestic and International Sustainability Initiatives

CDP

Since 2018, NPC has actively participated in CDP climate change and water security questionnaire evaluations. In 2023, NPC received "Leadership Level (A)" rating for both the climate change and water disclosure questionnaire.

TCFD

Since 2018, NPC has been promoting climate change management initiatives based on the TCFD framework. In 2021, NPC completed the commitment signing and became one of the "TCFD Supporter". In 2023, NPC published the 2022 TCFD Report.

SCIENCE BASED TAEGETS

Agreeing the Science Based Targets (SBT) initiative, NPC completed the commitment signing in 2021 and received target approval in March 2023.

Marine Debris Recycling Coalition

Agreed with the concept of "marine waste recycling" and joined as a coalition member



NPC Sustainability Performance

E Environmental Protection Aspect



- The Company received "Leadership Level (A)" in the climate change sector and received "Leadership Level (A)" in the water security sector in the 2023 Carbon Disclosure Project (CDP).
- At the end of 2023, the company completed the installation of solar power systems with a total capacity of **7,838.55**KW (located at part of plants in Chiayi and Xingang) and conducted equipment registration. This meets the 8%-early-bird requirement of the " Energy-heavy Industries Clause" (the regulatory authority issued an obligation installation capacity of 7,791.6KW for the company).
- In 2023, the company continued to publish the 2022 **TCFD** Report.
- The 2023 air pollutant emissions of the Company decreased by **214.29** tons for VOC, and **2.31** tons for TSP compared with 2021.

S Social Responsibility Aspect



- The Company was granted the "**Golden Medal**" of Manufacturing Industry Happiness Enterprise from 1111 Job Bank in 2023.
- Employee hiring of the Company and subsidiaries in Taiwan: more than **99.2%** are permanent employees, and **93.5%** are Taiwanese citizens.
- In 2023, the average monthly voluntary resignation rate from the Company and its subsidiaries in Taiwan was **0.46%**.
- **In 2023, the company had no major fatal occupational accidents.** The occupational accident indicators were as follows: disabling frequency rate (FR) was **0.10**, disabling severity rate (SR) was **5**, and frequency-severity indicator (FSI) was **0.02**. Notably, the disabling frequency rate (FR) indicator was better than in 2022.

G Corporate Governance Aspect



- The company's MSCI ESG rating remained at **BBB**.
- The Company was selected as a constituent of the "**FTSE4Good TIP Taiwan ESG index**" and "**FTSE TWSE Taiwan 50 Index**".
- 2023 customer satisfaction survey results indicated an overall score of **4.4** points, accounting for 88% of the total score, which is **better than** the 4.3 score in 2022.
- **No major violations** occurred in 2023.



NPC Awards

MSCI

MSCI ESG rating remained at BBB.

CDP

2023 CDP assessment:
"Climate Change ": Leadership Grade A (Leadership level for 6 consecutive years)
"Water Security": Leadership Level A (Leadership level for 5 consecutive years)

FTSE4Good

FTSE4Good Index Series FTSE4Good TIP Taiwan ESG index

TWSE

6-20% of the 10th Corporate Governance Evaluation System
FTSE TWSE Taiwan 50 Index
TWSE HC100 Index
Taiwan Environmental Friendly 50 Index

1111 Job Bank

The "Gold Medal" of Manufacture Industry Happiness Enterprise in 2023



Ministry of Environment

"Outstanding Green Procurement Supplier"



Ministry of Environment

"2023 Outstanding Resource Recycling Enterprise - Gold Medal" (Linkou Site II)



Ministry of Economic Affairs

"2023 Energy Saving Benchmark Award - Silver Award" of the Ministry of Economic Affairs
(Kung San Site)



Industrial Development Administration,Ministry of Economic Affairs

"2023 Industrial Greenhouse Gas Reduction Outstanding Manufacturer" of the Ministry of Economic Affairs
(Kung San Site, Chiayi Site I and Site II)



Ministry of Environment

"National Outstanding Operations Management Joint Defense Organization" (Shulin Site)



Yunlin County Government

Ministry of Environment "National Joint Defense Organization Deep Operation Award" (PA plant and DEHP plant)







ESG collections



Special Action 1

NPC Collaborated with Industrial Technology Research Institute (ITRI) and TÜV Rheinland to Complete Carbon Footprint Verification of Major Products

- Since 2005, NPC has continuously completed annual greenhouse gas emission verifications (Scope 1 and Scope 2) based on ISO 14064-1. Furthermore, the company is now advancing to ISO 14067 product carbon footprint verification, comprehensively assessing the greenhouse gas emissions of products from raw material acquisition (including transportation) to the manufacturing stage (covering Scope 1, 2, and 3). This initiative aims to accurately determine the actual carbon emissions and carbon hotspots of each product, which will serve as the basis for various carbon reduction plans.
- Since 2022, NPC has been collaborating with the Green Energy and Environment Research Laboratories of ITRI to train a seed team. Last year, we completed the verification of products such as recycled polyester pellets from PET bottles, POY, DTY, FDY, and polyester films. This year, we expanded to complete the carbon footprint assessment of 13 additional products, including Engineering Compounds, TPU Compounds, SMC Qingxiang Doors, PA, 1,4 BG, EG, Polyester Release Film, Copper Foil, Glass Fiber Yarn, Glass Fabrics, EPOXY, CCL, and Cast Resin Transformer. We entrusted TÜV Rheinland, a highly trusted organization in the industry, to conduct third-party verification. After confirming the relevant data and supporting documentation, we obtained the product carbon footprint statements.
- In addition to the aforementioned industrial products (business-to-business), NPC has also taken the lead in the industry by completing the carbon footprint verification of consumer products (business-to-consumer) such as Window Films and Recycled Plastic Pallets. We have obtained the Ministry of Environment's carbon footprint labels and carbon reduction labels, providing consumers with more energy-saving and low-carbon options.



(From left to right) TÜV Rheinland General Manager Hsiu-Yun Wang, NPC Chairman Chia-Chau Wu, and ITRI Green Energy and Environment Research Laboratories Director Han-Ying Wang attended the certification ceremony for the carbon footprint verification of NPC's major products.

Special Action 2

NPC's Innovative BPA-Clear Bisphenol A Removal Technology Accelerates the Quality Upgrade of the Polyester Environmental Brand

- NPC's efforts in the polyester recycling green economy have achieved another quality upgrade. The company's eco-friendly recycled brand, SAYA, has successfully gained international brand recognition, capturing 16% of the global recycling capacity market share. It has now successfully developed the innovative "BPA-Clear bisphenol A removal technology," which can control BPA (bisphenol A) content to meet international standards. Currently, the application rate of the BPA-Clear technology in existing polyester recycling capacity has reached 50%, with a target to further increase to 80% next year, enhancing the quality of recycling capacity.
- Nanya's eco-friendly recycled brand "SAYA" was established in 2020, focusing on the development of polyester recycling and has been adopted by international sports giants such as Adidas and Nike. Last year, the "SAYA Lab" research team was established to explore and develop various possibilities for PET recycling and remanufacturing, with a core focus on sustainable recycling technology.



NPC's innovative BPA-Clear bisphenol A removal technology accelerates the quality upgrade of its polyester environmental brand.

- SAYA's pioneering BPA-Clear technology effectively controls the BPA content in production lines to meet international standards through "removal technology" and "strict control," making recycled polyester products safer. Currently, it can produce stable and quantifiable outputs. BPA-Clear products are in high demand in the industry, and the production line is expected to be expanded next year to meet supply needs.



Special Action 3



Nanya's "SAYA" Partners with Taipei 101 Vertical Marathon: Athletes Wear the Most Eco-Friendly Racing Shirts for the First Time

- NPC's eco-friendly recycled brand "SAYA" uses leading-edge technology to process recycled materials and focus on polyester recycling research. In 2023, for the first time, SAYA was partnering with Taipei 101 for an environmental initiative. Using SAYA's "Rscuw Recycled Fabric Yarn," the brand was creating the most eco-friendly racing shirts ever for the grand event "Vertical Marathon," which was making a comeback after three years. A total of 3,500 shirts were provided to participants in the event.
- The racing shirt was not only the first functional racing shirt in Taiwan made from recycled fabric but also reduced carbon emissions by up to 70% compared to traditional shirts. It featured "Delight" fiber with a unique cross-section for quick-drying, ensuring that athletes stay comfortable and dry during intense activities. By wearing these shirts made from recycled fabric and PET bottles, participants can enjoy comfort and functionality while supporting green principles.



Nanya is partnering with Taipei 101 for the first time to promote environmental sustainability by creating the most eco-friendly racing shirts ever for the "Vertical Marathon" using SAYA's "Rscuw Recycled Fabric Yarn."

- SAYA continues to break through industry limits in fabric recycling technology and cost. The brand transforms discarded clothing scraps, secondary fabrics, and PET bottles into Rscuw recycled fabric, giving new life to materials that were previously unusable. The goal is to further promote zero-waste Rscuw recycled fabric, making it more widespread, driving revolutionary changes at the industry source, and advancing a circular economy to realize a sustainable living vision.

Special Action 4



NPC Hosts "Thousands Plant Trees, Future Generations Enjoy the Shade" Event

Item	Key Points
Corresponding ESG Issues	■ Social welfare, environmental protection. ■ Responding to environmental sustainability issues for "Tree Planting Day."
2023 Tree Planting Day Event	■ Organizer: Nanya Plastic. ■ Date: March 12, 2023, "Tree Planting Day." ■ Location: Formosa Plastics Yangmei Organic Ecological Farm. ■ The event focused on planting three types of seedlings: Tallow Tree, Taiwan Beech, and Sweet Gum. This tree planting event is expected to create approximately 13,378 kilograms of carbon sequestration. Through this activity, employees will learn environmental education and pass on environmental awareness to the next generation.



NPC employees planted Tallow Tree seedlings in groups.



NPC employees supported the company's ESG activities. We took photos before planting the trees.



Material topics Identification and Stakeholders Engagement 2-29、3-1、3-2

Material topics identification and analysis process

When NPC compiles the sustainability report, members of the "ESG Promotion team" will gather to focus on the current major stakeholders and the essential issues. Communicate and discuss the relevant topics and achieve consensus, which will serve as a critical reference for the content disclosed in the report.

STEP 1
Identification stakeholders

9 types of stakeholders: Employees、Shareholders and Investors、Customers、Suppliers and Contractors、Local Residents、Government Agencies、Experts, Scholars, and Industry Associations、Environmental Groups、Media

In 2023, NPC convened key personnel from various departments to conduct a horizontal comparison of the impacts on operations at domestic and international industry counterparts, and a vertical analysis of its own business activities and sustainability context. Based on the five principles of the AA1000 Stakeholder Engagement Standard (SES): Dependence, responsibility, influence, diverse perspectives, and attention. The company identified and assessed nine categories of stakeholders.

▼

STEP 2
Collection of issues that impact the Company

85 impact items

Refer to the GRI Standards, SASB, TCFD, Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies, ISO 26000: Guidance on social responsibility, international evaluation of industry issues, United Nations SDGs, domestic and foreign industry issues, global trend issues and media reports, etc. 85 impact projects were sorted out to identify impact items and the positive or negative impacts on enterprises.

▼

STEP 3
Integrating company impact issues into sustainability issues

21 sustainability issues

After the consulting team gave integration suggestions, the impact issues were integrated into sustainable matters according to the theme. After discussion with the core members of the ESG promotion team and external consultants, they were consolidated into 21 sustainability issues for subsequent identification.

▼

STEP 4
Analysis and ranking of material topics

814 questionnaire responses

The functional groups of the President's Office, Accounting Department, Safety and Health Department, various business offices, Mailiao Management Department, Kaohsiung Management Department, and other departments will assist in issuing electronic questionnaires. Then, based on the "degree of concern of stakeholders" and "degree of impact on the Company's operations," high, medium, and low-intensity analysis is conducted to identify its importance. In 2022, 774 valid questionnaires from stakeholders and 40 valid questionnaires from company executives were collected.

▼

STEP 5
Issue impact assessment and discussion

12 material topics

Utilize the spirit of GRI 3, materiality analysis to measure the financial impact and likelihood of occurrence of high and medium issues. Compare material topics with the GRI standards to identify 12 material topics.

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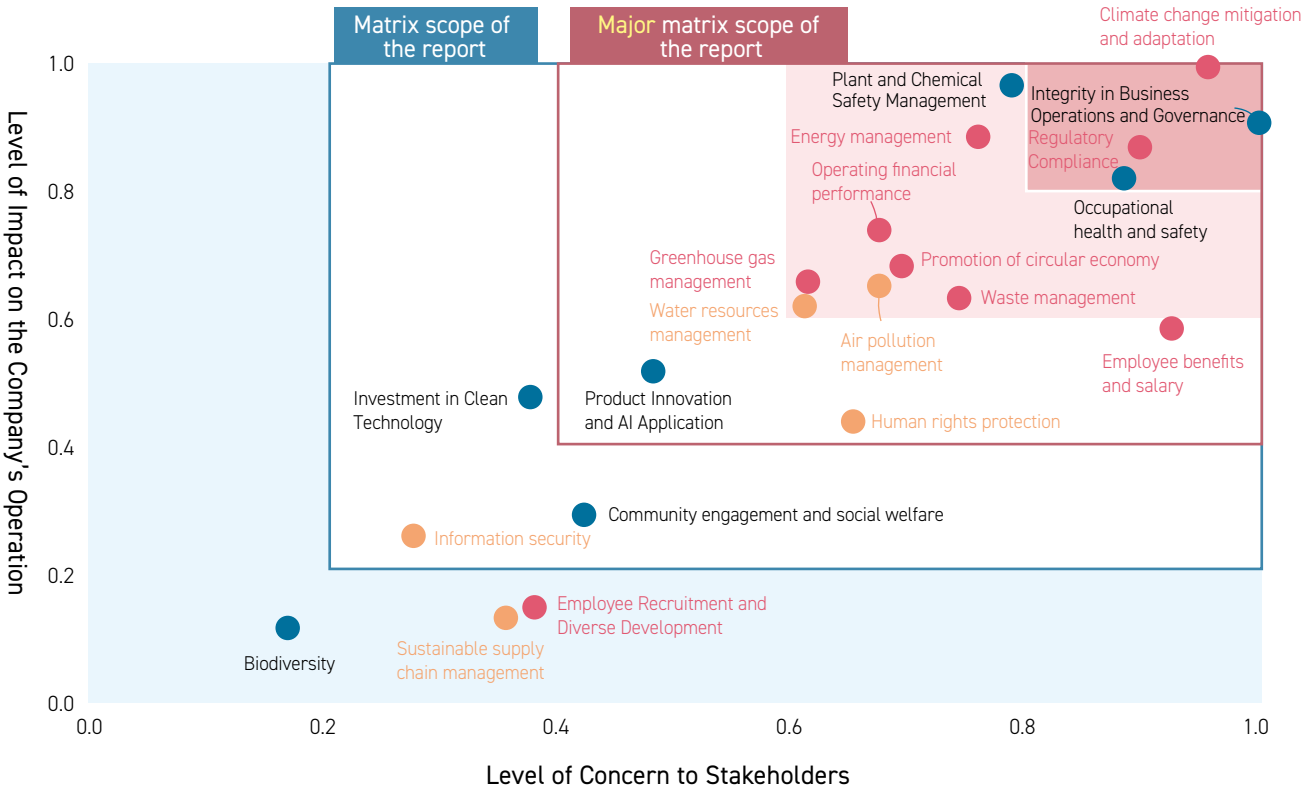
STEP 6
Disclosure and reporting of material topics

9 risks with a high likelihood of occurrence

After evaluation by the company, 12 material topics have been selected as key disclosure points for this report. Management policies for these topics have been developed, with special attention given to 9 issues that have a high likelihood of occurrence. The importance of various sustainability issues will continue to be reviewed in the future to address stakeholder expectations and ensure that the report's disclosures are transparent, reasonable, and balanced.



Material topic matrix and ranking





Management Policy	Highly Material Topics: 4	Low Materiality Issues: 6
	Moderately Material Topics: 8	Off-Matrix Tracking Issues: 3
Possibility	Highly Possibilitys: 9	Low Possibility: 7
	Moderately Possibility: 5	No Possibility: 0

Issue	Materiality in 2023	Materiality in 2021	Adjustment	Reasons for change	Corresponding page number
Employee benefits and salary	Low	Moderate	↓	NPC has been conducting long-term operational risk monitoring and actively optimizing employee care and management policies, which has led to a slight decrease in the importance of the issue.	P.107

In the spirit of improvement, we will appropriately disclose the content of issues of concern in this report. We will continue communicating with stakeholders in the future, list deficiencies as critical points for improvement, and strive to maintain good interactions with stakeholders.



Material topics and value chains

Raw Material Procurement

Purchase requirement › Price negotiation › Purchase order › Acceptance & payment

Impact on the entity
Employee, Supplier

R&D and Improvement

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

Impact on the entity
Employee, Customers, Industry/academic

Our Business Model

Manufacturing and Production

Materials preparation and production scheduling › Production › Quality inspection › Inventory

Impact on the entity
Employee, Supplier, Residents, Government

After-Sale Service & Consultations

Visit customer › Satisfaction survey › Feedback and improvement

Impact on the entity
Employee, Customers

Product Sales

Order confirmation › Manufacturing › Product delivery

Impact on the entity
Employee, Customers, Transportation Contractor





Items	SDGs		Crucial Topics	GRI Standards	Financial Impact	Impact and Business Relationships (cause/contribute to/directly link to)					Corresponding Chapter
	Goal	Sub-Goal				R&D and Improvement	Raw Material Procurement	Manufacturing and Production	Product Sales	After-Sale Service & Consultations	
Core connection	8	-	Integrity Corporate Management and Governance	GRI 205: Anti-corruption GRI 206: Anti-competitive behavior GRI 207: Tax	Low	●	✓	●	●	✓	1.1.3
			Regulatory Compliance	Custom Material Topics	Low	●	✓	●	●		1.2.2
		8.8	Occupational health and safety	GRI 403 Occupational health and safety	Low	●	✓	●	●	✓	4.3
	13	13.3	Climate change mitigation and adaptation	GRI 201: Economic Performance GRI 305 Emissions	Moderate	●	✓	●	●	✓	3.2
Sub-connection	8	-	Operating financial performance	GRI 201 Economic Performance	Moderate to High	●	●	●	●		1.2.1
	12 3	12.4 3.9	Air pollution management	GRI 305 Emissions	Low to Moderate	●	✓	●	●		3.3
	6	6.3	Water resources management	GRI 303 Water and Effluents	Low to Moderate	●		●			3.4
	12 3	12.5 3.9	Waste management	GRI 306 Waste	Moderate	●	✓	●			3.5.1
	13	13.3	Greenhouse Gas Management	GRI 305 Emissions	Moderate	●	✓	●	●	✓	3.2
	13	13.3	Energy management	GRI 302 Energy	Moderate	●	✓	●			3.2
	6	6.5	Promotion of circular economy	GRI 306 Waste	Moderate	●	✓	●	✓		3.5.2
	8	8.8	Facility and Chemical Safety Management	Custom Material Topics	Low to Moderate	●	✓	●	●		4.3

Note 1: Financial impact degree intervals: High (greater than 10 billion NTD), Moderate to High (1 billion - 10 billion NTD), Moderate (100 million - 1 billion NTD), Low to Moderate (10 million - 100 million NTD), Low (above 1 million NTD).

Note 2: Degree of involvement in impact and business relationship:

Cause (●): Indicates the impact caused by the organization's own activities.

Contribute to (▲): Indicates that the organization's activities lead to, facilitate, or induce another entity's impact.

Directly linked to (✓): Indicates that an organization has not caused or contributed to a negative impact but may be directly linked to a negative impact through its business relationships (operations, products, or services).



NPC's Stakeholder Identification and Engagement

In response to international trends and industry changes, NPC re-examined the sustainable context of its operations. Centering on the "ESG Promotion Organization," in 2023, the company referenced the AA1000 Stakeholder Engagement Standard (SES, 2015) principles of "Dependency," "Responsibility," "Influence," "Tension," and "Diverse Perspectives" to re-identify and confirm nine key stakeholders crucial to its sustainable development. NPC communicated with these stakeholders to address their needs and expectations. Through the stakeholder engagement process, the company enhanced its accountability to stakeholders and strengthened its internal sustainability strategy.

The Five Key Principles of Stakeholder Engagement Standards

Dependency

Stakeholders who directly or indirectly rely on the organization's activities, products, or services, or entities upon which the organization depends for its operations.

Responsibility

The organization currently or in the future has legal, commercial, operational, or ethical responsibilities to stakeholders.

Influence

Stakeholders who have influence over the organization and its operational decisions.

Tension

Stakeholders who require the organization's immediate attention due to issues related to financial, economic, social, or environmental matters.

Diverse Perspectives

Stakeholders have different perspectives and insights, which can help the organization understand the current situation, identify new opportunities, or develop action plans.

Nine Categories of Stakeholders

Customers	Employees	Suppliers and Contractors
Shareholders and Investors	Government Agencies	Local Residents
Environmental Groups	Experts, Scholars, and Industry Associations	Media



Communication Channels and Frequency with Stakeholders

Employees



Individuals who work for NPC, are employed, and receive salary or compensation; this includes current staff at various operational locations and plants, management, on-site operators, union members, and informal or irregular workers (e.g., interns).

Significance to NPC

Employees are a crucial foundation for enhancing the company's competitiveness. NPC values the development of employees' professional knowledge and skills, thus providing comprehensive training and a supportive work environment to lay a solid foundation for sustainable operations.

Responsible departments

HR Department, Plant Departments
Contact Person: Mr. Bai, President Office (HR Department)
TEL: (02) 2712-2211 #5648

Material Topics

- Integrity Corporate Management and Governance
- Climate change mitigation and adaptation
- Regulatory Compliance
- Occupational health and safety

Frequency and Methods of Communication

- Direct communication between senior management and union representatives
- Union (Labor-Management Committee), Welfare Committee, etc.
- Management system improvement feedback form
- Morning meetings
- Employee satisfaction surveys
- Occupational Safety and Health Committee meetings
- "Formosa Plastics Group" magazine (bimonthly)
- Physical and online suggestion boxes (Notes, Outlook)
- "799" hotline for Factories

Stakeholder Communication Performance in 2023

- Conducted online interviews for new employees with 763 participations in 2023, and collected feedback from 79 participations via online surveys.
- Held 42 labor-management committee meetings with 709 participations, primarily discussing year-end bonuses, salary adjustments, and other related matters.
- Held 60 welfare committee meetings with 848 participations, primarily discussing employee meals, holiday celebrations, travel, and other welfare measures.
- Issued the "NPC Multiculturalism and Inclusion Policy."
- Conducted safety and health education training for 4,555 participations, totaling 32,784 hours of training.
- Held general professional training and leadership reserve training for 1,115 participations, with a total of 28,952 training hours.
- Provided "Human Rights Policy Training" for 17,017 participations (including Taiwan subsidiaries), with a total of 17,017 training hours.
- Provided "Integrity Management Training" for 12,156 participations (including Taiwan subsidiaries), with a total of 12,156 training hours.
- Published six issues of the "Formosa Plastics Group" magazine (bimonthly).
- Issued twelve monthly employee learning e-newsletters.
- Awarded the "Golden Award" for the 2023 Manufacturing Industry Happiness Enterprise by 1111 Job Bank.









Customers



Individuals, organizations, companies, or other entities that purchase products from NPC, including both domestic and international enterprises, as well as product distributors.

Significance to NPC

Winning long-term support and feedback from customers is one of NPC's key business strategies. NPC provides high-quality products and continually innovates and improves its products and services to meet customer expectations and needs.

Responsible departments

General Manager's Office, Sales and Technical Departments
Contact Person: Mr. Liu,President Office (Management Department II)
TEL: (02) 2712-2211 #5626

Material Topics

- Integrity Corporate Management and Governance
- Occupational health and safety
- Climate change mitigation and adaptation
- Energy management

Frequency and Methods of Communication

- Distributor Conference Product Exhibition
- Special Visits
- Customer Satisfaction Surveys and Complaint Handling Forms
- Customer Complaint Channels
- Email/Phone

Stakeholder Communication Performance in 2023

- In 2023, NPC's customer satisfaction survey results showed an overall satisfaction score of 4.4, accounting for 88% of the total score.
- Customers can communicate through the online feedback platform. In 2023, the NPC official website received 1,020 feedback submissions related to "product inquiries" and other business matters. After careful evaluation by the responsible department, the feedback is considered or appropriately addressed.
- Sales personnel visit customers irregularly and provide NPC's sustainability reports, TCFD reports, or questionnaires as needed to meet customers' ESG requirements.

Suppliers and Contractors



Individuals, companies, organizations, or other entities that provide NPC with raw materials, products, equipment, services, or undertake specific projects. This includes both existing and potential direct and indirect vendors, such as agents, manufacturers, distributors, equipment suppliers, and third-party verification companies.

Significance to NPC

NPC's suppliers and contractors play a crucial role in ensuring the company's stable and high-quality products and services. Building long-term partnerships with suppliers and contractors is one of the key factors for NPC's success and sustainable development.

Responsible departments

General Manager's Office (Procurement and Contracting Center)
Contact Person: Mr. Wei, President Office (Management Dept. I)
TEL: (02) 2712-2211 #5621

Material Topics

- Climate change mitigation and adaptation
- Regulatory Compliance
- Occupational health and safety
- Water resources management

Frequency and Methods of Communication

- Supplier/Contractor Complaint Channels
- Email/Phone
- Contractor Agreement Organization Meetings
- Vendor Briefings
- Formosa Technology E-market Place System Customer Service Center

Stakeholder Communication Performance in 2023

- Among valid suppliers, a total of 3,144 have signed the "Corporate Social Responsibility Commitment".
- Among valid suppliers, a total of 3,077 have completed the "Social Responsibility Commitment Survey".
- Among valid suppliers, a total of 3,122 have filled out the "Formosa Plastics Group Vendor Integrity and Confidentiality Commitment".
- Suppliers can communicate through the online feedback platform. In 2023, NPC's official website received 101 inquiries. The responsible departments have carefully assessed these and have either incorporated the feedback or provided appropriate responses.



Shareholders and Investors



Individuals, institutions, or groups that hold shares in NPC or invest in NPC. This includes financial institutions (such as property insurance and investment advisors), general shareholders, securities firms, institutional shareholders and directors, as well as corporate entities with cross-shareholdings.

Significance to NPC

Individuals or entities holding shares in NPC will provide operational insights and financial assistance through various perspectives. In recent years, the disclosure of non-financial information has gradually become a criterion for investment selection. The issues and feedback that investors focus on have become one of the important reference for NPC in formulating its sustainable development strategy.

Responsible departments

President Office, Corporate Spokesperson System
Contact Person: Ms. Tsai, President Office (Operating Analysis Dept.)
TEL: (02) 2712-2211 #5612

Material Topics

- Operating financial performance
- Climate change mitigation and adaptation
- Promotion of circular economy
- Integrity Corporate Management and Governance

Frequency and Methods of Communication

Public Information Observatory, company website "Investor Area," institutional investor conferences, email/phone, annual general meeting of shareholders, quarterly board meetings (at least once per quarter)

Stakeholder Communication Performance in 2023

- Held a total of 4 corporate entity conferences and occasionally received calls from corporate entities.
- Published 46 major announcements in both Chinese and English, including 16 performance-related announcements in each language.
- Shareholders and investors can communicate via the online feedback platform. In 2023, NPC's official website received 16 inquiries. The responsible departments carefully evaluated and appropriately responded to the feedback.
- Engaged in ESG communication with domestic and international investment institutions, including responding to climate change questionnaires, discussing circular economy and other ESG topics, or holding communication meetings. There were a total of 6 communication cases.

Government Agencies



The government departments or related agencies responsible for formulating and implementing laws, policies, regulations, and providing public services, resources, and regulatory functions. This includes central and local government authorities and relevant ministries such as the Ministry of Economic Affairs, Ministry of Environment, Ministry of Finance, Ministry of Labor, Ministry of Justice, Ministry of Environmental Resources, Financial Supervisory Commission, Industrial Development Bureau, Water Resources Agency, Bureau of Energy, Industrial Development Bureau, and the Stock Exchange.

Significance to NPC

Government agencies are the formulators and regulators of relevant policies. In addition to complying with applicable regulations, NPC actively communicates with the government to jointly promote the sustainable development of the industry.

Responsible departments

President Office and Direct Departments, and Each Business Division
Contact Points:
President Office - Mr. Zhang (Operating Analysis Section)
TEL: (02)2712-2211 #5615
Safety and Health Dept. - Mr. Zhang, Ms. Zhou
TEL: (02)2712-2211 #5627, 5653

Material Topics

- Integrity Corporate Management and Governance
- Facility and Chemical Safety Management
- Climate change mitigation and adaptation
- Air pollution management

Frequency and Methods of Communication

Meetings (such as public hearings, seminars, etc.), official documents, special visits, email/phone

Stakeholder Communication Performance in 2023

- Ranked in the top 6% to 20% in the 10th (2023) Corporate Governance Evaluation.
- No major violations related to integrity or ethics occurred in 2023.
- In compliance with regulatory requirements, conducted internal audits, internal controls, ESG reporting, responded to questionnaires, or provided related reports.
- Cooperated with the Ministry of Economic Affairs' Industrial Development Bureau for the "112th Large Petrochemical Plant Public Safety Management - FPG Mailiao Site Joint Supervision and Comprehensive Inspection Follow-up Review."
- Participated in the Ministry of the Environment's "Carbon Fee Designation Targets and Voluntary Reduction Plan Seminar."
- Linkou Plant II received the Ministry of the Environment's "112th Resource Recycling Outstanding Enterprise" - Gold Award.
- Kungsan Site received the Ministry of Economic Affairs' Energy Bureau's "112th Energy Efficiency Benchmark Award" - Silver Award.
- Shulin Site received the Ministry of the Environment's "112th National Outstanding Operation Management Joint Defense Organization" - Outstanding Award.



Residents of the Operating Areas

Community members, the general public, and organizations located around NPC's operating locations and plant areas.

Significance to NPC

Co-creating a prosperous vision with the community is a key focus for NPC's operations. Specifically, NPC formulates relevant care and feedback policies for residents near the operating plants. Feedback from residents in the operating areas is also considered one of the factors in setting the annual strategic objectives.

Responsible departments

Administration Dept., On-Site Safety and Health Office
Contact Person: Mr. Zhang, Taipei Administration Dept.
TEL: (03)328-4191 #182

Material Topics

- Waste management
- Climate change mitigation and adaptation
- Regulatory Compliance
- Water resources management

Frequency and Methods of Communication

Meetings - Village/Township Residents Assembly, Construction (Expansion) Briefings, Seminars, Observation Meetings, Liaison Meetings, Email/Phone, Special Visits

Stakeholder Communication Performance in 2023

- Maintain good communication with neighboring communities. For example, in 2023, the northern sites recorded a total of 48 communications. If special situations arise, the frequency will be increased as needed.
- Environmental volunteers at the plants organize the surrounding environment at least once a month. In 2023, 903 participations executed in environmental volunteer activities, totaling 1,396 service hours.
- Organized charity activities for Renai Service, with a total of 1,416 participations and 6,568 volunteer service hours.
- Provided social donations and support totaling approximately NT$3.15 million to orphanages, nursing homes, and underprivileged community members.

Environmental Groups

Non-profit or non-governmental organizations or groups dedicated to environmental protection, ecological conservation, and sustainable development.

Significance to NPC

In addition to valuing academic theories on sustainability issues, NPC also emphasizes environmental sustainability issues just as environmental groups do. NPC hopes to apply these theories to enhance the competitiveness of Taiwan's industries and work toward environmental sustainability together. This includes environmental NGOs, green groups, community environmental organizations, environmental volunteer groups, and ecological conservation groups.

Responsible departments

Resource Recovery Dept., Safety and Health Department
Contact Person:
(1) Resource Recovery Dept. - Mr. Lee
TEL: (05) 681-8223
(2) Safety and Health Dept. - Mr. Chen, Mr. Tan
TEL: (02) 2712-2211 #5653

Material Topics

- Regulatory Compliance
- Promotion of circular economy
- Energy management
- Climate change mitigation and adaptation

Frequency and Methods of Communication

Meetings (e.g., Environmental Impact Assessment Review Meetings for new/expansion projects and Monitoring Meetings for the implementation of EIA conclusions), email/phone.

Stakeholder Communication Performance in 2023

- Respond to the Taiwan Renewable Energy Alliance regarding the "Major Electricity User Clause" and report on the company's solar and other green energy installations.
- Continue to cooperate with FPG's LOHAS Circle activities and jointly promote ecological education activities with the Society of Wilderness and Formosa Environmental Technology Corporation.



Experts and Industry Associations

Scholars, researchers, or experts with professional knowledge and experience in the chemical plastics industry and related fields.
Organizations composed of businesses, organizations, merchants, or professionals.

Significance to NPC

Experts provide NPC with diverse perspectives, collaborating through industry-academic partnerships and technical research, and offering recommendations for sustainable development strategies. This helps the company continuously improve in professional fields. The goal is to apply theoretical knowledge practically and enhance both Taiwan's industrial competitiveness and environmental sustainability efforts.

Responsible departments

President Office, R&D Center, Resource Recovery Dept., Safety and Health Department, Business Units
Contact Person:
(1) Resource Recycling Dept., Mr. Li
TEL: (05) 681-8223
(2) Safety and Health Dept., Mr. Chen, Mr. Tan
TEL: (02) 2712-2211 #5653

Material Topics

- Energy management
- Occupational health and safety
- Climate change mitigation and adaptation
- Promotion of circular economy

Frequency and Methods of Communication

Meetings (e.g., Environmental Impact Assessment Review Meetings for new/expansion projects and Monitoring Meetings for the implementation of EIA conclusions), email/phone.

Stakeholder Communication Performance in 2023

- Attended the "Petrochemical Industry Key Stakeholders Consultation Meeting" organized by the Green Foundation.
- Participated each quarter in the "Environmental Impact Assessment Review and Supervision Committee for the Sixth Naphtha Cracker Project," organized by the Ministry of the Environment, with committee members comprised of experts and scholars.
- Attended the "Public Hearing on Reference Guidelines for Enhancing Sustainable Economic Activities in the Manufacturing Industry" hosted by National Taipei University.
- Participated in the "Sustainable Environment and Energy Management Seminar" organized by the General Management Office in collaboration with National Yunlin University of Science and Technology, with members including domestic and international experts and scholars.

Media

Organizations, platforms, or individuals responsible for collecting, editing, reporting, and disseminating news, information, and opinions.

Significance to NPC

NPC views the media as a crucial partner for external communication in its operations. The company continuously maintains good interactions with the media by providing information and explanations, conveying its business mission, values, and achievements.

Responsible departments

President Office, Corporate Spokesperson System
Contact Person:
Mr. Zhang (Operating Analysis Group), President Office
TEL: (02) 2712-2211 #5615

Material Topics

- Integrity Corporate Management and Governance
- Operating financial performance
- Climate change mitigation and adaptation
- Regulatory Compliance

Frequency and Methods of Communication

Monthly performance briefings, and occasional interviews or press releases with newspapers and media

Stakeholder Communication Performance in 2023

- Issued 46 major announcements in both Chinese and English, including 16 related to "performance reports".
- Released 8 press releases, including one about NPC's "Tree Planting by Thousands, Future Generations Enjoying the Shade" initiative.
- Accepted an invitation from Taiwan's FTV to participate in the "Other Words" program for an in-depth interview on "The Second Life of Second-Hand Clothes," and another invitation from PTS's "Our island" program for a special feature on SAYA textile recycling, highlighting NPC's efforts in circular materials development in the textile industry.
- Updated the official website irregularly.

chapter 1

Ongoing Sustainable Governance Strategy

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1.3 Essential Risk Management 43

1.4 Issues of Particular Concern 45



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".

Strategies

- Sustainable development - Continue to expand business, and promote high-value products
- Integrity management - Improve corporate governance and protect shareholders' rights and interests.
- Operational risk management - Control operational risks and develop risk response strategies.

United Nations Sustainable Development Goals (SDGs)



Material Topics

Integrity Corporate Management and Governance, Regulatory Compliance, Operating financial performance

☐ Did not meet the goals ☑ Goals met ★ Exceeded expectations

Sustainable Development

2023 goals	2023 Implementations
■ Continuously promoted the expansion of domestic leukoreduction blood bags and other construction plans. ■ Continue to push forward with expansion plans for the BPA plant in China. ■ Hold at least one "Sustainability Development Committee" meeting.	☑ The expansion of domestic leukoreduction blood bags plant has been completed. ☑ Expansion of BPA plant in China is in progress. ☑ Held a total of 2 "Sustainability Development Committee" meetings.

Short-term Goals (2024 Goals)	Medium and Long-term Goals (2025-2030)
■ Continue to promote the domestic expansion plans for the release film production line. ■ Continue to advance expansion plans for copper foil in China and soft PVC in Texas, USA. ■ The "Sustainable Development Committee" is held at least once a year.	Continues to improve the competitiveness of existing products. In addition, NPC develops high-value, differentiated products and seeks new investment and development opportunities to ensure the Company's sustainable development.

Integrity Corporate Management

2023 goals	2023 Implementations
■ Conduct "Self-Evaluation of the Board of Directors regularly every year. ■ Participation in 4 or more investor conferences at least once per quarter. ■ Announce company information 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).	☑ "Self-Evaluation of the Board of Directors" has been conducted. ☑ Participated 4 investor conferences. ☑ 46 material messages were announced in Chinese and English. ☑ Completed 53 audits based on the "2023 Audit Plan", and all abnormalities found have been improved. ☑ Earnings per share was NT $ 0.08. ☑ No major violations occurred in 2023.

Short-term Goals (2024 Goals)	Medium and Long-term Goals (2025-2030)
■ Conduct "Self-Evaluation of the Board of Directors regularly every year. ■ Participation in 4 or more investor conferences at least once per quarter. ■ Announce company information 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).	Ensure that all operations of the Company comply with legal requirements, continue to strengthen corporate governance, and disclose important company information promptly to protect the rights and interests of shareholders.

Implement Operational Risk Management

2023 goals	2023 Implementations
■ Identify risk events and draft responsive measures accordingly. ■ Report on the execution of "Risk Management" to the board of directors at least once a year.	☑ A total of 21 risk events including climate change have been identified, and response measures have been drafted accordingly. ☑ Reported on the operations of ESG sustainability initiatives, including sustainability environment and risk management, to the Sustainability Development Committee on May 26 and to the Board of Directors on May 31.
Short-term Goals (2024 Goals)	**Medium and Long-term Goals (2025-2030)**
■ Identify risk events and draft responsive measures accordingly. ■ Report the implementation status of "risk management" to the Board of Directors at least once a year.	The Company shall promptly identify internal and external risks and draft responsive measures policies to mediate the hazard of troubles and strengthen operational flexibility.

Management of Material Topics

Policy Commitment



- NPC upholds integrity as a guiding principle in the operations, continuously enhancing corporate governance through three main aspects: "Establishment of systems and regulations," "signing of self-discipline documents," and "implementation of training." We aim to increase employees' awareness of "anti-corruption, fraud prevention, and strict discipline" and have computerized the management of various business operations. By leveraging new technologies, we strive to achieve management goals and, ultimately, ensure the effective implementation of audit operations to prevent personnel fraud and reduce risk occurrences.
- The Company is committed to mitigating operational risks, seizing market opportunities, and using emerging technologies such as AI and product differentiation innovations to create stable profits for shareholders.
- Compliance with regulatory standards is the fundamental principle of NPC and the foundation of our pursuit of "to aim at the sovereign good" and "sustainable management." We will strictly adhere to local regulations at each operational site and use this as a basis to improve various business activities and reduce the occurrence of external risks.

Organizational Vision

Establish a governance system based on integrity, comply with regulations, and pursue the maximization of shareholder interests.

☐ Did not meet the goals ☑ Goals met

Material Topics: Integrity Corporate Management and Governance

GRI 205: Anti-corruption
GRI 206: Anti-competitive behavior

Definitions and Impact Explanations

Actual | Potential | Positive | Negative

Definition:
NPC's management mechanism within the organization includes tax policies, board composition and operation, and the evaluation of business counterparties' legality and potential involvement in dishonest behavior. We avoid transactions with companies that have illegal records or lack integrity.

Impact:
- The diversification, professionalism, and transparency of the board of directors can enhance operational effectiveness.
- The lack of separation of roles within the board of directors may affect governance quality; increasing the salary gap between management and employees may lead to conflict.
- The board's lack of accountability and management efficiency increases operational and reputational risks.

Guidelines and Standards

Management Actions

Internally established regulations such as the "Code of Ethical Conduct," "Corporate Social Responsibility Practice Principles," "Corporate Governance Guidelines," and "Personnel Management Rules" are available for instant reference.

Action Performance Tracking in 2023

- ☑ Reported revisions to the "Internal and External Reporting Procedures for Illegal and Unethical Behavior".

Short-Term Goals(1-3 years)

Ensure that NPC's guidelines and regulations comply with domestic laws and international ESG sustainability standards, implementing integrity management policies.

Mid-to-Long-Term Goals(over 3 years)

Ensure that NPC's guidelines and regulations comply with domestic laws and international ESG sustainability standards, implementing integrity management policies.

Grievance Mechanism & Education and Training

Management Actions

There are established "Employee Grievance Handling Guidelines" and "Internal and External Reporting Procedures for Illegal and Unethical Behavior," providing internal and external grievance channels. "Integrity Management Education" training sessions are held annually.

Action Performance Tracking in 2023

- ☑ The company received two reports, both of which have been resolved and neither involved corruption.
- ☑ A total of 12,156 individuals completed "Integrity Management Education" training (including subsidiaries in Taiwan).

Short-Term Goals(1-3 years)

- Properly handle reported cases and ensure no incidents of corruption occur.
- Continue promoting "Integrity Management Education" training and expand the scope of the training.

Mid-to-Long-Term Goals(over 3 years)

- Properly handle reported cases and ensure no incidents of corruption occur.
- Continue promoting "Integrity Management Education" training and expand the scope of the training.

Internal Control

Management Actions

The operations of various management is computerized, with each operating department regularly conducting self-inspections, and the independent audit department irregularly performing re-examinations.

Action Performance Tracking in 2023

- ☑ Internal and external audits have been completed as planned, with no incidents of corruption.
- ☑ In the 10th Corporate Governance Evaluation, NPC ranked in the top 20% out of 952 listed companies.

Short-Term Goals(1-3 years)

- Annually plan and complete internal and external audits to ensure no corruption incidents occur.
- Maintain a top 20% ranking in corporate governance evaluations.

Mid-to-Long-Term Goals(over 3 years)

- Continue strengthening internal and external audit operations to ensure no incidents of corruption occur.
- Maintain a top 20% ranking in corporate governance evaluations.

Stakeholder Groups Shareholders, customers, supply chain, government agencies

Engagement Channels and Effectiveness In 2023, 46 significant announcements were released in both Chinese and English.

Material Topics: International Frameworks and Indicators

GRI 201: Economic Performance

Definitions and Impact Explanations

Actual | Potential | Positive | Negative

Definition:
Financial operational performance and overall revenue management of NPC, including salary allocation.

Impact:
- Investment in high-end material applications is expected to boost revenue.
- Rising costs in the raw materials market affects the company's stock performance.

Sustained Profitability

Action Performance Tracking in 2023	Short-Term Goals(1-3 years)	Mid-to-Long-Term Goals(over 3 years)
☑ Earnings per share: NT$0.80	Continued profitability	Continued profitability

Promote AI Applications to Enhance Competitiveness

Action Performance Tracking in 2023

☑ Continued investment in AI applications, please refer to 2.2.2 Artificial Intelligence (AI) Applications.

Short-Term Goals(1-3 years)	Mid-to-Long-Term Goals(over 3 years)
Ongoing investment in AI applications	Ongoing investment in AI applications

Actively Expand Markets and Plan Ahead

Action Performance Tracking in 2023

☑ Revenue from sales in the U.S. market increased by 0.8%, and revenue from sales in the China (Hong Kong) market decreased by approximately 1%.

Short-Term Goals(1-3 years)	Mid-to-Long-Term Goals(over 3 years)
Proactively exploring markets and planning ahead	Proactively exploring markets and planning ahead

Stakeholder Groups Stakeholders

Engagement Channels and Effectiveness In 2023, NPC was invited to participate in four corporate briefings.



Material Topics: Regulatory Compliance

SASB Compliance and Management

Definitions and Impact Explanations

Actual | Potential | Positive | Negative

Definition:

NPC may face significant fines and non-monetary penalties due to violations of environmental, social, economic laws, and/or regulations.

Impact:

- Voluntarily disclosing conduct codes and penalty incidents can enhance business credibility.
- Failure to respond to or disclose climate change and other ESG information requested by international or domestic authorities may result in penalties and reputational risk.

Adherence to international standards to reduce the occurrence of violations

Action Performance Tracking in 2023

☑ All plants have passed ISO 9001, ISO 14001, and ISO 45001 certifications.

Short-Term Goals(1-3 years)

Adhere to international standards to reduce incidents of non-compliance.

Mid-to-Long-Term Goals(over 3 years)

Adhere to international standards to reduce incidents of non-compliance.

Regular audit activities to prevent illegal incidents

Action Performance Tracking in 2023

☑ The 2023 audit plan by the Audit Office has been completed with no major abnormalities found, and any identified issues have been fully rectified.

Short-Term Goals(1-3 years)

Continuously strengthen audits.

Mid-to-Long-Term Goals(over 3 years)

Continuously strengthen audits.

Regulatory compliance-related education and training

Action Performance Tracking in 2023

☑ Training on integrity management and other related topics has been completed.

Short-Term Goals(1-3 years)

Conduct once a year.

Mid-to-Long-Term Goals(over 3 years)

Conduct once a year.

Stakeholder Groups

Shareholders, customers, supply chain, government agencies

Engagement Channels and Effectiveness

The company announces compliance information on the Market Observation Post System.

1.1 Remarkable Governance of Nan Ya Plastics

1.1.1 Organizational structure

2-13、2-15、2-23

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 11 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 General Manager's jurisdiction. Please refer to NPC's website on "Company Organization" for the organizational chart.

"Company Organization" on NPC's website.

On the other hand, the Company adopts the PDCA (Plan-Do-Check-Action) process to review policy formulation and vision commitments. In addition, NPC considers feedback suggestions from stakeholders to improve its corporate governance and enhance operational resilience.

NPC Responsible Business Conduct Implementation Process

Plan

- The company's Board of Directors is the highest governance body for responsible business conduct, including anti-corruption efforts. Under the Board, functional committees such as the "Sustainable Development Committee," "Audit Committee," and "Compensation Committee" are established to assist in managing the company's integrity in business operations and other ESG sustainability matters.
- The Board of Directors establishes an independent audit office to perform internal audit operations.

Do

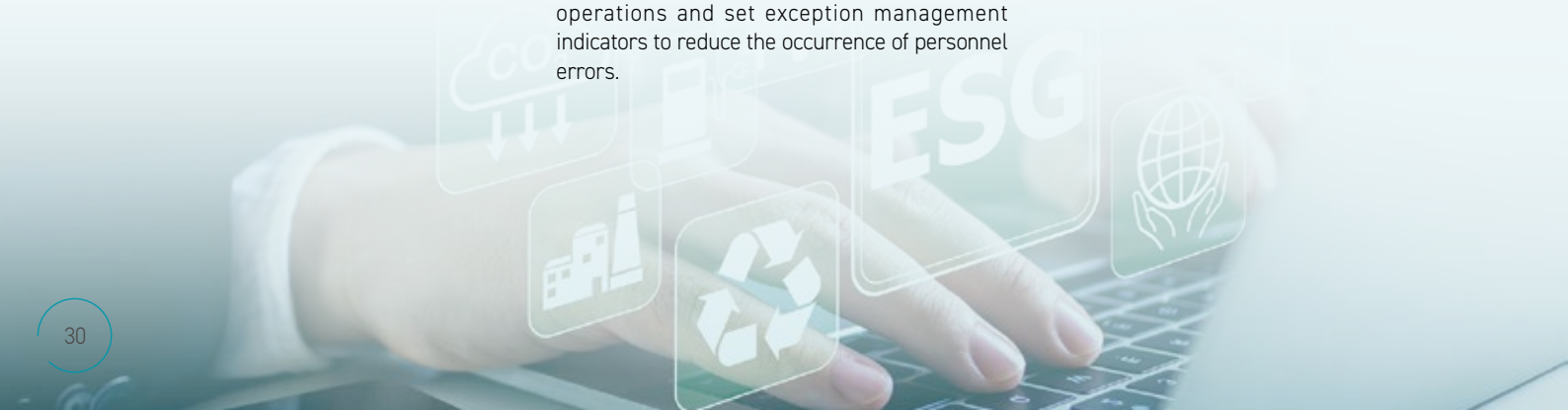
- The Company has formulated 22 important standards and rules including "Principles of Corporate Governance" and "Principles of Ethical Corporate Management". In addition, managers will submit them to the Board of Directors for approval as a guideline for implementing responsible business conduct.
- Promote the computerization of various operations and set exception management indicators to reduce the occurrence of personnel errors.

Check

- Set abnormal management indicators for each computer operation to reduce the occurrence of personnel errors.
- The audit office formulated an audit plan based on risk assessment every year and executes the audit according to the plan.

Action

- Provide internal and external stakeholders with a reporting channel, add or revise computer abnormal control standards, or provide project guidance for reasonable feedback matters.
- Implement improvement measures yearly based on abnormal matters checked by the audit office.



1.1.2 Board of Directors

2-9、2-10、2-11、2-12、2-17、2-18、2-20、2-21

Board of Directors Operations

The Board of Directors is the highest governance unit and the center for making business decisions of the NPC. The shareholders entrust the Board of directors. In addition to complying with the conclusion of the shareholders' meeting, the Board of Directors also abides by relevant regulations such as the "Company Act", "Securities and Exchange Act", "Company policy," and "rules of procedure for the Board of Directors". It also has the "Code of Ethical Conduct for Directors and Managers," requiring relevant personnel to adhere to ethical standards when performing their duties and prevent behaviors that harm the Company's and shareholders' interests.

The election of the Company's directors is based on the nomination of candidates system. The shareholders will select from the list upon resolution from the Board of Directors. All those serve a three-year term and organize board meetings at least once every quarter. Currently, the Board of Directors has 15 directors, of which 3 are independent and 2 are female. Please refer to the Company's website and the Annual Report for details on the list of directors and their respective educational and work experiences.

◉ The role of NPC's Board of Director

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 trends, and fulfill the obligations of social citizens to achieve the vision of sustainable development.

ESG strategies and policies

Understand the critical concerns of stakeholders, grasp the changes in international ESG trends, and lead the Company to formulate ESG policies. In addition, promote departments to implement project actions and then review and optimize them regularly.

Board Composition Overview

Board Seats (Including Independent Directors)	Independent Directors		Female Directors	
	Seats	Percentage	Seats	Percentage
15	3	20%	2	13%

Director Participation Summary

Number of Meetings in 2023	Board Attendance Rate in 2023
6 times	97.78%

2023 Major Conclusion of Board of Directors

Extraordinary Conclusion

- Formulated 2022 employee compensation.
- Approve the issuance of domestic unsecured corporate bonds within a total amount of NT$15 billion for the year 2024.





Diversity of Directors						
Name/Diversity Items	Director Attendance Rate in 2023	Gender	Concurrent Employment	Age		
				55-64	65-74	Above 75
Chia-Chau Wu	100%	Male				●
Wen-Yuan Wong	100%	Male				●
Wen-Chiao Wang	67%	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	100%	Male	●			●
Cheng-Chung Lee	100%	Male	●		●	
Chung-Yueh Shih	100%	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 is not only assessed and approved by the Remuneration Committee but also reported to the Board of Directors for approval. Managers' performance is evaluated by the Chairman based on the overall performance within the scope of the 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 that connects the manager's performance with the Company's overall performance. Directors' remuneration in 2023 will be NT$ 27,836,000, accounting for 0.44%.

◉ Remuneration Policy for Directors and Managers of NPC

Director (Including independent directors)



Performance Review

According to Article 16 of the Memorandum and Articles of Association, the Board of Directors is authorized to decide based on the director's degree of participation in the Company's operations, the value of his contribution, and the level generally paid by peers.

Distribution Items

- The chairman's remuneration includes a fixed monthly salary, bonuses, and incentives paid based on the Company's performance in the previous year. It is planned to be no more than two times the remuneration of the Company's President and is provided monthly following the Company's "Retirement Regulations." Allocate pensions, welfare funds, and severance pay upon retirement, and pay travel expenses based on actual attendance at the board of directors.
- Independent directors Shen-Yi Lee and Ching-Cheng Chang receive fixed monthly remuneration and travel expenses based on their attendance on the board of directors.
- The remaining directors only receive travel expenses based on their actual attendance at the Board of Directors, and no remuneration is paid.

Manager (President, Vice President and other managers)

Performance Review

The Company's managers' remuneration and performance evaluation indicators are as follows:

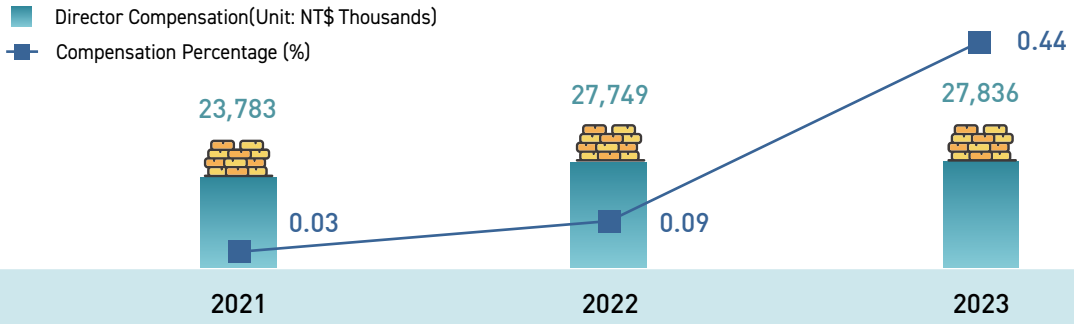
- Financial indicators: Including operating profit and loss/EBITDA, operating target achievement rate, revenue growth rate, and profit contribution.
- Non-financial indicators: Divided into three aspects: environmental protection (E), social responsibility (S), and corporate governance (G). Environmental protection indicators include participation in environmental sustainability, water, and energy saving performance, circular economic benefits, and reduction carbon target achievement rate. Social responsibility indicators include industrial safety/occupational disaster incidents, product research, development, innovation, and neighborliness. Corporate governance indicators include operational management capabilities, AI promotion cases/efficiencies, and the number of fraud cases.

Distribution Items

- Fixed monthly salary, diligence bonus, year-end bonus, supervisor bonus, monthly provision of pension (including new and old pensions), welfare funds, etc. following the Company's "Retirement Measures."
- Pay severance pay, pension, and other remuneration to supervisors under particular circumstances.



Director Compensation as a Percentage of Net Profit After Tax at NPC



Note: The percentage represents the ratio of director and supervisor compensation to net profit after tax.

Directors' Training

Every year, NPC provides or assists in arranging continuing studies courses for directors to facilitate the directors staying on top of the latest international trends. In 2023, directors' continuing studies courses included "Carbon Trading Mechanism and Carbon Management Applications", "2024 Global Economic Outlook and Industry Trends", etc. For detailed training information for directors, please refer to pages P. 60- 61 of the Company's 2023 Annual Report.

Number of directors trained
14
Training rate
93.33%

Total training hours
98 hours

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 of Directors. Both committees are composed of independent directors. The Audit Committee met six times in 2023, the Remuneration Committee met in twice, and Sustainable Development Committee met in twice. The main functions of the committees and the members' attendance are shown as follows.

Major Functions of the Functional Committees

Audit Committee

- Ensure fair presentation of the Company's financial statements.
- The appointment (or dismissal) of Certified Public Accountants (CPA), and evaluation of the CPA's competency, independence, and performance.
- The effective implementation of the Company's internal control system.
- The Company complies with relevant laws and regulations and controls existing or potential risks of the Company.

Remuneration Committee

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



Sustainable Development Committee

Review the Company's sustainable development policies and management guidelines, and supervise the Company's promotion of sustainable development business, etc.



Annual total compensation ratio [Note 1]		Percentage increase in annual total compensation ratio [Note 2]	
2022 17times	2023 17.61times	2022 -49.66%	2023 -30.76%

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)

2023 Meeting Attendance

Title	Name	Audit Committee			Remuneration Committee		
		Actual Attendance	Number of delegated attendances	Attendance Rate	Actual Attendance	Number of delegated attendances	Attendance Rate
Organizer (Executive directors)	Chih-Kang Wang	6	0	100%	2	0	100%
Member (Independent directors)	Yi-Fu Lin	6	0	100%	2	0	100%
Member (Independent directors)	Yun-Peng Chu	6	0	100%	2	0	100%

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.

2023 Meeting Attendance of Sustainable Development Committee

Title	Name	Number of meetings	Actual Attendance	Number of delegated attendances	Attendance Rate
Organizer (Chairman)	Chia-Chau Wu	2	2	0	100%
Member (General Manager)	Ming-Jen Tzou		2	0	100%
Member (Executive Independent Director)	Chih-Kang Wang		2	0	100%
Member (Independent Director)	Yi-Fu Lin		2	0	100%
Member (Independent Director)	Yun-Peng Chu		2	0	100%
2023 Major Conclusion					
Draft the 2022 Sustainability Report and the 2022 Greenhouse Gas Verification Results Report.					

1.1.3 Integrity Management and Anti-corruption 2-26

NPC has established strict ethics and related standards. Whether at work or in daily life, we must act responsibly and shoulder the critical responsibility of maintaining high ethical standards, company reputation, and compliance with laws. Since 2016, the Board of Directors of NPC has continuously revised the "Principles of Corporate Governance, "Insider Trading Prevention" and other contents to promote perfect corporate governance, and has formulated "Employee Grievance Procedures" and the "Rules for Encouraging Reporting of Unlawful of Unethical" Behavior." NPC provides specific channels for reporting any illegal or inappropriate behavior. On the other hand, NPC has also formulated 22 essential rules and regulations, such as "Principles of Corporate Governance" and "Principles of Ethical Corporate Management," which are published in NPC the "Investor section" on the official website is disclosed for the convenience of all stakeholders to review and follow to improve operational resilience.

Progressed Schedule

2021

- The Board of Directors amended "Principles of Ethical Corporate Management".
- Promote "Insider Trading Prevention" and "Integrity Management Education Training."

2022

The Board of Directors amended "Memorandum and Articles of Association," "Insider Trading Prevention," "Regulations Governing Procedure for Board of Directors Meetings", and "Principle of Corporate Governance."

2023

The Board of Directors revised the "Reporting Procedures for Illegal and Unethical Behavior by Internal and External Parties."

Professional Ethics

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.

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 policies and actions

Professional Ethics Framework

- Anti-corruption
- Compliance with 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"

Antitrust

To ensure the Company's operation comply with regulation set by the local government and reduce the risk of law violation, employees and supervisors at all levels are strictly required to abide by various rules and code 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 2023.

Implementation results and education and training

Under the above policies, NPC and our subsidiaries in Taiwan conducted a corruption risk assessment on all operating locations in 2023. The assessment results showed that there are no major corruption risks. In addition, annual education and training projects on "Integrity Management" and "Insider Trading Prevention" were launched in 2021 to strengthen employees' ethical awareness of honest management and other ethical issues. The implementation status is as follows:

Education and training item	NPC's education and training implementation status		
	2021	2022	2023
Integrity management (includes anti-corruption and antitrust law)	6,201 participations were trained. Total training hours are 3,101.	11,104 participations were trained. Total training hours are 5,552.	12,156 participations were trained. Total training hours are 12,156.
Insider trading prevention	6,189 participations were trained. Total training hours are 3,095.	11,062 participations were trained. Total training hours are 11,062.	11,472 participations were trained. Total training hours are 11,472.

Note 1: Starting from 2023, education and training on integrity management and prevention of insider trading will include NPC's subsidiaries in Taiwan.
Note 2: Employees currently participating in integrity management include full-time employees and contract employees.

Whistleblowing Channels

NPC and Taiwan subsidiaries provide 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 4.2.2 Valuing Employee Feedback for details on internal communication channels, P.107.)

Overview of Anti-Corruption Policy Implementation by NPC and Taiwan Subsidiaries in the Past Three Years

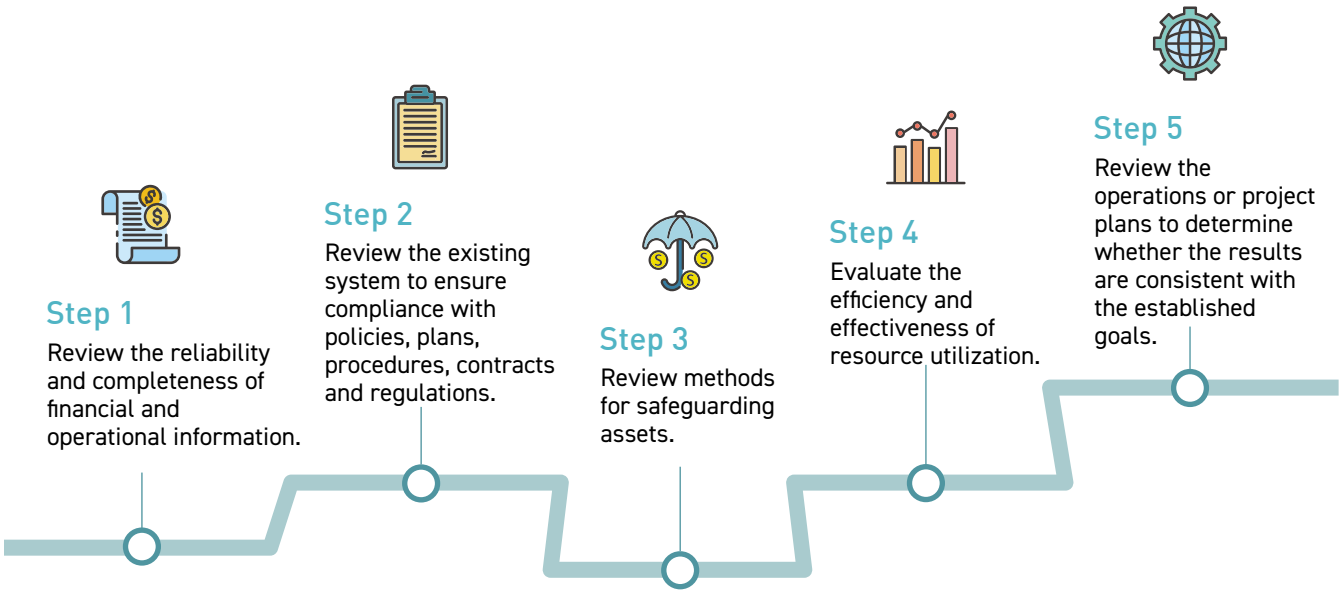
Items	NPC			Subsidiaries in Taiwan		
	2021	2022	2023	2021	2022	2023
Total number of reported cases	0	1	2	2	1	4
Number of reported cases related to anti-corruption policy	0	0	0	0	0	0
Number of cases that violate anti-corruption policies after investigation	0	0	0	0	0	0
Number of completed pieces	0	0	0	0	0	0

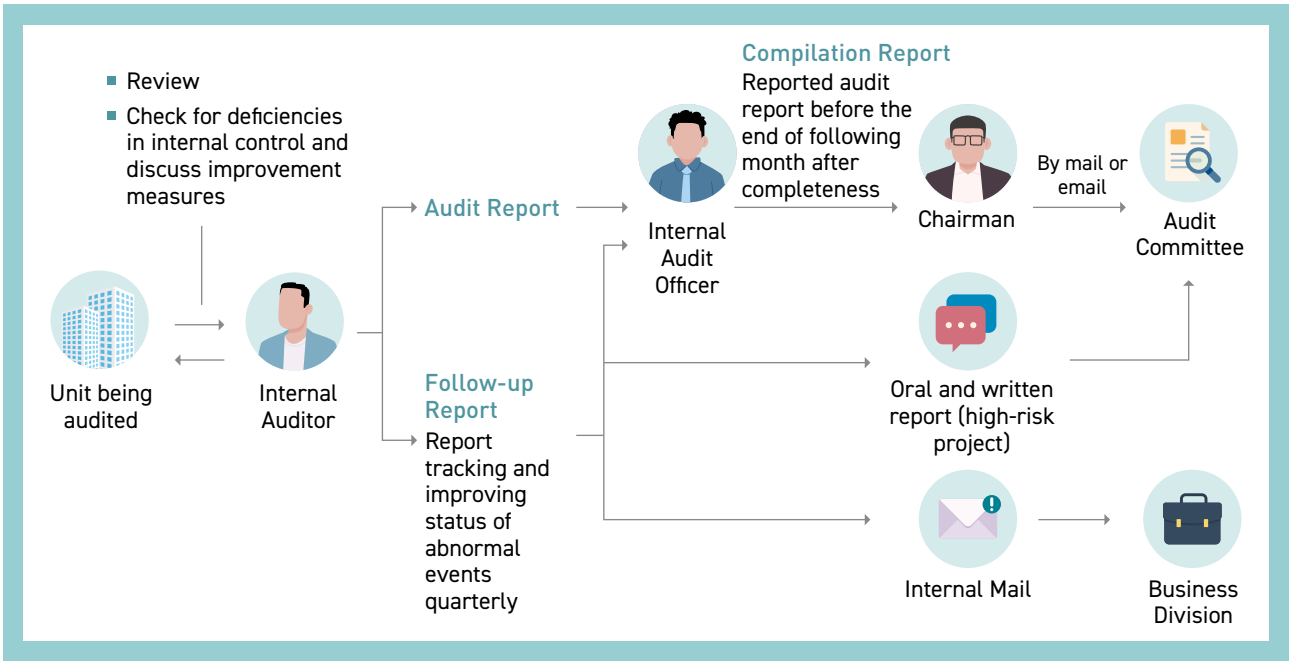
Note: The scope of assessment and disclosure includes all the business locations in Taiwan.

1.1.4 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 computer logic. Once an abnormality is found, the relevant personnel are immediately prompted so they can understand and handle it accordingly. 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 and participate in audit-related courses organized by professional training institutions every year to improve their professional capabilities continuously.

Internal audit scope and process





NPC provides education and training for internal auditors every year to improve the professional quality of personnel and completely implement the internal audit process. In 2023, 11 audit abnormalities were found, including 4 in the production and marketing category, 1 in the materials and engineering category, 4 in the human resources and general affairs category, and 2 in the financial category. There were no major abnormalities and all had been improved.

Internal Auditor Training in 2023

Numbers of Participant	Total training hours	Name of major courses
27 people	390 hours	■ Pre-job training and workshop for newly appointed internal auditors in the company. ■ Analysis of practical cases on the disclosure of major corporate information and asset embezzlement. ■ Legal issues in sustainability reports.

Statistics of Internal Audit of NPC in three years

Items	2021	2022	2023
Number of audit items performed	52	52	53
Number of abnormalities found	10	11	11
Abnormality improvement rate	100%	100%	100%

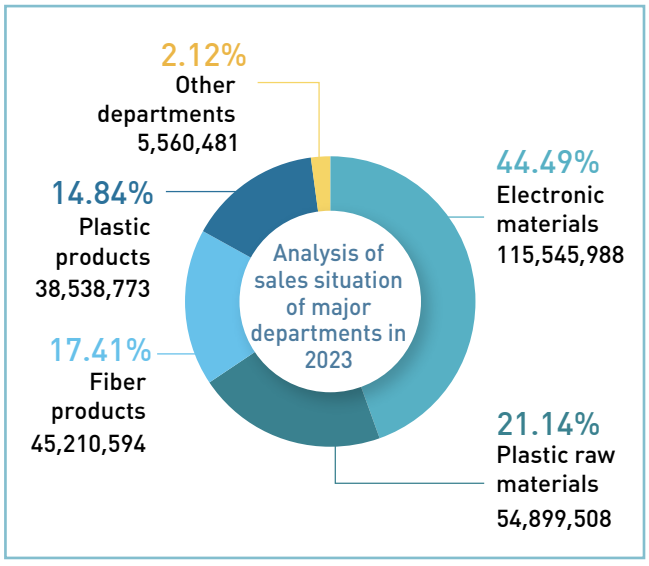
Note: In 2023, 11 audit abnormalities were found, including 4 in the production and marketing category, 1 in the materials and engineering category, 4 in the human resources and general affairs category, and 2 in the financial category. There were no major abnormalities and all had been improved.

1.2 Improve Business Performance

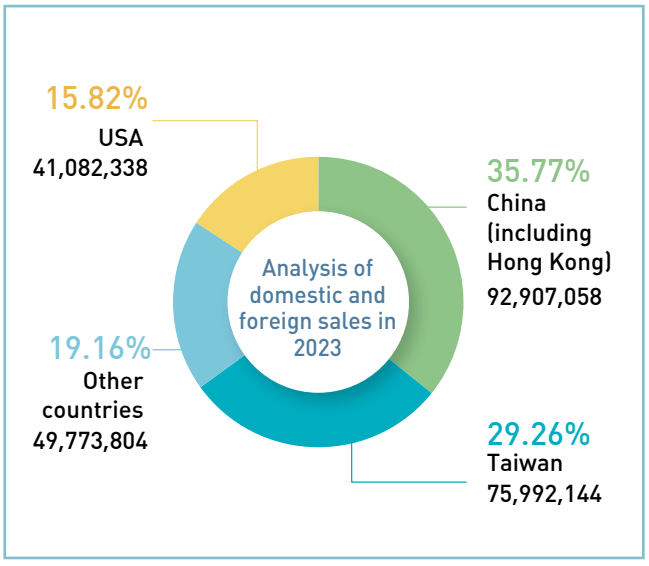
1.2.1 Economic Performance 201-1

Consolidated Operational Performance of NPC (Unit: NT$ thousand)			
Items	2021	2022	2023
Operating Revenue	411,670,391	355,183,300	259,755,344
Operating Costs	307,825,083	301,274,899	240,529,041
Net Profit After Tax	84,832,825	38,484,719	8,110,047
Net Profit Margin (%)	20.61%	10.83%	3.12%
Retained Earnings	273,458,343	247,505,467	230,801,650
Earnings Per Share (NTD)	10.25	4.05	0.80
Return on Equity (%)	21.60%	9.35%	2.10%
Return on Assets (%)	13.70%	6.09%	1.83%
Total Taxes Paid (excluding VAT)	1,812,450	7,649,368	3,759,452
Employee Salaries and Benefits	39,051,035	38,204,641	34,442,486
Cash Dividends Paid (to Investors)	19,044,329	59,374,150	23,833,140
Retained Earnings (Retained Economic Value)	273,458,343	247,505,467	230,801,650

Note: Sourced from NPC's 2023 consolidated financial statement



Note: Sourced from NPC's 2023 consolidated financial statements



Note: Sourced from NPC's 2022 consolidated financial statements

1.2.2 Legal Compliance 2-27

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 absolute perfection, and perpetual business operation." NPC 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. Regarding major violations, NPC defines these as illegal incidents where fines exceed NT$1 million.

Environmental Regulations (E)

NPC'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.

Social Regulations (S)

NPC values the rights of its employees and continuously ensures diligent workplace safety management. All business operations comply with the Labor Standards Act, and the company has implemented several improvement projects that exceed regulatory requirements. These include offering health check-up leave, installing movable safety barriers (guards) in process areas, and implementing interlock devices in restricted access zones. These measures aim to provide a healthy and safe environment that fosters employee well-being.

Corporate Governance (G)

Product Labeling

Labeling NPC'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 non-food additives products.

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 wish 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.



Environmental Compliance

There were no major leaks in NPC and its subsidiaries in Taiwan in 2023, but there were 3 environmental fines. The main reasons are:

(1) The construction waste removal agency did not adhere to the transport route specified by the environmental impact assessment (EIA) requirements.

(2) Personnel handling the return of toxic chemical raw materials for the first time made an error in online reporting.

(3) Due to software issues and operational errors by the maintenance contractor, the continuous air pollution monitoring system failed to automatically transmit the December monthly report online.

Overview of Environmental Regulatory Compliance by NPC and its Taiwanese Subsidiaries

Scope	Type	2021	2022	2023
NPC	Air Pollution	1 case/NT$ 450,000	0 case/NT$ 0	1 case/NT$ 100,000
	Water Pollution	2 cases/NT$ 40,000	0 case/NT$ 0	0 case/NT$ 0
	Waste Pollution	0 case/NT$ 0	1 case/NT$ 60,000	0 case/NT$ 0
	Others	0 case/NT$ 0	1 case/NT$ 500,000	2 cases/NT$ 360,000
Subsidiaries	Air Pollution	0 case/NT$ 0	0 case/NT$ 0	0 case/NT$ 0
	Water Pollution	0 case/NT$ 0	0 case/NT$ 0	0 case/NT$ 0
	Waste Pollution	0 case/NT$ 0	0 case/NT$ 0	0 case/NT$ 0
	Others	0 case/NT$ 0	0 case/NT$ 0	0 case/NT$ 0
Total		3 cases/NT$ 490,000	2 cases/NT$ 560,000	3 cases/NT$ 460,000

Due to the 2023 fines not meeting the target of "reducing the number of incidents to 50% or less (≦ 1 incident)," a review of the causes was conducted, and improvements have been implemented. These include "completing the change of environmental impact assessment (EIA) transport routes and requiring transport contractors to provide GPS tracking and manifests for each trip," "using the abnormal cases as training materials for awareness campaigns," and "adding a software early warning mechanism to automatically check the transmission status five days before the legal upload deadline, with personnel regularly verifying successful transmissions on the official website."

Social Regulatory Compliance

In 2023, NPC and its Taiwan subsidiaries did not experience any major social compliance violations, though there were 9 fines issued. The main reasons and corrective actions are briefly summarized as follows:

(1) Labor Standards Act-Related Cases: These included issues regarding the interpretation of providing a 30-minute break for employees after four consecutive work hours and failing to provide a detailed breakdown of wage calculations to departing employees. To prevent recurrence, adjustments to related policies and practices have been made in compliance with regulatory authorities' requirements, and relevant personnel have been notified.

(2) Workplace Health and Safety-Related Cases: Workplace accidents occurred due to internal valve leakage or equipment malfunctions during operations. To prevent similar incidents, the affected valves have been replaced, and safety protections and management practices have been strengthened (see Section 4.3.1 on Workplace Safety Management, p.114).

Overview of Social Regulatory Compliance for NPC and Taiwanese Subsidiaries

Scope	Type	2021	2022	2023
NPC	Labor Standards Act	0 case/NT$ 0	0 case/NT$ 0	1 case/NT$ 20,000
	Workplace Safety and Health	6 cases/NT$ 480,000	8 cases/NT$ 660,000	3 cases/NT$ 310,000
Subsidiaries	Labor Standards Act	1 case/NT$ 150,000	0 case/NT$ 0	4 cases/NT$ 110,000
	Workplace Safety and Health	0 case/NT$ 0	0 case/NT$ 0	1 case/NT$ 100,000
Total		7 cases/NT$ 630,000	8 cases/NT$ 660,000	9 cases/NT$ 540,000

1.3 Essential Risk Management

1.3.1 Risk Management Promotional Organization and Identification Process

NPC set up the "Risk Management Promotional Team" and was proved by the Board of Directors on December 16, 2020 to formulate the Company's risk management policies. The Company hopes to enhance the awareness of all employees through these procedures. This will allow the Company to maintain risk at tolerable levels, ensure the completeness and reasonableness of risk management, and maximize benefits.

Risk Management Process

1 Identification and Evaluation

According to the degree of impact on stakeholders, it is divided into environmental, social, and corporate. The three aspects of governance are risk identification.



2 Control and supervision

Process and procedure of internal control is formulated according to risk issues and will be monitored continuously.

3 Report and Disclosure

The operating status of risk management will be reported to the Board of Directors at least once a year and the relevant risk management policies will be published on NPC's website.

4 Performance Management and Improvement

The performance of risk issues will be tracked, recorded and will be adjusted and improved timely.

"Risk Management Promotional Organization" on NPC's website

1.3.2 Operational Risk Evaluation and Response Measures

The Company's "Risk Management" has identified 22 risks, including "climate change", in 2023 (7 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 2023

Environmental (E)	Social (S)	Corporate Governance (G)
Climate change*, Greenhouse gas management*, Air pollutant management*, Waste management*, Controlled chemical substance management, Water resource management*, Energy management*	Human rights and talent retention* (including employee benefits and compensations), Occupational health and safety*, Industrial and public safety*, Epidemic risk	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: Risk items that are both major sustainability issues of the Company are marked with "*".

1.3.3 Information Security Management

To ensure information security at NPC, relevant regulations and policies have been established and integrated into the management and operational systems. This is to safeguard the protection of trade secrets and maintain information security when employees, customers, and suppliers engage in business dealings.

Information security policy goals



Stable
Ensure the continued operation of the Company's business operations and the safe and stable use of information services provided.

Secure
Ensure the confidentiality, integrity and availability of the information assets held by the Company, and protect the security of business secrets.

Aligned
Introduce international information security certification to comply with regulations and standards of international markets.

Information Security Risk Framework

NPC has appointed one Chief Information Security Officer (CISO) and one Information Security Officer. Additionally, the President Office convenes a cross-division Information Security Management Committee, in alignment with the Formosa Plastics Group's Information Security Management Organization, to work with related business units to ensure the effective operation of the company's information security management.

The President Office is responsible for planning and formulating the company's information security procedures and management policies. The Information Security Management Committee holds at least one information security meeting annually to review and modify management policies and implementation statuses. Apart from regular security meetings, The President Office reports to the board of directors at least once a year on the implementation progress, with the most recent report submitted on May 31, 2023.

Information Security Control Measures and Management Plan

NPC's information security defense strategy maintains a multi-layered defense-in-depth framework to reduce information security risks. The Research and Development Center has implemented the ISO 27001 international information security management system standard, starting preparations for certification in August 2023 and obtaining the certification in May 2024.

Basic Protection

- Access control facilities and CCTV systems are installed in data centers and similar areas to monitor and record personnel entry and exit.
- The company has implemented firewall mechanisms in the data center, with external systems (such as the official website, e-commerce, etc.) protected by dual-layer firewalls and a Web Application Firewall (WAF) architecture, with an annual random inspection of firewall policy rules.

Multi-layer Fortification

- In addition to basic antivirus and control software, control and filtering mechanisms are established for employees' internet access, emails, and network isolation. Features include DDoS prevention, Intrusion Prevention Systems (IPS), malicious URL filtering, and Advanced Persistent Threat (APT) defenses, which actively block intrusion attacks.
- To prevent unauthorized access to sensitive information, all important company documents and data are encrypted, and computer operations and file access permissions require authorization.
- To mitigate the risk of data corruption and ransomware, a data backup center is established for centralized off-site backup management of key operational and research data.

Awareness Enhancement

- Regular information security awareness activities are conducted, with annual information security education and social engineering drills.
- All personnel are required to comply with legal regulations and information security policies, with supervisors ensuring that employees implement these policies, while enhancing their awareness of information security and legal compliance.

Preventive Practices

- Red team drills are conducted by third-party professional service companies to identify vulnerabilities in core systems, implement fixes, and fortify defenses to ensure effectiveness and reduce risk.
- Standard procedures for responding to and reporting information security incidents are established, with graded response and countermeasures for different types of incidents to prevent further damage.

Strengthen Employee Information Security Awareness

In order to enhance the information security awareness of all employees, a series of information security education training and drills were held in 2023, including:

Online Information Security Training

A total of **10,963** participations and a total of **10,963** training hours.

AEO Supply Chain Security Online Training

A total of **3,543** participations and a total of **1,772** training hours.

Introduction to the Latest Hacker Network Attack Techniques

A total of **74** participations and a total of **222** training hours.

Employee email social engineering drills

A total of **6,498** participations attended, with an employee email link click rate of **1.1%**, a decrease of **8.4%** compared to the same period last year.

No major information security incidents occurred in 2023.



1.4 Issues of Special Concern 2-16

NPC has long prioritized employee rights and public safety within its facilities, implementing various employee benefits and workplace safety measures that surpass legal requirements, all aimed at creating a safe and happy work environment. Due to recent changes in the business environment and other external challenges, NPC has adjusted the operational strategies. Priority has been given to transferring employees to other departments based on their preferences and needs, or offering voluntary early retirement packages that exceed legal requirements. To prevent potential workplace hazards, measures such as movable safety barriers (shields) and interlocked braking systems in controlled areas have been introduced. The company remains committed to advancing safety and environmental protection efforts, and thoroughly reviews and improves upon any incidents related to workplace safety.

Formosa Plastics Group website under the "News Release" section

Regarding recent media reports about the company's "Electronics Division offering early retirement" and the "fire at the Linkou site," further details can be found on the Formosa Plastics Group website under the "News Release" section (https://www.fpg.com.tw/tw/issue-news).

chapter 2

Product Value Expansion

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2.2 Green and Environmental-friendly Innovation 53

2.3 Customer Relationship Management 60



NPC is committed to providing diverse and high-quality products to customers. In addition to continuing to invest in R&D and innovation, the Company uses new technologies such as AI and digital transformation to strengthen the Company's competitiveness and product quality, as well as improve supply chain management, in the hopes of generating a good cycle for business partners and contributing to the industry's sustainability.

Strategy

- Reinforce R&D and innovation
- Enhance customer service

United Nations Sustainable Development Goals (SDGs)



☐ Did not meet the goals ☑ Goals met ★ Exceeded expectations

Sustainable Development

2023 Goals	2023 Implementation
■ Strengthen research and development and increase the proportion 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.	☑ In 2023, NPC's research and development expenses exceeded NT$1.333 billion, representing a 1.3% increase compared to 2022. ☑ The 2023 customer satisfaction survey results showed an overall satisfaction score of 4.4, accounting for 88% of the total score. ☑ No major violations related to product labeling or customer privacy occurred in 2023.

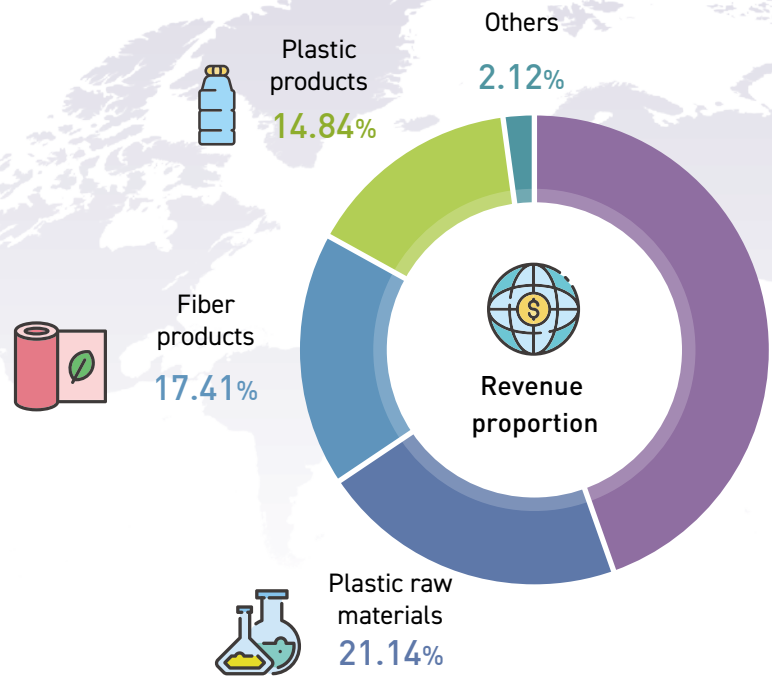
Short-term Goals (2024 Goals)	Medium- and Long-term Goals (2025-2030)
■ Strengthen research and development and increase the proportion of differentiated and high-value products. ■ The cumulative number of patents continues to grow ■ Conducted customer satisfaction survey and achieved overall satisfaction level. ■ No major violation regarding product labeling, customer privacy, etc. (with a penalty exceeding NT$1 million.	Maintain customer relations via innovation and R&D, helping the company seize market trends and develop a potential market.



2.1 Diversified Product Application

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

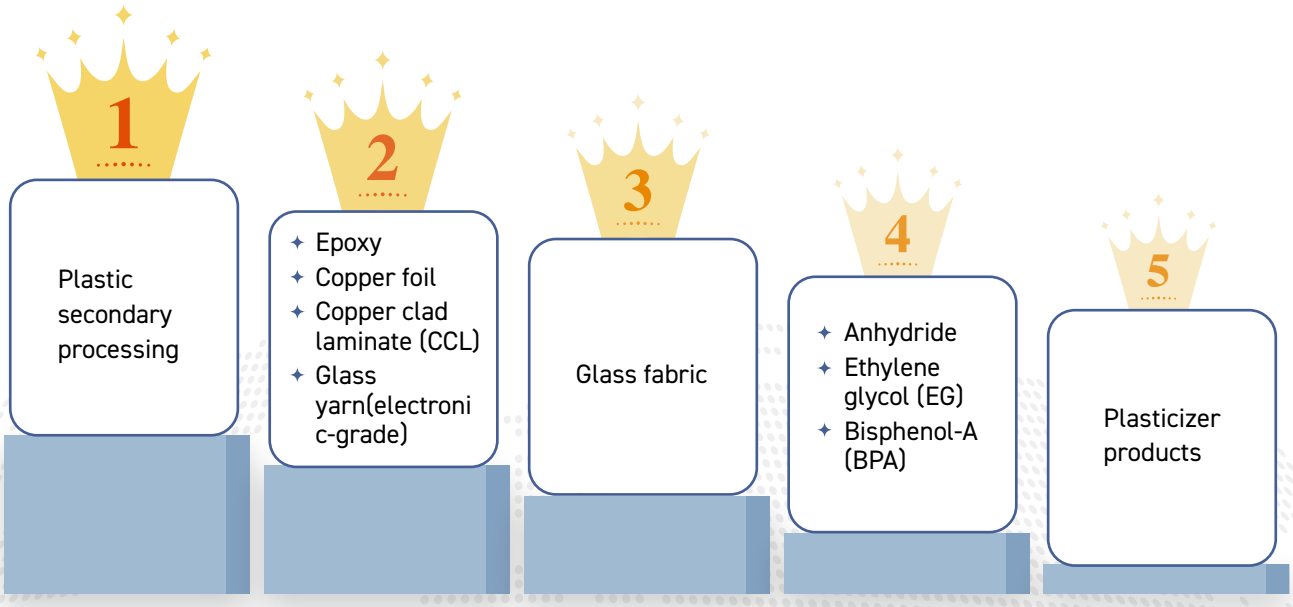
"Product Overview" on NPC's website



Note 1: The data is sourced from NPC's 2023 consolidated financial statements. Additionally, the "Others" category includes products such as "machinery" and "switchboards."

Note 2: Due to the diverse categories of NPC's product units (such as SH, tons, meters, etc.), please refer to the annual report on production and sales quality table for the distribution of each category of "products".

Market Positions of Main Product (Global Rankings)



2.1.1 Major Brands

Most of the products are marketed globally under NPC's brand . Years of hard work have resulted in a good industry reputation.

Jiemei Film

南亞保鮮膜
NAN YA WRAP



Product
PVC cling film

Applications
Packaging

TAIRILIN
(Dec. 1, 2007)

台麗綾 TAIRILIN



Product
Polyester fiber

Applications
Garment

Neuma
(Dec. 16, 2000)

Neuma 節能氣密窗



Product
Energy-saving airtight POM window, Entrance fire door, SMC door

Applications
Interior and outdoor construction materials

Splendid
(Feb. 16, 2002)

舒麗 SPLENDID



Product
PU artificial leather

Applications
Sofas, office chairs, car upholstery

Pearlescent Paper (PEPA)
(May 1, 2010)

珠光 PEPA



Product
Synthetic paper

Applications
Printing, tags and labels

ECO
(Jul. 16, 2011)

南亞 舒活



Product
Panel and decking, decorative panels

Applications
Interior and outdoor construction materials



Deluxe
(Nov. 16, 1997)

華麗



Product
Hollow tiles, plastic flooring, hollow foamed plates

Applications
Flooring, furniture board, door panels

Nan Ya ICE COOL insulation films
(Jan. 1, 2017)

NAN YA ICE COOL



Product
Energy-saving films

Applications
Insulation for glass panels in vehicles and buildings

SAYA
(Sep. 16, 2020)

SAYA



Product
SAYA 365, PET bottle recycling yarn, SAYA RSCUW grey cloth, leftover materials recycling
Silk, SAYA GARMA, fabric recycled silk

Applications
Clothes, home furnishings, shoes



"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

NPC's polyester fiber products website

NPC "SAYA " brand website

2.1.2 Innovation and Development of Product

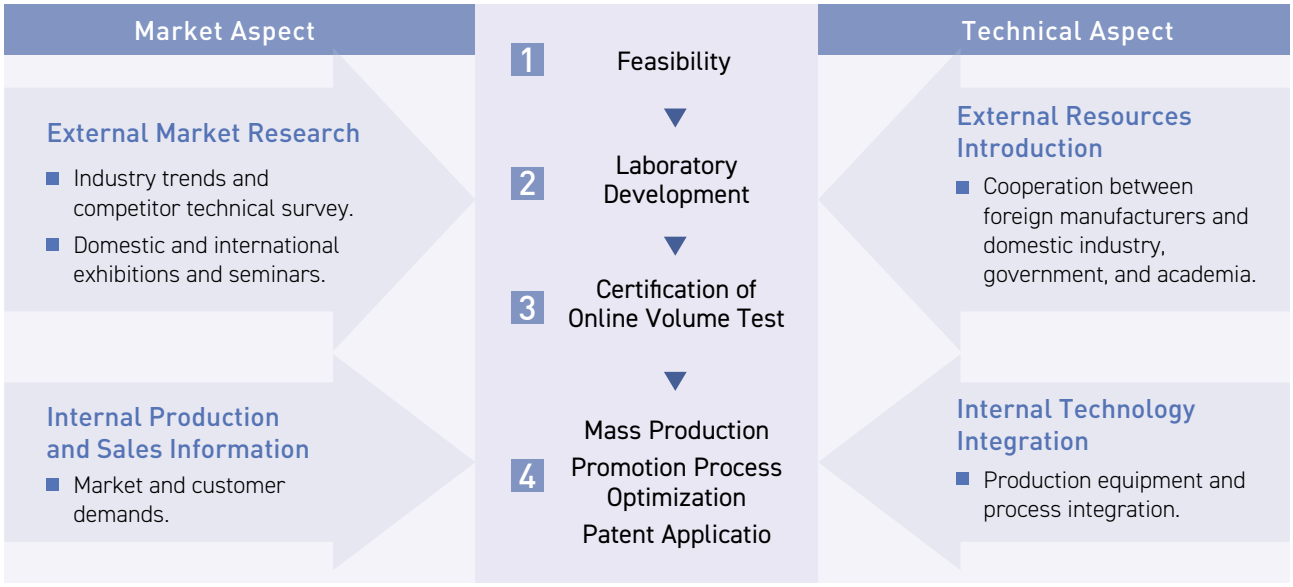
Management Processes of R&D and Innovation

(1) 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 markets.

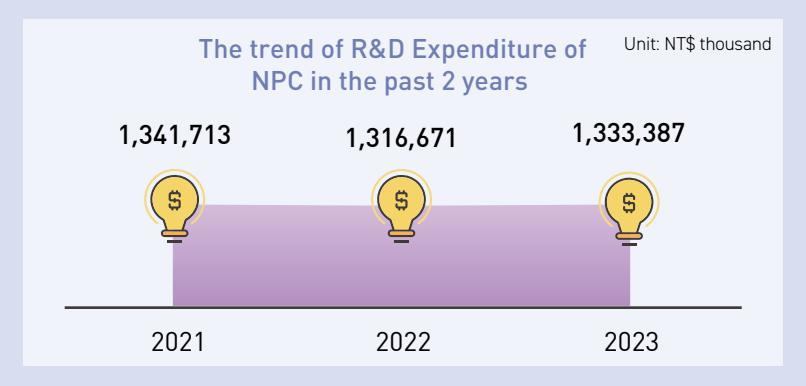
(2) R&D Operational Model

- Integrate technical and market aspects, hold regular production, sales, and technical meetings, and develop high-value products with development potential that meet the market's short-, medium- and long-term needs.
- Cooperate 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 3 years are as follows:



Note: Data sourced from NPC's 2023 standalone financial statements.

Innovative R&D and Product Applications

NPC's products include plastics, chemicals, electronics, fibers, and other fields. They are divided according to product categories: plastic products, chemicals, electronic materials, artificial fibers, electromechanical and switchboards, etc. In recent years, in addition to implementing Industry 4.0 intelligent chemical factories in production lines, we have also followed government policies. In terms of innovative product development, efforts have been made in three major innovation and research directions: expanding green technology products, developing smart health applications, and pioneering in the technology industry. A total of 15 research areas are involved. For future planned R&D projects, please refer to the company's annual report.

Expanding Green Technology Products

- Recycling and Reuse
- Energy Saving and Emission Reduction
- Carbon Capture and Reuse
- Water-based / Solvent-free
- Biodegradable / Biobased

Pioneering in the Technology Industry

- Chemicals for ABF
- IC Substrate Materials
- High-frequency Substrates
- Materials for Semiconductor Processes
- Battery Materials
- Materials for Wind Energy
- Specialty Chemicals

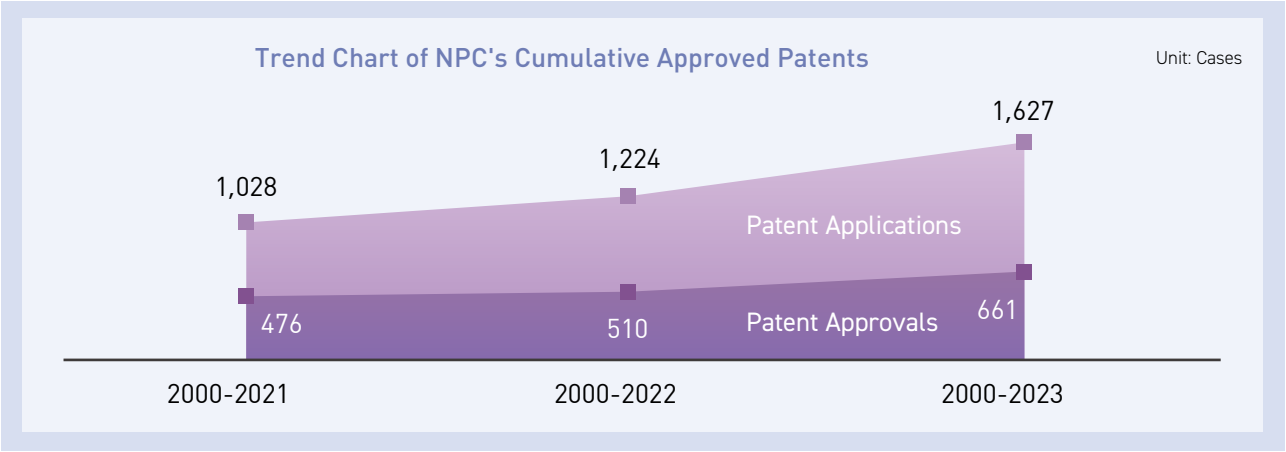
Developing Smart Health Applications

- Medical Materials
- PET Application Development
- Functional Materials

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. For further details, please refer to "IP Management" on the NPC's website. The innovation and R&D patents over the years are listed in the image below:

"IP Management" on NPC's website



Significant R&D Results in 2023

Expansion of Green Technology Products

Recycling and Reuse

- PET film recycling (core tubes)
- Fabric recycling (development of pre-treatment production line, construction of BHET pilot plant process)
- PET material recycling applications (modified pellets, industrial plastic pellets, resin alloy development)

Energy Saving and Emission Reduction

- Process optimization
- High-efficiency equipment
- New simulation tools (combining simulation software and AI to optimize process conditions, improve yield, capacity, quality, energy efficiency, and reduce CO_2 and wastewater)

Carbon Capture and Reuse

- CO_2 capture optimization at 2EH and EG plants

Water-based/Solvent-free

- PVC leather (water-based primer, matte treatment agent, ink)
- PU synthetic leather (high solid resin, water-based primer/topcoat)

Bio-based

- Bio-based polyol, bio-based polymer plasticizer (contains 20% bio-based PVC)

Exploring Technology Industry Fields

ABF Chemical Products

- Wet chemicals (solder flux cleaning solution, stripping solution)
- Thin films (green protective film)

Wind Power Materials

- Blade materials (low viscosity epoxy)
- Low viscosity hardeners
- Foaming polyester pellets

Semiconductor Process Materials

- Packaging process materials (PVC cutting tape, PO cutting tape)
- Wafer processing materials (grinding tape

Battery Materials

- Lithium batteries (aluminum plastic film, flame retardant materials)
- Solid-state batteries (lithium copper composite foil)

High-Frequency Substrates

- Substrates (ultra-low loss, microwave antenna low dielectric substrates)
- Copper foil and primer (low roughness adhesive copper foil)
- Low dielectric resin (low dielectric PPE-BMI resin)

IC Substrate Materials

- Core materials (low dielectric, low CTE, and high thermal conductivity core materials)

Specialty Chemicals

- Development of new uses for plasticizers
- Development of new specifications and uses for hardeners

Developing Smart Health Applications

Medical Materials

- Leuko-reduction Blood bag
- Blood collection tubes
- Advanced surgical films
- Regenerative medicine (cell culture bags)

PET Application Development

Applications beyond fiber films (development of modified pellets for storage boxes, cosmetic bottles, blood collection tubes, heat-resistant tableware, backpacks, buckles, sports equipment, etc.)

Functional Materials

- Films (PET synthetic paper, PP pearlescent paper, translucent touch film)
- Fibers (graphene)
- Packaging materials (CPP for high-temperature steaming, high-barrier transparent PET film, BOPP for fresh-keeping bags, mechanical packaging fresh-keeping films)
- Coatings (anti-corrosion, self-cleaning, heat-insulating, self-repairing coatings)
- Lightweight (LFT)
- TPU (for medical applications, films, hot-melt adhesives, and cables)
- TPEE (high-elasticity fibers, shoe materials)

Boosting the Excellent Performance of Innovation and R&D Team

In order to encourage R&D work, FPG has set up various R&D incentives to reward patent proposals, certifications, and critical products or patents that derive significant 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 further stimulate research and innovation within the Group.

2.2 Green and Environmental-friendly Innovation

2.2.1 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. NPC's major green and environmentally friendly products are as follows, and the estimated annual carbon reduction (CO_2 emissions reduction) benefit of energy saving and carbon reducing products is about 85,068 tons in total:

Green and Environmentally Friendly Solutions	Major Products	Description of Green Benefits
Energy efficiency	Thermal Insulating Coating	■ Verified by National Taiwan University of Science and Technology to conserve 31.8% of air conditioning energy consumption in summer. ■ Actual coating of solvent tankards in Mailiao site 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	The energy efficiency ratio is 99.2, which is 4% higher than the CNS national standard value of 98.8.
	Amorphous resin type dry type transformer	Compared with traditional silicon steel sheet transformers, total energy consumption and CO_2 emissions (kg/year) can be reduced by 36%, and each unit can reduce carbon emissions by 9.3 tons per year.
	Energy-saving airtight POM window	The thermal conductivity coefficient is low, and the thermal insulation is 1/1250 of that of aluminum steel, which can save more than 20% of energy consumption.
	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.
	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%.
	Lithium Copper Foil for Energy Storage	In response to energy shortages in many countries and rising electricity prices, the market demand for energy storage products has greatly increased. Due to its high charge-discharge efficiency and good stability, lithium batteries are internationally regarded as the preferred choice for modern energy storage equipment.

Green and Environmentally Friendly Solutions	Major Products	Description of Green Benefits
Emissions reduction	■ Water-based treatment agent ■ Water-based ink ■ Water-based PU leather ■ Non-VOC anti-corrosion coating ■ Pressure sensitive adhesive ■ Water-based Epoxy resin ■ Glass fiber water-based slurry ■ High solid content PU resin	Water-based or solvent-free products could effectively exclude emission rates of total volatile organic compound (TVOC).
Waste reduction	■ Eco-friendly plasticizers (DHIN, DHEH, DOTP) ■ Decomposable plastic wrap (PBAT)	■ Reduces emissions of phthalate-containing wastes. ■ PBAT furniture is biodegradable and reduces waste.
Water conservation	Celaperm	Saves up to 94% of water consumption in comparison with traditional dyed yarns.
Non-toxic	■ PVC leather, PVC sheeting, PU leather, TPU leather ■ PP construction material sheeting ■ Non-Phthalate Decorative Building Film ■ 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. ■ Capable of producing building decorative film products that comply with RoHS regulations. ■ Used in waterproofing materials and runway PU resin, the synthetic raw materials are MDI instead of TDI and plasticizers instead of traditional solvents. The formula has low VOC and meets the requirements of green building materials.
	■ Titanium catalyst ■ No heavy metal polyester resins	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, DHEH, and DOTP have low toxicity. The PVC products made by them 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.
	■ Halogen-Free Epoxy Resin ■ Halogen-Free Phenolic Resin	In response to the demand for the production of high-frequency and low-dielectric substrates, these materials must also meet environmental requirements by being halogen-free.
	High-frequency substrate used for 5G communication	Communication boards are non-toxic materials that comply with RoHS regulations. Demand for related communication boards is growing due to 5G communications.
	Polymer plasticizer	The product does not contain lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium (Cr6+), polybrominated diphenyl ethers (PBDE), polybrominated biphenyls (PBB).
	Polyethylene pipes for conveying domestic water and general purposes	
	Polyethylene pipe for gas	

Green and Environmentally Friendly Solutions	Major Products	Description of Green Benefits
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, health balls, food packaging materials, sports and recreational flooring, toys, and medical products.
	Epoxidized soybean oil	It is bio-based.
	Bio-based high-solid PU resin	It is biobased and its products can be labeled as USDA Certified Biobased Product.
	Decomposable plastic wrap	Use biodegradable materials for plastic wrap products, certified by BPI/DIN CERTCO.
	Medical materials	Products include surgical anti-adhesive film, alveolar periosteum, and blood materials (blood collection tubes, blood bags), which can improve human well-being.
	Medical-Grade PVC Pellets	Compliant with RoHS requirements, these are used in medical devices for EO and steam sterilization, including blood dialysis circuit main tubes, pump tubes, drip chambers, and dialysis connectors.
Recycled products	■ PET bottle cotton non-woven fabric ■ R-APET ■ Recycled polyester resins ■ Recycled polyester long fiber(Processed Yarn, Raw Cake) ■ Recycled polyester staple fiber (cotton) ■ Recycled polyester film	■ After recycling PET bottles, waste textiles, and industrial PET films, they are made into recycled polyester pellets. Forming various recycled products, approximately 67,648.7 tons of carbon will be reduced in 2023. ■ Recycle plastic bottles into Behnyl alcohol. TPU rubber particles and fabric made from Behnyl alcohol and isocyanate. Materials used in Ethylene Viny Acetate, synthetic leather and other products can reduce carbon emissions by 20% and meet the requirements of regeneration and environmental protection.
	Recycled polyester industrial plastic resins (PET industrial material recycling application)	1PET industrial material recycling and reprocessed PET resins have a significant reduction in CO_2 emissions compared with PET resins produced by traditional petrochemical processes. They can reduce CO_2 emissions by approximately 86.2~95.67% and reduce carbon emissions by 814.2 tons in 2023.
	Regenerated behnyl alcohol	Recycle PET bottle for alcoholysis, and introduce different acid raw materials to produce different behnyl alcohol, which can be used in PU leather base materials, impregnated materials PU, Ethylene Viny Acetate for shoes, environmentally friendly TPEE films, etc., to meet the requirements of recycling and environmental protection.
	PP recycled pallet	Using 100% recycled materials, and regularly entrusting professional organizations to conduct RoHS inspections, all are free of harmful substances.
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
Green Mark
Green Building Material Label
Singapore Green Building Product, SGBP
Low carbon material (LCBA)
Carbon footprint label
Home compostable
USDA ORGANIC
RoHS compliant
SCS global services

Environmental-Friendly Promotion Project

(1) Design and Development of Single-Material Products

In collaboration with leading international brands across various industries, adopting leasing or trade-in recycling models ensures a single material source. By leveraging the marketing and design capabilities of benchmark brands, the sustainability of single-material use is promoted. Utilizing NPC's diversified expertise in plastic processing, there is potential to become Taiwan's leading green recycling enterprise.

To enhance the circular economy's impact across the supply chain, raw materials are provided by FPC, and an internal vertically integrated production chain is developed, creating sustainable recycling value. NPC has developed single-material CPP films for retort pouches, BOPE films, and heat-resistant BOPP films, offering clients single-material packaging for composite processing, with ongoing expansion in applications.

Development of Modified Polyester Pellets (Single-Material Products)

Curtain	In collaboration with major domestic curtain manufacturers, modified PET is used to replace materials that are not conducive to recycling, producing curtains made entirely of polyester.
Clothing/ Backpack	Currently, most of traditional clothing and backpack accessories (such as zippers and buttons) are made from non-PET materials, which require manual removal during recycling. The development of modified polyester pellets for accessories makes the materials single-component and easier to recycle. Product validation for clothing and backpacks is ongoing.
All-Polyester Sports Shoes	Currently, sports shoes are made by bonding different functional materials with adhesives. By developing modified polyester pellets that can be foamed, heat-bonded, and have elastic properties, the entire shoe can be made of polyester, making it easier to recycle with the existing manufacturing process.
Luggage	Modified PET pellets replace commonly used PC and ABS materials in traditional luggage panels. With modified polyester pellets used for accessories, such as zippers, handles, and wheels, these non-PET materials are entirely replaced. After removing the aluminum alloy pull rod, the luggage is easier to recycle. SGS certification confirms that the luggage meets industry standards.

Single-Material Packaging Films

Packaging Bag	Functional packaging films, considering quality and preservation, require high moisture and oxygen resistance. Currently, different material adhesive films are used, making recycling difficult. Therefore, single-material packaging films (high-barrier BOPP, BOPE films) are being developed to facilitate future recycling and reuse.

Expected Results

The development of single-material items is expected to improve the convenience and efficiency of recycling across the value chain. Single-material packaging (PP or PE) can be recycled, with an initial estimate to reduce packaging waste by 25%, contributing to raw material circularity.

(2) Recycling 6.4 Billion PET Bottles, Reducing Carbon Emissions by 72% Compared to Virgin Materials

NPC upholds the business philosophy of protecting the Earth and promoting sustainable development. Since 2007, the company has been committed to recycling and regenerating post-consumer PET bottles and other polyester products, focusing on developing environmentally sustainable products while continuously expanding production lines. By 2024, NPC set the target for recycled material product sales in Taiwan to reach 47% of those using in virgin bottle resin.

Performance Highlights

In 2023, **6.4** billion PET bottles were recycled, reducing carbon emissions by **139,000** tons per year.	**84%** of the recycled PET bottles were used to produce high-tech, high-value-added long fiber.	Recycled PET pellets, replacing virgin polyester resin, reduce carbon emissions by **72%** compared to the original process.

Historical Recycling Volume and Carbon Emission Reduction						
Year	2021		2022		2023	
	Recycling Volume	Carbon Emission Reduction	Recycling Volume	Carbon Emission Reduction	Recycling Volume	Carbon Emission Reduction
	109,008 tons (8.7 billion PET bottles)	188,039 tons	88,140 tons (7.0 billion PET bottles)	152,042 tons	80,904 tons (6.4 billion PET bottles)	139,559 tons
Benefits	Recycling volume can circle the Earth 148 times	Equivalent to the carbon absorption of 482 Daan Forest Parks	Recycling volume can circle the Earth 120 times	Equivalent to the carbon absorption of 390 Daan Forest Parks	Recycling volume can circle the Earth 110 times	Equivalent to the carbon absorption of 358 Daan Forest Parks

Note 1: 1 ton of recycled products = 80,000 PET bottles.
Note 2: Carbon emissions reduction = (carbon emissions from virgin resin - carbon emissions from recycled resin) * sales volume.

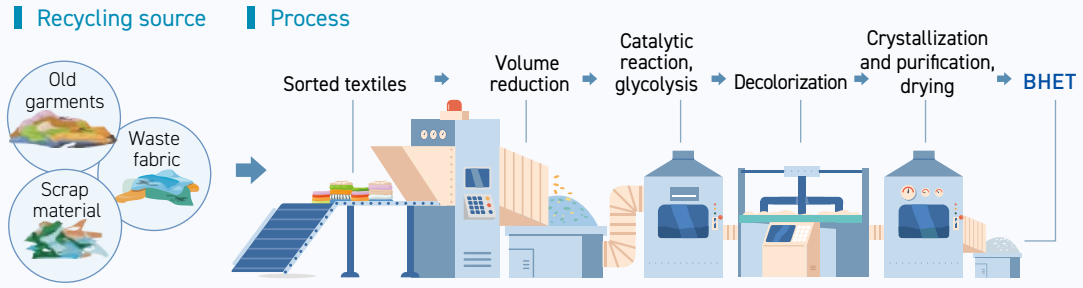
(3) Effective Recycling of Various Items Lays a Solid Foundation for Green R&D Innovation

Recycle of PP Pallets

The production of eco-friendly plastic pallets (manufactured with externally purchased recycle PP pellets and non-standard products) of low carbon footprint are introduced. In 2023, the production volume was 12,899 tons (accounted for 88.4%), achieving approximately 76% of carbon reduction benefit in comparison to the virgin raw material products.

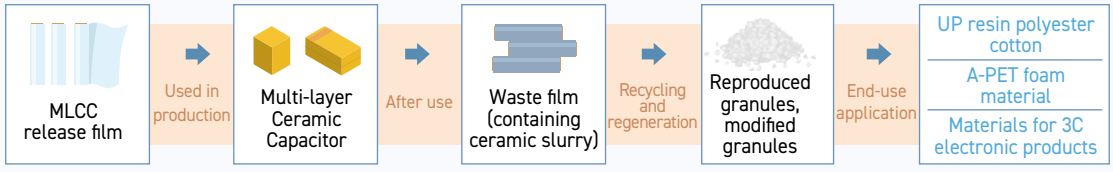
Recycle of Fabrics

NPC has equipped with the recycling and mass production technology for pure PET greige fabrics, finished fabrics and fabric scraps, and has also established the pre-treatment and pellet manufacturing production line with a monthly production capacity of 1,000 tons. In addition, NPC has developed the high-end BHET chemical recycling technology, and has constructed a leading factory to serve as the basis for mass production in the future.



MLCC (Multi-layer Ceramic Capacitor) release film recycling

After the customers' use, the release films were originally disposed as waste. Currently, after recycling treatment by NPC, we can provide for the manufacturing of the products of UP resin and polyester staple fibers. The recycling capacity is 600 tons/month, and the release films used by domestic MLCC and optical customers can be recycled.



2.2.2 Artificial Intelligence (AI) Applications

Since 2018, NPC has established an internal AI-driven team dedicated to developing relevant technologies and continuously providing various training programs, including internal staff training, external training with institutions, and industry-academia collaboration. The team applies these technologies to development operations such as image defect detection, virtual instrumentation establishment, and other application areas. The goal is to enhance factory automation, digitalization, and intelligence through process optimization combined with AI technology, gradually constructing a smart factory.

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.

AI Application Fields and Development Goals

NPC's current areas of AI application include the following 5 areas:

Development goals



Vision: Build a smart factory that is "adaptive" and resource efficient.

Expected benefit

- Conduct in-depth research and development on the 5 major application areas, establish independent technologies, and gradually apply AI technology to various management functions.
- Through the integration of software and hardware, the factory has the capabilities of sensing collection, environmental monitoring, Internet, information exchange, manufacturing execution, decision-making analysis, etc.

Five major areas of AI application

Process condition optimization

- Collect data on process and quality variations to identify key factors.
- Use statistical analysis or AI-related algorithms to find the best operating conditions and assist decision-making.
- Complete **34** cases in 2023, with annual benefits of NT$ **130,736,000**.
- A total of **136** cases were completed from 2019 to 2023, with annual benefits of NT$ **1,088,622,000**.

Workflow optimization

- Establish smart production and marketing schedules.
- Image recognition assists industrial safety and environmental monitoring.
- Design process optimization.
- Complete **4** cases in 2023, with annual benefits of NT$ **12,145,000**.
- A total of **11** cases were completed from 2019 to 2023, with annual benefits of NT$ **30,417,000**.

Quality prediction (virtual analyzer)

- Establish a quality prediction model based on process data.
- Real-timely grasp quality variations and make adjustments.
- Complete **17** cases in 2023, with annual benefits of NT$ **9,561,000**.
- A total of **52** cases were completed from 2019 to 2023, with annual benefits of $ **206,309,000**.

Device status monitoring

- Apply multi-variable analysis techniques to establish process or equipment. Established process or equipment health indicators
- Maintenance cycle estimation.
- Equipment life prediction

- Complete **15** projects in 2023, with annual benefits of NT$ **19,789,000**.
- A total of **59** cases were completed from 2019 to 2023, with new annual benefits NT$ **64,537,000**.

Defect image recognition

- Use the CNN model to improve defect classification accuracy and perform automatic quality determination.
- Trace the process history and improve production conditions in series.

- Complete **13** projects in 2023, with annual benefits of NT$ **14,706,000**.
- A total of **57** cases were completed from 2019 to 2023, with new annual benefits NT$ **508,692,000**.
- The accuracy of defect classification has improved from 70% to over **95%**.

AI Professional Talent Training

In order to train AI professionals and strengthen its internal ability to independently develop AI applications, NPC has carried out three major directions: "training at Taiwan Artificial Intelligence School", "internal AI-related education and training", and "industry and academia cooperation". The key points are as follows:

Send talented people to Taiwan Artificial Intelligence School training

Cumulative number of trainees: **131** people	Number of trainees in 2023: **8** people
Total training hours accumulated: **50,304** hours	Total training hours in 2023: **3,072** hours

AI related education and training

Cumulative number of trainees: **72** events	Number of trainees in 2023: **4** events
Total training hours accumulated: **2,168** people	Total training hours in 2023: **132** people

Collaboration with the Industry and Academia

Cooperating units in 2023	Cooperation results in 2023
Ming Chi University of Technology	Research on optimization methods for machine learning technology to achieve goals such as shortening model learning time and reducing model complexity, thereby improving model development efficiency.
National Yunlin University of Science and Technology	■ 2EH Plant pipeline corrosion AI intelligent monitoring system, predicting corrosion conditions to extend the service life of pipeline equipment, with an annual benefit of NT$ 316,000. ■ AI forklift protection system in the Electronic Materials division to prevent collisions and reduce occupational safety hazards.
Formosa Plastics Corporation, Electronics Department	Development of a formula prediction module for the plastics plant, reducing the time spent on formula research and development, with an annual benefit of NT$ 6,999,000.

AI implementation results and overview

As of the end of 2023, NPC has promoted 482 AI projects (completed and in progress), with an estimated investment amount of NT$ 590,929,000. The estimated annual benefit is NT$ 2,519,148,000. The key points are as follows:

Unit: NT$ thousand

Project	Number of cases	Investment Amount	Annual benefit
Completed	315 cases	382,681	1,898,577
In progress	167 cases	208,248	620,571
Total	482 cases	590,929	2,519,148

2.3 Customer Relationship Management

NPC puts great emphasis on customer rights and feedback. Enhancing customer satisfaction falls not only on the sales divisions but also on 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.

2.3.1 Collaborative Customer Relations

Mutually-Benefiting Interactions

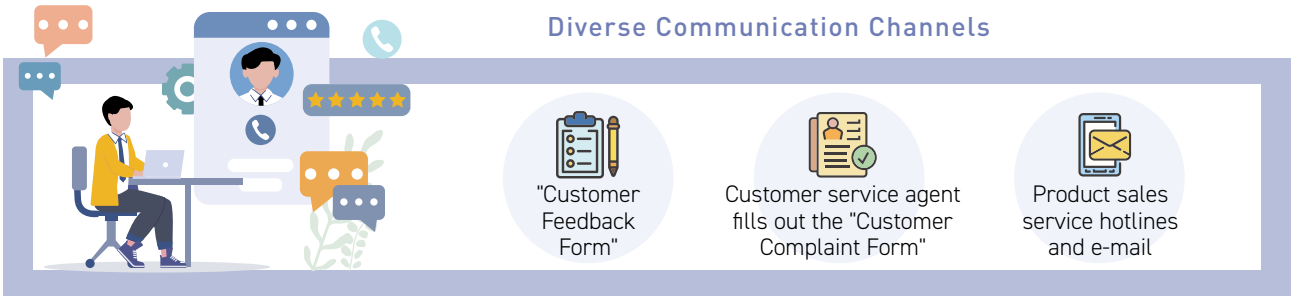
To strengthen customer relationships, the sales divisions regularly visit customers, exchange opinions on existing or new products, and establish an interactive and timely communication channel. Through attending product exhibitions, we can talk face-to-face with the customers about market information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

Stakeholder Communication and Feedback Mechanism



Responding to Customer Feedback

Customer relationship management is essential to 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:



Customer Satisfaction Survey Model

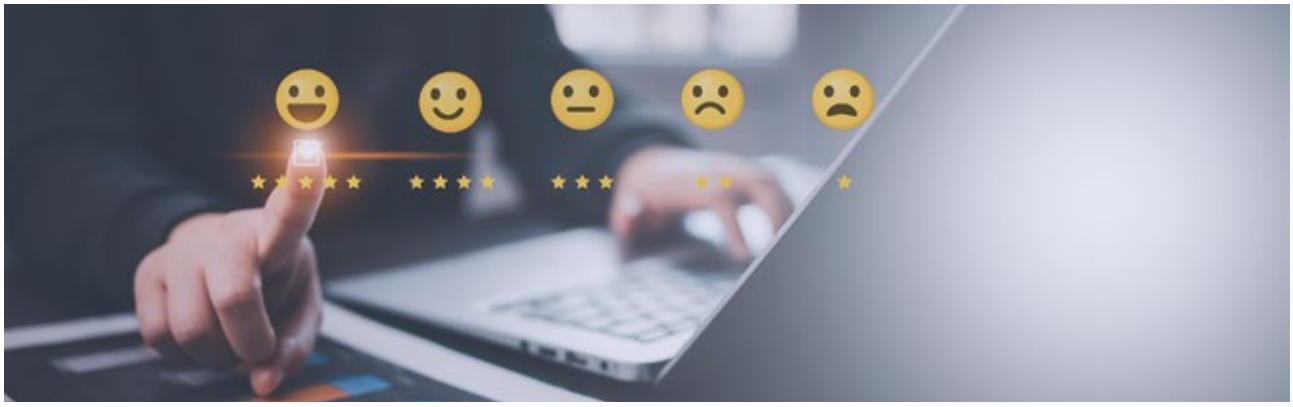
According to the 2023 customer satisfaction survey results, the overall satisfaction was 4.4 points, accounting for 88% of the total score. Seven performance indicators were above "satisfactory," though some product pricing failed to meet customer expectations. This was mostly attributed to the fact 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.



NPC Customer Satisfaction Survey in the Past 3 Years

Year	Technical research	Service attitude	Brand image	Product delivery time	Product quality	Product characteristics	Product price	Overall satisfaction
2021	4.3	4.5	4.4	4.3	4.3	4.3	3.7	4.3
2022	4.3	4.5	4.4	4.3	4.3	4.3	3.7	4.3
2023	4.4	4.5	4.4	4.3	4.4	4.4	3.8	4.4

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.



chapter 3

Green Environmental 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.

Strategies

- Implementing circular economy: Introducing single-material design to improve recycling efficiency, reducing waste at the source, and enhancing resource utilization.
- Mitigating climate change risks: Promoting energy transition, improving energy and resource efficiency through cross-plant integration, increasing the use of renewable energy, and applying carbon capture technology.
- Strict adherence to environmental regulations: Implementing air pollutant management to achieve zero environmental violations.

United Nations Sustainable Development Goals (SDGs)



Material Topics

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

☐ Did not meet the goals ☑ Goals met ★ Exceeded expectations

Circular Economy Promotions

2023 Goals	2023 Implementations
■ Continue to promote energy conservation and water conservation projects; reduce total water consumption, gas consumption, and electricity consumption from the 2022 figures. ■ Water use reduced by 2%, energy (gas, electricity, fuel) reduced by 3%, and waste reduced by 1% at Mailiao site compared to the previous year's consumption per unit product. ■ Increase rainwater collection and wastewater reuse at each business division.	☑ Compared with 2022, consumption of water, gas, and electricity decreased by 17.5%, 22.5%, and 14.5%, respectively. ☑ Water use reduced by 3.6%, gas reduced by 16.9% at Mailiao site compared to consumption per unit product in 2022. ☐ Compared to 2022, due to reduced production capacity at the Mailiao plant, utilities continued operating, resulting in a 13.9% increase in electricity consumption per unit and a 47.4% increase in fuel consumption per unit. Waste increased by 7.4%, mainly due to assisting local governments in processing household waste, leading to more fly ash and bottom ash. ☐ In 2023, the average monthly rainfall decreased by 18%, reducing rainwater collection by 249 tons per day; however, the rainwater collection rate increased by 2.5%. ☐ Due to lower capacity utilization in 2023, wastewater generation decreased, resulting in a reduction of 386 tons per day in reclaimed water usage.

Short-term Goals(2024 Goals)	Medium- and Long-term Goals(2025-2030)
■ Continue to promote energy conservation and water conservation projects; reduce total water consumption, gas consumption, and electricity consumption from the 2023 figures. ■ Compared with the previous year's unit product consumption, water consumption is reduced by 2%, energy consumption (gas, electricity, fuel) by 3%, and waste by 1% in Mailiao site. ■ Increase rainwater collection and wastewater reuse at each business division.	■ Continue to promote water conservation, energy conservation, carbon reduction, and waste reduction as well as increase rainwater storage and utilization. ■ Continue to introduce new technology, and promote the rainwater collection and wastewater reuse.

☐ Did not meet the goals ✅ Goals met ⭐ Exceeded expectations

Mitigate Climate Change Risks

2023 Goals	2023 Implementations
■ Complete internal audit and external third-party verification on 2022 GHG inventories. ■ Reduce GHG emissions or reduce emissions intensity (GHG emissions/ NPC individual revenues) by 2.5% compared with the previous year. ■ Install renewable energy equipment equivalent to 8% of the contracted electricity capacity. ■ Maintain "leadership level" on the "climate change" and "water security" sectors in 2023 Carbon Disclosure Project (CDP) ■ Publish NPC's 2022 TCFD report.	✅ Internal audit and external third-party verification on 2022 GHG inventories were completed. ✅ The Company's GHG emissions in 2023 reduced by 16.92% compared with 2022, and the emission intensity of unit turnover increased from 2.71 kilotons/ NT$ 100 million to 3.15 kilotons/ NT$ 100 million. ✅ A total of 8,185.98 kW has been installed at the Hsinkang, Chiayi, and Shulin sites, and renewable energy certificates have been applied for. This meets the required capacity obligation under the regulations for large electricity users. ✅ Maintained the "leadership level' on the "climate change" and "water security" sectors in 2023 Carbon Disclosure Project (CDP). ✅ TCFD report was published in June 2023.

Short-term Goals(2024 Goals)	Medium- and Long-term Goals(2025-2030)
■ Reduce GHG emissions or reduce emissions intensity (GHG emissions/ NPC individual revenues) by 2.5% compared with the previous year. ■ In addition to meeting regulatory requirements, NPC continues to plan the installation of renewable energy equipment. ■ Maintain "leadership level" on the "climate change" and "water security" sectors in 2024 Carbon Disclosure Project (CDP). ■ Publish the Company's 2023 TCFD report.	■ With the long-term goal of "Carbon Neutrality by 2050," the combined targets for Scope 1 and 2 are set as follows, based on different purposes: ◆ External Commitment: A reduction of 20% by 2025 and 35% by 2030, compared to 2007 levels. ◆ Internal Stricter Targets: A reduction of 12.5% by 2025 and 25% by 2030, compared to 2020 levels. ◆ SBTi Target: A reduction of 15% by 2027, compared to 2021 levels; additionally, a 7.4% reduction for Scope 3. ■ Continue to assess the feasibility of installing solar or other green energy facilities at each site. ■ Continue to submit CDP surveys to understand the international trends on response to climate change.

Strict Compliance with Environmental Laws

2023 Goals	2023 Implementations
■ Air pollutant emissions in 2023 to be lower than 2022. ■ Reduce the number of penalties for environmental violations to less than 50% of 2022(less than 1).	✅ Total air pollutant emissions in 2023 decreased by 250.75 tons compared with 2022. ☐ In 2023, there were 3 environmental penalties, an increase of 1 case compared to 2 cases in 2022. The root causes have been thoroughly investigated, and internal management will continue to be strengthened.

Short-term Goals(2024 Goals)	Medium- and Long-term Goals(2025-2030)
■ Air pollutant emissions in 2024 to be lower than in 2023. ■ Reduce the number of penalties for environmental violations to less than 1.	■ Continue to reduce various pollutant emissions ■ No environmental violation

Material topics management 3-3

Policy Commitment

To pursue sustainable environmental development, NPC actively manages the environmental impacts of all its operations. The company is fully committed to promoting water and energy saving projects, integrating raw materials, energy resources, and waste recycling across plants to avoid or mitigate environmental impact risks. NPC sets targets to review the execution of sustainable performance and takes responsibility for green production.

Organizational Vision

Under the guidance of the Board of Directors and the Sustainability Development Committee, NPC is dedicated to implementing four major carbon reduction strategies to achieve carbon neutrality by 2050 and fulfill its environmental protection responsibilities.



☐ Did not meet the goals ☑ Goals met

Material Topics: Mitigation and adaptation for Climate change, GHG management, Air pollutant management

GRI 305 Emissions
SASB GHG emission
SASB Air quality management

Definition and Impact description

Actual | Potential | Positive | Negative

Definition:

- NPC reduces the impact on its operations through practices and strategies related to climate change mitigation and adaptation.
- The company promotes management measures to reduce greenhouse gas emissions, sulfur oxides (SOx), and volatile organic compounds (VOCs).

Impact:

- External communication regarding carbon neutrality strategies and innovative research and development plans aids in assessing decarbonization pathways and improving external communication.
- Physical and transitional climate risks will increase operational costs for the company.
- Improving energy efficiency and using alternative fuels can enhance operational efficiency and reduce regulatory risks.
- High-carbon-emitting companies will be subject to government regulations and must formulate and implement decarbonization operations or pay substantial carbon fees.
- By optimizing technological processes or implementing other management strategies to reduce air pollution emissions, the company can decrease regulatory fees and enhance brand value.
- Abnormal air pollution events will incur additional management and monitoring costs for the company and impact brand value.

Management Actions

- Implement various carbon reduction management activities in accordance with short, medium, and long-term carbon reduction targets and the "Four Major Carbon Reduction Strategies."
- Commission third-party impartial organizations for verification and participate in international assessments such as CDP to review and improve the company's energy-saving and carbon reduction efforts, advancing toward the long-term goal of "Carbon Neutrality by 2050."
- Continuously promote process optimization and improvements in water and energy conservation, holding regular "Water and Energy Conservation Effectiveness Review Meetings" to assess various countermeasures and review implementation results.

2023 Action Performance Tracking

- ☑ Implement the "Four Major Carbon Reduction Strategies."
- ☑ Achieve "Leadership Level (A)" in the CDP Climate Change Questionnaire.
- ☑ Publish the annual TCFD report.
- ☑ Apply to join the Science Based Targets initiative (SBTi).

Short-Term Goals (1-3 Years)

- Achieve carbon reduction targets.
- Maintain a "Leadership Level (A)" rating.
- Publish the annual TCFD report.
- Reduce greenhouse gas emissions by 2.5% each year.

Mid to Long-Term Goals (3+ Years)

- Achieve carbon reduction targets.
- Maintain a "Leadership Level (A)" rating.
- Publish the annual TCFD report.
- Reduce greenhouse gas emissions by 12.5% over five years.

Stakeholder Groups

Shareholders, customers, supply chain, government agencies, environmental groups, experts and scholars, local residents.

Communication Channels and Outcomes

- Disclose various information in accordance with legal requirements in the annual report, sustainability report, and government public information platforms.
- The 2022 TCFD report has been published in 2023, and the same will be executed in 2024.

Material Topics: Energy Management

GRI 302 Energy
SASB Energy Management

Definition and Impact description

Actual | Potential | Positive | Negative

Definition:

The status and demand of energy consumption by NPC, classified into renewable and non-renewable energy sources.

Impact:

- Reducing energy consumption can lower environmental liabilities and external costs, enhancing corporate competitiveness.
- The unit energy consumption in the manufacturing process is relatively high. Under government regulations, it is necessary to purchase renewable energy or pay fees, increasing operational costs.

Management Actions

- Phased implementation of solar power generation systems on the rooftops of facilities in Chiayi, Hsinkang, Mailiao, Renwu, Changbin sites, and northern plant areas.
- Promotion of a digital energy management platform.

2023 Action Performance Tracking

- ✅ The solar installation capacity of 1,500 kW at the Hsinkang distribution panel plant was completed and generating power in November 2022, and the renewable energy certificate was obtained in March 2023.
- ✅ The cumulative solar installation across all plants of the company and its subsidiaries in Taiwan has reached 8,185.98 kW, and a total of 2,171 green energy certificates have been obtained.
- ✅ The production facilities, such as the Shulin Plant 1 and Chiayi Plant 1, have passed the ISO 50001 energy management system certification.

Short-Term Goals (1-3 Years)

In addition to meeting the regulatory installation capacity for 2025, continue to complete the installation of solar power generation systems.

Mid to Long-Term Goals (3+ Years)

Promote the digital energy management platform.

Stakeholder Groups

Shareholders, customers, supply chain partners, government agencies, environmental groups, experts and scholars, local residents.

Communication Channels and Outcomes

- In accordance with legal requirements, various information is disclosed in the annual report, sustainability report, and government public information platforms.
- The 2022 TCFD report has been published in 2023, and a similar execution will be followed in 2024.

Material Topics: Water Resource Management

GRI 303 Water and Wastewater
SASB Water Resource Management

Definition and Impact description

Actual | Potential | Positive | Negative

Definition:

NPC evaluates and assesses measures related to water resource extraction, recycling, and reuse, and provides information about affected water sources.

Impact:

- Reducing water usage and recycling wastewater can lower environmental liabilities and external costs, enhancing the company's competitiveness.
- Major water consumers will be subject to government regulations and may incur water usage fees, increasing operational costs.
- If the quality of discharged water does not meet emission standards, there is a risk of penalties, which could severely disrupt operations and lead to financial losses.

Management Actions

- Using the World Resources Institute (WRI) water resource risk assessment and available water analysis method (AWARE), we verify the annual water scarcity risk for each plant and strengthen various water-saving measures for high-risk locations.
- NPC has established a "Water Quality Automatic Monitoring (Visual) and Online Transmission System, CWMS" and a "Water Pollution Prevention Management Computer Operating System" to ensure that water quality meets regulatory requirements.
- We have commissioned a verification agency to assist in the water footprint inventory and report verification.
- We continuously promote process optimization and improvements in water and energy conservation, holding regular "Water and Energy Conservation Effectiveness Review Meetings" to evaluate various measures and review implementation results.

2023 Action Performance Tracking

- ✅ The international carbon disclosure project (CDP) "Water Security" questionnaire maintains a "Leadership Level (A)" rating.
- ✅ All plants' discharged water meets water quality testing standards, with no violations occurring.
- ✅ NPC and its Taiwan subsidiaries have completed 42 water-saving improvement projects, with an investment amount of NT$10 million and an annual benefit of approximately NT$4 million.

Short-Term Goals (1-3 Years)

- The international carbon disclosure project (CDP) "Water Security" questionnaire maintains a "Leadership Level (A)" rating.
- All plants' discharged water meets water quality testing standards, with no violations occurring.

Mid to Long-Term Goals (3+ Years)

- The international carbon disclosure project (CDP) "Water Security" questionnaire maintains a "Leadership Level (A)" rating.
- All plants' discharged water meets water quality testing standards, with no violations occurring.

Stakeholder Groups

Shareholders, customers, supply chain, government agencies, environmental groups, experts and scholars, local residents

Communication Channels and Outcomes

- Information is disclosed in the annual report, sustainability report, and government public information platform as required by regulations.
- The 2022 TCFD report has been published in 2023, and similar implementation will be carried out in 2024.

Material Topics: Waste Management and Promotion of Circular Economy

GRI 306 Waste
SASB Hazardous Waste Management

Definition and Impact description

Actual | Potential | Positive | Negative

Definition:

NPC promotes waste reduction at the source and resource recovery, while implementing single-material design to improve recycling efficiency.

Impact:

- Increasing the proportion of waste resource recovery can achieve circular economy effects, reducing environmental responsibility and external costs, while enhancing corporate competitiveness.
- Investing in circular economy and recycling technologies, and enhancing green product portfolio lowers costs, increases exposure in the recycling market, and improves corporate reputation.
- Improper management of waste will incur additional management and monitoring costs for the enterprise, affect brand value, and may lead to penalties, with the most severe consequence being operational disruption.
- Failure to meet customer demands for enhanced green products and recycling technologies may result in loss of orders, increasing operational pressure.

Management Actions

- Monthly meetings are held to review energy-saving, emission reduction, and circular economy.
- Participation in the annual FPG's Environmental Management Excellence Factory Observation and Improvement Case Selection Conference.
- Participation in the annual award ceremony for outstanding departments in energy-saving and emission reduction at the Mailiao site.

2023 Action Performance Tracking

- ✅ NPC and our subsidiaries in Taiwan generated a total of 96,045.56 tons of waste, with a resource recovery rate of approximately 72.9%.
- ✅ Completed waste flow audits as required, totaling 334 sessions.
- ✅ No environmental fines for violating waste regulations.
- ✅ NPC and our subsidiaries completed 539 energy-saving improvement projects, saving 28.4 tons of steam per hour, 11 kilowatt-hours of electricity per hour, 0.7 tons of fuel per hour, and reducing CO_2 emissions by 148,000 tons per year, with an investment benefit of NT$ 570 million annually.
- ✅ NPC and our subsidiaries completed 42 water-saving improvement projects, saving 4,785 tons of water per day, with an annual benefit of NT$ 4 million.

Short-Term Goals (1-3 Years)

- NPC and subsidiaries will increase resource recovery to 80%.
- Complete waste flow audits as required.
- No environmental fines for violating waste regulations.

Mid to Long-Term Goals (3+ Years)

- NPC and subsidiaries will increase resource recovery to 85%.
- Complete waste flow audits as required.
- No environmental fines for violating waste regulations.

Stakeholder Groups

shareholders, customers, supply chain, government agencies, environmental groups, experts and scholars, local residents

Communication Channels and Outcomes

- In compliance with regulatory requirements, various information is disclosed in the annual report, sustainability report, and government public information platform.
- In 2023, the TCFD report for 2022 has been published, with similar execution planned for 2024.
- In 2023, NPC provided explanations to various media about its sustainability initiatives, such as collaborating with the Industrial Technology Research Institute (ITRI) and Germany's Rhein to complete carbon footprint verification for 13 key products; SAYA fabric recycling and the "Second Life of Second-Hand Clothes" feature interview; and organizing a series of events such as "A Thousand People Plant Trees, Future Generations Enjoy the Shade."

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

NPC's Environmental Cases in 2023

Develop green and environmentally friendly products

- Bio-degradable PBAT resins: The polyester fiber division developed PBAT polymerization and modification technology that can be used in a variety of processed products. It has applied for bio-degradable certification.
- Replace petrochemical raw materials with PLA (polylactic acid, corn, sugar cane, or their residues) in the production of PBAT cling film and label package film. It has obtained DIN CERTCO and BPI certified in 2022.

Source reduction and waste reduction

Development of recycled and renewable products

- Fabric recycling: Confirm that PET depolymerization conditions and bis-hydroxyethyl terephthalate(BHET) purification procedures meet quality requirements in the pilot factory.
- PET bottle recycling: PET bottles are recycled and granulated to replace virgin polyester resins, and carbon emissions can be reduced by 72%. 23 qualified bottle flake suppliers were developed, totaling 712,000 tons/year, with a 310,000 tons/year available supply.
- MLCC (multilayer ceramic capacitors) release film recycling: The recycling capacity is 600 tons per month, and the release films sold to domestic MLCC clients may be 100% recycled. (For the launch and implementation of new products, we have negotiated with well-known 3C and home furnishing brands and manufacturers in Taiwan, the United States, Europe, and Japan).

Introduction of clean production

- Implement energy conservation and carbon reduction through process operating conditions change, model adjustment, AI and big data application, etc.
- Implement low-carbon energy transition by replacing high-carbon energy (coal, heavy oil) with low-carbon energy (natural gas, etc.)
- At present, the side reaction in the EO process will generate CO_2. 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

- Inventory the computerization of every environmental protection operations, and promote the electronization of management operations to strengthen the management
- Implement internal carbon pricing operations
- Strengthen environmental inspections

3.1.1 Safety, Health, and Environmental Protection Policy

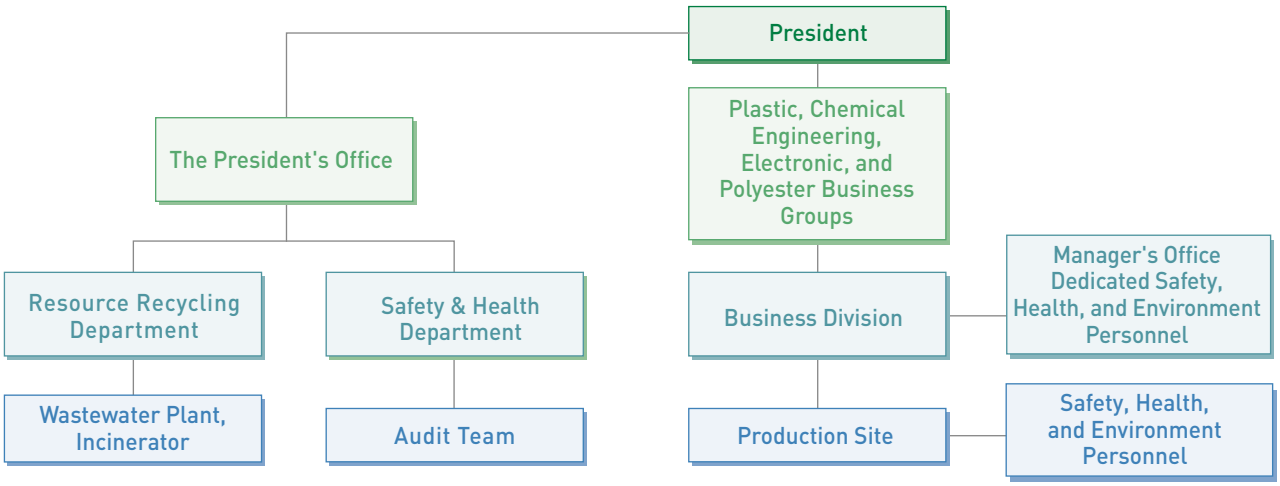
NPC fully implements its environmental protection policies by developing green and environmentally friendly products to achieve sustainable operations. The company actively enforces measures such as "reduction and waste minimization from source," "clean production implementation," and "strengthening environmental management systems" to achieve the goal of zero pollution.



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

FPG 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



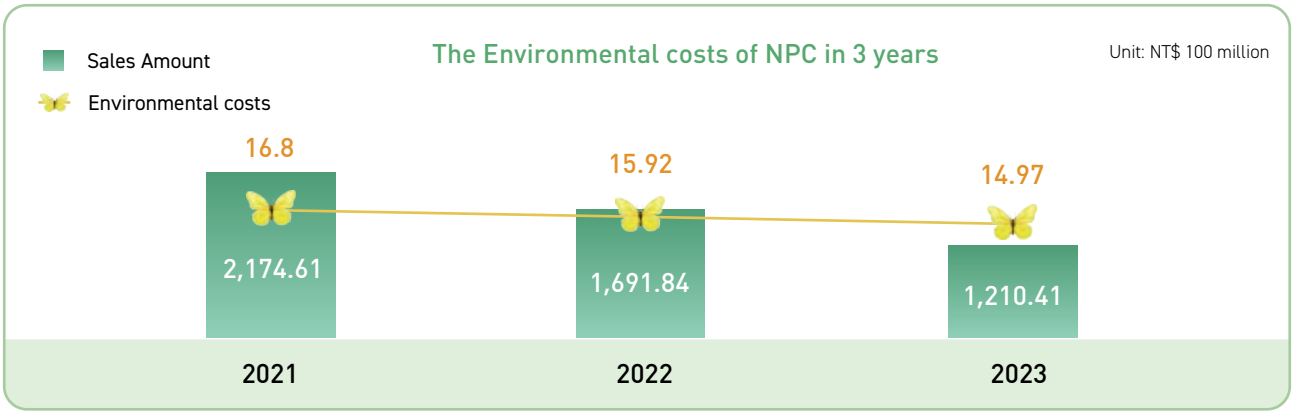
NPC has received the following certificates for environmental management systems:

Name of Certificate	Certified Plant/ Product
ISO 14001: 2015 Environmental Management System	Shulin, Linkou, Kung San, Jinxing, Mailiao, Haifeng, Hsinkang, Chiayi, Renwu ,and Linyuan sites
ISO 50001: 2018 Energy Management System	Shulin plant I, Shulin plant II, Linkou plant II, Chiayi site, Hsinkang plant I, Engineering plastics plant, Hsinkang CCL plant I, Hsingkang CCL plant III ,Renwu plant I, Renwu plant II, Linyuan sites
Green Factory Label	Shulin plant II, Hsinkang CCL plant I, Hsinkang CCL plant III, Mai-Liao Main Plant (Ethylene Glycol Plant), Hai-Feng Main Plant (Ethylene Glycol Plant)
Green Building Label	Shulin plant II, Hsinkang CCL plant I, Hsinkang CCL plant III, Hsinkang CCL plant IV(Silver Grade), Mai-Liao Main Plant (Ethylene Glycol Plant), Hai-Feng Main Plant (Ethylene Glycol Plant)
ISO 14046: 2014 Water footprint	The Company

3.1.3 Environmental Expenditure

Environmental Accounting

NPC defines environmental costs as direct or indirect costs related to the environment. In 2023, the total expenditure on environmental costs was NT$1.497 billion, with pollution prevention expenses amounting to approximately NT$858 million, accounting for 57.29% of the environmental costs.



Note1: Revenue data is sourced from "NPC's individual financial statements for each year."
Note2: Currently, only NPC has implemented the environmental cost system.



NPC's Environmental Costs List (Unit: NT$ thousand)				
Type	Item	2021	2022	2023
Environmental Costs	Operational costs	1,558,872	1,481,331	1,371,422
	Costs associated with supply chain and customers	11,993	12,381	11,375
	Management activity costs	41,682	48,310	52,131
	Research and development costs	41	0	0
	Social engagement costs	18,440	17,700	35,112
	Loss and remediation costs	30	0	0
	Fees, taxes, energy taxes, and others	49,399	32,067	26,928
	Total	1,680,457	1,591,789	1,496,968

Note1: Source: FPG's environmental accounting database

Note2: 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

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 2023, the green product procurement amounted to NT$130.58 million for NPC.

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 the energy transition, increases the proportion of renewable energy and applies emerging technologies to reduce the impact of climate change. In 2023, the Company invested more than NT$1.79 billion and participated in a number of energy transformation projects. The following are quick summaries of the important projects:

◈ Low-Carbon Energy Transition

In 2023, an investment of NT$15,976,000 was made to complete the conversion of fuel to gas for the boiler at the Utility Section of Plant No. 3, which will reduce carbon emissions by 1,480 tons per year.

◈ Circular Economy, Energy Saving, and Carbon Reduction

In 2023, an investment of NT$587,047,000 was made, with an annual improvement benefit of NT$526,533,000. This resulted in savings of 4,581 tons of water per day, 26.0 tons of steam per hour, 9,708 kWh per hour of electricity, and 0.60 tons per hour of fuel, reducing carbon emissions by 126,325 tons per year. The details are as follows:



Energy Management Cases

- Spinning Mill 3 plant in Kung San site replaced return air fans with natural ventilation fans, reducing power consumption by **63.7 kWh/hour**.
- The Utility Section of Kung San site installed inverters on refrigeration pump motors, reducing power consumption by **38.6 kWh/hour**.
- Shulin Plant II utilized energy analysis software to collect environmental and operational data, improving energy control and reducing power consumption by **35.2 kWh/hour**.

Equipment Efficiency Improvement Cases

- Shulin Site's Release Film Factory replaced the refrigeration units with high-efficiency units, reducing power consumption by **167 kWh/hour**.
- Linkou Site's Spinning Mill 1 installed variable frequency axial fans, replacing inefficient fans, reducing power consumption by **610 kWh/hour**.
- Hsinkang Plant's Copper Foil Substrate Plant No. 2 installed a new refrigeration unit, integrated with the plant's digital monitoring system, ensuring optimal operation, reducing power consumption by **428 kWh/hour**.

Waste Heat Recovery and Steam Reuse Cases

- At Mailiao Site's 1,4-BG Plant, waste heat from the top of the high-pressure azeotropic distillation tower was recovered, reducing steam consumption by **1.1 tons/hour**.
- Mailiao Site's MA Plant installed a flash tank to recover regenerated steam, reducing steam consumption by **0.4 tons/hour**.

Process Energy Reduction Cases

- Mailiao Site's EG Plant improved energy efficiency in the operation of its recycling gas compressor (current reduced from 298A to 270A), reducing power consumption by **575 kWh/hour**.
- Hsinkang Site's Utility Section adjusted the cooling water supply temperature (from 7.5 ° C to 8.5 ° C), reducing power consumption by **797 kWh/hour**.
- Mailiao Site's MA Plant implemented wastewater recycling in the exhaust scrubbing tower, reducing pure water consumption by 12 tons/day and fuel (PFO) consumption by **0.128 tons/hour**.

Increase Renewable Energy Usage

In 2023, an investment of NT$441.509 million was made to install solar panels at the Chiayi site, completing a capacity of 6,143.85 kW (including Chiaya No.3, Machine Engineering, Chiayi No.1 Building C, Chiayi No.1 Buildings A and B, Chiayi No.4 Flat, Chiayi No.1 Injection Molding). This will reduce carbon emissions by 3,710 tons per year.

By the end of 2024

By the end of 2023, the rooftop solar installations at the Chiayi, Hsinkang, and Shulin sites will accumulate a total capacity of 8,185.98 kW, meeting the 2023 energy-intensive user obligation.

Upcoming projects

- Installation sites: Following the completion at the Chiayi and Hsinkang sites, installations will continue at Mailiao, Renwu, Kung San, Shulin, and Changbin sites.
- Estimated additional capacity: 46,476.95 kW.

Green New Energy Industry Expansion – Investment in Formosa Smart Energy Tech Corp.

In response to global trends in energy conservation, carbon reduction, and new energy development, and to promote the transformation of the energy industry, NPC and other companies jointly established "Formosa Smart Energy Tech Corp." The company will integrate internal corporate departments related to new energy development to drive the layout of the new energy industry. The details are as follows:





- Approval Date: Approved by the Board of Directors in May 2022.
- Investment Amount: Total capital of NT$7 billion, with NPC investing NT$1.75 billion, holding a 25% stake. Of this, NT$1 billion was invested in 2022, and NT$750 million was invested in 2023.
- New Smart Technology Company plans to venture into four major areas: Energy Conservation, Energy Storage, New Energy, and Recycling.

3.2 Climate Action and Strategy

201-2、302-1、302-3、302-4、302-5、305-5

3.2.1 Mitigation and Adaptation of Greenhouse Gas

Mitigation factors in climate	CO_2, greenhouse gas, greenhouse gas and others	Effective Scope	Business scope of NPC, scope of value chain

Actions for mitigation and adaptation strategies

Four major carbon reduction strategies

- Low-carbon energy transformation: Gas-fired boilers and other equipment were built in place of the coal-fired boilers that were previously used in utility plants. Production plants also changed from using high-carbon energy like coal and heavy oil to low-carbon energy like natural gas.
- Energy conservation, carbon reduction, and circular economy: Continue to promote process improvement, circular economy, AI and digital transformation to improve energy efficiency and reduce waste generation.
- Increase the use of renewable energy: Build solar power generation equipment on the roofs of various plant buildings. By 2030, the total installed capacity will be approximately 56,011.82KW, which is estimated to account for 18.2% of Taipower's contracted capacity, much higher than the 10% stipulated in the government's terms for large electricity consumers.
- Application of carbon capture technology: Expand electronic-grade and industrial-grade liquid CO_2 plants and recover all CO_2 generated during production.

In response to the global carbon reduction trend and the United Nations Sustainable Development Goals (SDGs) NO.13 climate action, NPC has set "carbon neutrality by 2050" as a long-term carbon reduction goal and actively promotes four major carbon reduction strategies. The following are the key features and the carbon reduction benefits of each strategy:

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 coil-fired boilers with gas-fired boilers in utility plants		Duly replace natural gas with bio-based material
	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		
Energy-saving and carbon-reduction and circular economy	Continue to promote process improvement for energy conservation and carbon reduction		
	Promote resource recycling and other projects based on 4R circular economy principle		
	Promote AI and digital transformation, introduce intelligent management systems, and improve the utilization efficiency of energy and resources		
Increase the consumption of renewable energy	Install solar power generation equipment on the roofs of each plant for about 56,011.82 kW (including PFG and other subsidiaries in Taiwan.)	Review and evaluate other plant areas where solar power generation equipment can be applied	Evaluate for purchasing renewable energy certificates (inadequate quotas that cannot be built by ourselves)
	Continue to evaluate and duly introduce applications of renewable energy such as water, wind and geothermal		
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		Introduce feasible technologies in the industry such as carbon capture from flue gas to reduce CO_2 emissions
	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		

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 striving to achieve a "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

Management Strategies and Action Plan		2023 Implementation
	Governance	
■ The Board of Directors discusses the implementation of ESG, which includes climate-related issues at least once a year ■ 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		■ In May 2023, the ESG promoting team reported a summary of the company's sustainability report to the "Sustainable Development Committee." In December, the company's 2022 greenhouse gas emissions and related issues were presented. ■ Starting from Q4 2022, the "Environmental Protection (E)" working meeting has held quarterly meetings to monitor climate change and various environmental protection initiatives, reporting the implementation results to the Chairman. In 2023, a total of three meetings were held.
	Strategies	
■ Set short-term, medium-term, and long-term carbon reduction goals ■ Promote" internal carbon pricing" and other management strategies ■ Identify the risks and opportunities of climate ■ Implement four major carbon reduction strategies including "low-carbon energy transition" ■ Apply to participate in SBTi.		■ Make external commitments and strengthen internal management of carbon reduction targets, with the long-term goal of achieving carbon neutrality by 2050. ■ Implement management operations such as "internal carbon pricing" and incorporate them into ERP computer management. ■ Continuously promote the "Low Carbon Energy Transition" and other three major carbon reduction strategies, such as completing a total of 8,185.98 kW of rooftop solar energy by the end of 2023. ■ The SBTi (Science Based Targets initiative) target was approved in 2023.
	Risk Management	
■ Establish the Company's climate risk identification process based on the TCFD framework ■ Identify the ranking of climate risks according to ISO 14001 Risk Management Process, and formulate corresponding solutions according to the ranking		■ The identified 16 TCFD risks and opportunities were disclosed in the Company's 2023 TCFD report. ■ Make responses to risks and opportunities.
	Indicators and Targets	
■ Promote GHG inventories based on "ISO 14064-1 standard" ■ Draft climate change management goals and review the implementation status according to the scenario analysis and Science Based Targets		■ Greenhouse gas emissions in 2023 decreased by 45.2% compared with 2007. ■ Invest approximately NT$ 580 million in energy conservation and carbon reduction improvement projects in 2023.

Note: Source: Please refer to the Company's 2023 TCFD report for relative information.



Governance Body and Supervisory System

To cope with the global sustainability trend of carbon reduction, NPC established the "Risk Management Promotion Team". 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.

Climate Risk Identification and Management Process

Step 1

Background information collection

TCFD Task Force regularly collects information and identifies and evaluates risks and opportunities related to climate change based on the ISO 14001 risk identification procedures

Step 2

Risk and operational assessment boundaries

Consider transition risks and physical risks at production sites throughout Taiwan, analyze the parts of the value chain subjected to the impact, the risk occurrence time and frequency, and describe potential financial impacts and impact amount.

Step 3

Risk and operational impact analysis

Define the three levels of risk using the severity of financial impact and risk occurrence matrix diagram, prepare response measures to mitigate losses from risks, and monitor and manage according to the ISO 14001 Environmental Management System.

Step 4

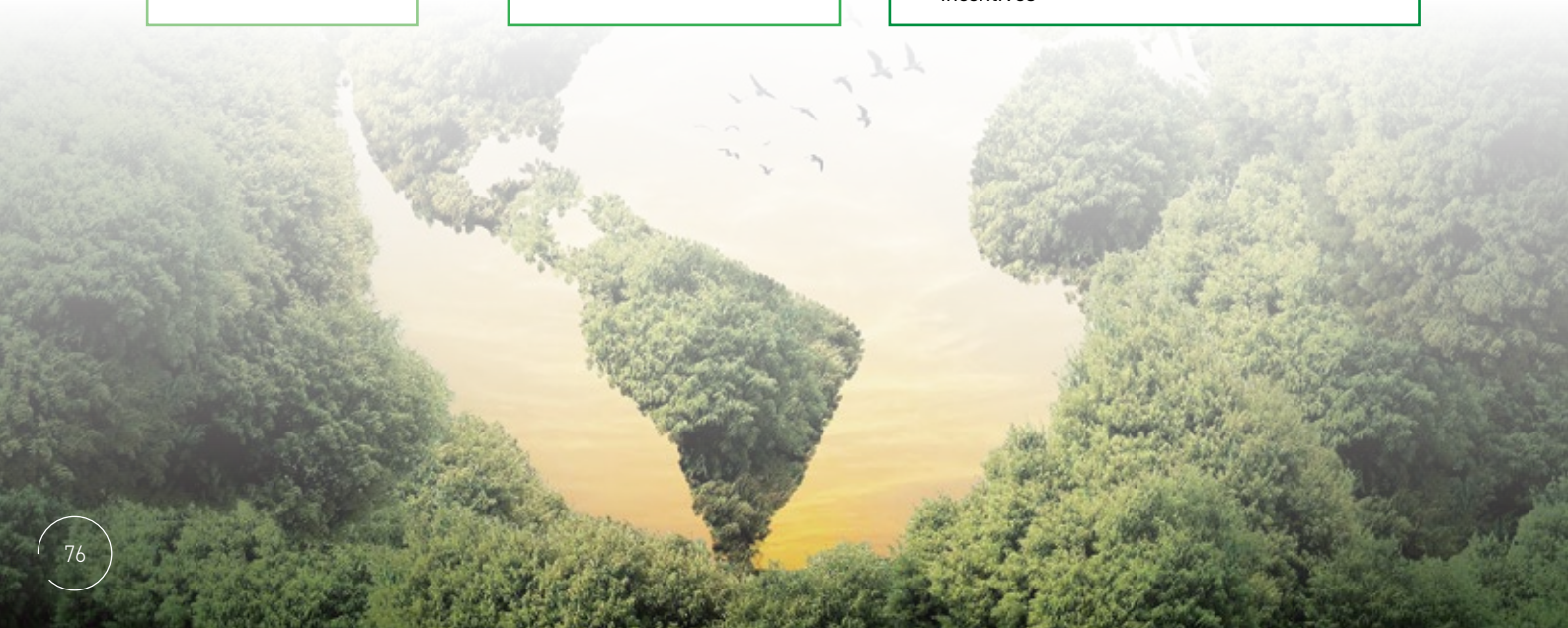
Set control measures and goals

- NPC's short, medium, and long-term carbon reduction targets are set based on 2007 as the baseline year, aiming for a 20% reduction by 2025, 35% by 2030, and carbon neutrality by 2050.
- In addition, in response to the Paris Agreement, NPC applied to join the SBTi in early 2022, using 2021 as the baseline year with a goal of a 12.5% carbon reduction by 2026.

Step 5

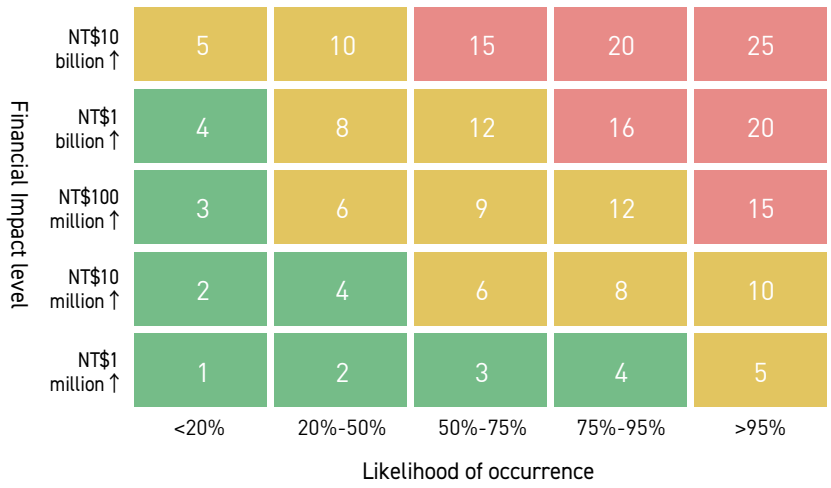
Review optimizations

- Commission third-party institution to conduct GHG inventories and green product certification
- Participate in the Carbon Disclosure Project (CDP) "climate change" questionnaire
- Convene "water and energy conservation review meetings" to review the effectiveness of the 12 energy and water conservation projects
- Encourage employee creativity and promote IE improvement proposals by offering bonuses and incentives



Analysis of Risk and Opportunities Associated with Climate Change

The risk and opportunity matrix takes into account factors such as the likelihood of occurrence and degree of financial impact of each risk and opportunity, and divides the severity and likelihood of the financial impact that risks and opportunities may have on NPC into five levels, each of which targets a different financial situation. Points are assigned based on the impact and likelihood of occurrence. After weighing the financial impact and the likelihood of occurrence, the risk matrix is completed. The risk matrix is as follows:

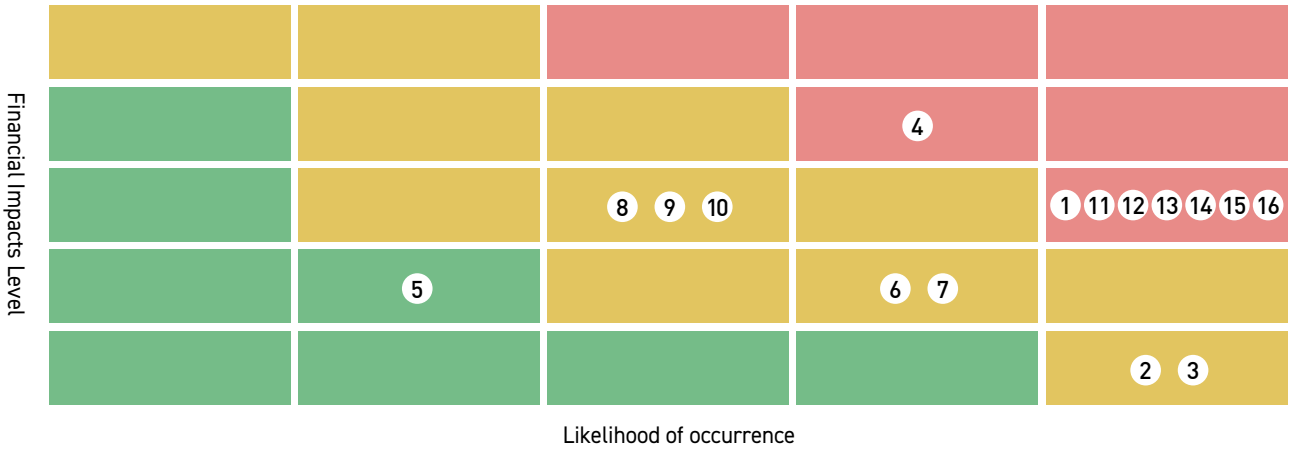


1-4 points: Low risk/ Low opportunity
Considered as acceptable risk or temporarily ignored scope

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

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

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:



Low risk/ opportunity Moderate risk/ opportunity Material risk/ opportunity

Transition Risk

1. Policy/legal - Risk of collection of carbon tax
2. Policy/legal - Risk of installation of renewable energies
3. Policy/legal -Risks of levying water consumption charges
4. Market - Change of customer behavior
5. Company reputation - Causing negative feedback

Physical Risk

6. Chronic – rising temperature
7. Chronic –water resource shortage
8. Acute - Extreme climate (heavy rainfall/flooding)
9. Acute - Extreme climate (strong wind/typhoon)
10. Acute - Extreme climate (water shortage /drought

Opportunity

11. Energy/technology- Low-carbon energy transformation
    Carbon capture, storage and utilization
12. Resource efficiency- Circular economy, reducing costs
13. Resource efficiency--Improved energy and resource usage efficiency
14. Product and service- Development of Energy-saving product
15. Product and service- Expansion of recycled products
16. Market- Diverse business operation

Note: Source: For more relevant content and response strategy, please refer to the summary table as below.Please refer to the

Financial Impacts of Risks

Category of Risk (Transition/ Physical)	Type of Risk	Scope of Impact			Level of Impact (Proportion of the company's individual revenue in 2023)	Description of Major Potential Financial Impact	Response Strategy/Example
		Upstream	Business	Downstream			
Transition Risk	Policy and law		●		0.58%	" Climate Change Response Act " and the EU's "CBAM" - Related expenses for complying with regulations (carbon charges, carbon tax)	■ Continue to promote the four main carbon reduction strategies of "Low carbon energy transition". ■ By the end of 2023, solar power generation equipment had been progressively installed on the rooftops of some plants at the Chiayi and Hsinkang sites, with a cumulative installed capacity of 7,838.55 kW, meeting the requirements of the large electricity user regulations. ■ Cross-plant achievement case sharing.
			●		- (It complies with current regulations, avoiding the risk of paying substitute fees.)	Renewable Energy Development Act (large electricity consumption users clause)- Related expenses for complying with regulations (monetary substitution for insufficient renewable energy)	
					0.003%	Levying water consumption charges - Related expenses for complying with regulations	■ FPG Mailiao Industrial Complex seawater desalination plant project (constructed by FPCC). ■ The Jinxing site uses discharged water from the Taoyuan North District Water Recycling Center as process cooling water. ■ Implement circular economy, promote water-saving improvement projects such as rainwater recycling, and use AI technology to improve water use efficiency.
	Market		●	●	1.84%	Change of customer behavior-Impact of reduced revenue from failing to satisfy customer demand	■ Actively develop and promote green products, implementing green solutions. ■ Actively create new uses for products and new materials that meet environmental protection trends and unique requirements in response to market demand. ■ Strive for active manufacturing and sales collaboration, as well as strategic alliances with domestic and overseas large manufacturers, such as developing a "sustainable recycling value chain" with PCSC and ATUNAS.
	Company reputation	●	●	●	0.07%	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.	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: ■ Participate in the international "Carbon Disclosure Project (CDP)" evaluation, "TCFD Advocacy", "Science Based Target initiative (SBTi)". ■ Strengthen information disclosure and improve the company's ESG performance in international evaluations, as NPC achieved excellent results in 2023 with an "A" rating on both the CDP "Climate Questionnaire" and "Water Questionnaire." ■ Participate in the sustainability-linked loan project of Mizuho Bank and MUFG Bank.

Category of Risk (Transition/ Physical)	Type of Risk	Scope of Impact			Level of Impact (Proportion of the company's individual revenue in 2023)	Description of Major Potential Financial Impact	Response Strategy/Example
		Upstream	Business	Downstream			
Physical Risk	Chronic-Change of environment	●	●	●	0.07%	Rising temperature	■ Replace old air conditioning equipment with high-efficiency and energy-saving models, and adopt green building designs for new plants. ■ Encourage production plants to get ISO 50001 energy-saving management system verification, and a total of 14 production plants obtained certificates by 2023. ■ Continue to promote circular economy and apply AI technology to improve the efficiency of water-saving and energy-saving projects, such as optimizing the ice water host system.
					0.03%	Water resource shortage	■ Conduct risk assessment and management for water resources every year. ■ Expand water sources and implement various water-saving measures, such as desalination plants, recycled water, rainwater and process water recycling, etc. ■ Encourage the sharing and integration of water resources across production plants and companies.
	Acute - Extreme climate	●	●	●	0.82%	Heavy rainfall/flooding	Each production plant continues to work on flood prevention measures, and the following are significant improvement projects: ■ Renwu site is installed with the flood control pumps, which the maintenance is performed periodically. ■ For Mailiao site, major desilting and dredging operation is performed annually.
					0.27%	Strong wind/typhoon	■ Form a typhoon prevention task force, establish clear authority and labor divisions, and perform emergency response training to reduce the risks and harm caused by a strong typhoon. ■ Prepare the plant's infrastructure, such as fortifying doors and windows before the typhoon arrives. ■ Insure the Company's assets and equipment to mitigate the effects of natural disasters.
					0.82%	Water shortage/ drought	Each plant continues to manage water resources. The following are the primary measures for improvement: ■ To mitigate the risk of plant shutdown due to water shortage or drought, 2 drought-resistant wells were drilled in the Renwu site, increasing the water supply by 2,300M^3/day. ■ Collaborate with the public sector to develop the hyporheic flow of Donggang River and Gaoping River in order to stabilize the water supply. The Company also assesses trading water for water in order to secure water rights by developing the treatment of high ammonia-nitrogen wastewater in the Huliao River.

Financial Impacts of Opportunities

Category of Risk (Transition/ Physical)	Type of Risk	Scope of Impact			Level of Impact (Proportion of the company's individual revenue in 2023)	Description of Major Potential Financial Impact	Response Strategy/Example
		Upstream	Business	Downstream			
Transition Opportunity	Energy/ technology		●	●	0.14%	Promoting the following climate transformation projects is expected to lower carbon charges or raise revenue, bringing up opportunities for NPC: ■ Low carbon energy transformation ■ Carbon capture, storage and utilization	■ Promote low-carbon transformation, such as converting coal to natural gas in the utilities plants at Linkou, Shulin, and Chiayi. ■ Convert all CO_2 generated from chemical processes into liquid CO_2 through carbon capture technology, and sell it to downstream customers. ■ Maintain a thorough understanding of the commercialization status of technologies such as "flue gas capture," "Algae carbon capture," and "hydrogen energy," and apply them in a timely manner. ■ Collaborate with industry, government, and academia to develop and commercialize new carbon-negative technology.
	Resource Efficiency		●		0.09%	Circular economy, reducing costs: In accordance with the 4R principles of circular economy: 1.Reduce 2.Reuse 3.Recycle 4.Renew NPC promotes raw material recycling and reuse, raises the proportion of waste that becomes resources, and progressively establishes a sustainable and circular value chain.	■ Continue to promote the recycling and reuse of sub-quality products and PIR, such as sub-quality PET products, PP recycled resins, and MLCC release films. ■ Increase the proportion of waste that is recycled and reused as a resource, such as fiberglass cloth scraps, sandblasting waste, and SMC waste glass fiber. ■ Increase the use of regenerated materials and reduce carbon emissions at the raw material stage.
			●		0.78%	Efficiency improvement of energy and resource use: To actively reduce carbon emissions, promote different water-saving and energy-saving improvement projects such as AI applications and the introduction of advanced energy-saving equipment.	■ Use modern technologies such as AI to reduce raw material waste and material costs. ■ Promote energy-saving improvement projects: In 2023, 440 energy-saving improvement projects were completed, reducing CO_2 emissions by approximately 126,153 tons per year. ■ Promote water-saving improvement projects: In 2023, the estimated water-saving benefit is 4,581 tons/day. ■ Promote technology improvement in the production process and entirely replace office area lighting fixtures in the plant area with LED lamps.

Category of Risk (Transition/ Physical)	Type of Risk	Scope of Impact			Level of Impact (Proportion of the company's individual revenue in 2023)	Description of Major Potential Financial Impact	Response Strategy/Example
		Upstream	Business	Downstream			
Transition Opportunity	Product / market		●	●	0.65%	Research and development of energy-saving products: In recent years, the world has been affected by extreme weather events, temperatures have continued to rise, and consumer demand for low-carbon and energy-saving products has increased, resulting in potential business opportunities for energy-saving and heat-insulating products.	Numerous green products have been developed, and research and development are now being consistently invested in to support the transition of new green business opportunities. The following are the primary cases: ■ 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. ■ Energy saving airtight window: Low thermal conductivity can save up to 20% on energy consumption. ■ ICE COOL (heat insulation paper): Use non-toxic material, and equipped with the characteristics of antiexplosion, high light transmittance and high IR, UV isolation, capable of reducing energy consumption.
			●	●	0.56%	Recycling product expansion: To expand the product life cycle, making it easier to reuse, repair, and recycle, and use recycled materials to replace primary raw materials as much as possible. Governments around the world have set up recycling targets for beverage containers. Simultaneously, big international brands such as NIKE, IKEA, and HP also set target schedules for the usage of recycled materials.	■ Continue to promote PCR products, including PET products, environmentally friendly film products, APET tape products, fabric recycling, etc. ■ Actively seek for recycled material sources to provide a steady supply of raw resources. ■ Develop modified polyester resins and single-material packaging films to aid in subsequent recycling. ■ 4. Spread the word about the Nanya SAYA recycling products brand.
	Market	●	●	●	0.40%	Diversified Operations - Many countries around the world have established net-zero emission and carbon reduction plans, such as implementing bans on the sale of fuel vehicles or encouraging the development of renewable energy like wind power. Aligning with international trends, this will drive the rapid development of the electric vehicle and wind power industry chains.	■ 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. ■ In response to the trend of green energy development and wind power industry applications, we are investing in the "Development of Multi-Axial Glass Fiber Fabric Technology and Equipment for Industrial Use" to produce multi-axial glass fiber fabrics for wind power and enter the market for wind turbine blade applications.

Scenario Analysis

NPC simulates future scenarios based on the climate change models RCP 2.6, RCP 4.5, RCP 6.0, and RCP 8.5. And refer to the following information: The IEA's Net Zero Emissions by 2050 Scenario, Nationally Determined Contribution targets (NDC), and Taiwan's "Intended Nationally Determined Contribution (INDC)" report, which aims to achieve a 50% reduction below the business as usual (BUA) GHG emission level by 2030, and announces the National net-zero emissions pathway by 2050. Using the electricity generation structure and the development of various national departments from 2030 to 2050 as a basis for analysis, the potential impact on the Company's market and technology, reputation, finances, and operations, when temperature rise, rainfall, flooding, and drought occur between 2020 and 2050, are estimated.

BAU scenario	Positive mitigation scenario
Description of Scenario RCP 8.5	**Description of Scenario** Net Zero Emissions by 2050 Scenario (NZE) Net-zero emissions pathway by 2050
Analysis Results The lower the control of greenhouse gas emissions, the larger the climate change and the frequency and severity of floods and droughts. As a result, it is expected that temperatures will rise, rainfall will increase, and flooding and drought danger will grow between 2020 and 2050.	**Analysis Results** The movement toward net-zero carbon emissions has raised awareness of the need to reduce greenhouse gas emissions and slowed down climate change. The Company examines the potential impacts that the company might experience in the future on the market, technology, reputation, finances, operations, etc. under the scenario of RCP2.6 and the 2050 net-zero emission pathway based on the evaluation of the electricity generation structure and the development of various national departments from 2030 to 2050.
Risk Floods and droughts will occur more frequently as a result of exacerbated climate change, increasing operating costs under low-level greenhouse gas emission reduction scenarios.	**Risk** In order to effectively reduce greenhouse gas emissions, the Company must take into account its future operational expansion, engage in different carbon-reduction strategies, and weigh the potential financial effects of a low-carbon transformation.

Action Plan

The NPC develops four main carbon reduction strategies and offers related action plans for risks in various scenarios. Following are some examples of relevant action plans for each scenario:

Action Plan for Physical Risk

- Establish early warning and response mechanisms for water shortages, assess the duration and extent of the drought's impacts, and develop a comprehensive plan for dealing with water shortages.
- Set up annual water consumption reduction goals and periodically assess the efficacy of water use in order to lessen reliance on water.
- Go over the risk of flooding brought on by rising sea levels, evaluate the likelihood that Taiwan's production plants may flood as a result of rising sea levels, and then create backup plans.
- Follow the circular economy concept, recycle rainwater, wastewater, process water, and lessen the effects of floods and droughts.

Action Plan for Transition Risk

- Carry out energy conservation and carbon reduction by modifications to model assumptions, uses of AI and big data, etc.
- Developing products with minimal carbon footprints, using recycled materials, and alternative raw resources, and investing in new market development to gain market share and boost sales for the business.
- Build solar power generating equipment along with applications for carbon capture technology.



3.2.3 Management of Carbon Issues

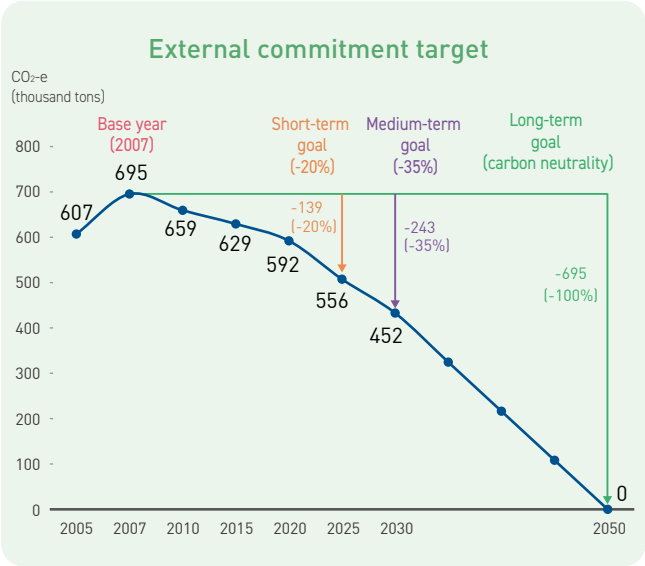
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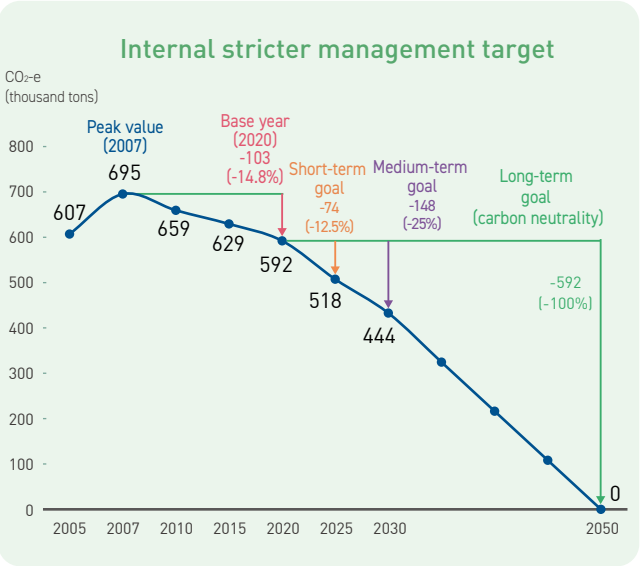
Carbon Reduction Roadmap

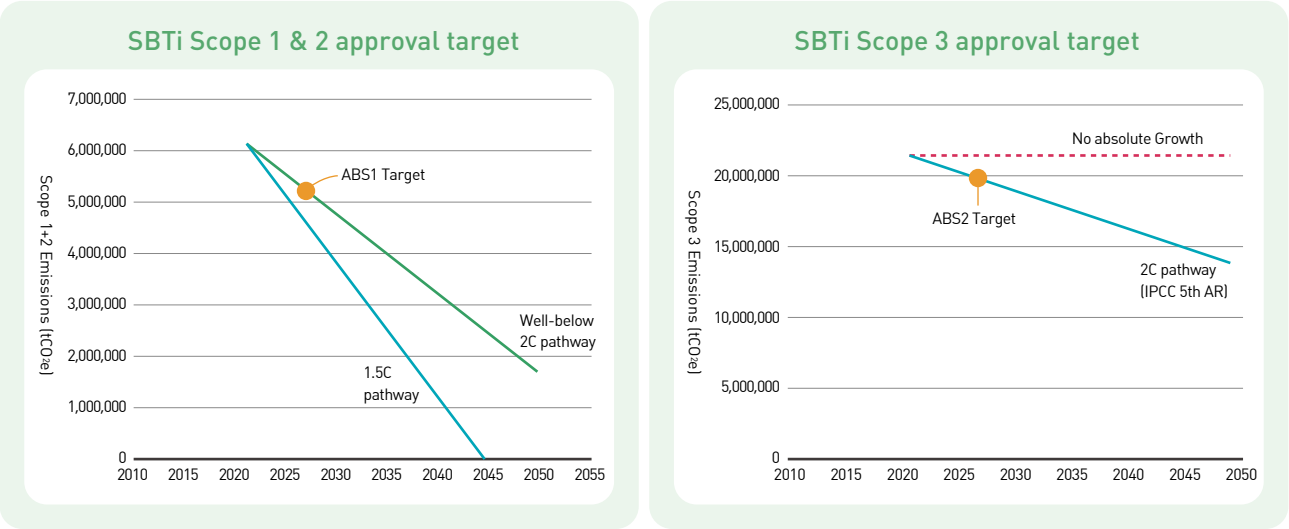
NPC has set up three carbon reduction targets: "external commitment," "internal stricter management," and "SBTi approval" in response to various objectives. The long-term goal of "carbon neutrality by 2050" can ultimately be realized as NPC will pursue the strictest reduction standards as the goal. This will allow each phase of carbon reduction paths to fulfill the aforementioned targets. Following is the explanation of each indicator:

External commitment target	Internal stricter management target	SBTi approval target
Scope 1 + Scope 2 Use 2007 as the base year (6.95 million tons of CO_2e) ■ 20% decrease in 2025 (5.56 million tons of CO_2e) ■ 35% reduction in 2030 (4.52 million tons of CO_2e).	**Scope 1 + Scope 2** Use 2020 as the base year (5.92 million tons of CO_2e) ■ 12.5% decrease in 2025 (5.18 million tons of CO_2e). ■ 25% reduction in 2030 (4.44 million tons of CO_2e).	The targets were set up in compliance with SBTi's specifications, and be accepted in March 2023. The targets are as follows **Scope 1 + Scope 2** With 2021 as the base year (6.14 million tons of CO_2e) and a reduction of 15% in 2027 (5.22 million tons of CO_2e)
Scope 3 NA	**Scope 3** NA	**Scope 3** With 2021 as the base year (23.79 million tons of CO_2e) and a reduction of 7.4% in 2027 (22.03 million tons of CO_2e).
Ultimate Target Carbon neutrality in 2050.	**Ultimate Target** Carbon neutrality in 2050.	**Ultimate Target** Carbon neutrality in 2050.

NPC Carbon Reduction Roadmap







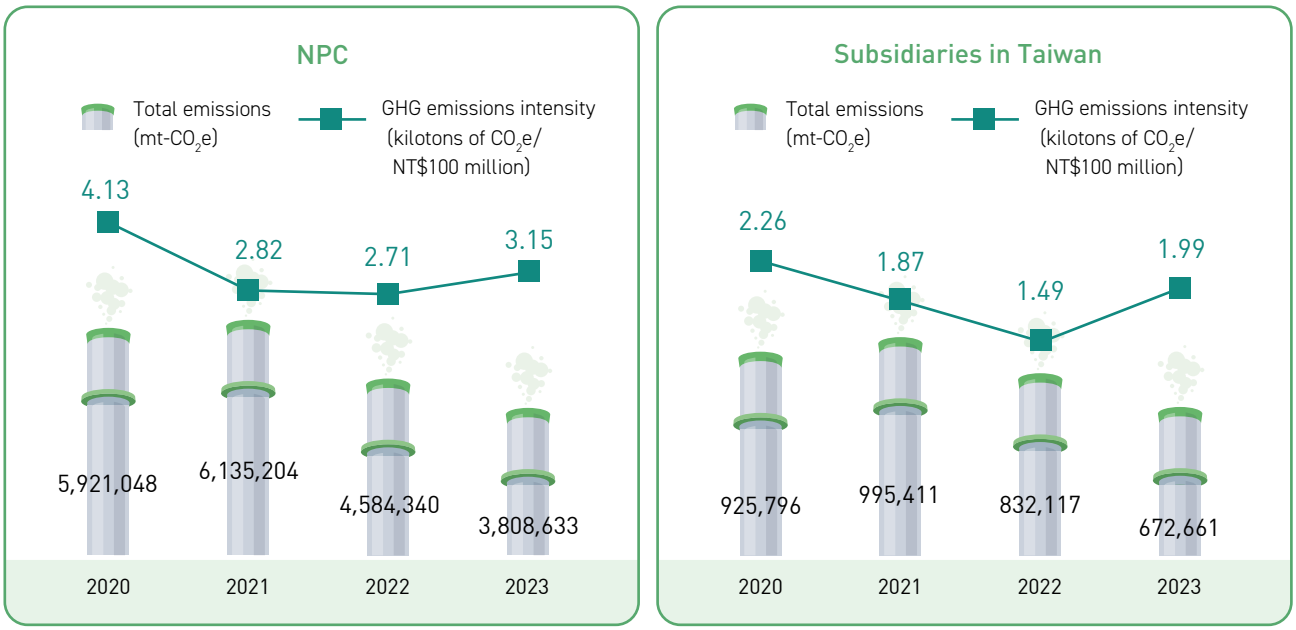
Note: NPC's Scope 3 emissions for 2021 were verified at 14.87 million tons. However, after a review by the SBT organization, the company was required to include emissions from "investments". Therefore, NPC adjusted the total emissions to 23.79 million tons. Additionally, NPC's Scope 3 emissions for 2022 were verified at 13.68 million tons, and the relevant work for 2023 is currently in progress.

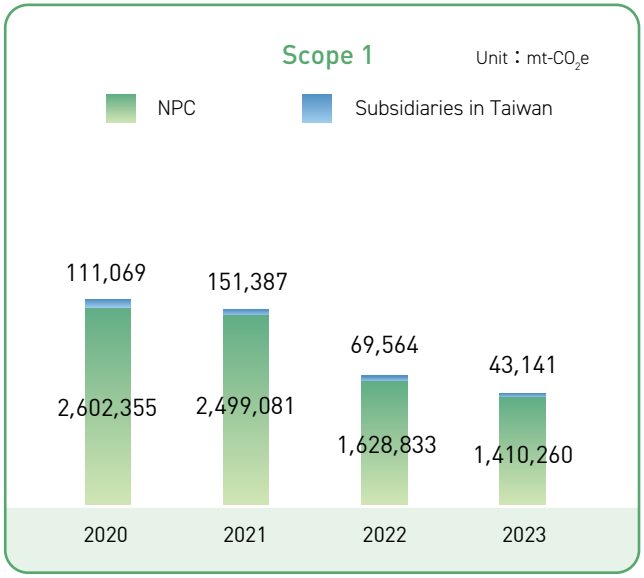
Greenhouse Gas Emissions Management

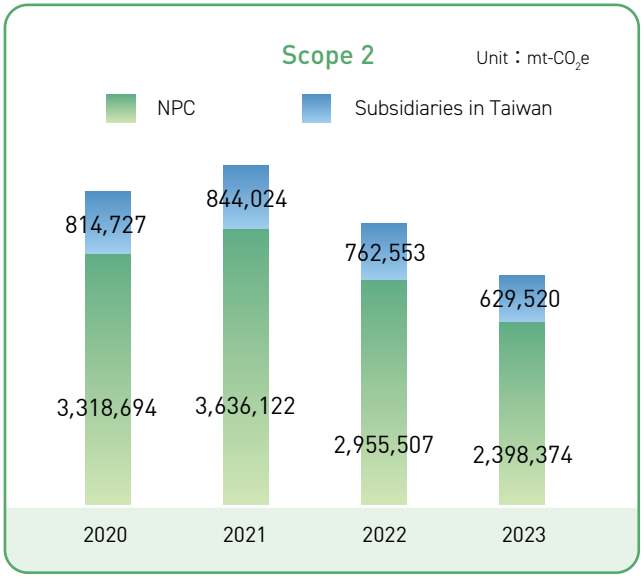
NPC commissions third-party verification for its annual greenhouse gas emissions in accordance with ISO 14064 standards. The 2023 verification results are as follows: Scope 1 emissions were approximately 1.41 million metric tons of CO_2e, and Scope 2 emissions were around 2.41 million metric tons of CO_2e. Although Scope 3 emissions are not required to be verified under the regulations, NPC still conducts both internal and third-party verifications based on auditing principles.

In 2023, NPC's standalone revenue was NT$121 billion, with total emissions of approximately 3.81 million metric tons of CO_2e, a reduction of 16.92% compared to 2022. The greenhouse gas emission intensity was 3.15 kilotons CO_2e per NT$1 billion, an increase of 16.12% compared to 2022's 2.71 kilotons CO_2e per NT$1 billion. This increase was primarily due to a 28.45% decline in revenue, leading to higher emission intensity.

Greenhouse Gas Emission Status







Scope 3 Emissions Data (Unit: mt-CO_2e)			
Emission Source	2021 Emissions	2022 Emissions	2023 Emissions
Purchased goods and services	14,518,253	5,539,058	4,613,424
Capital goods	183,098	48,624	39,063
Fuel- and energy-related activities (not included in Scope 1 or 2)	841,289	659,068	561,348
Upstream transportation and distribution	49,369	17,547	16,964
Waste generated in operations	2,307	4,759	1,901
Business travel	92	179	1,581
Employee commuting	6,290	202	7,058
Downstream transportation and distribution	265,900	171,793	217,660
Processing of sold products	1,911,033	1,071,379	863,410
End-of-life treatment of sold products	37,281	1,155	363,987
Investments	5,973,139	6,166,696	4,922,474
Total	23,788,049	13,680,459	11,608,872

Note 1: Scope 1 refers to direct greenhouse gas emissions, Scope 2 refers to indirect greenhouse gas emissions, and the inventory includes the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). Scope 3 refers to other indirect greenhouse gas emissions.

Note 2: Starting from 2024 and onwards, the emissions will be calculated in terms of carbon dioxide equivalent (CO_2e) based on the Global Warming Potential (GWP) from the IPCC Fifth Assessment Report (2013) as announced by the Ministry of Environment.

Note 3: The emission factors used are as follows: Scope 1 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 in 2019); Scope 2 energy-related indirect emissions are calculated using the electricity emission factors published by the Energy Bureau of the Ministry of Economic Affairs and the electricity and steam emission factors of NPC utility plants verified by SGS.

Energy Management

Major Emission Sources and Energy Consumption in 2023					
Company	Emission source	Consumption(A)	Heating value(B)	Total energy consumption (A)*(B)	Proportion of CO_2e emissions
NPC	Coal	309,234 tons	26.78 GJ/ton	$8.28*10^6$ GJ	19.5%
	Fuel oil	52,819 kl	34.34 GJ/kl	$1.81*10^6$ GJ	3.6%
	Fuel gas	111,258 tons	54.76 GJ/ton	$5.66*10^6$ GJ	7.0%
	FPG internally purchased gas	1,801,374 tons	2.83 GJ/ton	$5.09*10^6$ GJ	13.0%
	FPG internally purchased electricity	1,634,608 MWh	3.60 GJ/ MWh	$5.88*10^6$ GJ	38.3%
	Externally purchased electricity	880,243 MWh	3.60 GJ/ MWh	$3.25*10^6$ GJ	11.7%
	Solar power	2,036 MWh	3.60 GJ/ MWh	$7.33*10^3$ GJ	0.0%
	Total			$3.00*10^7$ GJ	93.1%
	Energy Intensity (Total Energy Usage per Million NT Dollars of Revenue)			248 GJ	
Subsidiaries in Taiwan	Fuel oil	1,059 kl	38.43 GJ/kl	$4.07*10^4$ GJ	0.5%
	Fuel gas	10,826 tons	53.54 GJ/ton	$5.80*10^5$ GJ	3.9%
	FPG internally purchased gas	271,601 tons	2.83 GJ/ton	$7.68*10^5$ GJ	10.5%
	FPG internally purchased electricity	520,940 MWh	3.60 GJ/ MWh	$1.87*10^6$ GJ	74.8%
	Externally purchased electricity	109,951 MWh	3.60 GJ/ MWh	$3.96*10^5$ GJ	8.0%
	Solar power	135 MWh	3.60 GJ/ MWh	$4.86*10^2$ GJ	0.0%
	Total			$3.69*10^6$ GJ	97.7%
	Energy Intensity (Total Energy Usage per Million NT Dollars of Revenue)			108 GJ	

Note 1: The data is sourced from the 2023 greenhouse gas emissions inventories of each company.

Note 2: The calorific value of each emission source is calculated using average values.

Note 3: Calorific value conversion factors: Electricity 860 MCAL/kWh, Steam 675.9 MCAL/ton, Coal 6,400 MCAL/ton, Natural Gas 9,900 MCAL/m³, Liquefied Petroleum Gas 6,000 MCAL/ton. (1 cal = 4.184 J.)

Energy Management Improvement Incentive Program



Incentive program for improvement projects

Implementing an incentive program for improvement projects; NT$300~NT$20,000 bonus will be given based on merits.



Encourage personal creativity

Implementing an incentive program for proposing IE improvements; NT$300~NT$20,000 bonus and administrative incentives will be given based on merits.



Presentation of excellent improvement projects

- Present outstanding improvement projects each year for internal evaluations.
- Organize ceremonies to applaud outstanding environmental protection and energy/water conservation projects.



Evaluations of outstanding environmentally friendly suppliers

Encourage and give incentives for participation in government-organized environmental protection, water and energy conservation evaluations, and competitions for businesses across all divisions and plants.

Energy Conservation Performance Management

Since 2020, the Company has complied with and tracked annual energy consumption in accordance with the recommendations of the Sustainability Accounting Standards Board (SASB), which are considered industry standards and assist in achieving energy-saving targets.

Energy Consumption of NPC in 2023

Total energy consumption (GJ)
29,980,594

Proportion of electric consumption of the grid (%)
78.3

Total amount of self-generated energy (GJ)
2,522,917

Energy Consumption of subsidiaries in Taiwan in 2023

Total energy consumption (GJ)
3,659,021

Proportion of electric consumption of the grid (%)
99.98

Total amount of self-generated energy (GJ)
486

Energy Conservation Practices of NPC

Item\Year	1999~2021 (A)	2022 (B)	2023 (C)	In progress (D))	Total (E=A+B+C+D)
Improved cases	4,978	408	440	333	6,159
Gas saved (ton/hour)	712.8	23.3	26.0	31.6	793.8
Electricity saved (MWh/hour)	79.4	9.2	9.7	9.4	107.7
Fuel saved (ton/hour)	34.8	0.2	0.6	0.4	36.0
CO_2e reduction (10,000 tons/year)	257.0	9.9	12.6	13.7	293.2
Investment Amount (NT $100 million)	62.7	6.4	5.8	9.9	84.8
Investment benefit (NT $100 million/year)	64.2	3.3	5.2	4.8	77.5

Note: This table converts related values using the formula 1 kWh = 3.6 * 10^9 joules.

Energy Conservation Practices of the Subsidiaries in Taiwan

Item\Year	1999~2021 (A)	2022 (B)	2023 (C)	In progress (D))	Total (E=A+B+C+D)
Improved cases	990	89	99	15	1,176
Gas saved (ton/hour)	123.6	10.5	2.4	1.1	137.6
Electricity saved (MWh/hour)	8.9	1.3	1.3	0.8	12.4
Fuel saved (ton/hour)	2.3	0.3	0.1	0.01	2.7
CO_2e reduction (10,000 tons/year)	41.4	4.8	2.2	0.8	49.2
Investment Amount (NT $100 million)	21.6	2.2	2.1	1.2	27.0
Investment benefit (NT $100 million/year)	11.1	1.3	0.5	0.3	13.2

Note: This table converts related values using the formula 1 kWh = 3.6 * 10^9 joules.

The company highlights three key energy-saving cases with better performance for explanation. The relevant information is calculated based on the actual savings per hour and the annual operating hours. These are explained and the emission reductions calculated as part of the projects.

Examples of significant energy efficiency improvements of NPC in 2023

1 BPA4 Plant: Replaced azeotropic distillation with extraction method, saving steam used for phenol-water recovery.

GHG Reduction Performance
14,818 tons of CO_2e/year

2 BG2: Optimized steam savings by improving vacuum condensate recovery.

GHG Reduction Performance
6,165 tons of CO_2e/year

3 EG1: Established an AI model for CO_2 system operation to adjust the optimal steam usage for 3K steam.

GHG Reduction Performance
2,462 tons of CO_2e/year

Note: The greenhouse gas emission factors used are based on the 2022 Taipower electricity emission factor of 0.495 tons per MWh, and the verified electricity and steam factors for FPG utility plants in 2022.

Case sharing- NPC's Kung San Site was awarded the "Energy-Saving Benchmark Award-Silver Award"

Steam Boiler Modification and Introduction of Natural Gas Burners:

- In 2017, the boilers were modified to use natural gas burners, utilizing low-carbon fuel to increase combustion efficiency, reduce power consumption of auxiliary equipment, and eliminate the visual pollution from the emissions of wet flue gas desulfurization equipment by utilizing the waste heat from natural gas boilers.
- By 2023, a total of 7 units have been improved, with a total investment of NT$167.395 million, saving 1,533 MWh of electricity annually.


蒸汽鍋爐改造天然氣

Energy-saving benefits

Electricity saved	Fuel saved	Equivalent fuel oil savings	Reduced carbon emissions
144.8 MWh	7,246 kl/year	7,743 Equivalent fuel oil/year	22,615 tons/year

Energy-saving improvements using high-efficiency dual-impeller centrifugal chillers

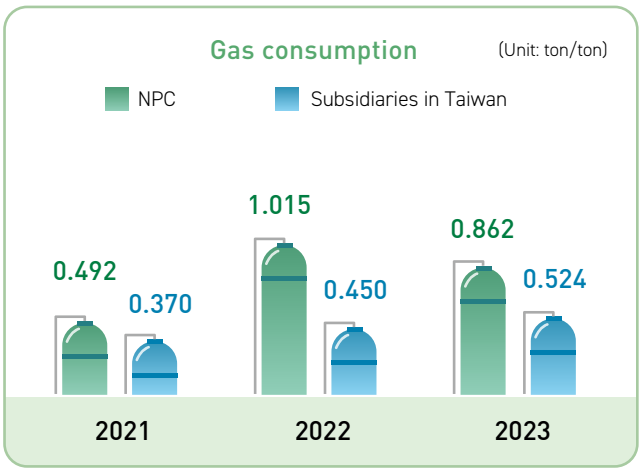
- Prioritized the replacement of chillers at the Kung San site to improve energy efficiency. By 2023, a total of 7 chillers have been upgraded, with an investment amount of NT$72,319,000.
- Future plans include upgrading an additional 2 chillers for operation during the summer months (5 months/year), with an estimated investment of NT$18,938,000, which could further enhance electricity savings of 1,214,000 kWh/year.

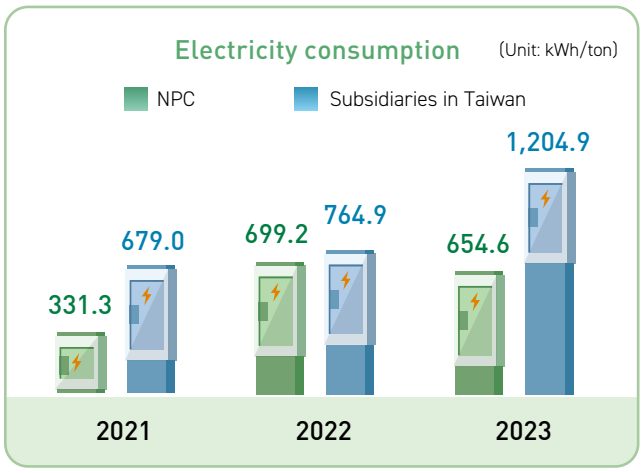

汰換使用高效率雙葉輪離心式冷凍機節能

Energy-saving benefits

Electricity saved 10,032 MWh | Reduced carbon emissions 5,109 tons/year

NPC has set a target to reduce unit energy consumption per product by 3% compared to the previous year. In 2023, the company's steam consumption per unit product was 0.862 tons/ton, a reduction of 15.1% compared to 2022. The electricity consumption per unit product was 654.6 kWh/ton, a decrease of 6.4% compared to 2022.





3.3 Air Pollution Management 305-7

3.3.1 Air Pollution Prevention

Air Pollution Prevention and Reduction

In 2021 and 2022, after the completion of gas boiler installations and the decommissioning of coal-fired boilers at the Linkou and Shulin utility plants, the Chiayi utility plant also transitioned to gas boilers for steam supply in 2023, in response to the carbon reduction trend.



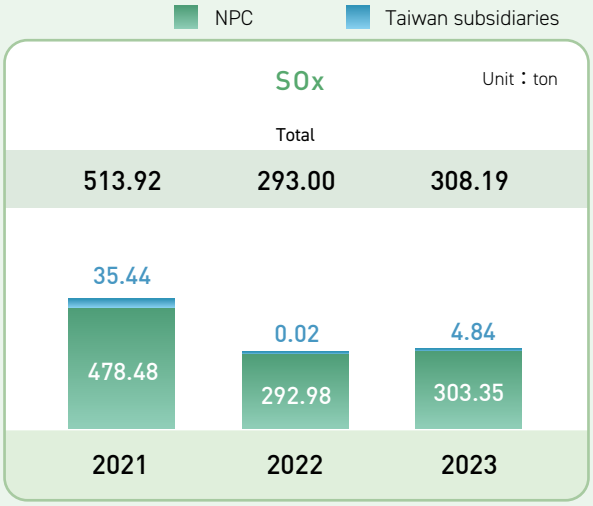
Exterior view of the Chiayi gas boiler



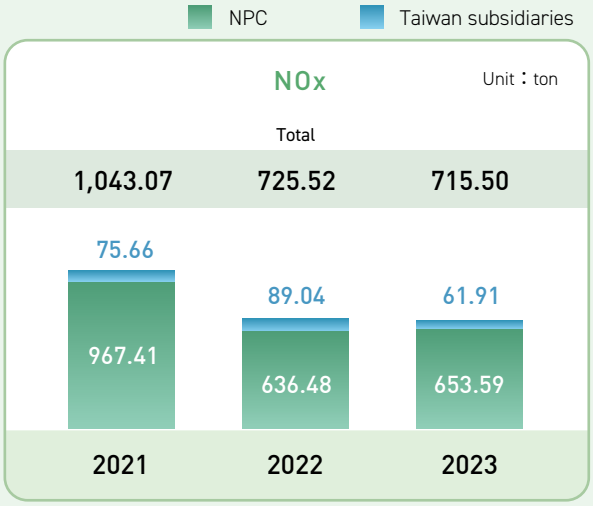
25-ton gas boiler

NPC and its Taiwan subsidiaries' air pollution emissions statistics

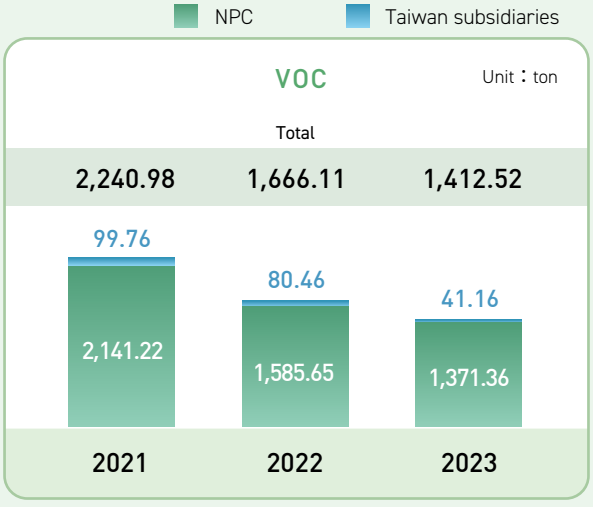
NPC's **SOx** emissions increased compared to the previous year, primarily due to the Mailiao incinerator handling a large amount of local household waste and testing a new furnace.



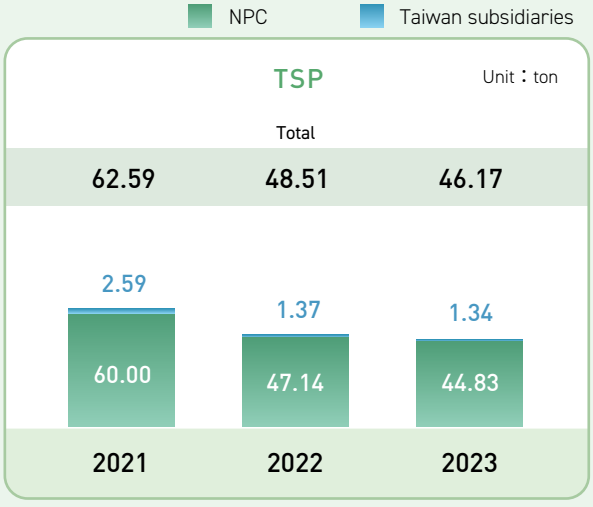
NPC's **NOx** emissions increased compared to the previous year, primarily due to the Mailiao incinerator handling a large amount of local household waste and testing a new furnace.



VOC emissions decreased compared to the previous year, mainly because of the increased use of raw materials that do not contain volatile organic compounds.



TSP emissions decreased compared to the previous year due to factors such as reduced production capacity and fewer orders in 2023.



Note 1: Data source is the "Environmental Protection Administration's Integrated Management System for Air Pollution Fees and Emission Reporting."

Note 2: Among Taiwan subsidiaries, NPC Circuit Board added data from the Shulin Plant 1 in 2023.



VOC Reduction and Odor Control

To present VOC effusion and to reduce odor complaints from the public, the Company has undertaken the following practices while regularly assigning dedicated personnel to do routine inspections around the plant site:

Process optimization:

Use raw materials that do not contain VOCs and reduce the number of components. (when using threaded tubes with a diameter of less than 2 inches, switch to cold welding; and to enhance the tightness of the connection between the instrument and the equipment, mechanical tubing is used instead of the capillary tubes.)

Management improvement

To remind staff to undertake routine equipment maintenance, set up a reminder mechanism in the computer system. If a leak is discovered, it must be repaired right away and tracked for four weeks while also performing a self-check once every week. The irregularity could only be declassified from surveillance and inspection after it returns to normal.

Enhance detection technology

Apply GasFind IR infrared leak detectors to help reduce the time needed to locate potential effusion in equipment.

Hazardous Air Pollutant Management

In compliance with rules, NPC regularly assigns a testing organization authorized by the National Institute of Environmental Analysis to inspect the concentration of dioxin in the discharge pipes of cogeneration coal-fired units and incinerators. All of the test results meet regulatory requirements:

1. The coal-fired units are inspected every 2 years, and the inspection values are all less than 1 ng-TEQ/Nm^3.
2. The incinerator is inspected once a year, and the inspection values are all less than 0.1 ng-TEQ/Nm^3.



3.4 Water Resource Management

303-1、303-2、303-3、303-4、303-5

3.4.1 Statistics on Water Consumption

NPC pays great attention to water sources in order to preserve water supplies. From north to south, NPC has 9 sites in Taiwan. Surface water and tap water are the primary water sources.

Water Usage Statistics for the Past Three Years

Category		NPC's			Taiwan subsidiaries		
		2021	2022	2023	2021	2022	2023
Water Intake(A)	Surface Water	15,749	10,417	8,235	2,304	2,242	1,034
	Well Water (Groundwater)	1,541	1,434	1,080	-	-	-
	Rainwater	691	577	2,038	213	33	27
	Third Party (Tap Water)	2,849	2,841	484	4,002	3,959	4,101
Water Discharge(B)		6,075.87	4,850.76	3,962.80	3,698.13	3,546.67	2,968.46
Water Consumption(A-B)		14,754.37	10,418.79	7,874.20	2,654.87	3,312.33	2,193.54

The water usage statistics for each site are analyzed as follows:

Company	Site	Surface Water	Well Water (Groundwater)	Third Party (Tap Water)	Others	Total
NPC	Shulin	-	391	491	-	883
	Linkou	78	-	251	24	352
	Kung San	-	625	1,003	7	1,635
	Chin Hsing	1,772	-	15	-	1,787
	Mailiao	4,763	-	65	450	5,277
	Chiayi	266	25	45	4	340
	Hsinkang	1,356	-	142	-	1,497
	Jenwu	-	39	17	-	57
	Linyuan	-	-	8	-	8
	Total	8,235	1,080	2,037	484	11,837
NCPC	Mailiao	319	-	2	27	348
Nan Ya PCB Corporation	Jinxing	234	-	2,650	-	2,884
	Shulin Plant 1	-	-	1,449	-	1,449
PFG	Hsinkang	481	-	-	-	481

Note: The water source categorized as "Other" refers to rainwater recycling.

Water Consumption at Jiji Weir

According to the "Jiji Weir Industrial and Public Water Supply Report" of the Industrial Development Bureau, MOEA, the water consumption is shown in the table below.

Statistics on Water Supply from the Jiji Weir from 2021 to 2023 (Unit:10,000tons)					
Year	Inflow from the Jiji Weir (A)	Agricultural Irrigation	Industrial consumption		Public Water Supply
		Average Water Consumption (B)	Average Water Consumption (C)	Proportion of Water Source' s Total Volume (C)/(A)	Average Water Consumption (D)
2021	284,714	135,989	9,726	3.4%	4,380
2022	266,056	169,917	8,860	3.3%	4,306
2023	364,015	153,449	8,393	2.3%	4,366

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 2024.

Water Stress Assessment

NPC monitors water use while identifying water resource risks and assessing the impacts of water stress by using the World Resources Institute's (WRI) Water Risk Assessment and Available Water Remaining Approach (AWARE). Based on indicators like "water pressure," "water consumption," "annual changes in water supply," and "inter-seasonal changes in water supply," the water resources situation simulation demonstrates that each plant area does not draw water from and discharge water into the water-stressed area. Additionally, the Company raises its management standards to match those in water-stressed areas, actively promotes water-saving practices, and expands its usage of recycled water in the process.

Water Recycling

The majority of the water utilized at the plant is used in the manufacturing process as industrial water, pure water, gas, etc. Every plant carries out a realistic analysis of its water usage and recycling practices, and it actively encourages the recycling and reuse of wastewater, rainwater, and process water.

Responding to Water Resource Risks

In response to the risk of water shortage caused by extreme weather, the important promotion cases are as follows:

- Construct a seawater desalting plant in Mailiao Industrial Complex (constructed by FPCC): Construction began in 2017.
- 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.



3.4.2 Effluent Management and Sewage Prevention

Effluent Control Process

Treatment Stage

To decrease the impact on the discharged water body, the engineer and construction department, as well as the safety, health, and environment unit, collect and assign treatment facilities (including physical, biological, and chemical treatment methods) depending on the characteristics of processing effluents.

Management Stage

To efficiently manage water, dedicated processing departments and personnel are assigned and get regular education and training, as well as conduct water quality inspections. The water could only be discharged once it met the statutory standards for water quality.

Reduction Stage

Based on the effluent quality and quantity, each plant periodically evaluates and implements improvement plans.

Specifications for Effluent Testing

Every quarter, samples and testing are conducted at each plant location. Additionally, testing is carried out by the processing department at least once a day. The results all meet the national requirements. There are 8 sets in total of automatic continuous monitoring systems for discharge water installed in Shulin, Mailiao, Hsinkang, and Chiayi sites. The systems keep track of discharge volume, temperature, pH value, and conductivity in real-time with the nearby competent authorities. (The Mailiao site needs to do additional COD and SS tests.) Please refer to "Prevention and Energy Conservation Performance" on NPC's website for the discharge volume in each plant.

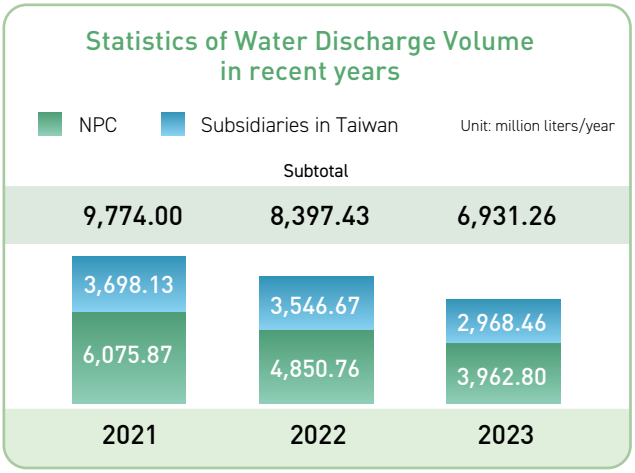
"Prevention and Energy Conservation Performance" on NPC's website

Statistics on Wastewater Discharge

Statistics on Discharge Volume in 2023 (Unit: million liters/year)				
Company	Surface water	Seawater	Third-party water	Total
NPC	1,170.30	1,464.49	1,328.01	3,962.80
Subsidiaries in Taiwan	2,836.00	132.46	0.00	2,968.46
Subtotal	4,006.30	1,596.95	1,328.01	6,931.26

Note 1: Subsidiaries in Taiwan include Nan Ya PCB and PFG. (The Mailiao Wastewater Plant of the Company is in charge of treating the wastewater from NCPC.)
Note 2: In the table above, the discharge water at each discharge endpoint is freshwater with a total dissolved solids (TDS) value of 1,000 mg/L or less.

Statistics of Water Discharge Volume in recent years



Note: The Mailiao Wastewater Plant of the Company is in charge of treating the wastewater from NCPC.

Water Consumption in 2023

NPC	**7,874.20** million liters/year
Subsidiaries in Taiwan	**2,193.54** million liters/year
Total	**10,067.74** million liters/year

Discharge Impact on Ecology: Ecological Preservation in Mailiao Industrial Complex

Over the years, FPG has commissioned competent institutes to assess the environmental impact and ecological changes of Mailiao Industrial Complex's neighboring flora and animals. According to the results, the number of plant species is steady, whereas the number of animal species is mostly changed by seasonal impacts. Mailiao Industrial Complex's operation has no substantial impact on the surrounding environment. All wastewater treatment plants are strictly monitored to ensure that wastewater is only discharged when it meets regulatory standards. According to the results of the monitoring over the years, all wastewater fulfills the discharged standards. Furthermore, during a long-term study of marine ecology, Chinese White Dolphins were found populating a nearby sea area. It demonstrates that the Mailiao Industrial Complex has no effect on the ecosystem of Chinese White Dolphins.

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

Note: For details of the ecological observation in Mailiao Eco-industrial Park, 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 efficient use of water resources, the Company continues to implement process water reduction, water-saving management measures, and evaporation loss reduction, as well as wastewater recycling and reuse, and strengthens rainwater collection in each plant.

Summary table of water conservation implementation over the years

Item	1999-2021 (A)	2022 (B)	2023 (C)	In progress (D)	Total(E=A+B+C+D)
NPC's					
Improved cases	775	33	25	26	859
Water saved (ton/day)	31,290	1,868	4,581	3,311	41,050
Amount invested (NT$100 million)	5.7	0.9	0.05	1.4	8.3
Improvement benefits (NT$100 million/year)	1.67	0.08	0.03	0.1	1.9
Taiwan subsidiaries					
Improved cases	390	15	17	1	423
Water saved (ton/day)	11,778	293	204	12	12,288
Amount invested (NT$100 million)	0.9	0.005	0.05	0.01	0.9
Improvement benefits (NT$100 million/year)	0.5	0.02	0.01	0.0005	0.5

Note: FPG Energy and Water Conservation Improvement Database; in-progress projects are counted as ongoing improvement cases.

Water-saving Projects and Performance in 2023

1 Jinxing Utility Plant increased the concentration factor of cooling water to save make-up water.

Water-saving Performance
224 tons/day

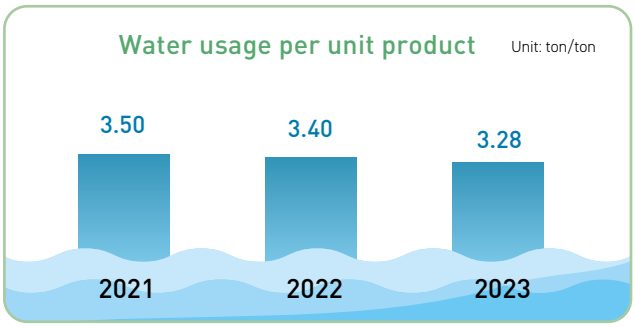
2 Fiber Division Utility Department improved water savings by recycling cooling water and condensate from the sludge dryer.

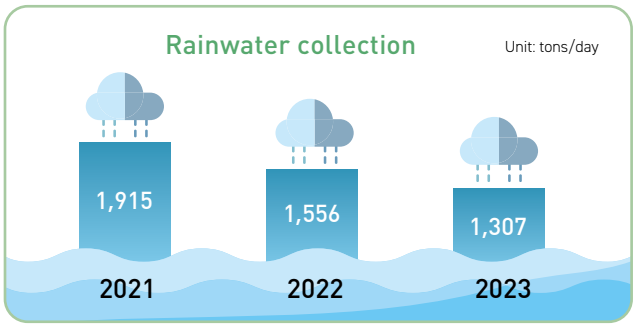
Water-saving Performance
81 tons/day

3 The Isononanol Plant improved water savings by optimizing the backwash water from the cooling tower.

Water-saving Performance
75 tons/day

NPC aims to reduce water consumption per unit product by 2% compared with the previous year. However, due to the wide variety of products and different measurement units, the energy consumption of the Mailiao site, which has the largest consumption, is used for comparison. The water consumption per unit product and rainwater recovery volume of the Company's 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].

Note 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]

Note 3: Coefficient runoff = Strata, porous 0.2; Strata, impervious 0.8; therefore, the collection rate may be greater than 100%

3.4.4 Soil and Groundwater Management

Groundwater monitoring activities have been carried out every three months since the plant's construction in order to efficiently regulate the quality of soil and groundwater. After consulting with US experts and the Soil and Groundwater Remediation Process of the Industrial Bureau of the Ministry of Economic Affairs, the Company established a "Soil and Groundwater Pollution Remediation and Inspection Management Plan" to manage known pollution and potential pollution in order to ensure that leakage incidents can be kept under control as soon as possible.

The plant's groundwater monitoring results for 2023 all met the requirements, and the frequency of implementation is as follows:

Location of site	Frequency of implementation	Result
Shulin, Kung San, Linkou and ChinHsing	Once every two years	Met the standards in 2022, and exempt from testing in 2023.
Mailiao	Conducted once per quarter	Met the standards
Hsinkang	Conducted once every six months	Met the standards

3.5 Waste Management and Circular Economy

3.5.1 Waste Management

306-1、306-2、306-3、306-4、306-5

Waste Impact Assessment and Management Process

Based on operations and production processes, the Company identifies potential impact sources and manages them in accordance with Environmental Protection Agency waste-related laws and regulations, the waste disposal plan approved by the appropriate authority, and the "Management Regulations of Business Waste" developed by FPG Group.

The output department is usually in charge of handling general and hazardous waste, and manufacturers with valid environmental protection permits are entrusted with the collection and disposal of waste. To make sure that all business wastes are properly handled by the waste removal manufacturers, management mechanisms for internal audits of waste removal have been established.

In 2023, 334 waste disposal tracking verifications were conducted in compliance with legal standards, and there was no anomaly where wastes were disposed of at the waste removal manufacturers' option.

Supplies of raw materials

Container of raw materials (e.g. flexible freight bags, 53-gallon barrels, etc.)



Production Process

Manufacturing of Product

- Impurities in the chemical reactions
- Residues after raw materials are mixed and used
- Leftovers from the cutting process

Pollution prevention (includes equipment maintenance)

- Resultant of wastewater treatment
- Resultant of electrostatic dust collection, flue-gas desulfurization, and denitrification
- Resultant of flue-gas desulfurization and denitrification
- Waste products from the replacement of insulation materials and building renovations
- Engineering waste generated after annual repairs and maintenance

Shipping

- Containers of products (e.g. pallets, packaging bags, etc.)
- Replacement of product for it has reached the useful life



Step 1

- Prior to beginning the disposal procedure, the waste disposal vendor delivers the necessary paperwork.
- The dedicated department is in charge of managing the vendor's necessary information and conducting the qualification evaluation.

Step 2

- The manufacturer submits a waste disposal application in compliance with the requirements. They can only enter or depart the plant after having their identification confirmed.
- The whole disposal process must be monitored by the waste-generating unit.

Step 3

- After waste disposal is accomplished, obtain the documents from the manufacturer stating that it was properly disposed of.
- Personnel should be dispatched for onsite inspection on a regular basis to ensure the manufacturer is working properly.

Step 4

- According to the annual data results, waste disposed of via incineration and landfill is chosen as the reduction priority.
- Conduct dynamic audits to ensure that records, storage, labeling, and classification in the plants comply with regulations.

Statistics on Waste Disposal

In 2023, NPC and its Taiwan subsidiaries generated 96,045.56 tons of waste, of which 72.9% was recycled (the proportion of waste reused + recycled among total waste). The following are the classifications of hazardous and general waste:

Statistics on Hazardous Waste Disposal (Unit: Ton)

Company	Landfill	Incineration		Reused	Recycled
		Excluding energy recovery	Including energy recovery		
The Company	1,033.19	682.09	7.72	0.00	2,510.66
Subsidiaries in Taiwan	153.68	1,766.57	0.00	0.00	10,865.57
Subtotal	1,186.87	2,448.66	7.72	0.00	13,376.23
Total	17,019.48				

Note: Reuse and recycling are categorized according to the relevant regulations of the Ministry of Environment's Resource Recycling and Reuse Act.

Statistics on General Waste Disposal (Unit: Ton)

Company	Landfill	Incineration		Reused	Recycled
		Excluding energy recovery	Including energy recovery		
The Company	12,677.96	4,384.92	3,779.82	97.88	50,524.81
Subsidiaries in Taiwan	281.24	1,269.26	14.38	0.00	5,995.81
Subtotal	12,959.20	5,654.18	3,794.20	97.88	56,520.62
Total	79,026.08				

Item		Hazardous Waste (Unit: Ton)		General Waste (Unit: Ton)	
Disposal Method		On-site disposal	Offsite disposal	On-site disposal	Offsite disposal
Volume of waste treated	The Company	7.72	4,225.94	15,195.06	56,270.33
	Subsidiaries in Taiwan	0.00	12,785.82	295.62	7,265.07
Subtotal		17,019.48		79,026.08	
Total		96,045.56			

Note 1: The data source is the "Business Waste Reporting and Management Information System" of the Resource Recycling Department, Ministry of Environment.
Note 2: In 2023, Nanya PCB (Taiwan subsidiary) added data from the Shulin Plant 1.

3.5.2 Circular Economy Promotion

By forming the Energy Saving and Carbon Reduction Promotion Team, the four primary enterprises of Formosa Plastics Group (FPG) collaborate on integrating resources and enhancing the efficacy of energy and water savings. Every year, along with domestic universities, the Company holds presentations and mutual observation meetings on excellent cases of energy saving, water saving, and environmental protection to encourage all units to implement improvement projects on energy saving, carbon reduction, and circular economy.

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 principles of circular economy:

- Reduce raw materials consumption
- Reduce energy usage (improvements on energy saving and water saving)
- Reduce waste generation

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



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

- Waste recycling
- Development of recycled products

Results of Promotion

To encourage all units to strive to improve the effectiveness of energy saving, carbon reduction, and circular economy, the Company not only holds a commendation conference for outstanding plants, but also holds presentations on outstanding cases of energy saving, water conservation, and environmental protection in collaboration with domestic universities.

2023.05.11

"Yunlin County Climate Change Response and Carbon Reduction Forum"

Significant accomplishments

Presented "The Path to Sustainable Development of Formosa Plastics Group".

2023.06.21

"2023 Mailiao Site Energy Conservation, Emission Reduction, and Circular Economy Outstanding Department Recognition Conference"

Significant accomplishments

Plasticizer Plant

2023.10.13

Organized the 2023 "Formosa Plastics Group Energy and Water Conservation and Environmental Protection Excellent Case Selection" with Yunlin University of Science and Technology

Significant accomplishments

The Bisphenol-A Plant and Ethylene Glycol Plant participated in the case selection and were awarded honorable mention.

chapter 4

Creating a Happy and Safe Workplace

4.1 Human Rights Policy 103
4.2 Talent Training and Development 103
4.3 Workplace Safety 114
4.4 Supplier and Contractor Management 126



A company's ability to develop sustainably depends on its workforce. In order to create a company that its workers would be proud of, NPC is committed to creating a safe and secure work environment by implementing a variety of methods to care for our employees' physical and mental well-being while enhancing their awareness of safety.

Strategies

- Taking care of employees' health- sustaining all workers' physical and mental health and improving the overall quality of the work environment
- Creating a culture of safety and health - to prevent hazards in the workplace, adopt process safety and health management at every level.

United Nations Sustainable Development Goals (SDGs)



Material Topics

Occupational Health and Safety, Plant, and Chemical Safety Management

☐ Did not meet the goals ☑ Goals met ★ Exceeded expectations

Taking care of employees' health

2023 Goals	2023 Implementations
Provide employees with attractive compensation and benefits, as well as extensive training and smooth promotion pathways	☑ Conducted interviews with 763 new employees and received feedback from 79 participants through surveys. ☑ In 2023, NPC and its Taiwan subsidiaries provided an average of 48 training hours per employee and offered promotion exam opportunities to eligible staff. ★ Issued the "NPC Diversity and Inclusion Policy."

Short-term Goals (2024 Goals)	Medium- and Long-term Goals (2025-2030)
Provide employees with attractive compensation and benefits, as well as extensive training and smooth promotion pathways	Provide employees with attractive compensation and benefits, as well as extensive training and smooth promotion pathways

Creating a Safety and Health Culture

2023 Goals	2023 Implementations
■ Continue to promote digital optimization of work safety, fire prevention, and PSM procedures. ■ Continuously promote safety care and inspections by executives. ■ Implement and execute improvements for abnormal incident prevention on a horizontal level. ■ No fatal occupational accidents, fewer than 5 disabling injuries; zero accidents.	★ Improve operational efficiency by digitally optimizing industrial safety, fire protection, and PSM management processes, as well as strengthening on-site management duties via data supervision. ★ Promote safety care and inspections by executives, and establish an optimized system that can instantly disseminate abnormal and exemplary cases horizontally to all departments for review and improvement. ☑ No fatal occupational accidents, 4 disabling injuries, an injury frequency rate of 0.1, an injury severity rate of 5, and a composite index of 0.02, achieving the short-term goals set last year.

Short-term Goals (2024 Goals)	Medium- and Long-term Goals (2025-2030)
■ Continue to promote digital optimization of work safety, fire prevention, and PSM procedures. ■ Continuously promote safety care and inspections by executives. ■ Implement and execute improvements for abnormal incident prevention on a horizontal level. ■ No fatal occupational accidents, fewer than 5 disabling injuries; zero accidents.	Zero occupational injuries; zero accidents

Implement Sustainable Supply Chain Management

2023 Goals	2023 Implementations
■ The "Social Responsibility Commitment Letter" response rate increased to 90% ■ The "Social Responsibility Commitment Questionnaire" response rate increased to 85%	☑ The "Social Responsibility Commitment Letter" response rate increased to 97.46%. ☑ The "Social Responsibility Commitment Questionnaire" response rate increased to 95.38%.
Short-term Goals (2024 Goals)	**Medium- and Long-term Goals (2025-2030)**
■ The "Social Responsibility Commitment Letter" response rate increased to 100%. ■ The "Social Responsibility Commitment Questionnaire" response rate increased to 100%.	Strengthen supply chain sustainability management and serve as the cornerstone of industry sustainability development.

Material topics Management 3-3

Policy Commitments

- Fulfill obligations
- Uphold social responsibility
- Emphasize pollution prevention
- Promote a circular economy
- Strengthen risk management
- Prevent abnormal incidents
- Encourage full participation
- Implement continuous improvement
- Ensure health management
- Facilitate internal and external communication
- Enhance management performance
- Ensure sustainable operations



Organizational Vision Achieve the ultimate goal of zero workplace injuries and zero incidents.

☐ Did not meet the goals ☑ Goals met

Material Topics: Occupational Health and Safety

GRI 403 Occupational Health and Safety
SASB Occupational Health and Safety

Definition and Impact Explanation Actual | Potential | Positive | Negative

Definition: NPC's management actions concerning the workplace environment and health of employees and other workers.

Management Actions	2023 Action Performance Tracking	Short-term Goals (1-3 years)	Mid- to Long-term Goals (more than 3 years)
Promoting Safety Care and Inspections by executives	☑ Each business unit vice president conducts inspections once a month in their respective departments. ☑ Each business group executive conducts inspections once a quarter in their respective departments.	This allows on-site personnel to recognize the importance that executives places on safety management, thereby motivating employees to engage in self-management, enhance safety awareness, and establish a positive safety culture.	Zero occupational injuries; zero accidents.
Improvement of Abnormal Deficiencies and Incident Level Promotion	☑ The Safety and Health Department, along with the business units, collects the abnormal deficiencies and incident cases on an irregular basis, requiring the plants (departments) to promote horizontal review and improvement.	For significant abnormalities and incidents, the plants (departments) are required to conduct a horizontal review and improvement to prevent the recurrence of the same or similar abnormalities.	

Management Actions	2023 Action Performance Tracking	Short-term Goals (1-3 years)	Mid- to Long-term Goals (more than 3 years)
Education and Promotion of Training on Deficiencies and Incident Case	☑ The Safety and Health Department, along with the business units, collects the abnormal deficiencies and incident cases on an irregular basis, requiring the plants (departments) to implement education and training for their personnel.	Important deficiencies and incident cases within the company are compiled into training materials, and the plants (departments) are required to train their colleagues to enhance overall safety awareness.	Zero occupational injuries; zero accidents.
Implementation of Employee Safety Observation and Interview (SWAT) Audit	☑ The Safety and Health Department conducts monthly audits of the implementation of Employee Safety Observation and Interview (SWAT) at the affiliated plants (departments) to eliminate unsafe behaviors among personnel.	This process encourages the plants (departments) to effectively carry out Employee Safety Observation and Interview (SWAT), identify unsafe behaviors, and address them in a timely manner.	

Stakeholder Groups Employees

Engagement Channels and Effectiveness Regular employee safety observations and interviews (SWAT) are conducted, and internal and external complaint channels are provided, allowing stakeholders to respond to issues in a timely manner.

Material Topics: Site and Chemical Safety Management

Custom Theme Guidelines
SASB Chemical Safety and Environmental Management
Operational Safety and Emergency Response

Definition and Impact Explanation

Actual | Potential | Positive | Negative

Definition: NPC implements measures to enhance industrial safety by managing and maintaining safety in office areas, plant sites, and public spaces. This includes the handling of regulated chemicals, emergency response protocols, and training mechanisms.

Management Actions	2023 Action Performance Tracking	Short-term Goals (1-3 years)	Mid- to Long-term Goals (more than 3 years)
Hazardous Chemical Assessment and Classification Management, Promoting Process Sampling Safety Inspection Improvements	☑ In addition to implementing hazardous chemical assessments and classification management in accordance with regulations, efforts are also made to enhance safety inspections for hazardous chemical process sampling.	Apart from complying with the regulations for hazardous chemical assessment and classification management, the protective measures at sampling points are reviewed, and the use of closed sampling boxes is considered to make operations safer.	▪ Comply with the regulations for hazardous chemical assessment and classification management. ▪ Achieve zero occupational injuries and zero incidents.
Prioritized Management of Chemical Inventory Registration and Reporting	☑ In accordance with the regulations for the designation and operational management of prioritized chemicals, registration and reporting are conducted.	Comply with the regulations for the designation and operational management of prioritized chemicals.	Comply with the regulations for the designation and operational management of prioritized chemicals.

Stakeholder Groups Employees

Engagement Channels and Effectiveness By utilizing regular employee safety observations and interviews (SWAT) or providing internal and external complaint channels, stakeholders can promptly report issues.

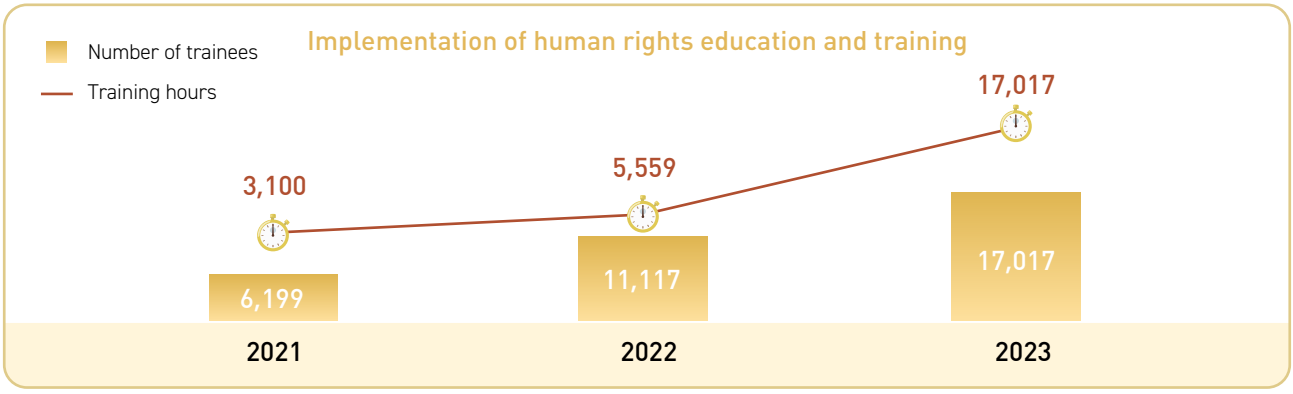
4.1 Human Rights Policies 2-7

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



The Company supports and adheres to fundamental human rights principles such as 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), as well as the laws and regulations of its global operating bases. Furthermore, the "NPC Human Rights Policy" was established to protect employees (including contract and temporary personnel). This regulation applies to both Company employees and non-employee personnel. In addition, in 2023, NPC announced the "Diversity and Inclusion Policy of Nan Ya Plastics Corporation," which respects diverse differences, ensures equal opportunities for all employees, and is committed to promoting diversity and inclusion. For further information, please refer to the NPC Official Website "Human Rights Policy and Specific Practices".

Furthermore, since 2021, the Company has provided "Human Rights Policy Promotion" education and training in order to raise human rights awareness among all employees. From 2023, the subsidies of NPC in Taiwan were also joined. Human rights education and training have been implemented in the following ways:



Note: Since 2021, NPC has promoted "Human Rights Policy Awareness" training. In addition to continuously increasing the types of personnel trained, starting in 2023, the scope of training will also include its subsidiaries in Taiwan.

4.2 Talent Training and Development

2-7、2-8、2-19、201-3

4.2.1 Employee Structure and Recruitment

In 2023, NPC and its subsidiaries in Taiwan employed a total of 17,658 people, with 93.5% of them being domestic. The percentage of formal employees was 99.2%, while informal employees were 0.8%. There were 14,058 men and 3,600 women, all of whom were of local nationality.

The ratio of men to women among the formal employees of the nation is approximately 3.9:1 (of which 3.3:1 in staff units and 4.2:1 in production units). With an average seniority of 19.7 years, employees are 45.0 years old on average. There is no obvious change in number of employees of NPC.

2023 Formal Personnel Structure (Unit: person)										
Company		NPC				Subsidies in Taiwan				Total
Category	Division	Female		Male		Female		Male		
		Number of People	Percentage	Number of People	Percentage	Number of People	Percentage	Number of People	Percentage	
Position	Management Supervisors (including) and above	2	0.1%	62	0.7%	0	0.0%	9	0.2%	73
	Level 1 and Level 2 Supervisors	72	4.1%	1,569	16.4%	37	2.1%	320	7.2%	1,998
	Frontline Supervisors and Frontline Staff	1,686	95.8%	7,885	82.9%	1,760	97.9%	4,113	92.6%	15,444
Work Place	Northern Taiwan	1,057	60.1%	4,140	43.5%	1,614	89.8%	3,877	87.3%	10,688
	Central Taiwan	59	3.4%	1,389	14.6%	1	0.1%	39	0.9%	1,488
	Southern Taiwan	644	36.5%	3,987	41.9%	182	10.1%	526	11.8%	5,339
Age	Under 29	171	9.7%	1,240	13.0%	164	9.1%	581	13.1%	2,156
	30~39	201	11.4%	2,090	22.0%	293	16.3%	819	18.4%	3,403
	40~49	626	35.6%	1,806	19.0%	982	54.6%	2,129	47.9%	5,543
	50~59	625	35.5%	3,334	35.0%	330	18.4%	832	18.8%	5,121
	Over 60	137	7.8%	1,046	11.0%	28	1.6%	81	1.8%	1,292
Years of Service	Under 10	349	19.8%	3,343	35.1%	379	21.1%	1,290	29.0%	5,361
	11~20	48	2.7%	398	4.2%	370	20.6%	1,203	27.2%	2,019
	20~30	752	42.7%	3,343	35.1%	896	49.8%	1,734	39.0%	6,725
	Over 30	611	34.8%	2,432	25.6%	152	8.5%	215	4.8%	3,410
Education Distribution	Doctorate	0	0.0%	24	0.3%	0	0.0%	4	0.1%	28
	Master's	78	4.4%	649	6.8%	68	3.8%	273	6.1%	1,068
	Associate Degree	97	5.5%	1,274	13.4%	84	4.7%	388	8.8%	1,843
	Others	1,585	90.1%	7,569	79.5%	1,645	91.5%	3,777	85.0%	14,576
Subtotal in Gender		1,760	15.6%	9,516	84.4%	1,797	28.8%	4,442	71.2%	17,515

2023 Informal Personnel Structure (Unit: Person)			
Company	Title	Women	Men
NCP	Regular contract	27	48
	Intern	12	25
Subsidies in Taiwan	Regular contract	3	7
	Intern	1	20
Total		143	

The employee composition of NPC and its Taiwan subsidiaries consists of full-time employees and temporary employees. There are 17,515 full-time employees who are regular staff, and 143 temporary employees, including interns and contract personnel, for a total of 17,658 employees.

Employment in 2023							
Company	Classification	Gender			Workplace		
		Female	Male	Total	Northern Taiwan	Central Taiwan	Southern Taiwan
NPC	Number of employees	1,799	9,589	11,388	5,241	1,465	4,682
	Number of permanent employees(note 1)	-	-	-	-	-	-
	Number of temporary employees(note 2)	39	73	112	44	17	51
	Number of employees not guaranteed minimun hours(note 3)	-	-	-	-	-	-
	Number of full-time employees(note 4)	1,760	9,516	11,276	5,197	1,448	4,631
	Number of part-time employees(note 5)	-	-	-	-	-	-
Subsidiaries in Taiwan	Number of employees	1,801	4,469	6,270	5,522	40	708
	Number of permanent employees(note 1)	-	-	-	-	-	-
	Number of temporary employees(note 2)	4	27	31	31	0	0
	Number of employees not guaranteed minimum hours(note 3)	-	-	-	-	-	-
	Number of full-time employees(note 4)	1,797	4,442	6,239	5,491	40	708
	Number of part-time employees(note 5)	-	-	-	-	-	-

Note 1: Permanent employees: Full-time or part-time workers who commit to a non-fixed-term (=indefinite) contract.

Note 2: Temporary employees: Workers who commit to a fixed-term or limited-term contract. The contract ends at a certain time or upon completion of an event or task with a deadline for evaluation (such as the end of a work project or the return of deputized staff).

Note 3: Employees not guaranteed minimum hours: Employees who may be required to be available for work based on requirements but who are not promised a minimum number of hours of work per day, week, or month, such as temporary workers, those on zero-hour contracts, and on-call workers.

Note 4: Full-time employees: Workers whose weekly, monthly, or annual working hours are determined by national legal and practical standards of working hours.

Note 5: Part-time employees: Employees who don't work as many hours as full-time workers do per week, month, or year.

Employment

In all of its recruitment procedures, NPC has always upheld the values of justice, impartiality, and transparency. Candidate selection is based on their past performance and professional experience. It adheres strictly to the Labor Standards Act's guidelines and sets working conditions in compliance with governmental labor regulations. Never has it used child labor. Additionally, based on the fundamental human right to fair employment chances for all, individual professional qualifications and experience are taken into full consideration. After hiring, specific guidelines are developed for each employee's promotion, assessment, training, awards, and punishments, among other things, to ensure that they are all treated fairly. Additionally, NPC employed a total of 136 outsourced workers, with 50 involved in kitchen meal services and 86 in environmental cleaning.

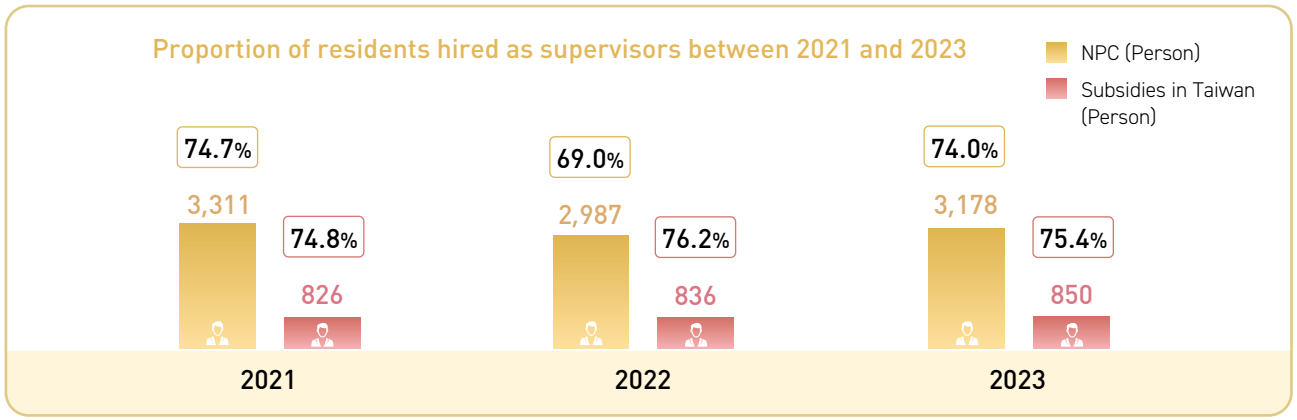


Age and Regional Distribution of New Employees in 2023 (Unit: Person)					
Company		NPC		Subsidiaries in Taiwan	
Type	Division	Female	Male	Female	Male
Age	Under 29	29	157	36	121
	30-39	6	45	9	32
	40-49	1	4	4	11
	50-59	0	1	0	0
	Over 60	0	0	0	0
Region	Northern Tai-wan	30	121	48	163
	Central Taiwan	1	40	0	0
	Southern Tai-wan	5	46	1	1
Total		36	207	49	164
Proportion of New Employees		2.0%	2.2%	2.7%	3.7%

Note: The ratio of new employees is calculated by dividing the total number of new employees by the number of new employees of that gender.

Ratio of Local Supervisors

To give back to the community, the Company and its Taiwanese subsidiaries prioritize residents when hiring entry-level personnel. Furthermore, the company aggressively grooms local citizens to become great senior personnel. Furthermore, all supervisors are Taiwanese natives who have been trained internally to promote staff morale. Over the last two years, the proportion of local citizens working as entry-level supervisors (inclusive) or higher has averaged more than 70%.



Job Security

The Company offers its employees safe and secure employment. An integrated personnel method has been developed to replace staff dismissal with transfer. When an individual is deemed underqualified for his or her position, the person's department head will first communicate with the employee before transferring or dismissing the employee. Furthermore, all relevant procedures are carried out in accordance with the Labor Standards Act and other applicable laws and regulations. The employee internal transfer ratio was 25.2% in 2023. It is intended to allow employees to serve in positions that allow them to fulfill their full potential in order to meet the goal of flexible manpower utilization.

In 2023, the Company and its subsidiaries in Taiwan had a monthly average voluntary turnover rate of 0.46%, while the absence rate was 0.64% (absence rate computation takes sick leave, official leave, and occupational injury leave into account, with males accounting for 0.55% and females accounting for 0.99%). The absenteeism rate of outsourced personnel was 0.54% (with males accounting for 0.54% and females accounting for 0.40%). These figures thoroughly reflect the Company's success in terms of employee care and job security, as well as the employees' trust and sense of belonging.

Age and Regional Distribution of Resigned Employees in 2023 (Unit: Person)

Company		NPC		Subsidiaries in Taiwan	
Type	Division	Female	Male	Female	Male
Age	Under 29	33	114	48	141
	30-39	18	103	32	67
	40-49	18	38	28	55
	50-59	30	163	14	42
	Over 60	16	111	9	24
	Retired at 65	9	120	1	4
Region	Northern Tai-wan	71	371	121	298
	Central Taiwan	2	57	0	3
	Southern Tai-wan	51	221	11	32
Total		124	649	132	333
The turnover rate		6.9%	6.8%	7.3%	7.5%

Note 1: The number of resigned employees in the above table includes retired and laid-off personnel.

Note 2: The turnover rate is calculated by dividing the number of employees of that gender by the total number of employees of that gender.

4.2.2 Employee benefits and care 2-26、2-30

Employee Remuneration

The Company's remuneration is greater than the local minimum wage. Furthermore, in order to attract and retain talent, all salary is above the industry norm. The average annual wage adjustment during the last ten years is approximately 3.28%. The total pay adjustment would be 3.93% if a fixed amount of bonus was added.

(1) Average and Median Remuneration

In 2023, the number of full-time employees who do not serve as manager as well as their average and median remuneration are as follows:

Salary Data for Full-Time Employees Not in Supervisory Positions in 2023

Year	NPC			Subsidiaries in Taiwan		
	2021	2022	2023	2021	2022	2023
Number of employees who do not serve as manager (person)	12,035	12,124	11,510	6,650	7,093	7,506
Average remuneration of employees who do not serve as manager (NT$ thousand/year)	1,410	1,238	1,188	1,199	1,182	921
Median remuneration of employees who do not serve as manager (NT$ thousand/year)	1,369	1,161	1,105	1,169	1,134	890

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

(2) Remuneration Ratio of Female and Male Employees

The pay scale for new employees is defined by the qualities required for the role, 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, their income and grade will be altered year by year based on their work performance, and they will be compensated accordingl



Remuneration ratio of female and male employees with the same position and grade at NPC and its Subsidiaries in Taiwan

Unit: %

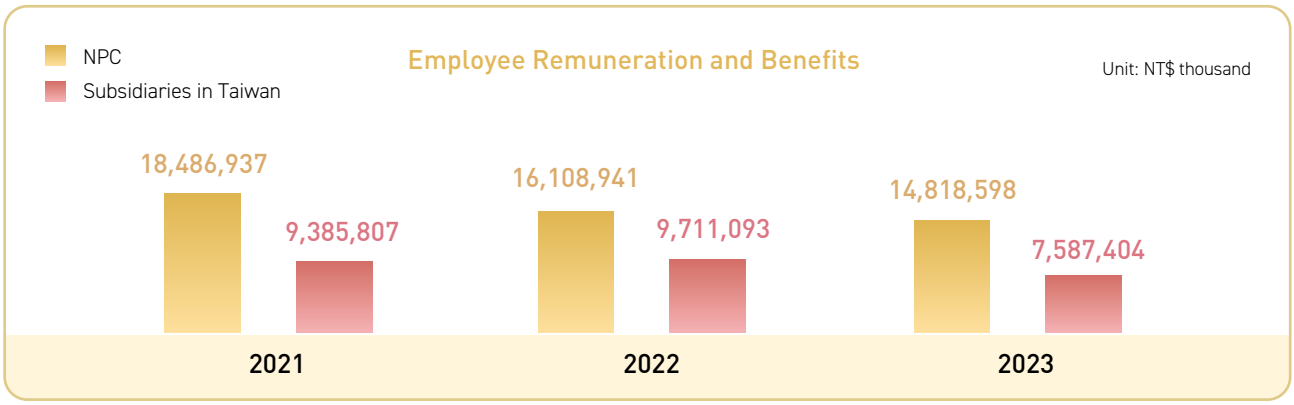
Second-level supervisors (inclusive) and above		Entry-level supervisors (inclusive) and below	
Female 100	Male 126	Female 100	Male 122

Note: In 2023, 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.

Company	Gender	Minimum wage for junior employees	Local minimum wage	Ratio of junior employees' standard wage to local mini-mum wage
NPC	Male	39,348	26,400	1.49
	Female	32,412	26,400	1.23
Subsidiaries in Taiwan	Male	39,348	26,400	1.49
	Female	32,412	26,400	1.23

Note: The government's statutory minimum monthly basic wage for 2023 is NT$26,400.

(3) Remuneration and Benefits



Employee Benefits and Care

The Company continues to treat employees like family in order to give all full-time employees peace of mind and allow them to fully unleash their talents. Basic eating, lodging, and recreational facilities have been planned from the start of each plant's construction. Furthermore, many comprehensive benefit schemes have been developed with the long-term well-being of employees in mind.

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

The Company has established a number of employee benefits and incentive initiatives that exceed regulatory standards, including:

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
- Self-learning benefits

Retirement Benefits

- Retirement benefits
- Retirement Association



Employee Subsidy Program Performance

- We provide the birth subsidy of **NT$20,000** per child and a childcare subsidy of **NT$2,000** per month for each child up to age 6 (with no subsidy during unpaid leave). In 2023, the company provided **199** birth subsidies and **12,949** childcare subsidies, totaling NT$**30.276** million in assistance.
- To promote energy-saving and carbon reduction among employees, NPC offers a one-time electric scooter subsidy (NT$10,000 for a new purchase and NT$16,000 for a replacement) for each employee. In 2023, NPC employees purchased or replaced **85** electric scooters, with a total subsidy of NT$**1.072** million.

Furthermore, in order to implement the notion of a happy workplace, the Company has established breastfeeding facilities within the plants in accordance with the legislation, as well as a friendly office atmosphere for employees. A parental leave system is also available. Employees who qualify could alter their work hours to accommodate their childcare needs. In 2023, a total of 44 females and 61 men, totaling 105 employees, requested parental leave. The rate of reinstatement was 100.0%.

Age and Regional Distribution of Resigned Employees in 2023 (Unit: Person)

Company	Item	2021			2022			2023		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
NPC	Number of employees eligible for parental leave	30	331	361	31	459	490	25	460	485
	Number of parental leave applications received	33	15	48	20	25	45	26	41	67
	Number of employees who are expected to be reinstated during the year (A)	29	14	43	8	11	19	9	22	31
	Number of reinstatement applications received during the year (B)	24	13	37	11	14	25	8	32	40
	Reinstatement rate % (B/A)	82.8	92.9	86.0	100	100	100	88.9	100	100
	Still employed more than a year after their reinstatement	22	13	35	10	12	22	7	26	33
	Retention rate %	91.7	100	94.6	90.9	85.7	88.0	87.5	81.3	82.5
Subsidies in Taiwan	Number of employees eligible for parental leave	13	87	100	30	194	224	25	163	188
	Number of parental leave applications received	14	12	26	34	10	44	18	20	38
	Number of employees who are expected to be reinstated during the year (A)	7	5	12	12	2	14	6	11	17
	Number of reinstatement applications received during the year (B)	13	7	20	22	8	30	16	15	31
	Reinstatement rate % (B/A)	100	100	100	100	100	100	100	100	100
	Still employed more than a year after their reinstatement	12	7	19	22	8	30	13	11	24
	Retention rate %	92.3	100	95.0	100	100	100	81.3	73.3	77.4

Note 1: Retention rate refers to the percentage of employees who are reinstated after taking a parental leave and staying for more than a year.

Note 2: The data from 2021 to 2023 includes NPC and subsidies in Taiwan. The data from 2019 to 2020 does not yet include Taiwanese subsidiaries.

Stable Pension System

Based on the employees' choice of the new or old pension plan for retirement security, the Company distributes monthly payments to specific pension accounts. This makes it possible for the Company to pay pensions to employees once they fulfill the legal requirements for retirement:

Old pension system

For those who choose the "Labor Standards Act" retirement system): 4% of the total monthly pay will be deposited into a dedicated account at the Bank of Taiwan. The total labor pension reserve has grown to NT$**1,452,577,000** as of 2023.

New pension syste

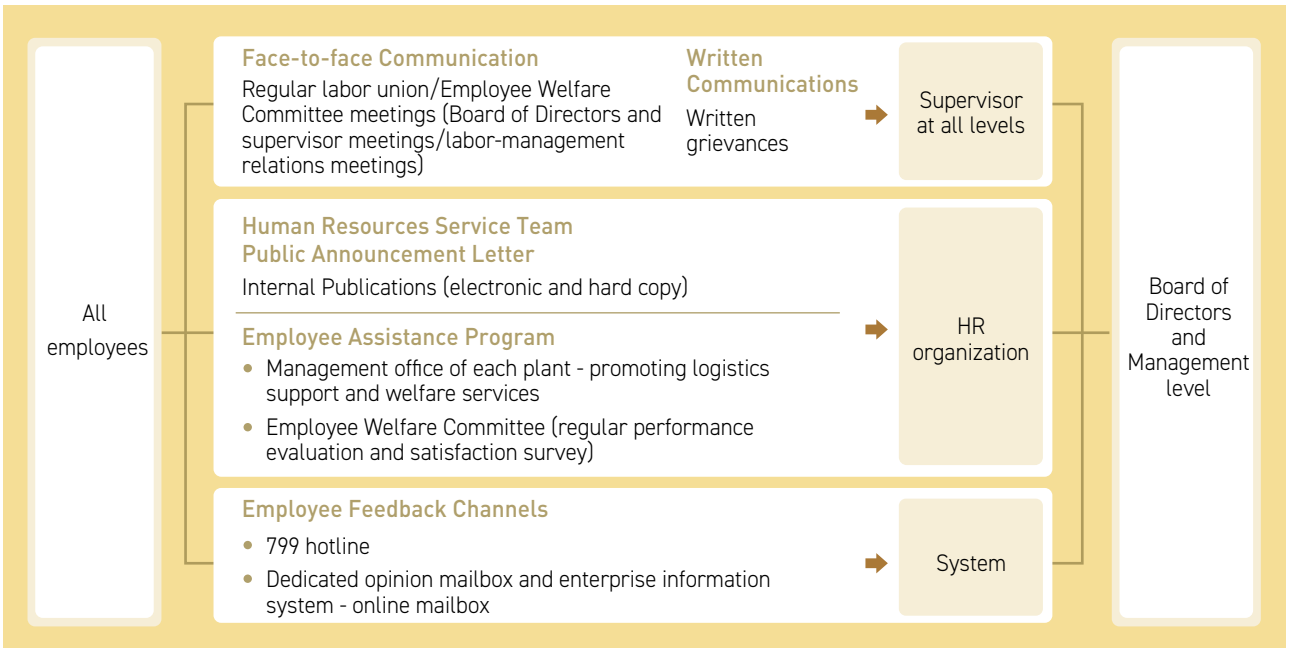
For individuals who choose the "Labor Pension Act" retirement system): 6% of the employee's individual pay is deposited into the employee's personal pension account. The cumulative pension contribution made by the Company in 2023 was NT$ **310,597,000**. Additionally, in 2023, voluntary pension contributions were NT$**142,443,000**.

Valuing Employee Feedback

The Company strives for good labor-management interactions and offers a variety of free contact channels. We also aggressively encourage staff to come up with new ideas. By joining organizations such as the labor union and the Employee Welfare Committee, all employees may express their opinions and ideas. Currently, 79.2% of all employees are union members.

Although the company has many sites and unions that operate independently and has not signed a unified collective agreement, relevant department managers participate in the regularly held board meetings and labor-management meetings of each union. Any demands and suggestions made are considered and reviewed by the company. For major labor-management issues, the company prioritizes compliance with government regulations, and the highest-level executives engage in discussions and negotiations with the unions. Consensus reached in these discussions is incorporated into reviews and adjustments. Over the long term, NPC has implemented several welfare measures that exceed labor law requirements. All employees are protected by both legal regulations and labor-management agreements. This practice embodies the spirit of the Collective Agreement Act, which mandates that labor and management conduct negotiations in good faith, thereby fully safeguarding employees' collective bargaining rights and fostering harmonious labor-management relations. Additionally, the company's main communication channels are as follows:

Internal Communication Structure for FPG Employees



Labor union

Key Agreement Items

Negotiations for year-end bonuses, pay raises, and other benefits

Meetings	Attendees
42	709

Employee Welfare Committee

Key Agreement Items

Welfare programs such as free meals for employees, holiday festivities, vacations, children's scholarships, and club activities

Meetings	Attendees
60	848

4.2.3 Talent Training and Evaluation

NPC has established a comprehensive employee training system. Each stage of training is performed step by step using the e-training management system. To achieve the training goal of developing all-around employees, the existing training system could be separated into pre-employment training, basic job training, professional competencies training, reserve cadre training, job certification, and cross-functional training courses.



Employee Training System

Supervisory level

First and second-level supervisor training

Entry-level personnel

Plastic processing training	Petrochemical process training	Process operation training	Polyester fiber process training	Resource and material & finished goods training Machinery and electronic equipment maintenance training Safety and health and fire prevention training

New employee

New employee training

Plastics processing business group	Chemical engineering business group	Electronics material business group	Polyester fiber business group	Direct department

Employee Training and Evaluation

The Company arranges various education and training based on the features of various works in order to develop the professions and management abilities of employees at all levels, as well as to provide training that is superior to the legal requirements.

In 2023, the average amount of training hours per employee was approximately 48 hours. The average number of training hours was 15 for first-level supervisors, 34 for second-level supervisors, 64 for entry-level supervisors, and 47 for entry-level staff. The following are the main courses and outcomes:

Professional Certificate Program (Occupational safety training)	Safety and Health Training (Basic occupational safety training)	Other Training Program
Purpose Organize job-related professional certificate certification courses in accordance with each department's operational and safety requirements.	**Purpose** Raise employees' awareness of human rights and work safety	**Purpose** Enhance employees' professional abilities

Strategies

- 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
- Occupational safety education and training are offered for particular occupational hazard jobs, and all colleagues involved in related businesses are expected to pass the training courses.
- Use the medium such as "10-minute on-site training", "communication sessions", "morning meetings" and "formal training" to educate employees

2023 Results

Professional Certificate Program (Occupational safety training)		Safety and Health Training (Basic occupational safety training)		Other Training Program	
Number of courses	36	Number of courses	69	Number of courses	36
Number of attendees	1,097	Number of attendees	3,458	Number of attendees	1,115

Note: The safety and health training includes "occupational safety training" and "basic occupational safety training". A total of 4,555 participations in 2023, with a total of 32,784 hours of training.

Training Status for All Employees in 2021~2023 (Unit: Hour)													
Company	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
NPC	2021	8,331	122	8,453	29,601	577	30,178	166,961	2,663	169,624	432,843	87,401	520,244
	2022	6,759	30	6,789	28,206	555	28,761	169,316	2,089	171,405	398,207	74,470	472,677
	2023	9,956	84	10,040	36,958	1,049	38,007	184,953	4,588	189,541	393,620	69,185	462,805
Subsidiaries in Taiwan	2021	1,014	0	1,014	2,525	210	2,735	15,676	869	16,545	99,794	38,671	138,465
	2022	1,129	2	1,131	3,498	243	3,741	19,184	958	20,142	122,618	45,489	168,107
	2023	1,280	61	1,341	4,402	435	4,837	23,414	2,597	26,011	121,939	49,990	171,929

Note 1: Due to the epidemic in 2020-2022, the number of training hours was lowered.
Note 2: The Company belongs to the (plastic) secondary processing industry, and female employees generally serve in indirect jobs in office environments, requiring less professional training.

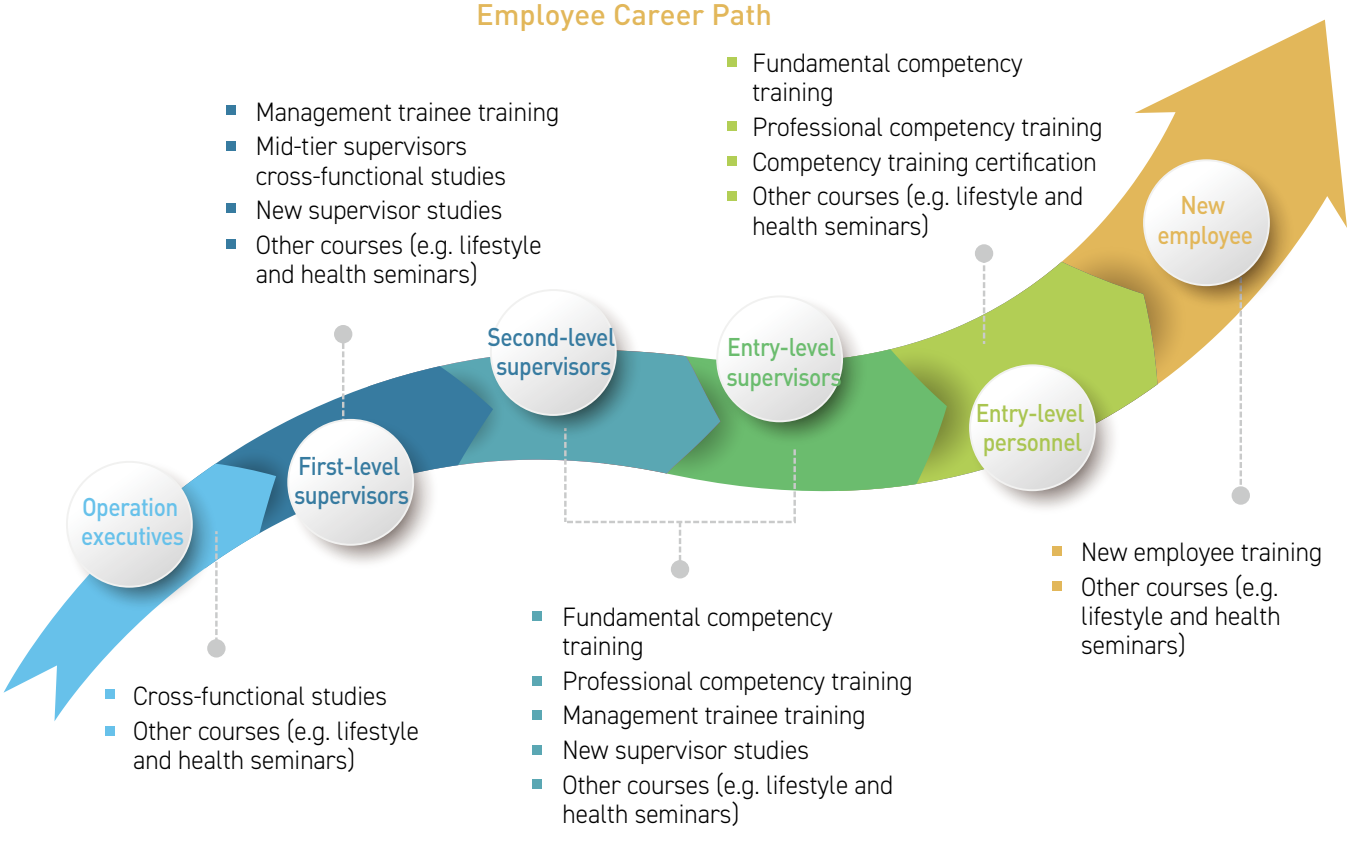
Employee Training Completion Rate in All Stages in 2021~2022

Unit: %

NPC			Subsidiaries in Taiwan		
Basic job training	Professional competencies training	Annual training program	Basic job training	Professional competencies training	Annual training program
100%	100%	100%	100%	100%	100%

Note: The completion rate is the percentage of training subjects completed during the year.

Employee Career Path



Furthermore, the Company has included "regular work evaluation" in its "Performance Review Procedures" in order to improve job quality and foster a serious and responsible work attitude among employees. Depending on their duties, employees are evaluated every 1-3 months. Employees are driven to pursue improvement and create a self-challenging work environment through frequent job reviews.

Entry-level Personnel

Procedure of regular work evaluation

Direct evaluation by the supervisor



Those who perform well are instantly notified and encouraged, while those who perform badly are interviewed, guided, and coached for improvements.

Other Personnel

Procedure of regular work evaluation

Those being evaluated will be required to present a report on their current progress toward meeting their annual goals and KPIs.

Direct supervisors will conduct face-to-face evaluations and communicate with people being assessed.

Security Personnel Training and Digital Learning & Knowledge Management System

The Company provides complete professional security training for all security professionals to gain appropriate training certification, including "industrial safety," "security personnel work procedures," and "applicable laws and regulations." In addition, an e-learning system has been established to give our personnel different self-learning channels. For further information, please see "Talent Development" on the NPC website.

"Talent Development" on NPC's website



4.3 Workplace Safety

403-1、403-2、403-3、403-4、403-5、403-6、403-7、403-8、403-9、403-10

4.3.1 Workplace Safety Management

To ensure workplace safety, NPC has established a clear occupational safety and health organization. Each site has set up an Occupational Safety and Health Committee in accordance with legal regulations and obtained both the ISO 45001 Occupational Health and Safety Management System and the Taiwan Occupational Safety and Health Management System (TOSHMS) certifications. The scope of the workplace safety management system includes all sites in Taiwan and NPC's Taiwanese subsidiaries, covering inspection items such as the work environment, personnel operations, and equipment safety.



ISO 45001 Occupational Safety and Health Management System certificate



Taiwan Occupational Safety and Health Management System (TOSHMS) certificate

Occupational Safety Committee

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 2023 are as follows:

- Make recommendations on employer-developed occupational safety and health policies
- Coordinate and make suggestions on planning for occupational safety and health management
- Examine the training program for safety and health
- Examine the on-site environment monitoring strategy, the results of the monitoring, and the actions to be performed
- Examine issues related to occupational disease prevention, health promotion, and health management
- Examine various proposals for health and safety
- Examine the self-inspection, safety, and health audit concerns in production plants
- Examine the procedures used to prevent risks to machinery, equipment, or raw and processed materials
- Examine the occupational injury investigation report
- Assessment of on-site safety and health management performance
- Examine the safety and health management issues in the contractual businesses

Occupational Injury Indicators

In 2023, there were 4 disabling injuries in NPC and our subsidiaries in Taiwan. Under the classification of occupational accidents, there were 3 case of "contacting with harmful objects" and 1 case of "being trapped by the equipment".

Occupational Injury Indicators of NPC and subsidies in Taiwan between 2021 and 2023

Year	NPC			Subsidiaries in Taiwan		
	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)
2021	0.29	4	0.03	0.07	1	0.00
2022	0.21	1	0.01	0.00	0	0.00
2023	0.10	5	0.02	0.00	0	0.00

Note 1: Disabling Injuries Frequency Rate (FR) = number of disabling injuries x 10^6 / total working hours

Note 2: Disabling Injuries Severity Rate (SR) = working days lost to disabling injuries x 10^6 / total working hours

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

Management and Prevention of Occupational Accidents

Description of accidents	Approach to the accidents	Improvement
On January 17, 2023, a high-pressure hot water steel hose (3 inches) on the B rolling machine in Renwu Plant 2 suddenly ruptured when personnel were performing wheel cleaning on the AE09 PVC sheet machine, causing hot water to spray out. The worker was 7 meters away from the leakage point and suffered burns from the hot steam.	After initial treatment with cold water and bandaging at the plant, the employee was accompanied to the hospital by section supervisor Yan Chin-Sheng. The doctor diagnosed second-degree burns, covering 27% of the body, and immediate hospitalization was arranged. The employee was discharged on January 30 to recover at home and returned to work on February 15.	▪ Upon investigation, the steel hose on the rolling machine and PVC sheet machine was found to have insufficient pressure resistance (20 Kg/cm²). The hose was replaced with one that withstands 30 Kg/cm². A horizontal inspection of the other four similar machines confirmed the hoses' pressure resistance was normal. ▪ The original 2mm-thick iron protective plate and bracket were secured with rivets, which provided insufficient protection. These were replaced with a welded fix. ▪ The rupture of the steel hose was suspected to be due to poor welding quality. The hose was sent to the Metal Industries Research and Development Centre for welding quality inspection. Additionally, new procurement specifications now require third-party inspection of welding quality, with vendors required to provide welding certification.
2023/4/19, at the Shulin No. 3 Plant, a worker was injured while dismantling a feed blind flange from the R-5110 phenolic resin reaction tank. During the process, due to internal leakage in the valves (manual and pneumatic valves for the 95% phenol liquid line), phenol liquid remained in the pipeline and accidentally splashed, causing injury.	The emergency shower alarm in the control room was activated, and the control operator notified colleagues and the supervisor on duty to assess the situation. Upon realizing the worker was injured, they assisted with using neutralizing agents and water for decontamination before sending the worker to the hospital. The doctor diagnosed chemical burns on the abdomen and lower limbs, covering 17% of the body's surface. After hospitalization, the worker was discharged to recover at home on 4/23 and returned to work on 4/25.	▪ The damaged valve was replaced, and the task was completed on 5/17. The SOP was revised to control the water temperature of the phenol liquid at the same 55° C as the operating temperature of the phenol liquid to prevent continued heating and expansion that could cause gasket failure. ▪ A company-wide safety training was conducted on this incident to raise safety awareness.
On 2023/6/15, at the Film Plant No. 1, a worker stopped a transfer cart for inspection and, after restoring power, switched to manual mode to move the finished product to the cart's positioning point. Due to repeatedly pressing the manual transfer button, the product continued to move to the end of the cart and tilted forward. While trying to stabilize it by hand, the worker's right arm was caught between the product and the packaging conveyor frame, resulting in an injury.	The supervisor accompanied the worker to the hospital emergency room, where the doctor diagnosed a fracture of the right ulna. The worker underwent surgery and was discharged on 6/22 to recover at home, returning to work on 6/26.	▪ The control procedure was modified to include interlock protection for aligning the horizontal transfer machine with the packaging conveyor during manual operation, preventing the rollers from activating before proper alignment. ▪ Safety gates were installed at both entrances of the conveyor. When opened, the interlock system stops the machine. The control panel was relocated outside the newly installed safety gate. ▪ Surveillance cameras are installed in the work area. The shift leader monitors them, and site supervisors and safety personnel conduct random checks. Any unsafe behavior by workers is immediately stopped, with strict penalties enforced.
On 2023/8/22, at the Butylene Glycol Plant, a worker was sampling acetic acid (90% concentration, 49 ° C temperature). Due to an issue preventing the sample port in the sampling box from opening, the worker proceeded to sample from the pressure gauge exhaust valve of the stripper column discharge pump. The manual valve was opened too quickly, causing the sample bucket to overflow. In the process of hastily replacing the pipe cap, acetic acid splashed onto the worker's chest, back, hands, and legs, resulting in chemical burns.	After being sent to the hospital and returning home to rest, the worker continued to feel unwell and was transferred to another hospital at 23:00 that day. The doctor diagnosed 15% chemical burns on the hands, chest, and back, as well as respiratory irritation. After treatment, the worker was discharged on 9/9 to recover at home.	▪ A thorough inspection of all 32 sampling boxes in the plant was conducted to ensure they were functioning properly, and sampling box checks were included in pre-startup safety inspections. ▪ Locks were placed on exhaust valves at the pump outlets for processes using acetic acid concentrations above 85%, requiring approval for high-risk operations to prevent accidental operation. ▪ The reporting rules for non-routine operations were tightened, and tasks such as pump exhaust and filter cleaning were brought under control, requiring supervisor approval before beginning work.

Occupational Injury Data from All Plants of the Company and Its Subsidiaries in Taiwan in 2023						
Plant	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	0.53	2	0.03	0	0	0
Linkou	0	0	0	0	0	0
Kung San	0.3	7.42	0.001	0	0	0
Jinxing	0	0	0	0	0	0
Mailiao	0.34	43	0.12	0	0	0
Chiayi	0	0	0	0	0	0
Hsinkang	0	0	0	0	0	0
Renwu	1.2	16	0.13	0	0	0
Description	4 occupational injuries happened to male employees. 3 case of "contacting with harmful objects", 1 case of "being trapped by the equipment".			No female employee was involved in any occupational injuries.		

Management Principle for Contractors

1. Before the commencement of construction, the supervising and entrusting departments shall confirm whether there are any changes in the workplace environment, potential risks, construction methods, etc., and list the safety notices in the " Information for Construction Safety ".
2. Prior to construction, the supervising department must hold a pre-construction consultative meeting with the entrusting department and explain the 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. To ensure that the contractor has comprehended the potential hazards and has adequately prepared for safety and hygiene procedures, the " Information for Construction Safety " must be signed in person.
3. After the plant's safety and health department (or the designated safety and environmental protection department) has reviewed and confirmed the content of the safety notification, the supervisory department should supplement and re-notify it according to the above procedure if any deficiency is found and considered to be explained.

Occupational Injury Indicators of Contractors

Worktime and Relative Occupational Injury Indicators of Contractors								
Company	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					
NPC	2021	443,852	3,550,814	0	0	0	0	0
	2022	495,194	3,961,550	4	6,413	1.01	1,618	1.27
	2023	462,488	3,699,907	1	180	0.27	48	0.11
Subsidies in Taiwan	2021	41,056	328,450	0	0	0	0	0
	2022	79,606	630,848	0	0	0	0	0
	2023	44,376	355,006	0	0	0	0	0

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

4.3.2 Process Safety Management

NPC promotes 14-key Process Safety Management (PSM) procedures in compliance with business regulations. It has hired 86 PSM personnel at various levels, all of whom have acquired legal process safety assessment staff certificates and receive regular refresher training. They are committed to promoting and regulating PSM management operations throughout departments, as well as ensuring the quality of PSM activities. The following is the management work content:

Monthly	Annually
▪ 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)	▪ 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

Since 2012, NPC has contracted the American Sphera Company (previously IHS Company) to manage PHA Facilitators' training and certification in order to improve the quality of process hazard analysis activities. A total of 18 persons (seed personnel) are qualified as PHA facilitators, assisting PHA instruction and training to be extended to all plants. Every month, the PHA assessment team at each unit conducts PHA operations. PHA facilitators then visit the facility to provide instruction and evaluate the quality of operations, with the goal of identifying potential workplace hazards and effectively controlling process risks.

The Hazard and Operability Analysis (HzaOp) was separated into normal and abnormal operations for evaluation in 2021. In 2022, we kept promoting the detailed evaluation of six primary types of abnormal operations: emergency or abnormal shutdown, online maintenance, begin production/shutdown, pump switching, and filter removal, to ensure that process risks and hazards may be thoroughly examined. In 2023, procedural guidelines for conducting Procedural Hazard and Operability Analysis (Procedural HAZOP) were reviewed and established.

Production sites in Taiwan

Internal auditor	Executed by the PHA facilitators using the cross-audit method
Progress	Quality inspection of 54 plants (offices) was completed in 2022. Continue to review the implementation of process risk assessment, analyze potential hazards and the effectiveness of safety protection, and re-examine the PHA using investigation reports from previous events.



Process safety incidents over the years

Company	Item	Unit	2021	2022	2023
NPC	Process Safety Incidents Count (PSIC)	Cases	1	0	0
	Process Safety Total Incident Rate (PSTIR)	%	0.009	0	0
	Process Safety Incident Severity Rate (PSISR)	%	0.009	0	0
Subsidiaries in Taiwan	Process Safety Incidents Count (PSIC)	Cases	0	0	0
	Process Safety Total Incident Rate (PSTIR)	%	0	0	0
	Process Safety Incident Severity Rate (PSISR)	%	0	0	0

Management of Change, MOC

To ensure that any changes in design, equipment, raw materials, or operating conditions do not harm the process, the Company establishes process safety management personnel in each department to control management change operations and review procedures to ensure compliance with corporate regulations. The target scope of the MOC was further widened in 2021 to encompass construction workers for the "fixed asset auction" and computer source management in the preliminary stages of "Process Trial Production" at each plant. Process modification projects identified in the "Hazardous Workplace Review and Inspection Measures" were included in corporate regulations for implementation in 2022, and to improve management, the breadth and depth of audits will continue to be strengthened.

Production sites in Taiwan

Internal auditor	Executed by the PSM personnel in each department using the cross-audit method
Progress	In 2023, the quality inspection of 54 plants (offices) was completed. It has been proven that the MOC review and assessment can clearly identify hazards, and regulate operation and improvement effectively, and the Company will continue to undertake pre-production/ pre-commissioning/(operation) safety inspections.



In 2023, basic and advanced MOC (Management of Change) training courses were conducted for maintenance and process personnel to ensure that all relevant functional personnel involved in MOC cases are familiar with the process. Additionally, monthly inspections were carried out by personnel from the Safety and Health Office and dedicated process safety management personnel from the business unit to verify the completeness and quality of change management analysis.

Job Safety Analysis, JSA

Organizational and systematic analysis techniques are used to evaluate the potential risks of personnel operations and construction operations in the workplace and then take the necessary precautions. This serves as an essential foundation for the work safety analysis operations of various departments in NPC. In order to verify the accuracy of the work safety analysis and the quality of the work, personnel from the Safety and Health Department will visit the plant for inspection once a month.

Production sites in Taiwan

Internal auditor	Inspection from personnel of the Safety and Health Department
Progress	The quality inspection of 54 plants was completed in 2023. In the future, we will continue to strengthen JSA hazard identification, risk assessment, and control, and regularly track and control the progress of various improvements. We will also strengthen the implementation of education and training after JSA assessment and on-site review.



Industrial Safety Protection Promotion Cases in 2023

Scope of Implementation: Taiwan, China

The promotion item

- Promotion of senior management safety care and inspections in 2023
- Inspection and improvement of manual handling operations
- Inspection and improvement of process elevator safety
- Improvement of frequently repaired and replaced equipment
- Safety inspection for handheld cutting tools

The promotion result

The overall number of disabling injuries has shown a decreasing trend over the years

- 16 cases in 2019
- 10 cases in 2020
- 8 cases in 2021
- 5 cases in 2022
- 4 cases in 2023

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 revises the contents of potentially hazardous and the corresponding SOPs on a regular basis based on the results of the work safety analysis, which is expected to significantly improve the safety of on-site operations.

Production sites in Taiwan

Internal auditor	Joint inspection by personnel from the Safety and Health Departments, as well as personnel responsible for supervising SOP from each department
Progress	In 2023, the quality inspection of 71 plants (offices) was completed. Continue to quantify SOP control points and apply SWAT to improve SOP implementation.

To assure the performance of SOP promotion, each unit 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" on a regular basis. Safety and health personnel, as well as executives from each department, would collaborate to conduct onsite inspections to verify the integrity of the implementation.

4.3.3 Controlled Chemicals Management and Disaster Prevention Training

Management of Controlled Chemical Substances Usage

According to the Environmental Protection Agency's announcement, there are 51 chemical substances handled by NPC that are classified as controlled chemical substances (of which 16 chemical substances are handled in small quantities and only used for laboratory research and testing). To ensure the safe production, use, storage, and transportation of controlled chemical substances, the handling sites and facilities of each plant are all operational, and factors such as regulatory compliance, operational risks, and disaster prevention have all been considered before use. In addition to acquiring approval documents from the competent authority in accordance with regulations, reported activities, pipeline marking, and so on are included in each department's self-inspection items.

Safety Management of Controlled Chemical Substance

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

Each plant assesses potential disaster losses by applying PHA analysis and develops "rescue specifications."

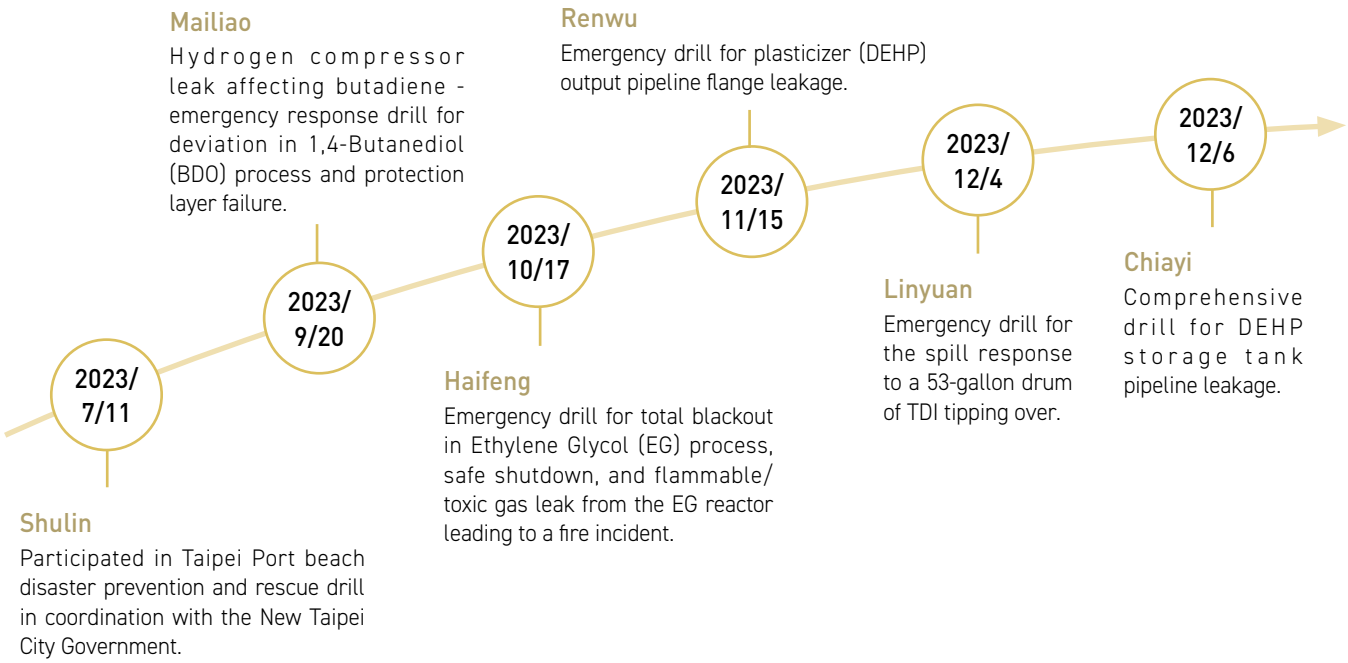
With reference to the "SDS Data Sheet," and frequently analyzes the contents of the "hazard prevention and emergency response plan" for appropriateness.

Continue to undertake unscheduled tests and overall drills, as well as collaborate with county and city governments to conduct large-scale observation drills. Emergency response drills for EPA-controlled hazardous compounds were held in 2023, including simulated notice, evacuation, disposal, and follow-up activities. The following are the training objectives:

1 Be familiar with the process of emergency response drill.

2 Increase the utilization of emergency response and protection equipment.

Disaster drill for toxic chemical substances in 2023



The plant manager of NPC's Shulin site has long served as the leader of the regional joint defense organization in New Taipei City, assisting the government in improving members' response capabilities and supporting toxic disaster response efforts. This dedication has earned high recognition from the New Taipei City Government, and the manager was nominated for the "2023 Excellence Award for Joint Defense Organization Operations" organized by the Ministry of Environment. Following evaluation, NPC was awarded the "Excellence Award for Regional Joint Defense Organization Operations."



Taipei Port Beach Disaster Prevention Drill



NPC provided emergency response equipment to support personnel in leak prevention.



Award Ceremony by the Minister of the Environment



Certificate of Excellence in Regional Joint Defense Organization Operations.

Starting in 2022, professional response personnel have been assigned for training in accordance with regulations on managing toxic and priority chemical response personnel. Based on the types of regulated chemicals and maximum daily operational quantities for each process, NPC planned training for personnel. In 2023, 81 personnel were registered on the EPA website (10 at expert level, 11 at command level, 37 at technical level, 19 at operational level, and 4 at general knowledge level). Reserve personnel are also designated to promptly fill any response personnel vacancies.

Green Chemistry Promotion

In response to global sustainability trends, NPC has proactively followed the international standards outlined by the SASB (Sustainability Accounting Standards Board) under "Chemical Safety and Environmental Management." The company has tracked the percentage of products classified as Category 1 for health hazards and Category 2 for environmental hazards under the Globally Harmonized System (GHS). Over the past three years, the percentage of such products has consistently decreased, and hazard assessments for these products have been completed (see Appendix 1, ii. SASB Index). Additionally, NPC continues to adopt emerging digital tools, such as AI, to optimize process operations, reduce raw material consumption, and increase recycling rates, ultimately reducing the use of chemicals. The company also plans to enhance internal research and collaborate with external academic institutions to develop alternative chemicals and promote the application of green chemistry in line with market dynamics.

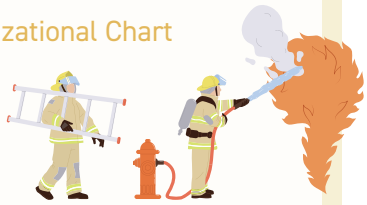
For instance, on November 30, 2021, the Company agreed to an exclusive interview with the Toxic and Chemical Substances Bureau for the "Green Program" to explain the Company's promotion and research and development of Non-Phthalates, such as the technique of hydrogenating DEHP and DINP into DHEH and DHIN, respectively. Furthermore, since October 2015, the Company has been studying and developing DINT, an environmentally friendly plasticizer; the development was approved by the Environmental Protection Agency for New Chemical Substances Standard Registration Level 3 in October 2021. Related work is still being promoted.

Disaster Prevention Training

Each plant not only performs regular disaster prevention training but also participates in joint practice drills from the competent authorities in order for the emergency response teams to better understand the hazardous variables and potential threats in each process. Emergency rescue operations are replicated based on the nature of the tasks, such as fire, poisoning, chemical disaster, and compound catastrophes. In response to poor air quality, the Company partnered with the local environmental protection department this year to organize air pollution emergency response drills.

The Company's emergency response strategy is divided into three phases based on the magnitude of the incident and practical requirements:

Firefighting Self-Defense Team - Plant Emergency Response Organizational Chart



Plant-level emergency response

Divisional-level emergency response

- Vice President of Management Dept. at Mailiao Industrial Complex — Plant Emergency Response Head Commander
  - Command Center (personnel)
    1. Onsite President's Office
    2. Management Office
    3. Safety and Health Division
    4. Department where the abnormality occurs
    5. External Support Unit
  - Assistant Manager at the incident-occurring department — Plant Emergency Response Deputy Head Commander
  - Medical Care Team
  - Supply Team
  - Safety Protection Team
  - Onsite Emergency Response Commander
    - External Supporting Units (In-house Fire Prevention Team)
    - Onsite Fire Prevention Commander
    - Assistant to the Emergency Response Commander
    - Fire Extinguishing Unit
    - Reporting and Communication Unit
    - Evacuation Guidance Unit
    - Safety Protection Unit
    - Medical Care Unit
    - Rescue Unit
  - Reporting and Communication Team
  - Evacuation Guidance Team
  - Other Supporting Units



In-house Fire Protection Team

To ensure that, in the event of a large fire, neighboring plants are instantly contacted and that firefighting equipment and manpower can be used to assist one another. At each plant, in-house fire protection teams have been established. The teams are externally trained and participate in emergency response drills every six months to improve their ability to respond to emergencies.



In-house Fire Protection Team
Onsite Fire Protection Team

In-house Fire Protection Team at Mailiao Industrial Complex
423 members and **2,111** reserve members from FPC, NPC, FCFC, and FPCC

In-house Fire Protection Teams from other plants
544 members

Training
Cooperate with the fire protection team from FPCC to conduct live-fire training at Mailiao Industrial Complex

Training
Personnel are dispatched to Nantou Zhushan Training Center of Natithe onal Fire Agency and Minghu Training Base of Hsinchu City to undergo firefighting skill training

External Transportation Safety

Management approach	Descriptions	2023 Implementations
Evaluation	The transportation contractor for the Company must first pass the "Safety Quality Assessment System (SQAS)" evaluation and acquire a certificate of conformity (every three years).	■ Conducted the 2023 carrier evaluation process, which included three stages: Phase 1 - document review, Phase 2 - interviews, and Phase 3 - on-site inspections at vendor locations. ■ In preparation for the expiration of existing qualified certificates for hazardous chemical carriers in May 2023, the 2024 carrier evaluation has been planned. This includes Phase 1 - document review, Phase 2 - interviews, and Phase 3 - on-site inspections for first-time applicants.
	Qualified contractors must get annual assessments based on their assessment level.(Grade A contractors are evaluated every two years, while grade B contractors are evaluated every year.)	
Education and Training	Regular safety review meetings are held with all plants. On occasion, meetings with contractors are held to examine and analyze all accidents.	Each site holds monthly training sessions to educate transport vendors on traffic incident case studies.
Rescue drill	Each plant regularly holds disaster prevention training Participate in joint drills held by the competent authority from time to time. Participate in joint drills held by the competent authority on a regular basis.	The major drill is the "Taiwan Responsible Care Association's (TRCA) Cross-regional Mutual Aid.

NPC adheres to the various procedures and operating standards established by Formosa Plastics Group to ensure the safety of transportation operations and lower operational risk. These include "Transportation Safety Management Measures" and "Emergency Response Management Measures," which are put into practice through evaluation, education, training, and rescue simulations.

4.3.4 Employee Healthcare

NPC employs systematic thinking and organizational methods to continuously promote health promotion measures to provide employees with a healthy and safe working environment, good training plans, and training systems so that employees have clear goals to follow, allow them to fully utilize their talents, and encourage their willingness to actively participate.

Health Risk Management

In order to create a workplace that allows employees to work in peace, the Company summarizes "psychosocial", "physical", "chemical", "biological", and "human factors" as five major hazards that may lead to occupational diseases based on the characteristics of its own industry and organization, after referring to the five categories of the Ministry of Labor's "Occupational Disease Reference Guide". The company then develops appropriate preventive management activities and offers health inspection items that exceed laws and regulations.

To protect our employees' health, NPC not only implements the health assessment items stipulated by law but also provides four additional examination items that exceed the statutory standards. Furthermore, all employees who work in operations that are more likely to threaten health are subjected to a specific health examination and health classification management. In 2023, no anomalous cases of occupational disorders were discovered in the specific health examinations.

Hazard factors of psychosocial stress: Long working hours, working pressure	■ Identify high-risk populations, schedule medical interviews and health counseling, and modify work content based on physician advice. ■ Consistently carry out health inspection, management, and promotion.
Hazard factors of physical stress: Abnormal temperature, Ionizing radiation	■ Routine health examinations ■ Consistent monitoring of the working environment ■ Provide employee health counseling to raise knowledge of risk factors.
Hazard factors of chemical stress: Dust, organic solvent, strong acid, alkali, etc.	■ Routine health examinations ■ Consistent monitoring of the working environment ■ Provide employee health counseling to raise knowledge of risk factors.
Hazard factors of biological stress: Microorganisms, infectious diseases, etc.	■ Take prompt action to avoid mutual infection if there is a chance of an infectious disease spreading. ■ Enhance publicity and awareness about infectious disease prevention. ■ Plant cleaning, disinfection, and environmental inspections shall be performed on a regular basis by dedicated people from each plant.
Hazard factors of ergonomic stress: Long-term heavy lifting, etc.	■ Identify high-risk populations, schedule medical interviews, and undertake additional reviews and improvements in ergonomic factors if the risks are associated with work. ■ Regularly implement health management methods.

Results In 2023, no anomalous cases of occupational disorders were discovered in the specific health examinations.



Occupational Disease Prevention Measures

The following initiatives have been put in place by the company to comply with the Occupational Safety and Health Act's preventive regulations against emerging occupational diseases: protection of maternal health, prevention of musculoskeletal diseases brought on by repetitive work, prevention of illegal activity while on the job, and prevention of diseases brought on by abnormal workload.

Occupational Disease Prevention Measures

Protection of maternal health
Through hazard assessment and controls, physician assistance, graded risk management, and special work arrangements, female employees are safeguarded from maternal health threats during pregnancy and for one year following childbirth.

Prevention of musculoskeletal diseases brought on by repetitive work
Preventing musculoskeletal illnesses caused by bad posture, excessive exertion, repetitive actions, and other variables through the implementation of relevant ergonomic factor improvement strategies.

Prevention of illegal activity while on the job
To achieve zero violence in the workplace, prevent employees from being threatened or attacked in work-related environments by implementing methods such as danger identification and assessment, job suitability arrangement, hazard prevention, and communication skills training.

Prevention of diseases brought on by abnormal workload
Preventing brain and cardiovascular illnesses caused by irregular work hours, lengthy work hours, frequent business trips and shifts, and other factors. Employees will be provided health counseling, work-hour adjustments, and job content changes to help them manage their health.

Health Promotion Measures

In the plants, medical personnel have been stationed to provide personal health instruction and consulting. Weight management, tobacco hazard prevention, health seminars, preventative healthcare, and injury/illness treatments are all available to employees. Furthermore, medical and health services supplied by Chang Gung Memorial Hospital have been incorporated to improve employees' health awareness even further. To preserve the health of employees, onsite physicians examine the work environment, employees' work habits, and safety protection practices to make ideas for improvement and give associated medical consultation services.



General health examination items that are superior to statutory requirements

- Alpha-fetoprotein test
- Screening for oral cancer
- Screening for prostate cancer
- Cancer embryo antigen test
- Static ECG test
- Breast cancer screening

Specific health examination items

15 items, including noise, ionizing radiation, dimethylformamide, benzene, dust, tetrachloroethane, n-hexane, toluene diisocyanate, butadiene, chromium, manganese, mercury, nickel, arsenic, and formaldehyde.

2023 Implementations

- Employees who underwent a general health examination
  8,876 people
- Employees who underwent a specific health examination
  4,442 people
- Employees who are being supervised by level two or higher management in specific health examinations
  1,720 people
- Employees who participated in health promotion activities
  8,480 people

NPC employee health examination frequency

- Under 30
  Once every 5 years
- 30 to 45
  Once every 3 years
  Partially superior to statutory requirement
- 45 to 65
  Once every 2 years
  superior to statutory requirement
- Over 65
  Once every year

Full Implementation of Automated External Defibrillator (AED) Installation

AED is a device that automatically detects irregular heart rhythms and delivers a shock to restore normal heart function. According to the Ministry of Health and Welfare, if defibrillation is applied within one minute after sudden cardiac arrest due to arrhythmia, the resuscitation success rate can reach up to 90%, decreasing by 7-10% with each additional minute.

Across various sites, a total of 112 AEDs have been installed, and training for AED managers has been completed.

Healthy Diet Promotion

Every month, we publish dietary nutrition facts to support healthy eating. We changed the cooking processes, condiment usage, food selection, and menu with the help of nutritionists at Chang Gung Memorial Hospital. Fried foods account for less than 6% of the total. In 2023, the staff restaurant offered about 1,121 dishes per month, 64 of which were fried (fried dishes ratio was 5.74%).

2023 Achievements in Healthy Workplace and Care Initiatives





Kung San site awarded the 2023 Corporate Sports Certification, with a public award ceremony on October 31, 2023.





Healthy Workplace Certification – Health Promo-tion Mark (awarded to Shulin site, Linkou No.2 site, Hsinkang site, and Nan Ya PCB Co.)

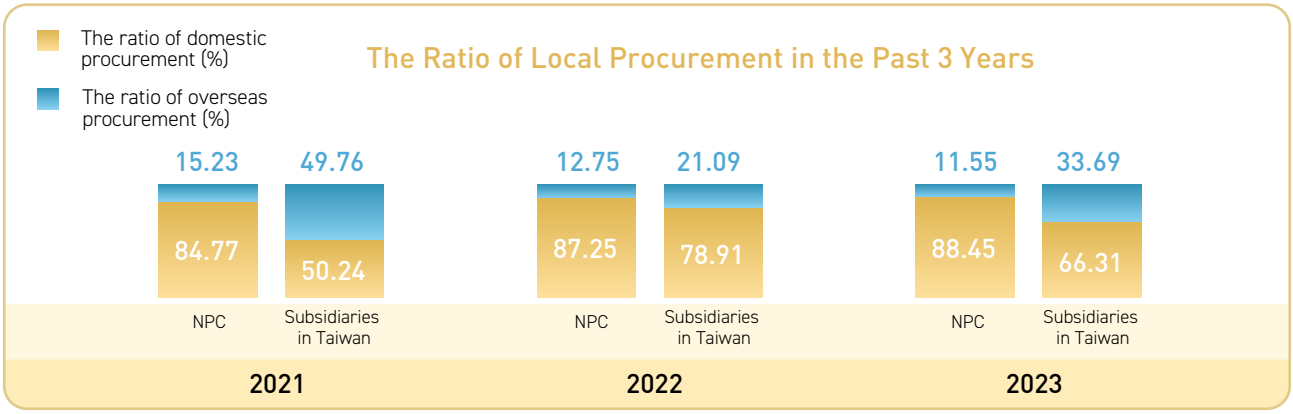


Actively participated in the "National Workplace Safety and Health Week" series of events organized by the Occupational Safety and Health Administration.

4.4 Supplier and Contractor Management 2-6

Prioritizing Local Procurement Principle

The procurement and contracting policies of the Company prioritize local procurement and contracting. Foreign procurement and tendering occur only when local ones are unavailable. The domestic procurement ratio during the last three years is as follows:



Furthermore, relevant operations will continue to leverage electronic transactions to fulfill the goal of developing an open, fair, and just procurement and contracting framework. Through the sound contractor management method, the Company can eliminate subpar contractors while fostering long-term excellent partners.

4.4.1 Supplier Management

Supplier Sustainability Issues

The Company follows the philosophy of perpetual commercial operation and fair-trade during procurement processes. The Company is committed to requiring suppliers to adhere to environmental, occupational, and human rights standards. If a supplier fails to meet these conditions, their items will be rejected, and the supplier will be included in the vendor review. The following is the procurement procedure:

Supplier procurement process

Establish supplier database → Requesting department files procurement application → Open ten-der from the pur-chasing depart-ment → Formulate and sign contracts → Delivery, inspection, payment

Sustainable regulations

- Supplier/Contractor Social responsibility Commitment
- Supplier/Contractor social responsibility Survey
- Formosa Plastics Group Vendor Integrity, Anti-Corruption, and Confidentiality Agreement

Sustainable regulations

Check the following delivery conditions based on procurement needs:

- RoHS Compliance
- Labeling or marks for hazardous substances are included
- Prioritize the procurement of products manufactured by the disabled
- National industry safety standards
- Used containers or loading equipment should be properly recycled
- Non-radioactive certificates are included
- Obtained ISO certificate

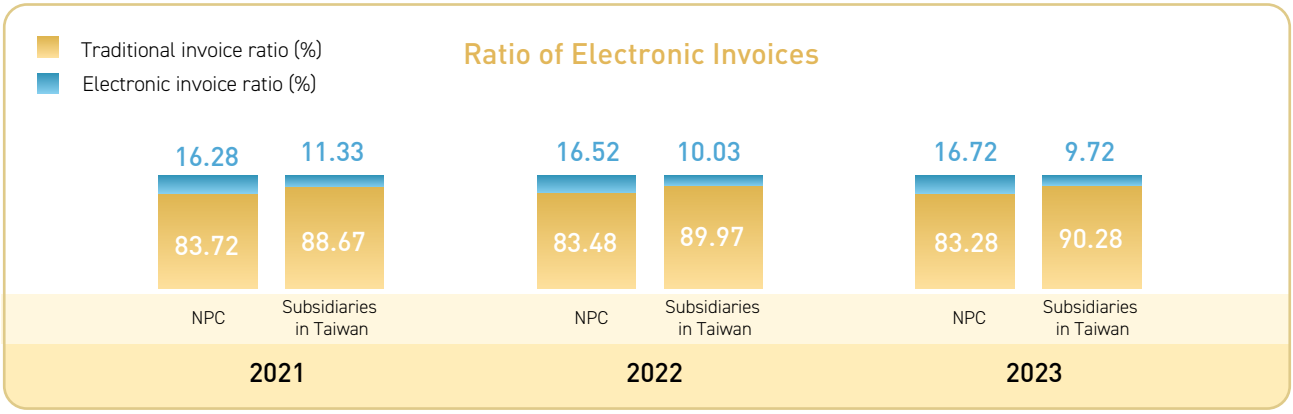
Supplier evaluation

Sustainable regulations

The following specifications are used to evaluate the vendors:

- Delivery (installation) overdue
- Poor quality
- Violation of safety requirements/social responsibility commitment

Furthermore, traditional invoices have been replaced by e-invoices in order to cut expenses and improve management efficiency. So far, more than 83.28% of suppliers have used e-invoices, which has greatly saved both parties' time and costs of manual labor, as well as the costs of stamps and paper. The procurement and contracting policy of NPC and its Taiwan subsidiaries primarily focuses on local procurement and contracting. Only when local sourcing is unavailable do we proceed with procurement and bidding from overseas. The domestic procurement ratio for the past three years is as follows:



Contractor Sustainability Issues

A contractor rating system has been established to strengthen safety management, control contractor quality, improve contractor occupational safety requirements, and avoid injuries to their personnel.

The contracting department refers to the contractor rating system throughout the tender process. Furthermore, the Company has designated safety and health management expenses as a compulsory budget expense for the outsourced operation. During the tender process, the Company examines safety and health management expenses in addition to contract specifications and computer control. To avoid contractors compromising safety and health management for price considerations, management charges cannot be less than the budget.

Suppliers

In order to distinguish between manufacturer levels and give a reference for price comparison and final purchase in purchasing instances, the quotation data and delivery records of manufacturers that have delivered more than 6 pieces each month for nearly two years are computed and scored.

Appraisal items

- Delivery (installation) overdue
- Defective rate
- Violation of industrial safety regulations/social responsibility commitments



Contractors

Collect pertinent data for different manufactur-ers of professional engineering, such as looking into and assessing factory locations, construc-tion machinery and equipment, construction site safety management capabilities, technical ca-pabilities, past performance, etc.

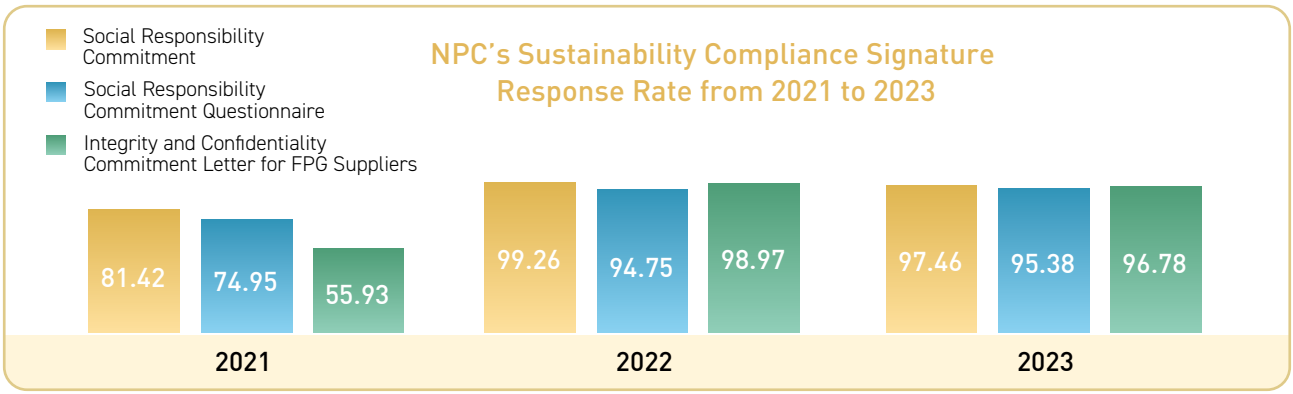
Appraisal items

- Factory site
- Site safety management capability
- Past performance
- Construction schedule management
- Construction equipment
- Technical capabilities
- Construction quality
- Legal contract

2023 Supply Chain Management Practices

Since October 1, 2019, the "Supplier/Contractor Social Responsibility Commitment" and "Supplier/Contractor Social Responsibility Survey" have been developed one at a time and are given to vendors when they log into the Formosa Technology E-Market Place or place an order. Vendors are required to sign and respond to documents, as well as follow any restrictions. In 2023, there were 3,226 domestic suppliers, of which 3,144 signed the Social Responsibility Commitment, achieving a response rate of 97.46%. A total of 3,077 suppliers completed the "Social Responsibility Commitment Questionnaire," with a response rate of 95.38%.

Simultaneously, to ensure that dealers respect the FPG Group's procurement and outsourced operating standards, fiercely reject the occurrence of collusion in bidding (quotation), bribery, favoritism, and fraud. Since the "Integrity and Confidentiality Commitment Letter for FPG Suppliers" was developed, suppliers have been required to download the commitment letter from the supplier section of Formosa Technology E-Market Place, sign it, and reply to the Company; if the letter is not responded to, it will be included in the supplier's ranking assessment, which is set as the priority reference when ordering. There were 3,226 domestic purchase producers in 2023, with 3,122 having signed the letter of commitment and a response rate of 96.78%. We will continue to demand non-responding producers to adhere to our company's policies in the future.



4.4.2 Contractor Safety Management

To protect the safety of the workplace environment, the Company requires contractors to follow occupational safety and health laws and regulations, and safety and health management staff have been set up. Before entering the plant, the contractors must complete safety and health instructions as well as danger identification training. The company also encourages contractors to be self-sufficient in order to accomplish zero disaster targets through mutual trust and cross-supervision. The Company has used the following management techniques to provide a platform that encourages constructive, bilateral communication and coordination:

Organizing Coordination Meetings

To work safely, exchange information with vendors about workplace hazards and any improvement proposals.

Personnel Access Management

Access control can be used to limit the number of workers. Furthermore, in order to improve safety and health awareness, contractors must be taught, trained, and tested before entering the workplace.

Organizing Toolbox Meetings

Contractors will be warned of potential risks and hazards that may occur during op-erations before enter-ing the plant each day. In addition, the mental status of the workers is checked on a daily ba-sis to avoid work-related incidents.

Implementing Regular Audit

Contractors must follow the Company's safety and health rules as well as applicable legislation. If an anomaly is detected during the audit, a review meeting will be scheduled the same afternoon to resolve the issue and prevent it from occurring again.

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

Item	Promotion periods	Main features	2023 Implementation
Safety Supervisor	Since 2012	■ Conduct safety supervision before, during, and after construction ■ Accompany the contractor in conducting self-inspection before the operation, and report the abnormal construction of the contractor	■ No occupational accidents involving contractors occurred, indicating that safety inspectors have effectively enhanced and strengthened pre-, mid-, and post-operations inspections and supervision. ■ There is a continued strict requirement for safety supervisors to carry out thorough construction oversight, with plant safety personnel conducting regular walkthrough inspections. If any irregularities are found, disciplinary action will be considered for inadequate supervision per company regulations.

Item	Promotion periods	Main features	2023 Implementation
Safety & Quality Assessment System (SQAS)	Since 2011	■ Contractors who fail the SQAS evaluation may not undertake or pick up hazardous substances from NPC ■ 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	Implementation of the 2023 carrier evaluation process: Phase 1 – document review, Phase 2 – interviews, and Phase 3 – on-site inspections at ven-dor locations.
Mailiao Industrial Complex Occupational Safety Joint Inspection	Since September 2011	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	■ No occupational accidents involving contractors occurred in Mailiao, indicating that supervisory efforts have been effectively strengthened. ■ On-site joint inspections and supervisory rigor continue to be enhanced, with audits prioritized for higher-risk activities (such as confined spaces and hazardous material exposure), ensuring thorough inspection and strict enforcement.
Education and Training	Since 2006	The plant site management office (section) shall take into consideration the training re-quirements of the plant contractors, hold meetings with pertinent depart-ments to determine training dates and training times, etc., assign plant safety office or plant safe-ty and health man-agement profes-sionals to guide the training programs and assess the training personnel's performance	■ Contractor training has been completed for a total of 1,387,464 hours. ■ No occupational accidents involving contractors were recorded in 2023. Plans are in place to continue strengthening contractor training and evaluations to ensure an increased safety awareness among personnel.



chapter 5

The Pursuit of Co-prosperity and a Better Homeland

5.1 Local Engagement 132
5.2 Social Contribution 140



NPC is dedicated to social investment, actively encourages good neighborliness and local care, and collaborates with FPG in taking part in numerous public welfare activities in order to have a social impact, support community development, and work together to create a sustainable and beautiful future.

Strategies

- Neighborhood outreach
- Expand social engagement



United Nations Sustainable Development Goals (SDGs)



Did not meet the goals ☑ Goals met ★ Exceeded expectations

Neighborhood Outreach and Social Engagement Expansion

2023 Goals	2023 Implementations
■ 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 disadvantaged groups ■ NPC organized the "Plant Trees for a Thousand, Shade for Future Generations" series of activities, inviting employees and their families to participate in tree planting for carbon reduction, promoting environmental ESG initiatives.	★ The Shulin site hosted a performance by the Apple Children's Theater on June 10, with approximately 1,600 attendees. ★ The Jinhsing site completed a performance by the Ming Hwa Yuan Theater Troupe on December 22, with around 1,000 attendees. ☑ In 2023, a total of 903 people participated in environmental volunteer activities (with 1,396 volunteer hours), while 1,416 people took part in charitable activities for Ren-Ai Services (totaling 6,568 volunteer hours). ★ A tree-planting event was held at the Formosa Yangmei Farm on Arbor Day in March 2023.

Short-term Goals (2024 Goals)	Medium- and Long-term Goals (2025~2030)
■ 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 disadvantaged groups ■ NPC organized a number of "Thousands of people plant the trees in whose shade another generation rests" events and invited staff members and their families to plant trees with us to reduce carbon emissions and carry out environmental ESG initiatives. ■ Continue organizing or participating in various public welfare activities related to environmental protection and ecological education.	■ Continue to organize various neighborhood outreach and charity activities ■ Enhance the promotion of traditional arts

The Company has long taken on the role of a corporate citizen, investing in the community in order to uphold its corporate social responsibility. Through the influence of Formosa Plastics Group (FPG), we want to build a vision of shared prosperity and a better country. To protect the environment at the Mailiao Industrial Complex, for instance, FPG not only established specialized research groups to carry out environmental monitoring and effect assessment but also offered people free healthcare and promoted environmental literacy.

The management teams at every plant also arrange local outreach initiatives such as occasional visits, traditional culture promotion, charitable work, and assistance for underprivileged groups. Employees are also encouraged to participate in local environmental cleanup efforts and charity flea market events as corporate volunteers, which will improve relationships and communications with the community. Additionally, it works in tandem with FPG's corporate plans to promptly give back to society, pushing initiatives such as the "Formosa Lohas Circle" and collaborating with seven foundations and charitable trusts to carry out various charitable endeavors.

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. Using the northern sites in Taiwan as an example, the community outreach initiatives we supported in 2023 were as follows:

Item	Collaborative Unit	Promotion Method	2022 Results
Visits	■ Local village offices ■ Residents	■ Strengthening communication through occasional visits. ■ The residents are invited to plant activities to foster stronger ties	■ Annual plan executed 48 times. ■ Traditional cultural promotion activities organized at each site invite local communities and residents to participate.
Traditional Culture Promotion	■ Apple Theater (Shulin site) ■ Ming Hwa Yuan Arts and Culture Group (Jinxing site)	Sponsoring theater companies to perform at the plants	■ On June 10, the Shulin site hosted an Apple Children's Theater performance, with approximately 1,600 attendees. ■ On December 22, the Chin-Hsing site hosted a Ming Hwa Yuan Theater performance, with around 1,000 attendees.
Community Outreach	■ Township Office ■ Village Office ■ Community development associations	Participate actively in township, village, and community development association events to foster connections with the local communities.	■ Sponsorship amounted to NT$2,793,361.
Environmental Protection Volunteering	Employees and their families of each plant	Enlist employees of each plant and their families to do environmental protection volunteering work to keep the plants as well as the surrounding areas clean	■ A total of 47 environmental volunteer activities of street sweeping were held, of which 903 volunteers participated. ■ On March 11, 12, 18, and 19, tree-planting events for Arbor Day were held at the Formosa Yangmei Farm, with around 900 employees and family members participating to support tree planting, carbon reduction, and earth care.
Charity Service	■ Charity Service Club of Welfare Committee ■ Labor union ■ Local social welfare groups	■ Pay frequent visits to nursing homes and orphanages. Products are gathered and given to social welfare institutions. ■ Flea markets were held in collaboration with the Charity Service Club of Welfare Committee and local public welfare groups. The entire amount was contributed. ■ Assist underprivileged groups in requesting emergency relief from FPG's Ching Pao P.D. Charitable Foundation.	■ A total of 27 charity service activities were organized with 1,416 participants, and total donations amounted to NT$ 3,150,000. ■ The "Chin-Lao Foundation" received 7 emergency assistance applications, granting a total of NT$460,000 in aid.





Community Feedback

New Taipei City, Taishan District: Year-End Warmth Distribution and Home Environment Organization for Elderly Living Alone

— Social Affairs Section Chief Hu Jianwen, Taishan District Office —

The Taishan District Office organized activities for year-end warmth distribution and home organization for elderly individuals living alone. We would like to express our gratitude to the NPC LinKou site volunteers for their long-term care of local seniors. In addition to donating supplies, they also mobilized to clean the living environments of these elderly individuals. With the approach of the New Year, having a tidy, clean, and safe living space allows vulnerable groups to feel the warmth of society and fulfills corporate social responsibility.





Community Feedback

Monthly Elderly Group Meals in Dongshan and Shanjia Villages, Shulin District: Sponsorship of Food Expenses

— Dongshan Village Chief Gao Jian, Shanjia Village Chief Zhang Jin-Zong —

NPC is a good neighbor in the community, sponsoring food expenses for the monthly elderly group meals in our neighborhood. We sincerely thank NPC for their support and contributions to the elderly group meal activities, fulfilling their corporate social responsibility.





Fulfilling Responsibilities and Achieving Community Co-Prosperity-"Formosa LOHAS Circle" and the Special Actions for Ecology Maintenance

In order to promote local economic development, promote local tourism, and foster local co-prosperity, FPG plans to use the idea of a "circle" to bring together local resources near the plant site, including communities, small farmers, businesses, and local governments. This will help to infuse Taiwanese society with more positive energy.

Taoyuan is where the "Formosa LOHAS Circle" begins. There are currently five LOHAS circles in Taiwan: Taoyuan, Yilan, Yunlin, Kaohsiung, and Changhua. Each has developed a variety of travel activities. Please refer to the "Formosa LOHAS Circle" "Live Circle" official website for further details.

Official website for "Formosa LOHAS Circle"

2023 Performance

In response to global ESG biodiversity issues, NPC has followed FPG to implement various initiatives. This includes commissioning professional organizations to conduct ecological surveys in areas such as Wild Area No. 2 and Yangmei Farm, as well as promoting numerous environmental protection, restoration, and educational efforts. By partnering with experts, scholars, and the public, NPC aims to create a sustainable and environmentally friendly atmosphere that protects biodiversity. The company is also committed to laying the groundwork for future generations to cultivate a green and sustainable living environment. The main measures are as follows:

Ecological Risk Assessment and Investigation

NPC conducts ecological surveys and risk assessments based on risk attributes and operational needs, prioritizing the following operational areas:

Mailiao Sixth Naphtha Cracking Site (Petrochemical Park)

To understand the ecological changes and environmental impact of the Mailiao Site on nearby flora and fauna, NPC has commissioned professional organizations since 2007 to conduct surveys on avian species, mammals, amphibians, reptiles, butterflies, and plant ecology. This aims to assess the status of these organisms within the survey area and evaluate the environmental impact following the operation of the Sixth Naphtha Cracking Plant. Historical survey results indicate that the number of plant species remains stable, while animal populations fluctuate primarily due to seasonal changes. There have been no significant changes attributed to the establishment of the Mailiao Plant.

Furthermore, the Mailiao Plant strictly controls wastewater treatment, ensuring compliance with standards before discharge. In addition to automated monitoring of wastewater temperature, conductivity, and pH, water samples are regularly collected for testing. Historical monitoring results have consistently met discharge standards, and the presence of Chinese white dolphins has been observed multiple times in nearby waters, indicating no significant impact on marine ecology.

Linkou Plant (Invested by NPC's Subsidiary, Nanya Technology Corporation)

Nanya Technology Corporation, an investment of NPC, is located adjacent to the Linkou Plant. In line with ESG initiatives, the company is implementing the Taskforce on Nature-related Financial Disclosures (TNFD) related operations. Initially, the LEAP methodology is being executed to compare and analyze biodiversity information layers within two kilometers of the operational site of Nanya Technology Corporation, revealing no areas of high biodiversity sensitivity.

Environmental Protection, Restoration, and Education Projects

Formosa Plastics Group promotes various environmental protection, restoration, and educational initiatives in northern, central, southern, and eastern Taiwan. Among them, NPC has donated the Wilderness No. 2 area to the local NGO "Wildlife Conservation Association," which focuses on ecological conservation. NPC collaborates with the Formosa Yangmei Organic Farm to implement multiple projects, detailed as follows:

Protecting Natural Ecosystems: Formosa Plastics Group promotes sustainable ecological conservation activities.



Conducted an ecological survey at Wilderness Site No. 2, discovering freshwater crabs in the stream.



Environmental Education at Yangmei Farm: Collaborated with Yangmei High School students to construct an ecological pond, laying the groundwork for the restoration of Taiwan's native aquatic plants.



With the assistance of the Wilderness Conservation Association, Formosa Plastics Group and the Formosa Plastics Group Ching Pao Charitable Foundation collaborated with the Yunlin County Government to thin out mangroves and protect Taiwan fiddler crabs.



Lungtan Lake Ecological Classroom: Volunteers conducted ecological education at Lungtan Lake and activities to reuse mile-a-minute weed.



"Protecting the Ocean, Formosa Plastics Ching Pao Leads the Way!": Donation of the marine cleanup vessel Formosa Plastics Ching Pao Ocean Guardian.

Note: The ecological survey at Wilderness Site No. 2 and the environmental education activities at Yangmei Farm are related to NPC.

To promote organic education, NPC considers the "Yangmei Organic Farm," which has long utilized organic farming practices that are land-friendly. Collaborating with Formosa Plastics, NPC has planned a series of agricultural and ecological education activities utilizing the idle land surrounding the Yangmei Organic Farm and combining it with the Organic Education Center. These activities welcome various groups to promote the concepts and spirit of organic farming, environmental education, and land stewardship. Additionally, to preserve Taiwan's native species, NPC partners with the Yangmei Organic Farm, Yangmei High School, Yangmei Leisure Agriculture Zone, and the Taiwan Native Fish Conservation Association.

NPC has also invited plant expert Huang Lijun from the Wildlife Conservation Association to assist in conducting seasonal plant surveys. An ecological pond has been created within the Yangmei Organic Farm to teach students how to build an ecological pond, understand the importance of habitat protection, recognize the threats posed by invasive species, and restore Taiwan's native aquatic plants. This initiative aims to provide the Yangmei area with an environmental education venue while contributing to biodiversity conservation and the preservation of Taiwan's native species. The efforts put forth by NPC in 2023 are detailed below:

Project	Input		Outpout		Influence
Item	Resource	Holding times	Number of participants (Persons)	Number of volunteer services	substantial influence
A Organic Ecological Environmental Education Promotion Activities and Ecological Pond Maintenance Management B Working Holidays and Ecological Pond Construction	Total Investment: NT$1,065,858	6	2,470	-	■ Insect specimen donation ceremony. ■ Collaboration with Yangmei High School for the restoration of endangered plant species. ■ Visits to the farm by the employee welfare committee of the Formosa Plastics Building and the residents of Chang Gung Medical Center and Health Culture Village. ■ Collaboration between Yangmei High School teachers and students for the organic fertilizer cultivation science exhibition activity. ■ Collaboration with Yangmei High School and Chuhuangkou Farm for the restoration of endangered plants. ■ Grass Jelly Carnival.
C NPC Thousand-Person Tree Planting Event	-	1	950	-	■ The event primarily features seedlings of three tree spe-cies: wax tree, Taiwanese beech, and sweet gum. ■ Create approximately 13,378 kilograms of carbon storage. ■ Allows employees to learn environmental education knowledge and pass on en-vironmental awareness to the next generation.
D Habitat Protection at Wildland No. 2	Participation by 54 people in 10 sessions, totaling 540 participants	10	140	16	■ Survey area: 35,461 square meters. ■ Number of species observed: 1,632 observation records / 409 identified species / 147 identifiers participated. ■ Protecting habitats to safeguard biodiversity and establish ecological value.

Special Action - Collaborate with NGOs to preserve the environment

To respond to the global ESG biodiversity issues, NPC has donated a piece of land (located in the Xiuzhan section of the Xizhi District and belonging to the Dajian Mountain area) to the domestic NGO "Wildness Conservation Association," which has long focused on ecological conservation, to jointly promote the mission of "Guarding Habitats." In addition to donating the land, NPC has also taken the initiative to bear the land value increment tax resulting from the donation. On June 25, 2022, the company was awarded a certificate of appreciation. To date, the company has maintained a monthly collaboration with the Wildness Conservation Association for ecological surveys. In the future, we will continue to protect the Wildness No. 2 area together and promote environmental education, laying down roots and sharing the valuable survey results and ecological highlights of the No. 2 area with more people. The preliminary plan is as follows:

Ongoing Project

Wildness No. 2 Area Ecological Survey



December 15, 2023: Wildness Conservation Association and company colleagues conducted the monthly environmental and ecological survey in Wildness No. 2 Area.

Use document survey results and highlights to produce the video.



Fresh animal droppings are often found during ecological surveys, representing the richness of biodiversity in Wildness No. 2 Area.

Future Plan

- Collaborate with the Wildness Conservation As-sociation to hold an exhibition and showcase the video.
- Promote envi-ronmental educa-tion and, if nec-essary, carry out ecological resto-ration Open No. 2 Area as a site for pro-moting environ-mental education and ecological restoration.



5.1.2. Sustainable Development of Mailiao

Environmental Impact Assessment of Mailiao Industrial Complex

In light of public concern about the impact of air emissions from the Mailiao Industrial Complex on air quality, FPG has implemented measures to monitor environmental conditions in real-time around the complex and assess whether factory discharge may affect marine ecology. To achieve this, specialized research committees have been established: the "Air Quality Impact Assessment and Advisory Committee for Mailiao Industrial Complex" and the "Marine Ecology Impact Assessment and Advisory Committee." Following scientific evaluations, air quality monitoring stations were installed at sensitive, high-population points near the complex in accordance with legal requirements. Additionally, all legally required and voluntarily managed air quality monitoring facilities within the complex were integrated to form an eight-tier air quality monitoring network. This network prevents pollution from spreading internally and identifies sources externally, supporting efforts to protect ambient air quality and reduce and improve air pollution within the complex.

"Corporate Social Responsibility" section on FPG's website

Water discharge is continuously monitored 24 hours a day, meeting the Class A Marine Environmental Quality Standards along the Mailiao coastline. Quarterly water quality and ecological surveys have shown no impact on nearby marine water quality, and Mailiao Harbor has received Green Port certification, showcasing a vibrant ecosystem where the presence of white dolphins has been observed. For further details, please refer to the Formosa Plastics Group website sections "Beauty of Sixth Naphtha Cracker" and "Environmental Protection and Safety."

Healthcare for Mailiao Residents

Since 2009, National Cheng Kung University has been hired to carry out 64 health risk evaluations resulting from dangerous air pollution in order to protect locals' health. The simulation results show that all of the maximum total noncarcinogenic hazards of the evaluations are less than 1, indicating that the impact on human health is acceptable. The Yunlin Chang Gung Memorial Hospital was also constructed. We hope to improve the healthcare and medical quality in the surrounding communities and establish Mailiao as the benchmark for the medical community by combining the medical and educational resources within the Chang Gung Memorial System.

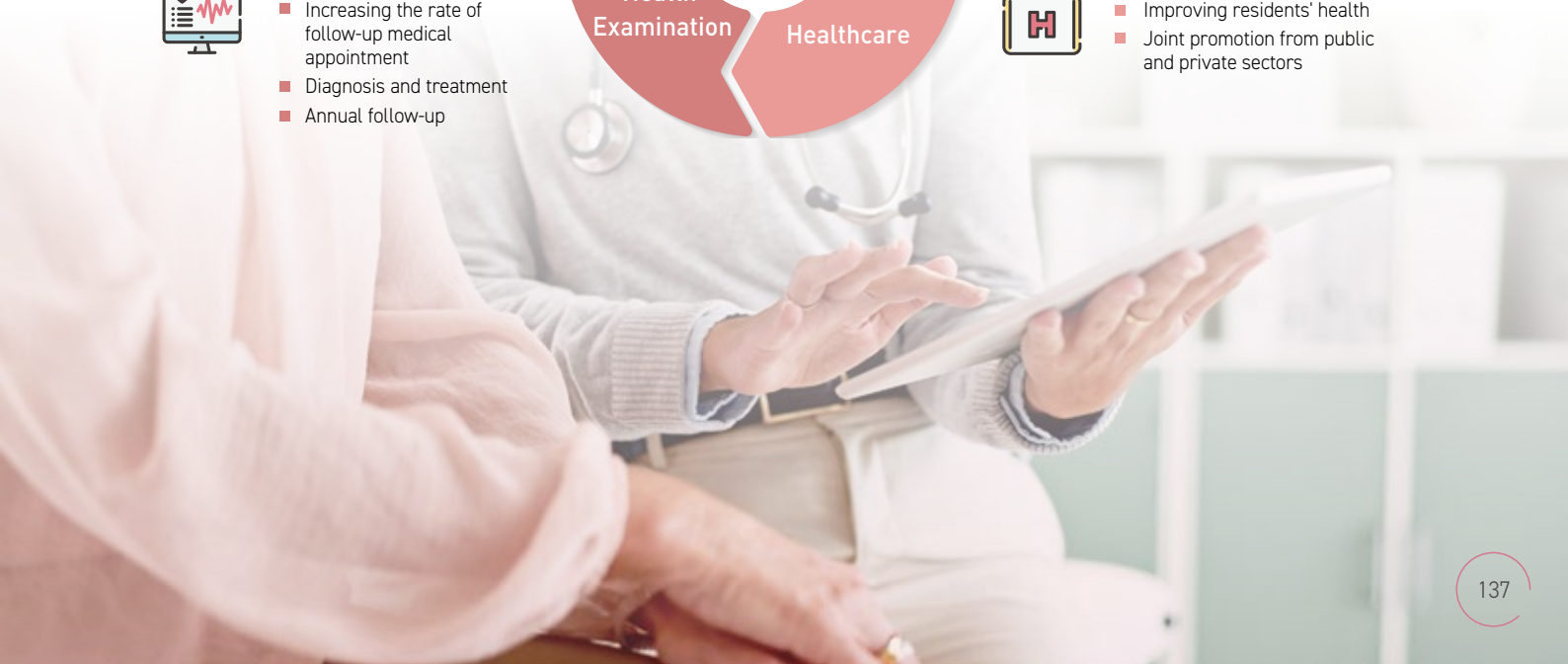
- Building and maintaining health database
- Health data analysis
- Results sharing



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

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

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



Healthcare Progress in 2023

Residents

Medical service

There were 113,839 outpatient visits, 12,461 ER visits, and 17,697 inpatient beds/day. The scope and size of services will be steadily expanded in order to continually improve medical quality in Yunlin coastal areas.

Health examina-tions and fol-low-up diagnosis and treatment

In 2023, 15,167 residents took part in health examinations, and 1,420 were tracked and treated for abnormal health examinations, helping residents to better understand their health state through health examinations, detect potential illness threats early, and receive early treatment.

Health education activities

Residents of five townships are screened for significant ailments such as "hepatitis," "metabolic syndrome," and "chronic obstructive pulmonary disease." In 2023, a total of 2,256 residents from 5 townships participated in disease screening activities, according to statistics.
In 2023, 10 communities and 242 elders were joined to execute the "Presentation of the Summer Camp for the Elderly," a continuation of summer camp activity for the elderly. It is thought that encouraging experience sharing will have the effect of attracting better ideas and making everyone healthier as a group.

Teachers and students

Health education activities

In 2023, health education activities were conducted in seven townships, engaging 6,630 community members. Additionally, tobacco prevention courses were provided to 1,260 elementary and junior high school students.
Collaborating with Mingli Elementary School in Mailiao Township, Luchang in Sihu Township, Dongshi Elementary School in Dongshi Township, and Sihu Elementary School in Sihu Township, a total of 439 teachers and students participated in the TTF Fun Movement School Initiative, promoting exercise habits among youth and actively advancing community health.

"Community Healthcare" on FPG's website

Note: 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	Noise Management	Air Quality
Purpose To maintain good traffic conditions in communities near Mailiao Industrial Complex and ensure the safety of school children.	**Purpose** To effectively manage noises from production processes at Mailiao Industrial Complex.	**Purpose** To preserve the air quality in Yunlin County.
Practices Implement a vehicle diversion system for access to and from Mailiao Industrial Complex, and arrange volunteers to help maintain traffic safety at ad-jacent intersections.	**Practices** Perform regular noise monitoring operations in nearby areas..	**Practices** Diesel vehicles are required to submit an emission certificate when applying for Mailiao Industrial Complex's access permit.
Results Traffic is smooth near Mailiao Industrial Complex during commuting hours, and the safety of school children has been improved.	**Results** The monitoring results show that the operation of Mailiao Industrial Complex has not had a significant noise impact on the local community.	**Results** In 2023, 212 diesel vehicles were intercepted all were qualified.

According to the statistics of diesel vehicle exhaust inspection conducted by the Environmental Protection Bureau of Yunlin County in 2023, 212 diesel vehicles on the roads around Mailiao Industrial Complex were intercepted and 82 were inspected, all were qualified. 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 Intercep-tions	Failure Rate of Traffic Volume
2020	1,511	597	82	82	0.0%	0.0%
2021	1,502	167	85	84	0.6%	0.01%
2022	1,341	163	82	82	0.0%	0.0%
2023	2,470	212	82	82	0.0%	0.0%

Note 1: Traffic volume: the quantity of diesel vehicles that passed through the inspection section during the Environmental Protection Bureau's inspection period.
Note 2: Number of interceptions: the number of diesel vehicles that the Environmental Protection Bureau stopped and examined at the side of the road.
Note 3: Number of inspections: the number of diesel vehicles that are intercepted that also generate black smoke and are inspected.
Note 4: Number of unqualified vehicles: refers to a vehicle that is being inspected that does not meet the statutory exhaust and opacity emission standards for diesel vehicles.

Promoting Local Industry

FPG commissioned experts to provide recommendations to locals who work in the agriculture and fishing industries in the Mailiao, Taixi, Dongshih, Sihu, and Kouhu areas in order to protect their livelihood and realize our vision of local co-prosperity. Our objective is to raise the economic value of agricultural and fishing products. Additionally, we want to encourage the sustainable management of local fisheries and foster intergenerational prosperity in the 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

FPG has actively engaged with the government and a number of private organizations to better understand social issues and to care for and aid underprivileged groups in order to put the two founders' philosophies into practice. FPG keeps helping those in need by providing resources for education, healthcare, and social welfare. The Group Administration of FPG plans all significant charitable initiatives, and NPC promptly promotes and carries out pertinent programs. Please see "Foundation and Charity Trusts" on the FPG website for further information on how they are implemented.

"Foundation and Charity Trusts" on FPG's website

5.2.1 Medical and Educational Promotion

The two FPG founders believed Taiwan lacked adequate medical resources. They made the decision to start a non-profit teaching hospital at the level of a medical center based on their goal to give back to society. After 40 years of arduous work, they have successively established the Chang Gung Memorial Hospitals in Taipei, Linkou, Keelung, Kaohsiung, Chiayi, Taoyuan, and Yunlin, offering integrated healthcare including preventive medicine, acute care, chronic care, traditional Chinese medicine, long-term care, and wellness community.

Beginning in 1963, Ming Chi Technical College (now known as Ming Chi University of Technology), Chang Gung College of Medicine (now known as Chang Gung University), and Chang Gung Institute of Nursing (now known as Chang Gung University of Science and Technology) were successively established to cultivate talent in the fields of industry, medicine, and nursing.

長庚醫療財團法人 Chang Gung Medical Foundation

5.2.2 Social Assistance

The two FPG founders established seven foundations and charitable trusts as part of their active involvement in promoting social welfare. FPG works to reduce personnel and administrative expenditures in order to focus donations on social welfare and needy groups. Additionally, FPG engages with academic institutions, professional associations, and experts to advance numerous social welfare initiatives that adhere to the principles of "comprehensive, thorough, and systematic".

"Foundation and Charity Trusts" on FPG's website

Foundations and Charitable Trusts

- Wang Chang-Gung Charitable Trust Fund — Founder: Mr. Yung-Ching Wang
- Wang Jhan Yang Charitable Trust Fund — Founder: Mr. Yung-Tsai Wang
- Ching Pao Charitable Trust Fund — Founder: Ms. Pao-Chu Lee
- Wang Jhan-Yang Social Welfare Foundation — Founder: Mr. Yung-Ching Wang, Mr. Yung-Tsai Wang
- Ching Pao P.D. Charitable Foundation — Founder: Mr. Yung-Ching Wang
- Ming-De Foundation — Founder: Mr. Yung-Ching Wang, Mr. Tsung-Han Shen
- Jin-che Indigenous Foundation — Founder: Mr. Tian-Tsai Lee, Mr. Chao-Lin Yang

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

Appendix 1	Comparison of International Sustainability Disclosure Standards	142
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Appendix 3	Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies Comparison Table	150
Appendix 4	Independent Assurance Opinion Statement	152



Appendix 1 International Sustainability Disclosure Standards Comparison

i. Global Reporting Initiative (GRI) Comparison Table

Statement of Use	Nan Ya Plastics Corporation has reported in accordance with the GRI Standards for the period from January 1, 2023, to December 31, 2023.
Use of GRI 1	GRI 1: Foundation (2021)
Applicable GRI Sec-tor Standards	NA

GRI 2: General Disclosures 2021

Disclosure Indicators		Reference Sections	Page	Note
2-1	Organizational details	About This Report About Nan Ya Plastics	P.1 P.6	
2-2	Entities included in the organization's sustainability reporting	About This Report	P.1	
2-3	Reporting period, frequency and contact point	About This Report	P.1	
2-4	Restatements of information	About This Report	P.1	No restated information
2-5	External assurance	About This Report	P.1	
2-6	Activities, value chain and other business relationships	About Nan Ya Plastics 2.1 Diversified Product Application 4.4 Supplier and Contractor Management	P.6 P.47 P.126	
2-7	Employees	4.2 Talent Training and Development	P.103	
2-8	Workers who are not employees	4.2 Talent Training and Development	P.103	
2-9	Governance structure and composition	1.1 Remarkable Governance of Nan Ya Plastics	P.30	
2-10	Nomination and selection of the highest governance body	1.1 Remarkable Governance of Nan Ya Plastics	P.30	
2-11	Chair of the highest governance body	1.1 Remarkable Governance of Nan Ya Plastics	P.30	
2-12	Role of the highest governance body in overseeing the management of impacts	1.1 Remarkable Governance of Nan Ya Plastics	P.30	
2-13	Delegation of responsibility for managing impacts	About This Report 1.1 Remarkable Governance of Nan Ya Plastics	P.1 P.30	
2-14	Role of the highest governance body in sustainability reporting	About This Report 1.1 Remarkable Governance of Nan Ya Plastics	P.1 P.30	
2-15	Conflicts of interest	1.1 Remarkable Governance of Nan Ya Plastics	P.30	
2-16	Communication of critical concerns	1.4 Issues of Special Concern	P.44	
2-17	Collective knowledge of the highest governance body	Identification of Material Topics and Stakeholder Engagement	P.14	
2-18	Evaluation of the performance of the highest governance body	1.1 Remarkable Governance of Nan Ya Plastics	P.30	
2-19	Remuneration policies	1.1 Remarkable Governance of Nan Ya Plastics 4.2 Talent Training and Development	P.30 P.103	
2-20	Process to determine remuneration	1.1 Remarkable Governance of Nan Ya Plastics	P.30	
2-21	Annual total compensation ratio	1.1 Remarkable Governance of Nan Ya Plastics	P.30	

Disclosure Indicators		Reference Sections	Page	Note
2-22	Statement on sustainable development strategy	Message from the Chairman	P.5	
2-23	Policy commitments	Management of Sustainability Issues in Each Section	P.25, 46, 63, 100, 131	
2-24	Embedding policy commitments	Management of Sustainability Issues in Each Section	P.25, 46, 63, 100, 131	
2-25	Processes to remediate negative impacts	Management of Sustainability Issues in Each Section	P.25, 46, 63, 100, 131	
2-26	Mechanisms for seeking advice and raising concerns	1.1.3 Integrity Management and Anti-corruption 4.2.2 Employee benefits and care	P.35 P.107	
2-27	Compliance with laws and regulations	1.2.2 Legal Compliance	P.40	
2-28	Membership associations	External Association Participation	P.9	
2-29	Approach to stakeholder engagement	Stakeholder Communication Channels and Frequency	P.19	
2-30	Collective bargaining agreements	4.2.2 Employee benefits and care - Valuing Employee Feedback	P.110	Although the company does not have collective bargaining agreements, it listens to employee feedback through unions and labor-management meetings, fostering harmonious labor relations.

GRI Standard

Topic	GRI Indicator Reference	Section Reference	Page Number	Omission/Notes
GRI 3: Material Topics 2021	GRI 3-1 Process to determine material topics	Identification of Material Topics and Stakeholder Engagement	P.14	
	GRI 3-2 List of material topics	Identification of Material Topics and Stakeholder Engagement	P.14	
Material Topic: Integrity in Business Operations and Governance				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	1. Ongoing Sustainable Governance Strategy	P.26	
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	1.1.3 Integrity Management and Anti-corruption 4.4.1 Supplier Management	P.35 P.126	
	205-2 Communication and training about Anti-corruption policies and procedures			
	205-3 Confirmed incidents of corruption and actions taken			
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	1.1.3 Integrity Management and Anti-corruption	P.35	
Material Topic: Operational and Financial Performance				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	1. Ongoing Sustainable Governance Strategy	P.28	
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	1.2.1 Economic Performance	P.39	
Material Topic: Regulatory Compliance				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	1.Ongoing Sustainable Governance Strategy	P.29	

Topic	GRI Indicator Reference	Section Reference	Page Number	Omission/Notes
Material Topic: Energy Management				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	Green Environmental Management Promotion	P.66	
GRI 302: Energy 2016	302-1 Energy consumption within the organization	3.2 Climate Action and Strategy	P.74	
	302-3 Energy consumption outside of the organization	3.2 Climate Action and Strategy	P.74	
	302-4 Reduction of energy consumption	3.2 Climate Action and Strategy	P.74	
	302-5 Reductions in energy requirements of products and services	3.2 Climate Action and Strategy	P.74	
Material Topic: Water Resource Management				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	Green Environmental Management Promotion	P.67	
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	3.4 Water Resource Management	P.92	
	303-2 Management of water discharge related impacts	3.4 Water Resource Management	P.92	
	303-3 Water withdrawal	3.4 Water Resource Management	P.92	
	303-4 Water discharge	3.4 Water Resource Management	P.92	
	303-5 Water consumption	3.4 Water Resource Management	P.92	
Material Topic: Climate Change Mitigation and Adaptation				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	3. Green Environmental Management Promotion	P.65	
GRI 201: Economic Performance 2016	201-2 Financial implications and other risks and opportunities due to climate change	3.2 Climate Action and Strategy	P.74	
Material Topic: Air Pollution Management, Greenhouse Gas Emissions, Climate Change Mitigation and Adaptation				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	3. Green Environmental Management Promotion	P.65	
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	3.2.3 Management of Carbon Issues	P.83	
	305-2 Energy indirect (Scope 2) GHG emissions	3.2.3 Management of Carbon Issues	P.83	
	305-3 Other indirect (Scope 3) GHG emissions	3.2.3 Management of Carbon Issues	P.83	
	305-4 GHG emissions intensity	3.2.3 Management of Carbon Issues	P.83	
	305-5 Reduction of GHG emissions	3.2 Climate Action and Strategy	P.74	
	305-6 Emissions of ozone-depleting substances (ODS)	Regulatory Prohibitions	-	NPC does not use or produce ozone-depleting substances and complies with national regulations, ensuring no ozone-depleting substances or equipment are used in production processes.
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	3.3 Air Pollution Management	P.89	

Topic	GRI Indicator Reference	Section Reference	Page Number	Omission/Notes
Material Topic: Waste Management and Promotion of Circular Economy				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	3. Green Environmental Management Promotion	P.68	
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	3.5.1 Waste anagement	P.96	
	306-2 Management of significant waste related impacts	3.5.1 Waste anagement	P.96	
	306-3 Waste generated	3.5.1 Waste anagement	P.96	
	306-4 Waste diverted from disposal	3.5.1 Waste anagement	P.96	
	306-5 Waste directed to disposal	3.5.1 Waste anagement	P.96	
Material Topic: Facility and Chemical Safety Management				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	4. Creating a Happy and Safe Workplace	P.102	
Material Topic: Occupational Health and Safety				
GRI 3: Material Topics 2021	GRI3-3 Management of material topics	4. Creating a Happy and Safe Workplace	P.101	
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	4.3 Workplace Safety	P.114	
	403-2 Hazard identification, risk assessment, and incident investigation	4.3 Workplace Safety	P.114	
	403-3 Occupational health services	4.3 Workplace Safety	P.114	
	403-4 Worker participation, consultation, and communication on occupational health and safety	4.3 Workplace Safety	P.114	
	403-5 Worker training on occupational health and safety	4.3 Workplace Safety	P.114	
	403-6 Promotion of worker health	4.3 Workplace Safety	P.114	
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	4.3 Workplace Safety	P.114	
	403-8 Workers covered by an occupational health and safety management system	4.3 Workplace Safety	P.114	
	403-9 Work-related injuries	4.3 Workplace Safety	P.114	
	403-10 Work-related ill health	4.3 Workplace Safety	P.114	

ii. Sustainability Accounting Standards Board (SASB) Comparison Table

Disclosure Topic	Greenhouse Gas Emissions				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-110a.1	Gross Scope 1 emissions (unit: CO_2-e)	2,499,081	1,628,833	1,410,260	3.2 Climate Action and Strategy
	The percentage covered under emissions-limiting regulations (unit: %)	Inventory under the regulations of the "Regulations for Registra-tion 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	NPC has established carbon reduction goals such as "external commitments" and "internal tightening management" in re-sponse to various purposes but it will pursue the strictest re-quirements and actively promote the four main carbon reduction strategies in order to work towards the long-term goal of "carbon neutrality by 2050" to mitigate and adapt for the impacts of climate change.			

Disclosure Topic	Air Quality(including subsidies in Taiwan)				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
	Air emissions of the following pollutants: (unit: ton)	2021	2022	2023	
RT-CH-120a.1	NOx (excluding N_2O)	1,043.07	725.52	715.50	3.3 Air Pollution Management
	SOx	513.92	293.01	308.19	
	Volatile organic compounds (VOCs)	2,240.98	1,666.11	1,412.52	
	Hazardous air pollutants (HAPs)	-	-	-	

Disclosure Topic	Energy Management				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-130a.1	Total energy consumed (unit: GJ)	47,259,941	35,677,066	29,980,594	3.2 Climate Action and Strategy
	Percentage of grid electricity (unit: %)	71.8%	80.3%	78.3%	
	Percentage of renewable (unit: %)	0%	0%	0.01%	
	Total self-generated energy (unit: GJ)	4,831,885	2,668,080	2,522,917	

Disclosure Topic	Water Management				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-140a.1	Total water withdrawn (unit: 1000m^3)	20,830	15,269	11,837	3.4 Water Resource Management
	Water withdrawn in regions with high or ex-tremely high baseline water stress (unit: %)	It does not apply to the current disclosure scope			
	Total water consumed (unit: 1000m3)	14,754.37	10,418.79	7,874.20	
	Water consumed in regions with high or ex-tremely high baseline water stress (unit: %)	It does not apply to the current disclosure scope			

Disclosure Topic	Water Management				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	Environmental violations related to water pollution unit: case Type of violations\Year: 2021: 2; 2022: 0; 2023: 0 Water pollution: 2; 0; 0 Soil and groundwater: 0; 0; 0			3.4 Water Resource Management
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			

Disclosure Topic	Hazardous Waste Management(including subsidies in Taiwan)				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-150a.1	Amount of hazardous waste generated (unit: ton)	23,371.0	21,757.0	17,019.48	3.4 Water Resource Management 3.5 Waste Management and Circular Economy
	Percentage recycled (unit: %)	89%	84%	79%	

Disclosure Topic	Community Relations		
Code	Accounting Metric	Corresponding Disclosure	Referenced Section
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	Water Management				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-320a.1	Total recordable incident rate (TRIR) and fa-tality rate for direct employees	The fatality rate: 0 TRIR: 0.044	The fatality rate: 0 TRIR: 0.042	The fatality rate: 0 TRIR: 0.022	4.3 Workplace Safety
	Total recordable incident rate (TRIR) and fa-tality rate for contract employees	The fatality rate: 0 TRIR: 0	The fatality rate: 0 TRIR: 0	The fatality rate: 0 TRIR: 0	
RT-CH-320a.2	Explanation of Measures for Evaluating, Monitoring, and Reducing Long-Term Health Risks to Employees and Contract Workers.	NPC keeps reviewing the process protection measures in each plant in an effort to improve process safety management and lower the frequency of hazardous occurrences. To reinforce the intrinsic safety of the equipment, upgrades such as interlocking devices, alarm systems, buzzers, etc. have been adopted based on the features of the process. The Company also inspects assembly and disassembly processes, reviews the safety of tools used, and requests introspection and improvement reports from business units with declining industrial safety management KPIs.			

Disclosure Topic	Product Design for Use-phase Efficiency				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-410a.1	Revenue from products designed for use-phase resource efficiency (unit: currency used for reporting)	Green product sales accounted for about 4.1% of parent company-only revenue in 2021.	Green product sales accounted for about 5.4% of parent company-only revenue in 2022.	Green product sales accounted for about 9.3% of parent company-only revenue in 2023.	2.2 Green and Environmental-friendly Innovation

Disclosure Topic	Safety & Environmental Stewardship of Chemicals				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-410b.1	Percentage of products that contain Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardsous Substances (unit: % by revenue)	57.51%	49.44%	43.17%	2.2 Green and Environmental-friendly Innovation 4.3 Workplace Safety
	Percentage of such products that have undergone a hazard assessment(unit: % by revenue)	100%	100%	100%	
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.			
	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		
Code	Accounting Metric	Corresponding Disclosure	Referenced Section
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.	2.2 Green and Environmental-friendly Innovation

Disclosure Topic	Management of the Legal & Regulatory Environment(including subsidies in Taiwan)				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-530a.1	Explanation of the Organization's Stance on Government Regulations and/or Policy Proposals Related to Environmental and Social Issues Affecting the Industry	Violations: 10 cases Fine: NT$1,120,000	Violations: 10 cases Fine: NT$1,220,000	Violations: 12 cases Fine: NT$1,000,000	1.2.2 Legal Compliance

Disclosure Topic	Operational Safety, Emergency Preparedness & Response				
Code	Accounting Metric	Corresponding Disclosure			Referenced Section
		2021	2022	2023	
RT-CH-540a.1	Process Safety Incidents Count (PSIC)	1	0	0	4.3 Workplace Safety
	Process Safety Total Incident Rate (PSTIR)	0.009	0	0	
	Process Safety Incident Severity Rate (PSISR)	0.009	0	0	
RT-CH-540a.2	Number of transport incidents	0	0	0	

Disclosure Topic	Community Relations		
Code	Accounting Metric	Corresponding Disclosure	Referenced Section
RT-CH-000.A	Description of Production by reportable segment (unit: m^3 or ton)	Please refer to the sales volume/value table of the Company's annual report "2023 Annual Report" on the Company's website.	2.1 Diversified Product Application

Appendix 2 Corporate Governance Evaluation ESG Indicator Disclosure Item - NPC

Topic	Indicator Item	Description	2023 Results	Note
		Environmental Issues		
GHG Emissions	Scope 1 GHG direct emission	ton CO_2	1,410,260	
	Scope 2 GHG indirect emissions	ton CO_2	2,398,374	
	Scope 3 other GHG indirect emissions	ton CO_2	11,608,872	
	GHG emissions intensity	ton CO_2/ revenue(NT$ million)	31.47	2023 Scope 1+ Scope 2
	Strategies, methods, and goals of GHG management	qualitative narrative	3.2 Climate Action and Strategy	
Energy Management	Renewable energy usage	renewable energy / total energy	0.001%	
	Energy efficiency	qualitative narrative	3.2 Climate Action and Strategy	
	Use of recycled materials policy	qualitative narrative		
Water Resources	Water Comsuption	ton	11,836,750	
	Water Intensity	Water Comsuption / revenue(NT$ million)	97.79	
	Water Resource Management or Reduction Target	qualitative narrative	3.4 Water Resource Management	
Waste	Hazardous waste volumn	ton	17,019.48	Including subsidies in Taiwan
	Non-hazardous waste volume	ton	79,026.08	
	Total weight (hazardous + non-hazardous)	ton	96,045.56	
	Waste Intensity	waste volumn/ revenue(NT$ million)	0.79	
	Waste management or reduction targets	qualitative narrative	The reduction target is 1% compared with last year	
		Social Issues		
Human Resource Development	Average employee remuneration	NTD/ person	1,042 thousand dollars	
	Average employee benefits	NTD/ person	1,200 thousand dollars	
	Average remuneration of full-time employees who do not serve as manager	NTD/ person	1,187.95 thousand dollars/year	

Topic	Indicator Item	Description	2023 Results	Note
Human Resource Development	Median remuneration of full-time employees who do not serve as manager	NTD/ person	1,104.81 thousand dollars/year	
	Proportion of female supervisors in management positions	Ratio	4.20%	
	Number of Occupational Accidents	Number of people	4	No fatal occupational injuries in 2023.
	Proportion of Occupational Accident	Ratio	0.035%	Ratio = Number of Occupational Accidents / Total Number of Employees Total Number of Employees: 11,388 persons
Governance Issues				
Board of Directors	Members of the Board of Directors	Number of memebers	15	
	Members of the independent directors	Number of memebers	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	93.33%	
Investors Communication	Number of investor conferences held by the company	Number of conferences	4 Times	

Appendix 3 Comparison Table of Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies

Plastics Industry

Number	Indicator	Type of Indicator	Annual Disclosure	Unit	Note
1	Total energy consumption	Quantitative	29,980,594	Billion joules	
	Percentage of externally purchased electricity	Quantitative	78.3	Percentage(%)	
	Renewable energy usage rate	Quantitative	0.001	Percentage(%)	
	Total self-use energy [Note1]	Quantitative	2,522,917	Billion joules	
2	Total water withdrawal	Quantitative	11,837	Thousand cubic meters(m^3)	
	Total water consumption	Quantitative	7,874.2	Thousand cubic meters(m^3)	
3	Weight of hazardous waste	Quantitative	17,019.48	Ton(t)	
	Percentage of recycled hazardous waste	Quantitative	78.59	Percentage(%)	
4	Number of occupational accidents	Quantitative	4	Number of injured	
	Ratio of occupational accidents	Quantitative	0.035%	Ratio	
5	Plastic Products(Identify the primary product items and their output in terms of the product categories)[Note2]	Quantitative	31,116,351	NT$ thousand (depends on product type)	

Note 1: The total amount of self-use energy is calculated in accordance with the definitions of the "Renewable Energy Development Act", " Implementation Regulations Governing Renewable Energy Certificates " or relevant sub-laws

Note 2: This appendix only discloses the primary manufacturing items and amounts due to the broad variety of product categories offered by NPC. Other products include "chemical products (23%), electronic materials (46%) and polyester products (18%)." For relevant information, please refer to "2.1 Diversified Product Application" of this report.

Climate-Related Information for Listed Companies

	Risks and Opportunities Posed by Climate Change and Company's Response Measures	Reference Website
1	Describe the board and management's oversight and governance of climate-related risks and opportunities.	Please refer to the information disclosed on the "ESG Digital Platform" of the Market Observation Post System.
2	Explain how identified climate risks and opportunities impact the company's business, strategy, and finances (short-, medium-, and long-term).	
3	Outline the financial impacts of extreme climate events and transition actions.	
4	Explain how the process for identifying, assessing, and managing climate risks is integrated into the overall risk management system.	
5	If scenario analysis is used to assess resilience to climate change risks, describe the scenarios, parameters, assumptions, analysis factors, and key financial impacts used.	
6	If a transition plan for managing climate-related risks exists, describe its contents, as well as the indicators and targets used to identify and manage physical and transition risks.	
7	If internal carbon pricing is used as a planning tool, explain the basis for price setting.	
8	If climate-related targets are set, explain the activities covered, greenhouse gas emission scopes, target period, and annual progress. If using carbon offsets or renewable energy certificates (RECs) to achieve related targets, indicate the offset source and amount or number of RECs used.	
9	Greenhouse gas inventory and assurance status	Please see the table below.

Scope 1	Total Emissions (tons CO_2e)	Intensity (tons CO_2e/thousand NTD)	Assurance Provider	Description of Assurance Status
NPC	1,410,260	0.012	SGS	Certification issued on 8/6.
Subsidies in Taiwan	43,141	0.001	-	Not among the first batch of assurance subjects required by the FSC.
Total	1,454,234	0.009	-	-

Scope 2	Total Emissions (tons CO_2e)	Intensity (tons CO_2e/thousand NTD)	Assurance Provider	Description of Assurance Status
NPC	2,398,374	0.020	SGS	Certification issued on 8/6.
Subsidies in Taiwan	629,520	0.019	-	Not among the first batch of assurance subjects required by the FSC.
Total	3,034,598	0.020	-	-

Note 1: Scope 1 emissions include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.
Note 2: Scope 2 refers to energy indirect emissions, originating from greenhouse gas emissions due to imported steam and electricity; emissions include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Appendix 4 Independent Assurance Opinion Statement

獨立保證意見聲明書

南亞塑膠工業股份有限公司 2023 年永續報告書

英國標準協會與南亞塑膠工業股份有限公司(簡稱南亞塑膠)為相互獨立的公司，英國標準協會除了針對南亞塑膠工業股份有限公司 2023 年永續報告書進行評估和查證外，與南亞塑膠並無任何財務上的關係。

本獨立保證意見聲明書之目的，僅作為對南亞塑膠工業股份有限公司 2023 年永續報告書所界定範圍內的相關事項進行保證之結論，而不作為其他之用途。除對查證事實提出獨立保證意見聲明書外，對於其他目的之使用，或閱讀此獨立保證意見聲明書的任何人，英國標準協會並不負有或承擔任何有關法律或其他之責任。

本獨立保證意見聲明書係英國標準協會審查南亞塑膠提供之相關資訊所作成之結論，因此審查範圍乃基於並侷限在這些提供的資訊內容之內，英國標準協會認為這些資訊內容都是完整且準確的。

對於這份獨立保證意見聲明書所載內容或相關事項之任何疑問，將由南亞塑膠一併回覆。

查證範圍

南亞塑膠與英國標準協會協議的查證範圍包括:

1. 本查證作業範疇與南亞塑膠工業股份有限公司 2023 年永續報告書揭露之報告範疇一致。
2. 依照 AA1000 保證標準 v3 的第 1 應用類型評估南亞塑膠遵循 AA1000 當責性原則(2018)的本質和程度，不包括對於報告書揭露的資訊/數據之可信賴度的查證。

本聲明書以英文作成並已翻譯為中文以供參考。

意見聲明

我們總結南亞塑膠工業股份有限公司 2023 年永續報告書內容，對於南亞塑膠之相關運作與永續績效則提供了一個公平的觀點。基於保證範圍限制事項、南亞塑膠所提供資訊與數據以及抽樣之測試，此報告書並無重大之不實陳述。我們相信有關南亞塑膠的環境、社會及治理等績效資訊是被正確無誤地呈現。報告書所揭露之永續績效資訊展現了南亞塑膠對識別利害關係人的努力。

我們的工作是由一組具有依據 AA1000 保證標準 v3 查證能力之團隊執行，以及策劃和執行這部分的工作，以獲得必要之訊息資料及說明。我們認為就南亞塑膠所提供之足夠證據，表明其符合 AA1000 保證標準 v3 的報告方法與自我聲明依循 GRI 永續性報導準則係屬公允的。

查證方法

為了收集與作成結論有關的證據，我們執行了以下工作：

- 對來自外部團體的議題相關於南亞塑膠政策進行訪談，以確認本報告書中聲明書的合適性;
- 與管理者討論有關利害關係人參與的方式，然而，我們並無直接接觸外部利害關係人;
- 訪談 13 位與永續性管理、報告書編製及資訊提供有關的員工;
- 審查有關組織的關鍵性發展;
- 審查內部稽核的發現;
- 審查報告書中所作宣告的支持性證據;
- 針對公司報告書及其相關 AA1000 當責性原則(2018)中有關包容性、重大性、回應性及衝擊性原則之流程管理進行審查。

結論

針對 AA1000 當責性原則(2018)之包容性、重大性、回應性及衝擊性與 GRI 永續性報導準則的詳細審查結果如下：

包容性

2023 年報告書反映出南亞塑膠已持續尋求利害關係人的參與，並建立重大永續主題，以發展及達成對永續具有責任且策略性的回應。報告書中已公正地報告與揭露環境、社會及治理的訊息，足以支持過當的計畫與目標設定。以我們的專業意見而言，這份報告書涵蓋了南亞塑膠之包容性議題。

重大性

南亞塑膠公布對組織及其利害關係人之評估、決策、行動和績效會產生實質性影響與衝擊之重大主題。永續性資訊揭露使利害關係人得以對公司之管理與績效進行判斷。以我們的專業意見而言，這份報告書適切地涵蓋了南亞塑膠之重大性議題。

回應性

南亞塑膠執行來自利害關係人的期待與看法之回應。南亞塑膠已發展相關道德政策，作為提供進一步回應利害關係人的機會，並能對利害關係人所關切之議題作出及時性回應。以我們的專業意見而言，這份報告書涵蓋了南亞塑膠之回應性議題。

衝擊性

南亞塑膠已鑑別並以平衡和有效之量測及揭露方式公正展現其衝擊。南亞塑膠已經建立監督、量測、評估和管理衝擊之流程，從而在組織內實現更有效之決策和結果管理。以我們的專業意見而言，這份報告書涵蓋了南亞塑膠之衝擊性議題。

GRI 永續性報導準則

南亞塑膠提供有關依循GRI永續性報導準則2021之自我宣告，並對每個涵蓋其行業準則和具相關性的GRI主題準則之重大主題，其揭露項目依循全部報導要求的相關資料。基於審查的結果，我們確認報告書中參照GRI永續性報導準則之永續發展相關揭露項目已被報告、部分報告或省略。以我們的專業意見而言，此自我宣告涵蓋了南亞塑膠的永續性主題。

保證等級

依據 AA1000 保證標準 v3 我們審查本聲明書為中度保證等級，如同本聲明書中所描述之範圍與方法。

責任

這份永續報告書所屬責任，如同責任信中所宣稱，為南亞塑膠負責人所有。我們的責任為基於所描述之範圍與方法，提供專業意見並提供利害關係人一個獨立的保證意見聲明書。

能力與獨立性

英國標準協會於 1901 年成立，為全球標準與驗證的領導者。本查證團隊係由具專業背景，且接受過如 AA1000AS、ISO 14001、ISO 45001、ISO 14064 及 ISO 9001 之一系列永續性、環境及社會等管理標準的訓練，具有稽核員資格之成員組成。本保證係依據 BSI 公平交易準則執行。

For and on behalf of BSI:

Peter Pu, Managing Director BSI Taiwan

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2024-07-03

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