



China General Plastics Corporation

2022

ESG REPORT



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Official Website www.cgpc.com.tw

Sustainable Development ESG Section
<https://www.cgpc.com.tw/ESG/tw/index.aspx>



CGPC Family newsletter
<https://www.cgpc.com.tw/ESG/tw/newsletter.aspx>

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About this Report ▶ (GRI 2-1, 2-2, 2-3, 2-5, 2-10, 2-11, 2-12, 2-14, 2-16)

China General Plastics Corporation (hereinafter referred to as “CGPC”) has prepared the ESG report for the ninth time since 2014, to inform all our stakeholders of how we are committed to promoting sustainable corporate development. The contents of this report describe in detail our achievements and efforts in corporate governance, environmental protection, employee care, and social charity.

Report Writing Guidelines

Publishing Unit	In accordance with the Guidelines/Regulations
Global Reporting Initiative Global Reporting Initiative (GRI)	GRI Standards 2021 Version
Financial Stability Board (FSB) Financial Stability Board	Climate-related Financial Disclosures Recommended Framework Structure Task Force on Climate-related Financial Disclosures, TCFD
Sustainability Accounting Standards Board (SASB) Sustainability Accounting Standards Board	Industry-specific standard for the Chemicals by the Sustainability Accounting Standards Board
Taiwan Stock Exchange	Sustainable Development Best Practice Principles for TWSE/TPEX-Listed Companies
UN	UN Sustainable Development Goals Sustainable Development (SDGs)

Scope of This Report

- This report focuses primarily on CGPC and its subsidiaries in Taiwan, including: Taiwan VCM Corporation (TVCM), Global Green Technology Corporation (GGTC, subsidiaries of TVCM) and CGPC Polymer Corporation (CGPCP), explaining important information regarding Operating Performance, Environmental, Employees and Social Welfare Disclosure Scope Accounting for 89% of CGPC’s Consolidated Net Income.
- The financial information in this report is consistent with the data in the financial report audited by certified public accountants, and some statistical data are quoted from our annual reports or information disclosed by government agencies and on other relevant websites.
- The risk assessment boundary is primarily focused on The Company.

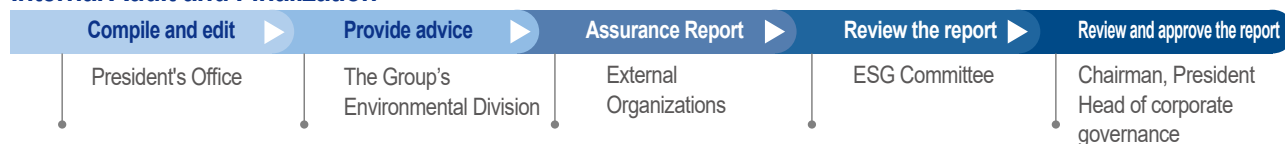
Note: This report mentions the “Vinyl Chain,” which consists of three companies: CGPC, TVCM and CGPCP.

- ▶ The website is expected to be updated on August 10, 2023. The relevant links in this report will be revised and updated to the 2022 ESG Report due to the revision and upgrade of the website.
- ▶ Google Chrome is recommended for reading this report.

Editing and Reviewing Procedures

ESG task force: The ESG task force is formed by relevant departments, and the President’s Office is responsible for the overall planning, data collection, communication and integration, as well as editing and revision. In the event of information re-editing, such instances will be clearly explained in the respective sections when disclosing the information. The consolidated information will be submitted to the ESG Committee for review and approval. The results will be disclosed to ensure that stakeholders are informed and understand the progress.

Internal Audit and Finalization



Data Period

The period of information disclosed in this report is from January 1, 2022 to December 31, 2022 and some of the information occurs before January 1, 2022 or in 2023.

Release Frequency

The Company’s reporting cycle is once a year. You are welcome to download it from the CGPC’s official website <http://www.cgpc.com.tw/>, or you may scan the QR Code below, enter ESG section, click Download Reports and be linked to the download page of the ESG Reports of CGPC.

▶ Previous Version: Released on June, 2022 ▶ Current Version: Released on June, 2023 ▶ Next Version: scheduled released on June, 2024

External Verification Organization of the Report

This report complies with the GRI Standards: 2021 and has undergone external assurance by AFNOR Asia Ltd., an independent third-party verification organization accredited by the French Standardization Association. The assurance process followed the AA1000 V3 Assurance Standard and achieved a moderate level of assurance as defined in the Type 1 Application Level of the 2018 Appendix.

Contact Us

If you have any suggestions or advice about this report or CGPC’s sustainable development initiatives, please feel free to contact us, and subscribe to our company’s [ESG e-newsletter](#).

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▶ Contact Information for Various Units : <https://www.cgpc.com.tw/ESG/tw/issue-SDGs.aspx>



Message from Management ▶ (GRI 2-22)



China General Plastics Corporation | Yi-Gui Wu, Chairman

Dear Stakeholders

In light of the impact of the COVID-19 pandemic, the Russia-Ukraine war and the increasing threats of extreme climate events, we recognize the need to continue our commitment to "Sustainability value to create a sustainable society" across the ESG (Environmental, Social, Governance) aspects. We are taking pro-active actions to pursue a balance between operating performance and sustainable development.

Active Carbon Reduction Efforts

In 2020, we established a Green Energy Team dedicated to responding to national net-zero policies. We have been actively installing solar energy systems and exploring opportunities to integrate green energy with local agricultural economies. By 2022, we have successfully connected 5.9MW of solar power to the grid, generating over 7 million kWh of green energy. We have also planned to install 15MW and 20MW capacities by 2025 and 2027, respectively. In alignment with the group's 2030 target of reducing carbon emissions by 27%. We have developed a decarbonization pathway until 2030, setting annual targets to monitor our progress each year.

Strengthening ESG Governance and Human Rights Risk Assessment

Our ESG Committee, chaired by an independent director, convenes meetings twice a year to oversee the implementation of ESG initiatives. Through active participation of board members in ESG affairs, we aim to enhance the momentum for sustainable practices. Furthermore, we have placed a strong emphasis on human rights risk assessment, thoroughly examining the risks associated with human rights issues to ensure their proper protection and maintenance.

Establishing a Safe Production Environment

We maintain stringent standards for factory safety and continuously strive towards our "Safety and Environment 5 Zero" targets, which include zero pollution, zero emissions, zero occupational accidents, zero incidents and zero failures. We continuously improve our process safety management system (PSM), conduct technical exchange meetings within the factory and perform unannounced fire drills to enhance our safety production environment. These measures enable us to respond effectively to unexpected events and minimize harm.

Driving ESG initiatives not only strengthens our operating resilience but also contributes to a better overall environment and society. We are progressively integrating ESG goals into our business operations, setting project-specific targets, and utilizing AI-driven intelligence and systemization to achieve these objectives. The journey towards sustainability requires the adoption of new concepts, technologies and the collective efforts of all employees. We aim to excel internally and expand our experiences to benefit the industry, supply chain and society at large.

ESG Development

We continue to engage in larger-scale equipment replacement and improvement to drive the profitability of our respective products. At the end of 2022, our company held the "Vinyl Chain Business Symposium" in Tufen, Linyuan and Taipei, where Vice-Chairman Lin personally expounded on the core values and future directions. We are integrating sustainability into our business model. The Chlor-Alkali Business Group has introduced AI (Artificial Intelligence) and established an AI team to promote various intelligent projects and enhance our competitive advantage, aiming to improve the overall quality of the Vinyl Chain.

With a focus on carbon neutrality and circular economy, we actively develop high-value and differentiated new products, obtaining four new patents in 2022. Regarding environmental performance, we have planned and implemented approximately 2MW of solar energy facilities, replaced coal-fired boilers with natural gas boilers and adopted an activated carbon fluidized bed to control VOCs emissions.

To enhance overall operating efficiency, CGPC Tufen Plant is constructing an integrated automated storage system, implementing Process Safety Management (PSM), and driving various intelligent projects. To accelerate sustainable development, we have successively completed the implementation of various management systems, including GRS Global Recycling System certification, ISO 46001 Water Resource Efficiency Management, ISO 14046 Water Footprint, ISO 14064-1 Greenhouse Gas and ISO 14067 Product Carbon Footprint. These systems aim to enhance safety and environmental awareness, continuously optimize process efficiency, ensure safe operations, reduce carbon emissions and promote sustainable water resource utilization.

In terms of talent development, we have designed a comprehensive career development plan to enhance employees' expertise. Since 2019, we have been improving the working environment to provide our employees with a more comfortable workspace through ongoing improvement projects. Outside of work, our colleagues have formed volunteer teams and engaged in activities such as coastal cleanups and community environmental preservation services. Furthermore, we have established a Charity Club, pooling together donations from our employees to support charitable endeavors and assist the underprivileged in society.



Sustainable Management Policy and Achievements

► Management Team



Yi-Gui Wu

The Chairman and the CEO



Han-Fu Lin

CGPC's Vice-Chairman and the President TVCM's Chairman and the President CGPCP's President



Chi-Hung Hu

CGPC
Implementation
Vice-President



Chun-Chang Yeh

TVCM
Implementation
Vice-President



Wan-Ta Chen

CGPC's Toufen factory
(Head of factory)



Pei-Hung Tsai

CGPC's Toufen factory
Vice Head of factory



Su-Chien Li

TVCM's Linyuan factory
(Head of factory)



Chao-Yuan Kuo

Executive Assistant and CGPCP
Head of Linyuan factory

► Sustainable Management Policy

To operate for the next 50 years and develop sustainably as a benchmark enterprise in the Group, we have launched various transformation plans since 2016 and completed one after another (as detailed in the 2020 report). We have adopted four major strategies since 2021 in alignment with the government's net zero emission policy: adoption of AI production technology, improvement to production efficiency, replacement with energy-saving equipment, and elimination of bottlenecks to increase production capacity and storage and transportation space.

Circular economy

1. R&D to increase the percentage of recycled raw materials
2. Increase the amount of water recycled by CGPC
3. Recovery of heat energy from cracking furnace

Implementation of various operations management systems

1. PSM system
2. Sustainable development included in KPI evaluation
3. ISO-50001 energy management system verification
4. ISO 14046-1 Greenhouse Gas Inventory Management System
5. ISO 14067 carbon footprint management system
6. GRS certification
7. ISO 46001 water resources management system
8. ISO 14046 water footprint management system

Establishment of renewable energy facilities and purchase of green electricity

1. CGPC has bought back Thunder Graphic Corp.'s solar power system
2. USI Optronics Corporation's plant and Busan warehouse self-built solar power generation system

Establishment of an AI factory

1. Manufacturing process Optimization: TVCM's distillation tower system and CGPC's PVC drying system.
2. Manufacturing process Safety Monitoring: Absorption tower process safety monitoring, electrical pane AOI thermal imaging recognition, critical rotating equipment intelligent monitoring system, AI stacker safety assistance system, intelligent improvement of space bag packaging safety operations, tank truck loading safety video recognition, dangerous behavior recognition for PVC film machine take-off wheels.
3. Image Recognition: Employee facial recognition attendance system, intelligent vehicle control and intelligent weighing system, product processing plant defect recognition system, pipe AOI image detection system.

Carbon Reduction Layout

In addition to implementing AI energy-saving measures through process optimization, ongoing efforts are being made for carbon reduction layout:

1. CGPC: Cooling tower pump energy efficiency improvement, installation of new natural gas boilers.
2. TVCM: Energy-saving coating for cracking furnaces, heat recovery in quench towers.

Environmentally Friendly

1. CGPC: Installation of new Activated Carbon Fluidized Bed
2. TVCM: VOCs control valves replacement, reduction of aerobic wastewater sludge volume project.

► Sustainable Management Achievements



VCM
productivity rises to
485,000 tonnes



PVC resin
secondary factory's
productivity rises to
450,000 tonnes



Value **Environmental**
Issues Practice **Energy**
conservation and
carbon reduction



Loving Community
Residents Value
Occupational
safety and health



Protect **Shareholder's**
rights Seek **R&D and**
innovation

2020	2021	2022	2023 ~ 2025
<ul style="list-style-type: none"> ▶ Ranked among top 6–20% in the 7th Corporate Governance Evaluation. ▶ Received the Platinum Award in the 13th TCSA Report and the Overall Performance "TOP50 Taiwan Sustainable Performance Award." ▶ Publicly announced and established the Safety and Health Family and made donations for anti-pandemic efforts. ▶ Equipment Improvements: Conversion of heavy oil boilers to natural gas, upgrading of air pollution TVCM detection systems, construction of new shipping container platforms, introduction of AI intelligent production technology, construction of PVC resin silos, improvement of equipment enclosure grounding resistance (Note 1). ▶ Striving for a clean and pleasant working environment: ▶ Floor repairs, maintenance and renovation of the premises, replacement of office desks and chairs, painting and refurbishment, replacement of office windows, improvement of dust collection in powder sprinklers, second-phase improvement of factory drainage, and more. ▶ (CGPC) passed ISO 45001. ▶ Recognized by the Taipei City Government's Environmental Protection Bureau with an appreciation letter for "Excellence in Green Procurement." <div data-bbox="168 1141 515 1300" style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>Note 1: Grounding resistance: Grounding plays a crucial role in providing a safe path for fault currents, protecting personnel, buildings, and equipment from electrical hazards. It also helps in dissipating electrical shocks, static electricity, and providing a pathway for the safe discharge of EMI and RFI signals.</p> </div>	<ul style="list-style-type: none"> ▶ Ranked among top 6–20% in the 8th Corporate Governance Evaluation. ▶ Received the Platinum Award of 14th TCSA for the report - Comprehensive Performance: Taiwan Corporate Sustainability Excellence Award Single Performance Award—Innovative Growth and Leader Award 1st TSAA Taiwan Sustainable Action Award - Silver Award. ▶ Served as the leader of the Safety and Health Family in Miaoli County and made donations for anti-pandemic efforts. ▶ Continuously improved energy conservation and carbon reduction at three entities: Adopted AI in the process, used high-efficiency motors, replaced old refrigerators, replaced old air compressors, improved the electric heating of pipe-expanding machines, replaced packaged air conditioners, replaced old street lights with LED ones ▶ Environmental Protection: Remediation of the drainage system, activated carbon fluidized bed. ▶ Recognized by the Taipei City Government's Environmental Protection Bureau with an appreciation letter for "Excellence in Green Procurement." ▶ Efforts have also been made to improve soil and groundwater resources through technological advancements and biological applications, as well as educational initiatives. ▶ Passed the review for the Action Plan for Accelerated Investment by Domestic Corporations by the Investment Commission, MOEA. ▶ Taiwan VCM was awarded the certificate of cancellation of management for remediation technology at polluted sites from the Environmental Protection Administration, Executive Yuan, and Director Chien, Hua-Yii was awarded the Outstanding Project Manager Award by the Taiwan Soil and Groundwater Environmental Protection Association. 	<ul style="list-style-type: none"> ▶ Ranked among top 6–20% in the 9th Corporate Governance Evaluation. ▶ Selected as a constituent stock of the "Corporate Governance 100 Index." ▶ Received the Platinum Award in the 15th TCSA Report and the Overall Performance (Taiwan Top 100 Sustainable Exemplary Enterprises Award), as well as the Taiwan Sustainable Action Award (TSAA) in the 2nd edition, with a Silver Award in SDG 12 and a Bronze Award in SDG 6. ▶ GPC and CGPC Polymer implemented the SO 14067 carbon footprint management system. ▶ CGPC and Taiwan VCM included ISO 14064-1 greenhouse gas inventory - Scope 3 in the inventory; CGPC Polymer implemented ISO 14064-1. ▶ We have adopted the Global Recycled Standard (GRS) to certify CGPC's eco-friendly TPE leather products. ▶ HCGPC implemented ISO 46001 water resources and ISO 14046 water footprint management system. ▶ The supervisors at CGPC, Taiwan VCM, and CGPC Polymer included ESG in the KPI evaluation. ▶ Establishment of renewable energy facilities and purchase of green electricity ▶ Newly established an automatic storage AI system. ▶ CGPC has updated the IEM Alkali Liquid Evaporator Renewal and Replacement Project (B0000200), and our first application for greenhouse gas reduction quota under this project was approved by the Environmental Protection Administration, and we were granted a reduction quota of 4,335 metric tons of CO₂e. ▶ Update 2 cracking furnaces (F-6201 and F-6202) in TVCM's Linyuan factory as part of the offset project (B0000210) and obtained approval from the Environmental Protection Agency for the first greenhouse gas reduction quota application, receiving a reduction quota of 3,129 metric tons CO₂e. ▶ Three plants have been continuously improving energy efficiency and reducing carbon emissions through the following measures: Replacement of high-efficiency dissolved air flotation blowers, implementation of AI energy-saving measures in processes, energy-saving coating for cracking furnaces, heat recovery in quench towers. ▶ Environmental Protection: Remediation of the drainage system, construction of a new activated carbon fluidized bed, installation of a LDS System, smart pipeline inspection project. ▶ Continued soil and groundwater environmental remediation efforts (enhancing technology and biological applications) and education. 	<p>2023</p> <ul style="list-style-type: none"> ▶ Continued soil and groundwater environmental remediation efforts (enhancing technology and biological applications) and education. ▶ Three plants have been continuously improving energy efficiency and reducing carbon emissions through the following measures: Utilization of AI models to optimize process operation conditions. AI implementation projects include: Phase two of the drying machine process, construction of wastewater sedimentation tanks, establishment of AI models for low-boiling-point towers, installation of natural gas boilers in CGPC, power monitoring for major energy-consuming equipment, upgrading of dewatering systems, installation of frequency converters and intelligent control systems for boilers, condensate water recovery. ▶ Environmental Protection: Construction of wastewater sedimentation tanks. ▶ Implemented PSM (CGPC completed the second phase) and TVCM implemented PSM platform and KPI planning. ▶ Established a computerized maintenance management system (CMMS). ▶ In response to drought conditions, our Linyuan plant has proactively planned the implementation of the Second Water Source Project. This project aims to address water shortages by utilizing water transport via water wheels. <p>2024~2025</p> <ul style="list-style-type: none"> ▶ Three plants have been continuously improving energy efficiency and reducing carbon emissions through the following measures: Upgrading of propylene refrigeration units, replacement of high-efficiency pumps, ongoing implementation of process optimization with AI energy-saving measures, and more. ▶ In collaboration with external consultants and industry-academia partnerships, incorporated AI-based intelligent technology and established an AIoT-enabled smart factory. ▶ VCM Recycling System ▶ Continued soil and groundwater environmental remediation efforts (enhancing technology and biological applications) and education.

2022 Key Performance Achievements

Environmental



Green Procurement Benchmark Enterprise

The 2022 cumulative amount of green procurement declared reached NT\$**77.31** million, and Deputy Commissioner Shi-Chang Lu issued a certificate of appreciation.

Received the **certificate of cancellation of management** for remediation technology

Received the [certificate of cancellation of management](#) for remediation technology at polluted sites from the Environmental Protection Administration, Executive Yuan

6,461 (tons/CO₂e) Annual Carbon reduction

Energy conservation and carbon reduction plan and performance (annual carbon reduction), equivalent to the annual carbon emissions absorbed by seventeen Da'an Forest Parks.

Implemented PSM system and KPI Planning

CGPC's Toufen Plant completed the second phase of PSM and Taiwan VCM's Linyuan Plant built the PSM platform and incorporated it into its KPI planning

775.7 (Million liters) Recycled water volume

Approximate saving of 310 Olympic-sized swimming pools' worth of water. This achievement is a direct outcome of our commitment to reducing water waste, improving and replacing water-intensive equipment, and increasing water recycling and reuse rates.

Social



26.0 (hours) from the Environmental Protection Administration, Executive Yuan

Built a comprehensive education and training system, with an average annual training hours of 26.0 hours per person

The core enterprise of the Safety and Health Family

The Company was appointed as the core enterprise of the Safety and Health Family, helping 20 small- and medium-sized enterprises

760 (people) Participation in volunteer teams

Mobilized volunteer teams to engage in social charity activities, with a total of 700 participants

762 (people) Participated in beach cleanup

A total of 762 persons participated in the 5th beach cleanup activity at the Long Fong Fishing Port

102 (times) Visits by the charity club

In 2022, the charity club visited the disadvantaged groups, totaling 102 visits

1.8 % Employment of people with disabilities

The employment of persons with disabilities accounts for 1.8% of the total, which is better than the 1% under the Labor Standards Act.

5,141 (people) Contractor education and training sessions

Increased contractor education to prevent occupational accidents

Governance



ESG Included in the KPI evaluation

Included ESG in employee performance KPIs evaluation

6~20 % Corporate Governance Evaluation

Ranked among top 6~20% of the TWSE-listed companies in the 9th Corporate Governance Evaluation in 2022, and industry category: non-financial electronics with a market value of more than 10 billion. Ranking range: 11%~20% honor

99.7 % Customer satisfaction

Stabilize quality, reduce defect rate, and improve client satisfaction

TCSA

(1) Taiwan Sustainability Action Awards(TSAA):

Case-1: PE bag Recovery and reuse(Silver Award)
Case-2: High performance Bio-treatment and Filtration system(Bronze Award)

(2) ESG Report(TCSA):

Integrated Performance Award: Taiwan Top 100 Sustainable Enterprises Award
ESG Report: Traditional Manufacturing (Platinum Award)

Corporate Governance 100 Index

The company undergoes an annual process of liquidity testing, corporate governance evaluation, and screening based on three financial indicators to be considered for inclusion in the Corporate Governance 100 Index.

100 % Suppliers signed

All new suppliers signed the Supplier Social Responsibility Commitment



About CGPC

CGPC has VCM and PVC plants and secondary processing plants to full leverage the business advantages of vertical integration of upstream, mid-stream, and downstream businesses. We increase the market share and reputation of our various products through domestic and international marketing networks

▶ (GRI 2-1, 2-2, 2-7)

SDGs ▶



1.1 Company Introduction ▶ (GRI 2-2, 2-7)

CGPC (founded in 1964)



• The exterior of the administration building of the Toufen Plant of Huaxia CGPC

CGPC (stock code: 1305) was founded in 1964 and is one of USI Group's affiliates. CGPC is a mid-stream and downstream plastic raw material and goods supplier in the petrochemical industry. Our production and sales services includes PVC resin (Note), chemicals, PVC pellets, as well as secondary processed PVC film, PVC leather, pipes, and profile extruded goods.

Company name	CGPC
Industry	Plastics manufacturing
Location of headquarters	12F, No. 37, Jihu Road, Neihu District, Taipei City
Location of plant	No. 571 Minzu Road, Toufen City, Miaoli County
Paid-in capital	NT\$5.81 billion
Main products	Raw material products: ▶ PVC resin: Annual production capacity of 230,000 tons per year ▶ PVC pellets: Annual production capacity of 12,700 tons per year ▶ Chemicals: Annual production capacity of 68,675 metric tons per year (calculation as per concentration of 100%) ▶ PVC secondary processed products (including 26,640 tons of building materials products, 72,600 tons of PVC film, and 8,600,000 yards of PVC leather. Total annual production capacity of 107,900 tons
Number of employees	677 people

Note: The data in this table is as of December 31, 2022.
[CGPC company introduction](#) video Poly vinyl chloride (PVC)

TVCM (founded in 1970)



• VCM spherical storage tanks at the Linyuan Plant of Taiwan VCM

In 1970, the Ministry of Economic Affairs launched an initiative to invite six private enterprises, including CGPC, to establish Taiwan VCM to manufacture vinyl chloride monomer (VCM) to supply the raw materials required by domestic PVC manufacturers. At present, CGPC holds 87.3% of the shares of Taiwan VCM.

Company name	Taiwan VCM
Industry	Petrochemical manufacturing
Location of headquarters	12F, No. 37, Jihu Road, Neihu District, Taipei City
Location of plant	No. 1, Gongye 1st Rd., Linyuan Industrial Park Kaohsiung City
Paid-in capital	NT\$2.97 billion
Main products	VCM: Annual production capacity of 485,000 tons
Number of employees	180 people

Note: The data in this table is as of December 31, 2022.
[TVCM company introduction](#) video

CGPCP (founded in 2009)



• PVC resin tanks at the Linyuan Plant of CGPC Polymer

In 2009, CGPC established a wholly-owned CGPC Polymer by the Linyuan Plant of Taiwan VCM. It mainly produces PVC resin to fully leverage the business advantages of the vertically integrated vinyl chain to reduce costs.

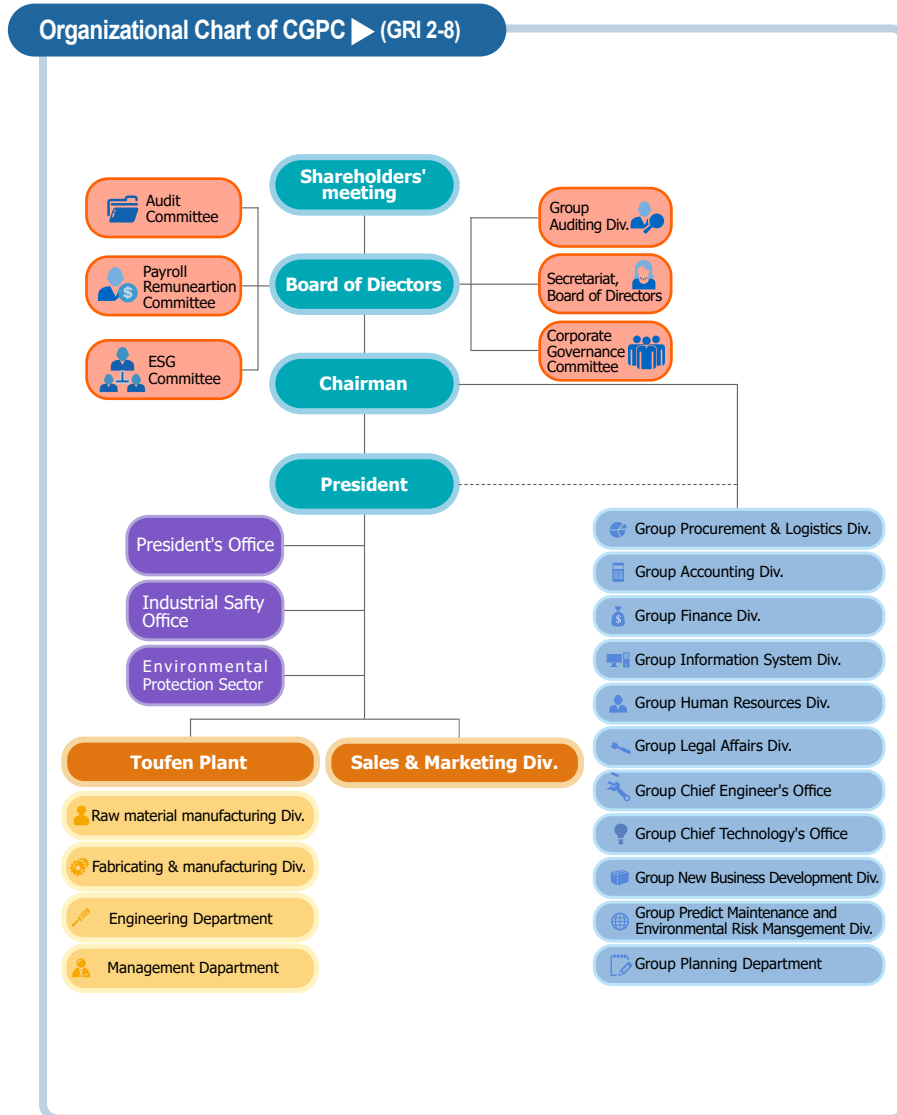
Company name	CGPC Polymer
Industry	Petrochemical manufacturing
Location of headquarters	12F, No. 37, Jihu Road, Neihu District, Taipei City
Location of plant	No.8, Shihua 2nd. Road, Lin Yuan District, Kaohsiung City
Paid-in capital	NT\$ 1 billion
Main products	PVC resin: Annual production capacity of 220,000 tons
Number of employees	39 people

Note: The data in this table is as of December 31, 2022.

1.2 Business Philosophy and Product Introduction ▶ (GRI 2-6)

▶ Business Philosophy

Since the establishment in 1964, CGPC has adhered to the business philosophy of integrity, care, discipline, and innovation, and has striven to implement corporate governance, fulfill social responsibilities, and promote sustainable management



Integrity

Honesty and Integrity

To be honest, tell the truth, and not exaggerate matters. Do not make promises to clients easily. Once making a promise, go all out to keep it.



Discipline

Pro-activeness, Responsibility and a Disciplined Team

Comply with laws and regulations, do our share and be responsible at work, establish partnership and mutual trust, and work together to be responsible to clients and the Company.



Care

Tolerance, respect, care and harmony

Be more tolerant and respectful of colleagues, clients, companies, families, environment, and society for the purpose of humanistic care and establish harmonious relationships.

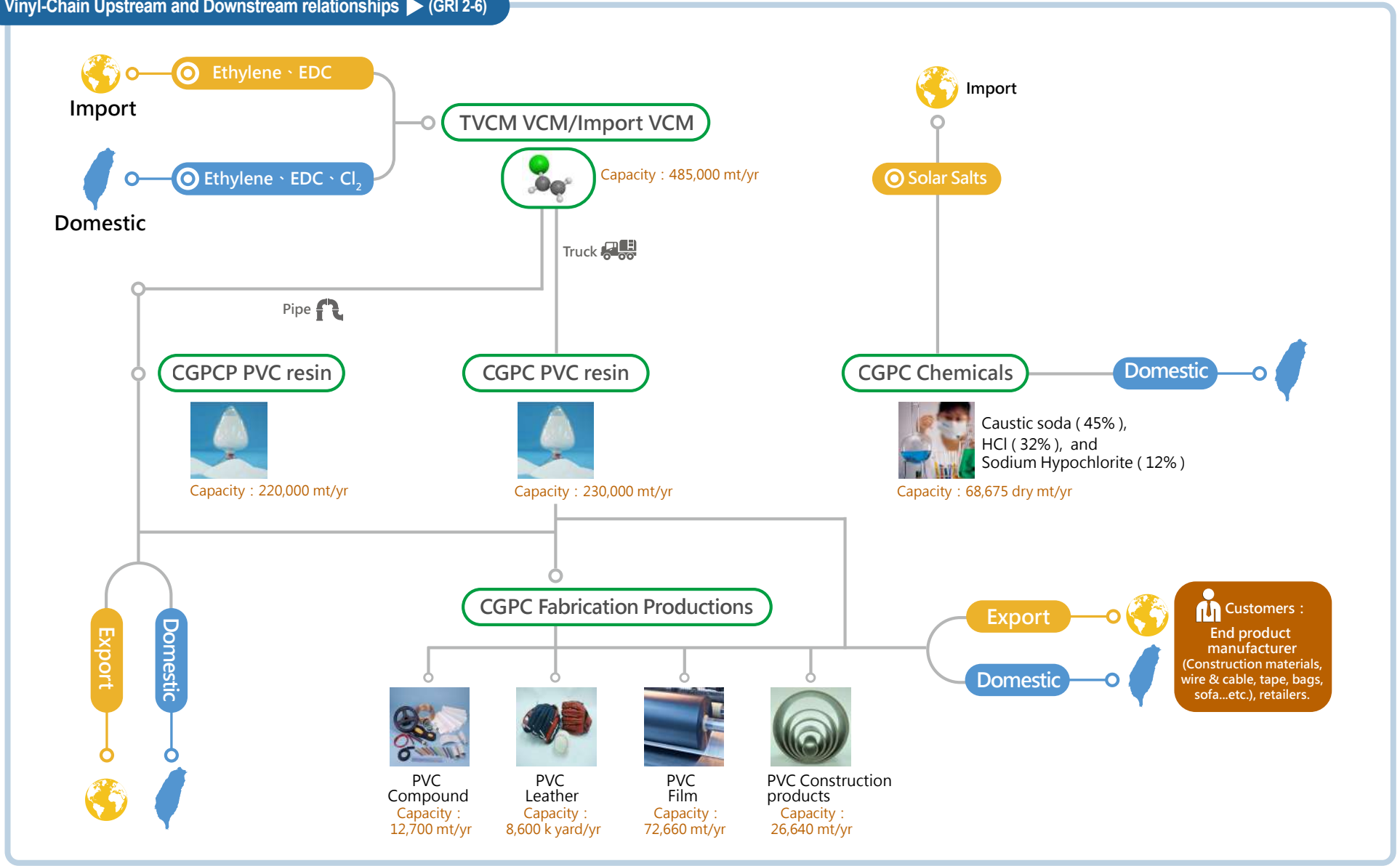


Innovation

Seek innovation and change and pursue excellence

Regardless of raw materials, products, production, marketing, R&D, and management, we must continue to innovate and seek changes, to pursue high quality and great business performance.


Vinyl-Chain Upstream and Downstream relationships ▶ (GRI 2-6)



► **About PVC (GRI 2-6, 2-9)**

► **Contribution of PVC to the environment and society**

Environmental impact



► **Contribution to reducing resource consumption**

- Reducing CO₂ emissions: PVC exhibits lower energy consumption during its manufacturing and processing in comparison to other plastics, which leads to reduced CO₂ emissions when incinerated.
- The composition of PVC resin includes 43% petroleum, with the remainder derived from salt, resulting in reduced resource consumption compared to other plastics that are primarily petroleum-based.
- PVC can be used to make products such as flooring, wall board, and construction materials etc., serving as a substitute for wood and making a significant contribution to reducing deforestation.
- PVC material possess recyclable, reusable, and long lifespan properties, which aligns with the global trend of energy conservation and carbon reduction.


Social responsibility



► **Contribution to society**

- The PVC related industry, with numerous stakeholders involved (shareholders, employees, suppliers and domestic and international customers), the employment, production, investment, logistics, and the overall economy contributes greatly to societal development and economic activities.

Recycling and reuse



► **Contribution of PVC recycling and re-use**

- PVC recycling and reuse have substantial positive benefits in alleviating global warming, energy conservation, petroleum resource conservation, and forest resource protection.

Industrial development



► **Contribution to industry - sodium hydroxide**

- Sodium hydroxide, by product of chlor-alkali process (commonly known as caustic soda), is an important raw material for pulp and paper industry, chemical fiber, detergent, soap, etc.
- Sodium hypochlorite, commonly referred to as bleach, is another important related product in the chlor-alkali industry, serving as a fundamental raw material in the downstream cleaning chemical industry.

Daily necessities



► **Contribution to the convenience of daily life**

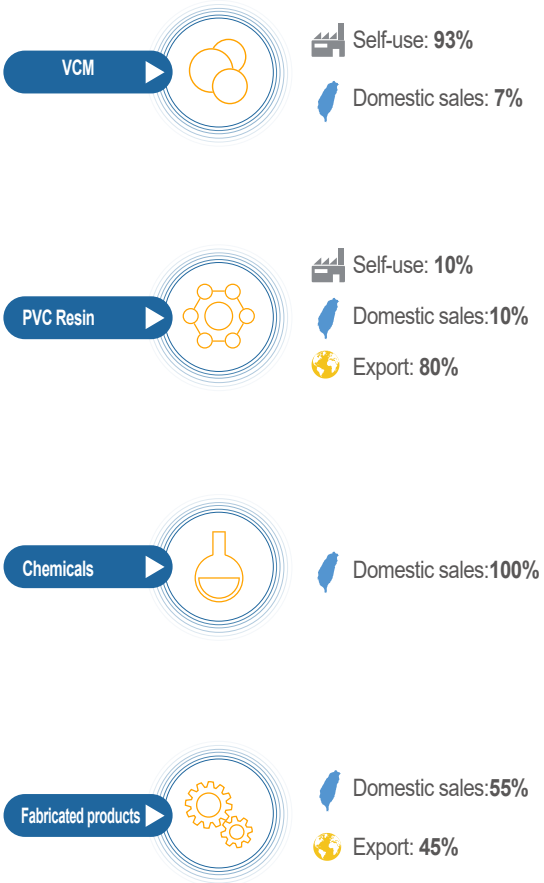
- PVC is utilized in construction materials and various range of consumer products, including shower curtains, table mats, car seat covers, sofa upholstery, and footwear. This not only offers convenience to consumers but also provides opportunities for reusing the materials, thereby minimizing unnecessary waste.

► **Contribution to the medical application**

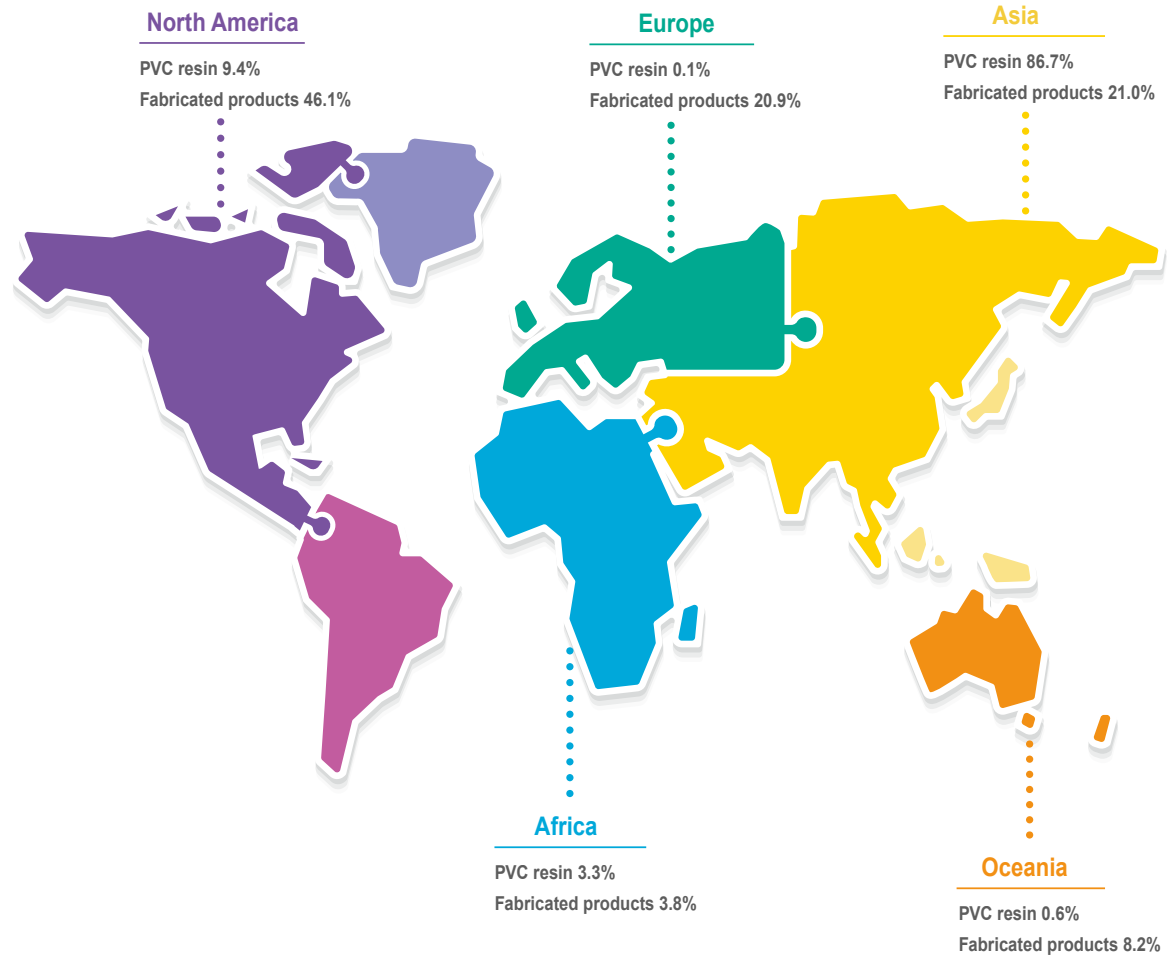
- PVC possesses excellent chemical resistance, transparency, and ease of processing, making it suitable for medical products such as blood bags, transfusion tubing, and urinary catheters. The safety of these products undergoes strict scrutiny and compliance with regulations and standards. Its countless contributions to healthcare and well-being are immeasurable.

▶ Product sales (GRI 2-6)

Percentages of domestic sales and exports of products in 2022



Distribution map of exports in 2022





ESG Issues

Amidst the ever-changing business and technological environment, a company's competitiveness and sustainable values include an ability to adapt to social and environmental changes, effective management of important intangible assets, and creation of enterprise values as a foundation for sustainable development strategies. We develop a sustainable strategy blueprint and actively evaluate the governance, environmental, and social aspects, while implementing various improvement measures in the ESG aspects to facilitate the Company's sustainable development.

► (GRI 2-9, 2-13, 2-16, 2-17, 2-23, 2-24)

2.1 Sustainable Development ▶ (GRI 2-23)

CGPC follows the sustainable vision of the USI Group, which is “Creating sustainable values and developing a sustainable society.” We strive to continuously create and consolidate sustainable value through our core capabilities, thus contributing to social sustainability.

▶ Information on awards received

Corporate Governance Evaluation



Ranked among top 6–20% of the TWSE-listed companies in the 9th Corporate Governance Evaluation. And ranked among the top 11-20% of TWSE-listed companies in the non-finance and non-electronics industry category with a market capitalization of TWD. 10 billion or more.

Taiwan Corporate Sustainability Awards



2022 15th Taiwan Corporate Sustainability Awards
 1. ESG Report-Platinum Award
 2. Integrated Performance Award: Taiwan Top 100 Sustainable Enterprises Award

Taiwan Sustainability Action Awards



CGPC is rewarded 2nd Taiwan Sustainability Action Awards, SDGs 12 Silver Award and SDGs 6 Bronze Award

2.1.1 Corporate sustainability vision and goals ▶ (GRI 2-23, 2-16)



Sustainability vision

CGPC follows the [sustainable vision](#) of the USI Group, which is “Creating sustainable values and developing a sustainable society.” We strive to continuously create and consolidate sustainable value through our core capabilities, thus contributing to social sustainability. The three core strategies of R&D and innovation, stable operation, and social inclusion are the Company’s ESG principles and our sustainable development policy.

Sustainable Management Policy

We review the consistency of the analysis results of major issues with the Company’s ESG principles every year, have established sustainable management policies and goals based on the sustainable development policy, and review and discuss the achievement of annual performance targets.

Major issue

The ESG task force gathers various concerning issues, conducts analysis on the level of stakeholders’ concern and internal impact on the company, and selects 12 issues as major issues for the company and reported them to the ESG Committee.

SDGs

We examined the connection between the Company’s sustainability vision and the UN SDGs and identified 6 SDGs and 15 sub-targets as a sustainable development strategy, while working with internal and external stakeholders and business partners in the value chain to achieve inclusion and shared prosperity through participation and collaboration.

2.1.2 ESG strategy ▶ (GRI 2-9, 2-13, 2-16, 2-23, 2-24)

To pursue sustainable development, the three core strategies of the Company's sustainability vision: R&D and innovation, stable operation, and social inclusion are the Company's ESG principles as our sustainable development policy. The ESG task force collects various issues of concern every year, analyzes material issues as per stakeholders' degree of concern and the level of the Company's internal impact, and has established the sustainable development policies and goals. The analysis results should be consistent with the Company's ESG principles. Meanwhile, the ESG task force examined the connection between the Company's sustainability vision and the 17 Sustainable Development Goals (SDGs) set by the United Nations Sustainable Development Group and focused on 6 SDGs and 15 sub-targets as a sustainable development strategy, while working with internal and external stakeholders and business partners in the value chain to achieve inclusion and shared prosperity through participation and collaboration.

2.1.4 Grievance mechanism ▶ (GRI 2-3)

Aspect	Environmental	Social	Governance
Material issue	<ul style="list-style-type: none"> Climate change and energy management Air Pollution Control Water Resources Management Waste Management 	<ul style="list-style-type: none"> Talent Attraction and Retention Talent Development and Cultivation Occupational Safety and Health Transportation Safety Management 	<ul style="list-style-type: none"> Economic performance R & D and innovation. Product Quality Intelligent Management
Grievance channels	<ol style="list-style-type: none"> Internal grievances File a complaint to the Occupational Safety and Health committee and the environmental safety unit. External grievances File a complaint with the local competent authority (environmental, health and safety related units) through phone calls, visits or in writing. These complaints are received by the designated units within the CGPC's premises. The environmental and safety units then verify the contents of the complaints. 	<ol style="list-style-type: none"> Union All union members can respond through the union if they have various suggestions for the Company or have questions about their own rights and interests. Labor-management meeting CGPC has established a labor-management meeting in accordance with the law, which is attended by representatives of the management and labor, facilitating the communication between labor and management with positive assistance. Employee grievance mailbox <ul style="list-style-type: none"> File a complaint orally or in writing to company. File a complaint through the Occupational Safety and Health committee and the environmental safety unit. External entities File a complaint through the e-mail, phone call, visits or in writing. 	<ol style="list-style-type: none"> Report the grievances to the company's executive team Please refer to the respective chapters for detailed explanations (7.3 GRI 3 Index of material issues). Audit Committee's mailbox The Regulations on the Handling of Reported Cases of Illegal and Unethical or Dishonest Conduct, specifying the reporting procedures and relevant confidentiality mechanisms, and reporting channels, including reporting in person, reporting by phone, and reporting by sending a letter, and a unit is designated for acceptance of such reports.





2.1.5 Procedure of SDGs identification ▶ As a member of the global world, CGPC needs to start from our core values and connect them with the UN SDGs. We identified the relevance to the SDGs in three stages and set relevant goals and included them in our business plan.





2.1.3 Changes in material issues

Issues	Year Difference	Adjustment Descriptions
Intelligent Management (added)	Reidentification and categorized of issues.	The direction of Intelligent Management is being developed diversely and has been identified as a material issue for CGPC.

2.1.6 Response to the UN SDGs

SDGs	Sub-target	Policies	Target and plan	2022 target	2025 target	2030 target	Corresponding chapter
3. Good Health and Well-Being 	3.9	Establish a SOP of safety management to take care of employees.	Achieve zero disaster and zero disabling, and Implementing ISO 45001 with the involvement of all employees.	1. Disabling injury frequency rate (F.R.): 0	1. Disabling injury frequency rate (F.R.): 0	1. Disabling injury frequency rate (F.R.): 0	6.4 Safe and Healthy Workplace
				2. Contracted suppliers' occupational accidents (times): 0	2. Contracted suppliers' occupational accidents (times): 0	2. Contracted suppliers' occupational accidents (times): 0	
4. Quality Education. 	4.3 4.5	Fostering a safe, harmonious, and innovative environment that prioritizes learning and growth is crucial for CGPC's team to make progress. It is only through the continuous improvement of all employees' abilities that we can achieve advancement.	Increase training sessions	120 sessions	150 sessions	170 sessions	6.3 Talent Development and Cultivation
6. Clean Water and Sanitation 	6.3 6.4 6.5 6b	Analyze and improve water consumption, recycle water for reuse, and reduce environmental pollution.	Increase the percentage of recycled water per year	39.7%	43.4%	50.3%	5.3 Water Resources Management
8. Decent Work and Economic Growth 	8.2 8.3 8.5 8.7 8.8	Creating a happy workplace is a consistent commitment of CGPC.	Reduce employee turnover	3.0%	2.8%	2.5%	6.2 Talent Attraction and Retention

SDGs	Sub-target	Policies	Target and plan	2022 target	2025 target	2030 target	Corresponding chapter			
12. Responsible Consumption and Production 	12.4 12.5	Improve product quality and reduce cost, develop high value-added new products, reduce waste, and increase the recycling rate.	Promote circular economy to reduce waste and increase recycling rate.	1. Decreasing of waste generation per unit of production (kilograms/tons):0.0065	1. Decreasing of waste generation per unit of production (kilograms/tons):0.005	1. Decreasing of waste generation per unit of production (kilograms/tons): 0.0045	5.5 Waste Management			
				2. Recycling rate: 80%	2. Recycling rate: 85%	2. Recycling rate: 90%				
				3. Landfill rate: 20%	3. Landfill rate: 15%	3. Landfill rate: 10%				
						Actively implementing proposals for improvement and product quality improvement projects, as well as conducting research and development of high-value-added new products, while promoting the use of eco-friendly materials.	1. Implemented proposals for improvement: 380 proposals	1. Implemented proposals for improvement: 400 proposals	1. Implemented proposals for improvement: 450 proposals	4.2 Product Quality
							2. Product Quality Improvement Project :11 projects	2. Product Quality Improvement Project : 11 projects	2. Product Quality Improvement Project :12 projects	
							3. Promoted the use of eco-friendly materials in products, with the sales volume: 120,000 yards	3. Promoted the use of eco-friendly materials in products, with the sales volume: 160,000 yards.	3. Promoted the use of eco-friendly materials in products, with the sales volume: 200,000 yards.	3.5 Technology Research and Development
4. Developed low-toxic and low-cost alternative raw materials: 7 projects	4. Developed low-toxic and low-cost alternative raw materials: 8 projects	4. Developed low-toxic and low-cost alternative raw materials: 12 projects								
			5. New product development: 9 projects	5. New product development: 10 projects	5. New product development: 10 projects					
13. Climate Action 	13.3	Implement energy conservation and carbon reduction initiatives, reduce the impact of corporate operations on the environment, to achieve the goal of environmental friendliness, low pollution, and low energy consumption.	Advocating energy efficiency and carbon reduction in line with government policies, and gradually adopting renewable energy sources or purchase green energy.	1. Actively implementing energy-saving and carbon reduction programs, utilizing low-carbon fuels and renewable energy sources (greenhouse gas emissions): 37.61 (ten thousand metric tons of CO ₂ e)	1. Actively implementing energy-saving and carbon reduction programs, utilizing low-carbon fuels and renewable energy sources (greenhouse gas emissions): 35.55 (ten thousand metric tons of CO ₂ e)	1. Actively implementing energy-saving and carbon reduction programs, utilizing low-carbon fuels and renewable energy sources (greenhouse gas emissions): 29.97 (ten thousand metric tons of CO ₂ e)	5.2 Climate Change and Energy Management			
				2. Reducing the emission intensity of sulfur oxides(ton/kt): ≤ 0.170%	2. Reducing the emission intensity of sulfur oxides(ton/kt): ≤ 0.167%	2. Reducing the emission intensity of sulfur oxides(ton/kt): ≤ 0.159%				
				3. Reducing the emission intensity of nitrogen oxides(ton/kt): ≤ 0.224%	3. Reducing the emission intensity of nitrogen oxides(ton/kt): ≤ 0.221%	3. Reducing the emission intensity of nitrogen oxides(ton/kt): ≤ 0.209%	5.4 Air Pollution Control			
				4. Reducing the emission intensity of VOCs (ton/kt): ≤ 1.418%	4. Reducing the emission intensity of VOCs (ton/kt): ≤ 1.401%	4. Reducing the emission intensity of VOCs (ton/kt): ≤ 1.329%				

2.2 Sustainable Management Policy ▶ (GRI 2-22, 2-23, 2-24)

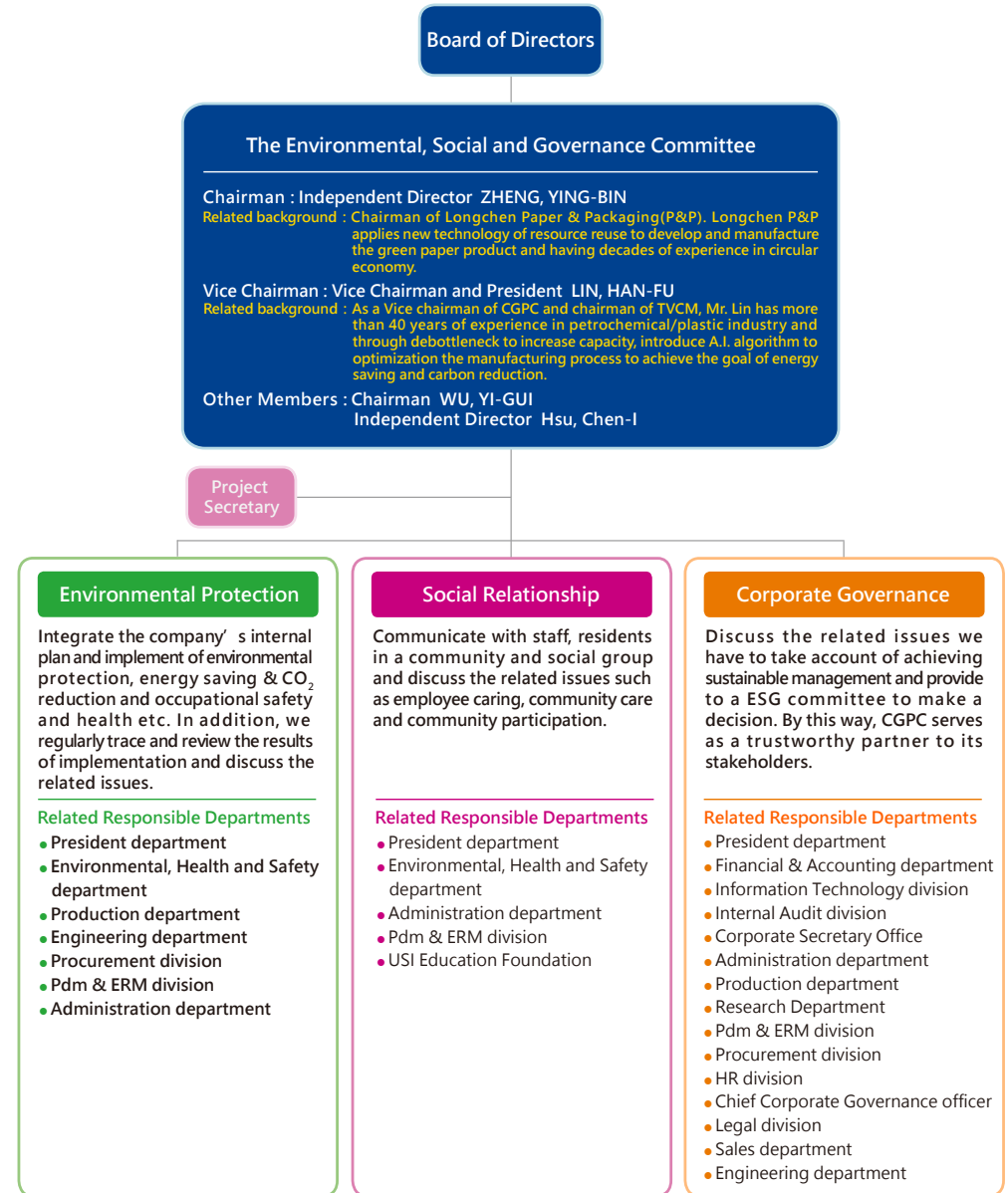
CGPC, on the basis of sustainable development, business strategy, and corporate culture, incorporates the stakeholders' issues of concern into the factors for decision-making. With a focus on stakeholders' issues of concern, we continue to implement corporate sustainable development strategies in various aspects, including climate change and energy management, corporate governance, environmental protection, employee care, supply chain management, and social participation.

2.2.1 ESG Committee ▶ (GRI 2-10, 2-11, 2-12)

In 2015, CGPC formally established the ESG Committee, which was upgraded to a functional committee under the Board of Directors in 2017 as the highest guiding unit. Independent director Ying-Pin Cheng serves as the chair of the ESG Committee to regularly review ESG policies, strategies, goals, and action plans, while guiding the implementation and tracking the progress and performance improvement of each action plan. (See the minutes of [the committee meetings on the official website for details](#))

2.2.2 Organizational Structure of the ESG Committee ▶ (GRI 2-9, 2-13, 2-14, 2-16)

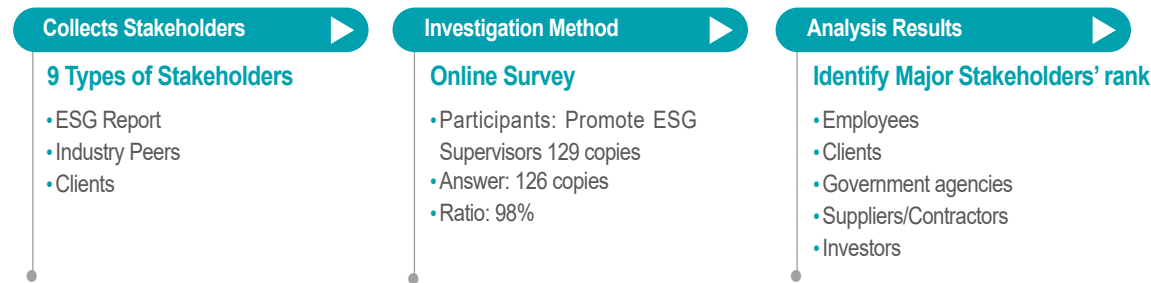
The ESG Committee holds two meetings annually, during which each operating unit provides sustainability-related information, including identification results of stakeholder, issues of concern and responses, material issues, ESG plans and execution outcomes. The ESG Core Team consolidates the information and reports to the Sustainability Development Committee through the Project Secretary, who subsequently presents the report to the Board of Directors. The Board of Directors oversees and reviews the management and performance of governance, environmental, and social aspects and providing guidance and direction on critical issues and instruct strategies for their implementation. The organizational structure and responsibilities are as shown in the figure:



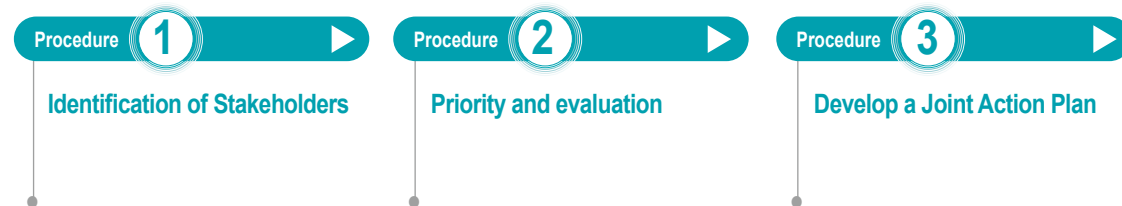
2.3 Identification of Major Stakeholders ▶ (GRI 2-29)

Our company adheres to the AA1000 Stakeholder Engagement Standards (SES) for stakeholder engagement. We assess the governance, economic, environmental and social issues and the impact on stakeholders, considering factors such as responsibility, influence, dependency, diverse perspectives and tensions. We conduct surveys using an online questionnaire targeting key stakeholders such as department managers. The results are then systematically organized using a weighted average scoring system. Based on this assessment, the identified stakeholders are ranked as follows: 1. Employees, 2. Customers, 3. Government agencies, 4. Suppliers/contractors, 5. Investors.

▶ Major Analysis








▶ Major steps for stakeholder engagement



2.3.1 The communication channel and concerning issues of stakeholder ► (GRI 2-29)

Stakeholders' identity information, issues of concern, communication channels and response methods are submitted to the Board of Directors every year. (Please find the ESG webpage for each complaint unit: [Stakeholders' Contact Information](#))

Identification of Major Stakeholders	The significance and importance of stakeholders to the company	Communication channel/frequency	Issue of concern	Summary of CGPC's response																												
 <p>Employees</p>	<p>Employees are the foundation of our sustainable development. We pay attention to the employment criteria, remuneration and benefits, training and evaluations and equal opportunities for promotion, while providing a grievance mechanism.</p>	<ul style="list-style-type: none"> • Performance interview/half year • Labor-management meeting/monthly • Union labor representative assembly/annually • Employee grievance mailbox processing/anytime • Bulletin board and email/anytime • Various work review meetings/weekly, monthly, and quarterly • CGPC Family Newsletter/every two months • Management Meeting/from time to time 	<ul style="list-style-type: none"> • Economic performance • Human Rights and Labor-Management Relations • Occupational Safety and Health • Talent Development and Cultivation 	<ul style="list-style-type: none"> • In accordance with the Consumer Price Index and individual performance, the salary adjustment for 2022 is approximately 4.1% on average for employees. • The labor union holds regular meetings to communicate with employee representatives and signs a human rights protection policy with the company. The employee participation rate in the union reaches 92.2%. • The Occupational Safety and Health Committee meeting is held quarterly and a total of 23 critical occupational safety issues were discussed in 2022. • Recognized as an excellent training institution in the Taoyuan, Hsinchu, and Miaoli regions by the Workforce Development Agency of the Ministry of Labor, we received a total of 160 subsidies in 2022. The total training hours were 41 hours and the subsidy received amounted to NT\$18,400. • Management Meetings were held on the following dates 2022/11/19, 2023/01/30, 2023/02/08, 2023/02/04. 																												
 <p>Clients</p>	<p>Customers are CGPC's primary source of revenue. We actively engage with our customers, listening to their needs and collecting market information to ensure that we promptly deliver products and information that align with their demands.</p>	<ul style="list-style-type: none"> • Sending samples/from time to time • Product exhibition/from time to time • Visits, phone calls, emails, video conferences/anytime • Client satisfaction survey/annually • Client feedback and complaint response form/anytime • CGPC Family Newsletter/every two months 	<ul style="list-style-type: none"> • Client relationship management • Technology Research and Development • Product Quality 	<ul style="list-style-type: none"> • Through the annual client satisfaction survey, we gain insights into clients' opinions. In 2022, 99.7% of the clients who responded to the survey rated their satisfaction as "Satisfied" or above, surpassing the target of 90%. • In 2022, within their respective product categories, the new product of construction materials, PVC films, and PVC leathers accounted for 14.7%, 0.7% and 5.9% of the total sales volume. • In 2022, a total of 406 quality improvement proposals were implemented, resulting in derived benefits amounting to NT\$55.95 million. The derived benefits increased compared to the previous year. 																												
 <p>Government agencies</p>	<p>Comply the relevant laws and regulations of government agencies, actively cooperate with the implementation of government policies and actively engage in two-way communication to gain its trust, support and collaboration opportunities.</p>	<ul style="list-style-type: none"> • Meet with regulatory authorities or correspondence with official documents./from time to time • Dispatch of employees to participate in public hearings, coordination meetings or regular meetings./from time to time • Market Observation Post System /release as required • CGPC Family Newsletter/every two months 	<ul style="list-style-type: none"> • Climate Change and Energy Management • Water Resources Management • Air Pollution Control 	<ul style="list-style-type: none"> • There were one environmental penalties in 2022, and the improvements have been completed and we did not violate regulations in terms of product services, client relationships and labor and human rights. (Read CH3.4 Regulatory Compliance Descriptions) • (1) Implemented Management System: <table border="1" data-bbox="1294 1066 2042 1279"> <thead> <tr> <th>Item</th> <th>CGPC</th> <th>TVCM</th> <th>CGPCP</th> </tr> </thead> <tbody> <tr> <td>ISO-50001 Energy management system verification</td> <td>√</td> <td>√</td> <td>√</td> </tr> <tr> <td>ISO 14046-1 Greenhouse Gas Inventory</td> <td>√ (added scope 3)</td> <td>√ (added scope 3)</td> <td>√ (added scope 3)</td> </tr> <tr> <td>ISO 14067 Product Carbon Footprint</td> <td>√</td> <td>√</td> <td>√</td> </tr> <tr> <td>ISO 46001 Water resources management system</td> <td>√</td> <td></td> <td></td> </tr> <tr> <td>ISO 14046 Water footprint</td> <td>√</td> <td></td> <td></td> </tr> <tr> <td>ISO 14001 Environmental management system</td> <td>√</td> <td>√</td> <td>√</td> </tr> </tbody> </table> • (2) In 2022, we constructed Activated Carbon Fluidized Bed, reduced the emission of volatile organic compounds (VOCs), strengthened the circular economy through the re-use of waste liquids and decreased carbon emissions by 45.578 tons /CO₂e. • (3) Formulated climate change risk management plans. • Built High performance Bio-treatment and Filtration system(HBF), the total volume of water recycled in 2022 reached about 775.7 million liters per year. 	Item	CGPC	TVCM	CGPCP	ISO-50001 Energy management system verification	√	√	√	ISO 14046-1 Greenhouse Gas Inventory	√ (added scope 3)	√ (added scope 3)	√ (added scope 3)	ISO 14067 Product Carbon Footprint	√	√	√	ISO 46001 Water resources management system	√			ISO 14046 Water footprint	√			ISO 14001 Environmental management system	√	√	√
Item	CGPC	TVCM	CGPCP																													
ISO-50001 Energy management system verification	√	√	√																													
ISO 14046-1 Greenhouse Gas Inventory	√ (added scope 3)	√ (added scope 3)	√ (added scope 3)																													
ISO 14067 Product Carbon Footprint	√	√	√																													
ISO 46001 Water resources management system	√																															
ISO 14046 Water footprint	√																															
ISO 14001 Environmental management system	√	√	√																													

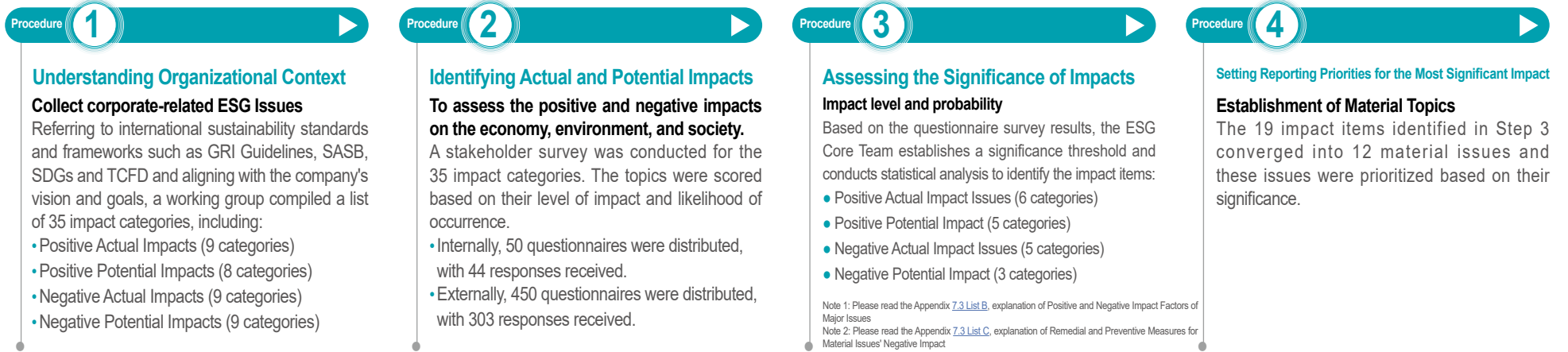
Identification of Major Stakeholders	The significance and importance of stakeholders to the company	Communication channel/frequency	Issue of concern	Summary of CGPC's response
Suppliers/ Contractors 	<p>Suppliers/Contractors are CGPC's important partners in sustainable development, affecting our production, services, and operations. We learn about suppliers' concerns through communication channels to reduce business risks and costs.</p>	<ul style="list-style-type: none"> Review meetings/from time to time Supplier evaluation, Commitment/Annually or add manufacture Contractor safety and health education and training/from time to time Industry exchange seminars/at least once a year Visits, phone calls and emails/from time to time CGPC Family Newsletter/every two months 	<ul style="list-style-type: none"> Sustainable Management of Supply Chain./from time to time Occupational Safety and Health 	<ul style="list-style-type: none"> (1) Engage in meetings with suppliers from time to time to meet our needs for quality and transaction conditions. (2) Conduct supplier evaluation once a year and inform them of the results. (3) Motivate suppliers to sign a social responsibility commitment. (4) Contact point: Mr. Chen, Material Planning Department at (02) 8751-6888 ext. 3771 In 2022, a total of 2,374 contractors' personnel received safety education and training. In response to the accident investigation results in 2022 (Three accidents for CGPC, one for contractors in 2021 and has explained in the report, none for contractors in 2022), we strengthen education and training, comply with various operating regulations and require employees to make various improvements. Taiwan VCM's and CGPC Polymer's contractors did not have accidents occurring between 2019 and 2022.
Investors 	<p>CGPC should provide every investor with fair access to the Company's material information, to disclose the Company's market value and sustainable development trajectory.</p>	<ul style="list-style-type: none"> Shareholders' meeting/annually Market Observation Post System /release as required The Company's website "Investor Services"/Anytime Annual report/annually Financial statements/quarterly ESG report/annually Investor conference/four times per year CGPC Family Newsletter/every two months The Company's website "USI Joint Stock Network"/Irregular Setup of whistleblowing mailboxes 	<ul style="list-style-type: none"> Economic performance Client relationship management Technology Research and Development 	<ul style="list-style-type: none"> Annual shareholders' meetings and quarterly investor conferences held by the Company are held to report our operating results and future outlook to our shareholders and the public. (1) Regularly disclose financial information on the MOPS of the Taiwan Stock Exchange and the company's website. (2) Set up the investor section on the Company's website. (3) Formulated the Corporate Governance Best Practice Principles to prohibit employees from unethical conduct. (4) Established the Company's internal and external reporting channels and response systems to duly implement the Codes of Ethical Conduct and the Corporate Governance Best Practice Principles formulated by the Company and ensure whistleblowers' and relevant people's legitimate rights and interests.

Note: CGPC Family Newsletter has been released once every two months (published after the middle of the second month) since March 2022.

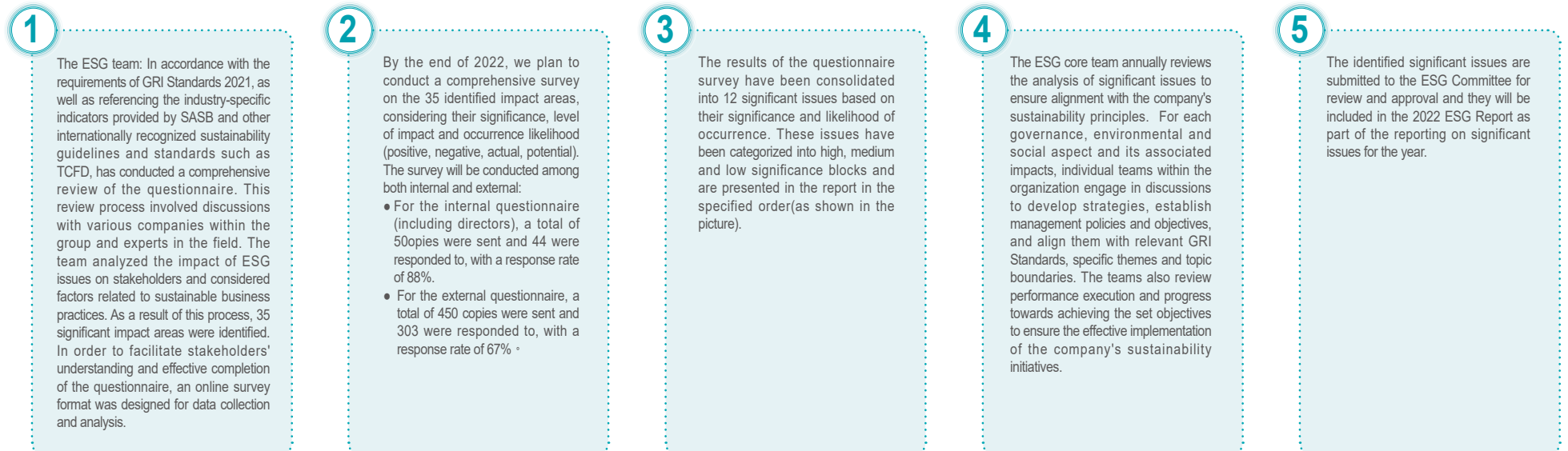
2.4 Identification of Material Issues ► (GRI 2-23)

In accordance with the GRI Standards 2021, we have established a systematic operational process through significant analysis to identify and address the impacts on the economy, environment and society (including human rights). We analyze the issues of concern to stakeholders and prioritize them based on their significance and relevance to our business operations. We have identified the major issues and developed strategies, goals and improvement plans to enhance operating efficiency and serve as a foundation for continuous improvement in sustainable development. These efforts are outlined within each major issue.

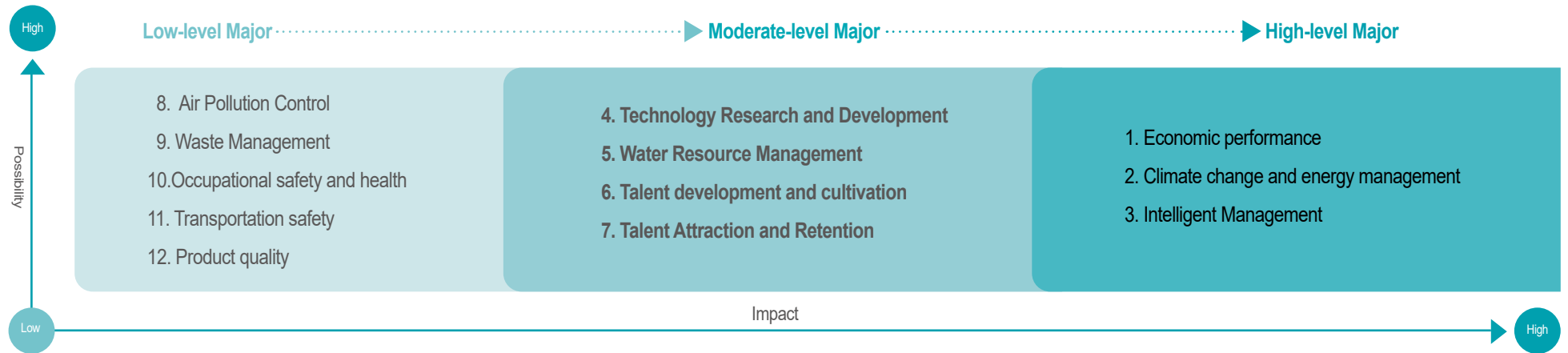
2.4.1 Steps for identification of material issues ► (GRI 3-1)



2.4.2 Identify material issues ► (GRI 2-23, 2-25, 3-1, 3-2, 3-3)



► **Material issues in 2022 are ranked as follow:**



2.5 Description of material issues ► (GRI 3-3)

Aspect	Material issue	ESG principles	Significance and Impacts on the Company	Corresponding to GRI Guidelines Major Topics	Corresponding chapter	Value Chain Impacts (Stakeholder Impacts) Boundaries and Involvement Levels				
						Upstream		Corporate Governance	Downstream	
						Supplier Contractor	Government agencies	Employees	Clients	Investors
Environmental	Climate Change and Energy Management	Stable operations	With the deterioration of the environment and ecology, shortage of energy and natural resources, exacerbation of climate change and stricter government laws and regulations, CGPC takes concrete actions to continuously promote and implement energy conservation, carbon reduction, and the development of green products to meet government requirements.	GRI 302: 2016 Energy	5.2 Climate change and energy management	⊙	●	●	●	●
	Air pollution control	Stable operations	Reduce the impact of business operations on the environment, to achieve low pollution and low energy consumption.	GRI 305: 2016 Emissions	5.4 Air Pollution Control	⊙	●	●	⊙	⊙
	Water Resources Management	Stable operations	Continuously monitoring records of water usage, conducting analysis and improvements. By utilizing recycled water to reduce environmental pollution, maintain the health of employees and community residents, and achieve sustainable ecological balance.	GRI 303: Water and effluents 2018	5.3 Water Resources Management	⊙	●	●	⊙	●
	Waste Management	Stable operations	CGPC attaches great importance to manage of the emission and waste from manufacturing process. We proactively and autonomously manage and properly handle wastewater and waste. By implementing effective management practices, we aim to minimize our impact on the environment, employees, and the community residents.	GRI 306: 2020 Waste	5.5 Waste Management	⊙	●	●	⊙	●

Aspect	Material issue	ESG principles	The significance and importance of stakeholders to the company	Corresponding to GRI Guidelines Major Topics	Corresponding chapter	Value Chain Impacts (Stakeholder Impacts) Boundaries and Involvement Levels				
						Upstream		Corporate Governance	Downstream	
						Supplier Contractor	Government agencies	Employees	Clients	Investors
Social	Talent development and cultivation	Social inclusion	Fostering a safe, harmonious, and innovative environment that prioritizes learning and growth is crucial for CGPC's team to make progress. It is only through the continuous improvement of all employees' abilities that we can achieve advancement.	GRI 404:2016 Training and Education	6.3 Talent Development and Cultivation	⊙	⊙	●	⊙	⊙
	Talent Attraction and Retention	Social inclusion	Employees play a crucial role and is the foundation of CGPC's sustainable operation. The company firmly believes that having satisfied employees is the key to continuously achieving higher performance. Therefore, creating a happy workplace environment for our employees is our commitment.	GRI 401:2016 Labor Relations GRI 405:2016 Diversity and Equal Opportunity	6.2 Talent Attraction and Retention	⊙	⊙	●	⊙	⊙
	Occupational safety and health	Social inclusion	Establish an operation safety management system to strengthen and educate relevant concepts and prevent occupational accidents, to maintain employees' and contractors' health and safety.	GRI 403:2018 Occupational Safety and Health	6.4 Safe and Healthy Workplace	●	●	●	●	●
	Transportation safety	Social inclusion	To ensure the transportation safety of raw materials and products, the strictest management system is adopted to ensure the safety of life and property and reduce pollution, which is our highest principle. Establish relevant management systems to achieve the goal of zero transportation accident. Minimize the impact on our employees, contractors, and customers.	GRI 413:2016 Local Communities	6.5 Transportation Safety Management	⊙	●	●	●	●
Governance	Economic performance	Stable operations	Economic performance is the fundamental for the sustainable development of the company. It allows shareholders to obtain reasonable returns on their investments and provides sufficient resources to care for employees. Furthermore, it fosters mutually beneficial relationships with partners, driving collective growth for the government, investors, society, and companies.	GRI 201:2016 Economic performance	3.2 Operational Performance	⊙	●	●	⊙	●
	Technology Research and Development	R&D and innovation	R&D and innovation are the foundation of the Company's sustainable development. Improve process technology and quality, reduce costs, understand market needs, develop new products with high added value, and enhance market competitiveness. Strengthen the trust of our customers and suppliers in our company.	Self-defined topic	3.5 Technology Research and Development	⊙	⊙	●	●	●
	Product quality	R&D and innovation	By utilizing an efficient quality system and a systematic management approach, we aim to stabilize product quality, decrease the defect rate, and enhance client satisfaction.	Self-defined topic	4.2 Product Quality	⊙	⊙	●	●	⊙
	Intelligent Management	Stable operations	By implementing AI intelligent systems, optimizing process technology and management, and achieving energy savings and carbon reduction, we aim to enhance competitiveness and move towards sustainable operations. This approach enables product consistency and contributes to the economic, environmental and societal needs, meeting the requirements of various stakeholders.	Self-defined topic	3.6 Intelligent Management	●	●	●	●	●

Note 1: ● Direct Effect; ⊙ Indirect Effect

Note 2: Please read the Appendix [7.3 List B](#), explanation of Positive and Negative Impact Factors of Major Issues

Note 3: Please read the Appendix [7.3 List C](#), explanation of Remedial and Preventive Measures for Material Issues' Negative Impact



3

Sustainable Development

Practicing sound corporate governance is the top priority of sustainability management. Therefore, we continue to develop and improve countermeasures for problems and actively improve the management system to create more fruitful results.

▶ (GRI 2-2, 2-9 ~ 2-21, 2-26, 2-27, 201-1, 201-4, 307-1, 418-1, 419-1)

SDGs ▶



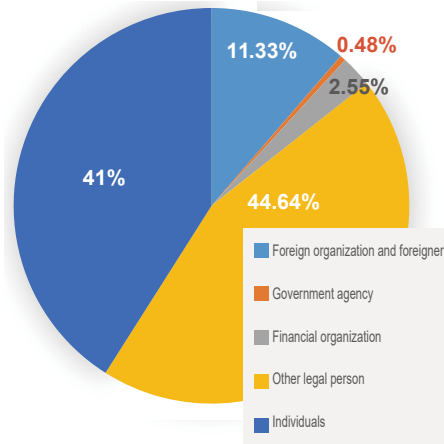
3.1 Corporate governance ▶ (GRI 2-16)



CGPC values the rights and interests of shareholders, and strictly abides by the relevant regulations on information disclosure, and provides information to shareholders on the Company's financial, business, insider shareholding and corporate governance conditions through the Market Observation Post System or the Company's website. We have established a corporate governance system in order to protect the rights and interests of shareholders and implement equal treatment of shareholders. A corporate governance system in which the shareholders have full rights to know, participate in and decide on material issues. (Please refer to [2022 Board of Directors' Resolutions](#)).

Corporate Governance Evaluation	Taiwan Corporate Sustainability Awards	Taiwan Sustainability Action Awards
<ul style="list-style-type: none"> Ranked among top of the TWSE-listed companies of the ninth term (6%~20%) Ranked among 11~20% of non-financial electronic companies with a market value of more than NT\$10 billion 	<ul style="list-style-type: none"> Integrated Performance Award: Taiwan Top 100 Sustainable Enterprises Award ESG Report: Traditional Manufacturing - Platinum Award 	<ul style="list-style-type: none"> Silver Award: SDGs 12 Project Name- PE bag recycling and re-use Bronze Award: SDGs 6 Project Name- Manufacturing process water recycling system

CGPC's composition of shareholders



3.1.1 Transparent information disclosure ▶ (GRI 2-9)

We adhere to the business philosophy of ethics, care, discipline, innovation and trustworthy corporate governance principles. Through [our website](#), [the Market Observation Post System](#), [annual report](#), [ESG report](#), [investor conference](#) and other diverse information channels, we disclose the information related to corporate governance, operations, financial statements, institutional investor conferences, the Group's current information, etc. to improve the communication with stakeholders and the speed, quality and credibility of information disclosure.

In 2022, the 4 sessions of institutional investor conferences, annual general meeting and the abovementioned diverse information disclosure channels helped us collect shareholders' opinions which are given to the management team as reference for decision-making. In addition, we value the rights and interests of foreign investors and the globalization of enterprises, and have followed corporate governance evaluation standards to improve the annual report, update information on the MOPS and the Company's website and disclose information in English. We actively establish good two-way communication channels with shareholders through various ways to realize the protection of shareholders' rights and interests.

3.1.2 Information on appointment of the board and the status of operation ▶ (GRI 2-9-2-21)

The Company's board is composed of 9 directors with extensive experience in various professional fields and among them, 4 are independent directors, accounting for 44% of the board of directors. The term of office of the directors is 3 years and they may be re-elected.

To establish a robust corporate governance framework and an independent director system, we aim to empower independent directors to fulfill their roles in the Board of Directors and contribute to the company's operations and formulate the [Independent Director Duties and Responsibilities Regulations](#).

In year 2022, a total of 6 board meetings were convened, with a remarkable 100% attendance. (Please refer to The Company's [website](#) or [Annual Report](#))

Board Members

Tenure: May 30, 2022 to May 29, 2025.

Member: Director: Yi-Gui, Wu (Chairman)

Han-Fu Lin (Vice Chairman and President)

Pei-Ji Wu, Han-Tai Liu, Hong-Duo Wu

Independent directors: Tsu-Te Li, Ying-Pin Cheng,

Liang-Hsien Li, Cheng-Yi Hsu

Gender: All male

Age: 50 and under	1
50 to 59	2
60 to 69	1
70 and over	5

Board of Directors' Resolution Submission Process

Authority and Responsibility unit

Submitting a proposal.

Functional committees

Convene conference within the scope of relevant responsibilities. Conduct resolution report, discuss, make resolutions, and prepare minutes of the conference regarding the resolutions' results.

Submission to the Board of Directors

Conduct resolution report, discuss, make resolutions, and prepare minutes of the conference regarding the resolutions' results.

2022 Board of Directors' Important Resolutions (GRI 2-16)

(Please refer to The Company's [website](#) or [annual report](#)) Furthermore, we set up the "Group Secretary of Board of Directors" as the administrative unit responsible for planning and organizing board meetings. Its role is to enhance the efficiency of board meetings and assist in the implementation of resolutions.

3.1.3 The implementation status of the board members' diversity policy (GRI 2-9, 2-10, 2-11, 2-15)

► Specific management objectives of board diversity

Diversity Policy for Board Members: The composition of the Board of Directors should consider diversity and the board of directors should have the following capabilities: judgment on operations, accounting and financial analysis, business management, crisis management, industry knowledge, perspectives on international markets, leadership, decision-making, laws and environmental protection. To attract outstanding external talent to join the company's Board of Directors, the number of independent director seats for this term has been increased from 3 to 4 and appointed on May 30, 2022. Mr. Cheng-Yi, Xu was appointed as a new independent director. He holds a Master's degree in Business Administration from a Swiss business school and currently serves as the Chairman of the TTFB Group. With his extensive business experience, Mr. Xu will contribute to enhancing the quality of board review and fulfilling the goal of implementing the board's diversity policy. The future diversity goal for the company's board members includes adding one director with expertise in sustainable development, who can assist the company in achieving its carbon reduction goals and implementing green energy policies. Additionally, it is planned to add one director with expertise in business risk management to enhance the company's sustainability competitiveness and further improve the functionality of the board.

Implementation Status of Diversity Policy for Board Members: Please refer to The Company's [website](#) or [annual report](#).)

► Conflict of interest and avoidance of directors

The Board of Directors has established comprehensive systems and measures to mitigate conflicts of interest. (Including their impact on the economy, environment, and stakeholders) These are outlined as follows:

1. Conflict of Interest Prevention System: The Company has implemented robust corporate governance practices to ensure that the Board of Directors is aware of any conflicts of interest that may arise and to safeguard the rights of investors. (Please refer to the [Board of Directors' Procedure Regulations](#) Article 16 and Article 17, Clause 1.)
2. To establish good corporate governance and an independent director system that enables independent directors to fulfill their functions in the Board of Directors and company operations, the "Independent Director Duties and Responsibilities Regulations" has been formulated. It explicitly states that "if an independent director holds dissenting or reservation opinions, they shall be recorded in the minutes of the board meeting," "the company shall not obstruct, refuse or evade the independent directors from performing their duties" and "when deemed necessary to fulfill their duties, independent directors may request the board to assign relevant personnel or hire experts to assist them." These measures ensure that independent directors can fulfill their responsibilities and effectively enhance the functioning of the Board of Directors and the company's operational performance.
3. Measures to Avoid Conflict of Interest: When the Board of Directors discusses matters related to directors with conflicts of interest, the Chairman reminds the relevant directors to recuse themselves from the discussion. If the Chairman has a conflict of interest, an independent director without any conflicts is appointed to act as the Chairman.
4. The Board's Secretary Office diligently records the relevant content regarding matters involving conflicts of interest with directors in accordance with the Board of Directors' Procedure Regulation.
5. The Board of Directors has established comprehensive systems and measures to avoid conflicts of interest among directors. (Please refer to the [Directors and Presidents' Ethical Behavior Guidelines](#), [Business Integrity Practices](#), [Business Integrity Operating Process and Behavior Guidelines](#).)
6. For details on the Board of Directors' adherence to avoiding conflicts of interest in 2022, please refer to the [Annual Report](#) - Board of Directors' Operations.

3.1.4 Performance evaluation of committees ► (GRI 2-18)

Established evaluation methods for the performance of the board, and regularly conduct self-evaluation of the board as a whole, individual board members, the Audit Committee and the Salary and Remuneration Committee every year, which is carried out by the Office of the Board Secretary. The results serve as a reference for the Company to review and improve. Overall Evaluation Results of the Board of Directors, Individual Directors, Audit Committee and Remuneration Committee for the Year 2022:

► 2022 performance evaluation of the board, Audit Committee and Salary and Remuneration Committee

Parties evaluated	Board of directors	Board members	Audit Committee	Salary and Remuneration Committee
Aspect of assessment	<ul style="list-style-type: none"> • Participation in the operations of the Company • Improvement in the quality of the board' decision making • Composition and structure of the board • Election and continuing education of the directors • Internal control 	<ul style="list-style-type: none"> • Alignment of the goals and missions of the company. • Awareness of the duties of a director. • Participation in the operation of the Company • Management of internal relationship and communication. • Management of internal relationship and communication. • Internal control 	<ul style="list-style-type: none"> • Participation in the operations of the Company • Awareness of the duties of the Audit committee. • Improvement of quality of decisions made by the Audit committee. • Makeup of the Audit Committees and election of members • Internal control 	<ul style="list-style-type: none"> • Participation in the operations of the Company • Awareness of the duties of the Salary and Remuneration committee. • Improvement of quality of decisions made by the Salary and Remuneration committee. • Makeup of the Salary and Remuneration Committees and election of members
Assessment results	The average score of all aspects of board members is above 4.6 and the evaluation results are good.	The average score of all aspects of board members is above 4.6 and the evaluation results are good.	The average score of all aspects of board members is above 4.6 and the evaluation results are good.	The average score of all aspects of the Salary and Remuneration Committee is 4.6 and the evaluation results are good.

Note: The evaluation score is expressed in the range of 0 to 5, with a full score of 5. The period being evaluated is from 2022.01.01 to 2022.12.31. The overall performance evaluation results of the Board of Directors and its members was reported to the Board of Directors in the first quarter of 2023.

Recommendations and implementations:

In light of the increasing global focus on environmental, social, and governance (ESG) issues, the Company has actively implemented various measures in accordance with the corporate governance 3.0 sustainable development blueprint released by regulatory authorities. These initiatives have been presented to both the ESG Committee and the Board of Directors, providing detailed explanations to the directors. During meetings, the directors have frequently offered valuable insights and recommendations.

In addition to continuously enhancing corporate governance effectiveness, the Company has placed particular emphasis on implementing carbon reduction goals and developing green energy strategies. We are carefully planning and executing these initiatives to meet international standards and achieve our ambitious goals for sustainable development.

3.1.5 Enhancing directors' professional competence ▶ (GRI 2-17)

In order to reinforce the professional competence of directors, we regularly provide information on relevant continuing education courses to directors and assists directors to register for the courses. An internal training program has been scheduled, consisting of a total of 6 hours of training. On July 14, 2022, Dr. Tsai-Yi Wu, President of the Taiwan Research Institute, delivering a 3-hour session on "Climate Change, Net Zero Emissions Policies and the Risks and Opportunities for Business Operations." On October 13, 2022, Attorney-at-Law Yu-Chin Hsu from PwC Legal, presented a 3-hour session on "Corporate Governance Disputes and an Introduction to the Commercial Case Adjudication Act."

In 2022, all directors and independent directors also participated in various external courses, and the total number of training hours was 57 hours. The 9 directors (including the independent directors) met the hour number requirements specified by the Directions for the Implementation of Continuing Education for Directors and Supervisors of TWSE Listed and TPEX-Listed Companies, and the content of the courses is detailed in our [website](#).

3.1.6 Chief Corporate Governance Officer ▶ (GRI 2-9, 2-17)

In order to protect shareholders' rights and interests of and strengthen the professional competence of the board, the board resolution on May 9, 2019, approved the appointment of the director Yung-Chih Chen of legal affairs holding the concurrent position as the chief corporate governance officer in charge of corporate governance-related affairs.

Director Yung-Chih Chen has more than 7 years of experience as the head of legal department of a publicly-traded company. His main responsibilities are to handle matters related to board meetings and shareholders' meetings, preparing the minutes of the board meetings and shareholder meetings, assisting in the appointment of directors of the board and their continuing education, providing directors with information required for business implementations, helping directors comply with the laws and regulations, etc. (For details, please see the description on the [website](#))

Highlights of 2022 task execution



- Assist the directors to perform their duties, provide the required information, arrange for the directors to attend continuing education courses and apply for liability insurance.
- Handle the procedures for board meetings and shareholder meetings and verify the regulatory compliance of resolutions.
- Maintain investor relations.

Completed hours of continuing education of Chief corporate governance officer in 2022.





- The chief corporate governance officer, Yung-Chih Chen, has completed 43 hours of continuing education in 2022. (Please see the [website](#) for details)

3.1.7 Functional committees ▶ (GRI 2-9)

We have established three functional committees under the Board of Directors, the Audit Committee, Salary and Remuneration Committee, and ESG Committee. For details, please visit the website of the respective committees.

Job Title	Name	Audit Committee	Remuneration Committee	ESG Committee
Chairman	Yi-Gui Wu			Committee Members.
Director	Han-Fu Lin			Vice Committee Chairperson
Independent director	Tsu-Te Li	Convenor	Committee Member	
Independent director	Ying-Pin Cheng	Committee Member	Convenor	Committee Chairperson
Independent director	Liang-Hsien Li	Committee Member	Committee Member	
Independent director	Cheng-Yi Hsu	Committee Member		Committee Member

3.1.8 Functions and operations of each functional committee ► (GRI 2-10, 2-19-2-21)

Name of committee	Duties/ Functions	Operation and communication status								
 <p>Audit Committee</p>	<ul style="list-style-type: none"> Establishment and revision of the internal control systems and supervision of operations. Establishment and revision of the control procedures of activities for major financial or business and the supervision of the operation. The hiring (and dismissal), independence and supervision of CPAs. The appointment and dismissal of chief financial, accounting, and internal auditor. Fair presentation and supervision of the financial reports. 	<ol style="list-style-type: none"> The second term of office was from June 21, 2019, to May 29, 2022, with a total of 3 members. The third term of office is from May 30, 2022, to May 29, 2025, with a total of 4 members, all of whom are independent directors. The Audit Committee meets at least once a quarter and the meeting may be held at any time as needed. There are 5 meetings in 2022, and the attendance of committee members (independent directors) in person was 100%. Communication between Independent Directors and Accountants/Internal Audit Manager: in order to fully exercise their duties and gain a better understanding of the company's financial reports and financial and business conditions, independent directors engage in separate communication with the auditors and internal audit manager at least once a year, without the presence of other directors or management personnel. <ul style="list-style-type: none"> Communication between Independent Directors and Accountants/Internal Audit Manager <table border="1" data-bbox="645 544 1736 799"> <tr> <td>Date</td> <td>2022.11.01</td> </tr> <tr> <td>Accountants</td> <td>1. Review the implementation and conclusion of the Q3 2022 consolidated financial report. 2. 2022 annual financial report audit plan and key audit matters. 3. Disclosure Framework and Timeline for Audit Quality Indicators (AQI).</td> </tr> <tr> <td>Internal audit supervisor</td> <td>1. Implementation status of audit and the results. 2. Revise Internal control System. 3. Schedule of 2022 internal control self-evaluation. 4. 2023 Audit plan.</td> </tr> <tr> <td>Communication Results</td> <td>No comments.</td> </tr> </table> <ul style="list-style-type: none"> For detailed information, please refer to the official website - Audit Committee, Audit Committee's Organizational Regulations. <ol style="list-style-type: none"> Annual Implementation of risk management Report from the President's Office 	Date	2022.11.01	Accountants	1. Review the implementation and conclusion of the Q3 2022 consolidated financial report. 2. 2022 annual financial report audit plan and key audit matters. 3. Disclosure Framework and Timeline for Audit Quality Indicators (AQI).	Internal audit supervisor	1. Implementation status of audit and the results. 2. Revise Internal control System. 3. Schedule of 2022 internal control self-evaluation. 4. 2023 Audit plan.	Communication Results	No comments.
Date	2022.11.01									
Accountants	1. Review the implementation and conclusion of the Q3 2022 consolidated financial report. 2. 2022 annual financial report audit plan and key audit matters. 3. Disclosure Framework and Timeline for Audit Quality Indicators (AQI).									
Internal audit supervisor	1. Implementation status of audit and the results. 2. Revise Internal control System. 3. Schedule of 2022 internal control self-evaluation. 4. 2023 Audit plan.									
Communication Results	No comments.									
 <p>Remuneration Committee</p>	<ul style="list-style-type: none"> Prescribe and review the performance evaluation and remuneration policy, system, standards, and structure for directors and managerial officers. Periodically evaluate and prescribe the remuneration of directors and managerial officers 	<ol style="list-style-type: none"> The current term of office is from June 2, 2022 to May 29, 2025, with a total of 3 members, consisting of all independent directors. The committee convenes a minimum of 2 meetings per year and in the year 2022, a total of 3 meetings were held, with all committee members achieving a 100% attendance rate. Regarding the operation of this committee, please refer to The Company's website, annual report or linked to the Market Observation Post System (MOPS) to research. The committee conducts regular reviews of the (1) performance evaluation and (2) compensation policies, systems, standards and structures for directors and executives. It considers various factors, including industry median compensation levels, individual time commitment, responsibilities, individual goal attainment, compensation of comparable positions, achievement of short-term and long-term business goals and the financial position of the company. Based on these factors, the committee establishes and evaluates the compensation of directors and executives, subject to the approval by the board of directors. (GRI 2-20) <ul style="list-style-type: none"> Salary and Remuneration: Director compensation comprises remuneration, director fees, and business execution expenses. Executive compensation includes monthly salary, fixed bonus, year-end bonus, employee remuneration, annual special bonus, retirement benefits and welfare benefits as required by law. The remuneration for directors and employees is governed by the provisions of Article 33 of the company's bylaws. (GRI 2-19) Total Remuneration Ratio for the year 2022: 5.09:1, Total Remuneration Variation Rate: 72.15%. (GRI 2-21) Performance evaluation: The aspect of assessment for directors' performance encompasses the understanding of company goals and missions, awareness of responsibilities, level of involvement in company operations, internal relationship management and communication, professionalism and continuous learning, and internal control, among others. The evaluation of managers' performance covers financial aspects (such as operating revenue, operating profit, and pre-tax net profit), customer aspects (customer satisfaction, service quality, etc.), product aspects (brand management, quality innovation, etc.), talent aspects (talent development, potential enhancement, etc.), safety aspects, project aspects (digital transformation, energy conservation and carbon reduction, circular economy, net-zero emissions, etc.) and medium to long-term sustainable business goals. <p>Note 1: Total Remuneration Ratio: Annual total remuneration of the highest-paid individual in the organization divided by the median annual total remuneration of all employees (excluding the highest-paid individual).</p> <p>Note 2: Total Remuneration Change Ratio: Percentage increase in the annual total remuneration of the highest-paid individual in the organization divided by the percentage increase in the median annual total remuneration of all employees (excluding the highest-paid individual).</p> <ul style="list-style-type: none"> For detailed information please refer to the official website-Salary and Remuneration Committee,Remuneration Committee's Organizational Regulations, annual report. 								

Name of committee	Duties/ Functions	Operation and communication status
 <p>ESG Committee</p>	<ul style="list-style-type: none"> Formulate a sustainable development policy Supervise the implementation of strategic planning of sustainable development, annual plan and project plans and evaluate the status of implementation. Review the ESG Report. Report the annual implementation results of sustainable development to the board every year 	<ol style="list-style-type: none"> The third term of office is from June 2, 2022 to May 29, 2025 and the 4 committee members include the chairman, the vice-chairman who concurrently serves as the president, independent directors Ying-Pin Cheng and Cheng-Yi Hsu. The ESG Committee conducts at least 2 meetings a year. In 2022, there were 2 meetings and the attendance of committee members in person was 100%. Report 2021 sustainable development progress and annual sustainability plan report to the board of directors. <ul style="list-style-type: none"> For detailed information, please refer to the CGPC's ESG Area (sustainable performance · ESG Committee meeting minutes), ESG Committee's Organizational Regulations.

Note: The board has approved on 2022.03.09 the amendment of the organizational charter of the ESG Committee and the Sustainable Development Best Practice Principles in response to the announcement made by the Taiwan Stock Exchange on 2021.12.07. The original Corporate Social Responsibility Committee Organizational Charter, Corporate Social Responsibility Best Practice Principles and the Corporate Social Responsibility Report have been renamed as the ESG Committee Organizational Charter, Sustainable Development Best Practice Principles and ESG Report.

3.1.9 Implement ethical management

Ethical operations is CGPC's corporate culture, we improve the behaviors and professional ethics of all employees to establish sound business operations and enterprise management, we explicitly prohibit unethical behavior, and the standard applies to directors and officers, employees or people who have substantial control over the Company. To promote management in ethical operations, the head of [Corporate Governance](#) provides regular reports (at least once a year) to the Board of Directors. (For detailed information, please refer to the [official website](#).)

Professional ethics and management

► Establish systems

CGPC has established the business philosophy of ethics, care, discipline and innovation, and formulated code of conduct for business activities, such as the Ethical Management Best Practice Principles, the Procedures for Ethical Management and Guidelines for Conduct, the Directors and Managers Ethical Code of Conduct, and the Code of Conduct for Employees Taking Part-Time Jobs. These standards apply to everyone who conduct business activities on behalf of the Company, including the employees, management, directors and members of subsidiaries. The contents include the prohibition of unethical behaviors and conducting bribery or receiving bribery, recusal from conflict of interests, the prohibition of leaking business opportunities, insider trading, improper charitable donations or sponsorships or illegal political contributions.

► Ethical management

CGPC has set up an "[Audit Committee mailbox](#)" on the Company's website, which handles whistleblowing cases related to the obligations of the Audit Committee. The board and the Audit Committee also have approved the "Measures Handling Reporting of Illegal and Unethical or Dishonest Behaviors." The whistleblowing measures stipulate the handling measures for the notification and the relevant confidentiality measures, and designate responsible units for handling the cases. We spare no efforts in confidentiality and protection of the whistleblowers, participating investigators and the case content. If the whistleblower is an employee, we guarantee that the person will not be mistreated.

CGPC abides by the Ethical Operations Management Best Practice Principles and all employees must abide by the Company's rules and policies. We use the ERP system to enable relevant employees and managers to obtain the necessary information immediately, which reflects the actual performance of the operation, and formulate relevant standards according to the Company's policies after risk assessment. The internal control self-evaluation can examine the compliance with laws and regulations, awareness of business ethics, and assessment of potential risks in order to achieve self-supervision. The internal whistleblowing measure files grievances through the Company's internal direct supervisor, head of human resources and head of audit supervisor. The prudent acceptance and handling process respects the parties involved and the confidentiality of the incident investigation. Suggestions or grievances filed from external stakeholders can also be handled by dedicated personnel through the mailbox on CGPC's official website. The "[Contact Us](#)" section, "[Audit Committee mailbox](#)" in the "Investor Services", and the "[Employee Complaint Channel](#)" in the "Human Resources" section of the website did not receive whistleblowing or grievance cases in 2021.

Note: ERP (Enterprise Resource Planning).

Operation and annual implementation of ethical management

In order to help our directors, managers and employees understand, promote and follow the Group's ethics and code of conduct standards, we require employees to abide by the ethical management policy as a condition of employment. Directors and senior executives need to sign the Statement of Ethical Management Policy when they are first appointed; in 2022, the signing rate is 100%. CGPC did not find any fraud or violation cases in 2022.

Promotion education

CGPC announces the standards related to ethics on the company website, and continuously invites well-known scholars, experts or lawyers to conduct education and training and promotion sessions for directors, officers, employees and substantial controllers, so they can understand the Companies' resolve to implement ethical corporate management, the related policies, prevention programs and the consequences of committing unethical conduct.

In order to improve employees' professional competence, an internal continuing education seminar on ethics was arranged in 2022, with a total of 1229 hours and a total of 485 person-times in attendance. For details, please refer to the following:

Item	Ethics seminars	Hours	Person-time	Total hours
1	Insider trading practical case study and related legal responsibilities	3	51	153
2	Copyright protection and fair use	3	136	408
3	Internet copyright and legal use of software	3	56	168
4	Introduction to the Trade Secrets Act and case study	2	14	28
5	Legal liabilities of breach of trust and case study	2	167	334
6	Discussion on labor laws and regulations conducted by human resources personnel	3	6	18
	Total		485	1,229

Education and training sessions and seminars on ethics



2022/08/11

"Ethics seminars-Regulations and Case Analysis of Fair Trade Act."



2022/09/14

"Ethics seminars-Preventing workplace misconduct and violations"

3.1.10 Intellectual property rights management plan

In order to enhance the Company's industrial status and maintain the existing technological achievements, we integrate intellectual property rights with operations objectives and R&D resources. It is expected that the establishment of the Company's intellectual property management system can improve the Company's competitive advantage in the industry and obtain higher benefits through high-value products and services (using the PDCA cycle to construct an intellectual property management system).

Report on the annual implementation status of intellectual property rights:

On November 1, 2022, we obtained the board's approval of the Intellectual Property Rights Management Plan and Annual Implementation Status Report. The 2022 intellectual property rights management plan implementation status and 2023 R&D plan have also been approved by the board. (For details, please see the description on [the website](#))

3.2 Operating performance ▶ (GRI 2-2, 201-1, 201-4)

In order to enable shareholders and investors to obtain more on-time and accurate information of CGPC when carrying out investment decisions, the information on the monthly revenue release, quarterly financial reports, annual general meetings and institutional investor conference, is made available in the "[Investor Services](#)" section of the Company's website or [the MOPS](#). Shareholders and investors can also contact the spokesperson or acting spokesperson by phone, or use the "[Contact Us](#)" on the Company's website and the USI Corporation's "[Contact Us](#)" on its website to submit any questions and suggestions, and all opinions will be handled by dedicated personnel.

✔ Material issue: Economic performance

 Significance and Impact of CGPC	It is the foundation of the Company's sustainable development, enabling shareholders to obtain reasonable return on investment and the Company to have sufficient resources to take care of employees. The Company also creates mutually beneficial and win-win relationships with clients, suppliers, and collaborating partners to facilitate the growth of both the society and the Company.
 Develop Strategy	Improve product value, provide customers with satisfactory service quality, and maintain stable profits and sustainable development of the enterprise.
 Policy Commitment	Implement corporate governance and environmental protection measures for energy conservation and carbon reduction to create a workplace of wellness.
 Grievance Unit	President's Office

✔ Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Reinforce product differentiation of PVC resin products, upgrade equipment to improve quality and output and establish stable sales channels.	PVC resin production growth rate %	3.0	-10.4 ⊖	3.3	4.0	8.0

Note 1: 2019 is the base year.
 Note 2: Reasons for failure to achieve: In 2022, the global economy was overshadowed by factors such as the Russia-Ukraine war, inflation and interest rate concerns and the pandemic, leading to a slowdown in demand. In response to these challenges, our company proactively adjusted our operations in a rolling manner to minimize the negative impact. (For detailed information, please refer to 3.2 section.)

⊖ Exceeded goal ✔ Achieved

⊖ Partially achieved ⊖ Not achieved

▶ Operational performance:

CGPC's earnings per share for 2022 were -0.64 yuan. The operational performance of VCM and PVC was impacted by the Russian-Ukrainian conflict and unexpected incidents involving Asian producers. The market briefly rebounded to its annual peak, but was subsequently affected by global interest rate hikes and China's maintenance of a zero-COVID policy. Domestic demand for PVC in China contracted, with average monthly PVC exports exceeding 200,000 metric tons in the first half of the year, reaching a historical high. However, in the second half of the year, increasing mortgage rates in the United States led to a monthly decline in domestic PVC demand. Excess inventory shifted towards overseas markets, resulting in continued weakness in the VCM and PVC markets and significant erosion of product margins.

(Unit: NT\$)

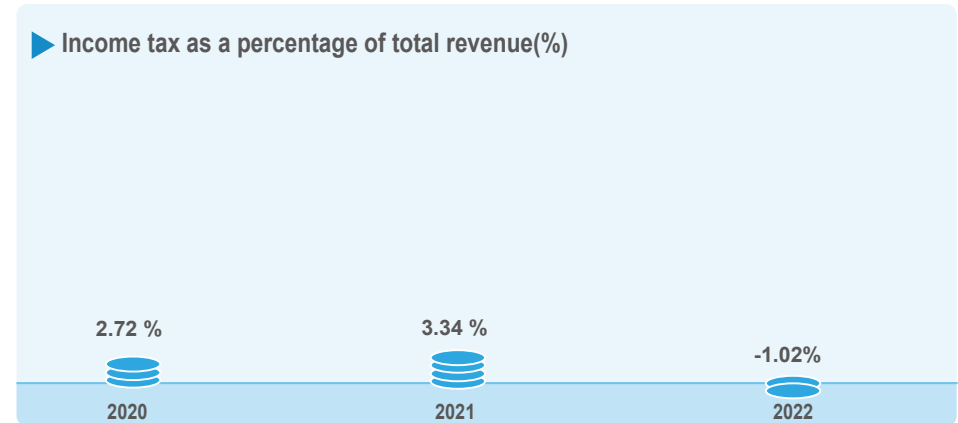
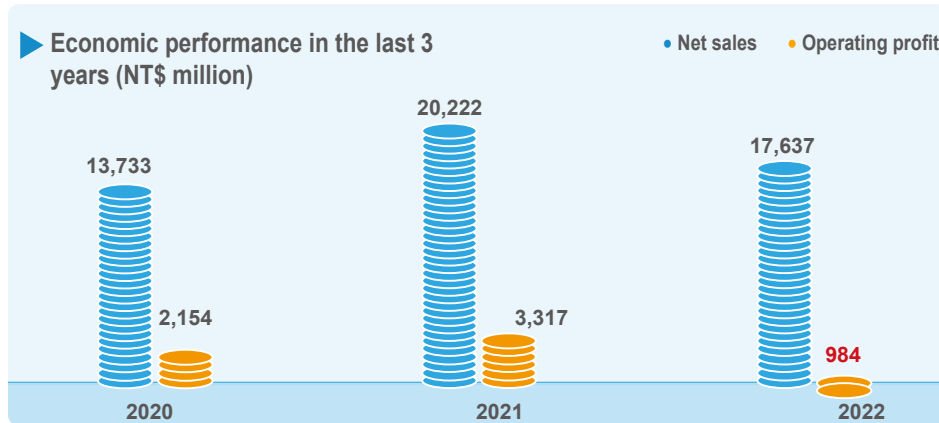
Item	Amount (in NT\$10 thousand)	Budget Achievement Rate	Compared to the same period last year (in NT\$10 thousand)
Consolidated Net sales	1,763,700	80%	-258,500
Consolidated operating income	-98,400	-50%	-43,100
Consolidated net income after tax	-33,800	-21%	-296,900
Consolidated net income after tax Attributable to the Company's Owners	-37,000		-283,900

▶ Sales performance of various products in 2022:

Our team will apply the planning of the vinyl industry value chain to secure the best profitability and make good use of vertical integration practice and effective management to implement improvement measures for occupational safety and environmental protection, and fulfill our corporate social responsibility, while creating and expanding our niches to maximize operational performance to achieve the annual sales target of 520,000 metric tons.

Product	Sales (tonne)	Compared to 2021	Budget Achievement Rate
VCM	32,000	24%	0.3%
PVC resin	350,000	2%	-10%
Chemicals(100% concentration meter)	60,000	-0.3%	-0.3%
Building materials products	20,000	1%	1%
PVC film products	23,000	-22%	-24%
PVC leather	5.1 million yards	-39%	-39%

3.2.1 Economic performance (net sales and operating profit)

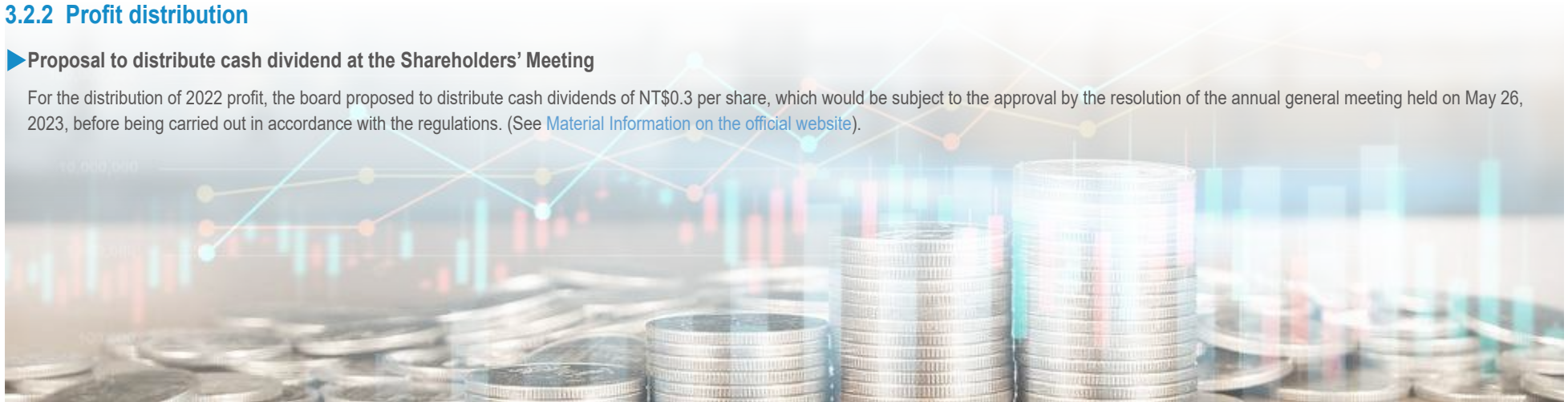


Note 1: Adopted the International Financial Reporting Standards (IFRS) recognized by the Financial Supervisory Commission starting 2014.
 Note 2: The relevant financial information can be found at the MOPS.
 Note 3: The operational performance is expressed based on the consolidated financial statements.

3.2.2 Profit distribution

▶ Proposal to distribute cash dividend at the Shareholders' Meeting

For the distribution of 2022 profit, the board proposed to distribute cash dividends of NT\$0.3 per share, which would be subject to the approval by the resolution of the annual general meeting held on May 26, 2023, before being carried out in accordance with the regulations. (See [Material Information on the official website](#)).



3.2.3 The revenue and dividend distribution in the last 3 years are as follows (excluding subsidiaries)

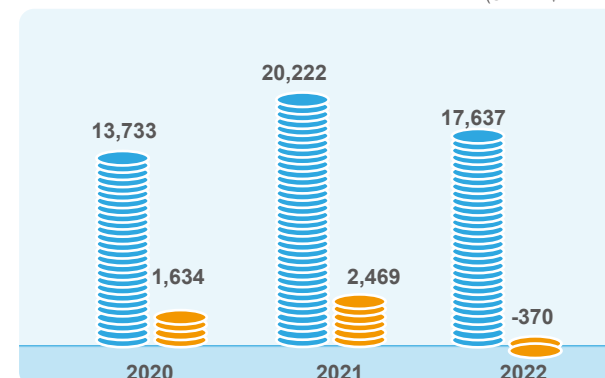
(Unit: NT\$ million)

Item	2020	2021	2022
Operating revenue	13,733	20,222	17,637
Earnings after tax	1,634	2,469	-370
Earnings after tax per share (NT\$/Share)	2.95	4.25	-0.64
Dividends distribution (Including cash and stock dividends)	1,273	1,453	174
Cash dividends per share (NT\$/Share)	1.8	2.5	0.3
Stock dividends per share (NT\$/Share)	0.5	0	0
Total Dividends distribution (%)	78	59	-47
Price/Earnings Ratio	6.65	8.33	-43.80
Price/Dividends Ratio	10.89	14.16	93.43
Cash Dividends Yield(%)	9.18	7.06	1.07

Note: (1) Price-Earnings ratio = Average closing price per share / Earnings per share of the year
 (2) Price-Dividends ratio = Average closing price per share / Cash dividends per share of the year
 (3) Cash dividends yield = Cash dividend per share / Average closing price per share of the year
 (4) Figures of 2020 price-dividends ratio and cash dividends yield were typos, and were updated this time.

▶ Operating revenue and after-tax profit in the last 3 years

(Unit: NT\$ million)



• Operating revenue • Earnings after tax

3.2.4 Description of direct economic value generated and distributed by the organization

(Unit: NT\$ million)

Item	2020	2021	2022
Direct economic value generated			
Net sales revenue	13,733	20,222	17,637
Service revenue	3	3	3
Financial investment revenue	24	55	40
Asset sales revenue	4	20	8
	13,764	20,300	17,688
Economic value distributed			
Operating costs	10,272	15,570	17,028
Employee salary and benefits	1,295	1,392	1,113
Payments to funders	1,396	1,571	201
Payments to the government			
Income tax	374	676	(179)
Land value tax/House tax/Others	20	20	27
Community investment (including charitable giving)	5	6	10
	13,361	19,235	18,201
Economic value retained	403	1,065	(512)

Note 1: Adopted the International Financial Reporting Standards (IFRS) recognized by the Financial Supervisory Commission starting 2014.
 Note 2: The relevant financial information can be found at [the MOPS](#).

3.2.5 2022 Government subsidies

(Unit: NT\$ thousand)

Abstract	Amount
Domestic Investment Interest Subsidies.	1,020
Occupational safety and Health Administration, Ministry of Labor	206
Water Resources Agency, Ministry of Economic Affairs	100
Bureau of Labor Insurance, Ministry of Labor	49
Taoyuan-Hsinchu-Miaoli Branch of the Workforce Development Agency, Ministry of Labor	18
Environmental Protection Administration, Executive Yuan	1
Total	1,394

3.3 Risk Management ▶ (GRI 2-9, 2-11, 2-12, 418-1)

CGPC identifies relevant risks that may affect the Company's sustainable development from its daily operations, and formulates relevant management strategies and countermeasures to reduce the possible risks of operational disruption.

At present, specific matters or significant risks are identified, evaluated, and screened by each implementation and responsible unit, and relevant plans for corresponding measures are prepared. The Audit Office conducts supervision and follow-up to achieve continuous improvement and PDCA cycle to reinforce risk management practices. The challenges and responses of various risks at this phase are described as follows:

3.3.1 Risk types and countermeasures ▶ (GRI 2-9, 2-11, 2-12)

In order to establish sound risk management within the company, our board of directors ensures effective evaluation and oversight of various existing or potential risks. In December 2020, the board approved the "[Risk Management Policies and Procedures](#)." The General Manager's Office provides an annual report to the board on the company's risk management operations, allowing the directors to have a comprehensive understanding of the risks faced by the company. This enables them to provide more specific recommendations regarding the company's operating strategies in a timely manner.

Description of risk management

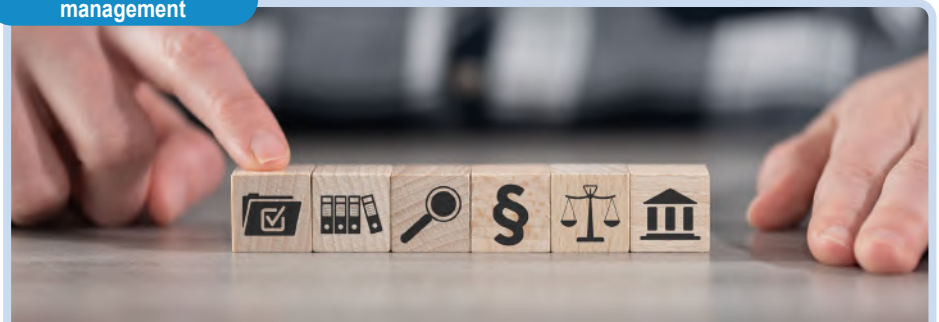


The ESG Committee conducts analysis based on the principle of materiality of the ESG Report to communicate with internal and external stakeholders, and reviews domestic and foreign research reports and literature and consolidates the evaluation data of various segments and subsidiaries to evaluate the materiality of ESG issues, formulate risk management policies for effective identification, measurement, monitoring and control, and take specific action plans to reduce the impact of related risks.

The Audit Committee and the board approved the Risk Management Policy and Procedures" in 2020. The main contents include risk management policies, risk management organization, risk management process, categories and practices, etc., to effectively control the risks arising from business activities. The status of the current year's risk management operations is reported to the Audit Committee and the board at least once a year.

Comply with the relevant laws and regulations of the competent authority, formulate the operating standards of each risk management unit, and carry out risk management and control of daily operations. Follow the development of international and domestic risk management systems at all time, review and improve risk management policies accordingly, and continuously adjust and improve the risk management methods in response to changes in the internal and external environment, so as to reinforce the effectiveness of the Company's risk management implementation, and protect the interests of the Company, employees, shareholders and stakeholders.

Implementation of risk management



We have always complied with the relevant laws and regulations of the competent authority in the formulation the operating standards of each risk management unit and the implementation of risk management and control of daily operations.

The main risks faced in 2022 include the COVID-19 pandemic, 2050 net zero emissions, the supply-demand imbalance and shipping variables caused by extreme global climate change, Russian-Ukraine war, inflation, interest rate hikes, the "Zero COVID" policy in mainland China, and unexpected incidents in Asian manufacturing have led to a global imbalance in supply and demand, the decline in prices in the Asian market for over eight months, the clauses for large power users, etc. The status of each risk management unit is summarized in the [Sustainable Development \(ESG\) Area - Risk Operations Scenario](#). Review response measures which can be effectively and appropriately identified and measured by risk management procedures. Currently, all risks can be controlled with an acceptable scale.

(For details, please see the description on [the website](#)).

► Risk management Identification Process

The risk identification process involves each responsible functional department assessing and identifying significant risks based on recent international economic developments, the latest ESG regulations, and risk and opportunity assessment management methods. This ongoing evaluation and rolling revision process ensures that risks are timely assessed and appropriate adjustments are made. Finally, the results of the identification of significant risks from each department are compiled by the General Manager's Office and reported to the Board of Directors.

Environmental

Description of risks	Response measures
Improper discharge of sewage and hazardous gases.	<ul style="list-style-type: none"> Establish an ISO 14001 environmental management system, and conduct regular internal and external audits to ensure compliance with environmental regulations. Passed ISO 50001 energy management system verification and regularly conducts review of equipment energy consumption and replacement of energy-conserving equipment every year. Carry out regular inspections, propose improvement countermeasures and add pollution prevention and control equipment. <ul style="list-style-type: none"> Newly constructed Activated Carbon Fluidized Bed VOCs abatement equipment in Q4 2022. Replace VCM tanker truck unloading materials equipment to reduce VOC emissions. (Completed in Q4 2023) Process: Refinement and optimization of reaction tank opening procedures to reduce VOC emission. (In progress) Regularly plan and test pipelines and equipment components, and respond to maintenance in a timely manner to reduce pollution caused by equipment damage and failure. (In progress) Pollution control equipment: regular flue cleaning and add chimney pollution treatment equipment to reduce odor. (In progress) Continue to follow the trends of relevant laws and regulations, and actively promote energy conservation and carbon reduction.

Social

Description of risks	Response measures
Storage operation and safety maintenance	<ul style="list-style-type: none"> Tanker trucks need to have qualifying certificates and comply with relevant regulations and measures. The transportation of controlled chemicals must have the participation of corresponding joint defense organizations. Regularly evaluate contractors' vehicles in accordance with the regulations and hold safety meetings. Formulate corresponding risk control countermeasures.
Infectious diseases affecting employees' health and work.	<ul style="list-style-type: none"> Develop guidelines for infectious disease response procedures. Establish a pandemic control response team to implement preventive measures. Formulate work standards for relevant technology and management.
Experience succession of high-level officers.	<ul style="list-style-type: none"> Position transfer and nurturing substitute system. Form functional organizations of projects/task teams. Enable personnel of different positions to exchange professional and technical information with one another.
Cybersecurity	<ul style="list-style-type: none"> Protection of customers' confidential information Risk types and countermeasures – Risks and challenges (detailed in 3.3.2 Cybersecurity risk management)

Governance

Description of risks	Response measures
Raw materials risk	<ul style="list-style-type: none"> Establish safety stock and review it regularly. Vertical integration for effective management. Coordinate operations and formulate the purchasing strategy. Flexibly coordinate production and sales.
Disaster/accident caused production and operational disruption.	<ul style="list-style-type: none"> Regularly hold education and training sessions on environmental safety and health and fire protection. Regular maintenance of machinery and equipment, PDA patrol inspection and infrared thermal image detection. Property insurance and business interruption insurance, cargo transportation insurance, and public liability insurance. To ensure the safety of on-site employees, we reinforce promotion and education and training to reduce the risk factors.
Financial risk	<ul style="list-style-type: none"> Interest Rate Fluctuations: due to the impact of the COVID-19 pandemic and the Russia-Ukraine conflict, global inflation has been on the rise, leading central banks worldwide to raise interest rates in order to curb inflation. We closely monitor market trends and adjust borrowing levels accordingly, while also rebalancing the proportion of short-term and long-term borrowings. This enables us to maintain a more robust financial structure and mitigate the risks arising from interest rate volatility. Exchange Rate Fluctuations: we manage the risk of exchange rate fluctuations through the use of forward foreign exchange contracts. As a general principle, our foreign exchange operations are fully hedged based on net positions, and we adjust the hedging ratio within controllable risk limits. Property Insurance: we mitigate risks by obtaining various property insurance policies, effectively transferring the risk to insurance companies. For example: fire insurance, business interruption insurance, cargo transportation insurance. Endorsement guarantee: implemented in accordance with the Procedures for Making Endorsements and Guarantees. Accounts receivable risk: actively care about customers' business condition or analyze customers' financial reports. <ol style="list-style-type: none"> Domestic customers: add substantial guarantees and qualified joint guarantors. Export customers: increase the amount of credit insurance and increase the letters of credit insurance for certain countries.
Others	<ul style="list-style-type: none"> Adjust business strategy in response to COVID-19: continue to diversify in the PVC market to avoid the impact of a single market on overall sales. Countermeasures for production capacity impact and operational disruption: make emergency external purchase and adjust overlapping production lines, arrange equipment maintenance in advance, and strictly control the acceptance and delivery of business orders, and at the same time, ask the Financial Division to discuss with insurance firms on damages caused by operational disruption and work stoppage.

3.3.2 Cybersecurity risk management ► (GRI 2-9, 2-11, 2-12)

We adopt the Risk Management Policies and Procedures as the standards for the establishment and development, operation, review and continuous improvement of the overall information security management system. We also establish information policies and objectives according to our operating activities and risks to carry out information security management and effectively control risks.

1 Establish an information security promotion team with the following duties:

- Formulate information security risk management framework and information security policy.
- Conduct information security risk assessment and analysis.
- Information security maintenance and execution.
- Confirmation of the effectiveness of information security operations.

3 Protection of customers' confidential information

- Comply with laws and regulations to formulate relevant standards.
- Personal data de-identification and monitoring of abnormal traffic of network access.
- Reinforce firewall management and authorization control for data access.
- Carry out internal and external information security risk assessment and improvement through external audit.

4 Risk types and countermeasures – Risks and challenges

- Facing the increasingly severe information security attacks, strengthening information security protection without affecting the yield of the production line is a great challenge for information administrators.
- We have referred to industry practices and the advice of information security consultants, and applied the use of firewall equipment to separate the computers of information tasks and the computers of the industrial control operations system. The implementation shows immediate results in preventing damage caused by information security incidents.

2 Develop management solutions

Regulations and standards:

- In terms of personal data protection, we follow the European Union's [General Data Protection Regulation (GDPR)].
- In terms of customer data protection, the Group's Information Technology Division has formulated the General Principles of Information Security Management Policy; the System Development and Maintenance Management Standards; the Key Points for Application System Program Online Operations Management; the Key Points of Database Management; the Information System Authorization and Equipment Protection Management and other standards to carry out the care of privacy information in the aspect of information security management.
- Formulate information security related policies, planning, governance, supervision and implementation in accordance with ISO 27001 to ensure the Group's information security protection capabilities and reinforce employees' information security awareness.

Information security awareness:

- Regularly hold education, training and promotion sessions
- A professional consulting company is commissioned to perform social engineering drills twice a year.
- Promote the Zero Trust network security protection model.

Defense tools:

- Prudent authorization control, masking and restricting personal data fields to be read.
- Reinforce measures such as firewall management, system vulnerability scanning, operating environment segmentation and de-identification processing.
- Establish network traffic monitoring and analyze potential threats to prevent illegal intrusions or improper disclosure of information.

Information security governance:

- Hold information security management review meetings for the information security management system (ISMS).
- Improve employees' information security awareness and reinforce information security education and training.
- Conduct information security risk assessment and analysis.
- Review information security infrastructure design.
- Continue to obtain ISO 27001 certification every year.

5 Implementation of risk management

Regulations and standards:

- Comply with the EU GDPR regulations to protect personal data.

Audit:

- Internal audits are conducted, twice a year.
- External audit is conducted once a year by a third-party organization.

Information security education and training:

- 4 hours of education and training are performed by information personnel every year.

Installation of industrial control equipment:

- Separate computers for business use to prevent information security attacks from affecting production lines.

Social engineering drills:

- Implemented twice a year.

Multi-factor authentication:

- Implemented Multi-Factor Authentication (MFA) for our email system as an additional layer of identification (Factor Authentication), enhancing the security level by requiring a second form of authentication, in addition to the traditional username and password.

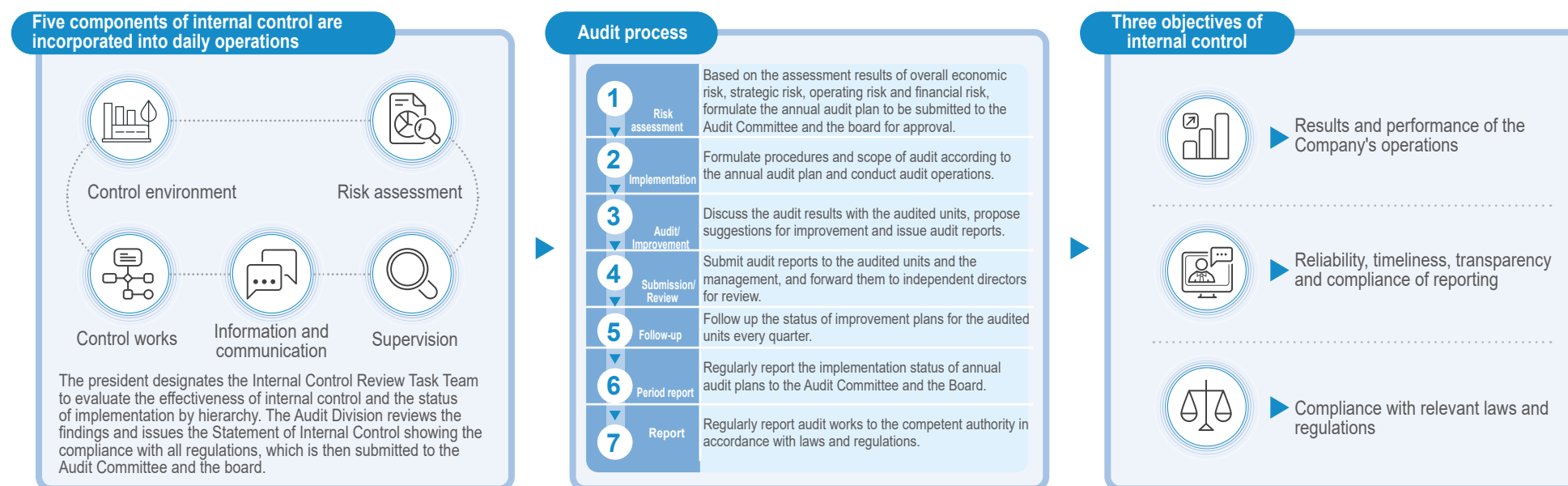
Vulnerability scanning and detection:

- Regularly perform vulnerability scanning and detection of the server's operating systems to identify potential risks for system correction or propose compensatory measures to improve system security. This is done once a year, and has been implemented continuously for 7 years.

3.3.3 Internal control ▶ (GRI 2-26)

▶ Internal audit system

CGPC has set up an independent internal audit unit directly under the board to evaluate the design and implementation of internal control and formulate and implement annual audit plans. The audit supervisor has an international internal auditor certificate, and conducts audits based on the principles of independence, ethics, and integrity. The audit supervisor regularly attends meetings of the board and the Audit Committee, reports on major audit findings, and follow up subsequent improvements. The audit supervisor is also the dedicated person responsible for the mailbox of the Audit Committee and the grievance filing hotline to handle grievances.



▶ Conduct risk assessment and formulate audit plans

In 2022, the internal audit unit completed the audit on schedule according to the audit plan approved by the board, and issued 49 audit reports and 5 follow-up reports. The recommended items have been improved, and the summary is as follows:

Name of audit process	Summary of recommendations	Summary of improvement status
Production cycle and regulatory compliance matters	If the operating conditions of the production process are changed, the standards and the operating handbooks should also be revised, so that the production unit can carry out production operations in compliance with the consistent standards.	Relevant standard and operating handbooks have been revised so that the production operations can stay consistent.
Development cycle	Quality control characteristics shall be indicated in the "Control Plan" of each new product development phase according to the standard and relevant management measures shall be implemented.	Items affecting the characteristics of product quality have been included in the "Control Plan" and relevant management measures have been implemented.
Industrial safety and health work	The responsibilities for fire protection of public areas and idle areas and period inspection and maintenance of safety facilities of factory spaces leased to outside parties should be clarified.	We have clarified with the lessee regarding the relevant responsibilities and regularly spot inspection and maintenance works.

3.4 Regulatory Compliance ▶ (GRI 2-27, 307-1, 419-1)

CGPC strictly requires employees, supervisors at all levels and members of the board to abide by laws and regulations, and act in accordance with the law as the operating principle. In terms of regulatory compliance, we follow changes in relevant domestic and foreign laws and regulations that affect the Company's operations, and hold training courses related to laws and regulations from time to time. We also actively participate in the dissemination of information on laws and regulations, ethical management and corporate social responsibility courses and seminars organized by the competent authority.

▶ Environmental protection

CGPC is committed to the pursuing a safer work environment and complies with important government and international industrial safety, labor health and environmental protection regulations and promote the ISO 14001, ISO 45001 and other management systems to ensure that the Company's daily operations have minimal impact on the community. We also conduct active communication to understand employees and local residents and other key stakeholders and then propose solutions for improvement.

▶ Occupational safety

CGPC has established an occupational safety and health management system in compliance with the law. It actively reviews the causes of accidents, reduces hazards and prevents their recurrence. In the event of an incident, immediate response measures are taken, and care for employees is provided. In 2022, CGPC, TVCM, and CGPCP did not experience any significant violations resulting in fines.

▶ Product, service and customer relationship

We spare no efforts in providing customers with satisfactory services, and hope to establish long-term partnerships with customers. In 2022, we did not receive complaints about violating customer privacy and losing customer information nor have there been any violations, fines or penalties related to products and services.

▶ Labor and human rights

We abide by relevant labor laws and regulations, protect the legal rights of employees and respect the principles of basic human rights recognized internationally. We also have formulated relevant standards and work policies to protect workers' basic labor rights. In 2022, we did not violations of relevant labor laws and regulations.

Considering the increasingly stringent regulatory standards and penalty criteria, the company continues to implement various improvement measures in order to further reduce the number of deficiencies and the amount of fines. (Definition of significant fine amount: fines exceeding NT\$300,000 for a single incident.)

▶ Penalties related to environmental protection






By company	Penalties	Fine (in NT\$10,000)	Violations	Improvement measures
TVCM	Violation of Air Pollution Control Act Article 20, Paragraph 1	45	Leakage of 2 points in M01 equipment's component.	Immediate repair and handling.

Note: 1. Unit: NT\$ 10 thousand

2. In 2022, CGPCP did not receive any fines. For details on the environmental measures related to air pollution, please refer to [CH5.4 Air Pollution Control](#).



3.5 Technology Research and Development

Material issue: Technological research and development

 Significance and Impact of CGPC	R&D and innovation are the focus of our sustainable development. We improve the manufacturing process technology to have product quality and reduce costs. We develop value-added new products to contribute to the sustainable development of the society and the environment.
 Develop Strategy	We follow the latest environmental protection regulations and global trends to develop products which incorporate the design elements of environmental protection, energy conservation and carbon reduction to improve products' added value and competitiveness.
 Policy Commitment	Innovate products and improve manufacturing process to comply with the latest international regulations.
 Grievance Unit	Product development lecture
 SASB Indicator	RT-CH-410a.1

Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Promote product applications and development of eco-friendly technologies	Ten-thousand	12	 9	12	16	20
Raw materials antagonists: Developed low-toxic and low-cost alternative raw materials:	Number of development projects	7	 14	8	8	12
New Product development	Number of development projects	9	 10	10	10	10

Note: The reason why the sales volume of eco-friendly materials did not meet the standard: The outbreak of the novel coronavirus pandemic (COVID-19) has affected the global economy and both air and sea transportation. The Company is also facing a major challenge in the promotion and sales of new products. Our employees have worked hard to achieve 75% of the promotion target.

 Exceeded goal  Achieved

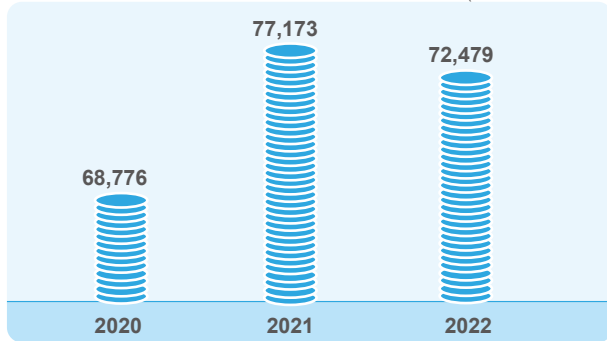
 Partially achieved  Not achieved

The R&D department embraces the spirit of "green environmental protection, circular regeneration, zero emissions, and sustainable materials" as a generational legacy. It introduces environmentally sustainable materials, implements carbon reduction and energy-saving processes and continuously improves the use of recycling technologies. The department focuses on developing high-value-added products, while closely monitoring international market trends and providing customized services. It is committed to innovation and transformation, aligning with the international community to create a better quality of life for humanity.



3.5.1 R&D expenditure in the last 3 years

(Unit: NT\$ thousand)



Note: The amount of R&D expenditure includes Taiwan and overseas subsidiaries.

► 2022 Promotion projects

- Four new patent applications have been submitted:
 1. Recyclable Synthetic Leather Structure (M630391): The patent for this structure was granted in August 2022.
 2. New Slow Temperature Rising Leather Structure (M631078): The patent for this structure was granted in September 2022.
 3. Scratch and Stain Resistant Leather Structure (M636680): The patent for this structure was granted in January 2023.
 4. Anti-Viral Coating Structure for Eyewear (M630340): the patent for this structure was granted in January 2023.
- Added a PVC pilot reactor to the 30L pilot plant, and completed in 2022. The applications are as follows:
 1. Research of PVC resin formula and manufacturing process improvement (such as conversion rate, formula, etc.).
 2. Evaluation of new raw materials and countermeasures (such as specific gravity and others).
 3. Discuss root causes of quality issues and make improvements (such as thermal stability improvement etc.), and develop CPVC according to market application needs.
- Benefits:
 1. Evaluation of optimized raw materials and incorporate advanced testing capabilities for countermeasures to reduce the testing time.
 2. Optimize manufacturing process parameters and adjust advanced testing capabilities.
 3. Develop ultra-high polymerization powder, ultra-low polymerization powder, high B.D powder and high CPA powder to enhance market competitiveness.
- In 2022, a total of 12 new products were developed, including: Non-P Floor Tile Protective Coating, Anti-Viral Gel Leather, TPE shoe series (R-grade) products, Recycled Carbon Black TPE Gel Leather from Waste Tires. For more detailed information, please refer to the [website](#).

Circular economy - Products developed with the latest curing technology (antibacterial function)

► Solution: Use natural marine biological shell powder to replace chemical antibacterial agents

► Description of promotion:

CGPC, in response to sustainable development and circular economy issues, has utilized technological methods and creative ideas through its research and development team. By leveraging the antibacterial properties of calcined marine bio-shell powder and innovative approaches, the company gradually replaces the use of chemical synthetic antibacterial agents with natural non-toxic marine bio-shell powder. This is applied in plastic-related products, creating a circular economy and contributing to environmental protection. We adopt the latest curing technology to add natural shell powder to resin to be applied to the surface of plastics, which can pass the mold resistance testing (ASTM G21) and antibacterial test (JIS Z-2801).

Note 1: PS1 - Mold resistance testing (ASTM G21) includes testing against *Aspergillus niger*, *Chaetomium globosum*, *Trichoderma viride*, *Penicillium funiculosum*, and *Aureobasidium pullulans*.

Note 2: PS2 - Antibacterial testing (JIS Z-2801) includes testing against *Staphylococcus aureus* and *Escherichia coli*.

We highly value the sustainable development of ESG. While pursuing sustainable operation and profit, our three core strategies of sustainable vision "R&D and innovation," "stable operation" and "social inclusion" are to co-create value with stakeholders to improve our competitive advantage of sustainable development.



► R&D and Innovation Goals:

Sustainable Development Goals: In the future, we will continue to plan and develop new green and eco-friendly antibacterial products, use nano and compound materials, etc. to develop products with diverse antibacterial effects. We will grasp market trends, understand customer needs, and improve our long-term competitive advantage.

► R&D and Innovation Benefits:

Our R&D team follows global trends, and is committed to meeting the Company's goals in circular economy, reduction of waste and environmental protection. The breakthrough technology research and development can improve morale, demonstrate the Company's contribution to environmental protection, enhance corporate image, make the business more competitive, and win the trust of customers.



Develop "Chroma cool" in response to climate change

► Solution: Chroma cool

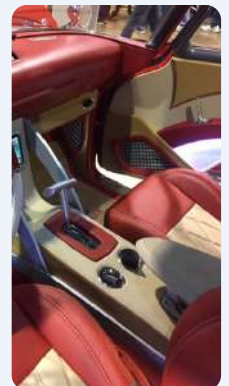
► Description of promotion:

In extreme climates, the duration of hot weather can be longer than the number of cold days, we have developed a new type of "Chroma cool," which can be used for motorcycle seat cushions and outdoor sports equipment. The products are available in various colors. Compared with traditional leather, they can reduce the temperature by 10 to 20 degrees, which is a great benefit for motorcyclists and sports enthusiasts.

► Implementation Status:

We have been actively marketing and pursuing a strong market presence, resulting in a cumulative sales volume of 97,000 yards from 2021 to 2022.

- Obtained the patent for new invention no. [M631078](#) in 2022.



3.5.2 New products to be developed



- Low film and quick-gelatinizing PVC resin
- PVC dispersing agent countermeasure testing
- Hydrogen energy utilization
- PVC wire harness tape fabric (Italy)
- PVC wire harness tape fabric (India)
- Easy-cut edge banding tape for door panels
- High softening temperature automotive floor mats
- Japan's Tape fabric for marking lines
- Development of synthetic casting soft leather for furniture
- Development of heat-reducing leather for marine seats
- Development of soft leather with a slippery feel for marine use
- Development of virus-resistant door panels
- Development of high hydrolysis resistance TPU materials and related products
- Low-VOC PVC/TPE leather
- PVC/TPE leather solvent-free surface treatment
- Recycled TPE leather in finished products
- Development of benzene-free/solvent-free TPE paste cloth
- Development of benzene-free/solvent-free PVC paste cloth
- GRS certification
- Development of Antiviral hard fabric
- Development of Bio-shell powder antibacterial and anti-mold leather
- Development of TPU earphone cover fabric
- TPO automotive console/floor mat
- TPO anti-static transparent film
- TPO fish-electricity symbiotic water pond fabric
- TPO automotive dashboard translucent film

3.5.3 Overview of technology and research and development



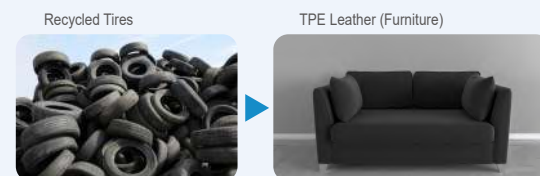
Newly-developed technologies or products

1. Technologies successfully developed

- (1-1) PVC resin Moisture AI Monitoring
- (1-2) Production technology and formula of PVC hard foam door panel
- (1-3) Production technology and formula of PVC hard foam door panel

2. Newly-developed products

- (2-1) PVC inkjet printing advertising cloth
- (2-2) PVC inkjet printing advertising cloth
- (2-3) PVC low shrinkage masking tape
- (2-4) Low temperature-resistant outdoor PVC door frame tape
- (2-5) Domestic Tour Bus Seat and Interior Leather
- (2-6) Marine and Jet Ski Seat Leather
- (2-7) MIH Electric Bus Seat Leather
- (2-8) Agricultural Machinery Seat Leather (SEATS & MILSCO)
- (2-9) United Brothers Baseball Glove Leather
- (2-10) TPE shoe series (R-grade) products
- (2-11) Antiviral Synthetic Leather
- (2-12) Recycled TPE Leather from Scrap Tires



Sales of newly-developed products

In response to climate change and various functional market demands, we have improved the added value of products and market share. We have also developed non-PVC leather that comply with environmental regulations, meet the needs of domestic and foreign manufacturers that adopt the green concept, and expand to new markets that demand value-added products.

Product category	Product item	2022 Sales target (tonnes/thousand yards)	2022 Sales quantity (tonnes/thousand yards)	2022 Sales revenue (NT\$ thousand)	Achieved?	The proportion of each new product to the revenue of the product category (%)
PVC film	5G base low-temperature PVC tape Low-gloss flat tape Low temperature-resistant outdoor PVC door frame tape	67	154	11,098	√	0.7%
Building Materials	Foam door panel, Foam tube	500	569	38,222	√	4.1%
Leather	PVC leather, TPE eco-friendly leather	310	302	50,100	X	7.2%
Total sales of 2022 new products				99,420		

Note 1: New products are defined as those within 2 years of the successful development.

Note 2: Reasons for TPE non-achievement: due to factors such as China's lockdown measures, the Russia-Ukraine war and inflation, the global economy experienced a downturn, leading to a significant decrease in demand.



▶ R&D plans in recent years

2023 R&D plans	R&D expenses needed to be committed again (NT\$ thousand)
Easy-cut edge banding tape for door panels	200
Japan's Tape fabric for marking lines	200
Development of soft leather with a slippery feel for marine use	200
High softening temperature automotive floor mats	300
Development of heat-reducing leather for marine seats	300
Development of virus-resistant door panels	300
Development of high hydrolysis resistance TPU materials and related products	300
Development of benzene-free/solvent-free TPE paste cloth	300
Development of Antiviral hard fabric	300
PVC dispersing agent countermeasure testing	300
PVC wire harness tape fabric (Italy)	500
PVC wire harness tape fabric (India)	500
Development of synthetic casting soft leather for furniture	500
Recycled TPE leather in finished products	500
Development of benzene-free/solvent-free PVC paste cloth	500
Development of Bio-shell powder antibacterial and anti-mold leather	500
Low film and quick-gelatinizing PVC resin	500
PVC/TPE leather solvent-free surface treatment	800
GRS certification	800
Development of TPU earphone cover fabric	800
TPO automotive console/floor mat	800
TPO anti-static transparent film	800
TPO fish-electricity symbiotic water pond fabric	800
TPO automotive dashboard translucent film	800
Hydrogen energy utilization	1,000
*Low-VOC PVC/TPE leather	15,000
Total	27,800



▶ Green products

Green products

Media mentioning the significant environmental impact of PVC materials (the negative impact of plasticizers on the environmental hormones and heavy metals). In fact, the advancement of technological research and development and the selection of new varieties of plasticizers and stabilizers have been eliminating the impact of environmental hormones and heavy metals. The use of non-PVC materials (TPE/TPU) by the processing industry has gradually developed green products that can be used in daily life.

PVC products meeting new regulatory requirements

The products sold by CGPC comply with the EU Restriction of Hazardous Substances Directive (RoHS for short) and the requirements of the Substances of Very High Concern (SVHC) listed in the EU REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), the EU Toy Safety Directive EN-71-3, the Proposition 65 of California, USA, California's The Safer Consumer Products Regulations, etc. We have the strategic planning for the new green R&D mindset (non-toxicity) that meets regulatory requirements and successfully incorporated the abovementioned standards into our operations to develop new products that can reduce environmental impact.

Non-PVC products

We have researched and tested non-PVC synthetic leather and cloth products, and successfully developed and continued to promote PVC materials alternatives that meet the requirements of environmental protection regulations and have relevant physical properties to meet market needs. CGPC actively develops differentiated products in-house, and offers high-performance POE, TPE, TPU and other plastics to produce more eco-friendly non-PVC leather fabrics to meet the needs of domestic and foreign manufacturers that adopt the green concept, and expand to new markets that demand value-added products. The varieties and applications of successfully sold products have gradually expanded. The product examples are as follows:

- Eco-friendly waterproof materials (no phthalate, no heavy metals, for breeding and water storage purposes)
- Eco-friendly exhaust pipe (heat-resistant, conductive)
- Eco-friendly furniture (used in sofas, seats, bicycle seat cushions)
- Eco-friendly shoe materials (applied to functional sneakers)
- Eco-friendly bags (applied to various slip-resistant functional parts)

3.6 Intelligent Management

The Company's top priority is to build a smart factory and move towards intelligent manufacturing. In order to accelerate digital transformation, the Chlor-Alkali Business Group has established an AI team to develop various plans and execution schedules. Through machine learning, we aim to cultivate skilled professionals and face the increasingly fierce industry competition.

Material issue: Intelligent Management

- Significance and Impact of CGPC** - Improve equipment efficiency, and reduce the impact of production on the environment as much as possible in order to achieve the eco-friendly goals of low pollution and low energy consumption.
- Develop Strategy** - Renovation and replacement of old equipment and Improve equipment efficiency in order to achieve the eco-friendly goals of low pollution and low energy consumption.
- Policy Commitment** - Enhancing Operational Safety, Reducing Accidents, Minimizing Resource Consumption, Building an Intelligent Factory
- Grievance Unit** - Technology Research and Development Lecture

Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Inclusion of AI in the processes	Piece	3	3	3	4	5
AIOT Intelligence Manufacturing	Piece	3	3	3	3	3

Exceeded goal
 Achieved
 Partially achieved
 Not achieved

High-Quality Smart Deep Transformation

CGPC has been continuously striving to improve its processes, enhance production capacity, improve product quality, and consistently reduce costs in its operational model. Since the significant breakthrough in AI-related technologies in 2012, the game rules of industries have been noticeably transformed. The application of artificial intelligence has the potential to bring competitive advantages to businesses.

Vinyl Chain has been actively engaged in a rooted industry-academia collaboration since early 2020, focusing on the integration of AI into chemical manufacturing processes. We initiated the "AI-driven PVC Drying Process" project and successfully replicated and applied the AI models to other drying machines and distillation tower equipment within our operations.

Industry 4.0 has become an indispensable path for the development of the manufacturing industry. Traditional manufacturing is currently in a critical period of transition and upgrading. Achieving the deep integration of industrialization and informatization and realizing comprehensive automation and intelligence in industrial production processes is both a trend and an urgent matter. Quality prediction, process monitoring and process optimization technologies, as the core elements of industrial intelligence, are crucial for ensuring production safety, enhancing product quality and increasing production capacity. They play a vital role in linking the past and the future.

2022 target: Historical data analysis and learning

- By using historical data and employing machine learning techniques, we aim to identify the optimal process operating conditions (SP) based on past performance. This helps us determine the best practices for our operations.
- Image recognition (AOI) combined with multiple equipment and processes within the facility allows us to monitor and alert operators to ensure a safe working environment. It also enables us to monitor the trend of equipment aging and issue early warnings.

2022 Achievements: Energy-saving and carbon reduction through optimal operating conditions.

- Using AI models to provide optimal program setting (SP) recommendations and continuously optimize them. Previously, the control room operators manually adjusted the control conditions, resulting in inconsistent process conditions. By utilizing AI, we aim to achieve optimal energy efficiency.
- Driving various AI projects within the facility, such as fully automated warehouse systems, defect detection in adhesive machines, facial recognition and license plate recognition for attendance and access control in the management department, and safety identification in PVC resin packaging machines. These initiatives help us monitor and alert operators, ensuring a safe working environment.

2023 Target: Automated control optimization

- Utilizing AI models to provide optimal program settings (SP) and implementing AI-based automatic control optimization allow us to rapidly achieve the best energy consumption conditions, resulting in more stable processes and energy-saving benefits.
- Integrating image recognition (AOI) with various equipment and processes within the facility, such as electrical panel AOI thermal imaging recognition, AI-based intelligent sensing safety systems for forklifts, and intelligent image recognition for smart weighing scales and tank truck loading, we can monitor and alert operators in the workflow, creating a safe operating environment.

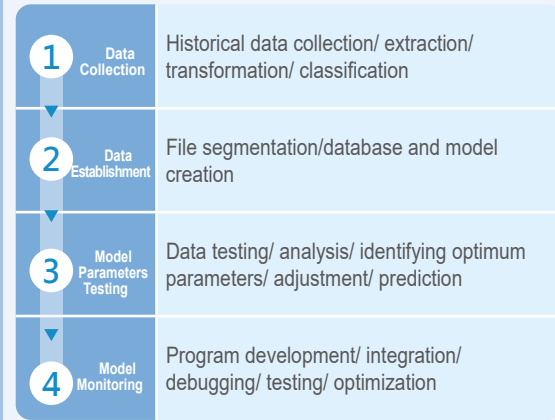
2025 target: Establishing a intelligence factory

- In collaboration with external consultants and industry-academia partnerships, incorporated AI-based intelligent technology and established an AIoT-enabled smart factory.

2030 target: Advancing towards full automation and intelligence

- We aim to achieve optimized control across comprehensive production indicators, including product quality, output, cost, and energy consumption. Our focus is on the intelligent transformation of the factory and continuous improvement of processes.

Implementing intelligent AI-driven management processes



Promoting intelligent automation projects.

Establishment of an AI factory

1. Manufacturing process Optimization :

- TVCM's distillation tower system and CGPC's PVC drying system.
- #5 Dryer
- Reboiler Tower (Utilizing AI model to provide optimal process operating conditions (SP) and continuous optimization)

2. Process safety management:

- Identification of Hazardous Behaviors in the Operation of PVC film Dispensing Machine with Wheel Segment.
- AI-based Smart Sensing for Stacker
- Electrical Panel AOI with Thermal Imaging
- Intelligent Improvement of Safety Operations in Space Packaging
- Safety Monitoring of Absorption Tower Process
- Intelligent Monitoring System for Critical Transformation Equipment
- AI-Assisted Safety System for Stackers
- Image Recognition for Tanker Truck Loading Operations

3. Image Recognition :

- Attendance and Access Control System for Management Department
- Intelligent Vehicle Control
- Smart Weighbridge Identification System
- Defect Recognition System for Manufacturing Plant Products
- Pipe AOI Image Detection System
- Energy Efficiency Performance Management Platform

Sustainable Management through Industry-Academia Collaboration

- Providing AI Education Scholarships
- Establishing AI Team in Chlor-Alkali Business Group
- Sharing Practical Experiences in Industry-Academia Collaboration

ESG Benefits

- Energy Conservation, Carbon Reduction, Environmental Protection
- Stable Quality, Economic Prosperity
- Reducing the Probability of Occupational Accidents

Promoting and Applying AI in an Intelligent Manner (Talent Development)

Develop Descriptions

CGPC has been deploying artificial intelligence (AI) to enhance production capacity, improve product quality, reduce energy consumption, and ensure safe operations. Since early 2020, the CGPC Toufen PVC Plant and TVCM Linyuan Taichung VCM Plant have officially implemented AI, aiming to save energy and reduce costs. Optimization models are being established and the best operating conditions are being identified to update and replicate the application in other process equipment.

In response to the government's '2050 Net Zero Emissions Roadmap and Strategy,' CGPC is actively pursuing green operations. Through industry-academia collaboration, AI is being comprehensively promoted. On August 1, 2022, the AI Functional Organization was established to oversee the promotion, application and monitoring of AI, enabling deep cultivation and widespread adoption within the company.



Implementation results

(1) External Communication:

In September 2022, Chief Engineer Ming-Guo Wei was invited to participate in the "TOP 100+ Trends Forum" to share insights on "AI Promotion and Application" and promote smart manufacturing and digital transformation. He elaborated on how AI can revolutionize industries and lead companies to new heights.

(2) Talent Development:

To cultivate outstanding industrial talents in society, CGPC sponsors the "USI Education Foundation - Artificial Intelligence Field Scholarship" and the "Mr. Han-Fu Lin AI Scholarship" to encourage excellent domestic students to engage in AI research and development. By reducing the gap between academia and industry and ensuring an abundant supply of AI human resources professionals, CGPC aims to foster skilled chemical engineering talents in the AI field. In May 2022, the company also announced the "Industry-Academia Collaboration Project - Internship Incentive Program" to reward students participating in summer and winter internships.

Future Promotions and Applications

CGPC will continue its efforts to improve processes, move towards intelligent and safe manufacturing, enhance production capacity and quality and achieve energy-saving and carbon reduction goals. We will also persistently work on reducing costs in its operational model. In addition, CGPC is committed to nurturing professionals in the field of AI in the chemical industry. By doing so, we aim to create the maximum economic benefits and ensure the sustainability of its operations.

https://www.cgpc.com.tw/ESG/ESGFiles/eDMs/CGPC_eDMs202212.pdf#page=15



Starting from the left: Pin-Hsun Chen, Ching-Wen Chuang, two students from Chung Yuan University (members of the industry-academe collaboration AI project), USI Corporation Alkali-Chlorine Business Group Advisor (Professor Chen), Vice Chairman Han-Fu Lin, Vice Head of factory Pei-Hung Tsai



Partnership

CGPC uses product and sales opportunities, quality meetings and communication and service platforms to understand customer needs and complaints in timely manner, to maintain the Company's product reputation and ensure the effective operation of the quality management system. Suppliers are required to improve quality and meet the goals of environmental protection, work safety and human rights.

The data in Section 4.1~4.2 is provided by CGPC (not including the subsidiaries, TVCM and CGPCP).

▶ (GRI 2-28)

4.1 Customer service management

Under the pursuit of sustainable operations, we aim to provide customers with satisfactory products and services, fostering mutual growth, and ensuring that our products meet their requirements and expectations. In terms of production and process management, we have implemented education and training programs to ensure that all employees understand quality standards. We also implement management by wandering around and process quality auditing, and carrying out correction and follow-up in a timely manner to prevent the recurrence of exceptions. The Company offers customized services to meet the specific needs of our customers. Through meetings, discussions and various project improvement initiatives, we strive to establish friendly customer relationships and enhance customer service satisfaction.

 <p>Consultation Reply to customer questions and provide relevant information for reference.</p>	 <p>Provide sample cards/ samples Provide sample cards/ samples according to the sample card number, requirements and standards specified by customers.</p>	 <p>Introduce new products Actively provide new products' samples and information to customers, and accept inquires and provide the relevant reference documents.</p>	 <p>Product development testing Cooperate with customers in development of non-standard products.</p>	 <p>Quotation and receive orders Complete formal quotation according to the relevant operation process. After customers formally place their orders, review and confirm the orders according to the relevant operating rules.</p>	 <p>Shipping Provide necessary delivery estimates, inquiries, tracking and arrangement of shipments to ensure that they meet the delivery deadline required by customers.</p>	 <p>Deadline for handling customer objections When customers think that the products or services provided by the Company do not meet their needs, they may file a written or oral complaint, and the sales representatives will analyze the complaints and notify the relevant departments for immediate and necessary responses.</p>
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4.1.1 Complete customer service

 <p>Clients Customer objections</p>	 <p>Sales Verify problems</p>	 <p>Quality assurance Receive reporting of defect samples</p>	<p>1. Product traceability quality inspection</p>	 <p>Responsible department's quality control unit 2. Root cause analysis</p>	<p>3. Develop Improvement measures to Prevent Recurrence</p>	 <p>Quality assurance Confirm improvement Track performance</p>
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- Principle for handling Customer objections cases: For domestic orders, the dispute period starts from the date of customer's product acceptance and lasts for six months. For export and re-export orders, the dispute period starts from the container packing date and lasts one year.
- Timeframe for handling Customer objections cases: The general timeframe for handling regular cases is 20 working days. Urgent customer complaint cases have a limit of 5 working days. However, special or contentious cases may take up to 3 months for resolution.

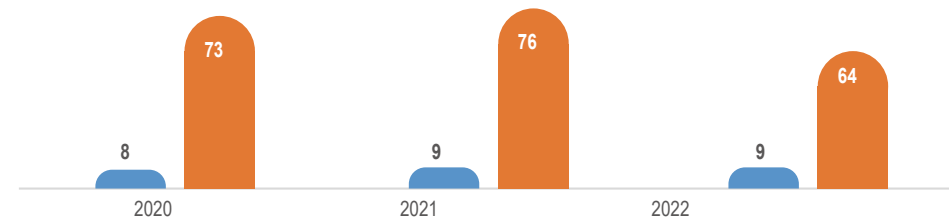


- Reasons for the increase in customer complaints and improvement measures:

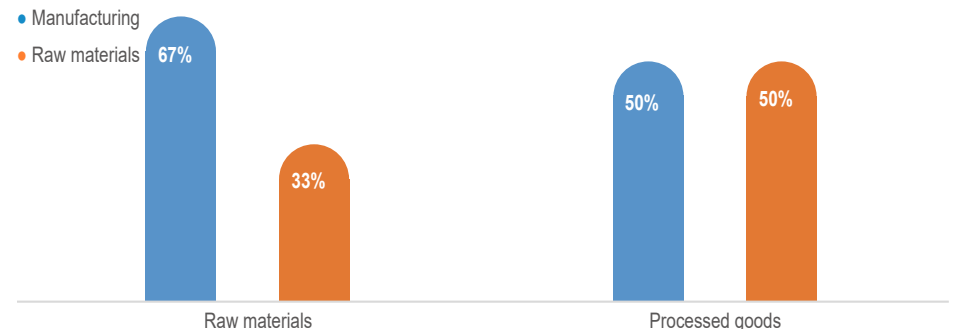
Complaints about raw materials products have resulted from damage caused during transportation; complaints of processed products are mainly about surface defects (traces, air spots, stains, etc.) and poor coiling (loose coils, curling marks, etc.), and other factors. We have strengthened packaging materials container loading, added online inspection equipment, adjusted the manufacturing conditions and changed personnel education as preventive measures.

▶ The customer complaint cases over the past 3 years, categorized by raw material products and fabricated products, are summarized in the chart below:

- Raw materials
- Fabricated products



▶ The main reasons for customer complaints in 2022 are illustrated in the following chart:



4.1.2 Customer satisfaction



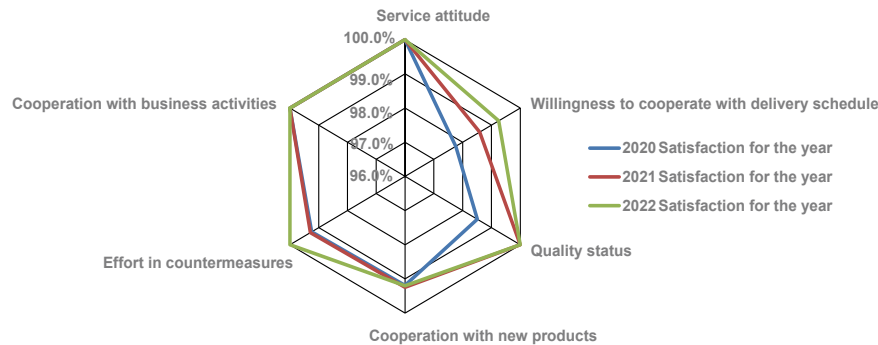
Awarded as a sustainable partner by Everlight Chemical in 2023.

In order to understand the customers' evaluation of various indicators and to strengthen the various services provided to customers, we have formulated the Customer Satisfaction Evaluation Measures. After analyzing the survey data, we formulate improvement measures to improve customer satisfaction.

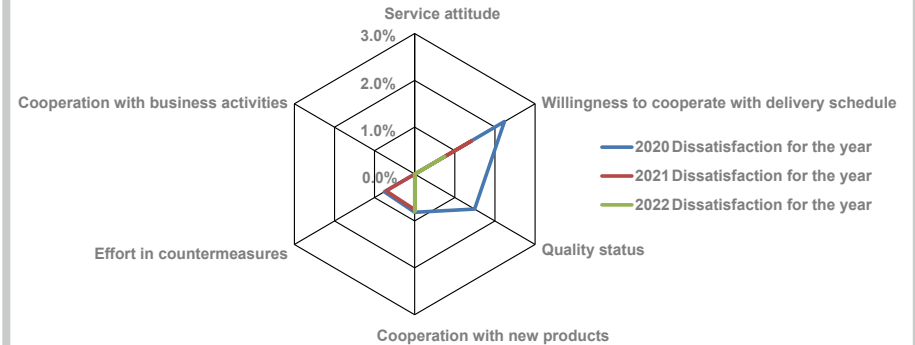
Every year, we select customers who account for more than 80% of our total revenue or 80% of each of our operating regions' revenue, including a recommendation list (potential or newly developed customers) from the business unit, as survey participants, and conduct satisfaction survey through the Customer Satisfaction Survey sent by mail, fax or email. The evaluation items include "Service attitude," "Delivery schedule," "Quality status," "New products," "Countermeasure efforts," "Business cooperation" suggestions to our Company.

In 2022, the number of responses to surveys in which customers considered "Satisfied" or above accounted for 99.7% of the total number of survey responses, slightly higher than in 2021. We will continue to make improvements. The 2022 results have met our control target (90%). For the results of each evaluation item, please refer to the radar chart.

Customer satisfaction radar chart



Customer dissatisfaction radar chart



Based on the comprehensive customer complaint case statistics and customer satisfaction survey, in 2022, customers have shown dissatisfaction with "Willingness to cooperate with delivery schedule" and "Cooperation with new products" (two items in total). However, the proportions of dissatisfaction for these two evaluation criteria have shown a slight improvement compared to 2021. The related departments (or units) have reviewed and reported on the items in the management review meetings, and created improvement projects for material issues. We actively find issues of concerns for customers and resolve them. For quality improvement issues, we organize projects to continuously update equipment, and improve personnel education and training to maintain stable quality of production and services to meet customer needs. The results of the 2022 customer satisfaction survey show that we have earned customers' recognition and improved the satisfaction.

Regarding the evaluation criterion of "Willingness to cooperate with delivery schedule" in the 2022 survey, although customers have reported improvements, the effectiveness of addressing the issue has been hindered by external factors. Despite the easing of the COVID-19 pandemic and the reopening of major country borders, the year that was expected to be an economic recovery year has been impacted by factors such as wars, high inflation, global interest rate hikes and the persisting challenges in meeting urgent customer order demands. The rapid reversal of container shipping rates has also posed challenges for us as a supplier. In addition to planning for equipment upgrades and improving production efficiency, we have been continuously hiring new employees to increase manpower and productivity. We hope that these efforts will further enhance improvements in meeting delivery timelines, aligning with customer expectations and needs.

4.1.3 Protection of customers' confidential information

The protection of customers and confidential information has always been part of our mission. The protection of sensitive information is related to our long-term growth and sustainable competitiveness. Therefore, we have referred to the General Data Protection Regulation (GDPR) for the process, storage and privacy of handling personal data to protect customer data.

Regarding the use of data, we reinforce the authority control and separate the test and the actual operating environment, and mask and restrict the personal data fields of each to be read in order to achieve the protection of personal data. We continue to reinforce the restriction on the use of USB or portable storage devices and abnormal data access. Starting from 2021, we have implemented the Endpoint Security Protection System to prevent data loss due to human negligence. Furthermore, the group implemented Multi-Factor Authentication (MFA) for our email system as an additional layer of identity verification, enhancing the security level by requiring a second form of authentication, in addition to the traditional username and password.

In order to improve employees' awareness of information security, we regularly organize information security education and training sessions and disseminate new information security knowledge, and commission professional information security consulting companies to perform social engineering drills twice a year to protect data security.

In terms of customer data protection, the Group's Information Technology Division has formulated the General Principles of Information Security Management Policy; the System Development and Maintenance Management Standards; the Key Points for Application System Program Online Operations Management; the Key Points of Database Management; the Information System Authorization and Equipment Protection Management and other standards to carry out the care of privacy information in the aspect of information security management.

To ensure the proper protection and de-identification of personal data, we employ various measures for privacy control. These measures include firewall management, permission controls, vulnerability scanning of server operating systems, and testing and operating in segregated environments. These actions are taken to achieve the secure preservation of personal data.

Specifically establish the rules that employees need to abide by in their daily operating procedures accordance to these management systems. Establish secure trading platforms such as the customer order inquiry network and incorporate the use of encrypted security certificate to prevent the occurrence of fraud incidents caused by tampered emails due to interception. Strict authorization control strategy and process for customer data, further reducing the risk of leakage of customers' confidential information.

► 2022 information security implementation results

Item	CGPC		TVCM		CGPCP	
	Sessions	Total number of people	Sessions	Total number of people	Sessions	Total number of people
Social engineering drills	2	550	2	214	2	38
Information security education and training	2 sessions for employees of the Information Technology Division					
Information security notification	17 times to all employees					

► Protection of customers' confidential information



Establish standards

- We prioritize the protection of customer data, and formulate various specifications in accordance with the relevant laws and regulations.



Reinforce firewall management and authorization control

- De-identification of personal information.
- Establish firewall and network traffic monitoring, and analyze potential threats to prevent illegal intrusions.



Third-party inspection and improvement



- Passed BSI ISO 27001 information security review for 8 consecutive years.
- Assess internal and external information security risks and make improvements.

4.2 Product Quality

CGPC is considered a midstream and downstream plastic raw materials and products suppliers in the petrochemical industry. The products include Vinyl Chloride Monomer (VCM), polyvinyl chloride (PVC), chemicals (hydrochloric acid, liquid caustic, bleaching water) in the primary manufacturing process, and PVC film, PVC leather, pipes, door panels, anti-corrosion sheets, etc. in the secondary manufacturing process. The data in Section 4.2 is provided by CGPC (not including the subsidiaries, TVCM and CGPCP).

Material issue: Product quality

 Significance and Impact of CGPC	In order to ensure product quality stability, our company has been progressively implementing intelligent management modules. We have also focused on improving product process technology and employing AI inspection equipment. These initiatives have allowed us to achieve greater consistency in production quality, meeting and exceeding customer expectations and requirements.
 Develop Strategy	<ol style="list-style-type: none"> 1. Establish projects for improvement. 2. Implement full participation and enhance product value. 3. Meet customer needs and comply with the regulatory requirements.
 Policy Commitment	Provide customers with good product quality and services. We encourage quality improvement proposals and product quality improvement projects as the driving force for improvement and growth, hoping to meet customer needs.
 Grievance Unit	President's Office

Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Promote quality improvement proposals	Number of proposals	380	 406	385	400	450
Product quality improvement projects	Number of proposals	11	 11	11	11	12

 Exceeded goal  Achieved  Partially achieved  Not achieved

4.2.1 Product quality policy

-  **Continuously improve product quality**
-  **Continue to improve service quality**
-  **Provides customers with satisfactory operational quality.**

The quality of the pipe products manufactured by CGPC has always been well received. They all meet the CNS standard and have earned the honor of the national-level CNS mark. The Company's chemicals, such as 45% sodium hydroxide solution and 32% hydrochloric acid, have obtained the food additive permit from the Ministry of Health and Welfare of the Executive Yuan, as well as the food industry health and safety management system verification (once every 3 years) from the China Grain Products Research & Development Institute. The flow and traceability of the products sold can comply with government laws and regulations and are declared on relevant websites, showing the Company's dedication to food safety.







4.2.2 CGPC's quality management system and product verification

We keep our promise to customers and are committed to the maintenance and efficient operation of the quality management system. Based on the development strategy and market conditions, we have established business policies, quality policies, quality goals, product realization, production management, customer services and other plans to serve as the basis for each department to implement the quality management process and the framework for achieving continuous improvement. The monthly managerial officers' meetings review the results, and the management review meetings also report the implementation results.

To enhance product quality and increase production capacity, our building materials factory has implemented a long-term machine refurbishment plan for extruders using recycled plastic pellets since 2020. The main focus of this plan is to improve the screw extrusion ratio (D:L) from 1:22 to 1:28, thereby enhancing the machine's ability to process recycled materials. This improvement enables the production of products using recycled plastic pellets without compromising speed or quality. We have already replaced one extruder in 2021 and another in 2022, with a plan to replace three more extruders by 2025, completing this long-term extruder refurbishment program.

In March 2020, we made a significant improvement in the packaging materials for PVC small bags. We replaced the woven laminated kraft paper bags with heat-sealable PE bags. These PE bags are recyclable and can be 100% processed for reuse, greatly increasing the proportion of reusable packaging materials.

-  Passed VSCC materials flame retardant performance requirements
-  ISO 9001 Quality management system verification
-  IATF 16949 Quality management system verification
-  Improve customer satisfaction and trust in products



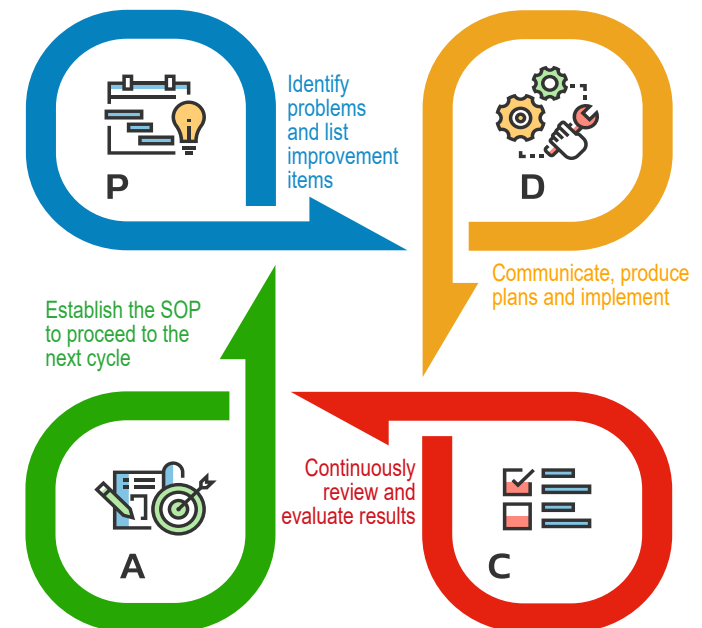
PVC resin is put inside single-material PE packaging bags

CGPC is committed to enhancing customer satisfaction and building trust in its products. In 1994, the company implemented the ISO 9001 Quality Management System. For automotive PVC leather, we have established an IATF 16949 quality management system that complies with the quality standards of the automotive industry. Additionally, we have successfully met the requirements for the "Materials flame retardant performance requirements of vehicle interior materials" set by the Vehicle Safety Certification Center (VSCC).

4.2.3 Quality management cycle

CGPC has established standardized operations for quality control, from incoming materials, manufacturing process, finished products and inspection. They all comply with the ISO 9001 quality management requirements, and the automotive PVC leather also meet the requirements of the IATF 16949 management system. In 2022, we have planned to prioritize hardware equipment as the primary improvement project. We aim to continuously improve the quality of raw materials, implement AI-optimized operating procedures and enhance our inspection equipment. These initiatives are part of our ongoing efforts to improve and optimize our operations. Both maintenance or improvement activities must follow the PDCA cycle and we need to find stability during the cycle for growth. If there are discrepancies from the operating standards, we revise the activities to make them comply with the standards. The application of PDCA helps us in review the handling of issues, while making continuous quality improvements in processing requirements, uses, etc. Based on various regulatory requirements (such as REACH, RoHS, control of types of plasticizers, etc.), develop and manufacture products meeting customer needs, and create product contributions and value.

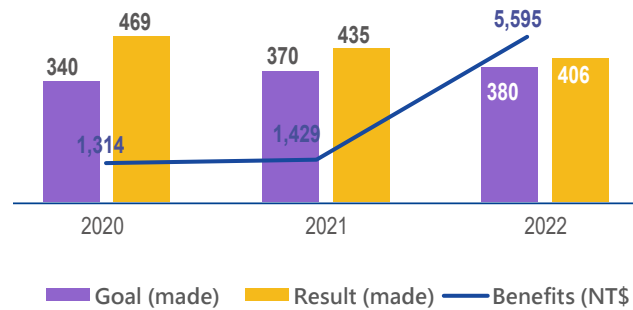
► PDCA management cycle



4.3 Supply chain management

► Improve proposal activities

In year 2022, there were a total of 406 quality improvement projects, all of which achieved the set target values according to the plan. The derived benefits from these projects amounted to NT\$55.95 million, calculated using the revised SOP benefit calculation method for 2022. Although the number of projects in 2022 slightly decreased compared to 2021, they still exceeded the set target values. CGPC sets annual target values and has provisions for rewarding proposals, encouraging active participation from colleagues.



Product quality problems and defects arising from the production and sales process are included in the annual improvement items such as raw materials used, production equipment, manufacturing process, product packaging methods, testing equipment and other issues after discussion. We carry out retirement, replacement, addition, revision and other methods to improve the reported problems and deficiencies, so that the stability of quality can be maintained to meet customer needs.

The number of quality improvement cases in 2022 has reached the set target according to the plan. Building Materials Factory aimed to enhance the product quality of PVC pipes and proposed a long-term replacement plan for extruder screws in 2020. By improving the screw extrusion ratio (D:L) from 1:22 to 1:28, the machine's ability to process PVC materials was enhanced, allowing the production of products using recycled plastic pellets without compromising speed or quality.

Note: [Various certificates](#) (- please click on the link).

CGPC (including CGC and two subsidiaries TVCM and CGPCP, hereinafter referred to as CGPC Company) requires suppliers to provide high-quality raw materials and high-efficiency services, and is also committed to developing communication channels with partnering suppliers to improve interactions, hoping to jointly achieve the goals of environmental protection, industrial safety and human rights.

Issue: Supply Chain Management

Significance and Impact of CGPC	As a leading domestic company, CGPC is committed to sustainable development. In this process, our operational strategies must consider the impacts and implications on both society and the environment. The Company also creates mutually beneficial and win-win relationships with suppliers, and thus collaborates with partners to facilitate the growth of both the society and Company.
Develop Strategy	Enhance procurement performance, establish strong partnerships and foster a culture of safety awareness, creating a collaborative work environment and sharing the corporate social responsibility.
Policy Commitment	<ol style="list-style-type: none"> 1. Improve the safety environment for workers and strive to protect the environment. 2. Fulfill social responsibility and improve competitiveness. 3. Enhance partnership and share sustainable business opportunities
Grievance Unit	Group's Material Planning Department

Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Promote the signing of "Supplier Social Responsibility Commitment"	Achievement rate %	100	100	100	100	100
On-site audit visit	company/year	2	2	4	4	6
Encourage suppliers to jointly participate in social activities	once/ year	1	1	1	1	1

Exceeded goal Achieved Partially achieved Not achieved

4.3.1 Supply chain sustainable development ▶ Supply chain sustainable development strategy and goals

As a leading domestic company, CGPC is committed to sustainable development. In this process, our operational strategies must consider the impacts and implications on both society and the environment. Therefore, we actively collaborate with our supplier partners to promote sustainable development within the supply chain. We strive to ensure that the supply chain maintains a safe working environment, fosters respectful labor relations, operates in accordance with the ethical standards and is committed to environmental protection. To achieve this, we have formulated a "Supplier Social Responsibility Commitment" and work together with our suppliers to meet the environmental, occupational safety and human rights goals. We also consider the level of supplier compliance as one of the key assessment items in our procurement decisions. In 2022, we successfully achieved a 100% adoption rate of the Supplier Social Responsibility Commitment, further enhancing the sustainability of our supply chain. During our supplier visits and audits, we conduct searches on the Environmental Protection Administration, local Environmental Protection Department and public information websites to identify any cases of non-compliance with the local environmental regulations. Based on the search results, we assess the associated risks, and provide follow-up tracking and guidance as necessary.

Goal

Short-term : 2022~2023

- Supplier Signing of the "Supplier Social Responsibility Commitment" achieved 100% in 2022
- 2023-Future Goals: Collaborate with research and development on three annual projects, subject to market conditions:
 1. Development of recycled plastics, 2. Biodegradable materials, 3. Low-carbon and recyclable materials
- 2023 Goal: Develop a "Supplier Sustainability Self-Assessment Form" to enable suppliers to self-evaluate their compliance with the required standards.

Intermediate-term : 2024~2025

- Overall Supplier Social Responsibility Commitment Promotion Achievement Rate, Target: 100%.
- On-site audits will be conducted on 4 suppliers annually, and the development of incorporating sustainability self-assessment form for field audits will be undertaken.
- Encourage suppliers to jointly participate in social activities at least once/year

Long-term : 2026~2030

- Based on the results of factory audit, establish a communication platform with suppliers. For the deficiencies, we assign the relevant professionals to provide suggestions and assist in planning.

Supplier management development track



Foundation

Establish a procurement unit, and consolidate the information that each subsidiary of the Group needs to purchase, purchase in bulks to achieve the goal of reducing costs.



System

- Compliance with regulations
- Establish procurement guidelines



Now

- Establish supplier sustainability management culture
- Increase risk assessment
- Incorporate sustainability indicators into supplier evaluation
- Promote signing of supplier/contract letter of commitment to social responsibility and on-site audit
- Promote green procurement
- Disclose sustainable supply management results and future plans
- Evaluation of Suppliers' Sustainable Self-Assessment Form



Future Plan

- Promote supplier factory audit and reinforce work injury investigation
- Suppliers jointly participate in social activities

Supply chain ESG risk management

Risk assessment and prevention

- We inspect safety requirements of the supply chain and the special conditions (such as chemical process risks, workplaces, VOC emissions, handling of environmentally restricted substances etc.) of chemical suppliers.
- Establish long-term collaborative relationship with suppliers, develop new suppliers and coordinate long-term material preparation systems.
- Establish an internal safety stock system and reference point for requisition according to the delivery schedule to prevent the risk of materials outage.
- Procurement personnel undergo education and training on supply chain sustainability.
- Environmental safety and health education and training for contractors.
- Implement Supplier Sustainable Self-Assessment Form for Initial Risk Identification Information.

Response to impact

- Adjust the supply proportion of suppliers and take alternative suppliers or have them complement one another.
- In terms of the engineering part, the environmental safety and health unit immediately starts an investigation on personnel safety, equipment damage and environmental impact, summarizes the results and submits such to the relevant units to take response measures, as well as understand the status.

Future plan

- Chemical suppliers are listed as key points, and aspects such as the procurement amount, tender amount for construction and the importance are included in the factory audit of the abovementioned SDGs, and establish risk assessment measures according to the results.
- Place it under restriction, and provide consultation according to the risk assessment measures and the risk levels after assessment.

► Supply chain ESG risk management

Risk items and attributes	Suppliers (Chemicals)	Construction contractors
	Environmental (E), Social (S), Governance (G)	
Potential risk	a. Chemical manufacturing process (E) b. High-dust, high-temperature, high-noise or high-humidity workplace (E) c. VOC (volatile organic compounds) escape risk (E) d. Labor-intensive industries (S) e. Supply chain disruption/delay risk (G) f. Quality risk (G)	a. High-dust, high-temperature, high-noise or high-humidity workplace (E) b. Risk of working at heights. (E, S) c. Labor-intensive (S) d. Industrial safety risks such as cutting or welding (S) e. Construction disruption/delay risk (G) f. Construction quality risk (G)
Number of audits and home visits	2 companies (Audit)	To be conducted together with the contractors' project construction assessment
Audit details	Environmental aspect (E) : Whether or not the manufacturing and storage of environmentally controlled substances are conducted in accordance with the laws and regulations Governance (G): Quality, production and order management, customer complaints and satisfaction follow-up, employee education and training, and external processing management.	
Number of qualified households	2 companies (100% qualified rate)	

4.3.2 Supplier and contractor management

1. Suppliers and contractors grow together

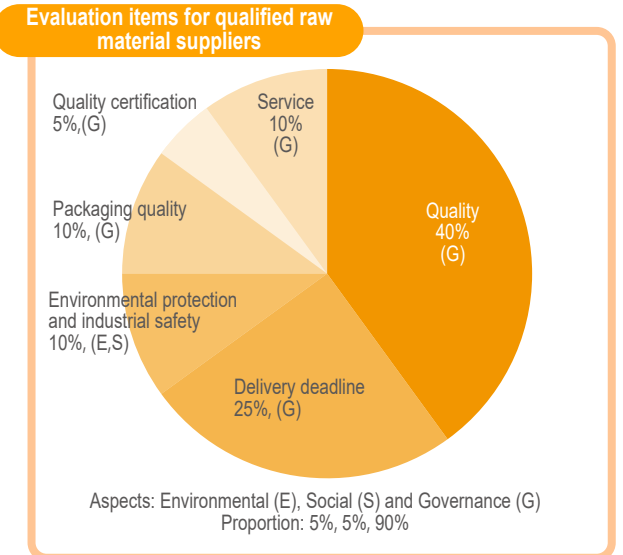
In addition to implementing the existing evaluation system for suppliers and contractors, CGPC plans to start a trial implementation of on-site evaluation system for raw materials suppliers in the future according to the abovementioned sustainable development strategies, and assign procurement, manufacturing, environmental safety and health and personnel units to conduct the on-site audit of services and raw materials provided. The document and deficiencies are recorded and discussed, so that we can review them with the suppliers regularly and give suggestions for improvement.

► Raw materials supplier

- Items certified by the ISO and complying with the European Union directives (RoHS) as part of the supplier evaluation.
- In 2022, all suppliers signed the Supplier Social Responsibility Letter of Commitment for a 100% achievement rate, and we continue to request new suppliers to sign the letter of commitment.

► Construction contractors

- Requires contractors to sign the Supplier Social Responsibility Commitment.
- Must comply with the requirements of the ISO 45001:2018 occupational safety and health management system.



2. Supplier management and evaluation

In response to changes in production operations and environmental protection policies, CGPC regularly evaluates the inclusion of new suppliers based on items such as service, quality certification, packaging quality, environmental protection, industrial safety, and delivery deadlines to ensure that every raw material and service obtained are of sufficient quantity, high quality, low price, while meeting the requirements of environmental protection, as well as industrial safety and policies and regulations.

Supplier management



Develop suppliers

Vendors' sample testing and qualification review



Qualification certification

Documentation of qualified suppliers "Group's Supplier Application Form/ Qualified Vendor Application Form"



Continuous evaluation

Annual supplier evaluation process "Supplier Evaluation Form"

Description of qualified suppliers

The qualification certification of suppliers of raw materials / contract manufacturing products by one or a combination of the following methods:

- Those who have obtained domestic and foreign quality certification, such as CNS, U/L, JIS, ISO and other qualification certificates.
- Recognized by the industry as a Company that offers good quality and has large-capacity equipment.
- Publicly listed company.
- Well-known foreign company.
- Direct agents or distributors with technical service capabilities.
- Direct agents or distributors that have been confirmed to meet the requirements.
- The quality of the raw materials has been confirmed suitable by the R&D department.
- Agree to cooperate with the Company's environmental protection requirements.
- Cooperate with the Company to implement IATF-16949 global automotive industry quality management system certification.
- Those who have a good supply quality or delivery records in the past.
- The brand designated by the technology provider.
- Exclusive supplier of raw materials and supplies.

Evaluation results of CGPC's qualified raw material suppliers and qualified material suppliers in the last 3 years

By company	Raw materials and supplies	Item	2020	2021	2022
CGPC	Raw materials	Number of companies evaluated	107	166	158
		Qualified rate	100%	100%	100%
	Supplies	Number of companies evaluated	39	20	27
		Qualified rate	100%	100%	96%
CGPCP	Raw materials	Number of companies evaluated	6	12	12
		Qualified rate	100%	100%	100%
	Supplies	Number of companies evaluated	14	11	9
		Qualified rate	100%	100%	100%
TVCM	Raw materials	Number of companies evaluated	6	16	14
		Qualified rate	100%	100%	100%

- Evaluated once a year with a score of 75 or above is considered qualified.
- Because TVCM does not have packaging materials or supplies, it is not included as part of the supplier evaluation.

In addition to using the abovementioned annual supplier evaluation to ensure that the vendors picked by the Company meet the requirements and the eco-friendly sustainable management concept, for suppliers that fail the evaluation or have low scores, we offer improvement suggestions based on the evaluation status, reduce frequency of transactions, suspend or stop transactions and other measures.

3. Selection and evaluation of contractors

The procurement unit mails the Construction Contractor Survey Form to selected contractors and asks them to fill out the form, apply company seal stamps on the form then send it back. Survey forms with incomplete submission of supporting documents will not be evaluated and such contractors will not be allowed to undertake the Company's projects.

Project construction evaluation items



Develop contractors

Select new contractors: Mail "Construction Contractor Evaluation Form" to contractors



Qualification certification

Documentation of qualified suppliers: "Table of Contents of Construction contractors' investigation categories"



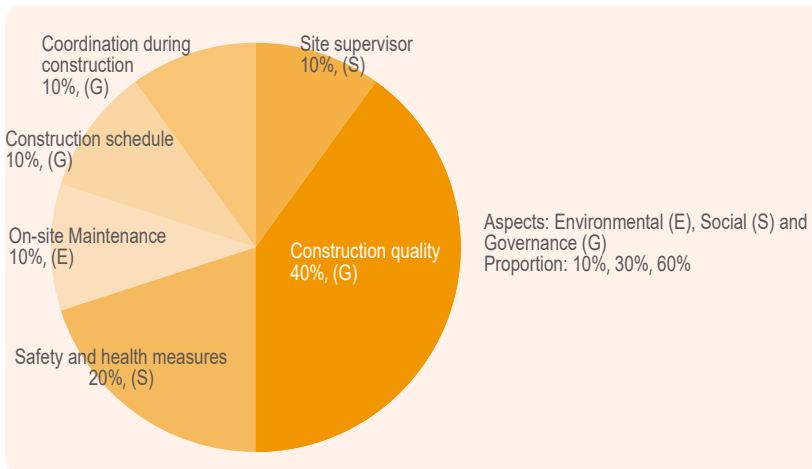
Continuous update

Irregularly Update of Contractors' File Information: Changes in items such as equipment, abilities and expertise



Evaluation process

Project construction evaluation process: "Suppliers' assessment form"



Evaluation results of CGPC's project contractors (qualifying score of 70 and above) in the last 3 years

By company	Item	2020	2021	2022
CGPC	Number of companies evaluated	94	81	31
	Qualified rate	98%	100%	100%
	Descriptions	(2 unqualified) Poor construction quality and the rights as a contractor were suspended for half a year as a warning.		
CGPCP	Number of companies evaluated	6	8	4
	Qualified rate	100%	100%	100%
	Descriptions	-	-	-
TVCM	Number of companies evaluated	10	23	12
	Qualified rate	100%	100%	100%
	Descriptions	-	-	-

- If the score is less than or equal to 69 points, it is considered unqualified. If the rating is C (69-60 points) or D (50-59 points), the request for quotation will be stopped for 6 months or 1 year, respectively. Those with a rating of E (below 49 points) will be disqualified from bidding and there will be no transactions in the future.
- In the process of construction evaluation, the supervisory unit and the environmental safety and health unit record the deficiencies in the construction process, and the contract offering unit will summarize and discuss with the project contractors, informing them of the scoring results and the deficiencies, and asking them to improve.

4.3.3 Support local procurement

CGPC prioritizes supporting the local suppliers in Taiwan. This is due to that it is easier to communicate with local vendors to know their status. Purchasing from foreign vendors is considered only when the materials cannot be supplied locally.

In 2022, the raw materials Vinyl Chloride Monomer (VCM) of CGPC and CGPCP are supplied by TVCM, and the purchase amount accounted for approximately 95.27% and 98.45%, respectively, of the total local source. The source of the raw materials ethylene and dichloroethane of TVCM is downstream products of the oil industry. Due to the limited supply in Taiwan and cost considerations, it must be imported to maintain the stability of the supply chain.

The project contracting policy also mainly focuses on local contractors in Taiwan. In principle, except for the main equipment that is purchased from abroad due to the lack of domestic manufacturers, other ancillary projects that have no special requirements will be designed and contracted by the Company in-house, and then contracted out to other domestic downstream construction firms.

► 2022 procurement proportion of CGPC's domestic and foreign vendors

By company	Taiwan	Not in Taiwan
CGPC	95.27%	4.73%
TVCM	24.26%	75.74%
CGPCP	98.45%	1.55%
Total	72.66%	27.34%

• CGPC's suppliers are mainly suppliers of raw materials, supplies and equipment, and construction contractors.

► Proportion of Transaction Amounts between CGPC and Suppliers of Different Natures in 2022.

By company	Raw materials suppliers	Materials/Equipment Suppliers	Construction contractors
CGPC	91.23%	4.76%	4.01%
TVCM	92.34%	4.21%	3.45%
CGPCP	97.50%	2.20%	0.30%

Note: The transaction amount of information software, hardware and administrative suppliers is extremely low and is not included in the calculation.

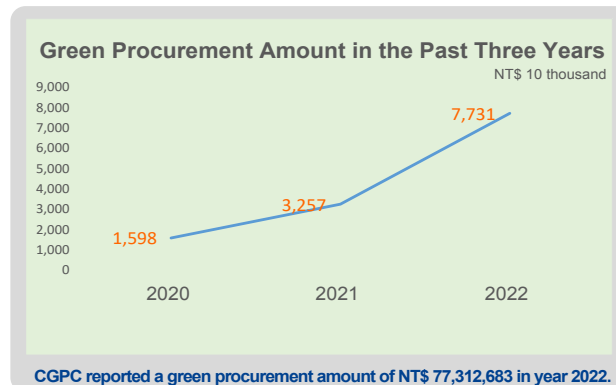
► Green procurement program

CGPC began to actively implement the green procurement program in 2019, and has planned to cooperate with the Taipei City Government to carry out an online green procurement declaration project, mainly purchasing green machinery and equipment.



In 2022, the self-evaluation found purchase of government-approved green products amounted to NT\$88.94 million, an increase of NT\$53.17 million compared with last year. We will continue to plan more purchases of green products in the future.

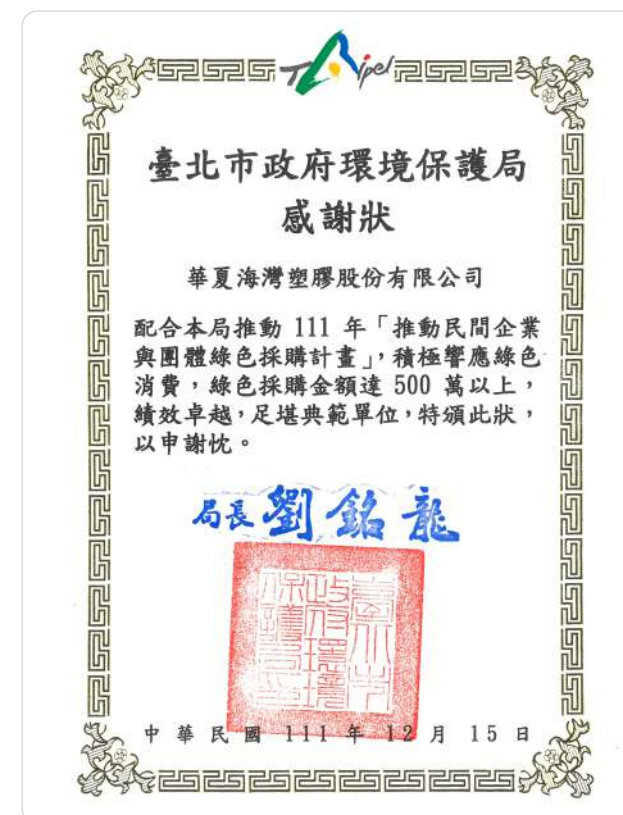
► Awarded a certificate of appreciation by the Department of Environmental Protection at the Green Procurement Performance Commendation Conference



► 2022 Self-Assessment of Government-Approved Green Products Purchases

(Unit: in NT\$10 thousand)

Year/ Company	CGPC	TVCM	Total
2022	7,731	1,163	8,894
2021	3,257	320	3,577



4.4 Participation in External Organizations ▶ (GRI 2-28)

▶ Main Participating External Organizations

Company	Name of cooperatives and associations	Membership	Positions held
CGPC	Chinese Management Association	√	-
	Taiwan Synthetic Resins Manufacturers Association	√	Executive supervisor
	Taiwan Plastics Industry Association	√	-
	Taiwan Acid and Alkali Industry Association	√	Executive director
	Taiwan Responsible Care Association	√	Supervisor
	Society of Plastics Engineers - Taiwan	√	-
	Miaoli County Labor Relations Association	√	-
	Miaoli County Industrial Association	√	-
	Miaoli County Toufen Industrial Park Manufacturers Association	√	Directors
TVCM	Taiwan Responsible Care Association	√	Directors
	Petrochemical Industry Association of Taiwan	√	Supervisor
	Kaohsiung City Industry Association	√	-
	Industrial Safety and Health Association	√	Directors

Other descriptions:

1. CGPC appointed as the core enterprise of the Safety and Health Family.



In 2022, CGPC, TVCM and CGPCP jointly participated in the Earth Hour movement to reduce environmental impact. From 8:30 to 9:30 on (Saturday) March 26, 2022, the exterior wall decorative lighting or non-essential lighting equipment in the Taipei Office (Tai-An Building), CGPC's Toufen factory and TVCM and CGPCP's Linyuan factories were turned off.



Environmental management

Due to environmental degradation, energy and natural resource scarcity, intensified climate change, and stricter government regulations, businesses face pressure and challenges. Facing these external pressures is both a challenge and an opportunity. We continue to promote the work of "energy conservation and carbon reduction" with practical actions in an honest and responsible attitude. We set the environmental protection goals of power, energy and water conservation and carbon reduction and try our best to reduce the impact of business operations on the environment, further achieving the eco-friendly goals of low pollution and low energy consumption.

5.1 Environmental Management Policy

CGPC (including subsidiaries TVCM and Taiwan Highpolymer, and excluding overseas invested affiliates, and the same applies to the rest of the chapter) considers the protection of personnel safety and health and the environment and ecosystem as the goals of environmental management. We have always complied with environmental protection and occupational health and safety regulations, continuously and effectively implemented practices such as reusing and recycling of leftover materials, pollution prevention, energy/resource conservation and recycling, industrial waste reduction, and promoting harmonious relationships with our neighbors. All factories of CGPC have passed the ISO 14001 environmental management system verification, providing a good environmental protection framework, reducing the impact on the environment due to accidents, and ensuring compliance with regulations.

► The verification certificates or product-related certificates obtained by the Company in 2022 (please see the link to the official website [Environment/Product Certification section](#)).



5.1.1 Hazardous Substances and Waste Management ► (SASB: RT-CH-150a.1)

1. All raw materials and products used by CGPC have passed the inspection of Restriction of Hazardous Substances (RoHS) to prevent the impact of the products on the environment.
2. Hazardous air pollutants discharged from production all meet the emission standards for hazardous air pollutants from stationary sources to reduce the impact on the environment.

5.1.2 SASB Chemical safety and environmental management ► (SASB: RT-CH-410b.1)

The performance indicators of CGPC's chemical safety and environmental management are calculated based on hydrochloric acid, caustic soda, and bleaching water used, and the chemical classification management and exposure assessment are carried out according to their related hazards. The data of various indicators are as follows:

1. The percentage of product revenue (%) of products containing chemical substances classified as Type 1 and 2 health and environmental hazards by the GHS hazard categories, CGPC is 10.35% and TVCM is 99.98%.
2. The percentage (%) of relevant products that have undergone hazard analysis is 100%. Besides, as hydrochloric acid, caustic soda, and bleaching water are not chemicals of high concern, they have less significant impact on humans and the environment.

Hazardous Substances and Waste Disposal and Management

Hazardous Substances Disposal and Management

CGPC takes comprehensive measures in the management of hazardous substances across its research, procurement and production activities. From the assessment to the use, management and disposal processes, the company strictly adheres to standards and relevant regulations to minimize its operational impact on the natural environment and human health.

Following Domestic and International Standards and Establishing Systems

In order to prevent hazardous substance-related accidents, reduce occupational hazards, ensure the health of employees, and comply with government regulations, CGPC has established operational standards such as "Hazardous Substance General Management Guidelines," "Specific Chemical Operations Management Guidelines," "Lead Operations Management Guidelines," "Dust Operations Management Guidelines," and "Organic Solvent Operations Management Guidelines." These guidelines are in place to effectively control the safe use of hazardous substances.

Management Structure

Please refer to the "[CGPC Hazardous substance safety management structure](#)" link.

Implementation Status:

Regarding the product design and development process, we adhere to international guidelines and standards. The content of hazardous substances in our products complies with environmental regulations and meets the green product requirements of our customers. We have established relevant management regulations to ensure proper control and management. In terms of the use, management, and disposal of hazardous substances, we strictly follow legal procedures. We require relevant personnel to obtain technical certifications and install detection and alarm systems in the work environment. In terms of environmental and safety aspects, we implement operational environmental monitoring for hazardous substances to ensure that the exposure concentration does not have adverse health effects on our employees. We also implement chemical classification management to effectively prevent potential health hazards caused by hazardous substances to our employees. During the production, service and related activities, we handle waste gases and wastewater properly, ensuring compliance with national emission standards. In 2022, we conducted measurements of harmful substance concentrations in the work environment air, covering a total of 20 types. The results showed good control of these substances.

Regarding the disposal of hazardous waste, in 2022, CGPC generated a total of 46.54 tons of hazardous waste. The proportion of waste that was recycled and reused was approximately 3% (as shown in the table below). Furthermore, CGPC conducts regular visits to the waste disposal contractors to ensure proper handling of the waste.



Hazardous Substances Disposal and Management Regulations

- New Product Development Management Guidelines
- Product Substance Management Guidelines
- Initial Product Quality Planning Guidelines
- Raw Materials Inspection Operations Guidelines
- Raw Materials and Finished Product Management Guidelines
- Processing Finished Product Management Guidelines



2022 Hazardous Substances Treatment Methods and Quantity Statistics

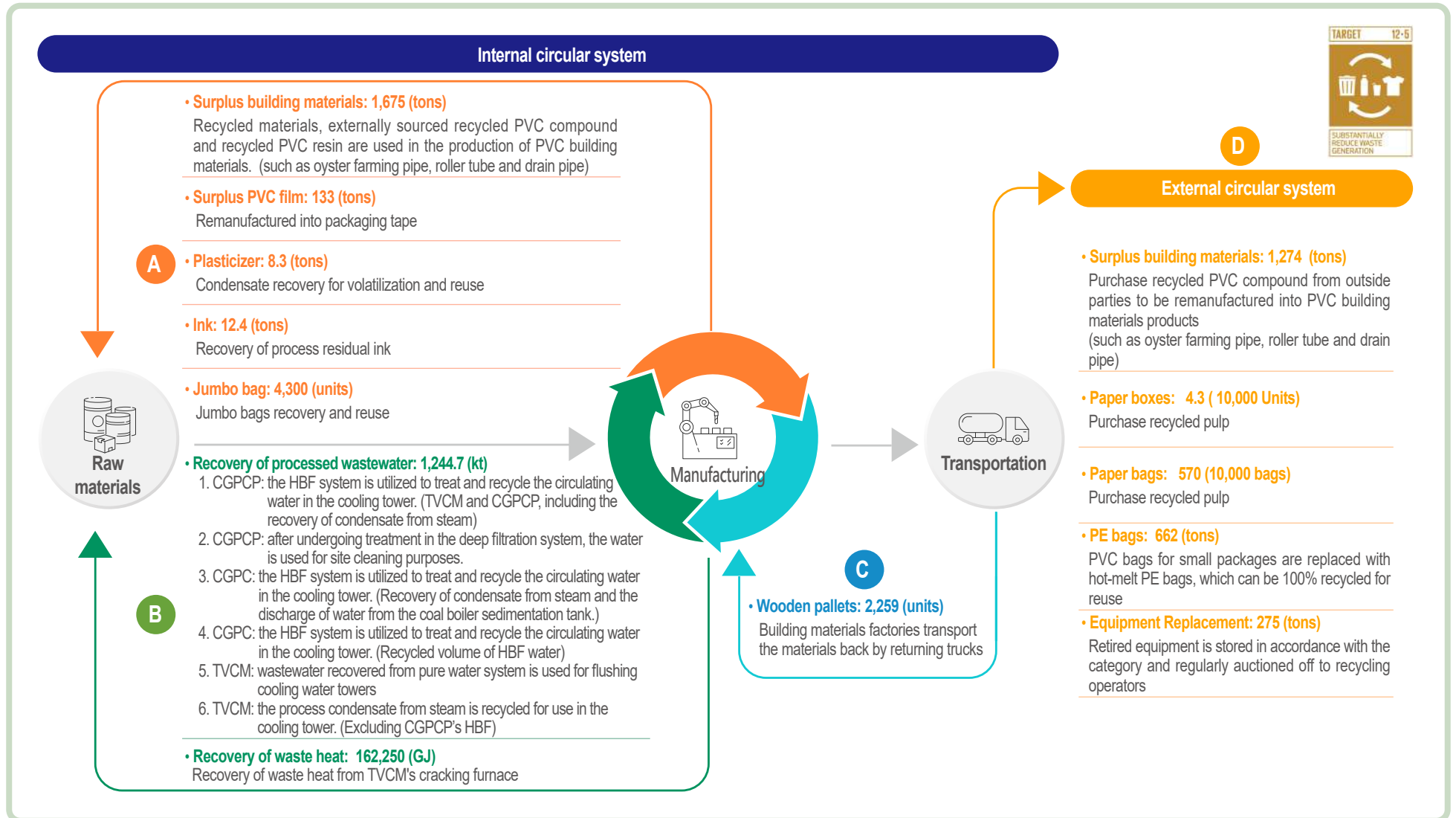
Item	Year	Final Disposal Method/Company	CGPC	TVCM
Hazardous Industrial Waste	2022	Landfill	6.69	38.23
		Recovery and reuse	1.62	-

Description:

1. In 2022, the total quantity of hazardous waste was 46.54 tonnes. The recovery and reuse rate accounts for 3% of the total quantity while the landfilling accounts for 97% of the total quantity.
2. Empty barrels of raw materials, which underwent cleaning process, were not included in the statistics.

5.1.3 Circular economy

► CGPC values the efficiency of resources use and have adopted the circular model of recovery and re-use of raw materials and supplies, manufacturing process and distribution. In 2022 , the internal and external results of circular economy practices are shown as follows:



Implement GRS and acquire verification

The GRS adds the use of recycled materials in products and the reduction of environmental impact during production process based on the principles of tracking and tracing verified finished products and at the same time includes relevant requirements for environmental and social responsibilities, providing better monitoring and control measures for industry supply chains. The verification of GRS requires that the upstream supply chain must have GRS certification to be effective to ensure the integrity of the verified product.

► Content of standards

- To obtain GRS verification, a product must contain at least 20% of its raw materials consisting of recycled materials and be 100% free of contamination.
- Recycled materials should also clearly indicate pre-consumer waste or post-consumer waste, and the proportion of both pre-consumer and post-consumer waste in the recycled fiber materials.
- In addition to the regulations on raw materials, corporate social responsibility, pollution prevention and treatment in the production process, and chemical restrictions are all strengthened.
- To obtain the GRS verification mark (hang tag), the raw materials of the product must contain at least 50% recycled content.

► Benefits

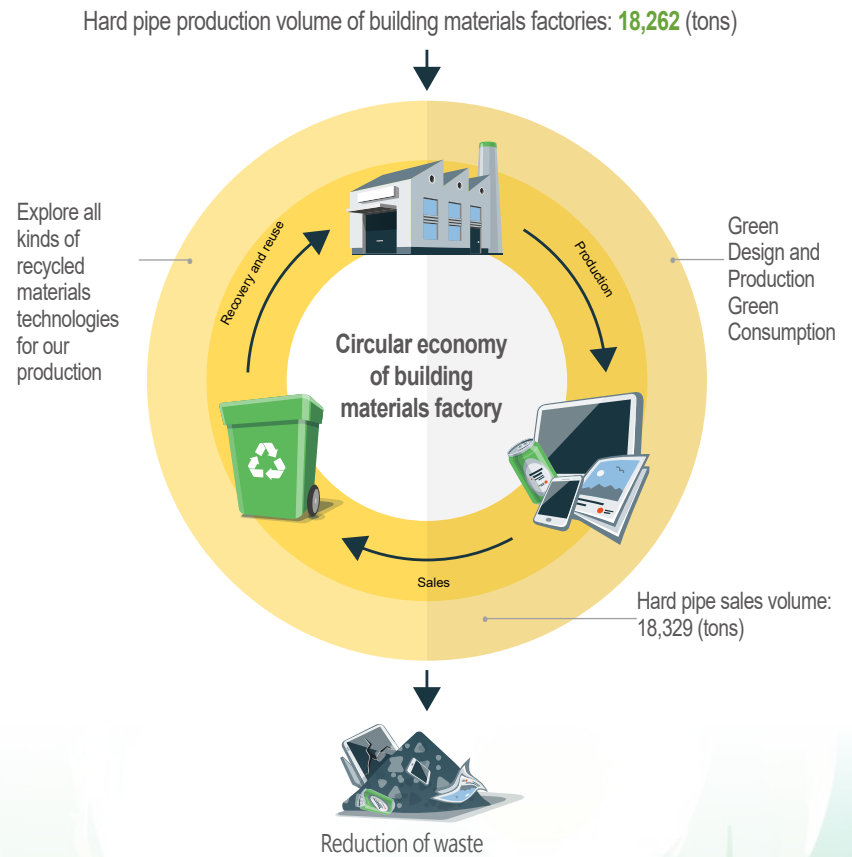
CGPC fully grasps the international trends and understands the customer needs, and provides certificates of recycled contents to become an excellent partner trusted by customers. We fulfill our social responsibilities and prioritize pollution prevention and treatment in the production process and the requirements of chemical restrictions. We put circular economy into practice to find more green business opportunities, which is a symbol of an excellent enterprise to enhance the corporate image.

► GRS verification

In response to the trend of net-zero carbon emissions, many brands have proposed policies for using recycled materials in their products. In March 2022, our company initiated the establishment of the Global Recycled Standard (GRS) certification. After 9 months of dedicated efforts, we successfully passed the review and obtained the GRS certificate on December 29, 2022. We received the GRS certificate on January 4, 2023 (see attachment).

Currently, the certification covers TPU and TPO recycled material products (with priority given to brand requirements). In the following years, other product categories can be added during the verification process. This certification will be beneficial for our business units in pursuing recycled economic products.

CGPC – 2022 circular economy implementation results for building materials products








- Since 2021, the building materials factory has begun to collect all kinds of recycled materials and recovered PVC resin in the factory, and purchase recycled PVC compound to be put into production of new products for sale, striving for environmental protection.
- 2022 recovery and reuse volume: 2,949 tons, the recovery and reuse rate accounts for 16.1% of the 2022 product volume of piping materials.

5.2 Climate Change and Energy Management ▶ (GRI 201-2, 302-4, 302-5)

Facing the challenges of global climate change and the government's promotion of net-zero carbon emission policies, we have continued to make efforts to reduce greenhouse gas emissions for sustainable development. Through industry-academia collaboration, we incorporate AI big data technology into our process to improve efficiency and build smart factories. We have actively implemented various management systems (ISO 50001, ISO 14064-1, ISO 14067, ISO 46001, ISO 14046, PSM, GRS) and referred to international technological development to propose various improvement plans, such as renewable energy, waste water, rainwater and sewer water recycling, energy conservation and carbon reduction solutions, smart energy management systems, etc. and followed the carbon reduction targets set by the Group to appropriately set annual carbon reduction targets and review renovation plans.

Material issue: Climate change and energy management

-  **The Significance and Impact of CGPC** ◀ Improve equipment efficiency, and reduce the impact of production on the environment as much as possible in order to achieve the eco-friendly goals of low pollution and low energy consumption.
-  **Develop Strategy** ◀ Renovation and replacement of old equipment and Improve equipment efficiency in order to achieve the eco-friendly goals of low pollution and low energy consumption.
-  **Policy Commitment** ◀ By 2030, carbon emissions will be reduced by 27% compared to the levels recorded in 2017.
-  **Grievance Unit** ◀ Engineering Department
-  **SASB indicators** ◀ RT-CH-110a.1, RT-CH-110a.2, RT-CH-130a.1

 Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Actively implementing energy-saving and carbon reduction programs, utilizing low-carbon fuels and renewable energy sources.	Reduction of GHG emissions (10,000 tons of CO ₂ e)	37.61	34.69 	36.82	35.55	29.97

Note: 1. The 2022 performance (pending third-party verification) is expected to achieve a rate of 108%. This is mainly due to the decrease in production compared to 2021, as the PVC demand was weak in 2022. Additionally, the usage of coal in steam boilers decreased due to market factors and the transition to natural gas.
 2. The scope of greenhouse gas inventory includes CGPC's Toufen factory, CGPC Taipei Office, TVCM's Linyuan factory, TVCM Taipei Office, GGTC, and CGPC's Linyuan factory, achieving a coverage rate of 100%.

 Exceeded goal  Achieved  Partially achieved  Not achieved

5.2.1 Response to climate change is an opportunity for enterprises' sustainable operations ▶ (GRI 302-3)

Climate change is a global challenge that requires collective action. In order to align with international standards and address the needs of sustainable development, the Legislative Yuan of our country passed the Climate Change Response Act on January 10, 2023, after its third reading. In response to the impact of climate change, carbon reduction has become a shared global goal. To enhance our efforts in carbon reduction, USI Corporation has established the 2030 carbon reduction target of "27% reduction in carbon emissions by 2030 compared to 2017." We are actively implementing the corresponding strategies and management mechanisms to achieve this target. The nine core production plants within the group have been consistently implementing ISO 14064-1 greenhouse gas inventories and verification, as well as planning and implementing carbon reduction programs. Since 2018, we have gradually introduced ISO 50001 energy management systems and obtained certifications to effectively manage energy performance. We remain committed to implementing energy-saving and carbon reduction initiatives to minimize our environmental impact and strive to make a positive difference in reducing environmental impact. In addition, the group is actively developing external renewable energy projects. As of the end of 2022, the cumulative grid-connected capacity of solar energy projects has reached 5.9 MW. These projects generate approximately 7.3 million kilowatt-hours of green energy annually, contributing to a reduction of approximately 3,700 tonnes of CO₂e emissions. We have also planned to achieve a grid-connected capacity of 15 MW by 2025 and 20 MW by 2027.

CGPC is following the group's 2030 carbon reduction target and has planned a carbon reduction pathway accordingly. In 2022, the greenhouse gas emissions (pending third-party verification) have already decreased by 16% compared to the base year 2017. Moving forward, the company will actively implement energy-saving and carbon reduction programs, enhance energy efficiency, utilize renewable energy sources, and adopt low-carbon fuels to effectively achieve the carbon reduction goals and promote sustainable development.

Carbon Reduction Pathway Planning

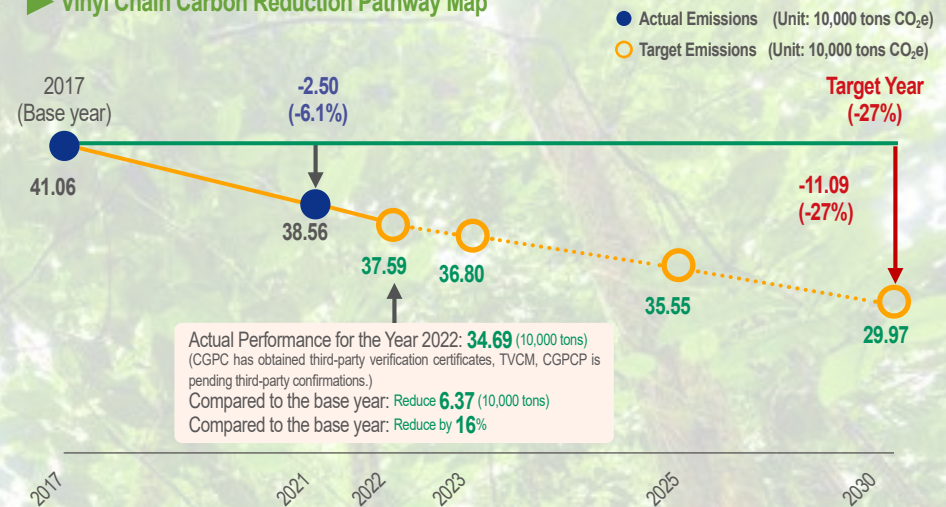
(Unit: tons CO₂e)

By company	2017 Base year Category 1, 2	2020 Performance Category 1, 2	2021 Performance Category 1, 2	2022 Performance Category 1, 2	2030 target Category 1, 2
CGPC (Toufen factory)	150,575	131,737	137,852	118,783	109,920
TVCM (Linyuan factory)	210,713	173,360	199,173	186,186	153,821
CGPCP (Linyuan factory)	49,292	45,065	48,595	41,904	35,984
Total	410,580	350,162	385,620	346,874	299,725

Note:

- Category 1: The main emission sources include natural gas, fuel coal and diesel. Category 2: Include purchased electricity and purchased steam.
- CGPC (Toufen factory) has transitioned to conducting greenhouse gas emissions inventory in accordance with ISO 14064-1:2018 and has obtained a third-party verification statement since 2022.
- TVCM (Linyuan factory) has been conducting greenhouse gas emissions inventory based on ISO 14064-1:2018 and has obtained third-party verification since 2021.
- CGPCP (Linyuan factory) has been conducting greenhouse gas emissions inventory in accordance with ISO 14064-1:2018 and has obtained third-party verification since 2021. However, there was a data error in the electricity consumption data and it has been self-corrected in Category 2 data.
- The greenhouse gas emissions for TVCM and CGPCP in 2022 are pending third-party confirmation. Once the third-party verification is obtained, the data will be published on the website and updated in the following year's annual report.

Vinyl Chain Carbon Reduction Pathway Map



Note: Between 2013 and 2022, the greenhouse gas emissions from the group's Taiwan facilities reached their peak in 2017. Therefore, the emission reduction targets are set based on 2017 as the base year.

Implementation and results



Promote establishment of the ISO-50001 energy management system

- As of 2022, the USI Corporation has successfully verified nine factories.
- CGPC and CGPCP have obtained the ISO 50001 verification in 2019.
- TVCM has obtained the ISO 50001 verification in April 2021.



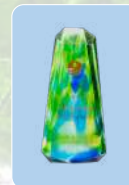
Awarded the "Performance of Excellence" trophy by the Ministry of Economic Affairs

- Awarded the "Performance of Excellence" trophy for the promotion of the energy conservation service team from 2016 to 2018.



Actively carry out energy conservation and carbon reduction actions

- Continue to participate in the Earth Hour movement to reduce environmental impact.



Taiwan Highpolymer recognized by the Water Resources Agency for its water conservation efforts

- 2022.03.22 CGPCP recognized by the Water Resources Agency for its [water conservation efforts](#)

The Group's cross-factory technical exchange seminar in 2022

On October 25, 2022, a "Group Plant Technical Exchange Meeting" was held at the TVCM's Linyuan factory. Continuing from last year, with the core themes of "Occupational Safety and Environmental Protection," "Equipment Maintenance," "Energy Conservation and Carbon Reduction," each of the 12 plants in Taiwan proposed 1 or more technical cases. These cases underwent a written review and ultimately, 7 plant cases (5 on the topic of energy conservation and carbon reduction and 2 on the topic of occupational safety and environmental protection) were selected as finalists. The final selection was made through voting and scoring by senior executives of the group and representatives from the presenting plants to determine the outstanding technical cases of the year. In his closing remarks, Chairman Wu commended the performance of each plant and emphasized the importance of achieving net-zero carbon emissions. He highlighted the significance of recognizing and rewarding outstanding achievements through the selection process, promoting knowledge exchange, and learning from each other's experiences. By collectively enhancing the technical capabilities of the group, the aim is to achieve the carbon reduction target set for the USI Corporation by 2030.



Information on Award-Winning Technical Case Studies in 2022:



TVCM's Linyuan factory
(First Place)
[AI-enabled Energy Saving in EDC Distillation Tower and Coating for Cracking Furnace \(F-6202\)](#)



CGPC's Toufen factory
(Third Place)
[Space Packaging Intelligent Safety Improvement](#)



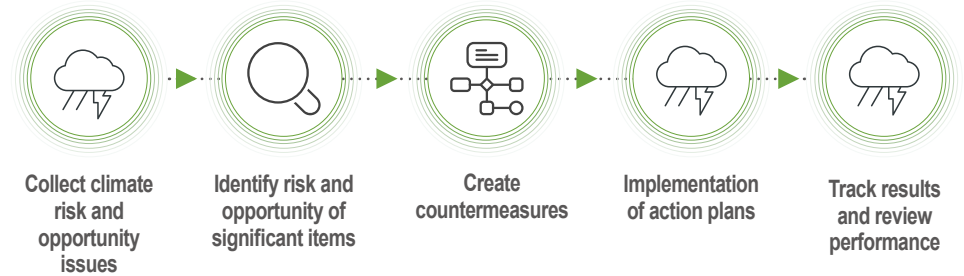
CGPC's Linyuan factory
(Excellent)
PVC Stripping Improvements and Optimization

▶ TVCM's Linyuan factory has been awarded the first place in the Technical Case Study Presentation for two consecutive years!

5.2.2 Climate change management ▶ (GRI 201-2)

In order to fulfill CGPC's commitment to corporate social responsibility and continuously manage the risks related to climate change and the related strategies and measures, the Group set energy management goals in 2016, hoping to keep everything within a controllable range with its best efforts. For the purpose of adaptation to the impact of climate change, CGPC has applied the Task Force on Climate-related Financial Disclosures from the Financial Stability Board in 2019 to identify risks and opportunities and plans to conduct a comprehensive assessment every 3 years, with annual reviews and updates. The most recent assessment was completed in 2021.

▶ Climate risk and opportunity identification assessment procedures



▶ Disclosure of climate change framework

In response to the drastic changes in climate, the Group has actively mitigated the greenhouse gases generated by its operations, continued to promote energy conservation and carbon reduction improvements, responded to government policies, installed renewable energy sources, spared no efforts in the controllable scope and assessed the potential financial impact, further using the identified results to formulate response plans.

▶ TCFD Structure



1 Governance

The ESG Committee serves as the highest-level organization for climate change management. Annually, it focuses on planning and reporting progress related to climate change initiatives to the Board of Directors.

- **ESG Committee:**CGPC's climate change management is organized at the highest level, with an independent director serving as the chairman. Annually, they oversee the planning and progress reporting related to climate change initiatives and provide reports to the board of directors.
- **The Executive Management Meeting:**Chaired by the Chairman, discusses and plans major energy-saving and carbon reduction policies on an irregular basis.
- **The Group's Environmental Division Quarterly Review Meeting :**Serves as the highest level of energy management in the USI Corporation. It takes place every quarter and involves reporting on the planning, progress and making resolutions to the Chairman.
- **The Green Energy Task Force:**Serves as the responsible unit for promoting green energy initiatives within the USI Corporation. Reports to the Chairman on the progress and future plans of green energy development on a monthly basis.

2 Strategy

The TCFD method was applied during the operational process to identify 5 major risk and 7 major opportunity items and an assessment was conducted to evaluate the occurrence timeline of impacts and their potential financial impact.

- Climate Change Risks and Opportunities Identified Based on Occurrence Schedule:

Type	Short-term (<3years)	Mid-term (3~5years)	Long-term (>5years)
Physical Risks	---	<ul style="list-style-type: none"> • Increased severity of extreme weather events • Changes in rainfall patterns and climate extremes 	---
Transition Risks	<ul style="list-style-type: none"> • Rising raw material costs 	<ul style="list-style-type: none"> • Raise the GHG emissions pricing • Stigma of the industry 	---
Opportunities	<ul style="list-style-type: none"> • Reduce water usage and waste 	<ul style="list-style-type: none"> • Participate in renewable energy programs and adopt energy conservation measures • Use low-carbon energy • Use more efficient production and distribution processes • R&D and innovation in developing new products and services 	<ul style="list-style-type: none"> • Participate in carbon trading market • Energy alternatives/ diversification

3 Risk management

The assessment results of climate change are integrated into the company's risk management evaluation, and the General Manager's Office provides reports on the operational aspects of control to the Audit Committee and the Board of Directors on an annual basis.

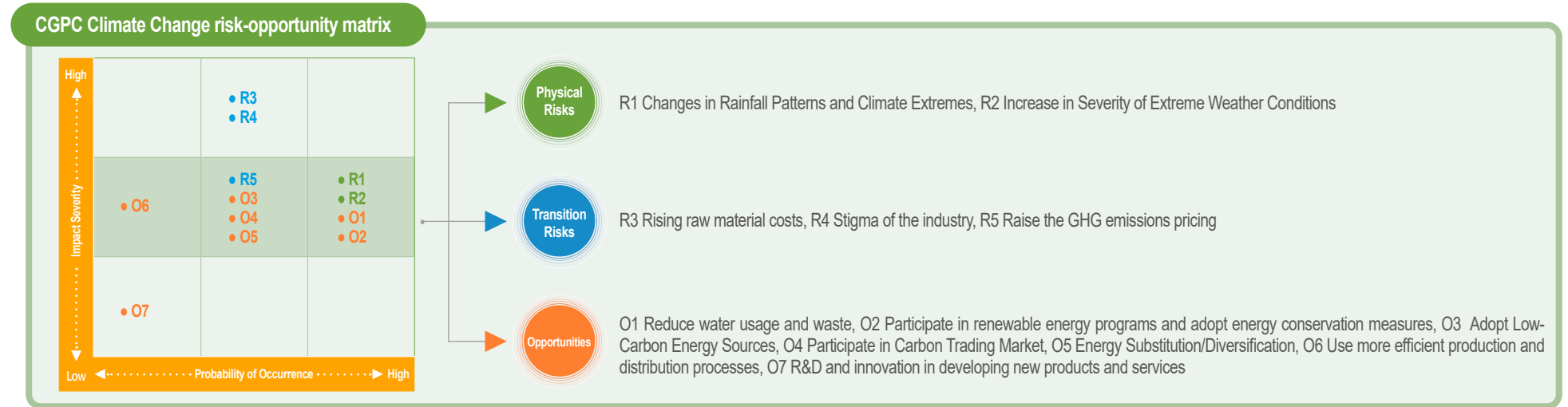
- **Implementation of TCFD:** Adopted the TCFD structure to identify risks and opportunities associated with climate change. This involves effective communication with relevant units and final confirmation by senior executives.
- **Results Identification and Reporting:** Integrated into the annual company's risk management evaluation. The General Manager reports on control measures and management operations to the Audit Committee and the Board of Directors on a yearly basis.

4 Indicators and objectives

- **Group's energy management objectives:**
The base year was set as 2017, with a target of reducing carbon emissions by 27% by the year 2030. Reviews will be conducted every 3 year.
- **Climate adaptation strategies:**
Equipment Replacement and Upgrading, Installation of Renewable Energy Equipment, Optimal Production Scheduling, Building Air Conditioning Planning, Energy Management System, Extreme Climate Emergency Response Plan.
- **GHG emissions disclosure :**
Disclosed emissions data in Category 1 and Category 2 annually, and reviews periodically to analyze the reasons for any changes in emissions.

5.2.3 Identify climate risk and opportunity

Facing the increasing impact on operations by climate change, CGPC prudently assesses possible risks and grasps potential new business opportunities. In recent years, we have actively implemented energy conservation and carbon reduction improvement solutions to enhance production efficiency, renovation and replacement of old equipment with newer high-performance energy conservation equipment. We adopt the TCFD approach to identify the transition and physical risks in the operation process, and found 5 main risk items and 7 main opportunity items. In 2021, we categorized them based on the time of occurrence, and will review the response measures every year to build a resilient climate change culture.



5.2.4 Potential financial impact of risks and opportunities

Type	Climate-related risks	Potential financial impact	Response measures
Transition	Rising raw material costs	<ul style="list-style-type: none"> Increasing operating costs Decreasing revenue 	<ol style="list-style-type: none"> Establish safety stock and review it regularly. Ensure a stable supply of raw materials. Grasp market changes as part of the purchasing strategy. Flexibly coordinate production and sales.
	Stigma of the industry	<ul style="list-style-type: none"> Increasing operating costs Increasing capital expenditure Decreasing revenue 	<ol style="list-style-type: none"> Strategic planning based on green research and development thinking (non-toxic) to develop non-PVC materials, for TPE, TPU, TPO and other green products. Replace VCM tanker truck unloading materials equipment to reduce VOC emissions. (Expected to be completed in Q4 2023) Carry out regular inspections, propose improvement countermeasures and add pollution prevention equipment: For process, refine and optimize the opening procedures of the reaction tank to reduce VOC emission. (In progress)
	Raise the GHG emissions pricing	<ul style="list-style-type: none"> Increasing operating costs Decreasing revenue 	<ol style="list-style-type: none"> Monitor GHG emissions through annual inventory inspections. Continue to pay attention to the trends in the revision of national climate change-related laws and regulations, and actively participate in public hearings on new (revised) research and development.

Type	Climate-related risks	Potential financial impact	Response measures
Physical	Change in rainfall (water) patterns and extreme change in climate patterns	<ul style="list-style-type: none"> Increasing operating costs Increasing capital expenditure Decreasing asset value Decreasing revenue 	Reconstruction of old rainwater ditch in Toufen factory: Added 2 external discharge outlets and sludge removal. The Phase of water ditch reconstruction plan is in progress.
	Increased severity of extreme weather events such as typhoons and floods	<ul style="list-style-type: none"> Increasing operating costs Increasing capital expenditure Decreasing revenue 	

Type	Climate-related Opportunities	Potential financial impact	Response measures
Resources efficiency	Reduce water usage and waste	<ul style="list-style-type: none"> Decreasing operating costs Increasing asset value Increasing revenue 	<ol style="list-style-type: none"> Centrifuge dryer waste water recovery system (HBF) for recovered water, steam condensate, and coal boiler sedimentation tank uses effluent instead. Uses and benefits: The recycled water is reused in the cooling water tower, so as to reduce the dependency on using tap water and the discharge of waste water. The total volume of recovered water in CGPC and CGPCP is 775.7 million liters per year.
	Use more efficient production and distribution processes	<ul style="list-style-type: none"> Decreasing operating costs Increasing asset value 	<ol style="list-style-type: none"> Equipment automation and energy conservation improvement Replacement of old equipment with new ones Use energy-conserving lights Promote smart manufacturing management system Set up automatic warehouses and improve transportation routes
Energy source	Use low-carbon energy	Decreasing operating costs	<ol style="list-style-type: none"> Three plants have all passed the ISO-50001 energy management system verification. CGPC's Toufen factory has built a solar photovoltaic power generation system and designated a project team to evaluate the construction of renewable energy power generation equipment and purchase of green electricity.
	Participate in carbon trading market	Decreasing operating costs	
Product service	R&D and innovation in developing new products and services	<ul style="list-style-type: none"> Decreasing operating costs Increasing revenue 	<ol style="list-style-type: none"> Smart machine testing and control equipment, optimize the PVC resin drying machine process to improve product quality and ensure energy conservation. Collaborate with customers to develop recycling of TPU shoe products and remanufacture them into shoe leather. Research and develop new varieties of non-toxic plasticizers and stabilizers to make PVC products.
Resilience	Participate in renewable energy programs and adopt energy conservation measures	<ul style="list-style-type: none"> Decreasing operating costs Increasing asset value 	<ol style="list-style-type: none"> Taiwan Power Company (Taipower) adjusted electricity prices on July 1, 2022, and April 1, 2023, as well as extended the summer electricity billing period. It is estimated that the annual electricity cost for 2023 will increase by approximately 30.4% compared to the electricity price adjustment made on July 1, 2022. Rented out the roof of CGPC's Toufen factory. Vendors installed a parallel solar photovoltaic power generation system with approximately 1,438 kWp. CGPC repurchased in May 2022. The 2022 wholesale to Taiwan Power Company amounted to 1,226,232 kWh. As of the end of 2023, install a solar photovoltaic power generation system with a capacity of approximately 680 kWp. It is projected that the installed solar capacity will reach around 2,118 kWp by 2025, with the remaining capacity to be planned and managed centrally by the group. In 2022, the three factories saved a total of 106,117 GJ in energy and reduced 6,461 tons of CO₂e, about the carbon absorption volume of 17 Daan Forest Parks.
	Energy alternatives/diversification	<ul style="list-style-type: none"> Decreasing operating costs Increasing asset value 	

5.2.5 Development of innovative products in response to climate change

GRS Certified Products



Antiviral Products



• Testing Method: ISO 22196: The antibacterial efficacy should exceed 2.0 according to the JIS Z2801 standard to be considered effective against bacteria.

Test Microorganism	Antibacterial Value(R)	Antibacterial Effect
Escherichia coli	3.0	99.9%
Staphylococcus aureus	2.8	99.9%

• Testing Method: ISO 21702: The antiviral activity should exceed 2.0 according to the SIAA specification to be considered effective against viruses.

Sample Name	Antiviral Activity Value	Antibacterial Effect
PVC leather (H3N2)	3.9	99.99%
TPO leather (H3N2)	3.3	99.99%
UVDor Panel (H3N2)	3.5	99.99%
Veneer Door Panel(Feline calicivirus)	3.8	99.99%

5.2.6 Energy management (GRI 302-1, 302-3)

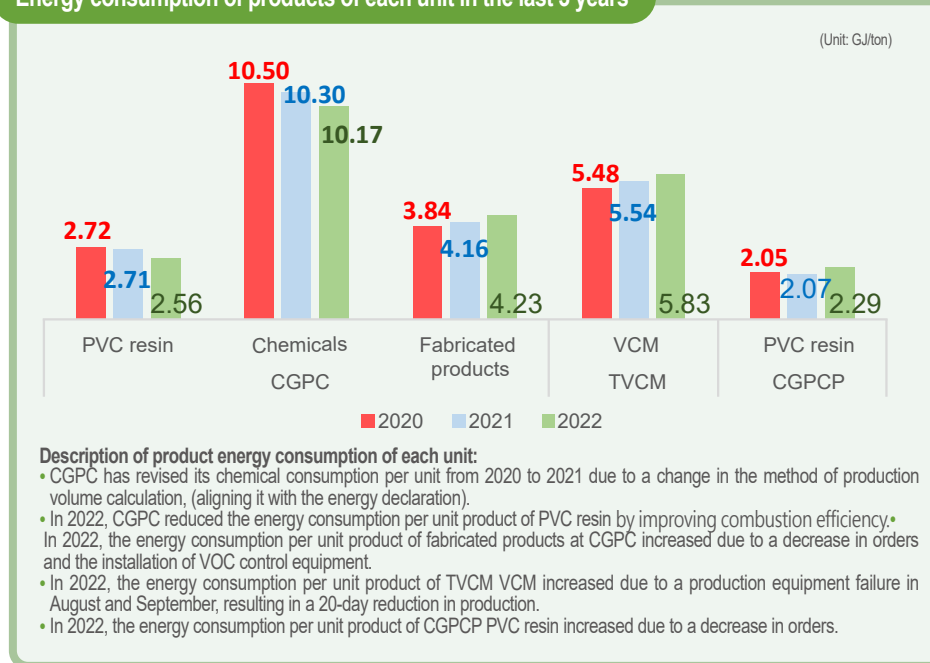
CGPC's factories primarily use purchased electricity, natural gas and fuel coal. The scope of energy use inventory in 2022 includes CGPC's Toufen factory and TVCM and CGPCP's factories in Linyuan, with a coverage rate of 100%.

Energy usage in the last 3 years

		(Unit: GJ)		
By company	Energy type	2020	2021	2022
CGPC (Toufen factory)	Purchased electricity	616,691	642,323	605,925
	Fuel oil (Note 1)	439	0	0
	Diesel fuel	5,034	4,797	4,299
	fuel coal	437,383	437,694	72,612
	Natural gas (Note 1)	188,076	242,357	518,107
	Total energy consumption		1,247,623	1,327,171
TVCM (Linyuan factory)	Purchased electricity	335,913	377,611	339,878
	Purchased steam	250,475	214,674	86,985
	Natural gas	1,558,206	1,892,061	2,005,950
	Diesel fuel	149	187	258
	Total energy consumption		2,144,743	2,484,533
CGPCP (Linyuan factory)	Purchased electricity	97,955	107,540	130,479
	Purchased steam	283,193	328,651	294,365
	Diesel fuel	72	65	150
	Total energy consumption		381,220	436,256

Note 1: CGPC's Toufen factory started replacing fuel oil with natural gas in 2019, and complete the implementation in 2020.
 Note 2: In line with the greenhouse gas emission inventory method, TVCM and CGPCP revised their allocation method for purchased electricity starting from 2022.

Energy consumption of products of each unit in the last 3 years



Energy management

In compliance with the government's net-zero carbon emission goals, energy-saving measures are being implemented: Voluntary reductions and the implementation of various energy-saving initiatives within the facilities, surpassing regulatory requirements.

2022 Energy Conservation Performance (Target:1%)



Description:
 1. The data comes from the Bureau of Energy's annual energy conservation inspection system reporting form
 2. Description of achievement rate: In 2022, CGPC had fewer completed projects due to operating considerations and equipment improvements. However, the company plans to continue the process of replacing outdated equipment. TVCM and CGPCP's two plants have achieved their energy-saving targets.

Banks' green finance ESG indicators

In response to the government's promotion of green sustainability, CGPC, as an enterprise of excellence, has actively cooperated with banks in bundling the ESG loan line of credit, and obtained the approval of 3-year energy conservation and carbon reduction indicators, and the indicators are as follows:

1. Energy consumption per unit product of CGPC's PVC resin.
2. Greenhouse gas emission intensity per unit product of CGPC's PVC resin.
3. CGPC increased the growth rate of recycled water.

Promotion of renewable energy

1. CGPC starts it from the construction of solar photovoltaic equipment on the factory roof, and gradually expanded the use of green electricity in each factory area. In 2019, CGPC's Toufen factory constructed a 1438 kWp solar power facility on the rented rooftop within the factory premises. In May 2022, CGPC repurchased the solar photovoltaic equipment. The actual electricity generation in 2022 reached 1.23 million kilowatt-hours.
2. CGPC will continue to expand the capacity of solar energy equipment, and is expected to add about 680kWp of solar energy in the factory before the end of 2023.
3. TVCM's Linyuan factory does not have a suitable roof space to put solar energy equipment. It plans to purchase 1.64 million kWh of green electricity and certificates by the end of 2025.

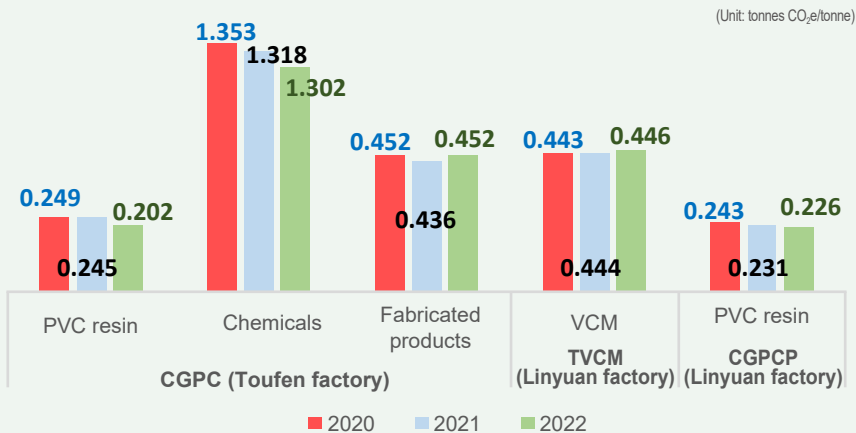
5.2.7 Greenhouse gas management ► (GRI 305-1, 305-2, 305-4, 305-5)

GHG inventory is carried out every year to effectively manage the emissions of each factory of CGPC. Among them, CGPC's Toufen Plant and TVCM's Linyuan factory are the first batch of stationary sources that should be checked and registered for greenhouse gas emissions under the Greenhouse Gas Reduction and Management Act, so the inventory of GHG is carried out in accordance with the Management Measures for GHG Inventory Registration, and the data is regularly verified by an independent third-party verification agency.

Greenhouse gas emissions intensity by product the last 3 years

(Unit: tonnes CO₂e/tonne)

By company	By product	2020	2021	2022	goal	達成
CGPC (Toufen factory)	PVC 粉	0.249	0.245	0.202	0.248	√
	Chemicals	1.353	1.318	1.302	1.366	√
	Processed products	0.425	0.436	0.452	0.455	√
TVCM (Linyuan factory)	VCM	0.443	0.444	0.446	0.446	√
CGPCP (Linyuan factory)	PVC 粉	0.243	0.231	0.226	0.234	√



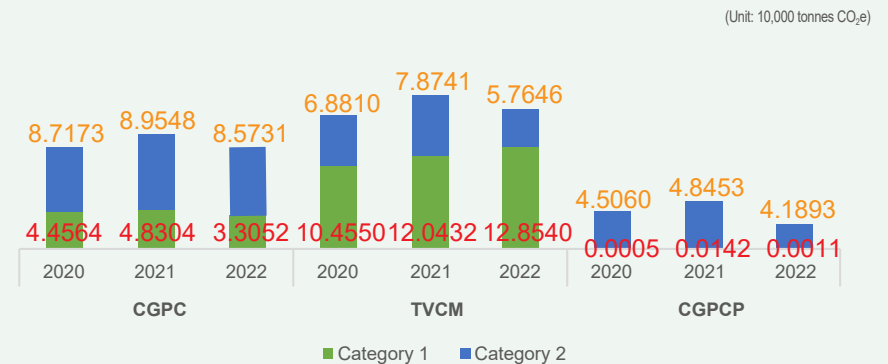
Note:

1. Calculation formula = Total GHG emissions by product (tonnes CO₂e) / Total output by product (tonnes)
2. CGPC has revised its chemical consumption per unit from 2020 to 2021 due to a change in the method of production volume calculation, (aligning it with the energy declaration).
3. TVCM revised the VCM products in 2021 because the inventory data was obtained after the reporting.
4. The 2022 target was based on the average of the emission intensity by product between 2019-2021, and it is expected that after the review in 2025, the target will be revised.
5. The greenhouse gas emissions for TVCM and CGPCP in 2022 are pending third-party confirmation. Once the third-party verification is obtained, the data will be published on the website and updated in the following year's annual report.

Greenhouse gas emissions of each plant in the last 3 years

(Unit: 10,000 tonnes CO₂e)

By company	By product	2020	2021	2022
CGPC (Toufen factory)	Category 1	4.4564	4.8304	3.3052
	Category 2	8.7173	8.9548	8.5731
	Total	13.1737	13.7852	11.8783
TVCM (Linyuan factory)	Category 1	10.4550	12.0432	12.8540
	Category 2	6.8810	7.8741	5.7646
	Total	17.3360	19.9173	18.6186
CGPCP (Linyuan factory)	Category 1	0.0005	0.0142	0.0011
	Category 2	4.5060	4.8453	4.1893
	Total	4.5065	4.8595	4.1904



Note:

1. Category 3-6: Not yet been included in the calculation.
2. The calculation adopts the operational control method, and the emission coefficient adopts the coefficient announced by the Environmental Protection Administration. (The carbon emission coefficient of electricity provided by the Bureau of Energy)
3. TVCM revised its greenhouse gas emissions in 2021 because the inventory data was obtained after the reporting.
4. CGPCP revised the GHG emission in 2020 due to the revision of the CO₂ emission coefficient of the purchased steam (Taiwan Styrene Monomer Corp).
5. Same as explanation of Carbon Reduction Pathway Planning
6. In 2022, according to the self-inventory data of GGTC (subsidiary of TVCM), the greenhouse gas emissions were as follows: Category 1 emissions were 0.0047 (10,000 tons) of CO₂e and Category 2 emissions were 0.017 (10,000 tons) of CO₂e. The above emissions are not included within TVCM's (Linyuan factory) emissions.

5.2.8 Energy conservation and carbon education solutions and performance

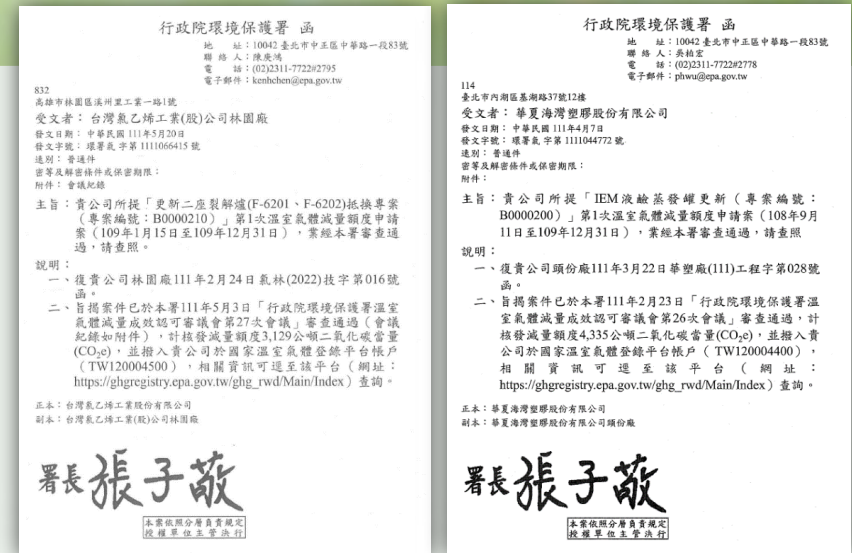
By company	Energy conservation and carbon reduction solutions	2022 performance	
		Amount of energy conservation (GJ)	Amount of carbon reduction (tons CO ₂ e)
CGPC (Toufen factory)	<ul style="list-style-type: none"> Energy-saving improvement for cooling water tower pumps. Replacement of outdated air compressors with new ones. Energy-saving improvements for pipe press sleeves and extrusion mold electric heaters. Upgrading motors to high-efficiency IE3 motors. Replacement of old air conditioners with new ones. Replacement of old exhaust fans with new ones. AI energy-saving project for the #5 dryer (Phase 1). 	6,989	710
TVCM (Linyuan factory)	<ul style="list-style-type: none"> Replacement of the reflux pump (P-6026) in the rectification tower with a high-efficiency pump. Apply energy-conserving coating on the cracking furnace (F-6201) Heat Recovery for Quench Towers (C-6201/C-6205) Implementation of an AI energy-saving project for C-6102. Steam trap improvement project for the entire plant (Phase 1). 	86,433	4,414
CGPCP (Linyuan factory)	<ul style="list-style-type: none"> Improvement of the heat exchanger in the stripping tower to reduce steam consumption. 	12,695	1,337
Total		106,117	6,461

Note:

- The data comes from the Bureau of Energy's annual energy conservation inspection system reporting form.
- Calculation benchmark:
 - The unit calorific value conversion factor refers to the unit calorific value table for energy products announced by the Bureau of Energy (for energy statistics only), in which the electricity is 860 kcal/kWh, fuel oil is 9,600 kcal/L and diesel 8,400 kcal/L, of which 1cal is 4.187 J.
 - The calorific value conversion factor of the fuel coal used by CGPC's Toufen factory in 2022 is 5,800 kcal/kg, and the CO₂ emission factor is calculated at 1.9618 kgCO₂e/kg.
 - The calorific value conversion factor of the natural gas used by CGPC's Toufen factory in 2022 is 9,003 kcal/m³, and the CO₂ emission factor is calculated at 1.905 kgCO₂e/m³.
 - The calorific value conversion factor of the natural gas used by TVCM's Linyuan factory in 2022 is 9,000 kcal/m³, and the CO₂ emission factor is calculated at 2.114 kg CO₂e/m³.
 - The calorific value conversion factors of the purchased steam used by TVCM and CGPCP's Linyuan factories in 2022 were 669,000 kcal/ton and 665,534 kcal/ton, respectively, and the CO₂ emission factors were calculated at 309.2 kg CO₂e/ton and 230.2kgCO₂e/ton, respectively.
 - The types of gases included in the calculation of carbon reduction in the energy conservation and carbon reduction plan include carbon dioxide, methane and nitrous oxide.
- This program does not include the carbon reduction benefits of offset projects. Please refer to the explanation provided in the Greenhouse gas replacement project Quota Application for further details.

Greenhouse gas replacement project Quota Application

Since 2018, CGPC has implemented two greenhouse gas offset projects. These projects, namely the "Updated The replacement project of the IEM Alkali Evaporator Tank" by CGPC and the "Cracking Furnace Replacement Project for Furnaces F-6201 and F-6202" by TVCM, have undergone third-party verification and registered for approval. On February 23, 2022, and May 3, 2022, respectively, both projects were approved in the first round of quota applications by the Environmental Protection Administration, obtaining a total reduction quota of 7,464 tonnes of CO₂e. These measures were taken to reduce future carbon regulatory risks.

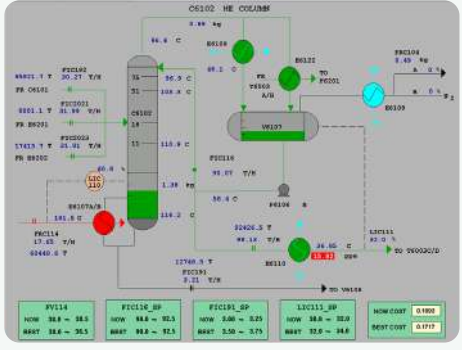







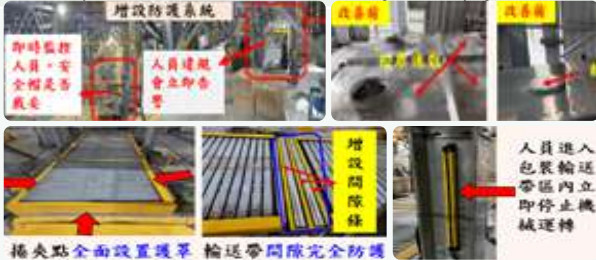

TVCM's "2 cracking furnaces (F-6201, F-6202) replacement project"

CGPC's "Updated The replacement project of the IEM Alkali Evaporator Tank"

5.2.9 Energy conservation and carbon reduction equipment improvement solutions ▶ (GRI 302-4, 303-3, 305-5)

We continue to promote the work of "energy conservation and carbon reduction" with practical actions in an honest and responsible attitude. In recent years, we have invested a lot of resources in adding new equipment and replacing old equipment with new ones, hoping to reduce the impact of the overall operating activities on the environment.


Program Name	TVCM's Linyuan factory Implementation of AI-based Energy Saving in EDC Distillation Tower	TVCM's Linyuan factory Apply energy-conserving coating on the cracking furnace (F-6201)	TVCM's Linyuan factory Heat Recovery for Quench Towers (C-6201, C-6205)
Condition before improvement	The steam control at the bottom of the distillation tower is challenging to achieve precise heat input control. Operators rely on experience and data on the composition of distillation products to make adjustments, which can lead to excessive steam usage.	Before the improvement, the refractory bricks inside the cracking furnace (F-6201) had not coating.	With the increase in production capacity of VCM products from 320,000 to 450,000 tonnes per year, the cracking furnace feed heat exchanger E-6122 has not been updated or expanded. Additionally, the limited space for expansion and difficulties in finding suitable locations for upgrades have resulted in increased steam consumption in the cracking furnace area.
Program Description	TVCM's production process requires a significant amount of energy and water. In line with the government's net-zero carbon emission policy, the company aims to reduce energy consumption to minimize the impact of greenhouse gas emissions on the environment and the well-being of employees and community residents. As a starting point, the company plans to establish an AI model driven by data. This model will identify the optimal operating conditions while ensuring the quality and quantity of the products at the top outlet of the distillation tower. By achieving consistency in operations, the company aims to reduce the steam consumption per unit product. By collecting historical data and performing data correction, the company ensures that the data is representative. When there are changes in the relationship between process variables and product quality, the model parameters are automatically updated.	The refractory bricks in the bottom and wall inside the cracking furnace (F-6201) are sprayed with high-temperature reflective ceramic coating to increase the heat energy absorption of the furnace tube and reduce the heat loss of the furnace wall, further improving the cracking furnace's thermal efficiency. Reduce the heat consumption per unit product, decrease the usage of natural gas and implement heat energy recovery methods.	To reduce steam consumption, the following measures will be implemented for heat recovery in the quench tower: (1) Two heat exchangers (E-6225 and E-6226) will be installed at the outlets of the quench towers (C-6201 and C-6205). The heat source will be the cracked gas, while the cold source will be the feed EDC to the cracking furnace. (2) Increasing the temperature of the feed EDC to the cracking furnace will result in a reduced steam requirement for EDC gasification. (3) Both heat exchangers (E-6225 and E-6226) will be equipped with insulation facilities to ensure that operators are protected from burns during operation.
Completion date	April 2022	June 2022	September 2022
Expected benefits after improvement	The project has also resulted in significant steam savings of 2,300 tons/year, which is equivalent to recovering 6,434.8 GJ of thermal energy annually. This translates to a carbon reduction of 319.7 tons CO ₂ e/year.	After the coating is applied, the cracking furnace (F-6201) can save 297,820 m ³ /year of natural gas, equivalent to 11,222.8 GJ/year of recovered heat energy and a carbon reduction of 629.6 tons of CO ₂ e/year.	The two quench towers has also resulted in steam savings of 23,280 tons/year, which is equivalent to 65,131.7 GJ/year of recovered heat energy and a carbon reduction of 3235.9 tons of CO ₂ e/year.
Photos		 <p>(F-6201) Appearance</p>  <p>Interior furnace bottom</p>  <p>Interior furnace wall</p>	


Program Name	TVCM's Linyuan factory Enhancement of Aerobic System Performance for High Chloride Brine Wastewater and Sludge Reduction	CGPC's Toufen factory Space Packaging Intelligent Safety Improvement	CGPCP's Linyuan factory PVC Stripping Improvements and Optimization
Condition before improvement	High Temperature in the Aeration System of the Wastewater Bioreactor, High Power Consumption of the Five Roots Blowers, Easy Detachment and Damage of Aeration Pipes and Water Emptying for Maintenance, Resulting in High Volume of Biological Sludge and Monthly Cost of 600,000 for Sludge Treatment.	Prior to improvement, the packaging operation management of the Space Bag Packaging Machine relied solely on self-confirmation of safety by operators and corrective actions implemented through management supervision. This resulted in ineffective implementation of relevant protective measures and operational safeguards.	Due to increased production, it was observed during operations that increasing the feed rate to the stripping tower resulted in unstable inlet flow, preventing breakthrough in production volume. Furthermore, the operational volume exceeded the original pre-set value, leading to a significant increase in steam consumption.
Program Description	<p>TVCM is a Vinyl Chloride Monomer (VCM) manufacturing plant. Vinyl Chloride Monomer (VCM) is a class 1 carcinogen. In line with the government's zero-carbon emission policy and our commitment to protecting the environment and reducing the impact on the health and water resources of workers and community residents, we have implemented improvements from two aspects:</p> <p>(1) Energy-saving improvement project: replacing the existing blowers with a gas flotation blower system, integrating the 5 blowers into 1 unit. The supply air system has been enhanced with the addition of a heat exchanger for temperature reduction to facilitate biological growth. The aeration pipes have been increased in number, the materials changed and modularized for easier maintenance without the need to empty the water from the tanks.</p> <p>(2) Wastewater efficiency enhancement: introduction of PVA carriers to reduce the biological sludge volume by 52%. The implementation of these improvement measures has significantly stimulated the growth of degrading bacteria in the wastewater tanks, thereby improving the treatment capacity for processed wastewater. Additionally, the halving of the generated biological sludge has greatly reduced the environmental pollution.</p>	After the improvements, we have implemented real-time monitoring and warning systems using AOI and safety image recognition systems. These systems are integrated with chain-controlled power cut-off devices to control personnel access to the hazardous areas of the conveyor belts. The dangerous areas around the conveyor belts are also enclosed with full safety nets to prevent unauthorized entry. The pinch points of the conveyor belts have been replaced with fully enclosed protective covers. The gripping mechanism of the packaging machine's bag mouth has been changed from a clamping mechanism to an inflatable filling mechanism, reducing the risk of pinching injuries. The hanging hooks for the bags have also been replaced with automatic movable hooks, minimizing the need for personnel to step onto the conveyor belts.	<p>To validate the occurrence of mutual compression of the inlet flow, a single-side top water pressure test was conducted. A bypass was then added to reduce the loss of production caused by this phenomenon, and the performance of the new heat exchanger was evaluated.</p> <p>After the installation, tests were conducted to examine the effectiveness of the improvements. These tests included increasing the inlet flow rate, comparing the performance before and after steam improvement, and evaluating VCM yield and VCM measurements in the exhaust ducts.</p>
Completion date	September 2022	October 2022	January 2022
Expected benefits after improvement	The energy-saving improvements and enhanced aeration efficiency have resulted in an annual electricity savings of 913.8 thousand kWh. By reducing the input of PVA carriers, we have decreased the annual amount of biological sludge by 120 tons, leading to a cost savings of 3.6 million dollars in sludge treatment expenses. Overall, the project has achieved a carbon reduction of 544.2 tons CO ₂ e/year.	CGPC remains committed to its safety improvement goals. In line with this commitment, a series of intelligent safety enhancements have been implemented for the packaging of space bags, with an investment of 4.36 million dollars. As a company dedicated to sustainable business practices, we promote a culture of safety within the organization and continue to prioritize measures that enhance the safety of our employees.	The project has also resulted in significant steam savings of 4,620 tons/year, which is equivalent to recovering 12,695 GJ of thermal energy annually. This translates to a carbon reduction of 1,337 tons CO ₂ e/year.
Photos	 <p>Replacing the aeration pipe materials to improve durability.</p> <p>Reducing PVA carrier sludge by half.</p> <p>Energy-saving with the use of the floating-type air blower.</p>	 <p>增設防護系統</p> <p>即時監控人員，安全觸感告警</p> <p>人員建籠會立即告警</p> <p>增設安全網</p> <p>攝夾點全面設置護罩</p> <p>輸送帶間隙完全防護</p> <p>人員進入包裝輸送帶區內立即停止機械運轉</p>	 <p>PVC Stripping Improvements and Optimization</p>


5.3 Water Resources Management ► (GRI 303: 2018)


Continuous monitoring and compilation of daily, monthly and annual water consumption records. In terms of management, we will continue to study feasible solutions and use manufacturing processes to improve water conservation and enhance water recycling and reuse rates. Improve pipelines, conduct regular leak-prevention inspections, follow up and review the progress, and propose improvement plans. The scope of 2022 inventory includes CGPC's Toufen factory, and TVCM and CGPCP's factories in Linyuan, with a coverage rate of 100%.


Material issue: Water resources management

- 
The Significance and Impact of CGPC

Value water resources, reduce the consumption of water resources in the production process, and improve the reuse rate of water recycled to reduce the impact on the environment.
- 
Develop Strategy

Implement ISO 46001 and ISO 14046 to reduce water waste, improve and replace water-consuming equipment and increase water recycling and re-use rate.
- 
Policy Commitment

Starting 2021, the year-over-year growth of recycled water used is 5.2%.
- 
Grievance Unit

Public Utility Course
- 
SASB indicators

RT-CH-140a.1, RT-CH-140a.2, RT-CH-140a.3

Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Increase the percentage of recycled water per year	Percentage of recycled water (%)	39.7	45.5 	40.9	43.4	50.3

Note: The 2018 recycled water percentage is the base year.

 Exceeded goal  Achieved  Partially achieved  Not achieved

Centrifugal Drying High performance Bio-treatment and Filtration system (HBF)



Abnormal climate can lead to lack of water resources in the world. [Taiwan is listed as the 20th country at risk of water scarcity in the world.](#) CGPC's Toufen factory and CGPCP's factory in Linyuan have planned to establish the recovery and reuse of recycled water. By setting up a biological treatment system and COD adsorption system, wastewater from the process is recovered for re-use and treated by the newly established centrifuge recycling equipment to reduce the chemical oxygen demand (COD) and suspended solids (SS) in the water, before being re-supplied to the cooling water tower to reduce the amount of tap water used and wastewater discharge, contributing to the environmental protection efforts.

5.3.1 Water management ▶ (GRI 303-1 ~ 305-5)

In response to the risk of water shortage potentially caused by climate change, the water source used by CGPC (Toufen factory) is supplied by Yongheshan Reservoir and the water used by TVCM and CGPCP (Linyuan factory) is supplied by the Fengshan Reservoir, which is put into the process. In order to save water, the three companies have added processed water recycling systems and various water-conserving devices, promoted other related measures and continued to pay attention to the internal and external water supply and demand status and reinforce the implementation of water risk management.

▶ Risk management of water resources

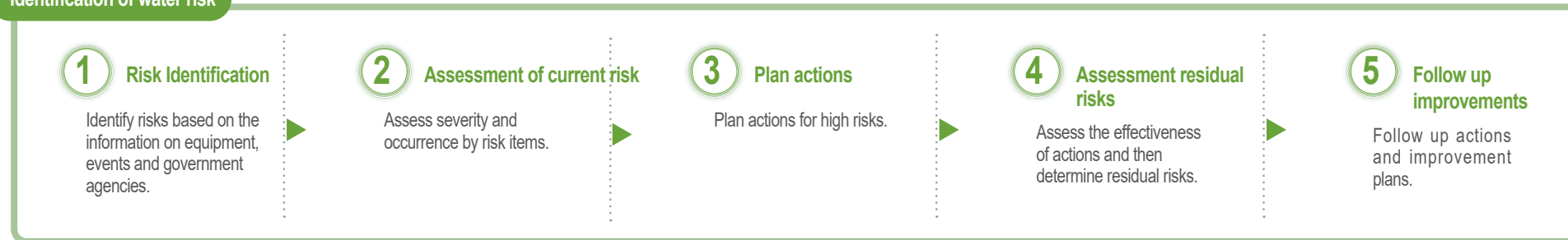
To ensure stable operation and sustainable development, the risk of water shortage resulting from climate change was addressed in December 2020 through the approval of the "Risk Management Policies and Procedures" by the Audit Committee and the Board of Directors, aiming to establish a comprehensive risk management system. To effectively implement the company's risk management mechanism, the Board of Directors, Audit Committee, General Manager, Audit Department, various risk management units, and subsidiaries collaborate in its promotion. Pay attention to the development of international and domestic risk management systems at all time, review and optimize the risk management methods to improve the effectiveness of the Company's risk management implementation.

▶ Distribution of water stress

The companies refer to the [water stress map](#) drawn up by the World Resources Institute (WRI), enabling us to understand the water stress felt by countries around the world. Each company is verified to be located in the low to high stress areas.

Item/Company	CGPC (Toufen factory)	TVCM (Linyuan factory)	USI Corporation (Linyuan factory)
Regions with water stress.	Low to moderate water stress zone	Low to moderate water stress zone	Low to moderate water stress zone
Water stress	10 ~ 20%	20 ~ 40%	20 ~ 40%

Identification of water risk



▶ Assessment of water risks and implementation

CGPC's Toufen factory plans to introduce ISO 46001 water resources management system and ISO 14046 water footprint in 2022 to understand the potential impact of water risks on operations through scenario analysis, and refer to [Taiwan Climate Change Projection and Information Platform](#) and [Taiwan-wide disaster risk map](#) to estimate the impact of future changes in average rainfall on water resources. Water footprint, recycling of water resources and wastewater treatment are used to formulate response strategies. Identified that the Company's operating locations (Toufen factory in Miaoli is in a low to moderate stress area, and Linyuan factory in Kaohsiung is in a moderate to high stress area) are not in high water stress areas and there is no significant impact on water use.

By company	Water stress Assessment Result	Impacts caused by extreme weather
CGPC's Toufen factory	Low to moderate water stress zone	<ul style="list-style-type: none"> In 2022, despite sufficient rainfall in the Hsinchu and Miaoli areas, the water supply situation did not reach critical levels. However, we continued to report the weekly water intake volumes to the management for reference and monitoring purposes. To further improve the efficiency of our water management, we focused on enhancing the recovery capacity of the HBF system and increasing the concentration ratio of the cooling water tower. These measures were implemented to reduce the amount of tap water required for replenishing the cooling water tower. Starting from March 23, 2023, we have pro-actively implemented a 5% water conservation rate in alignment with government policies. In response to drought conditions in 2023, our Linyuan plant has pro-actively planned the implementation of the Second Water Source Project. This project aims to address water shortages by utilizing water transport via water wheels.
TVCM's Linyuan factory	Low to moderate water stress zone	
CGPCP's Linyuan factory	Low to moderate water stress zone	
Identification of water risk (Frequency of occurrence)	The risks of operational sites are evaluated based on factors such as water usage, seasonal variations, droughts, floods, and declining groundwater levels.	
Management actions	<p>A. Conservation of processed water:</p> <ol style="list-style-type: none"> (1) Start water conservation measures to increase the conductivity of the water replenished to the cooling water tower. (2) Increase the concentration ratio of the cooling water tower and reduce the frequency of water replacement in the scrubber tower. (3) Discharge the cooling water and recycle it as the water used in the scrubber. <p>B. Conservation of water used in daily life</p> <ol style="list-style-type: none"> (1)Decompressed water supply. (2) Place water bottles and install water savers to squat toilets to achieve water conservation. (3) Continue to advocate water conservation to employees. (4) Improve on-site patrol inspections and send personnel to handle any water leaks immediately. <p>C. Improve the recycling water treatment operation and the recycling rate and actively plan rainwater recycling.</p> <p>D. Purchased water and active the use of underground in the Toufen factory.</p> <p>E. Continue to maintain contact with government agencies to obtain water information.</p> <p>F. CGPC plans to implement ISO 46001 and ISO 14046 in 2022.</p> <p>G. Conduct monthly factory review meetings, exchange opinions with other factories from time to time, and keep track of climate and reservoir information.</p>	
Water conservation results	<ol style="list-style-type: none"> 1. Install centrifuge dryer waste water recovery systems (HBF) for CGPC's Toufen factory and CGPCP's Linyuan factory. 2. The total volume of recovered water in CGPC and Taiwan Highpolymer is 775.7 million liters in 2022 and CGPC accounts for 17.65% and CGPCP accounts for 87.37%. <p>Note: CGPC's recycled water includes HBF process recycled water, steam condensate and coal boiler sedimentation tank uses effluent water instead.</p>	

We spare no efforts in conducting internal and external coordination and communicating with government agencies and have implemented adding the use of HBF recycled water, increasing the concentration ratio of the cooling water tower and reduce the water replenishment and other water conservation measures. Because the water data is inconsistent with the actual water volume we should be receiving, which results in great challenges to our operations, we will continue to observe the process and take action at any time.

CGPC's building materials factory – Rainwater recycling and re-use



Solution: Rainwater recycling and reuse

Description:

CGPC has been established for 58 years. The building materials factory uses the plastic pipes produced by the Company to build a green environment which can be used by employees during their break and for environmental protection purpose. We strive to harness the power of our team and give our utmost efforts to contribute to environmental protection.

- Rainwater storage tank capacity: (12-inch pipe X 2M X 6) about 3 tons + 1 ton buckets (2), which can store about 5 tons of rainwater.

- Application: Rainwater in the rainwater recovery tank can be used for watering plants and flushing toilets.

• Benefits Descriptions:

Green and keep the environment clean and it can also keep water bills low and add to conservation.

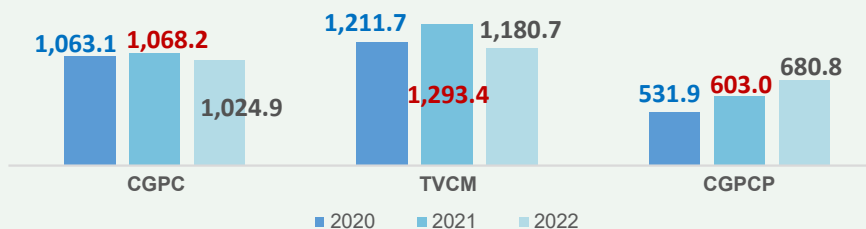
Water withdrawal by each factory in the last 3 years

(Unit: million liters)

By company	Source	2020	2021	2022
CGPC (Toufen factory)	Tap water	1,061.7	1,042.7	1,024.3
	Groundwater	1.4	25.5	0.6
	Total	1,063.1	1,068.2	1,024.9
TVCM (Linyuan factory)	Tap water	913.7	990.8	949.2
	Party from third-party (Note)	298.0	302.6	231.5
	Total	1,211.7	1,293.4	1,180.7
CGPCP (Linyuan factory)	Tap water	531.9	603.0	680.8
	Total	531.9	603.0	680.8

Note: Taiwan Highpolymer's recycled water from the HBF process is provided to the cooling water tower of TVCM.

(Unit: million liters)



Note: 1. CGPC completed the HBF (process recycling water system) in July 2018, which puts the qualified treated and recycled water into the cooling water tower, reducing the consumption of tap water.
2. In 2019, despite the continuous increase in production at CGPCP (Linyuan factory), the overall water usage significantly decreased due to the implementation of the HBF (Process Water Recycling System). The average monthly water intake in 2022 for CGPCP Company was 54,116 tons. However, there was a 13.3% increase in water intake in 2021 due to maintenance work on the HBF system that took place in July and August.

Water recycled and re-used in the last 3 years

(Unit: million liters)

By company	Recycling %	2020	2021	2022
CGPC (Toufen factory)	Water recycled	159.5	221.7	180.9
	Total water withdrawal	1,063.1	1,068.2	1,024.9
	Recycling %	15.00%	20.76%	17.65%
CGPCP (Linyuan factory)	Water recycled	609.1	627.6	594.8
	Total water withdrawal	531.9	603.0	680.8
	Recycling %	114.52%	104.08%	87.37%
Total water recycled in two factories		768.6	849.3	775.7

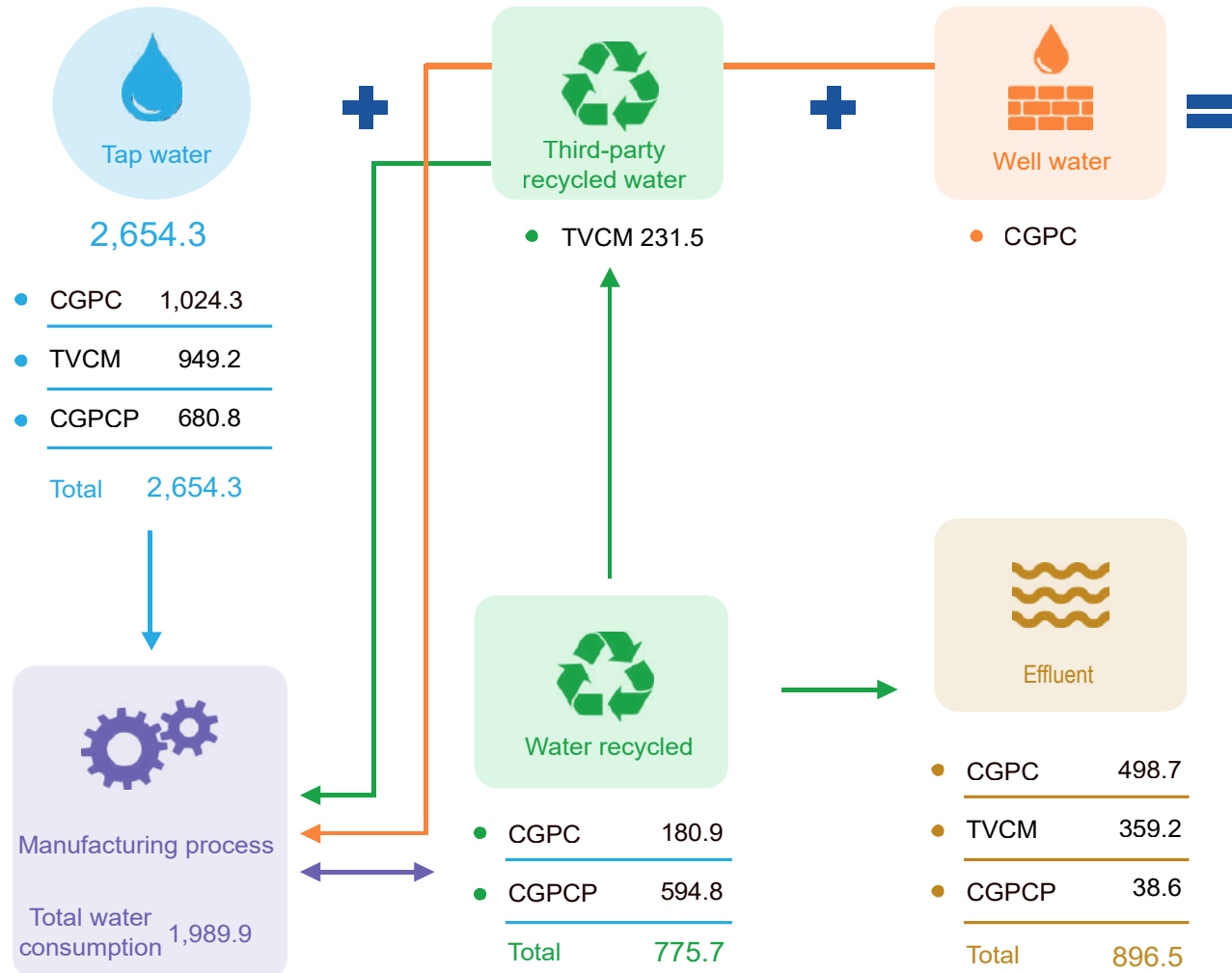
Note: CGPC's recycled water includes HBF process recycled water, the steam condensate and coal boiler sedimentation tank use effluent instead. Taiwan Highpolymer revised its 2020 and 2019 data of recycled water by adding the amount of water recycled from the manufacturing process.

Program Name	CGPC's Toufen factory/CGPCP's Linyuan factory Centrifugal Drying High performance Bio-treatment and Filtration system (HBF)
Condition before improvement	Before installing the system, the centrifuge wastewater and factory wastewater are treated by the sand filter system and then discharged to the sewage treatment plant.
Program Description	A biological treatment system and a COD adsorption system are set up to treat the separated original liquid that cannot undergo the complete recycling process and after the liquid is treated by the newly installed centrifuge to reduce the chemical oxygen demand (COD) and suspended solids (SS), it is resupplied to the cooling water tower to reduce the amount of tap water used and wastewater discharged.
Completion date	CGPC and CGPCP continued to modify equipment in April and July 2018, respectively, to reinforce the increased use of recycled water.
Expected benefits after improvement	2022 amount of water conserved: CGPC's Volume of water recycled: 112.8 million cubic meters/year, CGPCP's Volume of water recycled: 419.6 million cubic meters/year Total: 532.4 million liters/year

Photos



► CGPC Water Resource Statistics ► 2022 Water Balance Chart (Unit: million liters)



Note: Water consumption = Water intake - Discharge
All factories adopt standards stricter than regulatory requirements for their treatment and discharge of wastewater.

Company	Reservoir	Percentage of water intake to reservoir water outflow
CGPC	Yongheshan	1.95%
TVCM	Fengshan Reservoir	0.59%
CGPCP	Fengshan Reservoir	0.42%
Total water withdrawal (Unit: million liters)		2,886.4

Percentage of Local Reservoir Water Usage at the Plant Site

(Unit: million liters)

By company	Year	Water intake volumes	Reservoir outflow volume	Percentage
CGPC (Toufen factory)	2020	1,061.7	52,416	2.03%
	2021	1,042.7	40,517	2.57%
	2022	1,024.3	52,454	1.95%
TVCM (Linyuan factory)	2020	913.7	160,600	0.57%
	2021	990.8	160,600	0.62%
	2022	949.2	160,600	0.59%
CGPCP (Linyuan factory)	2020	531.9	160,600	0.33%
	2021	603.0	160,600	0.38%
	2022	680.8	160,600	0.42%

5.3.2 Wastewater discharge management (GRI 303-4)

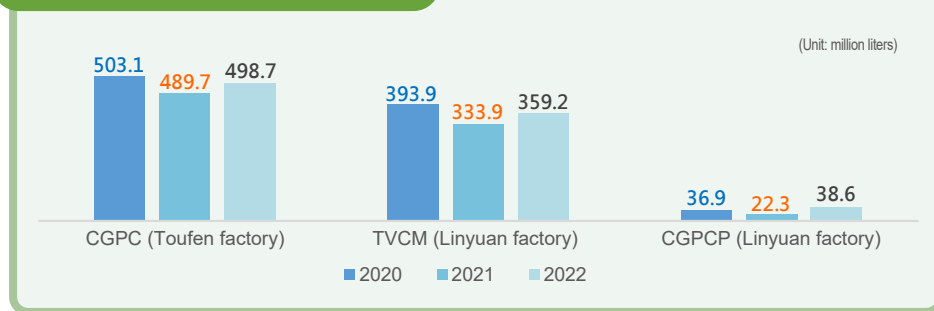
CGPC's factories adopt standards stricter than regulatory requirements for their treatment and discharge of wastewater.

The destinations of each plant's effluent are as follows:

By company	CGPC (Toufen factory)	TVCM (Linyuan factory)	CGPCP (Linyuan factory)
Effluents' Destination	Jhonggang River	Ocean discharge in Dalinpu (Note)	

Note: The wastewater of each factory in Linyuan Industrial Park is treated and then discharged to the sewage treatment plant in Linyuan and then transported to the Kaohsiung Linhai Linyuan and Dafa Industrial Parks Combined Wastewater Treatment Plant of the Industrial Development Bureau, Ministry of Economic Affairs, before being discharged to the open sea of the industrial park and the water quality has to meet the discharge standards.

Wastewater discharged in the last 3 years



Wastewater discharge intensity in the last 3 years



Note: 1. The amount of effluents of TVCM and CGPCP's Linyuan factories is far less than the consumption of tap water.
 2. Since the process wastewater is almost completely recovered to be used as water replenishment of the cooling water tower, the volume of discharged water is greatly reduced.
 3. CGPC's error in data entry in 2020.

5.3.3 Waste water quality testing (GRI 303-2)

The main water quality testing items include suspended solids, grease, chemical oxygen demand, etc., and are regularly tested and reported. In the last 3 years, they have all been lower than the effluent water standard or below the detection limit value.

(Unit: mg/L)

By company	Test items	2020 Mean	2021 Mean	2022 Mean	Discharge standards	Internal control value
CGPC (Toufen factory)	pH	7.57	7.55	7.7	6~9	7~8
	(SS) Suspended solids (mg/L)	6.13	13.53	14.35	30	<25
	(COD) Chemical oxygen demand (mg/L)	26.33	32	32.48	100	<80
TVCM (Linyuan factory)	pH	7.80	7.85	7.75	6~9	7~8
	(SS) Suspended solids (mg/L)	7.91	17.3	15.0	30	<25
	(COD) Chemical oxygen demand (mg/L)	47.81	41.95	33.50	100	<80
CGPCP (Linyuan factory)	pH	7.20	7.05	7.8	6~9	7~8
	(SS) Suspended solids (mg/L)	8.70	5.35	0.75	30	<25
	(COD) Chemical oxygen demand (mg/L)	54.50	65	12.9	100	<80

Source: Average of annual inspections (CGPC, four times/year; TVCM and CGPCP, twice/year)

5.3.4 Soil and groundwater remediation technology

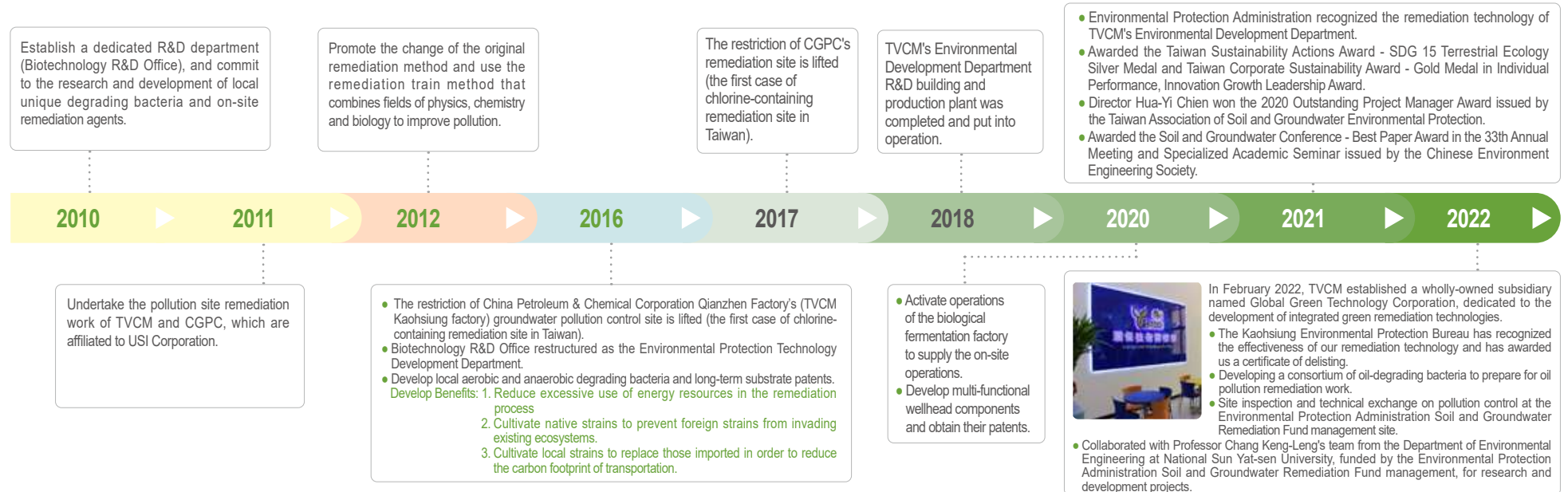


Development background

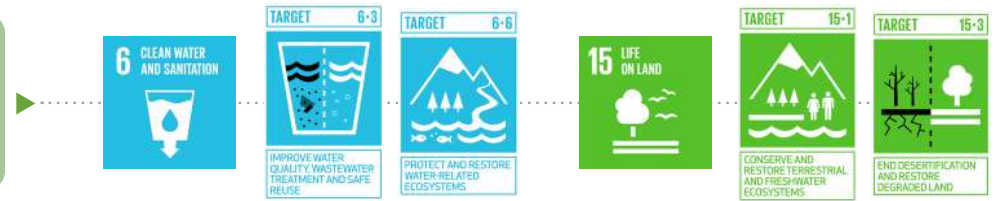
TVCM is a subsidiary of CGPC. It conducts its production on a leased land in Qianzhen District of Kaohsiung City in its early days. Due to business considerations, it stopped production in 1989 and ended the land lease. However, the land was announced by the Environmental Protection Administration in October 2006 as a groundwater pollution control site. Although the Company does not own the land, it has to face the pollution problems results from previous operations for the purpose of sustainability and has initiated its groundwater pollution control program. Traditional pollution treatment technologies are focused on the rapid removal of pollutants in a single approach, which often results in high energy consumption and may not necessarily achieve the goal of protecting the environment and human health. The use of such methods can also have an impact on the environment in terms of resource consumption. Therefore, it is important to consider the characteristics, concentrations, treatment timelines, costs and effectiveness of pollutants in soil and groundwater remediation operations. Additionally, adjustments to the remediation methods need to be made in accordance with environmental compatibility and public acceptance factors.

Recognizing the limitations of single remediation technologies in achieving site restoration, the Soil and Water Remediation Team of TVCM focuses on integrating and applying various technologies, including physical, chemical and biological mechanisms. The development of an integrated remediation train system offers a more environmentally friendly approach, particularly through the use of biological remediation methods. The team has invested in the research and development of biologically-based long-lasting substrates and specific indigenous pollutant-degrading bacterial strains. These technologies aim to create a win-win situation by promoting both environmental protection and economic benefits. Compared to other remediation methods, bioremediation technology is considered a powerful tool for green remediation development. Our team produces remediation materials and technologies domestically, reducing the need for imports. We prioritize the use of indigenous bacteria over foreign ones. Our approach focuses on five core elements: "reducing energy consumption," "lowering atmospheric emissions," "minimizing water resource impacts," "reducing materials and waste" and "mitigating soil and ecosystem impacts." On the social front, we prioritize "human health and safety" and "social justice" as our core elements. In terms of the economy, we strive for "cost-effectiveness" and "economic impact," aligning with the principles of Green and Sustainable Remediation (GSR) promoted by the Environmental Protection Administration.

Promotion of development (2010~2022)



CGPC's soil and groundwater remediation technology restores the original land through biological remediation technology, which also reduces the harm to groundwater sources and pollutants that harm ecosystems and it is also linked to SDGs 6 Clean water and sanitation and SDGs 15 Protect terrestrial ecosystems.
Remediation requires years of actual performance before it can be affirmed by government agencies.



Remediation performance – CDPC's factory in Qianzhen District



In October 2006, the factory was announced as a groundwater pollution control site by the Environmental Protection Agency as the concentration of chlorine-containing organic compounds in groundwater exceeded the control standard, and the controlled area was about 16.8 hectares. Since October 2009, the TVCM Remediation Team has been implementing the groundwater pollution control plan at the site. The plan lasted for approximately six years and was delisted in April 2016, making it the first controlled site with chlorinated organic compound pollution to be delisted in Taiwan. The successful experience made it a good example for promoting improvement of sites with dense non-aqueous phase liquid (DNAPL).

• **Lifted the status as a restricted site in 2016.**
 • **Obtained the second delisting certificate in 2022.** ▶ Environmental Protection Administration recognized the remediation technology of TVCM's Environmental Development Department (CGPC's subsidiary)



Remediation performance – CGPC's factory in Toufen



Listed as an underground pollution remediation site by the Environmental Protection Agency of the County Government of Miaoli in 2011, and the main pollutant was only Vinyl Chloride Monomer (VCM). In 2013, an environmental consulting company was commissioned to carry out the improvement plan, which was not completed. In 2015, the TVCM team took over and implemented an extended remediation plan. After over a year of remediation, long-term monitoring has been able to maintain compliance with regulatory standards. The pollution improvement work at the site was completed ahead of schedule by the end of 2016. In February and March, 2017, the Company obtained official letters from the Environmental Protection Administration and the Environmental Protection Agency of the County Government of Miaoli, respectively, announcing the lift of restriction on the remediation and controlled site, becoming the first chlorine-containing organic pollution site to be lifted from the controlled list in Taiwan.

• **Lifted the status as a restricted site in 2017.**
 • **Obtained the first delisting certificate in 2021.** ▶ Environmental Protection Administration recognized the remediation technology of TVCM's Environmental Development Department (CGPC's subsidiary)



2020-2021 development key points



Construct a bio-fermentation plant

The automatic production control of fermentation technology can cultivate and obtain inoculum stable in quality and large and quantity in a short period of time for practical application. The original laboratory can only produce a capacity of only 20 liters per week, it can now be scaled up to 1,000 liters or more for on-site remediation.



Develop multi-functional wellhead components

The device can switch to multiple functions according to different remediation methods, and can be combined with air pressure for injection, which increases the distance of drug transmission and overcomes the existing technical shortcomings. It can save about 5 times the operating time and has been awarded a utility patent in 2020.

Application of high-resolution site investigation technology at site locations in 2022.



Developed new oil-degrading microbial strains in 2022.



After laboratory acclimation of soil at oil-contaminated sites, microbial strains with degradation capabilities were screened. Through fermentation and cultivation, genes for the degradation of toluene and naphthalene were detected, and the strains demonstrated the ability to degrade benzene, toluene, and diesel, making them suitable for on-site remediation purposes.

GGTC sponsored the annual conference of the Chinese Institute of Environmental Engineering in 2022.



Official visits and exchanges with the academic community in 2022

• On July 28 (Thursday), a visit was conducted by the Keelung Environmental Protection Bureau to the Tainan site, including a presentation and explanation of the site's operations.



• On December 14 (Wednesday), a visit was organized for the Executive Secretary of the Soil and Groundwater Remediation Fund to the Tainan site, featuring a presentation and explanation of the site's operations.



• On August 12th, the team led by Professor Chang Keng-Leng from National Sun Yat-sen University visited the Tainan site of TVCM for an observation and technical exchange related to remediation activities.



5.4 Air Pollution Control

Each factory of CGPC conducts regular inspections for air pollutants and reports the results to the competent authority as scheduled, obtains the installation and operation permits of stationary sources of pollution according to law, and has designed air pollution personnel and their work substitutes responsible for managing the processes. The main air pollutants emitted from the manufacturing processes at CGPC's various plants include sulfur oxides (SOx), nitrogen oxides (NOx), volatile organic compounds (VOCs), and total suspended particulate (TSP). Sulfur oxides and nitrogen oxides are mainly produced by boilers, and volatile organic compounds are mainly emitted from manufacturing process and equipment components.

(Unit: tons/year)

✔ **Material issue: Air pollution control and prevention**

The Significance and Impact of CGPC

◀

Reduce the impact of greenhouse gas emissions and air pollutants on the environment.

Develop Strategy

◀

Switch to the use of low-polluting fuel (natural gas) to reduce sulfur oxides (SOx), nitrogen oxides (NOx) and volatile organic compounds (VOCs) emissions.

Policy Commitment

◀

In addition to complying with environmental regulations and emission standards, the unit product emissions of sulfur oxides (SOx), nitrogen oxides (NOx) and organic volatile compounds (VOCs) are reduced year by year.

Grievance Unit

◀

Occupational Safety Office

SASB indicators

◀

RT-CH-120a.1

✔ Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Continue to replace equipment and use low-polluting fuels	Reduce sulfur oxide emission intensity (ton/kt)	0.170	0.002	0.002	0.002	0.002
	Reduce NOx emission intensity (ton/kt)	0.224	0.148	0.146	0.145	0.142
	Reduce the emission intensity of volatile organic compounds (ton/kt)	1.418	1.023	1.009	1.000	0.980

Note: 1. The base year for emissions per unit product was set as 2019, with a target to reduce emissions by 8% by 2030. However, the target for 2030 was achieved ahead of schedule in 2022 due to the following reasons: (1) Gradual transition to natural gas boilers, resulting in a significant reduction in SOx emissions; (2) Implementation of pollution control facility to reduce VOCs emissions (completed on September 29, 2022). Therefore, the targets for the years 2023 to 2030 will be adjusted on a rolling basis.

2. Due to the change in the calculation method of VOCs emissions in 2021, the unit emission intensity target from 2019 to 2021 was changed to the same basis as the calculation method in 2021.

Exceeded goal

Achieved

Partially achieved

Not achieved

By company	污染物	2020	2021	2022	2022 Percentage of pollutants in performance indicators of each plant
CGPC (Toufen factory)	Sulfur oxides (SOx)	18.600	4.500	1.400	92%
	Nitrogen oxides (NOx)	28.400	29.800	24.500	31%
	Volatile organic compounds (VOCs)	509.843	606.951	404.400	91%
TVCM (Linyuan factory)	Sulfur oxides (SOx)	0.138	0.130	0.118	8%
	Nitrogen oxides (NOx)	40.652	55.337	55.821	69%
	Volatile organic compounds (VOCs)	26.231	38.047	33.454	8%
CGPCP (Linyuan factory)	Volatile organic compounds (VOCs)	5.921	6.032	5.116	1%
	Total suspended particulate (TSP)	6.419	5.163	2.466	-

Note:

- Since 2020, CGPC and TVCM has switched to the use of natural gas for fuel, so SOx and NOx emissions have decreased. However, due to the increase in production in 2021, the number of days of boiler operating also increased, resulting in an increase in NOx and VOCs emissions.
- Since 2020, CGPCP's TSP has reduced due to that clean water was added to the venturi scrubber to wash the particulates away, so the TSP emissions have been reduced.
- Due to the change in the calculation method of VOCs emissions in 2021, the unit emission intensity target from 2019 to 2021 was changed to the same basis as the calculation method in 2021.

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5.5 Waste Management ▶ (GRI 306-1~3: 2020)

SDGs ▶



The Company adheres to the philosophy of green environmental protection for pollution control work. In addition to the abovementioned water and air pollution control, it reduces waste pollution in various aspects to fulfill its operational responsibilities. CGPC's factories sell leftover materials, auction off unqualified products and recycle and remanufacture offcuts, so there is little waste from the process. The waste is classified into general industrial waste and hazardous industrial waste. The removal and disposal are handled by organizations with a qualified license, and comply with the Waste Disposal Act.

1. Each factory has designated waste personnel to manage, monitor, and inspect waste disposal vendors, and the designated personnel perform in-plant inspections (waste labeling, storage) from time to time and check whether or not the waste cleaning plan and reporting data are abnormal in order to ensure that the factory management complies with the laws and regulations.
2. Hazardous industrial waste shall be stored and labeled in accordance with the Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste and the disposal and treatment shall be tracked by using the Industrial Waste Reporting and Management System.

Material issue: Waste management

	The Significance and Impact of CGPC	Comply with environmental protection regulations, legally clean and transport, improve resource reuse rate, and pursue sustainable resource utilization.
	Develop Strategy	Continue to promote waste classification and improve resource reuse rate.
	Policy Commitment	Reduce waste per unit of output year by year.
	Grievance Unit	Occupational Safety Office
	SASB indicators	RT-CH-150a.1

Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Promote circular economy to reduce waste and increase reuse rate	Decreasing unit production waste generation (tons/tons)	0.0065	0.0028	0.0060	0.0050	0.0045
	Recycling rate %	80.0	68.9	80.0	85.0	90.0
	Landfill rate %	20.0	31.1	20.0	15.0	10.0

Exceeded goal Achieved Partially achieved Not achieved

Amount of waste generated in the last three years

(Unit: ton)

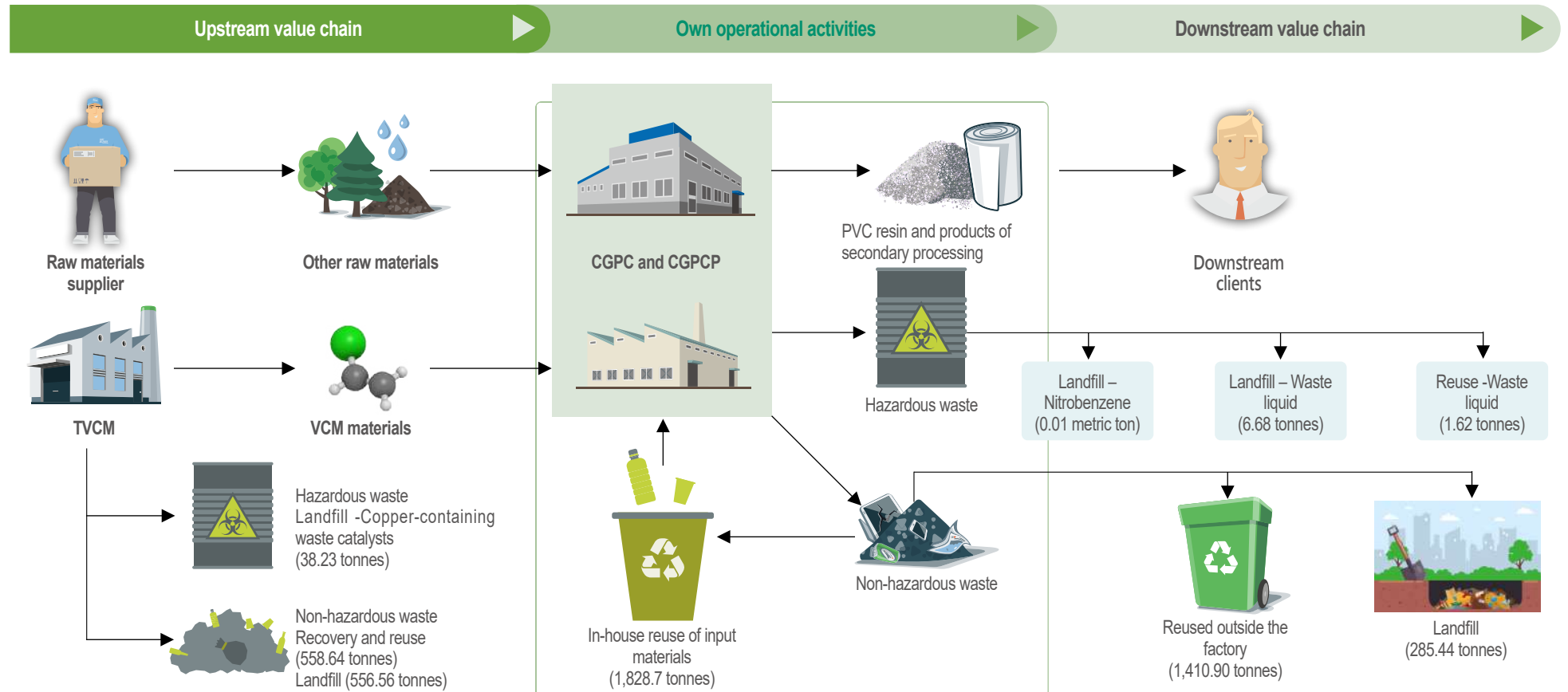
	By company	Final disposal	2020	2021	2022
General industrial waste	CGPC (Toufen factory)	Recovery and reuse	2,532.40	2,405.44	1,379.96
		Landfill	325.10	108.56	236.66
	Total for CGPC		2,857.5	2,514.00	1,616.62
	TVCM (Linyuan factory)	Recovery and reuse	134.00	432.00	558.64
		Landfill	174.00	358.29	556.56
	Total for TVCM		308.00	790.29	1,115.20
	CGPCP (Linyuan factory)	Recovery and reuse	21.30	43.94	30.94
		Landfill	50.00	53.74	48.78
	Total for CGPCP		71.30	97.68	79.72
	Total from three factories			3,236.80	3,401.97
Hazardous Industrial Waste	CGPC (Toufen factory)	Recovery and reuse			1.62
		Landfill	0.02	0.01	6.69
	CGPCP (Linyuan factory)	Landfill	10.43	38.30	38.23
	Total			10.45	38.31

- All recyclable resources from CGPC's factories are given to legal vendors for recycling.
- Our environmental safety and health units regularly inspects waste disposal vendors' management and disposal monitoring, and the general affairs units work with waste treatment organizations to formulate contracts. GPS real-time tracking systems are used to confirm the transportation routes and flows, and the delivery receipt is signed by all three parties, ensuring that the waste is transported and treated in accordance with regulations. In 2022, the disposal and treatment agencies did not have any breach of contract.
- The decrease in general business waste at CGPC in 2022 was attributed to a reduction in coal fly ash volume.
- The increase in hazardous waste at CGPC in 2022 was attributed to the chemical waste from the PVC leather plant.
- At TVCM, the increase in the quantity of business waste in 2022 was a result of tank cleaning, which generated approximately 250 tonnes of mixed sludge.

► Life cycle management for waste

The hazardous waste generated by CGPC and TVCM in 2022 was 46.54 tonnes. Without proper management and effective treatment, random disposal can pollute the environment (air, soil and water), further affecting the ecosystems and harm human health. Therefore, we have adopted the following management measures:

1. Review vendors' qualifications: they need to be qualified waste removal and treatment organizations.
2. Use the GPS real-time tracking system to confirm the transportation route and flow.
3. Follow vehicles to conduct inspections from time to time to ensure that hazardous wastes are properly disposed of.



On September 29, 2022, an activated carbon fluidized bed control equipment was installed, primarily for the recovery of Methyl Ethyl Ketone (MEK), accounting for approximately 70% of the total waste liquid volume.

The pollution control equipment has been continuously operating for two months in the factory, using a Flame Ionization Detector (FID) for self-monitoring. The FID detects the average concentration of Volatile Organic Compounds (VOCs) emitted from 2 to 4 production lines. The average removal efficiency is over 93%, significantly reducing environmental emissions and pollution.

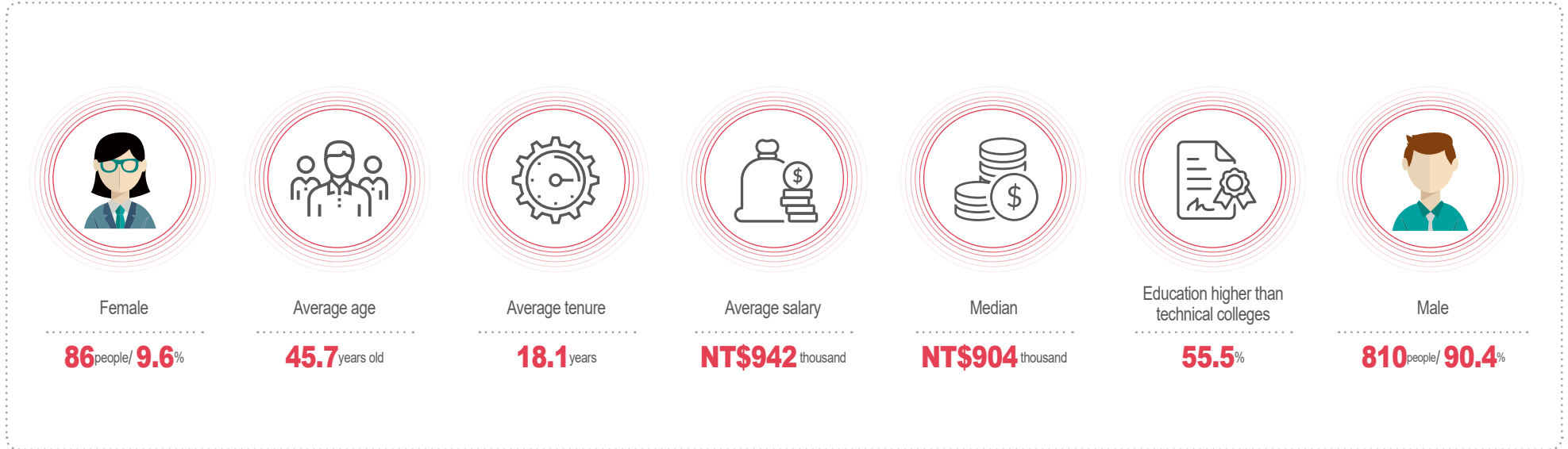


6

Social inclusion

Creating a happy workplace for our employees is our long-standing commitment. In order to fulfill the corporate social responsibility of "Love the homeland, and care for the society", we have consolidated internal and external resources to invest in social welfare activities.

► (GRI 2-1, 2-2, 2-7, 2-8, 2-13, 201-3, 401-1~401-3, 403-1~403-10, 404-1~404-3, 405-1, 405-2)



Manpower

Number of employees:

The total number of employees is 896, with 810 males (90.4%) and 86 females (9.6%). 879 people (98.1%) are local hires in Taiwan, and 17 (1.9%) are migrant workers from other countries (Thailand and Indonesia) due to particular job demand.

Taiwanese employees are mostly located in Taipei, Miaoli and Kaohsiung, and they are all full-time regular employees. Except for 7 people and the 17 foreign migrant workers who signed fixed-term contracts (a total of 24 people), the rest of CGPC's employees are on indefinite contracts

Others

Other Key Summary:

2022 CGPC companies (including subsidiaries TVCM and CGPCP, and excluding overseas investment affiliates. 100% manufactured in Taiwan, and the same applies to this section and latter).

In order to provide employment opportunities to the disadvantaged, 16 persons with disabilities are employed in 2022, accounting for 1.8% of the Company's total number, which is higher than the 1% employee percentage required by the People with Disabilities Rights Protection Act.

Issues

Material Issue ▶ See each section

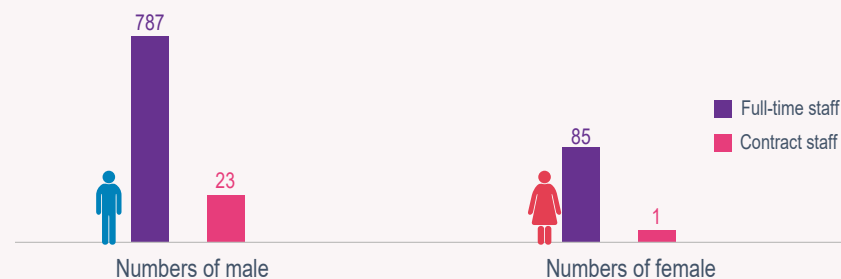
- for description for details
- [Talent Attraction and Retention](#)
(See chapter 6.2 for details)
- [Talent development and cultivation](#)
(See chapter 6.3 for details)
- [Safe and healthy workplace](#)
(See chapter 6.4 for details)
- [Transportation Safety Management](#)
(See chapter 6.5 for details)

6.1 Manpower Structure ▶ (GRI 2-1, 2-7)

▶ 2022 Statistics by position, job location, age, education background and gender

Category	Groups	Male		Female		Group subtotals and percentages	
		Number of people	Percentage of group	Number of people	Percentage of group	Number of people	Percentage of all employees
Job Title	Tier-one supervisors	29	3.6%	0	0%	29	3.2%
	Tier-two supervisors	130	16.0%	6	7.0%	136	15.2%
	General employees	651	80.4%	80	93.0%	731	81.6%
location	Taiwan	810	100.0%	86	100.0%	896	100.0%
Employment type	No fixed term or perpetual contract						
	Full-time staff	787	97.2%	85	98.8%	872	97.3%
	Fixed term or temporary contract						
	Contract staff	23	2.8%	1	1.2%	24	2.7%
Total number of employees: Full-time staff + Contract staff						896	

2022 Employment type statistics table

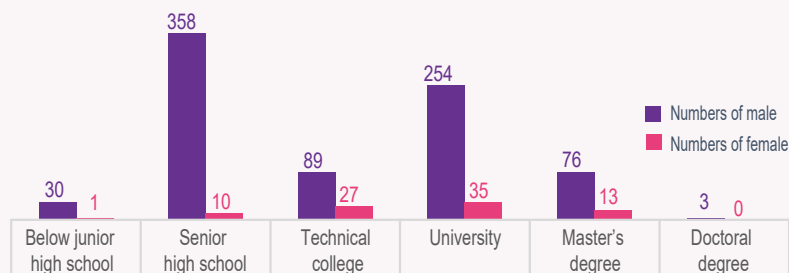


Note 1: Due to the nature of the petrochemical industry, the proportion of male employees is higher than that of female employees.

Note 2: The employee data is compiled by the Personnel Section of each factory as of 2022.12.31.

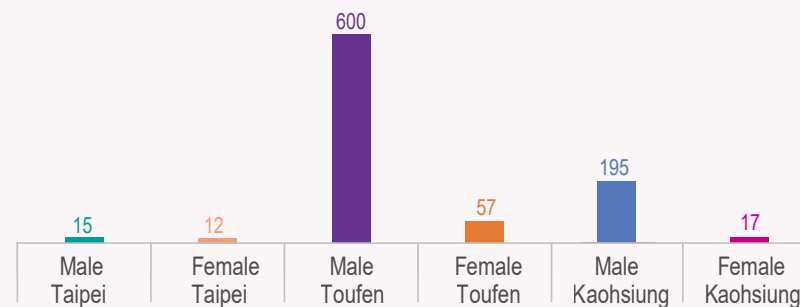
Note 3: We employed 16 persons with disabilities, accounting for 1.8% of the Company's total number, which is higher than the 1% employee percentage required by the People with Disabilities Rights Protection Act.

2022 Percentage of education background by gender



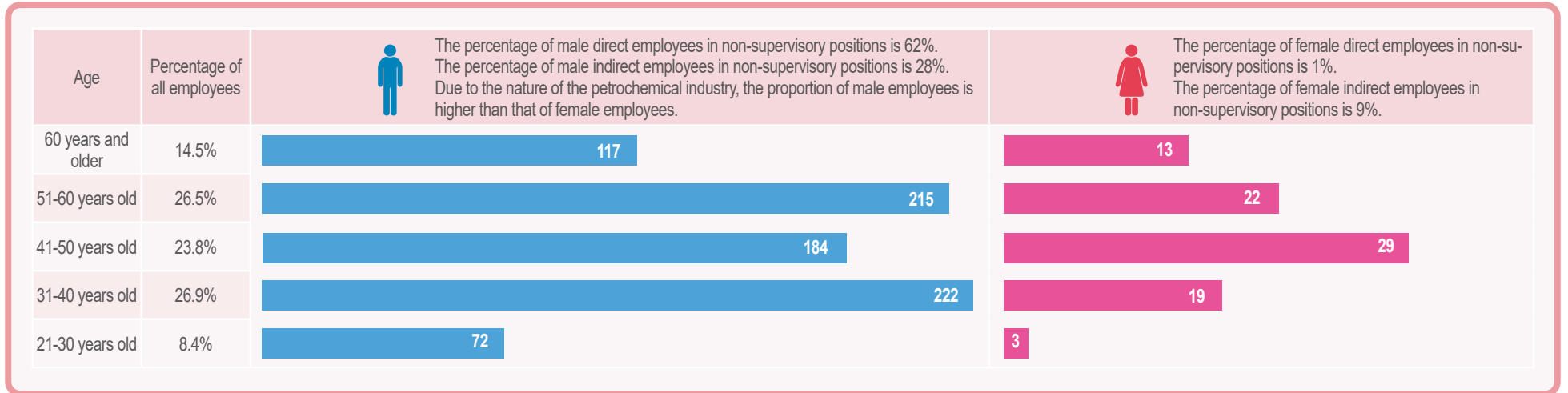
In response to technological advances and in order to improve efficiency, we have continued to replace old equipment in the factories with new ones, and personnel with relevant academic qualifications and operational skills are required. In 2022, we recruit new employees to make up for those who retire, and most of our new hires have either bachelor's or master's degree. 55.5% of our employees have a college degree or above. We have formed academia-industry collaboration with schools to nurture professionals in order transfer industry knowledge.

2022 Work region statistics table

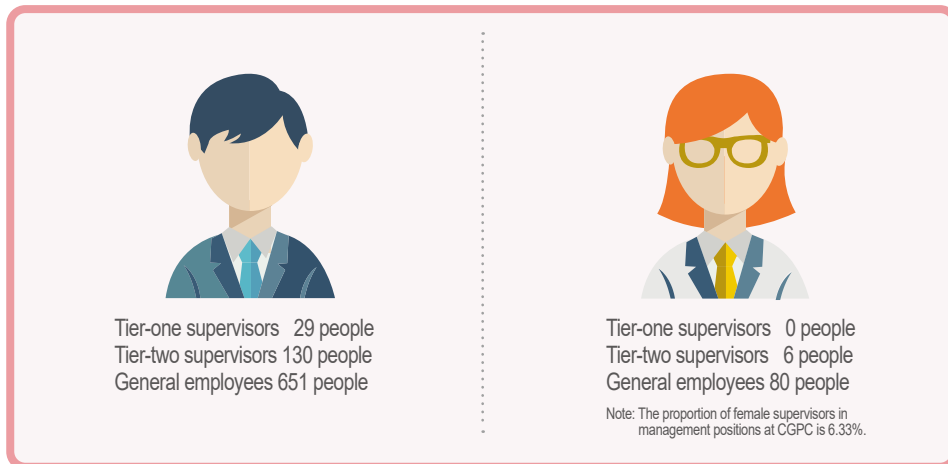


Employees are located in Taipei, Toufen and Kaohsiung. The reason for the high number of male employees: Job sites in the factories have mostly labor-intensive work.

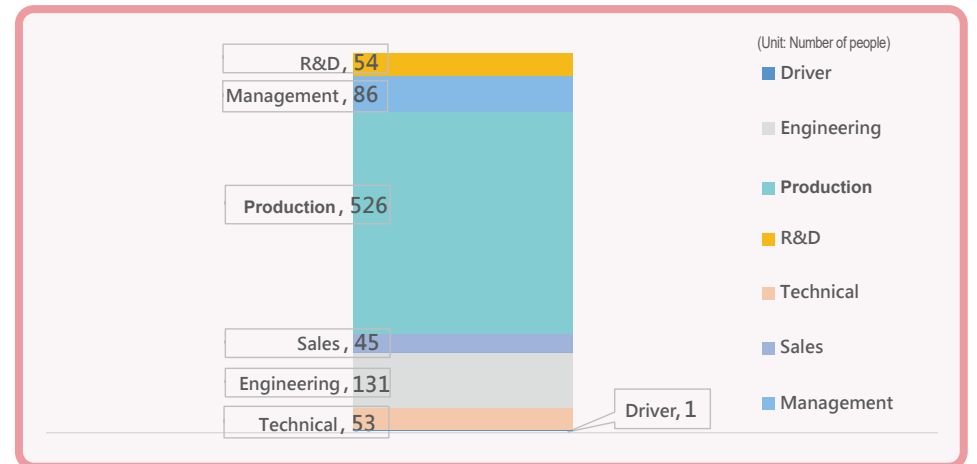
2022 Statistics of employee age by age



By position



2022 Statistics by position



6.2 Talent Attraction and Retention ▶ (GRI 401-1)

Attract and stabilize flows of talents for the Company. Based on the capability and experience required for the positions, we regularly review the policy and reasonableness of salary and remuneration. We also strengthen employees' recognition and practices of core values, so that all employees can elaborate on their talents and have growth, and the internal integration practices create a win-win situation.

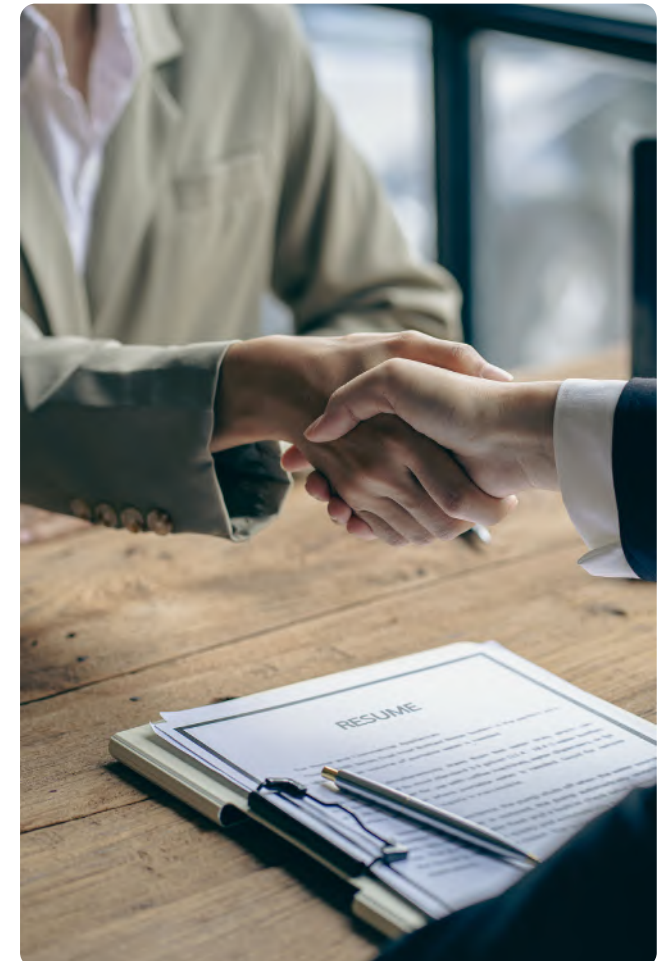
Material issue: Talent attraction and retention

- Toward CGPC's Significance and Impact** ← Employees are the foundation of CGPC's sustainable development, so creating a happy workplace for employees is our long-term commitment.
- Develop Strategy** ← Value employees' rights and interests, promotion channels, and salary and benefits in line with the market.
- Policy Commitment** ← Reduce employee turnover.
- Grievance Unit** ← Personnel Section

✓ Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Raise the starting salary of new hires, re-plan the ranks and promotion channels, and reduce the turnover rate	Turnover rate in %	≤3.00	2.12 	≤2.90	≤2.80	≤2.50

Note: Excluding retired and resigned employees, as well as employees on fixed term or temporary contracts.

 Exceeded goal  Achieved  Partially achieved  Not achieved



6.2.1 Recruitment and Turnover ▶ Talent Recruitment

We prioritize internal recruitment and rotation within the Group when we need to fill vacancies or expand based on business needs, organizational planning or personnel resignation. When we conduct external recruitment, we search talents through human resources websites and the government's employment services center. For vacancies in Toufen or Kaohsiung, we prioritize local hiring to give back to the communities. The labor conditions set by CGPC and employees comply with the local laws and regulations, including minimum wages, working hours, overtime pay, labor insurance, health insurance severance pay/retirement payment etc., and we provide group insurance plans and a variety of employee benefits.

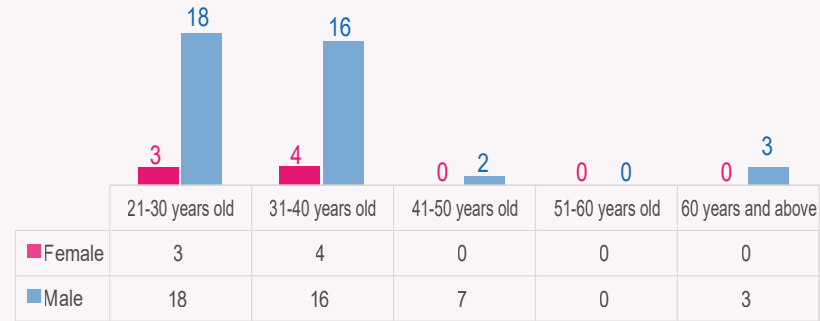
• CGPC employed a total of 54 new hires in 2022, accounting for 5.69% of the total number of employees, and the distribution by gender and age is shown as follows:

3-year comparison of new employees

Region	Age/Gender	2020		2021		2022	
		Male	Female	Male	Female	Male	Female
Taiwan	21-30 years old	24	0	17	0	18	3
	31-40 years old	12	0	22	3	16	4
	41-50 years old	2	0	2	0	7	0
	51-60 years old	0	0	8	1	0	0
	60 years and older	3	0	1	0	3	0
	Subtotal of new employees	41	0	50	4	44	7
	Grand total of employees	920		908		896	
Percentage	4.46%		5.79%		5.69%		

Note 1: Due to the nature of the petrochemical industry, the proportion of male employees is higher than that of female employees.
 Note 2: The employee data is compiled by the Personnel Section of each factory as of 2022.12.31.

2022 New hires statistics table



▶ Talent turnover

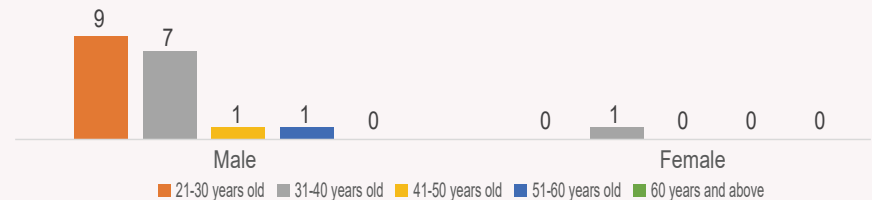
In 2022, a total of 19 people left (excluding retirement or contract expiration), who were all male, and the turnover rate (Number of people who left/Number of people at the end of the reporting year) was 2.12%. In order to reduce the brain drain rate, the personnel units have set a turnover rate target of less than 3% (excluding transfer or retirement) to retain talents for the Company.

Brain drain from 2020 to 2022

Item	2020	2021	2022
Outgoing employee (excluding transfer or retirement)	25	20	19
Total number of employees	920	908	896
Percentage of outgoing employees to total number of employees	2.7%	2.2%	2.12%

Note: The number of resigned employees (including retirees, deaths, or contract expirations) in the years 2020, 2021, and 2022 were 83, 68, and 63, respectively. In 2022, the resigned employees accounted for 7.59% of the total workforce, which is an increase of 0.09% compared to 2021, indicating minimal difference.

2022 distribution of age and gender of employees who left



6.2.2 Salary and benefits ► (GRI 401-2, 401-3, 405-2)

► Salary system

The CGPC salary system reviews employees' education background, specialization or technical and tenure experience, and does not have discrepancy due to gender, religion, race, political party affiliation, etc. In addition to the base salary, employees are entitled to performance bonuses, allowances for position, transportation, shift rotation and others, full-attendance bonuses, overtime pay, fixed bonus and year-end bonus.

Due to the nature of the petrochemical industry, the salary for women and men in the Company may be slightly different for some employees. In order to maintain the stability of human resources and retain outstanding talents, we have annual salary adjustments based on the price index and personal performance. We participate in the salary survey for petrochemical industry peer every year and evaluate the salary level of the market, and make appropriate adjustments and plans for employee salaries (the average salary increase of employees in 2022 is about 4.1%). We give special raises to outstanding talents who have excellent performance in order to keep our salary offers competitive in the market.

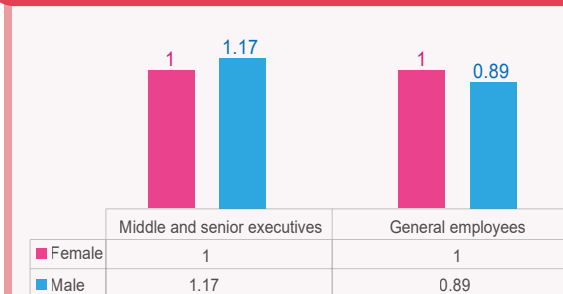
Preparation and Filing

- Publicly listed companies pursuant to Subparagraph 4, Paragraph 1, Article 4 of the Rules Governing the Preparation and Filing of ESG Report by TWSE Listed Companies shall disclose the following:

Item	Contents	2020	2021	2022	Difference compared with 2021	2022 and the previous year
1	Number of full-time employees in non-managerial positions	718	679	661	-18	Differences Description: The primary factor contributing to the decrease in average salary in 2022 compared to 2021 was a reduction in year-end bonuses.
2	"Average salary" of full-time employees who are not in managerial positions (annual salary in NT\$ thousand)	995	1,190	942	-248	
3	"Median salary" of full-time employees who are not in managerial positions (annual salary in NT\$ thousand)	965	1,165	904	-261	

Note: This table does not include subsidiaries, only the average salary of full-time employees of CGPC who are not in supervisory positions.

2022 Salary comparison between male and female employees



Note1: This table does not include subsidiaries. Salary is calculated based on the annual taxable income.

Note 2: Starting from 2022, middle and senior executives are classified as employees with job grades of 8 or above, while general employees are classified as employees with job grades of 7 or below, including workers.

Note 3: Due to the nature of the petrochemical industry, there is a slight difference in remuneration between male and female employees in the company.

► Standardization of Employee Remuneration ► Employee welfare

The Company's Articles of Incorporation has stipulated that "If the Company is profitable in the fiscal year, no less than 1% of the profit shall be offered as remuneration for employees," and all employees are entitled to the Company's operating results. In addition, the Company issues performance bonuses to employees every month, and the payment standard is based on the performance of the month's sales, gross profit, accounts receivable, productivity, yield, and unit energy consumption. We highly value employee welfare, and have introduced the following measures:

Bonus and vacation	Year-end bonus, performance bonus, full attendance bonus, allowances for meal and transportation, maternity subsidies, annual festival bonus. Vacation and leave are granted according to the Labor Standards Act.
Insurance and pension	Labor insurance, health insurance, employee/family group insurance, labor retirement fund, pension under the old system.
Promote health and activities	Regular health inspections, qualified nurses, fitness equipment and shower rooms in each factory, the employee dormitory area of Toufen factory has basketball court, table tennis room, social halls, game rooms, etc. Employee travel, birthday party, recognition of senior employees, recognition of model workers, etc.
Education and training	On-the-job education and training, executive training, management associate continuing education, specialization training, hierarchical training, mathematics platform learning, etc.
Others	Trade union, employee welfare committees (including: weddings and funerals, birthday gifts, children's education subsidies), employee restaurant, parking spaces, breastfeeding rooms, employee dormitories, and collaboration with childcare cultural and educational institutions to provide childcare and parenting services.

Note: This table is a key description of full-time employee welfare.

► CGPC employees applied for parental leave in 2022

Employees can apply for parental leave any time before the child is 3 years old, and the leave can be for a maximum of 2 years.

Item		Male	Female	Total
Annual Status	Number of people who are entitled to parental leave in the current year	67	2	69
	Actual number of people who used parental leave without pay in the current year	1	0	1
Reinstated Status	A) Number of people who should be reinstated after the parental leave of absence without pay and were reinstated in the current year	0	0	0
	B) Number of people who should be reinstated after the parental leave of absence without pay	0	0	0
	Reinstatement = A/B	-	-	-
Retention Status	C) Number of people still employed 12 months after reinstatement in the previous year	1	1	2
	D) Actual number of people reinstated in the previous year	1	1	2
	Retention rate =C/D	100%	100%	100%

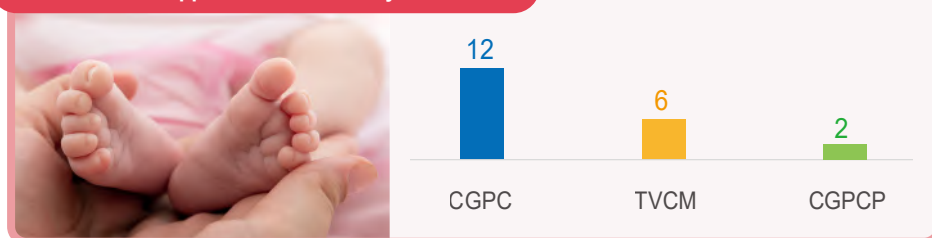
Note: 1. Reinstatement rate: (Total number of employees who are actually reinstated after parental leave/Total number of employees who should be reinstated after parental leave)*100%
 2. Retention rate: (Total number of employees who are still employed by the Company 12 months after reinstatement from parental leave/ total number of employees reinstated after taking parental leave within the last reporting period)*100%

► Maternity allowance

In response to the government's active promotion of fertility incentive measures to fulfill the corporate social responsibility, the Group has formulated employee fertility subsidies, which took effect on December 16, 2018. Employees or their spouses would receive a subsidy of NT\$10,000 per child. If the husband and wife both work for the Group, he/she can apply for the subsidy separately.

The average age of CGPC's employees is 45.7 years old, so the number of birth is relatively low. In 2022, a total of 20 people applied for the childcare subsidies, receiving a total of \$200,000.

2022 number of applicants for maternity allowances



► Pension system

We allocate monthly an amount of employees' monthly salaries and wages to employees' personal pension account in the Bureau of Labor Insurance. To ensure the security of employee retirement, our company has established a Pension Committee to oversee the allocation of pensions. As of the end of 2022, the balance of the retirement fund (Please refer to the Annual [Financial Report](#).)

Item	Labor pension	
	Old system	New system
Legal basis	Labor Standards Act	Labor Pension Act (Implemented on July 1, 2005)
Eligibility	Those who are eligible under the Labor Standards Act.	
Retirement allocation as a percentage of salary	Establish "Labor Retirement Preparation Fund Supervisory Committee" Allocation of 10% of employees' monthly salary towards the Labor Retirement Preparation Fund.	Employer: 6% of employees' monthly salary Employee: 0 to 6% of the monthly salary (can be fully deducted from the personal comprehensive income of the current year)
Income and expenditure custody unit	Bank of Taiwan	Bureau of Labor Insurance
Requisition criteria and methods	The employer pays the pension when an employee retires from the unit under which he/she serves and meets the criteria for collecting pension as stipulated by the Labor Standards Act.	An employee may apply to the Bureau of Labor Insurance for the accumulated amount in the personal account once turning 60 years old.
Employee participation in retirement planning	100%	100%

Note: 1. Under the old pension system, the shortfall in the allocation of pensions after the annual actuarial calculation is made up before the end of March of the following year, and then submitted to the Supervisory Committee of Business Entities' Labor Retirement Reserve Funds for review.
 2. The Labor Pension Act (the new system) came into effect on July 1, 2005. Those who were still working at the Company at the time could choose to adopt the new or old system or not decide right away before July 15, 2005. Those who decided not to make a selection right away will continue with the old system later. Those who chose to adopt the new system shall allocate the pension to the labor retirement new system from July 1, 2005. Those who chose to adopt the old system (including those who did not select either one right away) could re-select the new system within 5 years (before June 30, 2010). New hires who started to work for or were re-hired by the Company after July 1, 2005 were eligible for the new system.
 3. Employees who chose to adopt the pension system under the Labor Pension Act (new system) cannot switch back to the old pension system under the Labor Standards Act.



Employee Welfare Committee



- CGPC and its subsidiaries TVCM and CGPCP each has an Employee Welfare Committee, and each company allocates 0.05% to 0.15% of the revenue every month as the funding for welfare programs.

- Payments by Employee Welfare Committee**

In addition to gifts and vouchers for members, there are allowances for employee trips, children education, marriage, maternity, medical assistance, funeral, injury and others.

Employee satisfaction



We prepared an employee opinion survey report in 2021. It was hoped that through a comprehensive survey, we could understand employees' views on the Company's management operations, identify key indicators of talent retention, and identify items that could be improved. The content includes employee satisfaction and employee engagement surveys, covering areas such as supervisors, salary, co-workers, work content, development, and organizational commitment. The overall satisfaction score is 3.6. In the future, our company, CGPC, will continue to listen to employee feedback and implement improvement measures based on the report findings.

Company	CGPC	CGPCP	TVCM
Participants	All employees		
Title	The assessment includes 7 major dimensions and 28 sub-dimensions, aspects, supervisors, salary, co-workers, development, corporate culture, and organizational commitment.		
Number of Participants in the Survey	221 people	13 people	56 people
Recovery rate	83%	86%	74%
Overall Satisfaction(Note 1)	3.64	3.72	3.41
Survey results	<ul style="list-style-type: none"> Overall, the satisfaction scores are highest in "Job", "Value Commitment", and "Effort Commitment". Overall, the satisfaction scores are lowest in "Salary", "Development", and "Supervisors". 		
Enhance Improvement solutions:	<p>In response to the 2021 items rated lower in the satisfaction survey, "Salary", "Development" and "Supervisors", we will carry out the following improvement measures in 2023:</p> <ol style="list-style-type: none"> 1. Review the employee promotion pipeline: Develop schemes such as "adding job levels" or "expanding employee grade levels" to attract talented individuals and create more opportunities for employee advancement. 2. Review supervisor's job allowances: We refer to the salary level of benchmark companies in the same industry, and take into account factors such as authority of position, scope of responsibilities, organizational functions and others to make internal salary adjustments to improve the internal fairness and external competitiveness of remuneration. 3. Management skills training: Conduct courses on "goal management and performance appraisal," "work instruction and subordinate development," "process improvement and innovation," and "time management." 		

Note 1: Five-point scale.

Work environment improvement

CGPC (since 1964) has more than 50 years of history. The old factories has left traces of aging, exuding an essence of simplicity. After renovation and planning, we have built a healthy and safe workplace, so that employees can feel the Company's care for them.

► 2022 Work environment improvement for employee



Blower and Baghouse Dust Collector



Various Dust Collection Ports

► Condition before improvement:

Minor Dust Emission

► Improvement solutions:

Central dust collection equipment project for new powder warehouse.

► Completion date

December 2022

► Estimated Costs

The estimated cost for this project is approximately 4 million dollars.

► Influence

Promote employees' physical and mental health and team cohesion.

► goal

1. 2022 objectives: (Achieved) Central dust collection equipment project for new powder warehouse.
2. 2023 objectives: New toilet construction for Fabrics Two Section.
3. 2025 objectives (intermediate term): Complete improvement to the space from the 1st to the 6th floor in the office building.
4. 2030 objectives (long-term): Improve the office space of each job site year by year according to the needs.

► Benefits after improvement:

1. The improvement to the office environment enhances employee cohesion and work efficiency.
2. The elegant and bright office environment enhances the corporate image.

► **Vinyl Chain Carbon Reduction Pathway Map**

► Due to the pandemic, the Company suspended some of the events (year-end celebration banquet, Christmas lunch, Mid-Autumn Festival party, etc.) in 2022.

• 2022 Lunar New Year group greeting ceremony



Taipei Company



Taipei, Toufen and Linyuan offices conducted group greeting ceremony online



Linyuan Factory



Toufen Factory

• Birthday Party



Taipei Company



Toufen Factory



Linyuan Factory

• Commendation of senior employees



Commendation of Linyuan factory's senior employees

• Ghost Festival Pu Tu



Linyuan factory Ghost Festival Pu Tu

• Organizing the Thai Migrant Workers' Songkran Festival Event



The Songkran Festival, originating from Buddhist countries like Thailand and Myanmar in the Southeast Asian region, is celebrated annually around April 13th to 16th in accordance with the traditional calendar. It holds significant cultural importance, similar to the Chinese New Year. To help Thai migrant workers alleviate homesickness, CGPC organized a Songkran Festival event in the dormitory area, allowing the workers to participate in water splashing activities and seek blessings together.

• TVCM and CGPCP's Linyuan factory presented health drinks to female employees on International Women's Day



6.2.3 Human rights and protection ▶ (GRI 404-2)

▶ Human Rights Policy

In fulfilling our corporate social responsibility and ensuring human rights, we have formulated human rights policies applicable to our company and USI Corporation's related entities, referring to international recognized human rights standards such as the International Bill of Rights and the International Labor Organization's Declaration on Fundamental Principles and Rights at Work. These policies aim to eliminate violations and infringements of human rights in the workplace and ensure fair and dignified treatment of our employees. The company maintains an appropriate adjustment and planning of employee salaries based on the market salary level (with an average adjustment of approximately 4.1% in employee salaries in 2022). Additionally, exceptional performance and outstanding talent are rewarded with special salary adjustments to ensure a competitive salary level in the market.



▶ Identification and assessment of human rights risks.

Human Rights Risk Identification is conducted annually, and compliance checks and third-party assessments are carried out on identified human rights concerns. Based on the risk assessment results and findings from internal and external reviews, mitigation and corrective measures are taken, and continuous improvement is pursued to achieve the objective of risk management. CGPC and its subsidiaries, TVCM and CGPCP, have established steps and processes for human rights management at various stages as the foundation for upholding and protecting human rights. These include the following steps:

▶ Process for Human Rights Due Diligence Investigation



Phase	Procedure	Methods
1. Commitment	Statement	Make a public commitment to support and adhere to international standards and local laws by formulating a human rights policy.
2. Management	Identification	Identify significant human rights issues and affected stakeholders based on the nature and operations of the organization.
	Assessment and Analysis	Regularly assess human rights impacts for all employees and service processes to understand the level of risk exposure.
3. Response measures	Actions and Measures	<ul style="list-style-type: none"> • Develop different action plans based on the assessed level of human rights risks. • Monitor the implementation and performance of action plans and communicate effectively to ensure the effectiveness of human rights management. • Provide compensation measures from systemic improvements to material and psychological support in case of human rights violations.
	Report	Facilitate internal discussions and reporting on human rights management within the company and disclose human rights management practices and achievements on the company's website.

▶ Human Rights Management Performance

In 2022, there were no significant legal violations. The company will continue to provide human rights-related education and training. For detailed information on the content of human rights training, please refer to the company's website. Based on the implementation policy of our human rights policy, a total of 14 human rights issues were identified and included in this year's agenda (please click the link to view). Among them, there are 8 major concerns, with identified risks in "Occupational Safety Management" and "Excessive Working Hours" ([complete assessment report](#)). Mitigation measures and compensation measures for the identified issues are as follows:

▶ Mitigation and Compensation Measures for Human Rights Management

Issues	Mitigation measures	Compensation Measures
Occupational safety management	<ol style="list-style-type: none"> 1. Conduct ongoing occupational safety and health education training every year. 2. Initiate occupational accident reporting and handling procedures. 3. Adjust work arrangements as necessary based on the employees' physical and mental recovery status. 	In response to the actual impacts that have occurred, relevant occupational accident reporting and handling procedures have been followed, and employees have been provided with care and compensation in accordance with the law.
Excessive working hours	<ol style="list-style-type: none"> 1. Overtime is obtained with the consent of employees, and they are given the option to receive overtime pay or compensatory time off after working overtime. 2. The system daily asks employees to indicate whether the reason for staying beyond regular working hours is due to personal or official matters. 3. The Human Resources Department regularly reviews the overtime situation in each company and tracks the reasons for its occurrence. 	<ol style="list-style-type: none"> 1. Overtime pay is provided to employees in accordance with the law if they have worked overtime. 2. Understand the workload and reasons for overtime among colleagues and actively improve processes and optimize operations to enhance work efficiency. 3. Understand the workload and reasons for overtime among colleagues and actively improve processes and optimize operations to enhance work efficiency.

Union

CGPC and subsidiaries TVCM and CGPCP have established separate unions with the purpose of improving productivity, employees' competency and welfare, communication of the government's laws and regulations and the protection of legal rights and interests of members through mutual assistance. Members at CGPC are mostly employees working in Toufen, excluding fixed-term foreign workers and contract workers, and members of TVCM and CGPCP are mostly in Kaohsiung. The 2022 statistics of members of each company is shown in the table to the left. Employees who have not joined the labor union can report work or rights-related issues to the Company through labor representatives at the employer-employee meetings. Since CGPC has always maintained good communication with employees through the labor union and the meetings, the two parties have not made any special group agreement.

The trade union regularly convenes its director and supervisor meetings, representative meeting, team leader working meeting, etc. The relevant supervisors of the Company all attend the meetings and communicate face-to-face with the employee representatives, so as to build consensus between the two parties and enhance employer-employee cooperation. Representatives appointed by the labor union participate in the operation of the Supervisory Committee of Business Entities' Labor Retirement Reserve Funds, Employee Welfare Committee and Occupational Safety and Health Committee, and hold regular meetings to protect employees' safety and relevant rights. The labor union has established mutual assistance measures for members so they can be eligible to medical assistance, injury, funeral subsidies, loans for disasters and other benefits.

2022 Distribution of members of the union and Employee Welfare Committee by the company and work region:

Company	Total number of people	Number of members in the union	Number of members in the Welfare Committee
CGPC	677	631	653
Taiwan VCM	180	160	178
USI Corporation	39	35	39
Grand total	896	826	870
Percentage	-	92.2%	97.1%

Note 1: Members of unions and the Employee Welfare Committee do not include foreign employees and contract personnel.

Note 2: Employees in Taipei office did not join the labor union due to that the number of retirees increased year by year, and they had no desire to join the union again, so the Taipei labor union was dissolved by the resolution of the meeting.

Note 3: The managerial officers at TVCM and CGPCP are considered representatives of the management, so they do not join the labor union.

• **Not in the Welfare Committee:**

- (1) For CGPC, 24 contract personnel in Toufen
- (2) For TVCM, there are 2 employees.

• **Not in the union:**

- (1) For CGPC, 2 employee in Toufen, 20 in Taipei, and 24 contract personnel, for a total of 46 people.
- (2) For TVCM, 7 employees in Taipei, 13 employees in Linyuan factory, for a total of 20 people.
- (3) For CGPCP, there are 4 people.

Employee assistance program

CGPC is a member of USI Corporation's affiliates, and is entitled to the services of the Employee Assistant Program Service Center (EAPC) of USI Corporation. The EAPC is committed to improving employees' quality of life, health and happiness, and has continued to promote employee assistance programs, organize various networking activities, and provide counseling, so that employees can receive comprehensive care and help in psychological adjustment, career development, health promotion and quality of life. The company has established an Employee Counseling Policy to provide counseling, necessary training, and support for employees with poor performance or competency gaps, aiming to improve their skills and enhance job performance. Additionally, a job rotation mechanism has been established to ensure that employees are assigned to positions that align with their capabilities and characteristics. The company has also implemented an Employee Talent Development, Training, On-the-Job Learning, and Job Rotation Policy to enhance employees' work capabilities and quality, unleash their potential, cultivate outstanding talents, and plan a comprehensive career system and promotion system. This policy assists employees in career planning and advancement.

Grievance channels

• Union

All union members can respond through the union if they have various suggestions for the Company or have questions about their own rights and interests. In the monthly committee member meetings, the directors respond issues to the Company's representatives, and the committee makes the proposal into meeting minutes and follow up the issues to protect members' rights and interests.

• Employer-employee meetings

CGPC holds employer-employee meetings in accordance with the law, which is attended by the management and labor representatives. The meetings are held every 3 months. The management representative can explain the current status of the Company's operation, and the labor representatives reflect the voice of the employees, which is of positive help for the communication between the employer and employees.

• Employee grievance mailbox

In order to protect the rights and interests of employees and resolve labor problems, CGPC has set up grievance filing measures. If employees are unfairly or unreasonably treated or have their rights and interests harmed at work, they can report the incidents to their supervisors, or to the employer-employee meetings or union representatives, or directly file grievances orally or in writing with the Company and the mailbox on the website to seek more explanation or help. After receiving the complaints, the Company will assign relevant personnel to conduct investigation, depending on the severity, and contact the parties involved to provide explanations. Grievance cases must be resolved within 3 months in order to build a fair and reasonable work environment and a healthy promote employer-employee relationship.

• Employee Complaint Channel

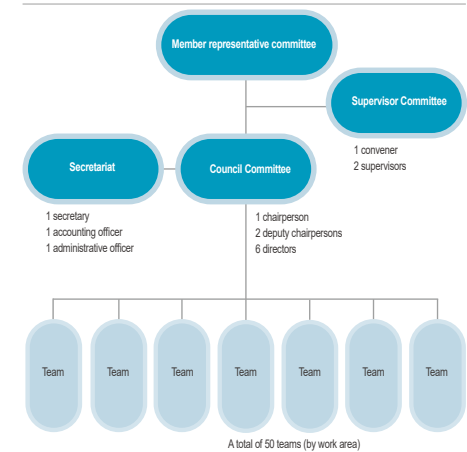
CGPC- Feng-Kai Xiao fkhsiao@usig.com

TVCM, CGPCP-Xian-Wen Lu hunterlu@usig.com

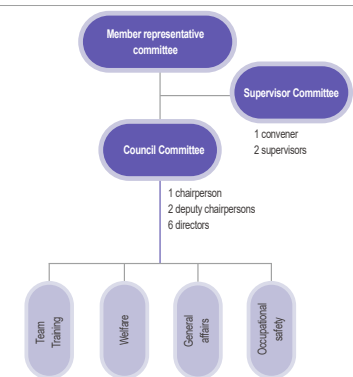
Audit Committee's email

CGPC has set up an "Audit Committee's email" in June 2016 to accept reporting cases related to the obligations and powers of the Audit Committee. On November 9, 2017, the board of directors and the Audit Committee approved the "Measures Handling Reporting of Illegal and Unethical or Dishonest Behaviors", which specify the reporting procedures and relevant confidentiality practices. The grievance channels include reporting in person or by phone and correspondence, and dedicated units are assigned to handle such cases. For the whistleblowers, participating investigators and the case content, we spare no efforts in confidentiality and protection to prevent them from unfair treatments or retaliation. If the whistleblower is an employee, we guarantee that the person will not be mistreated. No grievances were received in 2022.

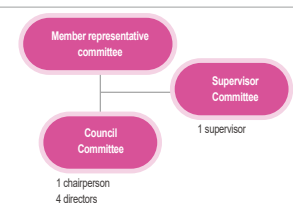
Organizational Chart for CGPC's Union



Organizational Chart for TVCM's Union



Organizational Chart for CGPCP's Union



6.3 Talent Development and Cultivation ▶ (GRI 404-1, 404-3)

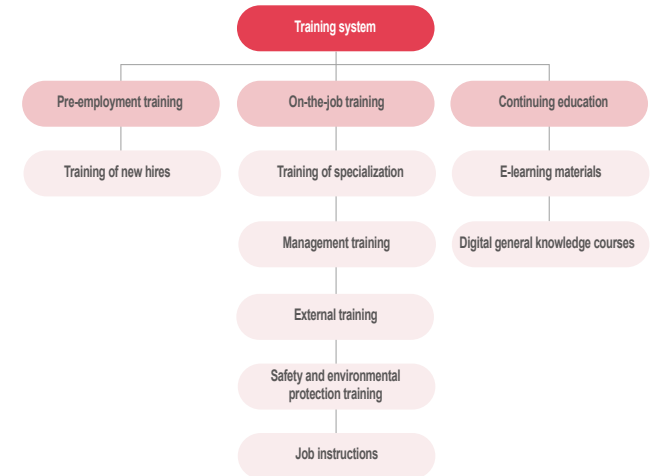
CGPC provides a safe, harmonious and innovative environment emphasizing on learning and growth environment. The Company's education and training courses are in line with the external environment, business policies, segment performance goals and employees' career development needs to build a comprehensive education and training system needed to nurture all-round talents. In addition to in-house materials, there are excellent training courses made by other businesses at home and abroad to improve employees' capacity and overall competitiveness.

Material issue: Talent development and cultivation

- The Significance and Impact of CGPC** ◀ We want to provide a safe, harmonious and innovative environment emphasizing on learning and growth environment. Only with the continuous improvement of the capabilities of all employees can we take a step forward.
- Develop Strategy** ◀ The Company's education and training courses are in line with the external environment, business policies, segment performance goals and employees' career development needs to build a comprehensive education and training system needed to nurture all-round talents.
- Policy Commitment** ◀ Increase the number of training sessions.
- Grievance Unit** ◀ Personnel Section

Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Improvement training	Sessions	120	194	130	150	170

 Exceeded goal
  Achieved
  Partially achieved
  Not achieved



The training framework is mainly composed of four major aspects, "On-the-job training", "Functional training", "Self-directed learning and growth", and "Digital learning". The training courses for employees' career development are comprehensively and systematically planned, and then extended to individuals' lifelong learning. Online e-learning courses also enable employees to effectively carry out learning activities anytime, anywhere, simultaneously improving employees' career development and overall work performance. Please refer to [the Talent Cultivation and Development](#) webpage.



6.3.1 Diverse on-the-job training program

In order to make on-the-job training systematic and have teaching materials and available online, we have incorporated the training into the knowledge platform to keep the professional knowledge required for each function, so that employees can learn from the internal website at any time. We have begun to promote the structured on-the-job training (SOJT) program since 2010. Learning materials on core competencies have been produced by the responsible person/experienced employees of various units starting 2013. As of the end of 2022, a total of 474 e-learning materials have been completed.

2022 statistics by specialization (management, quality control, technology, safety and environment protection), internal or external training, and gender:

Year	2022	
	Male	Female
Course categorization		
Average training hours for management	2.1	0.8
Average training hours for quality control	0.4	0.1
Average training hours for technology	8.0	0.8
Average training hours for safety and environment protection	13.1	0.7
Total person-time	5,603	676
Total hours	21,231	2,033.5
Average training hours per person	26.0	
Total number of employees	896	



6.3.2 Training performance

In 2022, the total number of training hours for CGPC employees reached 23,264.5 hours, with an average of 26 hours per person. For employees who have willingness to learn and development potential, we provide subsidies for on-the-job continuing education in domestic universities, supplemented by the experience of job rotation, to cultivate corporate talents. CGPC's training units often invite professional lecturers to conduct classes in the Company so that employees can learn new professional knowledge and management skills.

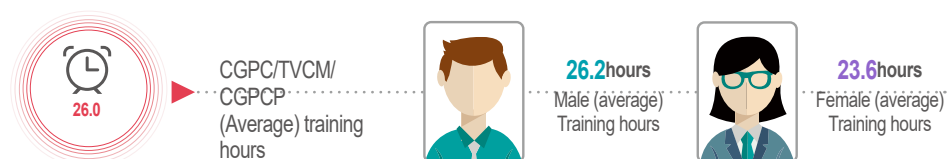
2022 average training hours by position

Gender	Male		Female	
	Person-time	Training hours	Person-time	Training hours
Job Title				
Driver	1	1.0	0	0.0
Technical	336	1,220.0	93	295.5
Engineering	1,408	6,216.0	46	226.0
R&D	335	1,324.0	97	382.5
Sales	226	606.0	120	255.0
Production	2,794	10,114.5	132	362.5
management	503	1,749.5	188	512.0
Total	5,603	21,231.0	676	2,033.5

Note: 1. The statistics of the number of supervisors include the managerial officers and employees who are appointed as managers (inclusive) and above.
2. The statistics table includes the training hours for retired, transferred and resigned employees for the year.

2022 training result

Category	"Skills credentials" Certification	Safety and Health "Completion Certificate"
Person-time	33	53



Note: Due to the characteristics of the petrochemical industry, women mainly hold staff and administrative positions, so the average training hours are slightly lower than those of men.

Talent development plan

In accordance with the guidelines for the reserve of key personnel and the annual performance evaluation results, potential key talents are identified and corresponding development plans are arranged to cultivate managerial talents for the organization. The development plan includes guidance from workplace mentors to understand one's strengths and weaknesses, as well as strengthening managerial and professional skills through curriculum arrangements, job rotations, and project assignments. The managerial skills are divided into five major functions: leadership, planning, organization, personnel management, and control. Different managerial skills are established for different levels of supervisors, and through competency-based development plans, the managerial capabilities of supervisors are strengthened. Before being promoted to a supervisor position, employees must complete the relevant managerial skills courses at each level to be eligible for promotion. In addition to the establishment of digital courses on the internal learning platform for various levels of managerial skills, supervisors are also provided with physical courses for key topics in 2022, such as "Crisis Beneath the Iceberg: Exploring Key Operations through Data," "Art of Understanding People - Recruitment and Interviewing Skills," "Work Improvement," "Goal Setting and Implementation Planning," and "Performance Review Management."

2022 number of employees and average training hours							Average training hours the most recent 3 years	
Gender	Male		Female		Total male and female		Year	Average training hours (hour)
Job type	Average training hours (hour)	Number of people	Average training hours (hour)	Number of people	Average training hours (hour)	Number of people		
Supervisors	29.1	159	19.0	6	28.8	165	2020	22.4
Director labor	17.0	463	23.9	6	17.1	469	2021	22.6
Indirect labor	46.5	188	24.0	74	40.2	262	2022	26.0
Total	26.2	810	23.6	86	26.0	896	3-year average	23.7

Description:

Most of the company's employees are male (nature of the industry), and according to regulations, they need to complete hierarchical training education and training courses in order to be promoted, so the number of class hours has increased a lot. Most of the female employees are administrative and specialized personnel, and there are many related specialized education and training courses for them. In 2022, several occupational safety and health training courses were conducted, leading to an increase in training hours.



2022/09/21 "Work Improvement" Lesson



2022/01/13 Process safety management training



2022/06/06 Self-defense fire formation training

CGPC Awarded as an excellent training enterprise by the Taoyuan-Hsinchu-Miaoli Branch of the Workforce Development Agency, Ministry of Labor

In order to incorporate the government's resources into the on-the-job training for employees to continue improving the quality of manpower, we have begun to participate in the Enterprise Human Resources Improvement Program promoted by the Workforce Development Agency, the Ministry of Labor since 2010. In 2012, due to our eligibility to the Industry Impacted by the ECFA, we have applied to the Recharge and Take-Off Program since then, and introduced the TTQS (Talent Quality-Management, to ensure the reliability and correctness of the training process, regular TTQS assessments are conducted to continuously improve the quality of training and enhance the operational efficiency of the human resources training system. In 2022, CGPC received a total of 160 subsidies from the Workforce Development Agency of the Ministry of Labor, with a total training duration of 41 hours.

華夏海灣塑膠股份有限公司
以教育訓練提升員工專業 並帶動企業轉型發展

Source of the report:
The Enterprise Human Resources Improvement Program and the Recharge and Take-Off Program promoted by the Taoyuan-Hsinchu-Miaoli Branch of the Workforce Development Agency, Ministry of Labor.
The National Association of Small & Medium Enterprises.

CGPC was invited to share successful case studies in the "Industry Innovation Lecture" Recharge and Takeoff Program.

In 2022, the National Association of Small and Medium Enterprises of the Republic of China was entrusted by the Taoyuan-Chungli-Miaoli Branch of the Ministry of Labor's Workforce Development Agency to organize the Industry Innovation Lecture series. Our company was invited to share successful case studies during the program. The aim was to provide insights into sustainable development and the latest trends in human resource management under the context of sustainable development. Through this sharing, we aimed to assist more enterprises in understanding the importance of sustainable development and human resources engage in advanced exchanges with other companies to improve their overall organizational capacity.

ESG 人才永續
產業創新講座

勞動部勞動力發展署桃竹苗分署
感謝狀
茲感謝 華夏海灣塑膠股份有限公司 積極投入訓練資源，促進人力資源發展，擔任產業創新系列講座企業代表分享辦訓經驗，內容精闢，助益良多，特頒此狀，以表謝忱。
分署長林淑媛
中華民國 111 年 7 月 22 日

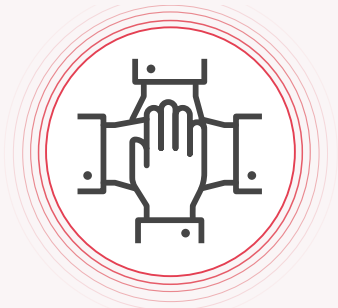
6.3.3 Performance evaluation

We conduct employee performance appraisal in January every year, hoping that it can help employees' personal development, as well as the Company's human resources and skills management. The personnel to be evaluated do not include foreign workers and fixed-contract personnel. In 2022, as high as 97.2% of CGPC employees accepted performance appraisal.

Legal basis: Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies

Amended in accordance with Article 9 of the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies, the employee performance appraisal system should be integrated with the sustainability policy, and a clear and effective reward and penalty system should be established.

Management by objectives



Performance appraisal

The management meeting in November 2021 requested to include ESG in the KPI

In order to ensure that all units can implement the ESG plan, it will be officially incorporated into part of the KPI items starting 2022.

Managers who are heads of sections or above work with personnel who prepare the sustainability report to include the ESG as part of the 2022 KPI. The net zero, recycling and re-use and other items related to their current functions are part of the evaluation items.

The 2022 male-female ratio of employee performance appraisal is as follows:

Gender	Male			Female		
	Total number of people	Actual number of people evaluated	Percentage	Total number of people	Actual number of people evaluated	Percentage
Supervisors	159	158	99.4%	6	6	100.0%
Director labor	463	440	95.0%	6	5	83.3%
Indirect labor	188	188	100.0%	74	74	100.0%

Remarks

1. Period of evaluation data: 2022/01/01-2022/12/31, and the number of employees is as of 2021/12/31.
2. A total of 896 people, 871 people were evaluated, and 25 did not participate in the evaluation, and the description is as follows:
 - (1) Toufen: 25 (Chairman 1, and 24 contract personnel)
 - (2) TVCM: 0
 - (3) CGPCP: 0

The 2022 commendation of model workers at Linyuan factory



TVCM's Exemplary Worker



CGPCP's Exemplary Worker

Note: Toufen factory (Did not hold)

6.4 Safe and Healthy Workplace ▶ (GRI 2-8, 403:2018)

We understand that employees, suppliers and contractors are the most important assets in the sustainable development of the Company. Therefore, the processes of research and development, manufacturing, testing and sales of the Company's products need to comply with occupational safety and health regulations and other relevant requirements, and a good safety and health protection framework must be provided to prevent accidents, continuously improve safety and health and ensure compliance with regulations, so that there are no unsafe behaviors and environment and equipment condition causing occupational disasters, further fulfilling the responsibility of protecting employees' safety and health.

✔
Material issue: Occupational safety and health

The Significance and Impact of CGPC

Enable employees and contractors abide by the requirements of safety and health regulations and standards, build a zero-disaster work environment, and ensure a comprehensive system for workers' safety and health and achieve sustainable development.

Develop Strategy

The occupational safety and health policy of full participation is carried out in accordance with the ISO 45001 occupational safety and health management system for performance measurement and continuous improvement.

Policy Commitment

Zero disaster and zero disabling injury incident.

Grievance Unit

Occupational Safety Office, Environmental and Safety Courses

SASB Indicator

RT-CH-320a.1, RT-CH-320a.2, RT-CH-540a.1, RT-CH-540a.2.

✔ Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Reinforce on-site patrol inspection and improve potential hazards	Frequency of disabling injuries (F.R.)	0	2.25 ⊖	0	0	0
Reinforce the prevention of scrolling and pinching injuries and safety management of stackers.	Severity of disabling injuries	0	119 ⊖	0	0	0

Reasons for failure to achieve: Relevant units have proposed countermeasures to strengthen job safety analysis to prevent potential hazards from occurring. Details: Occupational Safety and Disaster Management, 2022 Accident and Injury Statistics, Occupational Safety - Explanation of Care.

🔴 Exceeded goal
 ✔ Achieved
 🔄 Partially achieved
 ⊖ Not achieved

▶ USI Corporation Zero Occupational Incident Letter of Commitment



- CGPC's management objective for occupational disaster is zero occupational incident. Frequency and severity of disability injuries are key indicators for assessing employees' health and safety.
 - We have formulated the Safe Work Hours Incentive Measures to motivate employees to maintain work safety.
 - We have formulated the Operating Guidelines for Occupational Safety and Health Hazard Risk Identification, Opportunity Evaluation and Control Management, which uses hierarchical management and control to minimize risks.
- CGPC organizes training courses on human rights protection every year, please see the [website](#) for details.

6.4.1 Occupational safety management ▶ (GRI 403-1, 403-2, 403-4, 403-7, 403-8, 403-9)

We have established the ISO 45001 occupational safety and health management system, and TVCM, CGPCP and we have passed the ISO 45001 occupational safety and health management system verification in 2019 and 2021, respectively.

▶ Occupational safety and health organization and operation ▶ (GRI 2-8)

Each plant of CGPC separately participates in the Toufen, Zhunan, Linyuan Industrial Parks Safety and Health Promotion Association; the Toufen and Zhunan Industrial Park Manufacturers' Association; regional joint defense organizations; the Taiwan Responsible Care Association (TRCA); and the Vinyl Chloride Monomer (VCM) and chlorine operation joint defense organizations to observe and learn from one another in occupational safety, health and environmental protection, etc. and improve the safety and health of operators, and regularly hold fire drills and environmental safety and health education and training sessions every year to foster employees' capabilities responding to emergencies and implementing self-directed safety management. In 2022, we participated in the activities of the Safety and Health Family activities in Miaoli County as a core family member, and actively invited other contractors to participate in order to improve the safety management standard. The Occupational Safety and Health Administration funded and supported the Safety and Health Family initiative established and supervised by each county and city government. The objective is to improve the work environment and promote employment services for enterprises with less than 100 employees. See [work environment improvement](#) for details.



The ISO 45001 occupational safety and health management system includes:
The employees of CGPC's Toufen factory, TVCM's Linyuan factory and CGPCP's Linyuan factory (excluding employees working in Taipei).



Total number of workers **1,058**
Company's employees **85.66%**
Not the Company's employees **14.34%**

A total of 1,046 employees (Company's employees, 896 people, and contractors have about 150 people) reviewed by external agencies, and their jobs include sales, production, design, development, procurement, administration, engineering, contracting, etc., covering 100% of the Company's business areas.

▶ Identification of occupational safety

- 1 **Hazard identification**
Each unit conducts an inventory of activities in the managed areas to identify hazards and record them in the "Checklist".
- 2 **Confirmation of Checklist**
Occupational safety and health management representatives confirm the completeness, correctness and reasonableness of the "Checklist".
- 3 **Risk assessment**
Each unit PVC leather in an assessment form for the identified hazards
- 4 **Confirmation of assessment forms**
Occupational safety and health management representatives confirm the completeness, correctness and reasonableness of the "Assessment Form".
- 5 **Filing assessment forms**
The approved Assessment Forms are then filed by environmental safety units for future reference.
- 6 **Risk hazard control**
Implement hazard control, and compile the "Control List" to manage risks.
- 7 **Risk control**
Report and review during the annual management review meetings

► Occupational Safety and Health Family

CGPC has been serving as the leader of the "Occupational Safety and Health Family" for three years, and the mission has been successfully completed. The Occupational Safety and Health Administration of the Ministry of Labor expresses gratitude to our company for its dedicated assistance in guiding business units to improve their working environment and promoting employment plans, effectively preventing occupational accidents and safeguarding the safety and health of workers.



Deputy Director of the Occupational Safety and Health Administration, Bo-Chang Lee, presented the award, and CGPC's Executive Vice President, Chi-Hung Hu, received the award on behalf of the company.



Occupational safety and disaster management

We have set our occupational disaster management objective as "Zero incident. Zero disaster." In order to prevent occupational disasters, protect the safety and health of workers, and achieve the objectives and standard of safety and health management, we have established the Safety and Health Work Rules, and require all employees to abide by them.

Accident statistics for the past three years.

Unit	Year	2020		2021		2022	
	Gender	Male	Female	Male	Female	Male	Female
Million man hours	F.R.	1.33	0.00	2.86	0.00	2.25	0.00
	S.R.	11.00	0.00	43.00	0.00	147.00	0.00
	F.S.I	0.12	0.00	0.35	0.00	0.52	0.00
200,000 man hours	F.R.	0.27	0.00	0.57	0.00	0.45	0.00
	S.R.	2.20	0.00	8.60	0.00	29.40	0.00
	F.S.I	0.02	0.00	0.07	0.00	0.10	0.00

Description:

This statistic includes CGPC's Toufen factory, TVCM's Linyuan factory, and CGPCP's Linyuan factory. TVCM and CGPCP had no accidents involving suppliers and contractors from 2019 to 2021.

In 2022, the main cause of accidents was related to hazards from rolling and clamping. The company has implemented improvement projects in occupational safety and health environment through subsidies from the Plastic Products and Specific Process Industries Safety and Health Improvement Project by the Occupational Safety and Health Administration, Ministry of Labor. In collaboration with the ROC Industrial Safety and Health Association, the company has planned and improved the overall safety system and introduced AI preventive measures to prevent hazards related to rolling and clamping.

CGPC's Toufen factory achieved excellent results in the 2022 Group Inter-Plant Technical Exchange Seminar, ranking third. The project titled: "[Space Packaging Intelligent Safety Improvement](#)".

Note: (1) Frequency of disabling injuries (F.R.) = Number of injuries x 10⁶ / Total working hours

(2) Severity of disabling injuries (S.R.) = Number of days lost due to accidents x 10⁶ / Total working hours

(3) Frequency severity index (F.S.I.) = Square root of [(F.R. x S.R.)/1000].

(4) Male-female ratio: Male 100%; Female 0%.

(5) Data source: Monthly report of occupational hazard statistics

(6) Bloomberg ESG indicator: Frequency of disabling injury (F.R.) = Number of injuries x 200,000 / Total working hours.

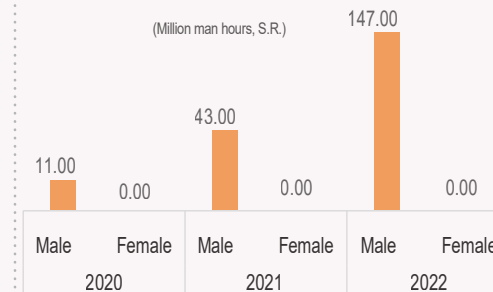
(7) Bloomberg ESG indicator: Severity of disabling injury (S.R.) = Number of days lost x 200,000 / Total working hours.

(8) Please see 6.4.1 [Injuries caused](#) by accidents.

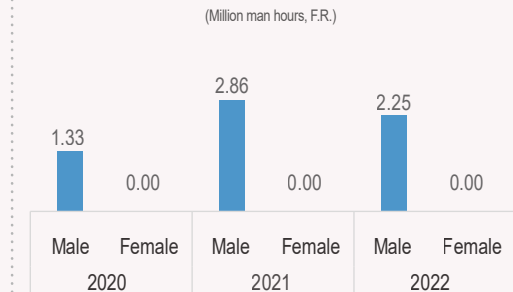
(9) Occupational accidents in CGPC in 2022: 3 people; Occupational accidents in TVCM: No one.

(10) Occupational accident rate in CGPC in 2022: 0.46%; Occupational accident rate in TVCM: 0%

Comparison of severity of disabling injuries (S.R.)



Comparison of frequency of disabling injuries (F.R.)



► 2022 Injuries caused by accidents

There's no incident at TVCM and CGPCP. In the event of an incident in CGPC's Toufen factory in 2022 (as explained below, there were no accidents in TVCM and CGPCP), the Company actively reviewed the cause of the accident, reduced the hazard factors to prevent recurrence, and immediately proposed countermeasures and cares for employees. Three industrial safety incidents and two contractor incidents occurred in CGPC in 2022:

2022 accident injuries (CGPC)			
By company	Reasons for the incident	Improvement measures	
CGPC Toufen Plant	An employee sustained an abrasion to the left ankle from being caught by the rotating tube when rubber material rolled off the floor.	<ul style="list-style-type: none"> ● Risk Management: <ol style="list-style-type: none"> (1) Implement job safety analysis to prevent potential hazards from occurring. (2) Revision of risk assessment data. ● Control and improvement of operation platform: <ol style="list-style-type: none"> (1) Rubber materials should be placed on the finished product platform and not on small platforms. (2) A barrier will be added to the small platform to prevent rubber material from rolling off. (3) After rolling the rubber material, a stopper should be placed to prevent it from moving. 	<ul style="list-style-type: none"> ● Revise SOP: <ol style="list-style-type: none"> (1) New Safety Regulations should be incorporated into the SOP. ● Safety observation : <ol style="list-style-type: none"> (1) Reinforce supervisors' management by walking around and safety observation, further preventing potential hazards fro occurring. ● Education and training: <ol style="list-style-type: none"> (1) Implement safety operating standards and provide safety and health education training.
	An employee sustained a finger injury to the right hand while handling foreign objects on the embossing wheel surface.	<ul style="list-style-type: none"> ● Engineering Improvements: <ol style="list-style-type: none"> (1) Install an emergency stop device that activates the opening and rising function of the embossing wheel. (2) When the equipment is in operation and the embossing wheel is pressing down, a flashing warning light and audible alarm should be activated. If the guard is not in place, the embossing wheel will open and rise, requiring the guard to be reset before the equipment can be operated. (3) Install a monitor in the area where the rolling and clamping hazards occur. ● Administrative management: <ol style="list-style-type: none"> (1) It is necessary to stop the machine (stop rotation) before handling any abnormalities, and ensure that the workers strictly comply with this procedure. 	<ul style="list-style-type: none"> ● Hazard identification and risk management: <ol style="list-style-type: none"> (1) Review the work safety analysis, hazard identification, and risk assessment data. (2) Submit "Voluntary Safety and Health Inspection and Improvement Results" on a monthly basis. ● Safety observation: <ol style="list-style-type: none"> (1) Supervisors at all levels should conduct safety observations. ● Education and training: <ol style="list-style-type: none"> (1) Job instructions should be signed by employees and written materials should be retained for reference.
	An employee sustained a finger injury to the left hand while cleaning the drawing-out wheel.	<ul style="list-style-type: none"> ● Engineering Improvements: <ol style="list-style-type: none"> (1) During abnormal handling, the extraction wheel is fully opened. (2) Use a T-shaped rod; direct wiping of the extraction wheel with hands is prohibited. (3) Install a monitor and electronic fence at the roller clamping hazard area. ● Administrative management: <ol style="list-style-type: none"> (1) The machine should be stopped before handling any abnormalities, and ensure that workers comply with the instructions. ● Hazard identification and risk management: <ol style="list-style-type: none"> (1) Review the work safety analysis, hazard identification, and risk assessment data. (2) Submit "Voluntary Safety and Health Inspection and Improvement Results" on a monthly basis. 	<ul style="list-style-type: none"> ● Safety observation: <ol style="list-style-type: none"> (1) Supervisors at all levels should conduct safety observations. (2) Safety observation records should be retained for reference. ● Education and training: <ol style="list-style-type: none"> (1) Implement safety operating standards and provide safety and health education training. (2) Job instructions should be signed by employees and written materials should be retained for reference.

Statistics of safety patrol inspections and improvement cases for the most recent 3 years

Company	CGPC			TVCM			CGPCP		
	Year	2020	2021	2022	2020	2021	2022	2020	2021
Safety patrol inspections	806	1028	1808	839	556	1265	190	298	376
Total cases of deficiencies	1,411	1328	1426	512	251	441	190	298	23
Number of cases improved	1,411	1322	1169	512	251	441	190	298	23
Number of cases improving	0	3	68	0	0	0	0	0	0
Improvement rate	100%	99.8%	95.2%	100%	100%	100%	100%	100%	100%

Note: 1. The number of patrol inspections includes the number of safety and health patrol inspections carried out by the site supervisor and the number of environmental safety and health inspections carried out by the safety and environmental protection units and industrial safety officers in the past 3 years.
 2. The incomplete cases go to the next year, and we follow up the cases until the improvement rate reaches 100%.
 3. Source: Environmental safety and health management platform.

Statistics of safety performance indicators are as follows:

(Million man hours)

Safety performance indicators	CGPC	TVCM	CGPCP
Frequency of disabling injuries (F.R.)	2.25	0	0
Severity of disabling injuries (S.R.)	119	0	0
Frequency severity index (F.S.I.)	0.52	0	0
Occupational safety violation ticket	6	0	1
Emergency response drills	37	9	4
Education and training sessions	106	84	4
Safety patrol inspections	2558	1338	376
Completion rate of occupational safety objective management solutions	100%	100%	100%
Violation improvement rate	82%	100%	100%

Note: 1. Occupational safety fines. Please see 3.4 Regulatory compliance
 2. The incomplete violation improvements go to the next year, and we follow up the cases until the improvement rate reaches 100%.

2022 Absence statistics table

Company type/Gender	Male	Female
CGPC (Toufen factory)	1.03%	0.29%
TVCM (Linyuan factory)	8.694%	0.475%
CGPCP (Linyuan factory)	1.166%	8.725%

Note: 1. Absence rate = Total days absent / Working days x 100%.
 2. Total days absent: The total number of absence days in 2022 is calculated based on the actual sick leave, public holiday and injury leave.
 3. The number of working days: Actual number of working days in 2022.

2022 Statistics table of important training sessions

Course name	CGPC		TVCM		CGPCP	
	Total number of people	Training Total hours	Total number of people	Training Total hours	Total number of people	Training Total hours
Process safety management	426	1737	367	2280	58	230
Work safety training/promotion	278	1,634	172	290	10	18
Environmental protection training	368	1310	41	479.5	21	210
On-the-job safety and health education and training(Including on-the-job and return training for operation supervisors)	475	1,499	44	652	37	340
Emergency response drills	692	1,355	177	655	14	56
Self-defense fire formation training	244	976	0	0	0	0
Firefighting training/promotion	39	117	58	317	21	96
Workplace health promotion seminars	38	81.5	125	163.5	19	19
First aid and vocational nursing education	84	353	12	63	4	27
Total	2,644	9,062.5	996	4,900	184	996

Note: First aid and vocational nurses are required to take a 3-hour training course over 3 years.

6.4.2 Occupational health management ► (GRI 403-3, 403-4, 403-6, 403-8, 403-10)

CGPC conducts annual operational environment monitoring and chemical classification management for hazardous chemicals (Please refer to 5.1.1 Hazardous Substances and Waste Disposal and Management). We commission large hospitals to conduct health examination every year to protect the health of employees, and report the results to the competent authority for future reference. The 2022 examination rate was 100% (covering employees in the headquarters in Taipei, CGPC's Toufen factory, TVCM and CGPCP's Linyuan factories). The jobs that require specialized health examination include works involving noise, lead, dust, Vinyl Chloride Monomer (VCM), dimethylformamide, chromic acid and its salts, cadmium and its components, n-hexane and ionizing radiation.

Operations of occupational health and safety

- (1) We adopt a hierarchical health management, and all conditions are divided into either Level 1 or Level 2 after examination by doctors. Level 1 refers to that the specialized health exam or the follow-up results are determined as normal by doctors. Level 2 refers to that the specialized health exam or the follow-up results are determined as abnormal but not related to the work environment by doctors.
- (2) The 2022 results of specialized health examination are shown as follows, and the examination rate was 100%.
- (3) No occupational illness cases in 2022.
- (4) In 2022, a total of 137 employees received health care services through the implementation of health care programs. Occupational medical specialists were commissioned to visit the company on a monthly basis to provide health services to employees, aiming to enhance their physical and mental well-being.
- (5) For those who are found to show abnormality during the specialized health examination, they are arranged for return visits, and physicians of occupational medicine will give them personal health guidance.
- (6) Absence rate is also one of the indicators for evaluating workplace health. Employees may be affected by factors such as work pressure or health risks, resulting in decrease of morale and increase of absence rate. The statistical table is as follows:
- (7) In order to effectively protect the safety and health of employees, we have identified 12 needs for training based on job type, work environment and other indicators, and arrange training sessions in proportion to the incidence rate and the impact to the Company's operation shown as follows:
- (8) We have provided professional blood pressure monitors for employees to develop the habit of measuring and recording their blood pressure for doctors' reference. The earlier we find the illness, the faster we can get it treated.
- (9) Create a friendly workplace environment
CGPC and TVCM provide female employees with a friendly work environment and protect their work rights. We have formulated measures for maternal health protection in the workplace and the promotion of breastfeeding (collecting) milk. By setting up nursing rooms and offering physical and mental health assessment during pregnancy to create an employment environment for female employees to work without burden, we can protect the physical and mental health of female employees.
- (10) TVCM promote labor health services, conduct health risk assessment and management, and take measures related to health promotion, as well as workplace selection, assignment and reinstatement of work. These measures improve physical and mental health of employees and create a healthy workplace. We arrange occupational specialists to come to the Company every 3 months to conduct health consultation to help employees know their health status, and implement four main programs. Every employee receives one health examination per year, and the items checked and frequency are better than the regulatory requirements. In 2022, all 164 employees of TVCM received their health examination. Among them, 53 received specialized check for Vinyl Chloride Monomer (VCM), and appropriate health management measures are adopted for the results. In 2022, 13 people were placed in Level 2 for their specialized work, and all have completed the health interview, for a completion rate of 100%.
- (11) In order to make the workplace healthier, TVCM hold health seminars from time to time.
In the first half of 2022, two health promotion seminars were held. On June 23, a seminar on the prevention of hazards from carcinogenic chemicals was conducted with 13 participants. On July 25, a seminar on new perspectives in cancer prevention and treatment took place with 45 participants. In the second half of 2022, two health promotion seminars were organized. On November 10, a seminar on gastrointestinal health was held, and it was attended by 35 people. On November 14, a seminar on the analysis of the annual internal health check-up results and obesity management was conducted, with 32 participants.
- (12) CGPC and TVCM have collaborated with the Occupational Safety and Health Administration to implement testing the fit of respirators for the respiratory protection program. Workers who work in hazardous environments are required to take proper respiratory protection measures based on the characteristics of the harmful substances in the air in the work environment. We have established and promoted a respiratory protection program, and all on-site operators have qualified the tests, ensuring their respiratory protection during operations.
- (13) CGPC collaborated with the Toufen City Health Center to organize tobacco control education training as part of the "Smoke-free and Harm-free, Real Health" campaign.
- (14) With the aim of safeguarding employee health, CGPC has installed three AED and encourages employees to participate in CPR operation training courses.
- (15) As the COVID-19 pandemic continues to escalate, Chairman Wu expresses concern for the health and safety of all employees. As a special measure, he has provided Sun Ten's "SUN TEN NATURECEUTICA" Honeysuckle-Astragalus Safety Protective Teato all employees, enhancing their protective capabilities.

► 2022 Health Caring Implementation Status

• Health Caring Operations Process:

Annual Health Check Report from the previous year→According to the overall report analysis, abnormalities are classified into three levels→(1)Level A to B: Occupational care and attention. (2)Level C: Arrangement for occupational medical care. When providing occupational care and attention, if a colleague's health condition requires a more specialized diagnosis, they will be referred to occupational medical care.

• In 2022, a total of 137 individuals were identified as care recipients (out of 834 individuals who underwent health checks in 2021). The following actions were taken:

Number under care	Implementation Status
137	<ul style="list-style-type: none"> The employees are assessed by occupational physicians and occupational health nurses together. They are arranged to meet in a conference room, where the occupational physician provides one-on-one health care and guidance based on the nature of their work. After the health care session, employees gain a better understanding of their own physical condition and make efforts to improve any health abnormalities.

Note: According to the regulations of labor health protection, there are no employees classified as management level three or higher.

2022 Status on specialized health checkup

(Unit: people)

Operations	Company		CGPC (Toufen factory)		TVCM (Linyuan factory)		CGPCP (Linyuan factory)	
	Expected	Examination rate	Expected	Examination rate	Expected	Examination rate	Expected	Examination rate
Noise	184		—		—		—	
Lead	43		—		—		—	
Dust	295		—		—		—	
Vinyl Chloride Monomer (VCM)	94		53		32			
Dimethylformamide	45	100%	—	100%	—	100%	—	100%
Chromic acid and its salts	14		—		—		—	
Cadmium and its compounds	17		—		—		—	
n-hexane	3		—		—		—	
Ionizing radiation	2		—		—		—	

Source: CGPC's 2022 specialized health examination report.

Note: There were no abnormal findings in the special health examinations.

Occupational medical interviews



Provides employees with health consultation

Health promotion seminar, Protect employees' health



"Smoke-free and Harm-free, Real Health" campaign



New Perspectives of Cancer Prevention and Treatment



Gut Health Seminar



Respiratory mask fit testing

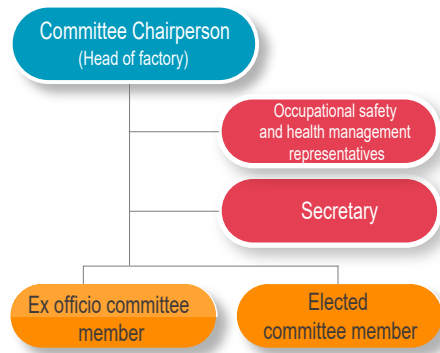


Continued Vigilance in COVID-19 Prevention Strengthening Immunity for Health and Well-being

6.4.3 Occupational safety and health organizations ▶ (GRI 403-1, 403-4)

We have established the Occupational Safety and Health Committee in accordance with the occupational safety and health management measures (CGPCP has less than 100 employees, and there is no need to establish such committee). Labor representatives are appointed by unions, and the proportion of committee members is higher than the one-third standard set by the laws and regulations. The committee meets once a quarter on a regular basis, with labor representatives speaking out for all employees and discussing issues related to environmental protection, safety and health, etc. with the management.

CGPC (Toufen Factory), TVCM (Linyuan Factory)
Organizational chart of the Occupational Safety and Health Committee



Proportion of 2022 occupational safety and health committee members

By company	Committee member type	Number of people	Percentage
CGPC (Toufen factory)	Elected committee member (labor representative)	9	39%
	Ex officio committee member (employer's representative)	14	61%
	Total	23	100%
TVCM (Linyuan factory)	Elected committee member (labor representative)	9	36%
	Ex officio committee member (employer's representative)	16	64%
	Total	25	100%

Note: The elected members are labor representatives who are workers performing works at the workplace controlled by the organization.

6.4.4. Contractor safety management ▶ (GRI 403-1, 403-5, 403-8)

We have established the Contractor Environmental Safety and Health Management Guidelines, which includes arranging education and training before work, holding communication and coordination meetings, and giving hazard notifications. Before work starts, it must pass safety inspection, and a work safety permit must be signed. Safety supervision during the work must be enforced. We also cooperate with the Occupational Safety and Health Administration to invite contractors to join the Safety and Health Family initiative, so as to improve the overall self-directed safety and health management standard of contractors.

▶ Passed the ISO 45001 2018 Occupational safety and health management system verification



▶ Implementation of contractor management ▶ (GRI 2-8)

Every year, contractors must be informed of hazards before entering the factory for work. Before the Lunar New Year holidays, a joint operation coordination meeting and education and training promoting safety of contracting works must be held. In 2022, a total of 4,562 person-time attended the safety education and training for contractors before they enter the factory for work.

2022 number of sessions and participants of the contractor work safety and health field visit and promotion education and training at each factory

By company	Number of sessions	Participating person-time
CGPC (Toufen factory)	401	2,374
TVCM (Linyuan factory)	110	2,033
CGPCP (Linyuan factory)	70	155
Total	581	4,562

Note: TVCM and CGPCP did not have incidents involving contractors for three consecutive years from 2020 to 2022.

Outline of discussion topics of the Occupational Safety and Health Committee in 2022

01. Revision of Safety Working Hours Incentive Policy
02. Public Hazardous Materials Safety Management Matters
03. Management Regulations for Preventing Contamination of Underground Water Bodies in Storage Systems and Installation of Monitoring Equipment
04. Addition of New Regulations for Contract Management
05. Implementation of AI Facial Recognition System for Contractors
06. "USIG Safety and Environment Instant Communication" Reporting Platform
07. Safety Knife Evaluation and Procurement
08. Improvements in Diesel Barrel Handling
09. Issue of Excessive Speed of Vehicles within the Plant Premises
10. Safety Device Interlock for Abrasive Cutting Machine and Guarding System
11. Procurement of Grinding Machines and Grinding Wheels with TS Certification
12. Reporting of Occupational Accident Situations
13. H-CARD Hazard Identification Card Production Instructions
14. Replacement of Locking Mechanisms for Fire Pipeline Valves
15. Bicycle Riding within the Factory Building Issue
16. Recognition and Incentives for Accident-Free Units' Supervisors
17. Issues of Unsafe Working Areas
18. Sampling Issues for Inspection Personnel
19. Issues Regarding New Employees Operating Machinery
20. Issues Related to Changes in Relevant Regulations
21. Electric Stacker Issues
22. Issues with Education and Training Records
23. ISO Internal Audit Personnel Training

6.4.5 Emergency response ▶ (GRI 403-7, 403-5)

We have established the Emergency Response Plan Guidelines, and regularly organize emergency response drills according to the hazard characteristics of each process (such as the number of emergency drills to be run and the number of people in each plant in 2022). The main purpose is to strengthen personnel's capability to respond to emergencies, determine correct handling procedures, familiarize the use of safety protection equipment, and provide timely action guidelines in the event of a disaster to ensure personnel and environmental safety and normal factory operation, further reducing the potential loss from accidents to a minimum.



CGPC and TVCM have been honored with the third place in the "TRCA 2021 VCM Joint Defense Organization Online Tabletop Exercise."

In view of the provisions of the Disaster Prevention and Protection Act and the Toxic and Concerned Chemical Substances Control Act, companies should have the capability for hazard prevention and emergency response. The Taiwan Responsible Care Association (TRCA) conducts regular field exercises every year to strengthen the emergency response capabilities of various teams. Through voluntary initiatives and continuous improvement within the industry, companies aim to achieve sustainable operation and international sustainable development goals, gaining recognition from the public and becoming good neighbors in the community. For the top-performing teams (top 3), an award ceremony will be held during the "2022 TRCA Annual Conference and Responsible Care Management Seminar" on October 27, 2022, to commend and encourage their achievements.

Emergency Drill Statistics for the Year 2022

By company	Number of sessions	Participating person-time
CGPC (Toufen factory)	37	692
TVCM (Linyuan factory)	9	177
CGPCP (Linyuan factory)	4	14
Total	50	883

Name, person-time, hours of training courses

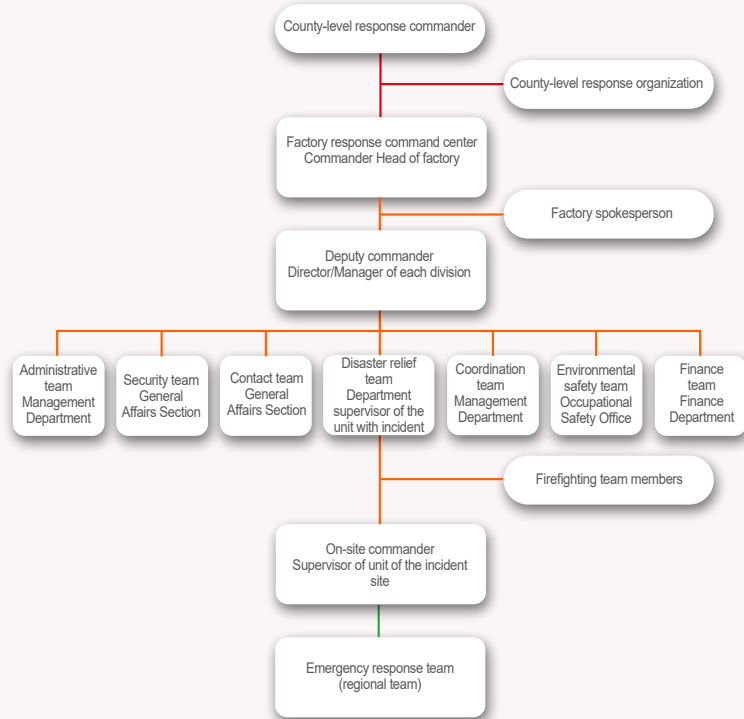
Course name	Person-time/Hours	Gender	Supervisors	Not supervisors	Total
Self-defense fire team training, emergency response drills, process safety, safety and health education and training, operation safety, fire prevention promotion, etc.	Person-time	Male	867	2,778	3,645
		Female	13	166	179
	Total person-time		880	2,944	3,824
	Hours	Male	3,138.0	11,145.0	14,283.0
		Female	39.5	636.0	675.5
	Total hours		3,177.5	11,781.0	14,958.5

Average Occupational Safety Training Hours for male: 17.6 hours. Average Occupational Safety Training Hours for female: 7.9 hours.

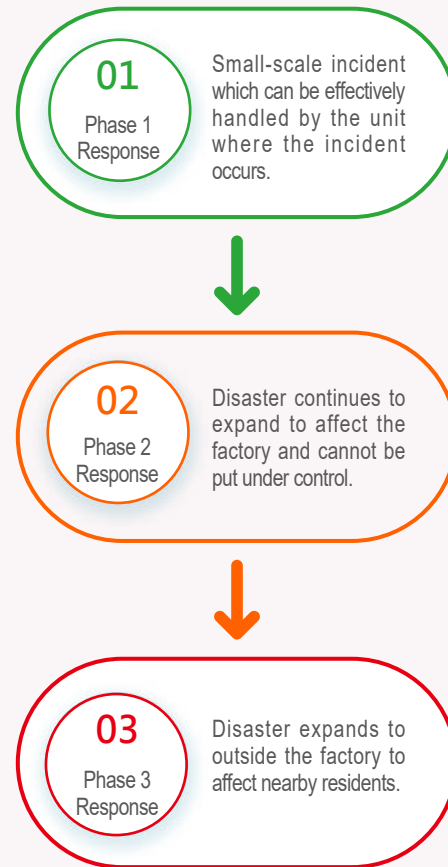
Emergency response process and implementation of the emergency response procedures at various phases

1. Emergency Response Organizational Structure

- Contingency framework for the Phase 1 (can be effectively handled by the unit where the incident occurs)
- Contingency framework for the Phase 2 (disaster continues to expand to affect the factory and cannot be put under control)
- Contingency framework for the Phase 3 (disaster expands to outside the factory to affect nearby residents)



2. Emergency Response Process



3. Procedures for actual implementation of emergency response



Status of emergency response training and drills at each factory

CGPC: Strengthen personnel's capability to respond to emergencies, determine correct handling procedures, and familiarize the use of safety protection equipment to ensure personnel and environmental safety and normal factory operation, further reducing the potential loss from accidents to a minimum.



CGPC emergency drills (outdoor drills)



CGPC emergency drills (indoor classes and rehearsals)

TVCM: Each shift holds emergency response drills every half a year according to the hazard characteristics of each process. The main purpose is to strengthen personnel's capability to respond to emergencies, determine correct handling procedures, familiarize the use of safety protection equipment, and provide timely action guidelines in the event of a disaster to ensure personnel and environmental safety and normal factory operation, further reducing the potential loss from accidents to a minimum.



TVCM emergency drills



CGPCP: Hold emergency response drills twice a year in accordance with the Enforcement Rules of Fire Services Act, and emergency response drill once a year in accordance with the Regulations Governing Toxic Chemical Substances Risk Prevention and Response Plans, and the two can be held at the same time.



CGPCP emergency drills

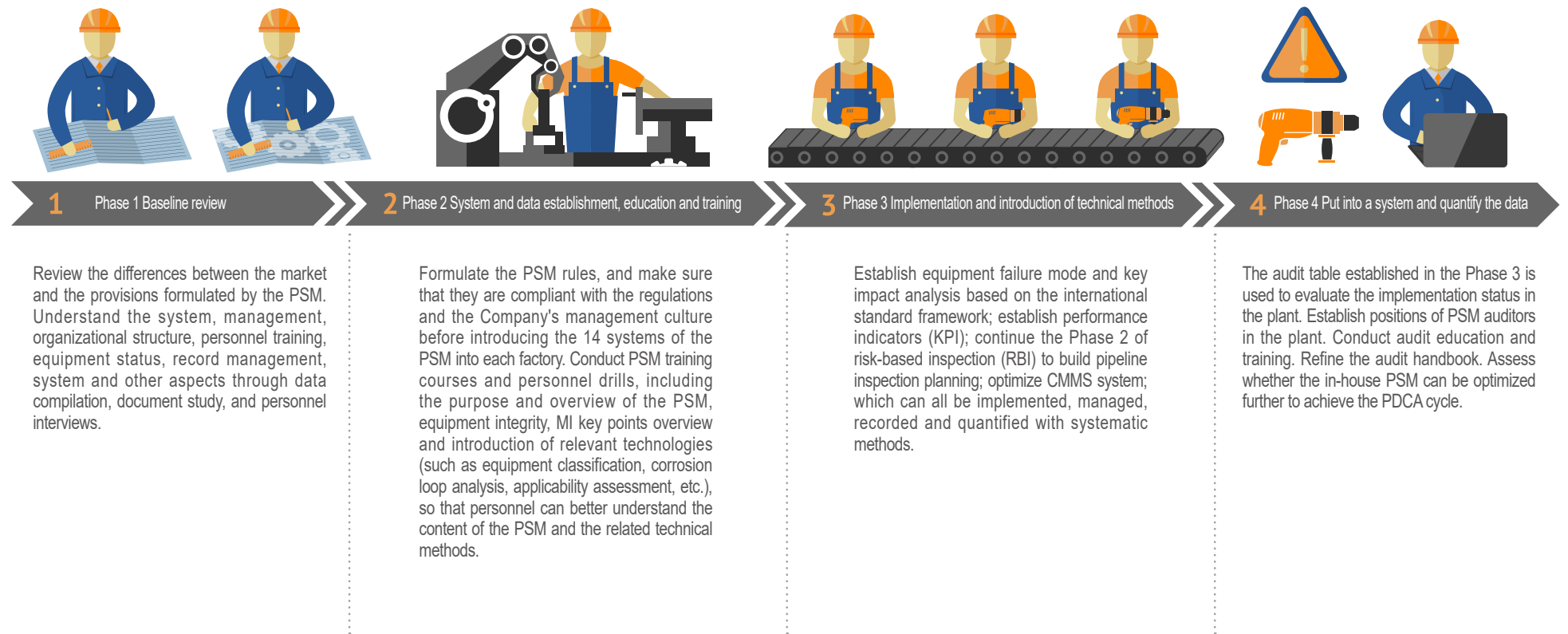
6.4.6 Process safety management ▶ (GRI 2-8, 403-4, 403-5, 403-7)

CGPC's hazardous work locations include the factory in Toufen and the PVC resin processing area in CGPCP's Linyuan factory, which are considered Type C hazardous workplace. TVCM's Linyuan factory has Type A and C hazardous workplaces spread out in the manufacturing area, filling area, storage tank area, etc. We apply to the competent authority for permit in accordance with the Hazardous Work Place Review and Inspection Regulations to obtain approval documents. Due to that our factories are close to the urban area, we have implemented the process safety management (PSM) to reduce the risk of failure of various protective measures and prevent disasters which may affect in-house employees or even residents nearby.

Implement process safety information and assessment, labor participation, hot work permit, change management, incident investigation, compliance audit and other major items to understand the best state of equipment and personnel in the factory in process operation and reduce the occurrence of various types of risks, and prevent false alarm events from becoming disasters.

▶ Promote process safety management (PSM)

Vinyl Chain #3 factory implemented the PSM, and Chairman Han-Fu Lin of TVCM led all employees to participate and implement the project. Hired external consulting teams which adopted the industry-academia collaboration to help us implement the PSM project, including system establishment, technological methods, etc., which was divided into four phases.



Management objectives

Promote process safety management, which has 14 items, employee participation; process safety information; process hazard analysis; operating procedures; education and training; contracting management; pre-startup safety inspection; mechanical integrity; hot work permit; change management; incident investigation; emergency planning and contingency; compliance audits; and trade secrets to ensure equipment integrity and personnel familiarity with equipment (including protective equipment).

Promoted the establishment of CMMS in 2022

The implementation of CMMS was completed in 2022, consisting of a total of 12 modules, including: 1. Equipment Management Module, 2. Maintenance Work Order Module, 3. Personnel Management Module, 4. Coding Maintenance Module, 5. Maintenance Scheduling Module, 6. Inspection Management Module, 7. Shutdown Management Module, 8. Spare Parts Management Module, 9. Procurement Management Module, 10. Reporting Module, 11. FMECA Module, 12. KPI Module: The aim of this technical implementation is to optimize equipment management and maintenance, thereby reducing losses and preventing incidents caused by equipment abnormalities

Improvement plan items

The contents of the implementation include the optimization of procedural documents such as Incident investigation, hot work permits, contractor management, protection of trade secrets, and emergency response. It also involves the development of individual training plans for employees, implementation of pre-startup safety checks, adherence to change management procedures, LOPA analysis, equipment classification (SCE), continuous improvement of equipment PM/PDM plans, establishment of RBI analysis and corrosion loops, and tracking and management of aging equipment. Detailed information regarding these activities is provided in the planned worksheet.

2022 Process safety performance indicators are shown as follows:

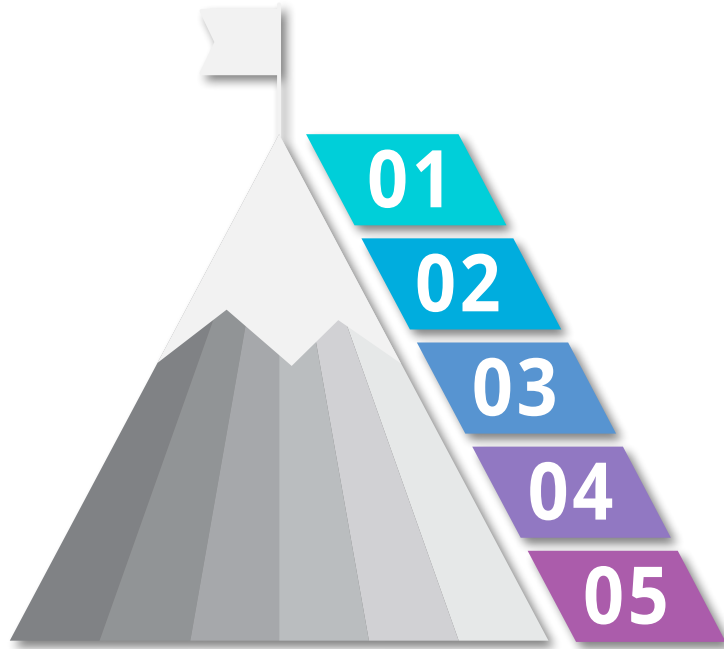
Item	Code	Content of indicators	Unit	2022 performance
Process safety and emergency response	RT-CH-540a.1	Process safety incident counts (PSIC)	Number	CGPC: 0 TVCM: 0 CGPCP: 0
		Process safety incident counts (PSTIR)	%	CGPC: 0 TVCM: 0 CGPCP: 0
		Process safety incident severity rate (PSISR)	%	CGPC: 0 TVCM: 0 CGPCP: 0
	RT-CH-540a.2	Number of transportation incidents	Number	CGPC: 0 TVCM: 0 CGPCP: 0

Note:
 (1) Statistics of the process safety incidents (PSIC) meeting the following four criteria:
 (a) Related to manufacturing process;
 (b) Chemical spills exceed the minimum reporting requirements, resulting in death or injury to employees or contractors or hospitalization of a third person (not employees or contractors); official declaration of community evacuation or shelter-in-place; the direct loss of the Company caused by the fire or explosion exceeds USD\$ 25,000, any of which needs to be reported.
 (c) The incident occurs in a production, distribution, storage, public or pilot plant.
 (d) Serious spills in which the amount of leakage exceeds the allowable limit in any one hour.
 (2) Process safety total incident rate (PSTIR) (= Process safety incident cases x 200,000 man-hour / Total employee work hours)
 (3) Process safety incident severity rate (PSISR) (= Total severity score for all process safety incidents x 200,000 man-hour / Total employee work hours)
 (4) Cause of incident: Used incorrect gaskets which caused leakage (chemicals), and no one was injured. Improvement measures: When the equipment is undergoing acceptance check, the auxiliary facilities should be checked in addition to the main body, and the PSSR should be implemented when the equipment is ready to go online.

Plan work:

Plan work	Descriptions
Procedural documents	Optimization of incident investigation, hot work permits, contractor management, trade secrets, and emergency response procedures documents.
Education and training	Based on job responsibilities, individual training plans for employees are established.
Pre-startup Safety Review	Prior to the commissioning or operation of new equipment or process units within the facility, a pre-startup safety review is conducted to ensure compliance with safety protocols.
Process Change Management	When there are changes or modifications to process technology, operating procedures, process equipment, hazardous areas, facilities affecting the process, or the use of legally required hazardous machinery or equipment within the facility, change management procedures are strictly followed.
Process safety assessment	For scenarios where the severity of environmental and personnel consequences is classified as Level A, LOPA is conducted.
Follow-up audit	According to the annual audit plan, internal audits are conducted within the facility, and any identified deficiencies are tracked and reviewed for further investigation.
Equipment management	1. Take inventory of equipment and classify them, and verify in-house SCE equipment.
	2. Establish a corrosion handbook, screen out the key equipment/pipelines, and establish a corresponding inspection plan.
	3. Propose recommendations for system improvement based on the in-house maintenance management system and maintenance records.
	4. Audit and tracking management of aging equipment items.
Explosion-proof Electrical Equipment Management	In accordance with the regulations on explosion-proof electrical equipment in our country, the establishment and review of existing explosion-proof electrical equipment are carried out.
Performance Indicator Procedure Development	Based on process safety management objectives, procedures and standards for implementing various performance indicators are established.

► **A good basis leads to a good system**



1. **ISO 55000~55002 Asset Management**
Asset management practice and implementation
2. **EN 13306 Maintenance terminology**
Maintenance terminology
3. **ISO 14224 Petroleum, petrochemical and natural gas industries -- Collection and exchange of reliability and maintenance data for equipment**
Petroleum, petrochemical and natural gas industries – Collection and exchange of reliability and maintenance data for equipment
4. **EN 15341 Maintenance Key Performance Indicators**
Maintenance and reliability indicators
5. **EN 16646 Maintenance within Asset Management**
Maintain physical asset management

► **Promotion objectives and achievement results**

Establish a management system that complies with the PSM and regulations, reduce the probability of equipment abnormalities, train personnel to take response measures, prevent disasters or obtain immediate control in the early phase to prevent expansion of incident, and ensure the safety and health of personnel inside and outside the plant to achieve sustainable business operations.

2022 objectives	Carry out auditing of the 14 items of the PSM, and learn clearly what needs to be optimized during the current PSM implementation. Incorporate the use of CMMS system, and manage it electronically. Analyze equipment information and carry out maintenance management. Systematically implement equipment failure analysis to estimate its remaining service life.
2022 Performance	Phase 2 (needs about 10 to 18 months, estimated completion time: 2023/02/28): CMMS system specifications, implementation and the auditing of the 14 items of the PSM. Mainly for the construction of the system. Formulate the PSM rules based on the other domestic examples and the regulations in the US, and include the content on the optimization of the Phase 1 baseline review, in-house management culture, overall management system and manufacturing process conditions, so that the 14 items of the PSM can comply with the rules.
2023 target	PSM platform and KPI planning: After the platform planning is established and the KPIs are implemented, we can clearly understand the implementation status of the PSM. The platform has 14 major items and a total of 94 subsystems. Main functions: (1) Integration of PSM Data (2) Documentation of PSM Implementation (3) Statistical charts Present Implementation Status (4) Compilation/ Review/ Updating of Data (5) Implementation of CCPS PSM Performance Indicators (6) Alignment with The Company's technology initiatives
2025 target (Intermediate-term)	Cooperate with external consultants (industry-academia collaboration) to establish the in-house PSM system, implement technical methods, and systematically manage CMMS.
2030 target (Long-term)	Each PSM work item refers to the Recognized And Generally Accepted Good Engineering Practices (RAGAGEP) to have a common language with international standards. Complete the following tasks: 1. 14 items of PSM comply with the requirements to achieve feasibility. 2. CMMS systematically manages equipment, establishes the Group's reliability data, and keeps track of equipment status. 3. Quantify KPIs, regularly inspect KPIs related to maintenance and PSM, and find out the best management practices of the factory. For PSM auditing works, regularly schedule audits, and inspects the areas that need to be optimized and improved in the factory to achieve the PDCA cycle.

Key promotion items

1 Senior executives' commitment and support



For the implementation of the PSM, Chairman Han-Fu Lin of TVCM presides over meetings to regularly review the progress.

2 Regularly hold education and training sessions



In order to enable employees to understand the importance of PSM, review and establish labor participation programs so that they can fulfill their respective responsibilities in line with the principles of labor participation in the 14 items of the PSM. Arrange joint participation of employers and employees in the planning, development, implementation and improvement of safety programs in the Company, further achieving process safety management. In 2022, CGPCP organized [PSM Auditor Training](#), taking a leading position in the industry.



3 Periodically review/revise process-related operating procedures

Process safety events have high-risk hazards in nature. Therefore, operation phases in addition to normal operations, such as emergency operations, should be considered, and corrective measures should be identified in advance for all deviations. Prepare operating procedures in writing can help us further understand the process, and improve process safety for more efficient operations, thereby reducing downtime and improving quality.

4 Contractor management

In order to prevent contractors from having catastrophic leakage that leads to catastrophic incidents during the contract period, a series of management process and follow-up, such as contractor assessment, contractor agreement organization meeting, factory entry management, toolbox meeting, process overview of hazard notification, etc., should be carried out from the beginning.

5 Participation in external activities

Regularly participate in PSM-related seminars and presentations held by government agencies/academia/third-party organizations, so as to learn about the best PSM practices from international factories and industry peers, and refine our in-house process safety management.

6.5 Transportation Safety Management ▶ (GRI 413-2)

✔ Material issue: Transportation safety management

The Significance and Impact of CGPC ▶ Transportation safety management complies with domestic laws and regulations. Prevent traffic accidents caused by man-made errors or equipment problems and environmental pollution harming the health of the public and causing life and property losses.

Develop Strategy ▶ 1. Formulate management standards for vehicle transportation, loading and unloading management, emergency equipment and detection systems.
2. Annual qualification review of transportation contractors and drivers.
3. Regular promotion, drills, spot checks and audits.
4. Ensure the operation of pipeline safety management system (PSMS), establish pipeline integrity management plan and implement pipeline risk management.

Policy Commitment ▶ Ensure that all transportation complies with regulations, improve personnel training and safety testing, and achieve the goal of zero disasters and zero accidents.

Grievance Unit ▶ Storage and Transportation Division

✔ Promotion policy	Unit	2022 goal	2022 result	2023 goal	2025 goal	2030 goal
Annual review rate of transportation contractors and tanker trucks	%	100%	100% ✔	100%	100%	100%
Improvement rate of deficiencies found by transportation safety inspection and audit	%	100%	100% ✔	100%	100%	100%
Inspection rate of pipeline adopting cathodic corrosion	%	100%	100% ✔	100%	100%	100%
Zero transportation disaster and accidents	Times/Year	0	0 ✔	0	0	0

✔ Exceeded goal ✔ Achieved ○ Partially achieved ○ Not achieved

We maintain the attitude of "Speed. Safety. Responsibility", and make sure that our transportation safety and environmental protection management comply with domestic laws and regulations. In order to ensure the safety of transportation and reduce road accidents, we have established standard operating procedures for transportation of goods, tanker trucks, and loading/unloading, and prepared defensive drills and emergency response plan for risk control of transportation safety management. We are committed to transportation safety and the prevention of traffic accidents caused by man-made errors or equipment problems and environmental pollution harming the health of the public and causing life and property losses.



Description of CGPC's transportation (including subsidiaries TVCM and CGPCP).

1. CGPC's Toufen factory / CGPCP's Linyuan factory:

All of CGPC's main raw materials are transported to the factory by the suppliers. The products produced and a small part of the raw materials imported from abroad are transported by qualified contractors. CGPCP's Vinyl Chloride Monomer (VCM) is directly transported from TVCM's spherical storage tanks, and TVCM is responsible for operating the pipelines and managing maintenance works.

2. TVCM's Linyuan factory:

Ethylene (22%) is transported by pipelines, and ethylene dichloride (EDC) and chlorine gas are transported by tanker trucks (78%), and the transportation of chlorine gas tanker trucks is managed by the seller. Part of Vinyl Chloride Monomer (VCM) and industrial hydrochloric acid are transported by tanker trucks (55%), the transportation of hydrochloric acid tanker trucks is managed by buyers. The rest of Vinyl Chloride Monomer (VCM) is transported from TVCM's spherical storage tanks to CGPCP through above-ground pipelines (45%).

Grievance measures

1. Internal grievances:

File environmental safety and health-related grievances with meetings of the Occupational Safety and Health Committee and occupational safety and warehousing and transportation units.

2. External grievances:

The occupational safety (environmental safety) and warehousing and transportation units verify the content of complaints with the unit being questioned after the complaints are received through the website, telephone, correspondence or transportation safety meetings, and the records are kept in the information reception/communication records or presented in the transportation safety meetings. If the complaints are confirmed, proper replies are provided or recorded in the meeting minutes for further actions.



We carefully employ good drivers and effectively use various management measures to improve traffic safety and reduce the occurrence of accidents. Creating a safe traffic environment to achieve "Safety first. Customer first. Value employees and contractors. Zero disaster". Our intermediate to long-term objectives are to help transportation contractors implement management measures and also make zero incident as their goals.

► Transportation safety risk management and control process

1

Establish transportation safety standards, prepare qualified inspection documents and follow relevant control regulations and measures.

2

Set transportation safety goals and action plans (sees description of major issues).

3

Joined the joint defense organization and served as the core enterprise of the inauguration meeting of the Safety and Health Family initiative, helping small and medium-sized enterprises improve the work environment.

4

Regularly evaluate whether the contractor's vehicles are inspected in accordance with regulations, and hold safety meetings.

5

Formulate and promote corresponding risk control countermeasures (emergency response plan).

Transportation Safety Management and Evaluation

1. Vehicles and equipment:

- 1-1 Formulate specific rules for handling accidents of Vinyl Chloride Monomer (VCM) road tanker transport, specifications for the use of fronts and tanks, and control standards for leakage control at the loading and unloading ports of tanker trucks.
- 1-2 Management rules for Vinyl Chloride Monomer (VCM) emergency response equipment and detection system.
- 1-3 Regularly check the repair and maintenance records of the transportation contractors.

2. Drivers:

- 2-1 In addition to the basic licenses, new and old drivers are required to have more than 4 hours of road driving probation or training. They need to have experience in transporting high-pressure tank trucks, pass fifteen times of evaluation of on-site operations with a grade of at least an A before being allowed to enter the factory to conduct operation.
- 2-2 Regularly disseminate case studies to the drivers, and conduct irregular inspection of tank trucks and regular audit of drivers.

3. Handling of goods:

- 3-1 Commission qualified contractors to perform transportation tasks.
- 3-2 Raw materials and products are transported by pipelines and tank trucks, and the related operations are carried out according to the operating standards.

4. Road transportation:

- 4-1 Apply for permit for road transportation of dangerous goods (Vinyl Chloride Monomer (VCM) according to law.
- 4-2 Monitor by using external GPS and DVR, retain the records, prepare monthly reports and follow up the progress of improvement.

5. Safety audit:

- 5-1 Review the qualifications of transportation contractors every year, establish communication channels with transportation contractors, raise the qualifications requirements of new drivers to transport VCM, or conduct regular sampling inspections before and after tanker trucks loading and unloading to improve the reliability of loading and unloading ports. The 2022 review rate for transportation contractors and tanker trucks is 100%. Inspection and audit found 88 cases of deficiencies in transportation safety, and a total of 88 cases have been improved for an improvement rate of 100%.
- 5-2 Regularly promotion and drills and update emergency response plans. (Minimize the impact when accidents occur). In 2022, there were 0 transportation disasters and accidents.

Transportation contractors are reviewed once a year.

Review qualifications of transportation contractors:

- A transportation company registered with the government.
- Has trained and qualified safety and health management specialists.
- Evaluate its capacity, efficiency and cooperation, and work quality every half a year, and propose improvement plans based on transportation issues reported by customers through transportation meetings.
- Regular inspection of contractors' transportation vehicles according to regulations.
- The transportation contractors shall hold a safety meeting every quarter to ensure that the products can be safely transported to the destination and minimize the environmental impact of transportation.

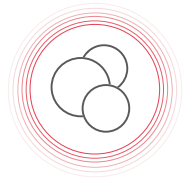
Annual qualification review items of transportation contractors:

- A transportation company registered with the government.
- Roster of work personnel accessing the factory.
- Contractors' letter of commitment to work safety and health.
- Designated labor safety and health personnel certificate.
- Labor insurance card or occupational disaster insurance card of each personnel accessing the factory.
- Employer's liability insurance for more than NT\$ 4 million for each personnel accessing the factory.
- Information of personal data for contracted work.
- Minutes of the environmental safety and health coordination meeting.
- Hazard notification records.
- Test form of hazard notification for accessing the factory.
- Re-contract affidavit.
- Driver license.
- Job safety analysis.
- Certificate of criminal records (no more than three times of drunk driving).

Number of inspections of transportation contractors of CGPC's raw materials and finished goods in the past 3 years.

By company	Descriptions	Item	2020	2021	2022
CGPC	Product transportation	Number of inspections	3	3	3
		Qualified rate	100%	100%	100%
Taiwan VCM	Transportation of raw materials	Number of inspections	7	7	7
		Qualified rate	100%	100%	100%
CGPCP	Product transportation	Number of inspections	1	1	1
		Qualified rate	100%	100%	100%
Total		Number of inspections	11	11	11
		Qualified rate	100%	100%	100%

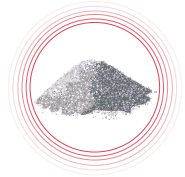
6.5.1 Transportation safety management of raw materials and finished products



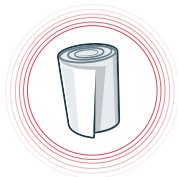
2022 Raw materials shipment volume
VCM and Solar Salt: **18.8** (10,000 tons)



2022 finished product shipment volume
caustic soda, Hydrochloric Acid, and Bleaching Water: **17.0** (10,000 tons)



2022 finished product shipment volume
PVC resin: **16.7** (10,000 tons)



2022 finished product shipment volume
Fabricated Products (pipes, PVC film, PVC leather, PVC compound): **5.4** (10,000 tons)

2022 Improvement rate of deficiencies found by transportation safety inspection and audit

By company	Total cases of deficiencies	Number of cases improved	Improvement rate
CGPC (Toufen factory)	54	54	100%
Taiwan VCM (Linyuan factory)	28	28	100%
USI Corporation (Linyuan factory)	6	6	100%
Total	88	88	100%

6.5.2 Emergency response planning and training

1 Promotion

1. Safety awareness
2. Safety and control of use of stackers
3. Identify potential hazards
4. Restricted areas for loading and unloading goods
5. Case studies and description of safety precautions
6. Work rules and emergency notification procedures
7. Warehouse escape map and facilities

2 Drills

1. Task teams and explanation
2. Fire drills
3. Check for injuries at a safe place and call for support
4. Notify relevant supervisors and security guards
5. Press the fire alarm
6. Operate fire extinguishers, pull-pull-press
7. Operate the hoses and water guns
8. Moving teams help rescue property
9. Practice first aid and send the injured to hospitals
10. Evacuate and count people

3 2022 Number of emergency drills and participating person-time of each factory

By company	Number of sessions	Number of people Participating
CGPC (Toufen factory)	11	114
Taiwan VCM (Linyuan factory)	8	167
USI Corporation (Linyuan factory)	2	16
Total	21	297

► **Emergency drills and promotion**



Promotion description



Operate fire-fighting facilities



Training of contractors



Stacker Safety drills



Protective clothing for drills



Call for support and report

Meeting of the Storage and Transportation Units and Transportation Contractors - Environmental, Health, and Safety Agreement Organizational Meeting.

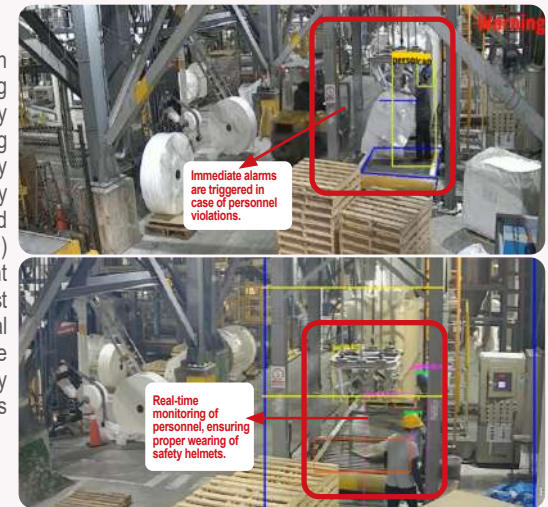
CGPC has established an agreement organization to reduce operational conflicts between the storage and transportation units and the transport contractors. Monthly meetings are scheduled with the contractors for the purpose of conducting the "Environmental, Health, and Safety Agreement Organizational Meeting." The contractors are required to comply with environmental, health, and safety regulations during their operations. Feedback from the contractors is discussed, and continuous communication and discussion are emphasized to achieve the goal of safe transportation.



Process safety management for Storage and Transportation Operations

Installation of Protective Systems

The main improvement focus is on ensuring worker safety, confirming the implementation of various safety protection facilities, and strengthening internal audits. We integrate safety operation management techniques by combining the Occupational Safety and Health Management System (OSM) with the Process Safety Management System (PSM). We also utilize the latest technology, such as Automated Optical Inspection (AOI) and safety image recognition systems, to enhance safety operations and minimize risks of hazards and environmental contamination.



2022 “USI Corporation Technical Exchange Meeting”

USI Corporation has held the annual factories technical exchange seminars to share technical knowledge and discuss problems to achieve resources sharing and improve the effect of energy conservation and carbon reduction and safety operation.

By company	CGPC
Award Descriptions	Awarded the Group's Technical Exchange Case Studies: Third Place
Presentation of Case Study	Space Packaging Intelligence Enhancement and Process safety management for Storage and Transportation Operations
Presenter	Factory Director Lai, Wei-Hung

Description:

- 1. Improvement Motivation and Reasons**
Following an incident involving a worker getting caught in a conveyor belt, a related error tree analysis and process safety assessment were conducted to identify hazards. Management improvement plans were proposed based on the categorized hazards.
 - 2. Safety Management**
Implementation of equipment automated check and functional verification of safety protection emergency braking systems, along with Job Safety Analysis (JSA), were carried out to ensure the functionality of safety measures and provide work hazard warning messages through the installation of signage.
 - 3. Health and Environmental Management**
Improvements were made to address issues such as dust dispersion from relevant equipment. Examples of these improvements include the implementation of pneumatic inflatable clamps and the installation of dust collectors with breathable filter pipes in buffer tanks. The objective of these improvements is to provide a safe working environment and promote the well-being of workers.
 - 4. Improving Management and Economic Performance**
Prevention of recurrence: The main improvement focus is on ensuring worker safety, confirming the implementation of various safety protection facilities, and strengthening internal audits. We integrate safety operation management techniques by combining the Occupational Safety and Health Management System (OSM) with the Process Safety Management System (PSM). We also utilize the latest technology, such as Automated Optical Inspection (AOI) and safety image recognition systems, to enhance safety operations and minimize risks of hazards and environmental contamination.
- Case Summary Communication Case, please refer to [Communication Case](#) link

6.5.3 Pipeline maintenance plan

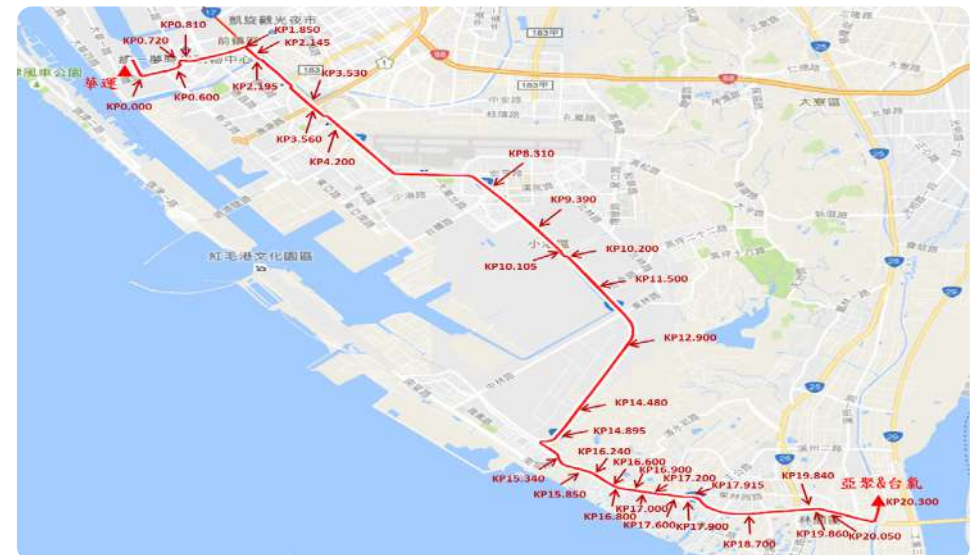
We have formulated the Maintenance Plan for Existing Industrial Pipelines, which cover safety management systems, information management systems and integrity management plan for pipelines, patrol inspection plans, repair, maintenance and inspection, operations and management of control room in order to improve the transportation safety of underground pipelines, effectively manage underground pipeline facilities outside the factory and establish proper management procedures to prevent potential disasters from occurring due to pipeline corrosion inside and outside the factory and improper digging of external units, and adopt proper measures to reduce environmental pollution and prevent losses of human life and properties.

In order to identify and assess the hazards and potential risks of off-site underground pipelines and implement necessary control methods, we have established risk management measures of pipeline integrity management (PIM) based on international standards, which can eliminate or reduce the risk of unacceptable hazards and ensure the safety of underground pipelines. We have carried out a comprehensive inspection and risk analysis of the safety of the underground pipelines, and formulated relevant mitigation measures for the parts with higher risks.

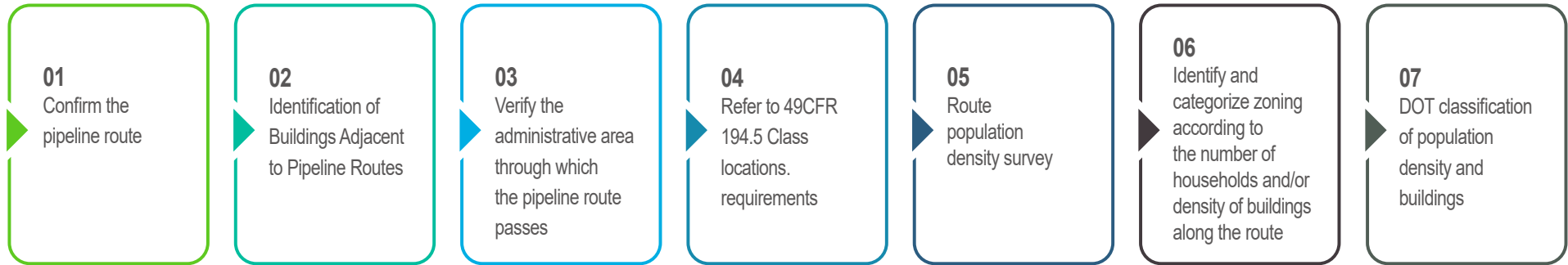
The long-distance external underground pipelines at the TVCM Linyuan Factory include:

Ethylene materials are transported through the underground pipelines from China General Terminal & Distribution Corporation to TVCM's spherical storage tanks.

Pipeline risk quantitative level/Population density chart



► Identification steps of TVCM's pipelines



- Evaluate the high consequence areas (HCA) along the pipelines divided into 15 sections according to 7 steps. The whole section has 19.94 kilometers in the high consequence area, and only a section of 0.36 kilometers is not a high consequence area.

► Pipeline maintenance and management flow chart

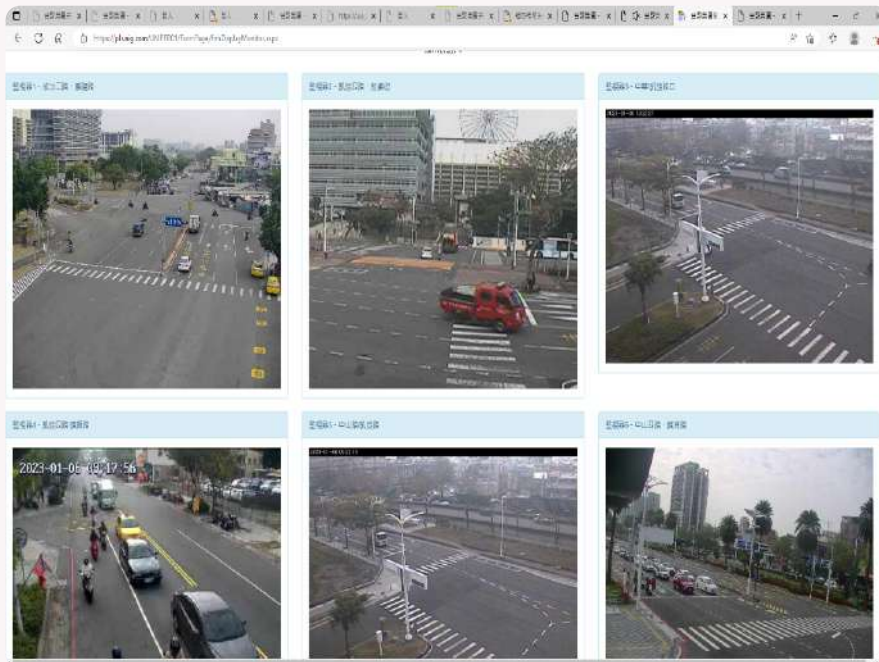


- TVCM's Linyuan factory adopts the boundary connection technique on the route of the underground pipelines to transmit the CCTV images to the USI Corporation control room, achieving 24-hour monitoring of the environmental change and road condition of the route.

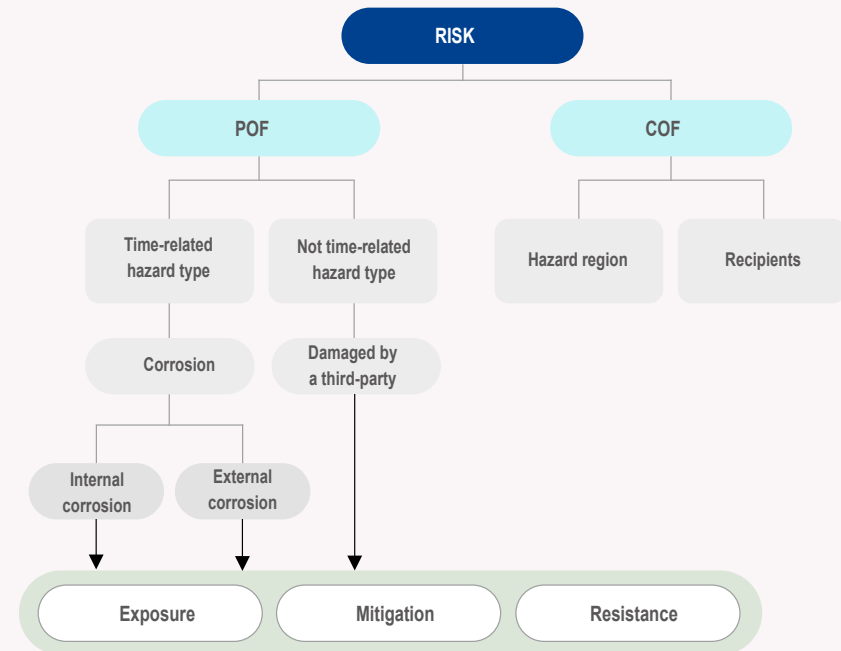
Risk assessment and countermeasures

The results of the risk assessment show that the two pipelines currently in use in the factory are at high risk because they pass through areas with high population density, indicating a greater potential impact on the environment and population caused by pipeline leakage. We identified high consequence areas and hazards, and then completed the risk assessment of underground pipelines. The results were submitted to a third party for review and verification of risk assessment report in 2017. In the same year, the government also promoted the construction of the Kaohsiung Intercontinental Container Center, and USI Corporation has planned and constructed storage tanks. Smart equipment has been installed for safety to lay the foundation for future operation and development.

Presentation of Real-time Road Images of Pipeline Routes



Risk assessment framework for TVCM pipelines



Underground pipeline detection target achievement rate

Detection target	result	Achievement rate
Cathodic protection testing	Four times a year	100%
Visual patrol inspection	Once per day	100%
Testing and patrol inspection conducted by engineers	Six times a year	100%

Performance of risk assessment for pipelines

Conduct overall risk assessment and judgment of risk levels based on four main risk indicators, pipeline design, corrosion, improper operation and destruction by a third party, coupled with leakage impact factors.

Performance of risk assessment for pipelines:

Implementation effect of pipeline risk assessment: Commission DNV to review the existing risk assessment methods and results, and develop a new version of risk assessment model based on the results of ILI implementation. In the maintenance and operation review briefing held on December 3, 2020, the Economic Development Bureau of the City Government of Kaohsiung proposed to reinforce the leak detection system (LDS) in accordance with Article 10 of the Measures for Management and Maintenance of Existing Industrial Pipelines in Kaohsiung City. The implementation included the existing monitoring system and simulation test of leak discharge. (The emission simulation testing for the year 2022 was successfully completed on November 16th)

Conduct leakage discharge simulation testing with the existing real-time monitoring system



6.6 Social participation

CGPC follows the USI Group's sustainability vision and goals, and builds relationships of inclusion, respect and harmony between people, the environment and the society focusing on human-centered social welfare. CGPC commits itself to social welfare with its core competency in plastics manufacturing, and environmental protection, community building and welfare, and education and activities are the three main points of its social welfare efforts. We continue to consolidate internal and external resources to promote local environmental protection activities to reduce the ecosystem damage caused by marine plastic waste; community building by cleaning environment in the neighborhood of local factories and maintaining street lighting equipment, etc.; and support of education platforms and nearby schools' digital education resources as education welfare to achieve the Group's vision and goals of "Sustainability value to create a sustainable society".



► 2022 Social welfare Key Descriptions



Environmental protection

Beach clean-up, wetland adoption

- In 2022, with the gradual containment of the COVID-19 pandemic, the beach cleanup event at Longfeng Fish Harbor was resumed, mobilizing a total of 202 participants. The cleanup efforts resulted in the removal of 750 kilograms of waste. Since 2017, a total of 814 individuals have participated in these events, and a cumulative total of 2,903 kilograms of waste have been cleared.
- The adoption of wetland by Dong-Hsing Bridge earned the Company a certificate of appreciation issued by the County Government of Miaoli. The Company donated NT\$100,000 in 2022, and has adopted the wetland for 9 consecutive years, from 2014 to 2022, donating a total of NT\$900,000.

Event Descriptions

- In 2022, the USI Education Foundation spent a total of NT\$13.61 million in various sponsorships, including scholarships and grants, university service clubs, the Alliance Cultural Foundation and Junyi School of Innovation in Taitung and other educational welfare activities.
- Started sponsoring Toufen Junior High School to implement the Junyi Academy education platform in 2017, and donated 30 units of iPad in 2021 as part of the education resources package.

Note:

The USI Education Foundation aims to engage in education based on social welfare, and has implemented the following programs:

1. Sponsoring education in remote areas.
2. Setting up scholarships.
3. Holding speeches, seminars or other social education public welfare activities.
4. Sponsoring schools or educational groups at all levels to help them participate in literature, sports, music, dance, art, drama and other activities.
5. Industry-academia collaboration.
6. Other related public welfare education programs in line with the purpose of the establishment of the Foundation.



Education and activities



Community building and welfare

Volunteer team Street Cleanup

- From 2010 to 2022, there have been a cumulative total of approximately 760 participants.

Adoption of street lights and parks

- A total of NT\$1.3 million has been donated to the adoption of 13 consecutive years. A total of 2,600 street lights have been adopted, and the park adoption maintenance has accumulated a total of 748 person-times.

Charity Club community care activities

- In 2022, there were 5 visits conducted, making a cumulative total of 102 visits for 12 years.

USI Cup tennis championship, slow pitch softball friendship tournament

- The tennis championship tournament is held once a year. The 20th tournament was held in 2022, and the tournament has drawn participation of a total of about 4,200 person-times over the years.
- Starting 2020, the USI Corporation slowpitch softball friendship tournament would be held every year. The purpose is to develop team work and improve employees' cohesion.

Donation to pandemic control efforts

- In 2022, the CGPCP (TVCM, APC, TTC, TVCM, and CGPCP) showed their support and appreciation for the hard work and risks taken by the disinfection personnel of the Kaohsiung Environmental Protection Bureau in the fight against the pandemic. Together, they donated 250 sets of protective suits to the Kaohsiung Environmental Protection Bureau to ensure the safety of the disinfection workers.

Employees Care

- In 2022, the Chairman of the Group specially presented each employee with the Honeysuckle-Astragalus Safety Protective Tea to enhance their immune system and promote well-being.

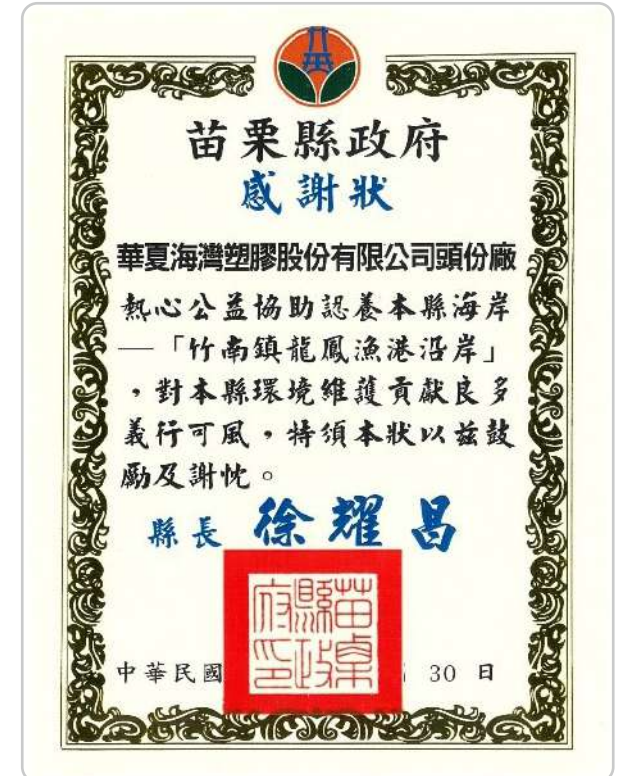
Thousand people donation campaign in Neihu Technology Park

- In January and August of 2021, the Company organized the 6th and 7th Neihu Technology Park Thousand People Blood Drive (USI Corporation was the co-organizer): 91 people; donated a total of 135 bags of blood (250cc/bag).






6.6.1 Environmental protection

Beach clean-up

CGPC's Toufen factory started to participate in the marine environment policy of the Environment Protection Bureau of the County Government of Miaoli starting 2017, taking the initiative to adopt a 500-meter section of beach by Longfeng Fishing Port in Zhunan Township. (Please refer to [Coastal Clean-up and Adoption System](#)). The annual beach clean-up event was resumed in 2022, with a participation of 202 individuals(CGPC 150、TTC 52), and a total of 750 kilograms of waste were removed.



The statistics of 2022 beach clean-up activities are as follows:

Category	PET bottle 	Glass bottle 	Tin can 	Fishing net 	Other General Waste 	Total
Weight (kg)	25	15	40	300	370	750

Dong-Hsing Bridge on Jhonggang River

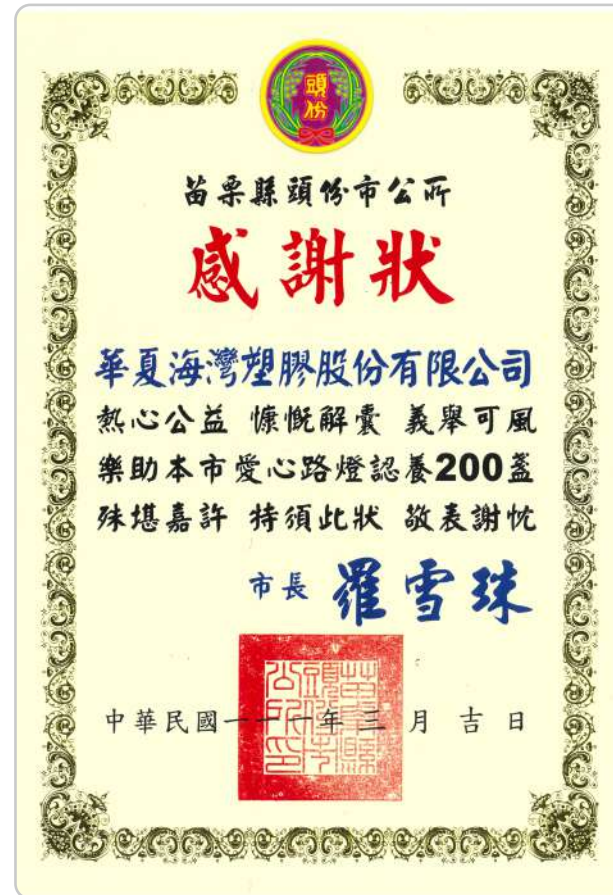
Wetland park by Dong-Hsing Bridge on Jhonggang River: We have made annual donations of NT\$100,000 for adoption and maintenance since 2014. The wetland park is located about 1.5 kilometers downstream of Dong-Hsing Bridge. It is hoped that the wetland system can effectively purify the water quality of Jhonggang River. The wetland provides an ecosystem for living creatures and birds to rest, and also serves as a leisure place for local residents, achieving the purposes of water purification, ecological regulation, recreation, education, landscaping, etc.



6.6.2 Community building and welfare

Street lights in Toufen

For the safety of local residents in Toufen, CGPC has adopted the street lights of Minzu Road and Ziqiang Road for 13 consecutive years from 2010 to 2022, donating NT\$100,000 a year to Toufen Township Office to care for 200 street lights. Accumulating an amount of NT\$1.3 million and 2,600 street lights. The Company was invited to participate the commendation event held in March 2022, receiving a certificate of appreciation from Mayor Hsueh-Chu Lo of Toufen.



Yongzhen Temple Park in Toufen



Park space in Toufen Industrial Park

There is a small park by the Toufen Industrial Park Service Center, which serves a leisure place for employees in the area. Park adoption has lasted 13 years, from 2010 to 2022. Four times a month, for a total of about 748 person-time.

A company's operations must take into consideration of caring for employees and the local environment and promoting the community development to provide a better environment. CGPC has adopted Yongzhen Temple Park, park space in Toufen Industrial Park and street lights in Toufen, provided services of volunteering teams and assisted in care for employees' health, Safety and Health Family, pandemic control management, sponsorship in the dodgeball team of Shin-Shing Elementary School, blood drive, improvement of workplace, etc. through donation or scheduled maintenance.

Volunteer team services

In order to raise the community's awareness of the environment and maintain the community environment, CGPC established a volunteer team in 2010 to encourage employees to participate in community maintenance and cleaning services in their spare time. The volunteer team has about 60 members and regularly organizes activities. The team usually has 10 to 15 people attending each activity. From 2010 to 2022, about 760 person-time has been mobilized to participate in beach clean-up, community environment cleaning, park maintenance, street cleaning, etc.



Won 3rd place in the north region for landscaping of adopted public facilities awarded by the industry park administration in 2022.



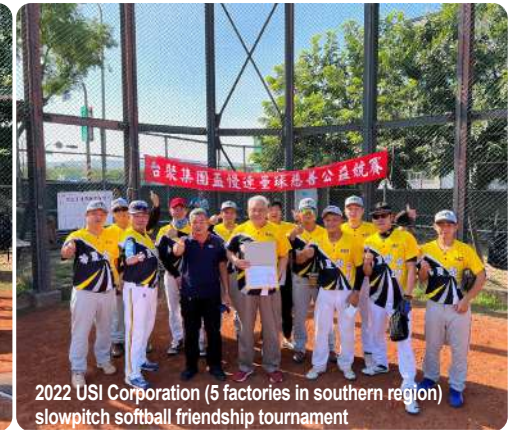
Promote sports culture and care for employees' health



The 20th USI Cup tennis championship in 2022



Speech by the Director of the Office of the Minister of Labor.



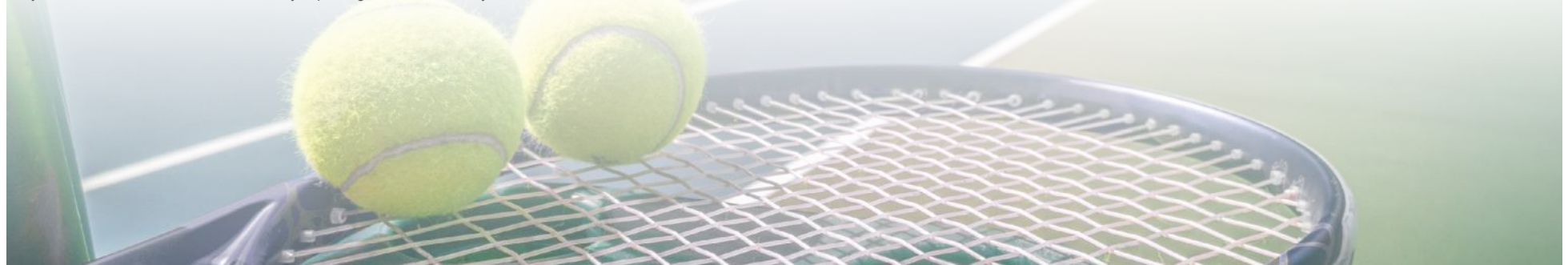
2022 USI Corporation (5 factories in southern region) slowpitch softball friendship tournament

Employees are the cornerstone of a company. For employees' health and development, we adopted the "Let's get moving" slogan to advocate for exercises and the changes they bring to the society and encourage the young workers to learn not to give up and relieve their work pressure and cultivate the Company's culture of fitness. Currently, employees have formed badminton, billiard, yoga and aerobic dance teams, and the Group office in Taipei also provided the employees in Taipei with fitness equipment, so they can exercise either before or after work at their convenience.

Employees at factories of TVCM, USI Corporation, Asia Polymer Corporation and Taita Chemical Company for years have participated in the USI Cup tennis championship organized by Linyuan Tennis Association. The tournament is in its 20th year in 2022. A total of 200 people are in this year's competition, and a total of 4,200 people have participated in the tournament over the years.

Since 2022, TVCM, CGPCP, Taita, CGPCP, Asia Polymer have jointly organized the USI Corporation Slowpitch Softball Friendship Tournament. This year, a total of 100 employees from the companies participated in the tournament, and a total of 300 person-time have participated in the tournament since its inception. TVCM and CGPCP formed a team to start friendly matches with other peer factories. All teams gave their best, and there were constant cheers and laughter during the matches. After the tournament, teams encouraged one another, fully displaying the spirit of teamwork.

The above activities all advocate sports and fitness, hoping to incorporate sports into corporate culture, and at the same time promote employee health to create a good workplace environment and increase cohesion. Exercise can make our body healthier and the mind clearer, indirectly improving the work efficiency.



Community welfare

CGPC (including its subsidiaries TVCM and CGPCP, excluding overseas affiliates) adheres to the principles of giving back to the community, caring for community development and participating in local activities. The Company provides sponsorships and equipment to neighborhoods around the factories, community development associations, cultural associations, schools and government agencies (graduation ceremonies, school anniversaries, etc.), local festivals (Double Ninth Festival, Mid-Autumn Festival, Ghost Festival, etc.) and scholarships and grants for disadvantaged students.



Occupational safety and health family

CGPC has been serving as the leader of the "Occupational Safety and Health Family" for three years, and the mission has been successfully completed. The Occupational Safety and Health Administration of the Ministry of Labor expresses gratitude to our company for its dedicated assistance in guiding business units to improve their working environment and promoting employment plans, effectively preventing occupational accidents and safeguarding the safety and health of workers. In order to expand the participation of business units and promote the sharing of experiences, the Occupational Safety and Health Administration of the Ministry of Labor has commissioned the Safety and Health Technology Center to hold the "Digital Technology for Sustainable Development of Occupational Safety and Health Seminar" on November 10, 2022, and present a certificate of appreciation to our company as an encouragement. The Miaoli County Government and the Occupational Safety and Health Administration of the Ministry of Labor established the "Occupational Safety and Health Family" in Miaoli County on February 19, 2020, to promote a culture of occupational safety and health and jointly promote occupational safety work in enterprises. The ceremony was presided over by Miaoli County Magistrate Xu, Yao-Chang, and CGPC was specially appointed as the leader, aiming to leverage the mechanism of "large enterprises leading small enterprises" to elevate occupational safety and health work in small and medium-sized enterprises in Miaoli County.



Donation to pandemic control efforts

Due to the rapid spread of the new variant of the COVID-19 virus, the disinfection team of the Environmental Protection Bureau has been closely monitoring the development of the epidemic with a highly rigorous attitude. They work in a dangerous environment and tirelessly protect the health of the citizens, ensuring a safe and secure urban environment. In recognition of the hard work and risks taken by the disinfection personnel in their epidemic prevention work, the USI Corporation (comprised of five companies in southern Taiwan: USI Corporation, APC, Taita Linyuan Factory, TVCM, and CGPCP) jointly donated 250 sets of protective clothing to the Kaohsiung City Environmental Protection Bureau to ensure the safety of the disinfection workers engaged in epidemic prevention efforts.

On March 2, 2022, the Kaohsiung City Environmental Protection Bureau expressed its gratitude to the USI Corporation for their philanthropic efforts. The appreciation ceremony was attended by key personnel from the Environmental Protection Bureau, including Secretary-General Fan Sheng-Wei, Secretary Sun Shao-Qiu, Labor Union Chairman Huang Feng-Xiang, and Labor Union Vice Chairman Zheng Yu-Da. They personally visited the APC Linyuan Factory to express their thanks and presented a certificate of appreciation.



Community building and welfare

Charity Club community care activities

CGPC's Charity Club was established in Toufen factory in 1972. It gathered donations from employees, and its club members sent the donations to those in need. In 1995, the head office established the Taipei branch of the CGPC Charity Club. There are now 72 members. In 2022 the Club organized 5 visits of community care, and a total of 102 visits have been organized from 2010 to 2022. Adhere to the philosophy of "Spread love and care for the society", and CGPC take the initiative to do good for the society to fulfil corporate citizenship.

Support disadvantaged children

Children are the future pillars of the nation. The welfare program helps disadvantaged and impoverished children or children with broken families have a healthy environment for growth and opportunities for education and a happy learning life, and improves their living condition. The Charity Club has collaborated with the Taiwan Fund for Children and Families to adopt two domestic children in poverty for a long time, and frequently donate to St. Francis Girls' Home, St. Francis Nursing Home, World Vision Taiwan, Miaoli County Family Support Center, and other institutions.

St. Francis Girls Home



• Toufen City Warmth Spreading Event



• Concord Charity Foundation Winter Warmth Campaign

Concord Charity Foundation, established in the year 2001, has been actively engaged in various charitable activities such as providing lunch subsidies for students, delivering meals to elderly individuals living alone, offering winter assistance to low-income households, and distributing essential supplies or financial aid to underprivileged and emergency cases. These dedicated philanthropic efforts have been widely recognized and appreciated. Every year, on the eve of the Lunar New Year, Concord Charity Foundation organizes the Winter Warmth Campaign to express care for vulnerable families. This initiative has been running continuously for 20 years, and the CGPC Charity Club has been a longstanding participant in the Winter Warmth Campaign, demonstrating their enduring commitment to making a difference in the lives of those in need.



• Emergency relief

In response to major incidents or accidents affecting the families of our neighboring communities or colleagues, which have led to financial difficulties, the Love Society has promptly sent representatives to provide care and offer emergency financial assistance. The aim is to help them overcome their challenges. In 2022, the family of a retired employee from CGPC faced financial difficulties due to a cancer diagnosis. The Love Society donated ten thousand dollars to provide assistance in this time of need.



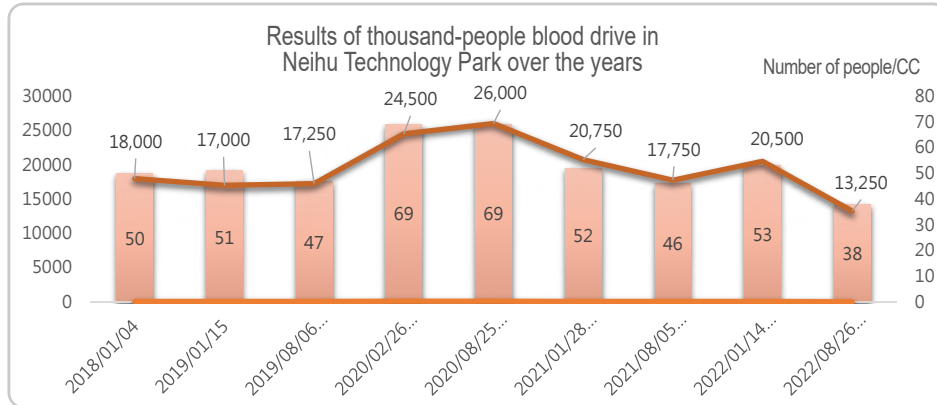
• Genesis Social Welfare Foundation

CGPC Charity Club has been actively supporting the Genesis Social Welfare Foundation through long-term donations, even during the pandemic period. The Genesis Social Welfare Foundation is dedicated to providing the best "care" for individuals in a vegetative state. They believe that these individuals, despite their lack of consciousness, should not be denied their basic human rights. The Love Society sincerely invites all colleagues to join hands and contribute with kindness by donating funds for this worthy cause.



Thousand people donation campaign in Neihu Technology Park

In order to fulfill corporate social responsibility, USI Group has collaborated with the Neihu Technology Park Development Association to organize the Neihu Technology Park Thousand People Blood Drive (USI Corporation was the co-organizer). The statistics of participation in each year is shown as follows:



2023 Taipei Science Cup Love Earth Charity Run

The Taipei Neihu Science Park Development Association, a registered nonprofit organization, held the "3rd Taipei Science Cup Love Earth Charity Run" on April 16th. The event attracted 9,000 participants who started their run at the Dazhi Meiti Riverside Park. The event fulfilled its corporate social responsibility by combining health, outdoor activities, family bonding, environmental protection, and charity. It not only promoted the physical and mental well-being of employees in the Neihu Science Park but also donated the event proceeds to disadvantaged groups in society. USI Corporation actively sponsored this charity run and encouraged employees to participate with their families. A total of 55 colleagues enthusiastically took part, injecting more energy into the event and demonstrating their passion for philanthropy and alignment with the company's culture.



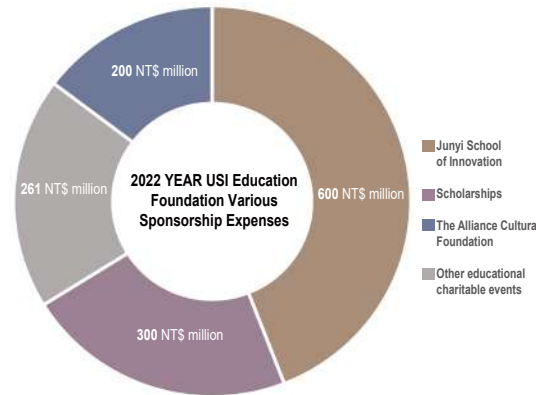
6.6.3 USI Education Foundation

The USI Education Foundation was established on December 30, 2011, funded by the joint donation of USI Corporation and Asia Polymer Corporation. The Foundation officially started operation in 2012. It promotes educational charitable affairs, with focus on the education for the vulnerable and the rural and the care for environmental protection. The foundation advances its goals by establishing scholarships and grants, donating to charities, and sponsoring educational and charitable activities to enhance the energy and efficiency of service.

In order to expand the scale of public welfare, CGPC and TVCM joined the sponsorship efforts in 2017, and Taita also participated in the sponsorship program in 2018 to show its support, enabling the USI Education Foundation to commit more resources in education in remote areas, sustainability and other public welfare to give back to the society.

Charity events

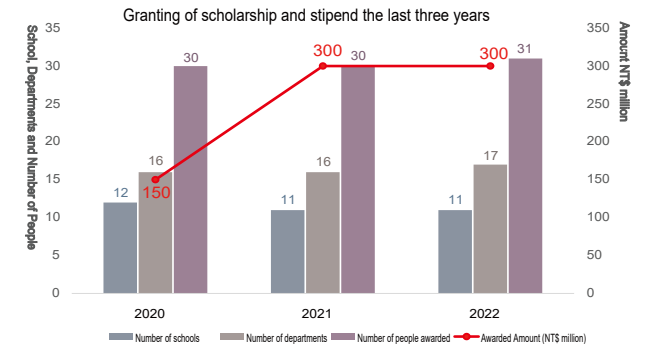
In 2022, the USI Education Foundation spent a total of NT\$13.61 million in various sponsorships, which include NT\$3 million for scholarships and grants, NT\$2 million to the Alliance Cultural Foundation and NT\$6 million to the Junyi School of Innovation in Taitung and NT\$2.61 million sponsoring various educational welfare activities.



Setting up scholarships

For disadvantaged students who show outstanding academic performance in chemical engineering, materials, chemistry and applied chemistry and other related fields in the specified 15 domestic public and private universities, the Company provides scholarships to encourage students studying for bachelor's or master's degree grow into industry talents. This is the 11th anniversary of the establishment of the scholarship program. A total of NT\$17.1 million has been awarded to 297 students.

In 2022, a total of NT\$3 million of scholarship is awarded to 31 students studying in 17 majors in 11 public and private universities. Among them, 10 are studying for the doctoral degree, 16 are studying for the master's degree and 5 are studying for the bachelor's degree, and 23 of them are considered disadvantaged students. On December 9, 2022, a scholarship award ceremony and commendation luncheon were held to recognize the award-winning students. The Group's supervisors were also invited to participate in the event to interact with the students, and encourage students to continue learning to exert a positive influence on the society and give back to the society.



[ATA News] 2023.03.25

Harvest365 public welfare matchmaking platform, organized the "2023 Listen to Me Sing" music concert.

All-inclusive Singing for Passion, Toufen Junior High School Choir from Miaoli County, took the stage.

The Toufen Junior High School in Miaoli County established its choir named "Harmony" in the year 2021. The name "Harmony" comes from the English word "Harmony" and reflects the choir's mission of "not discriminating, not competing" to encourage students' learning. The choir will participate in the "2023 Listen to Me Sing" music concert organized by the Harvest365 public welfare matchmaking platform in April. They hope to share the choir's music and stories from Toufen with the audience through their voices.

Principal Chung Wan-Hsiung stated that the Harmony choir has received support from Chairman Wu of the USI Education Foundation, which has provided resources. With assistance from the Harvest365 Foundation, students have opportunities to showcase their diverse talents. Seeing students wearing formal attire, bravely standing on the stage, showing confidence, and singing harmoniously is truly moving.

Conductor Mr. Chu Yu-Ching mentioned that the goal is to ensure that every student who wants to sing will not be rejected and that their joy of learning will not be overshadowed by the desire to win choir competitions. Therefore, they do not select choir members based on competition, but rather provide a stage for children to sing and allow them to challenge themselves and gain more confidence. The repertoire of songs includes Mandarin, Minnan, Hakka, English, and more. By learning songs in different languages, students gain a better understanding and appreciation of different ethnicities.



Toufen Junior High School: Harmony Choir takes the stage. Principal Chung Wan-Hsiung (front row, third from right) expresses gratitude to conductor Chu Yu-Ching (front row, fifth from right) and accompanist Wang Hsing-Hsien (front row, third from left) for their guidance and encouragement to the choir members.

Alliance Cultural Foundation and Junyi School of Innovation in Taitung

Junyi School – Fulfill rural education

The Alliance Cultural Foundation and the Junyi School of Innovation in Taitung are the long-term recipients of the Foundation's sponsorships aiming to bring more resources to rural education and the sustainable development in Hualien and Taitung areas. Chairman Stanley Yen of the Alliance Cultural Foundation hopes that reform of rural education and implementation of innovative and experimental education will provide opportunities to disadvantaged children. The Alliance Cultural Foundation also has established the Rural Education Seedling Program to provide scholarships to disadvantaged children in Hualien and Taitung areas to study in Junyi School of Innovation. The efforts over the past 10 years have benefitted 210 children, and more than 80% of the children are of indigenous background, coming from Amis, Puyuma, Bunun, Paiwan, Rukai, Tao and Truku tribes.

Children living in remote areas with limited resources need to be even more connected with the world to create more possibilities for the future of their hometown. In 2017, the Alliance Cultural Foundation launched a study-abroad program and established the Innovative Study Abroad Education Fund to provide scholarships to students with high potential at Junyi School of Innovation. They are eligible for applying for overseas 2 years communities' colleges or the United World College. This program creates a new start connecting with the world, and students will be able to learn professional skills and have a global perspective, and it is hope that they will become the driving force bringing changes their tribe and hometown in the future. Since its establishment, a total of 22 students have chosen to study abroad as part of the program. With the easing of the pandemic and the guidance and encouragement from older students who have already studied abroad, students have started to think more seriously about studying abroad and have made more preparations, including improving their English abilities. In 2022, the number of students studying abroad slightly increased to a total of 7.



Elementary school section: Waldorf education, upper-grade students participating in the "Facing the Mountain School - Jiafeng Adventure 2-day, 1-night" camp program



High school section: "Creative Learning Program" allows students to gain a deeper understanding of themselves through the process of exploration, inspiration, and achievement



Junior section: Students from the "Creative Learning Program - International Hospitality" group assist in organizing a Thanksgiving banquet



Junior section: Graduation thesis presentations by students, showcasing the results of three years of "self-directed learning"

Sponsor other educational charity events

In 2022, the main sponsored beneficiaries of other educational public welfare projects included the Bulareyaung Dance Company, Teach for Taiwan, Ying Guang Educational Association, the Cloud Gate Foundation, and the Taitung Blue Ocean Daily.

1. Bulareyaung Dance Company:

Bulareyaung Dance Company was established in 2002. It adheres to the mission of "Flipping poverty" and believes in that impoverished children's only hope is through education. Free supplementary education is given to disadvantaged junior high and elementary schoolchildren, and provide care and counseling services.. Boyo has continued to commit lots of manpower and resources to course design, supplementary learning materials and the training of parents in communities. There are 17 tutoring locations, and they have served more than 2,000 schoolchildren.

2. Teach for Taiwan:

Established in 2013, TFT is a non-profit organization dedicated to addressing "educational inequality" and aims to create equal educational opportunities for every child. TFT tackles the long-standing challenges faced by rural schools in Taiwan, such as difficulties in recruiting and retaining qualified teachers due to limited resources and frequent teacher turnover, through training and support programs. Since 2014, TFT has sent 300 young people to travel to rural areas. They have gone to schools in Taitung, Tainan, Pingtung, Yunlin, Hualien and Nantou, helping more than 6,000 disadvantaged school children.

3. Ying Guang Educational Association:

Established in 2019, Ying Guang Educational Association began with a long-term in-school mentoring program, reaching over 230 schools and regional organizations across Taiwan, including remote islands. Through this program, we accompany schools in addressing their challenges and identifying their development strengths. Starting in 2022, they initiated the "Non-Teacher Certification Substitute Teacher Support Program." Beginning in Taitung, we provide support to substitute teachers through "partner teachers" who accompany and guide them based on their specific circumstances and needs.

4. Cloud Gate Foundation:

A private non-profit organization dedicated to the creation, performance, promotion of dance, and other cultural activities to foster cultural development and international exchange. In addition to promoting performances both domestically and internationally, enriching Taiwan's cultural scene and global cultural life, the foundation also strives to promote arts education and community cultural activities in the Tamsui district.

5. Blue Ocean Daily:

A new ocean cultural exchange event launched by the Taitung County Government in 2022. It took place over two consecutive weekends from September 17th to September 25th. With the core concepts of slow travel and slow living, the event offered immersive marine recreational and ecological experiences in Sanwan Bay, Flowing Lake, Jinzun, and Green Island. It also incorporated indigenous marine culture, providing educational lectures on marine culture and opportunities to experience traditional ocean canoeing. The aim was to increase public awareness and understanding of indigenous marine culture while gradually establishing Taitung as a bridge between marine leisure development and international connections.

- TFT Photos (No suitable photo available for Ying Guang Educational Association)



Members accompanying and supporting teaching activities on-site photos



2022 TFT Summer Training



Blue Ocean Daily: SUP Cultural Exchange

7 Appendix

7.1 GRI 1 General Index

Use Statement	China General Plastics Corporation. (hereinafter referred to as "CGPC") has prepared this report in accordance with the GRI Guidelines. The reporting period of this report is for the year 2022 (from January 1, 2022, to December 31, 2022). Some data may include information and performance from before January 1, 2022, as well as content relating to the year 2023.
GRI 1 used	GRI 1 : 2021 General
Relevant GRI Industry Guidelines	Not Applicable

7.2 GRI 2 Index of General Disclosure

GRI Standard	GRI 2: General disclosure for 2021				
	Disclosure items	Section	Page Number	Descriptions omitted	Remarks
1. Organization and Reporting Practices					
2-1 Detailed Information about the Organization	About this Report, 1. About CGPC		02, 08	/	
2-2 Entities Included in the Sustainability Report	About this Report, 1.1 Company Introduction		02, 09		
2-3 Report period, Frequency and Contact Person	About this Report, 2.1.4 Grievance mechanism		02, 16		
2-4 Information re-editing	About this Report		02		
2-5 External guarantee / assurance	About this Report, 7.5 Statement of Assurance		02, 157		
2. Event and Workers					
2-6 Activities, Value Chain and Other Business Relationships	1.2 Business Philosophy and Product Introduction		10		
2-7 Employees	1.1 Company information, 6.1 Manpower structure		09, 94~95		
2-8 Non-Employee Workers	6.4 Safe and Healthy Workplace		110~124		

GRI Standard	GRI 2: General disclosure for 2021			
Disclosure items	Section	Page Number	Descriptions omitted	Remarks
3. Governance				
2-9 Governance structure and composition	2.1.2 ESG strategy 2.2.2 Organizational Structure of the ESG Committee 3.1.1 Transparent information disclosure 3.1.2 Information on appointment of the board and the status of operation 3.1.3 Status of implementation of board diversity 3.1.6 Head of corporate governance 3.1.7 Functional committees	16 19 27 27 28 30 30		
2-10 Nomination and Selection of the Highest Governance Unit	2.2.1 ESG Committee 3.1.2 Information on appointment of the board and the status of operation 3.1.3 Status of implementation of board diversity 3.1.8 Functions and operations of each functional committee	19 27 28 31~32		
2-11 Chairman of the Highest Governance Unit	2.2.1 ESG Committee 3.1.3 Status of implementation of board diversity	19 28		
2-12 The Role of the Highest Governance Unit in Supervising Impact Management	2.2.1 ESG Committee 3.1.2 Information on appointment of the board and the status of operation	19 27		
2-13 Person in Charge of Impact Management	2.1.2 ESG strategy 2.2.2 Organizational Structure of the ESG Committee 3.1.2 Information on appointment of the board and the status of operation 3.1.9 Implement ethical management	16 19 27 32~33		
2-14 The Role of the Highest Governance Unit in Sustainability Report	2.2.2 Organizational Structure of the ESG Committee 3.1.2 Information on appointment of the board and the status of peration 3.1.9 Implement ethical management	19 27 32~33		
2-15 Benefit Conflicts	3.1.2 Information on appointment of the board and the status of operation 3.1.3 Status of implementation of board diversity 3.1.9 Implement ethical management	27 28 32~33		
2-16 Key Major Issues Communication	2.1.1 Corporate sustainability vision and goals 2.1.2 ESG strategy 2.2.2 Organizational Structure of the ESG Committee 3.1 Corporate governance 3.1.2 Information on appointment of the board and the status of operation	15 16 19 27~33 27		

GRI Standard	GRI 2: General disclosure for 2021			
	Disclosure items	Section	Page Number	Remarks
3. Governance				
2-17 Collective Intelligence of the Highest Governance Unit	3.1.2 Information on appointment of the board and the status of operation 3.1.5 Improve directors' professional competence 3.1.6 Head of corporate governance	27 30 30		
2-18 Performance assessment of the Highest Governance Unit	3.1.2 Information on appointment of the board and the status of operation 3.1.4 Status of performance evaluation of committees	27 29		
2-19 Remuneration Policy	3.1.2 Information on appointment of the board and the status of operation 3.1.8 Functions and operations of each functional committee	27 31~32		
2-20 Remuneration Determination Process	3.1.2 Information on appointment of the board and the status of operation 3.1.8 Functions and operations of each functional committee	27 31~32		
2-21 Annual Total Remuneration Ratio	3.1.2 Information on appointment of the board and the status of operation 3.1.8 Functions and operations of each functional committee	27 31~32		
4. Strategy, Policies, and Practices				
2-22 Statement of Sustainable Development Strategy	Message from Management, 2.2 Sustainable Development Policy	03~04, 19		
2-23 Policy Commitment	2.1 Sustainable Development, 2.1.1 Corporate sustainability vision and goals 2.1.2 ESG strategy, 2.2 Sustainable Development Policy 2.4 Identification of material issues, 2.4.2 Identify Material Issues	15~18, 15 16, 19 22~24, 23		
2-24 Inclusion of Policy Commitment	2.1.2 ESG strategy, 2.2 Sustainable Development Policy	16, 19		
2-25 Procedure for remedying negative impacts	2.4.2 Identify material issues	23		
2-26 Mechanism for Seeking Advice and Raising Concerns	3.3.3 Internal control	40		
2-27 Regulatory Compliance	3.4 Regulatory Compliance	41		
2-28 Membership qualification of cooperatives and associations	4.4 Participation in External Organizations	61		
5. Stakeholder Engagement				
2-29 Stakeholder Engagement Policy	2.3 Identification of Major Stakeholders 2.3.1 Stakeholder communication management and issues of concern	20 21~22		
2-30 Group agreement	6.2.3 Human rights and protection	103~104	Not Applicable	Due to ongoing communication between CGPC and its employees through the labor union and labor-management meetings, no specific collective bargaining agreement has been established between the two parties.

7.3 GRI 3 Index of Material Issues

Disclosure of A-List, Specific Standard Disclosures and SDGs:

GRI Standard		Disclosure items		Section	Page Number	Remarks	
3-1		Process for determining material topics		2.4.1 Steps for identification of material issues	23		
3-2		List of material topics		2.4.2 Identify material issues	23		
Material issue	SDGs Sub-target	Disclosure of subject-specific guidelines		Section	Page Number	Remarks	
Category: Environment							
		GRI 3:2021	3-3	Management of material topics	5.2 Climate Change and Energy Management	67~78	
Climate Change and Energy Management	7.a, 3.1, 13.3	GRI 302 : 2016 Energy	302-1	Energy consumption within the organization	5.2.6 Energy management	74	
			302-2	External energy consumption of the organization	Not Applicable	–	Downstream products are non-energy-consuming products.
			302-3	Energy intensity	5.2.6 Energy management	74	
			302-4	Reduction of energy consumption	5.2.8 Energy conservation and carbon education solutions and performance	76	
			302-5	Reducing the energy demand of products and services	Not Applicable	–	Downstream products are non-energy-consuming products.
		GRI 3:2021	3-3	Management of material topics	5.3 Water Resources Management	79~88	
Water Resources Management	3.9, 6.3, 12.4	GRI 303: 2018 Water and effluents	303-1	Interactions with water as a shared resource	5.3.1 Water management	80~83	
			303-2	Management of water discharge-related impacts	5.3.3 Waste water quality testing	84	
			303-3	Water withdrawal	5.3.1 Water management	80~83	
			303-4	Water discharge	5.3.2 Wastewater discharge management	84	
			303-5	Water consumption	5.3.1 Water management	80~83	
		GRI 3:2021	3-3	Management of material topics	5.4 Air Pollution Control	89	
Air pollution control	3.9, 11.6	GRI 305: 2016 Emissions	305-1	Direct (Scope 1) greenhouse gas emissions	5.2.7 Greenhouse gas management	75	Item Words' Revision
			305-2	Indirect (Scope 2) greenhouse gas emissions from energy	5.2.7 Greenhouse gas management	75	Item Words' Revision
			305-3	Other Indirect (Scope 3) greenhouse gas emissions from	Not Applicable	–	Downstream products are non-energy-consuming products.
			305-4	Greenhouse Gas Emission Intensity	5.2.7 Greenhouse gas management	75	
			305-5	Reduction of GHG emissions	5.2.1 Response to climate change is an opportunity for enterprises' sustainable operations 5.2.8 Energy conservation and carbon education solutions and performance	67~69 76	
			305-6	Emissions of ozone-depleting substances (ODS)	Not Applicable	–	Non-production, imports and exports of ODS
			305-7	Emissions of nitrogen oxides (NOx), sulfur oxides (SOx) and other significant gas emissions.	5.4 Air Pollution Control	89	Item Words' Revision

Material issue	SDGs Sub-target	Disclosure of subject-specific guidelines			Section	Page Number	Remarks
Category: Environment							
Waste Management	3.9, 1.6, 12.4, 2.5	GRI 3:2021	3-3	Management of material topics	5.5 Waste Management	90~91	
		GRI 306: 2020 Waste	306-1	Waste generation and significant waste-related impact	5.5 Waste Management	90~91	
			306-2	Management of significant waste-related impact	5.5 Waste Management	90~91	
			306-3	Waste generated	5.5 Waste Management	90~91	
			306-4	Disposal and Transfer of Waste	5.5 Waste Management	90~91	
			306-5	Direct Disposal of Waste	5.5 Waste Management	90~91	
Category: Society							
Talent Attraction and Retention	8.5, 8.8; 10.3, 10.4	GRI 3:2021	3-3	Management of material topics	6.2 Talent Attraction and Retention	96~104	
		GRI 401:2016 Labor Relations	401-1	New hires and outgoing employees	6.2.1 Appointment and resignation	97	
			401-2	Benefits provided to full-time employees (excluding temporary or part-time employees)	6.2.2 Salary and benefits	98~102	
			401-3	Parental leave	6.2.2 Salary and benefits	98~102	
		GRI 405:2016 Diversity and Equal Opportunity	405-1	Percentage of corporate governance organization members and various types of employees by gender, age group, minority group, and other indicators of diversity	6.1 Manpower Structure	94~95	
			405-2	Ratio of basic salaries and remuneration to women and men by employee category and key operating locations	6.1 Manpower Structure 6.2.2 Salary and benefits	94~95 98~102	
Talent development and cultivation	4.3, 4.5	GRI 3:2021	3-3	Management of material topics	6.3 Talent Development and Cultivation	105~109	
		GRI 404:2016 Training and Education	404-1	Average hours of training per year per employee	6.3 Talent Development and Cultivation	105~109	
			404-2	Programs improving employees' capabilities and transition assistance	6.2.3 Human rights and protection 6.3 Talent Development and Cultivation	103~104 105~109	
			404-3	Percentage of employees receiving regular performance and career development reviews	6.3 Talent Development and Cultivation	105~109	
Occupational safety and health	8.8	GRI 3:2021	3-3	Management of material topics	6.4 Safe and Healthy Workplace	110~124	
		GRI 403:2018 Occupational Safety and Health	403-1	Occupational safety and health management system	6.4.1 Occupational safety management	111~114	
			403-2	Hazard identification, risk assessment and incident investigation	6.4.1 Occupational safety management	111~114	
			403-3	Occupational healthcare services	6.4.2 Occupational health management	115~116	
			403-4	Worker participation, consultation, and communication on occupational health and safety	6.4.1 Occupational safety management 6.4.3 Occupational safety and health organizations 6.4.4. Contractor safety management	111~114 117 117~118	
			403-5	Worker training on occupational health and safety	6.4.4. Contractor safety management 6.4.5 Emergency response	117~118 118~120	
			403-6	Promotion of worker health	6.4.6 Process safety management	121~124	
			403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	6.4.6 Process safety management	121~124	

Material issue	SDGs Sub-target	Disclosure of subject-specific guidelines			Section	Page Number	Remarks
Category: Society							
Occupational safety and health	8.8	GRI 3:2021	3-3	Management of material topics	6.4 Safe and Healthy Workplace	110~124	
		GRI 403:2018 Occupational Safety and Health	403-8	Workers covered by an occupational health and safety management system	6.4.1 Occupational safety management	111~114	
			403-9	Work-related injuries	6.4.1 Occupational safety management	111~114	
			403-10	Work-related illness	6.4.1 Occupational safety management	111~114	
Transportation safety	11.5	GRI 3:2021	3-3	Management of material topics	6.5 Transportation Safety Management	125~132	
		GRI 413:2016 Local Communities	413-2	Operations with significant actual and potential negative impacts on local communities	6.5 Transportation Safety Management	125~132	
Category: Economy							
Economic performance	8.2, 8.8	GRI 3:2021	3-3	Management of material topics	3.2 Operating performance	34~36	
		GRI 201:2016 Economic performance	201-1	Direct economic value generated and distributed by the organization	3.2.4 Description of direct economic value generated and distributed by the organization	36	
			201-2	Financial impacts and their risks and opportunities caused by climate change	5.2.4 Potential financial impact of risks and opportunities	71~72	Partial Disclosure
			201-3	Defined benefit plans, obligations, and other retirement plans	6.2.2 Salary and benefits	98~102	
			201-4	Financial assistance received from the government	3.2.5 2022 Government subsidies	36	
Technology Research and Development	8.3	GRI 3:2021	3-3	Management of material topics	3.5 Technology Research and Development	42~45	
		Customize theme		Customize theme	3.5 Technology Research and Development	42~45	
Intelligent Management	4.4, 8.2	GRI 3:2021	3-3	Management of material topics	3.6 Intelligent Management	46~47	
		Customize theme		Customize theme	3.6 Intelligent Management	46~47	
Product quality	12.a	GRI 3:2021	3-3	Management of material topics	4.2 Product Quality	53~55	
		Customize theme		Customize theme	4.2 Product Quality	53~55	



List B, Positive and Negative Impact Factors of Major Issues:

Considerate Aspects	Item	ESG Issues Item	Material issue
Positive Actual Impacts	1-1	Introduction and utilization of AI to enhance product quality.	Technology Research and Development, Operating Performance ,Talent development and cultivation, Intelligent Management
	1-3	Investment in renewable energy to reduce carbon emissions and improve industry competitiveness.	Climate Change and Energy Management
	1-5	Strong Economic performance leading to increased investor confidence and willingness to invest.	Operating Performance ,Talent Attraction and Retention
	1-7	Improved water recycling rates to reduce production costs and mitigate operating disruptions.	Climate Change and Energy Management, Water Resources Management
	1-8	Development of diverse environmentally friendly products and entry into emerging industries.	Technology Research and Development, Operational Performance ,Waste Management
	1-9	Creation of a friendly workplace environment to reduce employee turnover and occupational accidents.	Safe and healthy workplace, Talent Attraction and Retention
Potential Positive Impacts	2-1	Introduction and utilization of AI to enhance production efficiency and reduce energy consumption.	Operating Performance, Climate Change and Energy Management, Talent development and cultivation, Intelligent Management
	2-2	Development of sustainable materials to increase revenue.	Technology Research and Development, Operating Performance
	2-3	Business transformation towards high-quality, low-pollution industries.	Technology Research and Development, Operating Performance
	2-4	Investment in renewable energy to increase the use of green electricity.	Operational Performance ,Climate Change and Energy Management
	2-5	Creation of a happy workplace environment to enhance employee's sense of belonging to the company.	Talent Attraction and Retention
Negative Actual Impacts	3-2	Water scarcity leading to water supply constraints.	Water Resources Management
	3-3	Inadequate implementation of hazardous material safety transportation management.	Transportation Safety Management
	3-4	Insufficient measures to control air pollution.	Air pollution control, Climate Change and Energy Management
	3-5	High increase in energy costs, particularly electricity tariff adjustments.	Climate Change and Energy Management
	3-7	Power equipment failures and unstable power supply.	Climate Change and Energy Management, Operational Performance
Potential Negative Impacts	4-1	Lack of succession planning leading to a talent and technical expertise gap.	Talent Attraction and Retention, Talent development and cultivation
	4-5	Increased production costs due to water usage fees.	Water Resources Management, Operating Performance
	4-9	Increased production costs due to carbon fees.	Air pollution control, Operational Performance , Climate Change and Energy Management

List C, Remedial and Preventive Measures for Material Issues' Negative Impact:

Material issue	Considerate Aspects	Item	Significant Impact Items	Remedial and Preventive Measures for Material Issues' Negative Impact	Section
Climate Change and Energy Management	Negative Actual Impacts	3-2	Water scarcity leading to water supply constraints.	1.Groundwater Extraction 2.Water Recycling Enhancement 3.Concentration Ratio Improvement for Cooling Towers 4.Strengthened Inspections 5.Installation of Water Storage Equipment 6.Sourcing water from external suppliers such as tap water or purified water through water trucks 7.Production Capacity Reduction	5.2 Climate change and energy management 5.3 Water Resources Management 5.4 Air Pollution Control
		3-4	Insufficient measures to control air pollution.	In 2022, an activated carbon fluidized bed was installed. In 2023, a new natural gas boiler will be built and the drying machine prevention equipment, nitrogen impact recovery system and VCM discharge hose will be updated to reduce emissions. New emission control equipment will be added or low-pollution fuels will be used within the plant to reduce air pollutant emissions and minimize negative impacts on climate change.	
		3-5	High increase in energy costs, particularly electricity tariff adjustments.	1.Continuously replacing outdated equipment to improve energy efficiency. 2.Adjusting scheduling to shorten production preparation time and reduce energy waste during standby periods.	
		3-7	Power equipment failures and unstable power supply.	1.Conducting regular thermal imaging measurements to detect abnormalities early and arrange immediate improvements to reduce the probability of equipment breakdown. 2.Performing annual maintenance and inspections to monitor equipment operation. 3.Continuously replacing outdated equipment.	
	Potential Negative Impacts	4-9	Increased production costs due to carbon fees.	By implementing control measures, developing a carbon reduction roadmap and improving equipment, the company aims to reduce greenhouse gas emissions and minimize its impact on climate change. It also aligns with national regulations on greenhouse gas reduction and management by adopting energy-saving and carbon reduction measures.	
Water Resources Management	Potential Negative Impacts	4-5	Increased production costs due to water usage fees.	1.Water Recycling Enhancement 2.Concentration Ratio Improvement for Cooling Towers 3.Strengthened Inspections	5.3 Water Resources Management
Air pollution control	Negative Actual Impacts	3-4	Insufficient measures to control air pollution.	In 2022, an activated carbon fluidized bed was installed. In 2023, a new natural gas boiler will be built and the drying machine prevention equipment, nitrogen impact recovery system and VCM discharge hose will be updated to reduce emissions. New emission control equipment will be added or low-pollution fuels will be used within the plant to reduce air pollutant emissions and minimize negative impacts on climate change.	5.2 Climate Change and Energy Management 5.4 Air Pollution Control
	Potential Negative Impacts	4-9	Increased production costs due to carbon fees.	By implementing control measures, developing a carbon reduction roadmap and improving equipment, the company aims to reduce greenhouse gas emissions and minimize its impact on climate change. It also aligns with national regulations on greenhouse gas reduction and management by adopting energy-saving and carbon reduction measures.	

Material issue	Considerate Aspects	Item	Significant Impact Items	Remedial and Preventive Measures for Material Issues' Negative Impact	Section
Transportation safety	Negative Actual Impacts	3-3	Inadequate implementation of hazardous material safety transportation management.	<ol style="list-style-type: none"> 1. To ensure transportation safety and implement hazardous materials transportation management, the following transportation safety management measures are being implemented: <ol style="list-style-type: none"> 1-1. Formulate management standards for vehicle transportation, loading and unloading management, emergency equipment and detection systems. 1-2. Transportation contractor reviews conducted 11 times with a review rate of 100%. 1-3. Improvement of 88 items in transportation safety inspections and audits, with an improvement rate of 100%. 1-4. Cathodic corrosion protection inspection, visual inspections and verification inspections of underground pipelines, with a 100% inspection rate. 1-5. Conducted 21 sessions of transportation emergency response planning and training, with a total of 297 participants. 2. Negative Remediation : in the event of an accident, immediate notification is made to the relevant departments and cooperation with the emergency response team is carried out for evacuation, isolation, leak containment and fire suppression. The handling procedures are in accordance with the "Prevention of Vinyl Chloride Monomer (VCM) Transportation Hazards and Emergency Response Plan" and the "Tanker Accident Emergency Response Operating Procedures." 3. Preventive measures : according to the "Plan for the Establishment of Toxic and Hazardous Chemicals Joint Prevention Organization," the following actions should be taken: familiarize oneself with the Hazard Prevention and Emergency Response Plan specific to your own facility and the emergency response plan of the joint prevention organization. Follow the emergency response notification process for incident handling and reporting. Conduct pre-employment training for personnel involved in emergency response to ensure they are adequately prepared. Participate in relevant training, drills, and group exercises related to emergency response. Conduct annual training and refresher courses for emergency response personnel. 	6.5 Transportation Safety
Economic performance	Negative Actual Impacts	3-7	Power equipment failures and unstable power supply.	<p>In alignment with the energy management department's carbon reduction goals within the group, a thorough review of various energy-saving and carbon reduction programs, as well as water resource management programs, is conducted internally. Additionally, the group has established a green energy team to develop an overall plan and periodically review the initiatives. At the CGPC's Toufen factory, solar power generation has been installed (currently selling excess power to the grid), applications for Taiwan Power Company's demand bidding program have been made, planned adjustments to electricity usage during maintenance periods have been implemented (using the monthly selected 8-day model), and measures for energy conservation and backup power generation equipment have been planned. This ensures that there is alternative power available in the event of a power supply interruption. Moreover, management systems such as ISO 50001, ISO 14064-1, ISO 14067, ISO 46001 and ISO 14046 have been implemented. The company remains actively engaged and committed to public sector initiatives for electricity and water conservation planning and explores alternative water sources such as water trucks.</p>	3.2 Operating performance 5.2 Climate change and energy management 5.3 Water Resources Management 5.4 Air Pollution Control
	Potential Negative Impacts	4-5	Increased production costs due to water usage fees.		
		4-9	Increased production costs due to carbon fees.		

7.4 SASB Chemicals Index Table

Item	Code	Content of indicators	Unit	2020	2021	2022	Corresponding chapter	Page Number	
Greenhouse gas	RT-CH-110a.1	Scope 1 GHG emissions (tonne CO ₂ e. Scope 1 GHG emissions are regulated by emissions restriction regulations at a percentage (%).	(1) Million tonnes CO ₂ e (2) %	(1) 0.1491 (2) 99.9%	(1) 0.1689 (2) 99.9%	(1) 0.1616 (2) 99.9%	5.2.7 Greenhouse gas management	75	
	RT-CH-110a.2	Management strategies or plans for Scope 1 GHG emissions, including emission reduction targets, performance analysis, etc.	n/a	In response to the government's net zero emission policy, CGPC conducts inventory and monitoring of greenhouse gas emissions and holds technical exchange meetings with other affiliates of the Group, so that plants can communicate technologies used and issues faced to achieve sharing and improve the performance of energy conservation and carbon reduction. 2022 Energy Conservation and Carbon Reduction Plan and Performance: (1) Carbon Reduction (ton CO ₂ e) 6,286, (2) Energy conservation (GJ) 102,916			5.2 Climate change and energy management	67~78	
Air quality	RT-CH-120a.1	Emissions of the following air pollutants:						5.4 Air Pollution Control	89
		(1) Nitrogen oxides	tonne	69	85	80			
		(2) Sulfur oxides	tonne	19	5	1			
		(3) Volatile organic compounds	tonne	542	651	442			
		(4) Hazardous air pollutants (HAPs)	tonne	0	0	0			
Energy management	RT-CH-130a.1	(1) Total energy consumed (GJ)	GJ	3,773,586	4,247,960	4,059,009	5.2.6 Energy management	74	
		(2) Percentage of energy consumption from grid (%)	%	28%	27%	27%			
		(3) Percentage of renewable energy use (%)	%	-	-	-			
		(4) Energy generated in-house (GJ)	GJ	-	-	4,415			
Water management	RT-CH-140a.1	(1) Total water withdrawal	Million liters	2,806.7	2,964.5	2,886.4	5.3 Water Resources Management	79~88	
		(2) Total water consumption	Million liters	1,872.8	2,118.6	1,989.9			
		(3) Operating locations located in areas with "High" or "Very high" deficiency in water and the percentage compared with (1) and (2).	%	CPGC, TVCM and CGPCP are not located in areas with "High" or "Very high" deficiency in water.					
	RT-CH-140a.2	Number of cases of violations of water quality-related discharge permits, standards and regulations.	Number	No violations of relevant regulations.					
	RT-CH-140a.3	Describe water management risks and strategies, as well as risk mitigation practices.	-	Continuous monitoring and compilation of daily, monthly and annual water consumption records. In terms of management, we will continue to study feasible solutions and use manufacturing processes to improve water conservation and enhance water recycling and reuse rates. Improve pipelines, conduct regular leak-prevention inspections, follow up and review the progress, and propose improvement plans.					

Item	Code	Content of indicators	Unit	2020	2021	2022	Corresponding chapter	Page Number
Hazardous waste management	RT-CH-150a.1	The total amount of hazardous waste generated by the Company and the percentage of amount recycled.	(1) tonnes (2) recycling %	(1) 10.45 (2) 0	(1) 38.31 (2) 0	(1) 46.54 (2) 3	5.5 Waste Management	90~91
Community relations	RT-CH-210a.1	The processes involved in discussion of managing risks and opportunities related to community interests.	n/a	CGPC has established good communication channels with local residents for a long time, promoting the hiring of local talents, increasing scholarships provided to local schools, maintaining the cleanliness of neighboring communities, and caring for local residents' health.			6.6 Social participation	133~145
Occupational health and safety	RT-CH-320a.1	(1) Total Recordable Incident Rate (TRIR) formula: (Number of Recordable Incidents × 200,000) / Total Work Hours	%	CGPC: 0.27 TVCM: 0 CGPCP: 0	CGPC: 0.72 TVCM: 0 CGPCP: 0	CGPC: 0.45 TVCM: 0 CGPCP: 0	5.1 Environmental Management Policy 6.4 Safe and Healthy Workplace	63~66 110~124
		(2) Mortality rate, a. Regular employees, b. Contract employees	%	CGPC: 0 TVCM: 0 CGPCP: 0	CGPC: 0 TVCM: 0 CGPCP: 0	CGPC: 0 TVCM: 0 CGPCP: 0		
	RT-CH-320a.2	Description of assessment and monitoring of health risks for workers and non-workers (reduce exposure to long-term/chronic illness).	n/a	Establish the ISO 45001 occupational safety and health system, formulate occupational safety hazards identification risks and opportunities and control management operating guidelines and implement occupational health promotion activities. Arrange health examination according to the condition of work environment and track the status regularly.				
Product design contributing to the efficiency improvement in the use phase	RT-CH-410a.1	Product revenue that can improve resource efficiency during the use phase.	NT\$ thousand	There are seven new products developed in the past 2 years and the total sales of new products in 2021 is NT\$113,858 thousand. There are twelve new products developed in the past 2 years and the total sales of new products in 2022 is NT\$99,420 thousand.			3.5 Technology Research and Development	42~45
Chemical safety and environmental management	RT-CH-410b.1	The percentage of product revenue (%) of products containing chemical substances classified as Type 1 and 2 health and environmental hazards by the GHS hazard categories.	%	CGPC: 5.51 TVCM: 99.79 CGPCP: None	CGPC: 5.61 TVCM: 99.85 CGPCP: None	CGPC: 10.35 TVCM: 99.98 CGPCP: None	5.1 Environmental Management Policy	63~66
		The percentage (%) of relevant products that have undergone hazard analysis.	%	100				
	RT-CH-410b.2	Strategies for the development of chemicals of high concern and alternative products that reduce human and environmental impact.	n/a	Hydrochloric acid, caustic soda and bleaching products produced by CGPC are not chemicals of high concern.				
Genetically modified organism	RT-CH-410c.1	RT-CH-410c.1	%	No GMO products are produced.			–	

Item	Code	Content of indicators	Unit	2020	2021	2022	Corresponding chapter	Page Number
Legal and monitoring management	RT-CH-530a.1	The Company's position on government regulation and policy planning on environmental and social issues.	n/a	Check environmental protection/social laws and regulations every month, comply with important government and international environmental protection regulations and promote the ISO 14001 and other management systems to ensure that the Company's daily operations have minimal impact on the community. Conduct active communication to understand employees and local residents and other key stakeholders and then propose solutions for improvement.			5.1 Environmental Management Policy 6.4 Safe and Healthy Workplace	63~66 110~124
Process safety and emergency response	RT-CH-540a.1	Process safety incident counts (PSIC)	Number	CGPC: 0 TVCM: 0 CGPCP: 0	CGPC: 0 TVCM: 1 CGPCP: 0	CGPC: 0 TVCM: 0 CGPCP: 0	6.4 Safe and Healthy Workplace	110~124
		Process safety total incident rate (PSTIR) (= Process safety incident cases x 200,000 million man-hour / Total employee work hours)	%	CGPC: 0 TVCM: 0 CGPCP: 0	CGPC: 0 TVCM: 0.32 CGPCP: 0	CGPC: 0 TVCM: 0 CGPCP: 0		
		Process safety incident severity rate (PSISR) (= Total severity score for all process safety incidents x 200,000 million man-hour / Total employee work hours)	%	CGPC: 0 TVCM: 0 CGPCP: 0	CGPC: 0 TVCM: 0.96 CGPCP: 0	CGPC: 0 TVCM: 0 CGPCP: 0		
	RT-CH-540a.2	Number of transportation incidents	Number	CGPC: 0 TVCM: 0 CGPCP: 0	CGPC: 0 TVCM: 0.32 CGPCP: 0	CGPC: 0 TVCM: 0 CGPCP: 0		



7.5 Sustainable Disclosure Indicators—Plastic Industry

Number	Content of indicators	Type of Indicators	2022 disclosure status				Unit	Corresponding chapter and Page Number	
			Item	(1) Total energy consumed (GJ)	(2) Purchased electricity percentage (%)	(3) renewable energy Utilization rate (%)			(4) Total self-generated energy (GJ)
1	Total energy consumption, percentage of purchased electricity, renewable energy utilization rate, and total self-generated energy.	Quantify	CGPC	1,200,943	50%	–	–	(1) GJ (2) % (3) % (4) GJ	5.2.6 Energy management P,74
			TVCM	2,433,072	14%	–	–		
			CGPCP	424,994	31%	–	–		
2	Total water withdrawal and Total water consumption	Quantify	By company	Total water withdrawal(m³)	Total water consumption(m³)		thousand m³	5.3 Water Resources Management P,79~88	
			CGPC	1,024,940	526,248				
			TVCM	1,180,700	821,544				
CGPCP	680,800	642,200							
3	The total amount of hazardous waste generated by the Company and the percentage of amount recycled.	Quantify	By company	Total hazardous waste (tonnes)	recycling percentage (%)		(1) tonne (2) recycling %	5.5 Waste Management P,90~91	
			CGPC	8.31	19.49				
			TVCM	38.23	0				
CGPCP	-	-							
4	Explanation of occupational accident numbers and rates.	Quantify	Rate calculation method: Occupational accident number / Total number of employees in each company.				People, Percentage (%)	6.4 Safe and Healthy Workplace P,110~124	
			By company	Number of occupational accidents	Occupational accident rate (%)				
			CGPC	3	0.44				
TVCM	0	0.00							
CGPCP	0	0.00							
5	Based on the main product output by product category.	Quantify	By company	2022 production (tons)		ton	None		
			CGPC	440,747					
			TVCM	417,158					
CGPCP	185,616								

7.6 Implementation Status of Climate-related Information

Number	Item	Implementation Status																														
1	Clarification of the supervision and governance of climate-related risks and opportunities by the board of directors and management.	The ESG Committee, supervised by the board of directors, serves as the highest organizational unit for climate change management, with an independent director serving as the chairman. Annually, they oversee the planning and progress reporting related to climate change initiatives and provide reports to the board of directors. Monthly operational management meetings are held. Chaired by the Chairman, discusses and plans major energy-saving and carbon reduction policies on an irregular basis.																														
2	Explanation of how identified climate risks and opportunities affect the company's business, strategy, and finances (short-term, intermediate-term, long-term).	<p>Based on the likelihood and impact of climate-related risks and opportunities, five major risk and seven major opportunity projects have been identified, and the time frame and potential financial impact of the impacts are evaluated as shown in the table below:</p> <table border="1"> <thead> <tr> <th>type</th> <th>Related Item</th> <th>Time frame of occurrence.</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Physical Risks</td> <td>Increased severity of extreme weather events</td> <td>Intermediate-term (3 to 5 years)</td> </tr> <tr> <td>Changes in rainfall patterns and climate extremes</td> <td>Intermediate-term (3 to 5 years)</td> </tr> <tr> <td rowspan="3">Transition Risks</td> <td>Rising raw material costs</td> <td>Short-term (< 3 years)</td> </tr> <tr> <td>Raise the GHG emissions pricing</td> <td>Intermediate-term (3 to 5 years)</td> </tr> <tr> <td>Stigma of the industry</td> <td>Intermediate-term (3 to 5 years)</td> </tr> <tr> <td rowspan="7">Opportunities</td> <td>Reduce water usage and waste</td> <td>Short-term (< 3 years)</td> </tr> <tr> <td>Participate in renewable energy programs and adopt energy conservation measures</td> <td>Intermediate-term (3 to 5 years)</td> </tr> <tr> <td>Use low-carbon energy</td> <td>Intermediate-term (3 to 5 years)</td> </tr> <tr> <td>Use more efficient production and distribution processes</td> <td>Intermediate-term (3 to 5 years)</td> </tr> <tr> <td>R&D and innovation in developing new products and services</td> <td>Intermediate-term (3 to 5 years)</td> </tr> <tr> <td>Participate in carbon trading market</td> <td>Long-term (> 5 years)</td> </tr> <tr> <td>Energy alternatives/diversification</td> <td>Long-term (> 5 years)</td> </tr> </tbody> </table>	type	Related Item	Time frame of occurrence.	Physical Risks	Increased severity of extreme weather events	Intermediate-term (3 to 5 years)	Changes in rainfall patterns and climate extremes	Intermediate-term (3 to 5 years)	Transition Risks	Rising raw material costs	Short-term (< 3 years)	Raise the GHG emissions pricing	Intermediate-term (3 to 5 years)	Stigma of the industry	Intermediate-term (3 to 5 years)	Opportunities	Reduce water usage and waste	Short-term (< 3 years)	Participate in renewable energy programs and adopt energy conservation measures	Intermediate-term (3 to 5 years)	Use low-carbon energy	Intermediate-term (3 to 5 years)	Use more efficient production and distribution processes	Intermediate-term (3 to 5 years)	R&D and innovation in developing new products and services	Intermediate-term (3 to 5 years)	Participate in carbon trading market	Long-term (> 5 years)	Energy alternatives/diversification	Long-term (> 5 years)
type	Related Item	Time frame of occurrence.																														
Physical Risks	Increased severity of extreme weather events	Intermediate-term (3 to 5 years)																														
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Number	Item	Implementation Status																														
3	Explanation of the financial impact of extreme weather events and transition actions.	<p>The assessment of the financial impact of extreme weather events and transition actions is shown in the table below:</p> <table border="1"> <thead> <tr> <th data-bbox="808 456 947 515">type</th> <th data-bbox="954 456 1644 515">Climate-related risks</th> <th data-bbox="1650 456 2056 515">Potential financial impact</th> </tr> </thead> <tbody> <tr> <td data-bbox="808 520 947 727" rowspan="2">Physical</td> <td data-bbox="954 520 1644 635">Change in rainfall (water) patterns and extreme change in climate patterns</td> <td data-bbox="1650 520 2056 635">Increasing operating costs Increasing capital expenditure Decreasing asset value Decreasing revenue</td> </tr> <tr> <td data-bbox="954 635 1644 727">Increased severity of extreme weather events</td> <td data-bbox="1650 635 2056 727">Increasing operating costs Increasing capital expenditure Decreasing revenue</td> </tr> <tr> <td data-bbox="808 732 947 927" rowspan="3">Transition</td> <td data-bbox="954 732 1644 791">Rising raw material costs</td> <td data-bbox="1650 732 2056 791">Increasing operating costs Decreasing revenue</td> </tr> <tr> <td data-bbox="954 791 1644 868">Stigma of the industry</td> <td data-bbox="1650 791 2056 868">Increasing operating costs Increasing capital expenditure Decreasing revenue</td> </tr> <tr> <td data-bbox="954 868 1644 927">Raise the GHG emissions pricing</td> <td data-bbox="1650 868 2056 927">Increasing operating costs</td> </tr> <tr> <td data-bbox="808 932 947 1394" rowspan="7">Opportunities</td> <td data-bbox="954 932 1644 986">Reduce water usage and waste</td> <td data-bbox="1650 932 2056 986">Decreasing operating costs Increasing asset value</td> </tr> <tr> <td data-bbox="954 986 1644 1040">Participate in renewable energy programs and adopt energy conservation measures</td> <td data-bbox="1650 986 2056 1040">Decreasing operating costs Increasing asset value</td> </tr> <tr> <td data-bbox="954 1040 1644 1094">Use low-carbon energy</td> <td data-bbox="1650 1040 2056 1094">High initial investment costs, followed by a gradual reduction in operating costs over the years.</td> </tr> <tr> <td data-bbox="954 1094 1644 1149">Participate in carbon trading market</td> <td data-bbox="1650 1094 2056 1149">High initial investment costs, low carbon emissions in the long term, and reduced operating costs.</td> </tr> <tr> <td data-bbox="954 1149 1644 1203">Energy alternatives/diversification</td> <td data-bbox="1650 1149 2056 1203">Decreasing operating costs Increasing asset value</td> </tr> <tr> <td data-bbox="954 1203 1644 1318">Use more efficient production and distribution processes</td> <td data-bbox="1650 1203 2056 1318">Decreasing operating costs Increasing asset value Increasing revenue</td> </tr> <tr> <td data-bbox="954 1318 1644 1394">Research and development of new products</td> <td data-bbox="1650 1318 2056 1394">Increasing asset value Decreasing operating costs</td> </tr> </tbody> </table>	type	Climate-related risks	Potential financial impact	Physical	Change in rainfall (water) patterns and extreme change in climate patterns	Increasing operating costs Increasing capital expenditure Decreasing asset value Decreasing revenue	Increased severity of extreme weather events	Increasing operating costs Increasing capital expenditure Decreasing revenue	Transition	Rising raw material costs	Increasing operating costs Decreasing revenue	Stigma of the industry	Increasing operating costs Increasing capital expenditure Decreasing revenue	Raise the GHG emissions pricing	Increasing operating costs	Opportunities	Reduce water usage and waste	Decreasing operating costs Increasing asset value	Participate in renewable energy programs and adopt energy conservation measures	Decreasing operating costs Increasing asset value	Use low-carbon energy	High initial investment costs, followed by a gradual reduction in operating costs over the years.	Participate in carbon trading market	High initial investment costs, low carbon emissions in the long term, and reduced operating costs.	Energy alternatives/diversification	Decreasing operating costs Increasing asset value	Use more efficient production and distribution processes	Decreasing operating costs Increasing asset value Increasing revenue	Research and development of new products	Increasing asset value Decreasing operating costs
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	Research and development of new products	Increasing asset value Decreasing operating costs																														

Number	Item	Implementation Status
4	Explanation of how the identification, assessment, and management processes of climate risks are integrated into the overall risk management system.	Adopted the TCFD structure every 3 years to identify risks and opportunities associated with climate change. This involves effective communication with relevant units and final confirmation by senior executives. Integrated into the annual company's risk management evaluation. The General Manager reports on control measures and management operations to the Audit Committee and the Board of Directors on a yearly basis.
5	If resilience to climate change risks is assessed through scenario analysis, the scenario, parameters, assumptions, analysis factors, and key financial impacts used should be explained.	Scenario analysis to assess resilience to climate change risks has not been adopted yet, but it is planned to be implemented within 2 years.
6	If there are transformation plans to manage climate-related risks, the content of the plan and the indicators and targets used to identify and manage physical risks and transition risks should be explained.	The implementation plan includes: Equipment Replacement and Upgrading, Installation of Renewable Energy Equipment, Optimal Production Scheduling, Building Air Conditioning Planning, Energy Management System, Extreme Climate Emergency Response Plan. For detailed promotion details, please refer to Chapter 5.2 of this report.
7	If internal carbon pricing is used as a planning tool, the basis for price determination should be explained.	Internal carbon pricing evaluation tools have not been used yet.
8	If climate-related goals are set, the following information should be provided: the activities covered by the goals, scope of greenhouse gas emissions, planning timeframe, and annual progress towards achieving the goals. If carbon offsets or Renewable Energy Certificates (RECs) are used to achieve the goals, the source and quantity of carbon offsets or the quantity of RECs should be explained.	The base year was set as 2017, with a target of reducing carbon emissions by 27% by the year 2030. Reviews will be conducted every 3 year. Disclosed emissions data in Scope 1 and Scope 2 annually, and reviews periodically to analyze the reasons for any changes in emissions. Carbon offsets or RECs have not been used to achieve reduction targets.
9	Greenhouse gas inventory and verification status.	Please refer to Chapter 5.2 of this report for greenhouse gas inventory data.

7.7 Statement of Assurance ► (GRI 2-5)



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Independent Assurance Statement

CHINA GENERAL PLASTICS CORPORATION'S 2022 SUSTAINABILITY REPORT

AFNOR GROUP was established in 1926. We are the National Standardization Body of France, a permanent council member in ISO and one of the leading certification bodies in the world. This verification work was carried out by AFNOR ASIA LTD., a subsidiary of AFNOR GROUP. All the members of the verification team have professional backgrounds and have accepted AA1000 AS, AFAQ 26000, ISO 9001, ISO 14001, ISO 14064, ISO 45001, ISO 50001, and other sustainability-related international standard trainings. All assigned verifiers have been approved as the lead auditors or verifiers. AFNOR Group hereby provides a summary of CHINA GENERAL PLASTICS CORPORATION'S Sustainability Report of 2022 (hereinafter referred to as "the Report") but was not involved in any way in its preparation.

AFNOR Group and CHINA GENERAL PLASTICS CORPORATION (hereinafter referred to as "CGPC") are independent entities. AFNOR ASIA LTD., was commissioned by CGPC to conduct the assessment and assure the Sustainability Report of 2022 was in accordance with AA1000 Assurance Standard (v3) and the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards).

SCOPE

The disclosure scope of the Report covers the economic, environmental and social activities and operational performance of CGPC and its Taiwan subsidiaries.

AFNOR Asia is responsible for:

1. According to the Type 1 of the AA1000 Assurance Standard (v3), evaluate CGPC's compliance with the AA1000 Accountability Principle (2018). The reliability verification of the revealed sustainability performance information and data was not included. The verification scopes include sustainability issues, response mechanism, performance information, management systems of information, and the processes of materiality evaluation and stakeholder participation.
2. In accordance with the GRI Standards, we verified the statement options and material topics disclosed in the Report compiled by CGPC.

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REFERENCES

The scope of the assurance includes an assessment of the source adequacy of specific performance information and an assessment of adherence to the following reporting criteria :

- AA1000 Accountability Principles (2018)
- GRI Standards

METHODOLOGY

- Review the process and management of the principles of inclusivity, materiality, responsiveness and impact described in the Report related to the AA1000 Accountability Principles (2018).
- The Report is reported in accordance with the GRI Standards, and the content of the Report is reviewed for general disclosures and specific topic disclosures that comply with the GRI Standards.
- Conduct interviews with the management team to confirm stakeholder communication and response mechanisms.
- The qualitative and quantitative information produced, collected, and disclosed by the Report was reviewed through a validated sampling plan.
- Interviews with members of the organization related to sustainable development management and report writing, including representatives of all levels and departments.
- The verification team inspected and reviewed the documents, materials and information related to the report by interviewing the responsible personnel of each group of CGPC.
- Check the sufficiency and completeness of supporting materials and evidence for the content of the Report.

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CONCLCGPCON

◆ AA1000 Accountability Principles

Inclusivity

CGPC has continued to implement a wide range of stakeholder engagement programs to identify and understand the important information generated by issues of concern to stakeholders. The report has fairly reported and disclosed economic, environmental and social information, which is sufficient to support appropriate plans and goals. Future reports may:

- sustaining corporate sustainable development strategies, effectively integrating internal and external resources, managing risks and opportunities, clearly setting program goals, and presenting sustainability-related performance that stakeholders are concerned about.
- continuously the existing mechanism for identifying stakeholders and materiality issues, collect and understand stakeholders' concerns, specific methods of participation, and reasonable expectations and interests.

Materiality

CGPC has released relevant information on sustainable management to enable stakeholders to judge the company's management and performance, and develop and implement a decision-making mechanism for material issues to accommodate issues from all parties. Future reports may:

- expand the number of questionnaires and returns of stakeholders, continue to collect and disclose significant sustainable development information, and fully disclose significant sustainable development information.
- continuously the identification mechanism of positive and negative impacts, materiality considerations and related impacts, strengthen the risk and opportunity management and control of materiality issues, and implement them into the operating procedures of each department.



Responsiveness

CGPC has developed and implemented a stakeholder response mechanism and the comparison of SDGs, clearly declaring relevant policies and communicating with stakeholders, and responding to expectations and opinions from stakeholders. Future reports may:

- continuously the response and communication mechanism of various departments and stakeholders, strengthen the depth and breadth of disclosed data and increase their comparability.
- continue to compile the responses of stakeholders to this report as a reference for future refinement.

Impact

CGPC has developed and implemented a process for understanding, measuring, evaluating and managing the impact of the organization, and provided the necessary capabilities and resources, and committed to making a comprehensive and balanced disclosure of the measurement and evaluation of the organization's impact on stakeholders and itself. Future reports may:

- continuously the risk and opportunity monitoring and measurement mechanism of various major sustainable actions and related impacts, and implement them into the operating procedures of various departments.

◆ Global Reporting Initiative Sustainability Reporting Standards

Based on the results of the review, we confirm that the Report complies with GRI reporting requirements in terms of general disclosure items and specific topic disclosures, including material topic management and disclosure items. Future reports may:

- continuously collect and disclose performance information that can be extended to other regions or operating bases in the future, and strengthen the depth and breadth of disclosed information, strengthen the content of management policy disclosure, and more completely present the context of sustainability and related sustainability performance.
- continuously collect major issues, risks and opportunities, strengthen management and control, practice results, and gradually implement various operations and management actions of subsidiaries in various operating bases, so as to expand the influence of enterprises on sustainable management.





ASSURANCE OPINION

In our opinion, the information and data presented in the Report by CGPC provides a fair and balanced representation. We believe the focuses on economic, environmental, and social aspects of CGPC in 2022 are well represented.

Afnor Group has developed a set of process for the Assurance of Sustainability Reports based on current practice guidance provided in the AA1000 Assurance Standard (v3) and GRI Standards. We believe that the evidence collected by onsite assessment has exhibited that CGPC did follow the guidance of AA1000 Assurance Standard (v3) and GRI Standards, and their self-declaration in response to the Global Reporting Initiative.

ASSURANCE LEVEL

In accordance with the AA1000 Assurance Standard (v3), we verified this assurance statement corresponding to a moderate level. The scope and methods are as described in this statement.

LIABILITY

This assurance statement is intended for the use of CHINA GENERAL PLASTICS CORPORATION only. AFNOR is not responsible for any other uses. Our responsibility is only based on the scope and methodology described, and to provide stakeholders an independent assurance statement.

For and on behalf of AFNOR :

Trevor Wilmer
The Director for Certification and Assessment
May 26, 2023



AA1000
Licensed Report
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